The impact of mandatory adoption of International Financial Reporting Standards on accounting quality, analysts' information environment and cost of capital in Latin America

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Abstract

This thesis is structured upon three studies. The first study investigates whether mandatory IFRS adoption improves accounting quality in Latin America. The findings show that in the post-adoption period: accrual earnings management practices are reduced, value relevance of accounting increases, and the delay in recognising bad news reduces. However, these improvements cannot be found in firms with high bankruptcy possibility and poorly performing firms. The second study focuses on whether the analysts' information environment has improved since the IFRS adoption. The results show that the mandatory adoption of IFRS improves analysts' information environment, even after controlling for the firm-level reporting incentives. The third study focuses on whether IFRS has affected the cost of equity and debt in Latin America. The findings show that the cost of equity and debt decreased significantly in the post-IFRS period. Overall, the results found can be attributed to IFRS as the institutional environment has not changed significantly around the years of the mandatory adoption of IFRS. Thus, IFRS can contribute to enhance the accounting quality of Latin American firms, and may help to develop the capital market and the development of these firms.

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Table of Contents

List of Figures

List of Tables

List of Abbreviations

BACEN	Central Bank of Brazil
GDP	Gross Domestic Product
GAAP	Generally Accepted Accounting Principles
IASB	International Accounting Standards Board
IAS	International Accounting Standards
IFRS	International Financial Reporting Standards
FASB	Financial Accounting Standards Board
RIV	Residual Income Valuation
SEC	Securities and Exchange Commission
SUSEP	Brazilian Private Insurance Regulator

Chapter 1: Introduction

1.1 Introduction

This thesis contains 7 Chapters that are based on three studies. Overall, this thesis investigates whether the mandatory adoption of International Financial Reporting Standards (IFRS) in Latin America has impacted accounting quality, analysts' information environment and the cost of capital (e.g. higher accounting quality, enhanced information environment and lower cost of capital).

The IFRS has been mandatory in Europe since 2005 according to regulation 1606/2002 that required the government to ensure its compliance. The main aim of this regulation is to improve transparency, comparability, and the efficiency of capital markets. It seeks to enhance the protection of investors and increase international foreign direct investments over the globe (ICAEW, 2015). It is worth noting that the governments of more than 140 countries have adopted IFRS as the official accounting standards over recent years. However, emerging markets, in particular Latin American countries, have only started the process of adopting IFRS since 2008. The governments from these emerging markets took an effort to enhance the quality of accounting information and increase the comparability of financial statements in order to attract more investments and develop the capital markets (SVS, 2006; CNBV, 2008; CVM, 2008; CNV, 2009; CONASEV, 2010). Despite the importance of IFRS and the changes that it brings to a country, the literature on Latin American markets is very limited.

The impact of IFRS on the accounting quality, analysts' information environment and cost of capital has several implications for the users of the financial information, such as international regulators, governments, analysts, investors and lenders. For instance, international regulators discuss whether IFRS can provide greater accounting quality and

improve economic development, and these outcomes are expected by local governments and regulators (SVS, 2006; CNBV, 2008; CVM, 2008; CNV, 2009; CONASEV, 2010). In addition, greater accounting quality can influence analysts who can more accurately assess their risks and provide more accurate forecasts. Consequently, the quality of forecasts can influence other accounting information users, such as investors or shareholders, which in turn, take decisions to buy, sell or hold investments in shares. For instance, this situation might help to boost investments as investors would perceive higher accounting quality, which can help to reduce information asymmetry and hence the risk of investing in these countries. Likewise, lenders could perceive higher quality stemming from financial statements, which in turn would be helpful in lowering the required rates of return in debt contracting.

1.2 Motivations

Despite the implications of the adoption of IFRS to several users of accounting, investors, analysts, governments and international regulators, there are several reasons to study the effect of IFRS in Latin America. Firstly, Latin American countries have two economic trading blocs, the Mercado Comum do Sul (MERCOSUL)[1] and Pacific Alliance[2] in order to promote free trade amongst its participants. They export several types of commodities to developed countries, and influence the worldwide economy. Moreover, they attract foreign direct investment, in particular, from the U.S. and China (Trevino and Mixon Jr., 2004; Tuman and Emmert, 2004; Trevino, Thomas and Cullen, 2008; BBC, 2015; IMF, 2016). Thus, following the adoption of IFRS, these changes in accounting standards can affect how foreign investors make their investment decisions.

[1] Mercado Comum do Sul (MERCOSUL) is composed of five full members (Argentina, Brazil, Paraguay, Uruguay and Venezuela), five associated countries (Chile, Bolivia, Colombia, Ecuador and Peru) and two observer countries (New Zealand and Mexico). Its website is http://www.mercosul.gov.br/.
[2] Pacific Alliance is composed of five member states: Chile, Colombia, Mexico, Peru and Costa Rica.

This is a significant step taken by the governments of these countries, to develop their capital market, that brings implications for the quality and reliability of the standards, which in turn affects investors, analysts, lenders, and other users of accounting (SVS, 2006; CNBV, 2008; CVM, 2008; CNV, 2009; CONASEV, 2010).

Secondly, unlike other BRICS countries (China, India, Russia and South Africa), the adoption of IFRS was required in unconsolidated financial statements as well as in consolidated financial statements. This helps to identify more clearly the changes from domestic generally accepted accounting principles to IFRS.

Thirdly, the combination of national institutional structures and economic growth in Latin American markets may also affect accounting quality, which can provide new inferences for literature; as such, it is important to investigate how these factors affect the adoption of IFRS. It is worth noting that the gross domestic product (GDP) growth rate started to decline after 2012 reaching levels between 2% and 2.5%, which is lower than those of other emerging markets and those of the G7 countries[3]. Additionally, corporate debts have increased in the past six years and surge up to US$109 billion plus $47 billion in local currencies in 2014, which is about 21% of the GDP on average (Turner, 2015; IMF, 2015; Tett, 2015). These economic factors have affected Latin American firms' financial position and performance, and may affect manager's incentives to adopt IFRS.

Fourthly, studying Latin American markets also exploits the different national institutional structures (enforcement of accounting standards, investor protection mechanisms as well as less developed capital markets) when investigating the determinants and effects of these factors on accounting quality (Ball, 2016). Previous literature, which is mainly focused on developed countries, has demonstrated that accounting quality is not determined only by the adoption of high-quality accounting

[3] The World Bank's overview on Latin American and Caribbean Home, retrieved from http://www.worldbank.org/en/region/lac/overview.

standards, but it varies according to the level of legal enforcement, investors' protection and managers' incentives (Ball, Robin and Wu, 2003; Barth, Landsman and Lang, 2008; Daske, Hail, Leuz and Verdi, 2008; Li, 2010; Houqe, Zijl, Dunstan and Karim, 2012; Doukakis, 2014; Christensen, Hail and Leuz, 2013). The enforcement and investor protection mechanisms of these countries are weak (Brown, Preiato and Tarca, 2014; La Porta, Lopez-De-Sinales, Shleifer, Vishny, 1998), which in turn could help this thesis to identify more clearly the impact of the IFRS adoption. Thus, investigating the Latin American case can contribute to the international literature.

Overall, investigating these countries provides a unique framework, and also answer the call of the International Accounting Standards Board (IASB) for research on the impact of adopting IFRS in emerging markets. This thesis examines firms from five Latin American countries (Argentina, Brazil, Chile, México and Peru). The other countries could not be included as they either adopted IFRS after 2014 or their empirical data was not available.

The next section illustrates the research objectives of the four studies contained in this thesis.

1.3 Research objectives

This section reports the research objectives according to each major study of this thesis. The first study examines the impact of IFRS adoption on the accounting quality of Latin American firms. In particular, the objectives of this study are as follows: (i) to investigate the strength and changes of the enforcement of accounting standards, legislation and investor protection mechanisms; (ii) to investigate whether IFRS adoption improves Latin American firms accounting quality (based on earnings management, timely recognition of losses and value relevance); (iii) to investigate whether financial

health, operating performance, and the status of listing on the U.S. stock exchanges affects the manager's implementation of IFRS; and (iv) to investigate whether managers implement IFRS due to official requirements, according to the auditors' reports.

The second study examines whether the adoption of IFRS improves analysts' information environment measured in terms of earnings' forecast accuracy and dispersion, analysts' target price forecast dispersion, as well as the number of analysts following firms. Secondly, this study investigates whether firm-level reporting incentives affect analysts' information environment. Thirdly, this study re-examines the impact of mandatory adoption of IFRS on analysts' information environment after controlling for firm-level reporting incentives. Fourthly, this study also investigates whether mandatory adoption of IFRS improves the precision of public, private and consensus information based on the work of Barron, Kim, Lim and Stevens (1998) and Byard, Li and Yu (2011).

The third study investigates the impact of the IFRS adoption on the cost of equity and debt. This study also examines whether IFRS can still be beneficial in reducing the cost of equity, after controlling for firm-level reporting incentives.

The next section focuses on an overview of the theoretical framework, as well as the methodology employed to achieve the objectives of the four studies contained in this thesis.

1.4 Synopsis of theory and methodology

This section summarizes the theoretical framework and research methodology that supports this research. The theoretical framework and the event-study approach are discussed as a whole for the thesis followed by the methodology of each study.

1.4.1 Theoretical framework

The theoretical framework of this research is based on the theory of agency (Jensen and Meckling, 1976), the positive accounting theory (Watts and Zimmerman, 1986), the works of Ball et al. (2003) and Nobes (2006) as well as the equity valuation theory. The theory of agency argues that managers have incentives to act on behalf of their best interests, which may conflict with the best interests of the companies' shareholders. The positive accounting theory links the implications of the theory of agency (the conflict of interests between managers and shareholders) to possible accounting choices and outcomes, which can impact on the accounting quality. Moreover, Ball et al. (2003) argue that institutional settings such as market and political factors can affect the preparers' incentives in presenting financial reports, which in turn can affect accounting quality. Additionally, Nobes (2006) argue that the institutional setting as well as the properties of the standards where the firm is operating may affect the quality of accounting; in particular, enforcement of accounting standards and investor protection mechanisms. That is, if the institutional setting is not strong, the firm may not adopt the accounting standards properly. Considering that the enforcement of accounting standards and investor protection mechanisms are weak in Latin America (Brown et al., 2014; La Porta et al., 1998), these factors can affect the adoption of IFRS and the accounting quality in these countries as well as the managers' incentives to prepare financial statements. As Latin American countries recently adopted IFRS, and this represents a major change in the accounting standards of these countries and on their quality, these factors suggested by previous literature and theories are fundamental to the development of this thesis. The analyses on value relevance as well as on the cost of equity are supported by the equity valuation theory. Various models were developed to identify the value relevance of accounting numbers as well as to calculate the cost of equity (Ohlson, 1995; Claus and

Thomas, 2001; Gebdhardt, Lee and Swaminathan, 2001; Gode and Mohanram, 2003; Easton, 2004; Barth et al., 2008). These studies also offer a theoretical foundation to investigate these issues in Latin America.

1.4.2 Event-Study approach

The key issue of this section is to illustrate how to measure the target effects of the investigated event based on the research design of standard event studies. This is important because this thesis adopts the method of event-study. This methodology was initially employed by Ball and Brown (1968) and Fama, Fisher, Jensen and Roll (1969). Ball and Brown (1968) investigated the effect of net income on share prices by pinpointing the earnings announcement date through the Wall Street Journal. The authors argue that their methodology has several limitations regarding the impact of the net income on security prices. This is because security prices are affected by macroeconomic changes, industry effects and are volatile to speculations from the market. Nevertheless, the authors were able to identify that the net income is indeed useful for valuation purposes. Another key event-study is Fama et al. (1969) that accurately investigated the dates on which firms split their shares. It is likely this event occurs to show that directors are confident on the firm's performance. Therefore, the market perceives this, and as a result this information is reflected in the share prices. Thus, by investigating the split dates, the authors argue that the market is efficient. Considering the approach of these studies, Brown and Warner (1980) argue that one of the challenges of event-study methodology is to identify clearly the effect of the event. The key concern is that researchers need to identify accurately the event date in order to measure its effect, and to control for possible factors that may surround its effect. Thus, this thesis considers firms' incentives, the effect of the institutional environment as well as firm-level factors

in order to measure accurately the effect of the IFRS adoption. The methodology of each study is discussed next.

1.4.3 Research methodology of the first study

In the first study, this thesis investigates the enforcement of accounting standards and investor protection mechanisms through an updated code of enforcement based on the methodology of Brown et al. (2014), La Porta et al. (1998), Hope (2003) and the World Bank (2008) that aims to investigate the changes in the institutional environment during the adoption period. The results are helpful in controlling the changes in the institutional settings and further concentrate on the effect of the mandatory adoption of IFRS in the following research work. Secondly, the empirical work with regard to accounting quality is investigated based on the informational content of metrics of earnings management, value relevance, and timely loss recognition (Dechow, Sloan and Sweeney, 1995; Basu, 1997; Barth et al., 2008; Ahmed, Neel and Wang, 2013b). Additionally, this study expands the value relevance model and Basu's (1997) model by introducing lagged independent variables in order to capture firms' reporting behaviour in a timely manner. This is because previous published studies examine the accounting quality based on data of a single time point, *t* only, but ignore firms' behaviour in delaying the recognition of bad news, or smoothing earnings in bad times and good times. This study also analyses the issues of accounting quality in three sets of subsamples with regard to firm-level factors: operating performance, bankruptcy possibility, and the status of listing on U.S. stock exchanges. Furthermore, this study investigates the external auditors' reports in order to evaluate if the managers are following IFRS, as they still can use their discretion when enforcement and investors' protection is weak. The target population of this research includes all publicly listed companies excluding banks and

financial institutions in Argentina, Brazil, Mexico, Chile and Peru. This study adopts quarterly accounting and market data in order to track firms' behaviour in a timelier manner.

The sample is based on 309 industrial firms with quarterly data from 2003 to the fourth quarter of 2014 from Economática database. The data is analysed in a time span of eight quarters prior to IFRS adoption and after. This approach is adopted to ensure that there is a similar amount of data available for both periods.

1.4.4 Research methodology of the second study

The second study focuses on the impact of IFRS adoption on the analysts' information environment in Latin America. The metrics for the analysts' information environment are based on Byard et al. (2011) and Panaretou, Shackleton, and Taylor (2013): current-year analysts' forecast accuracy and dispersion of earnings as well as the number of analysts following firms. Moreover, this study extends the metrics and includes analysts' forecast error and dispersion of one-year-ahead forecasts as well as analysts' forecast dispersion of target price. Previous studies focus mostly on earnings forecasts but do not rely on the fact that analysts are responsible for issuing other types of forecasts (Beyer, Cohen, Lys and Walther, 2010). Thus, this study also investigates target price forecasts. Following previous literature, this study includes several controls for firm size, time between the analysts issuing the forecasts and the earnings announcement date, previous stock returns, changes in earnings per share and log of the number of analysts following the firm. This study also investigates whether firm-level reporting incentives affect the information environment. Following Byard et al. (2011) and previous literature, this study includes variables in the model that represents firms' incentives (greater return on assets, firms audited by big 4 auditors, highly leveraged firms, firms that list on foreign

stock exchanges and firms with greater growth opportunities). Afterwards, the effect of IFRS is investigated jointly after controlling for firms' incentives. The precision of public, private and consensus information is investigated following the method of Barron, Kim, Lim and Stevens (1998).

The data of this study is from the I/B/E/S detail and summary file. There are 97 firms with data available for this analysis from the detail file and 285 firms from the summary file.[4]

1.4.5 Research methodology of the third study

The third study focuses on the impact of IFRS adoption on the cost of equity and debt in Latin America. The average of four methods proposed by Claus and Thomas (2001), Gebhardt, Lee and Swaminathan (2001), Gode and Mohanram (2003), and Easton (2004) is adopted in order to calculate the cost of equity. However, the clean surplus accounting assumption that Claus and Thomas (2001) and Gebhardt et al. (2001) rely upon may not hold for the pre-adoption period. Thus, this thesis relies on the average of models of Gode and Mohanram (2003) and Easton (2004) because these models do not rely on clean surplus accounting. Additionally, this study estimates the cost of equity using only forecasts available by the analysts, as well as it produces another set of results by forecasting the three-year ahead through five-year ahead forecasts, using the long-term growth rate, if these forecasts are missing. Using the estimated cost of equity as a dependent variable, this thesis regresses it on several control variables adopted by previous literature: size, variability of stock returns, leverage, one-year-ahead inflation, risk-free rates, as well as industry and country effects (Hail and Leuz, 2006; Li, 2010).

[4] The number of firms for each analysis (e.g. precision, forecast accuracy, forecast dispersion) varies. Please refer to Chapter 5 for the detailed number of firms in each analysis, which is available at the bottom of each table that contains the results.

This research also controls for firms' incentives that could affect the cost of equity: return on assets, whether a firm lists on foreign stock exchanges, and whether it is audited by the Big 4 auditors.

To investigate the cost of debt, this thesis follows the approach of Moscariello et al. (2014). This is because the cost of debt is perceived in the contracts, and it can be obtained as the interest paid over the outstanding bearing debt. Multivariate analyses are employed using several control variables: expected inflation, risk-free rates, deviation of net income, size of the firm, the book to market value ratio, the log of sales, tangibility, the ratio of current assets over current liabilities, interest coverage as well as country, industry and year effects.

The data to evaluate the cost of equity is from the I/B/E/S detail file. There are 89 firms for which a meaningful cost of equity can be calculated for at least one year in the period of 4 years before and 4 years after the mandatory IFRS adoption and the other variables are available.[5] The data to evaluate the cost of debt is from DataStream and WorldScope. There are 279 firms with data available to achieve the research objectives in the period of 4 years before and 4 years after the mandatory IFRS adoption.

The next section illustrates the main findings of this thesis.

1.5 Main Findings

From the first study (Chapter 4), the main findings are as follows. Firstly, earnings management practices measured via the accrual aggressiveness models reduces in the post-adoption period. Secondly, the value relevance of accounting figures improved in the post-IFRS period. Thirdly, firms still delay the recognition of bad news; however, this delay is reduced during the post-adoption period. Hence, an overall improvement is

[5] Although the study of the cost of equity is based on the I/B/E/S detail file, the data available for the analysis of the cost of equity is lower than the data available to investigate the analysts' information environment. This is because the cost of equity for some firms is not a real root or is greater than 1.

perceived. Moreover, firm-level factors affect managers' behaviour in adopting IFRS. Poor performance and high bankruptcy possibility may constrain managers' willingness in adopting IFRS. According to this, the results illustrate that there are no accounting quality improvements for these firms. The results also indicate that there is still room for managers' discretion upon the standards, which is confirmed by the investigation of the auditors' reports for these firms as there are companies that do not fully follow IFRS.

With respect to the analysts' information environment analysis (Chapter 5), the main findings are as follows. The findings show that there is an overall improvement in analysts' information environment, as analysts issue more accurate and less dispersed forecasts. Additionally, the number of analysts following Latin American firms in the post-IFRS adoption period doubles. The dispersion of target price reduces in the post-adoption period, which illustrates that the improvement in analysts' information environment is not only due to increased accuracy and reduced dispersion concerning earnings forecasts, but is also related to target price forecasts. The results also show that the improvement in analysts' information environment brought by mandatory adoption of IFRS is reflected in the precision of public and consensus information.

With regard to the analysis on the cost of equity (Chapter 6), the main findings are as follows. This thesis finds that there is a reduction on the cost of equity, and this is associated with the adoption of IFRS in Latin America. Thus, investors require a lower premium for investing in these firms in the post-IFRS period, as they perceive higher quality stemming from their financial statements and a lower risk. Regarding the analysis on the cost of debt, this thesis shows that despite the political and economic uncertainty experienced in recent years, there is a reduction on the cost of debt in the post-IFRS period.

The next section presents the contributions of this thesis.

1.6 Contributions

This thesis contributes to the literature for the following reasons. Firstly, this study contributes to the international literature in investigating the impact of IFRS adoption in a unique setting of Latin American countries. Christensen et al. (2013) argue that the findings of previous literature are constrained due to confounding effects of a bundle of factors. They argue that the changes in the level of legal enforcement and investor protection mechanisms, firms' incentives as well as the mandatory adoption of IFRS could be related to the findings of an improvement in the accounting quality of previous studies. Preiato, Brown and Tarca (2015) also argue that if effective enforcement proxies are taken into consideration, the effects of improvement in accounting quality and analysts' information environment could disappear. Therefore, they urge researchers to control for this. This study addresses the concerns of Christensen et al. (2013) and Preiato et al. (2015) by firstly investigating whether there were any changes in the enforcement of accounting standards and investor protection mechanisms around the mandatory IFRS adoption dates (between 4 and 6 years depending on the date of adoption of IFRS by each country). In order to achieve this, a questionnaire containing several questions (further detailed on Chapter 3) was sent to the securities and market regulators, academics and Institute of Federal accountants and auditors of each country. The results found that there were no concurrent significant changes in the enforcement of accounting standards and investor protection mechanisms around the date of IFRS adoption. This framework allows for more accurate investigation of the impact of IFRS and avoids the confounding effects of institutional settings from previous research. Secondly, to the best of my knowledge, this thesis is the first study to examine six measures of accounting quality and economic consequences (earnings management, accounting conservatism, value relevance,

analysts' information environment, cost of equity and cost of debt) of the IFRS adoption in Latin America based on quarterly and annual data.

From the first study, the contributions are as follows: this study utilizes quarterly data to track the firms' behaviour in a timely manner, where the methods of value relevance (Barth et al., 2008) as well as timely recognition of losses (Basu, 1997) are extended. Due to this research design, this study shows that is necessary to investigate the lagged behaviour of Latin American firms, as their situation is different from developed nations, and provides new insights to the literature. Due to the current economic climate, this study also shows how different firm-level factors affect the adoption of IFRS in emerging economies, which is an additional factor that affects managers' discretion. This thesis argues that firm-level factors are another force affecting the accounting quality and managers' incentives, which contributes directly to the theoretical framework provided by Ball et al. (2003). This study also contributes to the literature in assessing the compliance to the standards according to the external auditors' reports. This analysis brings insights to the literature by showing which types of irregularities firms are caught by, and in turn help the securities and market regulators to focus more on investigating why these firms do not comply with the standards. Additionally, this evidence may help regulators in strengthening the penalties for these irregularities, which in turn could discourage firms' non-compliance behaviour. Finally, this study contributes to the literature by showing that IFRS can enhance the accounting quality of Latin American firms.

With respect to the analysts' information environment analysis, this thesis contributes to the literature in at least three ways. Firstly, this study investigates the long-term effect of the IFRS adoption in contrast to previous studies in developed nations that investigate the short-term effects. Secondly, this study expands the measures of analysts'

information environment by examining the accuracy and dispersion of one-year-ahead earnings forecasts (previous studies investigate current-year earnings forecasts), as well as examining the dispersion of target price forecasts. Thirdly, as there is an improvement in analysts' information environment, investors may realise the benefits of making investment decisions based on analysts' forecasts, and in return capital market efficiency may improve.

Regarding the analysis on the cost of equity, this research improves the understanding of the economic consequences of accounting standards harmonization via IFRS in developing countries as Beyer et al. (2010) urge researchers to examine the relation between accounting quality and cost of capital. Secondly, this study examines the long-term effect of IFRS, as previous literature focuses mostly on short-term effects. Thirdly, the metrics of cost of equity are derived based only on the forecasts provided by the analysts, in contrast to previous literature which estimated the forecasts when they were missing (Claus and Thomas, 2001; Li, 2010). This helps to investigate more accurately the IFRS effect because there is a measurement error involved when the researcher forecasts the missing data. With regard to the analysis on the cost of debt, given the unclearness on the effect of IFRS on debt contracting (Florou and Kosi, 2015), this research improves the understanding of the economic consequences of the adoption of IFRS with regard to the cost of debt where the literature is limited. This study is not constrained by concurrent institutional factors, which overcome the limitations of previous research (Florou and Kosi, 2015; Persakis and Iatridis, 2017). The adoption implies higher accounting quality, which in turn helps to lower the interest rates on the cost of debt.

Overall, as this was a major change in the accounting system of each country, the quality of financial information is one of the essential ways to attract overseas investments

in order to maintain investors' confidence and stimulate the development of capital markets. Therefore, this study contributes to understand the impact of the adoption of IFRS on the quality of accounting in Latin America. Thus, it contributes to the worldwide discussion, whether the goal of enhancing accounting quality is being achieved by IFRS in developing countries. It is worth noting that these countries were treated as control groups by past studies, and as such, the research evidence is very limited. This is helpful for the IASB, the Latin American governments and investors. In addition, for financial analysts and investors, this study contributes to comprehend the formation of share prices in the stock market, and the informational role of accounting in the current market scenario of convergence to IFRS in developing countries. Furthermore, this study contributes to the knowledge about convergence to international accounting standards, quality of accounting information and its implications to investors and market regulators. Finally, based on the findings that accounting information quality has improved, and the characteristics of emerging markets; this entails implications for policy makers. For instance, it can encourage other regulators in other emerging markets to adopt IFRS in the coming future. Colombia has just adopted IFRS and as such, their regulators can compare whether the benefits of IFRS with the other Latin American countries investigated in this thesis. For Latin American policy makers, it illustrates that their countries have improved their accounting quality in comparison to previous domestic accounting standards, which highlights opportunities for attracting foreign investment. It is worth noting though, that this thesis highlights the need to increase enforcement of accounting standards and investor protection mechanisms, as this would likely contribute to enhance the benefits flowing from IFRS, help to attract foreign investments, and it is in line with the expectations of regulators.

1.7 Structure of the Thesis

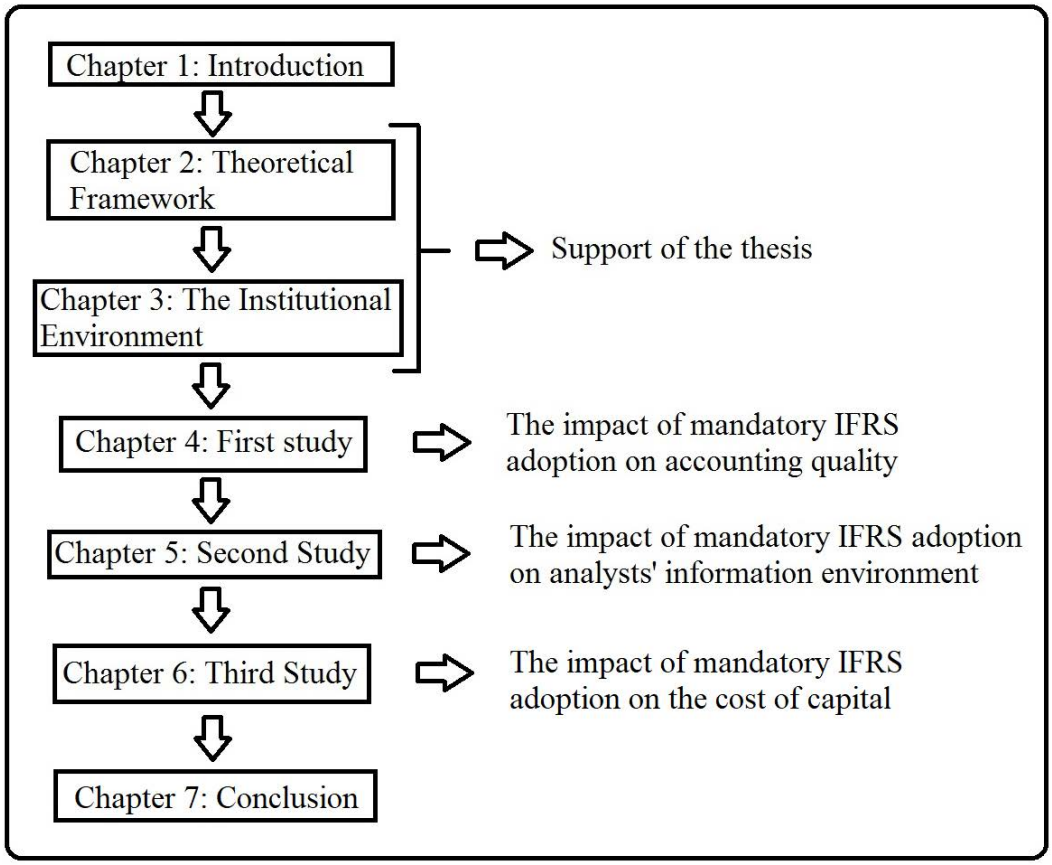
The thesis is organized as follows. Chapter 2 discusses the theoretical framework of this thesis. Chapter 3 presents the background and institutional settings of Latin American countries surrounding the IFRS adoption, as well as it presents the questionnaire issued to investigate any significant changes in the enforcement of accounting standards and investor protection mechanisms surrounding the IFRS adoption date in Latin America. Chapter 4 presents the empirical analysis of the first study that investigates the impact of mandatory adoption of IFRS on accounting quality in Latin America. This chapter presents the literature review of the mandatory IFRS adoption, present the research opportunities, the research methodology, which examines the impact of IFRS on the accounting quality (earnings management, accounting conservatism, value relevance) of Latin American firms. Finally, this Chapter reports the findings of the first study which is with regard to the impact of IFRS on the accounting quality of Latin American firms.

The second study that investigates the impact of mandatory IFRS adoption on analysts' information environment in Latin America is presented in Chapter 5. This Chapter reviews the literature with regard to the impact of IFRS adoption on analysts' information environment; it also presents the research opportunities, the research methodology employed to investigate the analysts' information environment, as well as the findings of the second major study.

The third study that investigates the effect of mandatory IFRS adoption on the cost of equity and debt in Latin America is presented in Chapter 6. This chapter reviews the literature and presents the research opportunities as well as it discusses the methods employed to investigate the research objectives and discusses the results.

Finally, Chapter 7 provides a summary of the main findings and concluding remarks. The implications, limitations and recommendations for future research are presented as well. In order to better illustrate how this thesis is structured, please rely on the next figure.[6]

Figure 1. Thesis's structure



Additionally, there are four appendices in this thesis. The first appendix illustrates the questionnaire adopted to investigate the strength and changes in the institutional settings. Appendix 2 presents the detailed results of the questionnaire. Besides presenting the literature review of the chapters, this thesis also presents the summary of the literature review (empirical studies) on Appendix 3, which is divided into three sections according to each study (each Chapter) for easiness of exposition. Thus, sections 1, 2, 3 of Appendix

[6] The titles of the Chapters in Figure 1 were adapted for the sake of easiness of exposition. That is, the title of each Chapter may be different than the title adopted in Figure 1.

3 present the empirical studies related to the adoption of IFRS that are quoted in Chapter 4, 5 and 6 respectively. Finally, Appendix 4 contains three sections that present a summary of the detail of the variables according to each study, which follows the same fashion as Appendix 3.

Chapter 2: Theoretical framework

2.1 Introduction

This section explains the meaning of accounting quality and the reasons that explain its importance. Additionally, this thesis discusses IASB's reasons to promote IFRS, and the drivers of accounting quality according to Ball et al. (2003) and Nobes (2006). The institutional setting, the properties of IFRS, and the theory of agency and positive accounting theory are examined indicating how they can affect accounting quality. Finally, this section discusses the institutional setting of emerging markets that could affect the adoption of IFRS.

The structure of this Chapter is as follows. Section 2.2 addresses the meaning of accounting quality. Section 2.3 argues why accounting quality is important. Section 2.4 discusses IASB's reasons to promote IFRS to the world. Section 2.5 presents the development of theories as to how institutional factors and manager's incentives affect accounting quality, which relates to the positive accounting theory, theory of agency and the equity valuation theory. Section 2.5.1 discusses the effect of market and political forces as well as the preparer's incentives on accounting quality. Section 2.5.2 discusses the effects of institutional factors that affect the implementation of IFRS. Section 2.5.3 discusses the interaction of market forces, political forces, preparer's incentives, the theory of agency, the positive accounting theory and the equity valuation theory that supports this research. Section 2.6 illustrates the distinguished legal and institutional factors in emerging countries. Section 2.7 concludes.

2.2 What is accounting quality?

Penman (2014) defines accounting quality based on five aspects. That is, generally accepted accounting principles (GAAP) quality, audit quality, GAAP application quality, transaction-timing quality and disclosure quality. Regarding GAAP quality, it is fundamental that the GAAP covers key aspects of the business; otherwise, this could mislead users in their valuations and forecasts. Audit quality is important in order to prevent fraud of financial statements, which would compromise all users of information. Moreover, it ensures the correct application of the GAAP and confirms the reliability of the statements to external users. Regarding GAAP application quality, the manager needs to apply standards reasonably in order to provide reliable information to external users. That is, standards often allow several choices to recognise firm's transactions. However, the manager needs to adopt choices that faithfully report the economic situation of the firm. Furthermore, there are operational timing choices that may compromise earnings quality. That is, managers can use their discretion in choosing a time to recognise accounting transactions. For example, in the case of transactions related to revenue and expenditure, the decision about when to recognise these transactions may affect accounting quality. The manager can postpone the expenditure of research and development (R&D) to the next year, which in turn would increase the net income of the current year (Penman, 2014). Therefore, these operational choices can mislead the users of financial information by indicating that the net income of a company is higher than it actually is. Finally, there is a concern regarding disclosure quality. That is, the manager may decide not to disclose key aspects of the business in the footnotes. The GAAP may not require the mandatory disclosure of these aspects, but they would be helpful for users in order to understand firms' financial situation. In addition, Penman (2014) argues that accounting quality is a matter of establishing the integrity of the accounting for

forecasting purposes. Alongside the five aspects mentioned, earnings quality is another indicator of accounting quality.

2.2.1 Earnings quality

The majority of empirical studies focuses on the concept of earnings quality. Although there is a consensus regarding the definition of accounting quality, Dichev, Graham, Harvey, and Rajgopal (2013) argue that there is not a consensus about the definition of earnings quality. According to Dichev et al. (2013, p.2), earnings quality is a combination of factors such as:

> *'earnings persistence, predictability, asymmetric loss recognition, various forms of benchmark beating, smooth earnings, magnitude of accruals, income increasing accruals, absolute value of discretionary or abnormal accruals, and the extent to which accruals map into cash flows'.*

Schipper and Vincent (2003) discuss earnings quality as the extent to which reported earnings faithfully represent the economic events that it measures. They base their definition on the degree that accounting information is useful for decision-making. This is the same criterion as the Financial Accounting Standards Board (FASB) presents in the Statement of Financial Accounting Concepts n° 1 (SFAC 1) that the purpose of the financial statements is to produce useful information for decision-making (FASB, 2008). This is also consistent with the view of the IASB (2008). The authors outline four concepts of earnings quality as follows: '(1) the time-series properties of earnings; (2) selected qualitative characteristics in the Conceptual Framework of the Financial accounting standards board (FASB); (3) the relations amongst income, cash, and accruals; and (4) implementation decisions'. Firstly, the time-series properties of earnings include persistence, predictive ability and variability. These aspects are proxies for accounting

quality; as such, high-persistent earnings, high predictive ability, and less variability are consistent with higher earnings quality.

Secondly, FASB's Conceptual Framework as well as IASB's Conceptual Framework focuses on the degree to which the information is useful, measured in terms of relevance, reliability, and comparability (IASB, 2008). According to this framework, accounting quality is of higher quality if it is reliable, comparable, relevant and useful to its users. Thirdly, because the recognition of cash and income is asymmetric due to the accruals regime, this creates an opportunity for earnings management endeavours. Therefore, if earnings do not represent the economic situation of the firm faithfully, this will affect earnings quality. Fourthly, earnings quality depends on the implementation decisions of preparers and auditors' incentives. Thus, subjective judgement, estimation, and forecasting of accounting numbers are likely to impact earnings quality negatively. The authors argue that earnings management behaviour could increase in these situations.

Dechow, Ge and Schrand (2010) propose a classification for the approaches to investigate earnings quality as follows: i) property of earnings; ii) reaction of investors to earnings announcements; iii) external indicators of distortion on the earnings figures. The first category covers earnings persistence and accruals, metrics related to earnings management such as earnings smoothness and managing earnings towards a target, and metrics related to accounting conservatism such as asymmetric timeliness and timely loss recognition. The second category focuses on how earnings announcements affect share prices through event study methodology. The third category relies on internal controls and third parties that audit financial statements. For instance, third parties such as the Securities and Exchange Commission (SEC) of the U.S. government can indicate companies with non-compliant financial statements.

Following the approach of investigating accounting quality through earnings quality, modern accounting research investigates earnings quality through three concepts. These concepts are earnings management (Jones, 1991; Dechow et al., 1995; Barth et al., 2008; Dechow, Hutton, Kim and Sloan, 2012), accounting conservatism and timeliness (Basu, 1997; Khan and Watts, 2009), and value relevance (Barth et al., 2008; Tsalavoutas, André and Evans, 2012). Moreover, it addresses its economic consequences on the cost of capital and analysts' information environment (Liang and Riedl, 2014; Preiato et al., 2015). This study discusses these concepts throughout the thesis.

2.3 Why is accounting quality important?

The importance of accounting quality is related to the degree of its usefulness to external users. In order to illustrate this, take for example the relationship between accounting quality and capital markets. Kothari (2001) argues that from 1970 to 2000, there was an increase of published studies focusing on capital markets. This is evidence about the importance of capital markets' research and the demand of users of financial information such as shareholders, investors, and lenders. Kothari (2001, p.4) states that there are at least four types of demands in capital markets research:

> *'(i) fundamental analysis and valuation; (ii) tests of capital market efficiency; (iii) role of accounting in contracts and in the political process; and (iv) disclosure regulation.'*

The accounting information has an interplay with all these demands. Fundamental analysis and valuation heavily rely on accounting information from current and past financial statements. Thus, accounting information can affect valuation in an efficient market, which relates to the second demand. Regarding the third demand, unfaithful accounting information can mislead investors and other external users. Lastly, the

disclosure regulation is the GAAP itself, and involves several rules and principles that define accounting reporting standards. As a result, the accounting quality affects several issues involving investors, regulators and the capital market. In particular, referring to the change of local standards to IFRS, Kothari (2001, p. 8) presents a number of questions that capital market research can shed some light on regarding the adoption of a new accounting standard:

> *'do financial statement numbers prepared according to a new standard convey new information to the capital markets? Are financial statement numbers prepared according to a new standard more highly associated with contemporaneous stock returns and prices? What are the economic consequences of the issuance of a new disclosure standard?'*

These questions indicate the importance of accounting quality. For instance, a change in the standards may have implications on the financial statements, which are used by investors and analysts for investment decisions. This also can infer whether the changes in the standards were helpful or not for the market. In addition, applying new standards could affect debt holders or shareholders. For instance, if the standards require a higher degree of disclosure on debt contracting, this could increase accounting quality, which could affect the perception of risk of the company to its debt holders and shareholders. Additionally, the informational content of earnings and its capacity to predict future earnings and cash flows are relevant for investment decisions, and thus for its users. Hence, the changes in accounting quality due to the adoption of a new standard is of potential interest to international setters, governments, shareholders, investors and analysts.

Following on the reasons why accounting quality is important, the next section discusses the IASB's reasons to create a new set of international standards (IFRS) and to promote them.

2.4 IASB's reasons to promote IFRS to the world

The IASB has focused on promoting the IFRS largely on countries over the globe. This set of standards aims to increase disclosure of financial statements and to provide higher comparability to accounting standards. Nowadays, 140 countries adopt the IFRS (IASB, 2015). Nevertheless, their aim is that every country will have its companies' financial statements in the same GAAP. It is worth noting that one of the key issues of IFRS is that it must be useful for investment decisions. Therefore, the IASB expects companies to provide higher accounting quality to market participants in order to promote the flow of investment decisions. According to this view, enhanced disclosure increases the transparency of the firm, which in turn lower the effort of the investor to get key information about the company and may lower the cost of equity. Thus, the IASB believes that IFRS will help the development of capital markets and increase the flow of investments over the world. Moreover, increased comparability, reliability and consistency of the financial statements may increase earnings quality, which in turn can facilitate investment decisions.

2.5 Theoretical foundation

This section discusses the effect of market and political forces as well as preparers' incentives on accounting quality according to the work of Ball et al. (2003). Afterwards, it discusses the effect of institutional factors and the properties of IFRS that can cause international variations in the adoption of the standards. Afterwards, a

discussion of the interlink among the positive accounting theory, theory of agency, the effect of political and market forces, preparer's incentives as well as the equity valuation theory is provided.

2.5.1 Effect of market forces, political forces and preparers' incentives on accounting quality

Ball et al. (2003) argue that much emphasis had previously been given to accounting standards in order to measure financial reporting quality. The authors argue that other factors influence this topic such as the effect of market forces, political forces and the legal system on preparers' incentives, which are discussed next.

Ball et al. (2003) investigating firms from Malaysia, Singapore, Thailand and Hong Kong argue that managers have incentives to prepare financial statements according to their needs and their institutional environment (Ball et al., 2003). Thus, there are three different market forces that can affect the managers' incentives: the size of the market in relation to equity and debt, family business, and easiness of access to banks' funds. Companies with low financing needs from debt and capital markets may not be motivated to improve accounting quality. The same situation may occur with family businesses, provided that they do not require financial support from these markets. Moreover, firms that have private contracts with banks instead of public contracts with capital and debt markets may not have incentives to enhance their accounting quality. In this case, conflicts are resolved through insider communication between the manager and a representative from the bank. These issues enhance asymmetry information problems and affect firms' intention to disclose transparent and relevant information to the market. The rationale is that asymmetric information will increase if there are fewer users of accounting statements providing financial support and demanding information from

firms. For instance, if a company does not have external financial needs, it will not have incentives to attract capital and hereby to disclose relevant information.

Political forces can also affect accounting quality and are summarised into three aspects as follows: the government's ability and intention to enforce and regulate standards, the effect of the legal system, and the tax role on the volatility of statements (large profits and losses). Firstly, the key issue is the enforcement of accounting standards. Subsequent studies show that it seems unlikely to expect higher accounting quality even with the best GAAP when the enforcement is compromised (Hope, 2003; Leuz, Nanda and Wysocki, 2003; Nobes, 2006; Burgstahler, Hail and Leuz, 2006; Jeanjean and Stolowy, 2008; Holthausen, 2009). Secondly, the legal system affects enforcement and preparer's incentives; that is, apart from the government, shareholders, debt holders and market analysts help to enforce the standards in common-law countries. In these countries (such as Australia, Canada, U.K. and U.S.) the incentives are demanded from the market, instead; in code-law countries, these incentives are demanded by governments or debt holders (Ball et al., 2003). Moreover, in common-law countries, shareholders have exclusive corporate governance rights (Ball et al., 2003). Generally, in these countries, capital and debt markets have more shareholders and bondholders in comparison with code-law countries. Therefore, there is a higher demand for high-quality accounting information and disclosure (Ball et al. 2003). Instead, code-law countries have more information asymmetry problems because the market is less developed, and the government is the main agent responsible for demanding accounting quality (Ball et al., 2003). Finally, political forces may influence tax regulations, which may affect earnings management behaviour. For instance, companies may smooth earnings and recognise larger expenses, due to tax incentives.

Apart from market and political forces, the institutional environment and the properties of IFRS may impact how the standards are adopted, which in turn can affect the accounting quality. This is discussed in the next section.

2.5.2 Institutional factors and the properties of IFRS

Nobes (2006) argues that the interdependence between accounting standards and a country's legal and institutional environment may affect the quality of accounting. Nobes (2006) points to several topics that constrain the use of the same accounting standard over the globe as follows: different versions of IFRS, different translations of IFRS, unresolved accounting procedures in IFRS, vague criteria and interpretations in IFRS, measurement estimations in IFRS, transitional or first-time issues in IFRS, imperfect enforcement of IFRS, and overt and covert options. Firstly, distinct versions of IFRS have arisen because different nations have adopted the standards according to their culture and situation (Nobes, 2006). Although distinct nations adopt the same set of standards, various nations adopt some specific accounting procedures differently. Secondly, IFRS has gaps in the implementation of standards, for instance; the accounting standards are not clear regarding the recognition of insurance contracts. This gap in the standard is likely to derive differences in accounting over the world. Thirdly, some standards, for example fair value, requires the manager to estimate the value of assets and liabilities. However, this creates room for manipulation, and several countries will have different estimation methodologies. Fourthly, some countries (for example, Brazil) have set up a transitional period to convert local standards to IFRS. However, when the standards are not properly enforced, inconsistencies in the adoption of the standards during the first time can continue for a long period. For instance, Nobes (2006) quotes the example of the goodwill in Germany and in the U.K. where differences in its

recognition could last for 20 years in the financial statements. Fifthly, different nations have distinct legal systems and different enforcement mechanisms. Therefore, it is likely that some companies adopt IFRS as a label when enforcement is compromised (Christensen et al., 2013). This issue is a key reason to justify that differences in the implementation of international standards across countries will exist for a long time. This is consistent with the view of Ball et al. (2003) who argue that these differences arise because of the interaction of legal system, institutional factors, and market and political forces surrounding reporting quality. Finally, Nobes (2006) discusses that overt and covert options may cause differences in international standards, for instance; IAS 2 permits two choices for determining the inventories' cost: first in first out (FIFO) or the weighted average method. The author argues that U.K. groups will continue to use FIFO whereas German groups will use weighted average because it is common under previous national accounting standard. Therefore, these options within the international standards may generate many differences on reporting quality.

There is an extensive discussion about whether only one set of standards will be suitable to every country. Leuz (2006) argues that there will inevitably be differences on accounting quality, even if enforcement, ownership structure, home-country market forces, and varying incentives are held constant. Holthausen (2009) argues that even though the GAAP is the same, there is still a doubt whether the standards are uniform, also referred as "de jure convergence", and whether this is feasible to be reached. This is because as long discretion exists in financial reporting, there will always be differences in reporting quality (Holthausen, 2009). Moreover, the author states that it is difficult to overcome all the discretion in a reporting system. Peng and Bewley (2010) contribute to the topic stating that even if uniformity in the adoption of standards could be achieved, this would not lead to uniform accounting practices in reality (de facto convergence).

Therefore, it is a challenge whether IFRS will fit all countries. Recent evidence has confirmed this view. Kvaal and Nobes (2012) provide evidence that companies from different countries have adopted different choices for specific accounting standards. Therefore, although the accounting standards are the same, differences are likely to persist among companies from different countries. Consistent with this view, Haller and Wehrfritz (2013) provide evidence that accounting policy choices changed little after the adoption of IFRS in the U.K. and in Germany. Thus, they are likely to remain the same, as those required under national rules, which point out that differences across countries are likely to persist. Thus, the IASB faces a new challenge regarding this panorama.

The next section illustrates the interaction amongst the studies of Ball et al. (2003), Nobes (2006) and the theories that this thesis relies on; that is, the theory of agency, the positive accounting theory and the equity valuation theory.

2.5.3 The interaction amongst institutional factors, market forces, political forces and theories on accounting quality

Ball et al.'s (2003) argument about manager's incentives affecting accounting quality is supported by the theory of agency. The theory of agency has its support on the initial arguments about the contract theory proposed by Coase (1937). In the contract theory, a set of contracts forms a firm. Jensen and Meckling (1976) developed the theory of agency based on the contract theory, specifically on the contract between the owner of the firm and the manager. The owner of the firm hires the manager in order to act in his behalf to manage the firm and maximize the firm's profits and value. However, a conflict of interest may arise as the managers may try to maximize their utility instead of working towards the best interest of the company and its shareholders. Thus, this issue may promote a conflict of interest between the agent and the shareholders, which affects the

accounting quality. Watts and Zimmerman (1986) linked the positive accounting theory with the theory of agency proposed by Jensen and Meckling (1976) which supports the quality of accounting research. That is, while the theory of agency explains potential conflicts that may arise amongst shareholders and managers, the positive accounting theory links this fact with possible accounting choices and its outcomes. The concern of the positive accounting theory is that accounting information must be useful for its users, which is in line with the aims of international setters. This concern gains momentum because of conflicts of agency and related incentives that managers have, in order to act on their behalf. The managers' incentives may also be affected by firm-level factors, such as operating performance, bankruptcy possibility, and the international reporting environment. That is, in the situation of bankruptcy possibility and bad operating performance, managers may inflate earnings or write off losses. Managers may adopt these procedures in order to hide the actual situation of the firm. Therefore, accounting numbers may mislead debt holders and shareholders. In order to attract capital, managers may try to adopt high accounting quality procedures in order to highlight these for foreign investors. This is in line with the bonding hypothesis, as managers try to "bond" the quality of their equity with the quality of accounting and institutional features of other developed countries such as the U.S. (Stulz, 1999; Coffee, 1999; Coffee, 2002). Therefore, these sources of financing may affect managers' incentives, and consequently the accounting quality. Figure 2 summarizes the interplay among these factors.

Figure 2. Summary of theoretical support

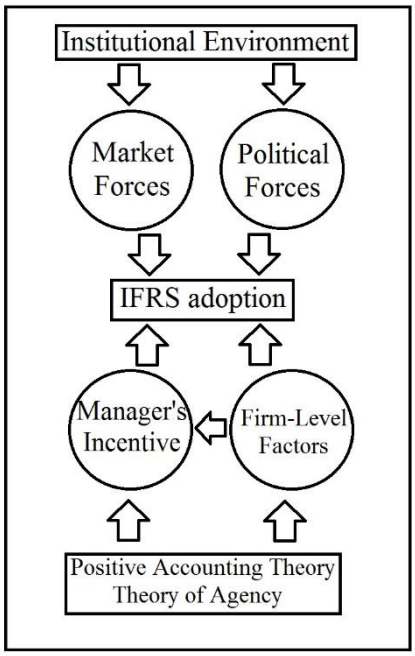


Figure 2 illustrates the interaction amongst market forces, political forces, manager's incentive and firm-level factors that affects IFRS adoption. Thus, the impact of the adoption may vary depending on these factors as illustrated before. It is worth noting that the theory of agency and the positive accounting theory help to explain the managers' incentives in adopting IFRS.

This thesis also has theoretical support from the equity valuation theory, which is the basis to investigate value relevance and cost of equity. Equity valuation theory relies on models that provide a link between accounting numbers and market values. The methods to investigate these concepts are presented in Chapter 4 and 6, which deals with the effect of IFRS on value relevance and the cost of equity, respectively.

In conclusion, the factors presented by Ball et al. (2003) and Nobes (2006) need to be considered when investigating the impact of IFRS on accounting quality. The next section illustrates the institutional factors in emerging markets.

2.6 Institutional factors in emerging markets and the adoption of IFRS

It is worth noting that the effect of the IFRS adoption in emerging markets may be different due to the joint effect of distinct legal and institutional factors as follows: code law system, weak enforcement, weak investor protection, less-developed capital market, high ownership concentration and high information asymmetry (La Porta et al., 1998; Brown et al., 2014). As previously discussed by Ball et al. (2003) and Nobes (2006), these factors affect the accounting quality. However, the combination of these factors indicates that there are reasons for the accounting quality among firms to be different. These factors affect managers' incentives in how they adopt IFRS. That is, in emerging markets, firms with better financial health are willing to signal that they follow and adopt high-quality standards in order to attract investments. However, due to weak enforcement and investor protection, managers of poor financial situation firms may use their discretion to attend the expectations of market participants to reduce pressure arising from these participants and avoid the termination of their employment contract with the firm. The less-developed capital market contributes to this because there are fewer shareholders and debt holders pressuring managers for reliable financial information. Moreover, shareholders' high ownership concentration increases the information asymmetry problem between managers and the other shareholders. In this situation, managers are often the major shareholders, and thus they do not have incentives to disclose timely and relevant information to the market, which increases the information asymmetry problem. Therefore, overall, the effect of the IFRS adoption on accounting quality may be different from that in developed countries.

The next section provides the conclusion of this chapter.

2.7 Conclusion

This chapter discusses the theoretical framework of this thesis. In summary, after discussing the theoretical background of this research, this study argues that it is necessary to consider the institutional setting that Latin American countries are inserted as well as firm-level factors that could affect the adoption of IFRS.

Chapter 3: The institutional settings of Latin American countries

3.1 Introduction

In order to understand the impact of IFRS in Latin America on accounting quality, it is necessary to examine the institutional background of these countries as well as other factors that could affect the adoption of IFRS. This is important to distinguish the effects of the mandatory adoption of IFRS on the changes in accounting quality from the bundle effect of the improvements in enforcement of accounting standards and investor protection or other institutional factors (Christensen et al., 2013). Thus, in this chapter, I review the institutional background of Latin American countries (Argentina, Brazil, Chile, Mexico and Peru) and investigate whether there were any changes in these factors surrounding the date of the mandatory adoption of IFRS. The other Latin American countries are not investigated because they adopted IFRS after 2014, or there was no data available to conduct the empirical analysis of the following chapters.

The structure of this chapter is as follows. Section 3.2 describes the background of the adoption of IFRS in Latin American countries and its motivations. Section 3.2.1 to section 3.2.5 presents the background of each country, respectively Argentina, Brazil, Chile, Mexico and Peru. Section 3.3 presents the research objective of investigating the changes in enforcement of accounting standards, investor protection and legislation in Latin American countries around the date of the mandatory adoption of IFRS. Section 3.4 discusses the research design, which presents the implementation of a questionnaire survey issued to the five Latin American countries. Section 3.5 reports the results of the questionnaire survey. Finally, section 3.6 provides the conclusions of the chapter.

3.2 Latin America background and motivation to adopt IFRS

The transition from local GAAP to IFRS is a challenge for both governments and for firms. There has been a lot of discussion and concern regarding how to convert local GAAP to IFRS in Latin America. For instance, in Brazil, the convergence occurred in two phases (2008 and 2010) in order to allow firms to adopt IFRS gradually, and for academics to discuss the convergence and translation of the standards to the Brazilian setting. The same issue occurred in Chile, where the government delayed the mandatory adoption date from 2009 to 2010 for major listed firms that presented technical difficulties to adopt the standards. Firms have faced several difficulties as follows: the cost of change, the doubt of benefits, the long period involved, insufficient experience, and pressure from the capital markets (Iatridis and Rouvolis, 2010; Moura and Coelho, 2016).

There are three reasons for the governments of Latin America countries to adopt IFRS. For several years, investors have faced the challenge of supporting their investment decisions in different companies that have reported their financial numbers in distinct accounting standards. Therefore, one of the greatest motivations for government bodies in emerging markets to adopt IFRS is to enhance the comparability, transparency and accounting quality via adopting high-quality financial reporting standards, such as IFRS in order to benefit the users of financial information (SVS, 2006; CNBV, 2008; CNV, 2009). It is noteworthy that internal pressures arising from economic development and external pressures to increase international trade motivated this transition. Thus, government bodies expect to contribute to the development of the capital markets and attract overseas investment. Companies and investors will benefit from this new reporting environment for two reasons. Firstly, as financial reporting standards in emerging markets are more comparable with those from developed markets, it will be easier to support investment decisions in these markets. Secondly, regulators expect that transaction costs

will be reduced due to increased comparability and transparency (SVS, 2006; CNBV, 2008; CNV, 2009). Consistent with this view, from 2015, China, U.S. and Germany increased their investments in Latin American companies and overall infrastructure projects in these countries, contributing to the economic development (BBC, 2015; IMF, 2016).

The next section discusses the process of adoption of IFRS for each country that has data available to conduct the tests of accounting quality, analysts' information environment and cost of capital. Other Latin American countries are not discussed because there was no data available to conduct the empirical analyses.

3.2.1 Argentina

The government of Argentina started the process of adopting IFRS in December 2009 through the announcement of regulation N. 562. The Federación Argentina de Consejos Profesionales de Ciencias Económicas (FACPCE, which is the Argentine Federation of professionals of economics), and the Comisión Nacional de Valores (CNV, the national securities commission, which is an agency of the Argentine ministry of economics and public finance) issued a recommendation for all companies, apart from financial and insurance companies, that have securities publicly traded on a stock market and that are regulated by the CNV to prepare their financial statements according to IFRS. This is required for all statements beginning on or after 1st January 2012 (IFRS, 2015a). It is worth noting that the resolution N.562/09 allowed early IFRS adoption from 1st January 2011. Instead, financial institutions and insurance companies are only required to adopt IFRS from 1st January 2018. The CNV argued that the adoption of IFRS was a fundamental step to promote investment opportunities in Argentina (CNV, 2009). Thus,

the regulator expects that the information will be more comparable, reliable and relevant for investors (CNV, 2009).

3.2.2 Brazil

In Brazil, IFRS has been introduced since the enactment of the law n. 11.638/07, which started the process of convergence of standards. Since this regulation was enacted, the Comissão de Pronunciamentos Contábeis (CPC, which is the Accounting Pronouncements Committee) has issued 48 technical pronouncements, 20 interpretations and 8 guidelines referring to the process of adapting Brazilian standards to IFRS. It is worth highlighting that some of these regulations were issued in the first phase of transition, which took place in 2008, and others in the second phase completed in 2010. Thus, all documents issued by the CPC are fully converged to IFRS. The Comissão de Valores Mobiliários (CVM, which is the securities and exchange commission of Brazil) has been responsible for the enforcement of these standards. According to Ernst & Young Terco (2011), in general, the degree of detail required by these standards is much higher than the previous Brazilian accounting standards in force. Previously in Brazil, accounting standards and practices were essentially conservative, derived especially from the tax regime instituted. Therefore, the government expects that the information disclosed to external users will be more relevant after the adoption of IFRS. In summary, as the original purposes of Brazilian generally accepted accounting principles (BRGAAP) and IFRS were distinct, regulators expect that the accounting quality will be different. Thus, the main reason for adopting IFRS relies upon the assumption of higher reliability of the reported financial information. This will help the development of the Brazilian capital market by attracting more investments. In addition, the Brazilian government aims to reduce preparers' costs in adopting IFRS (CVM, 2008). As a result, it may decrease

the level of uncertainty and may result in lower cost of capital for Brazilian companies. It is worth noting that apart from the problems surrounding the adoption of these standards, researchers have found evidence that firms' compliances were very low (Santos and Calixto, 2010). This evidence raises a concern on the enforcement of these standards in Brazil. Therefore, it highlights that the government should develop a plan to enhance the enforcement.

3.2.3 Chile

The government of Chile started officially the process of adopting IFRS on 16th October 2006 through the announcement N. 368/06. Conversely, the mandatory adoption took place only on 31st December 2009 when the regulator required major publicly traded companies to adopt IFRS. However, there were major listed companies that claimed not to be ready to adopt IFRS due to technical reasons. These firms were given a deferral until 2010, provided that they presented additional disclosure notes. The government required all publicly traded firms, apart from insurance companies, to adopt IFRS from 31st December 2010. Insurance companies were only required to adopt IFRS from 31st December 2012 (IFRS, 2013). The government aimed to increase the globalisation of markets by providing more comparable, transparent and comprehensible information after the IFRS adoption (SVS, 2006). However, one criticism of the literature is the compliance and enforcement of these standards. Even under the mandatory adoption period, Herrera, Sepúlveda and Gutiérrez (2011) showed that Chilean firms did not disclose information required by IFRS in 2010. Thus, this evidence highlights the same problem as in Brazil where the enforcement of these standards is not effective.

3.2.4 Mexico

In Mexico, the Comisión Nacional Bancaria y de Valores (CNBV, which is the National Banking and Securities Commission of Mexico) was responsible for issuing the standards for listed companies other than financial institutions and insurance companies. Mandatory adoption was required for financial statements beginning on or after 1st January 2012 while early adoption was allowed from 2008 (IFRS, 2014a). The CNBV announced that the main reason for adopting IFRS was to increase comparability of financial information, reducing preparers' cost and increasing the size of the Mexican market (CNBV, 2008).

3.2.5 Peru

In Peru, the process started earlier than in the other countries on 20th March 2006. The Peruvian Congress enacted the Law n. 28708/06 (General Law for the National Accounting System). The Peruvian government created the Consejo Normativo de Contabilidad (Accounting Standards Council, or CNC) to endorse accounting standards for private companies and to improve enforcement. According to IFRS (2014b), the CNC endorses IFRS after its translation into Spanish. The IFRS adoption is a joint effort of the Superintendencia del Mercado de Valores (SMV, which is the Peruvian securities market regulator) and the Peruvian Congress. On 14th October 2010, the Comisión Nacional Supervisora de Empresas y Valores (CONASEV, which is the government body responsible for supervising Peruvian companies) issued regulation Nº 102-2010-EF/94.01.1 requiring all publicly listed companies other than financial institutions (banks, insurance companies, and pension funds) to prepare and report their financial statements in conformity with IFRS. It is CONASEV's responsibility to enforce the standards in Peru (CONASEV, 2010). On 25th June 2011, the Peruvian Congress enacted Law n. 29720/11

(a law that promotes the issuance of securities and strengthens the Peruvian stock market). This law requires all private companies to prepare financial statements in conformity with IFRS from 2012. Other major non-listed companies were required to adopt IFRS in 2013 while smaller private companies only were required in 2014 and 2015 according to resolution n. 005-94-EF/93.01 (IFRS, 2014b). The main motivation to adopt IFRS is to provide external users and investors reliable and transparent information (CONASEV, 2010). It is worth noting that the adoption process was not smooth as several problems appeared. For instance, Becerra (2010) shows that compliance to standards is highly related to whether there is an incidence of tax and legal aspects on the financial statements. Therefore, this evidence indicates that enforcement of standards needs to be improved.

The next table summarizes the main features of IFRS adoption in these Latin American countries.

Table 1: Summary of the adoption of IFRS

	Salient features of IFRS - Summary				
Main Features	**Argentina**	**Brazil**	**Chile**	**Mexico**	**Peru**
Process started	December 2009 - Regulation N.562	December 2007 - Law 11.638/07	October 2006 - Regulation N.368	November 2008 - Press release 56/2008	March 2006- Law 28708/06
Which companies must adopt it?	All listed companies, apart from financial and insurance companies, that have securities publicly traded on a stock market	All listed companies whose securities are publicly traded	Major Listed companies	All listed companies but financial and insurance companies	All companies but banks and Financial Institutions
Requirement Date	From 1st January 2012	From 2010	From 31st December 2009	From 1st January 2012	From 1st January 2012
Date of adoption by financial companies	Only from 1st January 2018	From 2010, with a few differences issued by Brazilian Central Bank (BACEN) and Brazilian Private Insurance Regulator(SUSEP)	From 31st December 2009	Not Available	Not Available
Main Changes in Relation to IFRS	In separate company financial statements, the equity method is required to account for investments in subsidiaries, associates, and joint ventures.	It does not allow revaluation of property, plant and equipment under IAS 16 and revaluation of intangible assets under IAS 38.	Banks need to measure loan loss provisions using an expected loss approach (disclosing according to IAS 39). Banks are not allowed to use the 'fair value option' in IAS 39. There are other minor differences for banks	Not Applicable	Not Applicable

3.3 The changes in the institutional environment

The aim of this section is to investigate the strength and changes of the enforcement of accounting standards and investor protection mechanisms. This is important because past literature has shown that these factors affect managers' intention to adopt IFRS (Ball et al., 2003; Nobes, 2006). Christensen et al. (2013) show that the inferences of previous studies may be due to a bundle effect of IFRS. That is that the results of previous studies were caused by the effect of the enforcement of accounting standards (Preiato et al., 2015), investor protection mechanisms, firms' incentives and the adoption of IFRS. Moreover, the strength of the enforcement of accounting standards and investor protection mechanisms may change according to the progress of the

implementation of IFRS (Brown et al., 2014), which makes it difficult to isolate the IFRS adoption effect from other institutional effects. On the other hand, in order to pinpoint the effects of the adoption of IFRS alone, there are limited studies focusing on the changes in the strength of the enforcement of accounting standards and investor protection mechanisms in the years around the date of mandatory adoption of IFRS. Apart from Brown et al. (2014) who developed their own measures, other studies only base their results on the World Bank's historic legal enforcement data, or enforcement proxies based on one year only (see the rule of law of Kaufmann, Kraay and Mastruzzi (2007)), which are outdated for Latin American countries. Thus, as Latin American countries started to adopt IFRS after 2008, it is important to initiate new research about the status of the enforcement of accounting standards and investor protection mechanisms. Moreover, it is necessary to isolate the effects of the improvements in enforcement of accounting standards and investor protection mechanisms from the effect of mandatory adoption of IFRS in this study. Thus, this research design allows this study to pinpoint the effect of IFRS accurately.

3.4 Research design to investigate the effects of enforcement, investor protection and legislation

This chapter investigates whether there were any changes in the level of enforcement and investor protection in Latin American countries around the IFRS adoption.

3.4.1 Sampling criteria

In order to obtain first-hand data and result, this thesis issued a questionnaire to each country's Securities and Exchange Commission, academics, and the Institute of

Federal Accountants and Auditors. I identified the target respondents of this questionnaire by searching the key contact details of the officers on the official websites of each country's Securities and Exchange Commission, the Institute of Federal Accountants and Auditors. I also contacted academics whose published research related to the topic of the implementation of IFRS in their countries. These groups were chosen because they have experience in the process of adoption of IFRS as well as its enforcement and the changes that were derived from the adoption in each country.

3.4.2 The questionnaire

The design of the questionnaire is based on the works of La Porta et al. (1998), Hope (2003), the World Bank (2008) report on the observance of standards and codes, and Brown et al. (2014); the questionnaire is presented in Appendix 1.

It has three sections: the first section deals with enforcement of accounting standards; the second section focuses on the level of investor protection, and the third section focuses on general legislation issued regarding the adoption of IFRS, which supports the evaluation of the changes in the enforcement and investor protection mechanisms. At section one, questions 1 and 2 are based on Brown et al. (2014) and address whether there is a government body or a regulator monitoring the financial reporting of public companies. The third question is based on the work of Hope (2003); it addresses whether there were any companies that did not follow the IFRS guidelines even under mandatory adoption. Questions 4, 5 and 6 are designed based on the World Bank (2008) report. Questions 4 and 5 are designed to discover the penalties or consequences that each country issues for firms and managers if they do not comply with accounting rules in force. Moreover, it also helps to identify when the country enacted these rules. Emerging markets may only have enacted these laws more recently in

comparison with developed markets. This is due to the level of development of local stock markets in comparison with those in developed markets. Question 6 investigates whether these penalties turned to be stricter after the adoption of IFRS. Question 7 is based on the rule of law of Hope (2003) and addresses whether the regulator has taken judicial action against a firm's non-compliant financial statement. Finally, the last question of the enforcement section measures whether there was an increase in the number of staff members responsible for monitoring the statements of public companies. This question is designed based on the enforcement index of Brown et al. (2014).

At the investor protection section, questions 9 to 19 are designed based on La Porta et al. (1998) and Hope (2003). Question 9 seeks the answer to the type of shareholder voting system in each country as the voting mechanism could be unbalanced (shares that have more voting rights) or balanced (one-share-one-vote). La Porta et al. (1998) argue that the preferred mechanism to ensure the investor protection is the one-share-one-vote system. This is preferable because there are companies that issue nonvoting shares, founders' shares with extreme voting rights and shares that may have more voting rights according to the period for which one shareholder has held them. Thus, the one-share-one-vote system is preferable in order to guarantee equal and democratic rights. Questions 10 and 11 focus on the easiness of the voting system; they investigate whether the shareholder can vote through the mail or if the shareholder needs to present himself at the shareholders' meeting in order to be eligible to vote. The shareholders' protection is higher if there are fewer constraints within the voting system. Question 12 evaluates whether the minority shareholders have any right to challenge a director's decision in court; if they have the right to challenge his decisions, this is a sign of higher shareholder protection. Question 13 focuses on the minimum requirement of share capital needed in order to call for a shareholder meeting. A lower percentage of share capital

needed indicates higher investor protection. That is, as the requirement is lower, shareholders can exercise their rights with greater ease. Question 14 evaluates whether there is a minimum mandatory dividend. La Porta et al. (1998) argue that countries with low investor protection mechanisms may require a minimum mandatory dividend in order to guarantee investors' rights. Thus, countries with stronger investor protection mechanisms may not require a minimum mandatory dividend because they have other mechanisms to safeguard the investors' interests. Questions 15 and 16 evaluate whether there was any change or increase in the shareholder's protection after the adoption of IFRS. Finally, questions 17 to 19 investigate the insider trading laws and enforcement of these laws. Question 17 addresses whether there were any insider trading activities in recent years. Question 18 discusses whether the regulator prosecuted the people involved in these insider trading activities. It is worth noting that countries with higher investor protection have a history where the regulator prosecuted the people involved in such activities. Question 19 investigates whether there were any convictions for those involved in insider trading activities. It is worth noting that countries with a higher degree of investor protection have caught insider trading activities since more than 50 years ago, which led to the imprisonment of those involved. For instance, in the U.S., the first case was ruled in 1909. Nevertheless, in Latin American countries, this situation might not be the same as the capital markets and enforcement institutions are still developing. Additionally, the third part of the questionnaire is a general question about which legislations were enacted in order to allow the adoption of IFRS. This helps to identify whether the new legislations increase the enforcement or the investor protection in the country.

3.4.3 Implementation of the questionnaire

Firstly, the questionnaire was prepared in the local language of the target countries, and it was pre-tested (pilot tested) with native speakers in order to ascertain whether the questions were clear (Saunders, Thornhill and Lewis, 2009). Secondly, the questionnaire was uploaded to Google's forms in order to guarantee the consistency of its format for respondents over the globe, and to allow a quicker and easier way for respondents to reply (Hewson, Yule, Laurent and Vogel, 2003). Thirdly, the questionnaire was issued through the official online forms of each institution as well as through an e-mail according to the contact information retrieved from the official websites. Each e-mail was addressed to one target respondent only, containing a covering letter and the link to access the questionnaire, stored at Google forms, as well as the questionnaire in a Microsoft Word file (Hewson et al., 2003; Dillman, 2007; Saunders et al., 2009). Fourthly, the target respondents were reminded every four weeks to complete the questionnaire (Saunders et al., 2009), which composed of 5 rounds of 1 month each. In the final attempt, a hard copy of the questionnaire was sent as well as phone calls being made to the target respondents from the remaining countries that had not yet replied. It is worth noting that the reply rate in this study is not to be considered an issue as the objective of this analysis is to discover the fact of the institutional factors around the period of the IFRS adoption. Finally, the survey was officially closed once there was a minimum of one reply from each country. Regarding the analyses of the replies, this study reports exactly the feedbacks from the respondents. This study only received more than one reply from Brazil (from the Securities and Exchange Commission of Brazil as well as from the Brazilian Institute of Federal Accountants). In this case, the replies were highly consistent and this study reports the consolidated answer in the following sections.

For the other countries, this study received replies from all Securities and Exchange Commissions of the sampling countries.

3.5 Results

3.5.1 Enforcement of accounting standards

With regard to questions 1 and 2, all five countries have had a securities market regulator monitoring the financial reporting of public companies, and this has not changed since the mandatory IFRS adoption.

Regarding question 3, the Securities and Exchange Commission of Argentina reported that all firms followed the IFRS requirement, whereas a senior office of Brazilian Securities and Exchange Commission reported that several companies did not follow the IFRS requirements (a detailed number is described in Appendix 2). A senior officer from the Securities and Exchange Commission of Chile recognises that many companies did not follow the IFRS requirements; however, he did not provide statistical figures. A senior officer from the Securities and Exchange Commission of Mexico did not provide an answer for this question whereas an officer from Peru reported that 3 firms did not follow the IFRS requirements, and 1 auditor's firm was caught for providing inaccurate evidence of a firm's financial statement. These results show that firms still do not comply with the IFRS requirements and illustrate that the enforcement of accounting standards in Latin American countries is weak. Referring to question 4, all countries can issue fines and charges if a firm or manager does not comply with the accounting standards in force; however, only in Brazil the Securities and Exchange Commission has the power to suspend temporarily the manager from his role. With regard to question 5, the legislations that present the penalties and consequences are respectively for Argentina, Brazil, Chile, Mexico and Peru: Law N. 26.832 (Legislación y normas de Mercado de Capitales), Law

N. 6.385/76, Law N. 3538. (Ley Orgánica de la Superintendencia de Valores y Seguros), Law of Stock Markets/05 (Ley del Mercado de Valores/2005), and Norm CONASEV N° 0055-2001. The replies from question 6 indicate that there has been no change in the penalties and consequences for firms' and managers' noncompliance behaviours since the adoption of IFRS. Regarding the number of firms caught by the regulator in the post-IFRS period for a non-compliant financial statement (question 7), Brazil is the only country where several firms have been caught.[7] The regulator of Chile reported that there were cases from only before the IFRS adoption, but the number of cases was not provided. Moreover, in Peru, only 1 firm was identified with a non-compliant financial statement, but it was before the IFRS adoption. Overall, this indicates that the enforcement of these countries is weak in comparison to developed nations; however, Brazil has a stronger enforcement in comparison with the other sampling countries, which is consistent with the findings of Brown et al. (2014).

With regard to question 8, no country reported an increase in staff members responsible for monitoring the implementation of IFRS concurrent with the adoption of IFRS. There was an increment in staff members responsible for assisting in the monitoring of the accounting standards in force after two and two and a half years of the adoption of IFRS in Brazil and in Peru, respectively. Brazil hired 3 extra staff members in January of 2012, but they have been relocated to other roles in due course; by 2015, the number of staff responsible for the enforcement of the standards increased by only 1 member, and in Peru, 1 extra staff member was hired in July 2014. Unfortunately, the senior officer of Brazilian Securities and Exchange Commission as well as the senior officer of the Peruvian Securities and Exchange Commission did not provide further clarification on this issue. Overall, in Brazil and in Peru where the number of staff was

[7] Please refer to the footnote of appendix 2 for the detailed number of firms caught by the regulator per year as well as the type of action issued.

increased by only 1 member after more than 2 years following the adoption of the standards and considering that this member has also been responsible for other roles, this is not considered as a significant change.

According to the results of questions 2, 6 and 8, there were no concurrent changes in enforcement alongside the adoption of IFRS, which implies that enforcement should not affect the inferences of this thesis. The next section illustrates the results regarding the investor protection mechanisms.

3.5.2 Investor protection mechanisms

Regarding questions 9 and 10, all five countries adopt the system "one-share-one-vote"; however, only in Peru and Chile the shareholder can vote through the mail. Thus, it is worth noting that Peru and Chile have higher investor protection mechanisms in comparison to the other Latin American countries with regard to question 10. Regarding question 11, only in Argentina the shareholder, in order to be eligible to vote, needs to deposit his shares in the company prior to a shareholder meeting. As a result, this represents a higher constraint in relation to other Latin American countries, which indicates that the investor protection mechanism in Argentina is lower than the other countries. Referring to question 12, all countries allow the minority shareholders to prosecute and challenge the directors' decision in the court of justice. Argentina, Brazil, Chile and Mexico, however, define that it is required at least 5% of share capital in order to challenge a director's decision in court, whereas Peru does not require a minimum percentage of share capital. Thus, Peru has a higher investor protection in comparison to the other Latin American countries with regard to this question. With regard to question 13 (percentage of share capital needed to call for a shareholder meeting), Argentina requires 60% in the first call and 30% in the second call; Brazil and Chile require 10%,

Mexico specifies 75%, unless defined otherwise in the firm's statute, whereas Peru requires 20%. As Mexico demands the highest percentage, it is the country with the lowest investor protection mechanism in respect to this issue. Regarding the mandatory dividend (question 14), Argentina does not specify a minimum, whereas Brazil, Chile and Mexico specify 25%, 30% and 5%, respectively. Moreover, Peru only defines 50% of mandatory dividends if 20% of the shareholders demand it. Thus, as Argentina and Peru do not specify a minimum percentage, they are likely to have stronger mechanisms to safeguard the investors' capital. In relation to questions 15 and 16, it is worth noting that none of the countries have improved their investor protection mechanisms since the IFRS adoption. This allows this study to pinpoint with greater precision the impact of IFRS and firm-level incentives.

With regard to question 17, only Brazil and Chile have informed the number of insider trading activities caught by the regulator[8]. In Brazil, the regulator caught the first case of insider trading in 2009, and the first conviction was only in November 2016. In Chile, the regulator caught 32 companies involved in insider trading activities, but the senior officer from the Securities and Exchange Commission of Chile did not specify them according to every year nor provided any information regarding whether they have been convicted. In Brazil and Chile, the replies of questions 18 and 19 illustrate that it is not the responsibility of the regulator to take further actions to court, but from the public ministry. Moreover, only in Brazil the regulator has prosecuted companies (please refer to Appendix 2 for the detailed number of firms per year), whereas the regulators from the other countries have not provided an answer to these questions. This illustrates that the investor protection mechanisms in Latin American countries are weak, and it is consistent with the investor ranking of La Porta et al. (1998) and the World Bank's ranking. It is

[8] Please refer to the footnote of appendix 2 for the detailed number of firms.

worth noting though, that Brazil, Chile and Peru have stronger investor protection mechanisms than Argentina and Mexico. Finally, with regard to question 20, please refer to Appendix 2 for the detailed norms involved in the IFRS adoption for each country.[9]

In conclusion, the investor protection mechanisms of these countries are weak in comparison to developed nations and have not been substantially improved concurrent with the adoption of IFRS, which implies that the institutional environment should not affect the inferences of this thesis. Indeed, these countries have a slightly different institutional setting: Brazil has the strongest enforcement among these countries and Brazil, Chile and Peru have stronger investor protection mechanisms, the country fixed effects are implemented in the regressions of the following chapters in order to address this issue.

3.6 Conclusion

In this chapter, I overview the background of the mandatory IFRS adoption in Latin American countries. Then, I turn to investigate the changes in the institutional settings of Latin American countries around the official year of the mandatory adoption of IFRS. This is because the identification of these changes is essential to control their effects in order to focus on examining the effect of IFRS in the following chapters. The results show that the enforcement and investor protection mechanisms in Latin America are weak, and there is a huge gap between IFRS and previous domestic accounting standards. There is no significant change in the institutional environment around the mandatory dates of the adoption. Thus, the results of the questionnaire support the following analyses and help to pinpoint the effects of IFRS accurately, which are investigated in the coming chapters.

[9] These laws are not reported here because the relevant laws were discussed in the above sections.

The next chapter focuses on the first study that investigates the impact of the mandatory IFRS adoption on accounting quality with regard to earnings management, accounting conservatism, and value relevance.

Chapter 4: The impact of mandatory IFRS adoption on accounting quality of Latin American firms

4.1 Introduction

The aims of this study are as follows: (i) to investigate whether IFRS adoption improves Latin American firms accounting quality; (ii) to investigate whether financial health, operating performance, and the status of listing on the U.S. stock exchanges affect the manager's implementation of IFRS; and (iii) to investigate the external auditor's report in order to show whether managers implement IFRS due to official requirements or if there is still room for discretion upon financial statements. This Chapter discusses the results based on accounting quality measured in terms of earnings management, timely recognition of losses and value relevance. The results are derived based on the common sample, and the classified groups due to operating performance, financial distress, and the status of listing on U.S. stock exchanges. Considering that enforcement of accounting standards and investor protection mechanisms are weak, these three firm-level factors can illustrate new evidence on how they affect managers' incentives in adopting IFRS and the implications for accounting quality. Additionally, the auditors' reports were analysed in order to investigate further the firms' behaviour due to the weak institutional setting, and the results are presented as well.

This chapter proceeds as follows. Section 4.2 presents the literature review. Section 4.3 presents the research opportunities. Section 4.4 develops the hypotheses. Section 4.5 presents the research design. Section 4.6 presents the data and sampling procedures. Section 4.7 presents the results. Section 4.7.1 discusses the results of earnings management and timely recognition of losses following the approach of Barth et al. (2008). Section 4.7.2 presents the results of timely recognition of losses according to the

model of Basu (1997) and an extended version that helps to track firms' quarterly behaviour. Section 4.7.3 illustrates the results of value relevance following the approach of Barth et al. (2008) and the work of Ohlson (1995). Section 4.7.4 shows additional analysis regarding accrual aggressiveness as a proxy for earnings management. Section 4.8 describes additional analyses regarding the examination of the external auditors' reports. Finally, section 4.9 concludes.

4.2 Literature review

The purpose of this section is to review the main factors that could affect the adoption of IFRS, as well as to discuss the main ideas and empirical findings of an increase or decrease in accounting quality according to the adoption of IFRS. Firstly, this section discusses the role of firms' incentives on accounting quality and the adoption of IFRS. Afterwards, this chapter discusses other institutional factors that affect accounting quality and the mandatory adoption of IFRS. Following on, an overview of the reasons to expect an increase or decrease in accounting quality as well as a summary of the empirical studies that investigated the impact of mandatory IFRS adoption is discussed. Then this chapter reviews the previous literature on emerging markets and Latin American markets, pointing out the factors that are relevant to be considered when investigating the impact of IFRS adoption on the accounting quality of Latin American firms. The summary of the empirical studies that investigated the impact of IFRS adoption on accounting quality are available on Appendix 3, section 1.

4.2.1 The adoption of IFRS and firms' incentives

The first studies that examined the impact of IFRS adoption on accounting quality focused on voluntary adopters[10] (Bartov et al., 2005; Hung and Subramanyam, 2007; Barth et al., 2008; Barth et al., 2012). While this thesis focuses on the impact of the mandatory adoption of IFRS, the findings of previous studies on the impact of voluntary adoption of IFRS indicate that firms' incentives play a role in explaining the effect of the IFRS adoption (Barth et al., 2008). Following this evidence, other studies also show the impact of firms' incentives on the mandatory adoption of IFRS (Iatridis and Rouvolis, 2010; Zéghal, Chtourou and Sellami, 2011; Doukakis, 2014; Christensen, Lee, Walker and Zeng, 2015).

Barth et al. (2008) studied the early effects of voluntary IFRS adoption on earnings management, timely recognition of losses and value relevance on firms over the world. The main findings are that voluntary adopters experience less earnings smoothing, less managing of earnings towards a target, higher timely recognition of losses, and higher value relevance of net income related to book value of equity. Nevertheless, the improvements may not be due to the change in standards alone, but they may be due to concurrent changes in the reporting environment and firm's incentives. Barth et al. (2008) argue that these firms commit to adopt IFRS in order to differentiate themselves and attract capital. Therefore, the benefits on accounting quality are not due to standards alone, but due to manager's incentives to adopt IFRS. These arguments are key in explaining further results from the literature on mandatory adopters, which are discussed next.

[10] Several studies have investigated the impact of voluntary adoption of IFRS; this thesis makes no claim to quote all of them, but the focus here is to illustrate what can be learned from these studies that can help to investigate the effect of mandatory adoption of IFRS.

Iatridis and Rouvolis (2010) investigated earnings management, timely recognition of losses and value relevance after the mandatory IFRS adoption on 254 Greek firms from 2004 to 2006. They found evidence of earnings management on the year of the mandate (2005); however, it was reduced on the subsequent year. The value relevance followed the same trend; that is, the accounting numbers were more relevant on the year after the mandate (2005), and there was slightly more timely recognition of losses. The authors argue that the non-expected results for the year of the mandate are related to transitioning costs, which affected firms' behaviour. Thus, the transitioning costs may have affected the firms' incentives in adopting IFRS as the relation between costs and benefits of the adoption is not clear, and managers may not be willing to adopt IFRS on a timely manner.

Zéghal et al. (2011) aim to shed light whether the level of earnings management decreased in France after the mandatory IFRS adoption. The main finding is consistent with a reduction in the level of earnings management after the mandatory IFRS adoption. In addition, the authors conclude that firms' incentives of gathering funds on foreign financial markets are important to the IFRS adoption in France.

Doukakis (2014) investigated whether the mandatory IFRS adoption had a significant impact on the level of accrual earnings management and on real earnings management in 22 countries. The author claims to be the first study to investigate real earnings management after the IFRS adoption. The author finds no evidence of a significant change on the level of earnings management after IFRS adoption. The author's main argument is that firm-level incentives are the reasons for this result.

Christensen et al. (2015) investigate whether the standards or the firms' incentives are the key determinants of improved financial reporting. They examine this topic for both mandatory and voluntary adopters in Germany. They find that mandatory adopters

do not improve their accounting information quality after the adoption. However, this result does not depend on standards alone, but on the firms' incentives to adopt IFRS. However, voluntary adopters improve their accounting information quality after the IFRS adoption in Germany. The authors argue that firms have incentives to adopt international standards in order to differentiate themselves and attract more capital. Thus, this is a key issue that explains their results.

Overall, Iatridis and Rouvolis (2010), Zéghal et al. (2011), Doukakis (2014) and Christensen et al. (2015) show that even if the adoption of IFRS is mandatory, firms' incentives can play a role in explaining the effects of the adoption. So future research needs to examine carefully the impact of these incentives on accounting quality and the adoption of IFRS. This is particularly important when enforcement of the accounting standards is weak.

4.2.2 The adoption of IFRS and institutional settings

Apart from firms' incentives, and following on the framework of Ball et al. (2003) and Nobes (2006), the literature argues that institutional factors (Jeanjean and Stowlowy, 2008; Armstrong, Barth, Jagolinzer and Riedl, 2010; Devalle, Onali and Magarini, 2010; Tsalavoutas et al., 2012) such as investor protection mechanisms (Houqe et al., 2012; Christensen et al., 2013) and enforcement (Ahmed et al., 2013b; Christensen et al., 2013; Preiato et al., 2015; André, Filip and Paugam, 2015), can affect the adoption of IFRS.

Jeanjean and Stolowy (2008) investigated whether there was a significant impact on earnings management after mandatory IFRS adoption in France, the U.K. and Australia. They find evidence that the level of earnings management increased in France and had no change in the U.K. and in Australia after mandatory adoption of IFRS. The authors raise a question, whether just the fact that countries share the same standards is

enough to create a common business language. They argue that the mixed findings are due to management incentives and institutional factors that play an important role in defining the determinants of financial reporting. Thus, the interplay among these factors can cause different results across countries.

Armstrong et al. (2010) investigated the investor's expectations about IFRS in Europe during 2002 and 2005. They investigated 16 events that were related to mandatory adoption. Through event study methodology, the authors find evidence that market returns are positively related to firms with lower pre-adoption information quality and higher pre-adoption information asymmetry. This reaction is more pronounced for banks. Although during the development of the standards there was a discussion on how IAS 39 would affect banks, IAS 39 diminished information asymmetry, which led to positive market reactions. Nevertheless, there was a negative market reaction for firms in code law countries. This is consistent with investors' concerns about enforcement, investor protection, and other institutional factors surrounding the application of the standards, and illustrate the importance of these factors when evaluating the effects of the adoption. It is noteworthy that this finding raises questions, in particular whether IFRS will improve the accounting quality information on emerging markets. This is because several emerging markets have inferior enforcement and investor protection mechanisms, and are code law countries.

Devalle et al. (2010) investigated whether the earnings and the book value of equity are more value-relevant in the post-IFRS period in Europe. Overall, the authors find an increase in the value relevance of earnings while there is a decrease in the value relevance of book value of equity in Germany and France. Nevertheless, in the UK, the book value of equity is more relevant under IFRS; however, there is no evidence that Spain and Italy present any improvement on the value relevance of book value of equity

or earnings. Inconsistent with their predictions, there is no change in earnings smoothing between local GAAP and IFRS. There is evidence of more timely recognition of losses in local GAAP than in IFRS. The authors argue that this result may be due to differences in adopting IFRS across European countries. They argue that research on the impact of national factors associated with culture and legal systems is required in order to conclude the main reason for these mixed results. This evidence is consistent with the theoretical framework of Ball et al. (2003) and Nobes (2006).

While the previous studies show that institutional factors affect accounting quality and the adoption of IFRS, the studies of Houqe et al. (2012), Tsalavoutas et al. (2012), Christensen et al. (2013), Ahmed et al. (2013b) and André et al. (2015) suggest that improvements are only to be found in countries where enforcement of accounting standards and investor protection mechanisms are strong or if the country has bundled the adoption of IFRS with concurrent changes in enforcement of accounting standards.

Houqe et al. (2012) focus on the relation between earnings management and investor protection environment and their relation to the mandatory IFRS adoption in 46 countries. Contrary to expectations, they gather evidence that IFRS alone does not improve earnings management; they find evidence of reduced earnings management only on higher investor protection countries that adopted IFRS. Therefore, they conclude that it is the combination of stronger investor protection and the adoption of IFRS that leads to a decrease on earnings management.

Tsalavoutas et al. (2012) assessed whether the mandatory adoption of IFRS increased the value relevance of book value and net income in Greece. The authors analyse Greece as a case study because it is a small market with distinguished accounting environment and is often referred as having low-quality financial statements. This environment is composed of weak investor protection, low level of corporate governance,

high ownership concentration and code law system. Their main findings are that investors perceive value on the disclosure of specific IAS norms and that there is no improvement on the overall value relevance (measured by the adjusted R^2) after the IFRS adoption. The net income coefficient presented a decrease in the post-IFRS period, and the book value of equity an increase. Therefore, the authors' view highlight that markets with distinct characteristics such as Greece can indeed perceive unusual outcomes of mandatory IFRS adoption. It is worth noting that although the outcome is different, investors perceived new information disclosed under IFRS.

Christensen et al. (2013) argue that the adoption of IFRS is due to a bundle effect: firms' incentives, enforcement of accounting standards and investor protection mechanisms. That is, countries when adopting the standards may change their legislation in strengthening the penalties for firms' non-compliant behaviours, hire significantly more staff to enforce the correct application of the standards, increase the investors' protection mechanisms in order to signal to foreign investors higher reliability in investing in these countries. The authors only find improvement in liquidity for 5 EU countries that bundled the adoption of IFRS with significant changes in enforcement. Thus, any improvement found on accounting quality following the adoption of IFRS needs caution because of this bundle effect. The bundle effect then raises doubt on the findings of any improvements found by previous literature, but did not control for the changes in enforcement.

Ahmed et al. (2013b) investigated three metrics of earnings management (income smoothing, managing earnings to meet or beat a target as Barth et al. (2008), and accrual aggressiveness by modifying the modified Jones (1995) model), and timely recognition of losses through Basu (1997) approach. Moreover, they analysed whether enforcement would affect the result. In order to achieve this, they divided the sample between higher

and lower enforcement countries according to the rule of law of Kaufmann et al. (2007). They find higher earnings management and lower timely recognition of losses for firms in strong enforcement regimes, and no change in these metrics for firms in weak enforcement countries. They argue that the principles-based IFRS rules are looser than domestic standards, and this provides a bigger room for earnings management. While for weak enforcement countries, the adoption of the standards will not change accounting quality because the standards are not enforced. However, this thesis argues that this might not always be the case, if firms have strong incentives to adopt IFRS and attract investments even in weak enforcement countries.

André et al. (2015) analysed the longer time effects of IFRS on accounting conservatism. They also tested whether institutional characteristics (quality of audit and enforcement) play a role in financial reporting through the index of Brown et al. (2014). Their sample consists of firms from 16 European countries from 2000 to 2010. Their results show that mandatory adopters of IFRS do not present an increase on the degree of conditional conservatism after the adoption. Instead, the authors find an overall decline. Nevertheless, this decline is less pronounced for countries with higher audit and enforcement regimes. Moreover, the same trend occurs with firms that book an asset impairment test. The main argument of André et al. (2015) is that untimely impairment allows managers to postpone the recognition of bad news and as a result, it affects conditional conservatism behaviour.

While Christensen et al. (2013) cast doubt on the findings of previous studies that did not investigate the changes on enforcement of accounting standards concurrent with the adoption of IFRS, the study of Preiato et al. (2015) corroborates with this evidence. Preiato et al. (2015) investigate the effect of IFRS on analysts' information environment and provide consistent evidence that any improvements found are not valid if proxies for

enforcement are included in the models. This raises doubt about the findings from previous studies that have not considered the effect of enforcement on their analyses.

Overall, this literature illustrates that the researcher needs to consider firms' incentives, enforcement of accounting standards and investor protection mechanisms when investigating the effect of IFRS adoption. Moreover, there are other opportunities to evaluate the effect of firms' incentives by considering firm-level factors such as operating performance and bankruptcy possibility. This is important because Christensen et al. (2009) provide evidence that IFRS affects debt contracting, which in turn may affect how managers adopt IFRS depending on firms' financial performance and position. It is noteworthy that technical changes in GAAP on how earnings are measured may affect shareholders and debt covenants. Christensen et al. (2009) investigate earnings announcements on the mandated year and the one-year-ahead forecast on U.K firms. The authors argue that if the share price increases on the announcement date, it is likely that there is a transfer of wealth from lenders to shareholders. On the other hand, if the share price decreases, it is likely that there is a transfer of wealth from shareholders to lenders, and the company may face a technical default. Therefore, the authors argue that IFRS could imply a transfer of wealth between lenders and shareholders. Consistent with this rationale, debt, and financial distress may affect managers' incentives to adopt IFRS in low enforced countries. That is, companies in financial distress may adopt IFRS more as a label if their earnings are likely to be reduced under IFRS. As the manager perceives that share prices may decline because of poor performance, there will be a transfer of wealth from shareholders to debt holders. Although previous literature argues that firms' incentives affect the adoption of IFRS and accounting quality, these firm-level factors represent an opportunity to evaluate whether they would affect managers' incentives, which in turn can affect the adoption of IFRS.

4.2.3 Overview of the literature regarding the mandatory adoption of IFRS

This section discusses the reasons to expect an increase or a decrease in accounting quality after the IFRS adoption and summarizes the research evidence regarding this topic.

Barth et al. (2008) argue that accounting choices such as measurement of fair value may provide a better and realistic vision of firm's economic performance. Ball (2006) argues that fair value measurement implies more timely accounting information. This idea is supported, for instance, in the registration of gains and losses of securities, derivatives, and through impairment tests applied to long-term assets. Florou and Kosi (2015) argue that the recognition of impairment under IAS 36 may accelerate the recognition of bad news. These illustrate that the adoption of IFRS could increase firms' accounting quality. On the other hand, there are reasons that could reduce the quality of accounting. Firstly, IFRS as a principle-based standard may provide higher flexibility to managers (Barth et al., 2008; Capkun, Collins and Jeanjean, 2016). Ahmed et al. (2013b) argue that because of the above, events such as the revenue recognition for multiple deliverables would significantly increase discretion and allowable treatments depending on managers' interpretation. Capkun et al. (2016) do not find an improvement in earnings management after the mandatory IFRS adoption for several countries. The authors' explanation is that principle based IFRS creates opportunities for managers' discretionary ability. Secondly, use of fair value can increase the volatility of financial statements because it depends on managers' discretion (Ball, 2006). Thirdly, Florou and Kosi (2015) point out that the recognition and measurement of financial instruments under IAS 39 and IFRS 9 can reduce accounting conservatism. This is because, in this case, IFRS may not contribute to clarify the decision-making of debt providers (Florou and Kosi, 2015).

Therefore, for the above reasons, there is a possibility that earnings management practices were increased and thus, the accounting quality reduced.

Generally, there are both reasons to expect an improvement or a reduction on accounting quality following the adoption of IFRS as illustrated here. Consistent with this, there is mixed evidence regarding whether accounting quality increased after the mandatory IFRS adoption. Capkun et al. (2016) argue that the flexibility of IFRS does not contribute to an improvement to the accounting quality (regarding earnings management). There is evidence that accounting conservatism behaviour does not change or even decreases (Ahmed et al., 2013b; Christensen et al., 2015; André et al., 2015). Regarding value relevance, some studies did not find a significant improvement on value relevance on the initial years after the mandatory adoption (Callao et al., 2007; Gjerde et al., 2008). However, the literature indicates that there is an overall improvement on the value relevance of accounting numbers (Horton and Serafeim, 2010; Iatridis and Rouvolis, 2010; Tsalavoutas et al., 2012; Barth et al., 2014). Moreover, the greater is the difference between local GAAP and IFRS, the greater is the improvement on the value relevance of accounting numbers (Aharony et al., 2010). Overall, the literature indicates that accounting numbers are more value-relevant after the IFRS adoption. This summary of previous research is consistent with the study of Ahmed et al. (2013a) that drew conclusions about the impact of IFRS by doing a meta-analysis on 57 papers from both published and unpublished studies.

Although the evidence of an improvement in accounting quality is mixed, the literature suggests that firms will increase their accounting quality depending on their incentives and based on strong institutional settings surrounding the preparation of financial statements (Houqe et al., 2012; Ahmed et al., 2013b; Christensen et al., 2013; Doukakis, 2014; André et al., 2015).

In Latin America's context, the investor protection mechanisms and enforcement of accounting standards are low (La Porta et al., 1998; Brown et al., 2014). Besides, these countries have a code law system where enforcement is demanded by the government and less demanded by market forces as in common law countries. According to the literature, the impact of the IFRS adoption may vary depending on firms' incentives. Therefore, firms that have incentives to adopt IFRS may have increased their accounting quality. Next, a literature review on emerging markets is provided.

4.2.4 Literature review on emerging markets

This section discusses the studies in emerging markets and the factors affecting reporting quality and the adoption of IFRS. This is helpful because emerging markets share similar characteristics with Latin American countries. Regarding this topic, there is evidence on China, Poland, and Brazil. Moreover, an overview of the evidence in Latin America is discussed.

Dobija and Klimczak (2010) investigated the value relevance of accounting numbers on the value of the firm in Poland. The authors find a positive significant relation between earnings and returns, but they do not find an improvement in its strength over time. The conclusion is that IFRS does not improve the value relevance of accounting in Poland; unfortunately, the authors do not discuss the reasons behind this result.

Liu, Yao, Hu and Liu (2011) investigated whether there was an improvement in China's accounting quality after the mandatory IFRS adoption. The authors investigated accounting quality using the methodology of Barth et al. (2008) for earnings management, timely loss recognition through Basu (1997), and value relevance through the framework of Ohlson (1995). They investigated 870 firms with A-shares (Firms that are owned by Chinese citizens, and traded with Chinese citizens only) that were mandated to adopt

IFRS in 2007. They investigate 2 years of the adoption (2005 as the pre-adoption year and 2008 as the post-adoption year). The authors find a lower level of earnings management (less earnings smoothing and managing towards a target), and higher value relevance (earnings per share is more significant) in the post-IFRS mandatory adoption period. However, timely loss recognition does not improve. Nevertheless, the authors conclude that overall, the quality of accounting improved after the IFRS adoption.

He, Wong and Young (2012) investigated the fair value adjustments in the emerging market of China. The author argues that the accounting in China focuses on a contractual role rather than an informational role. Therefore, the IFRS might not be adequate to its current institutional scenario. Moreover, earnings management incentives are high due to stock market regulation. For instance, firms may be delisted if they report a loss in three consecutive years. Therefore, they investigated the fair value adjustments on 2007 and 2008 under IFRS in comparison to 2005 and 2006. Their findings indicate that firms do earnings smoothing through adjustments on fair value accounting. Moreover, firms with incentives to meet the zero earnings threshold are likely to sell securities in order to incur gains or losses due to fair value measurement. This evidence contrasts with Liu et al. (2011) in indicating that the institutional setting of China leads to unintended effects and not necessarily an improvement on accounting quality. Cang, Chu and Lin (2014) further corroborate with the evidence presented by He et al. (2012) that the Chinese institutional environment may lead to unexpected effects after the mandatory adoption of IFRS. They investigated earnings management after the mandatory IFRS adoption exploiting the property that the analyst coverage on a firm may influence in the degree of earnings management. Analysts can draw more attention to suspicious actions of the manager in order to reduce earnings management. However, the pressure from earnings forecasts can stimulate earnings management behaviour in order

to reach the analysts' expectations. Investigating 4,587 firm-year observations with analyst coverage from 2003 to 2009, the authors find an increase in earnings management in the post-IFRS period. They find that IFRS creates new opportunities for earnings management in China, and the monitoring effect by analysts is not improved. These results suggest that IFRS adoption is not compatible with the market's institutional environment.

In summary, although Liu et al. (2011) show an improvement in the quality of accounting in China, He et al. (2012) and Cang et al. (2014) illustrate that IFRS is not compatible with the institutional characteristics of China. Thus, although the accounting numbers are more value-relevant, fair value estimation alongside market pressures create room for earnings management. This highlights that the different institutional environment of developing countries may result in different unintended effects of IFRS adoption. This might be the case in Latin America as their institutional environment is different from developed countries. Latin American studies are discussed next.

4.2.4.1 Literature review in Latin America

In Latin America's context, there are two key points to consider regarding the adoption of IFRS. Firstly, before the adoption of IFRS, accounting was linked to the economic interest of the tax system, which created an incentive for companies to do earnings management in order to pay fewer taxes. For instance, in Brazil, the law 11,941/09 provided neutrality for the tax system, separating the tax system from the reporting system. Thus, the past accounting system provided an environment where managers could do earnings management in order to save tax. The situation is similar in Peru as Becerra (2010) provides evidence that the compliance to the standards in the initial stage of the IFRS adoption is associated with tax and legal aspects. So, this might

indicate that some type of firms will comply more to the standards than others. This is related to the incentives that these firms have to adopt the standards and disclose higher quality to the market in order to attract investments. Secondly, ownership concentration is high in Latin American stock markets. Therefore, information asymmetry problems are more pronounced among big shareholders and minority interest groups. Leuz (2006) argues that the ownership concentration structure affects managers' incentives to manage earnings and provides evidence that higher concentrated ownership structures are related to a higher degree of earnings management. So, in Latin America this could also happen, however the adoption of IFRS may reduce earnings management behaviour as these standards aim to improve information transparency and reliability of financial statements for investors. The adoption of IFRS brought several changes that enhance transparency and reliability of the standards. For instance, in Brazil prior to IFRS, intangibles were not properly recognised, there was no separation between current assets and non-current assets and several transactions were not correctly recognised such as operational leasing activities, a new recognition of items in fixed assets and others. Thus, overall regulators expect an improvement in the accounting quality.

In Brazil, Macedo, Machado and Reis (2013) studied the value relevance of accounting during the first phase (2008-2009) of the IFRS adoption. Different from Barth et al. (2008), the authors utilized share price in the same period as book value and net income per share and did not use the residual from a regression of price on several control variables. They find evidence of a more value-relevant earnings per share against a reduction in the book value per share. Santos and Cavalcante (2014) investigated the issue between 2010 and the first quarter of 2013. The authors find conflicting evidence for an improvement in the value relevance of accounting numbers. They find no improvement when the book value per share and the net income per share are regressed with price, but

they find an improvement when these variables are regressed with returns. Moreover, they do not find an improvement in accounting conservatism through Basu's (1997) model. The authors did not investigate any further explanations regarding institutional factors or firms' incentives in order to clarify these results. Besides, although they claim that the financial crisis may have affected the results, they did not control for it. Thus, it is necessary to control for the effects of the financial crisis by introducing macroeconomic variables that can capture the changes in the economic circumstances. Regarding earnings management, the only studies are those of Peluccio-Grecco, Geron, Grecco and Lima (2014), and Klann and Beuren (2015). The study of Peluccio-Grecco et al. (2014) investigated the degree of earnings management in Brazil from 2006 to 2011 with annual data considering firms that have different regulatory enforcement, auditors and corporate governance mechanisms. The regulatory enforcement is a dummy that equals to one if the company is regulated by an industry governmental agency. Auditor is a dummy that equals to one if the company is audited by the Big 4 auditors. Corporate governance is a dummy that equals to one if the company is quoted on segments of higher corporate governance practices of Brazilian stock exchange (BM&FBovespa). The authors investigated earnings management by using the Jones (1991) model, the modified Jones model, the model of Kang and Sivaramakrishnan (1995), and the approach of Kothari, Leone and Wasley (2005). Their main finding is that there is weak evidence of a reduction in the level of discretionary accruals in the post-IFRS period. Moreover, only the regulatory enforcement has a relation with the level of discretionary accruals. The authors state that future research should expand the sample size in order to compile results that are more robust. Klann and Beuren (2015) investigated earnings smoothing through the approach of Barth et al. (2008) in Brazil. The authors investigated the issue with annual data from 2005-2007 (pre-IFRS) and 2010-2012 (post-IFRS). Contrary to their

expectations, there is evidence that income smoothing is higher in the post-IFRS period. They argue that this result is possibly due to the weak enforcement and that the standards alone are not the main reason for improving accounting quality. Black and Nakao (2017) investigated accounting quality through earnings management, value relevance of net income and timely recognition of losses in Brazil from 2003 to 2014. The authors used cluster analysis based on market to book value, whether the company issues American Depositary Receipts (ADR), and volume traded. The objective of this analysis was to try to segregate firms that have incentives and firms that do not have economic incentives. They find increased accounting quality only for the firms with economic incentives. However, the authors have not evaluated the effect of the institutional setting on the results, and have not considered evaluating the topic using a common size sample.

In Chile, Bertin and Moya (2013) investigated whether the conditional conservatism had increased since the adoption of IFRS in 2010. They followed the approach of Basu (1997) to investigate this issue. The authors find a higher degree of conservatism in the IFRS period, which indicates that the relevance and reliability of the reported accounting information improved. There is no evidence concerning this topic on Argentina, Peru, and Mexico.

It is important to highlight that apart from Peluccio-Grecco et al. (2014), and Black and Nakao (2017) the limited research on Latin America does not consider firms' incentives and institutional characteristics surrounding the adoption of IFRS. It is worth noting that these aspects need to be addressed by future research due to their impact on the IFRS adoption (Ball et al., 2003; Christensen et al., 2013; Christensen et al., 2015). Moreover, some studies use quarterly data whereas the majority rely on annual data. However, these studies do not take full advantage of the properties of quarterly data in order to investigate the managers' behaviour in several time points during the year. This

analysis can illustrate other effects of the adoption of IFRS, and it is an opportunity for this study to fill this gap.

4.3 Research opportunities

This section focuses on research opportunities regarding the impact of IFRS adoption on emerging markets.

Latin American firms have adopted IFRS recently and research evidence on its impacts is very limited. These countries are often used as performance matching in comparison to developed countries that have adopted IFRS earlier. That is, they are used as proxies (non-IFRS adopting countries) in order to compare with countries that have adopted IFRS earlier. Considering that their different characteristics from developed markets such as low enforcement, weak investor protection, less developed capital market and high ownership concentration can provide different evidence on the impact of IFRS adoption. In other words, the evidence found in developed nations may not hold for developing countries. Liu et al. (2011) and Ball (2016) point out to the importance of studies on the impact of IFRS adoption on countries with different institutional, political and cultural environment. There is also an interest from the IASB for research in developing countries. This also represents an opportunity to investigate more accurately the impact of IFRS since the results of this thesis are not due to a bundle effect as the questionnaire revealed that there is not any significant change in the enforcement of accounting standards and investor protection mechanisms. This overcome the limitations of previous research following the recommendations of Christensen et al. (2013) and Preiato et al. (2015).

One topic that deserves attention is the effect of corporate debt and financial distress on manager's motivation to adopt IFRS. The evidence regarding the effect of

IFRS on debt is limited. Following on the evidence of Christensen et al. (2009), this thesis argues that it is important to investigate further whether debt and financial distress influence manager's incentive to adopt IFRS in Latin American countries. It is worth indicating that there are opportunities for managers to adopt IFRS due to their own incentives even after the mandatory adoption of IFRS, in particular, when legal enforcement is weak. This is a research opportunity to investigate value relevance, earnings management and accounting conservatism in these countries. Moreover, Chapter 6 further explores the issues with regard to the cost of debt.

Finally, it is worth noting that published studies have investigated the concept of accounting quality through annual data. However, this represents a limitation in investigating managers' incentives to adopt IFRS. This is because the behaviour of the firm throughout the year is not examined. Therefore, studies that investigate the phenomenon of accounting quality through quarterly data will be able to pinpoint the managers' behaviour with greater accuracy. Hence, the first study of this thesis adopts quarterly data, and can provide new evidence regarding firms' incentives to adopt IFRS.

4.4 Hypotheses development

The findings from past studies show some economic and financial benefits associated with the mandatory adoption of IFRS such as greater comparability, increased transparency, increased information content, greater relevance of accounting information and others (Horton and Serafeim, 2010; Li, 2010; Iatridis and Rouvolis, 2010; Horton, Serafeim and Serafeim, 2013; Tsalavoutas et al., 2012; Barth et al., 2014). The literature argues that it is the combination of stronger investor protection (Houqe et al., 2012), firms' incentives, enforcement (Christensen et al., 2013; Doukakis, 2014; Preiato et al., 2015) and the adoption of IFRS that increases accounting quality. However, there is also

evidence of reduced accounting quality (Callao et al., 2007; Ahmed et al., 2013b; Christensen et al., 2015; André et al., 2015; Capkun et al., 2016). Nevertheless, the findings from past research on developed markets may not hold because Latin American countries have a different institutional setting. For instance, the literature shows that the investor protection and enforcement are weak in these countries (La Porta et al., 1998; Brown et al., 2014). Past literature argues that it seems unlikely to expect higher accounting quality even with the best GAAP if the enforcement is compromised (Hope, 2003; Leuz et al., 2003; Burgstahler et al., 2006; Jeanjean and Stolowy, 2008; Holthausen, 2009; Christensen et al., 2013). Therefore, even considering that IFRS has higher quality than previous domestic GAAP in force in Latin American countries, it is a challenge whether this change alone will imply greater accounting quality. However, this thesis argues that due to the recent stagnant GDP growth period in Latin America and the increasing debt in these countries, the IFRS adoption is an opportunity for firms to adopt high-quality accounting standards and attract foreign investment. As there is a big gap between IFRS and previous domestic standards, and as IFRS requires greater level of disclosure in comparison to previous domestic accounting standards (Barth et al., 2008; Moura and Coelho, 2016), the accounting quality is expected to increase (Aharony et al., 2010; Florou and Kosi, 2015). Thus, the hypothesis is as follows.

H1: The quality of accounting of Latin American firms has increased since the mandatory adoption of IFRS.

It is noteworthy that because the enforcement is weak, manager's incentives may influence the adoption of IFRS. This thesis argues that the managers may still use their discretion even under the mandatory adoption of IFRS due to weak institutional factors. Ball et al. (2003) argue that the strength of market forces can affect the managers' incentives to disclose information. Under this circumstance, the financial performance of

the firm may affect managers' incentives to disclose information, and this situation may vary depending on the firms' main sources of funding. The manager needs to meet certain requirements and disclose information in order to gather funding from equity and debt markets. Therefore, the source of funding may affect this behaviour. Consequently, the general hypothesis (*H1*) may not hold for all types of firms. That is, the effect of IFRS if considered firm-level factors may be different. This study argues that operating performance, bankruptcy possibility, and the status of listing on U.S. markets may affect the adoption of IFRS. First, regarding operating performance, the firms' managers that experience a continuous decline in operating performance prior to the adoption may not adopt IFRS properly in order to not disclose fully their financial woes. They may delay the disclosure of losses, which would increase information asymmetry among shareholders. This may also be an opportunity to undertake earnings management. On the other hand, the manager of strongly performing firms may be motivated to adopt IFRS to signal higher reliability of financial statements and attract foreign capital. Therefore, the hypotheses are as follows.

H2a: Accounting quality of poorly performing firms has not increased since the mandatory adoption of IFRS.

H2b: Accounting quality of strongly performing firms has increased since the mandatory adoption of IFRS.

Second, managers of firms with high bankruptcy possibility prior to the mandatory adoption date are pressured to adopt IFRS because they are under the scrutiny of debt holders and need to avoid penalty of covering material bad news (Watts, 2003a; Watts, 2003b). However, the manager may be discouraged to adopt IFRS if the adoption implies in the disclosure of more bad news that do not help to improve firms' financial position, credit ranking and further alert debt holders. In this case, managers may try to improve

the firms' financial position by deferring the recognition of bad news and undertaking earnings management practices (Ramanna and Watts, 2012; André et al., 2015). Moreover, there could be a wealth transfer between shareholders to debt holders under IFRS (Christensen et al., 2009). That is, if the firms' financial position is worse under IFRS and the firms face technical default, shareholders will not have priority in receiving their invested capital. Instead, debt holders will have higher priority in such circumstances. Thus, this represents a wealth transfer from shareholders to debt holders. On the other hand, managers of firms with low bankruptcy possibility may predict positive outcomes from the IFRS adoption. This can be an opportunity to indicate financial health and maintain the confidence of debt holders in the credit market (Wu and Zhang, 2014). Hence, the hypotheses for these two set of firms are as follows:

H3a: Accounting quality of firms with high bankruptcy possibility in the post-adoption period may not be higher than that in the pre-adoption period.

H3b: Accounting quality of firms with low bankruptcy possibility in the post-adoption period may be higher than that in the pre-adoption period.

Third, Barth et al. (2008) and Armstrong et al. (2010) argue that investors perceive IFRS as higher quality than domestic standards. Therefore, this may be an opportunity for managers of domestic firms to increase accounting quality and attract more capital. Nevertheless, the quality of accounting may not have increased for those firms that have been trading stocks on U.S. stock exchanges before the IFRS adoption. These firms have already been adopting high-quality accounting standards as required by Securities Exchange Commission (SEC) prior to the mandatory adoption of IFRS. Thus, their accounting quality should not improve during this period. Thus, the hypotheses are as follows:

H4a: There is no improvement in accounting quality of firms that list on U.S. stock exchanges after the mandatory adoption of IFRS.

H4b: Accounting quality of firms that do not list on U.S. stock markets has increased since the mandatory adoption of IFRS.

4.5 Research design

This section presents the econometric approach. This thesis relies on several accounting quality metrics in order to examine the accounting quality according to different aspects. These include the metrics of earnings management, value relevance and timely recognition of losses.[11]

It is worth noting that there are several models to investigate earnings management (Healy, 1985; Deangelo, 1986; McNichols and Wilson, 1988; Jones, 1991; Dechow et al., 1995; Kang and Sivaramakrishnan, 1995; Dechow and Dichev, 2002; Land and Lang, 2002; Leuz et al., 2003; Kothari et al., 2005; Lang, Raedy and Wilson, 2006; Roychowdhury, 2006; Dechow et al., 2012). There are also several metrics to investigate timely recognition of losses (Basu, 1997; Ball and Shivakumar, 2005; Khan and Watts, 2009). The metrics to investigate value relevance generally follow the framework of Ohlson (1995), and differ slightly on the dependent variable used: stock price, returns, abnormal returns or market value of equity (Barth et al., 2008; Devalle et al., 2010; Tsalavoutas et al., 2012; Barth et al., 2014).

The econometric methods of this study follow Barth et al. (2008), Basu (1997), Ahmed et al. (2013b), and Dechow et al. (1995). The reasons for that are four-fold. Firstly, these metrics (earnings management, value relevance and timely recognition of losses)

[11] Several accounting quality metrics were adopted to provide a clear picture of the situation in Latin America, moreover the models were expanded to reflect Latin American firms' incentives and firms' behaviour, such as the lagged recognition of bad news.

considered together provide consistent evidence of the manager's behaviour in adopting IFRS, and illustrate the perception of reliability of accounting numbers to investors. Secondly, the combination of these methods helps to mitigate effects of management incentives to adopt IFRS and other economic changes. This also helps to provide a clear view regarding accounting quality, instead of relying only on one or two proxies. Thirdly, this thesis adopts this approach in order to be comparable with past research (Christensen et al., 2015), and expands these models in order to capture accurately the manager's behaviour.[12] Fourthly, in particular for adopting Barth et al. (2008) approach, even though the adoption of IFRS is mandatory for Latin American firms, as previously discussed, managers can still use their discretion upon the financial statements, which requires the models to control for firms' incentives. The methods of Barth et al. (2008) includes several controls for firms' incentives, which well matches the situation being examined for Latin American countries. This thesis also improves the models by introducing changes in the gross domestic product (GDP) and quarterly dummies in order to control for financial crisis effects and other macroeconomic changes in general. Additionally, this study investigates the effect of firm-level factors that could affect the adoption of IFRS.

Regarding the econometric estimation, this thesis follows the approach of Wooldridge (2010), the models are estimated according to the best estimator (pooled ordinary least squares, fixed-effects, and random-effects). The Chow (1960) test, the Lagrange multiplier of Breusch and Pagan (1968), and Hausman (1978) test were employed in order to decide the optimum estimator. Consistent with Barth et al. (2008), untabulated statistics indicate that fixed effects are more suitable for this approach. The fixed-effects approach not only mitigates survivorship bias, but also mitigates concerns

[12] This thesis does not follow the metric of timely recognition of losses of Khan and Watts (2009) as they argue that their approach would be compromised in countries with weak enforcement, which is the case of Latin American countries. Thus, this thesis follows the other metrics of timely recognition of losses according to Basu (1997) and Barth et al. (2008).

about unobserved heterogeneity and (time-invariant) selection bias (Hail and Leuz, 2009; Wooldridge, 2010). Moreover, the regressions are estimated with the robust approach for heteroscedasticity.

The econometric models are discussed in the following sections.

4.5.1 Earnings management metrics

Following Barth et al. (2008), the first metric is the variance of the residuals (variability of the change in net income scaled by total assets) of equation 1. Thus, following the adoption of IFRS the variance of net income should be higher as managers may have less room to smooth the earnings. Hence, the variability of the changes in net income should be higher in the post-adoption period.

$$\begin{aligned}\Delta NI_{i,t} = {} & \alpha_0 + \alpha_1 LogMV_{i,t} + \alpha_2 GROWTH_{i,t} + \alpha_3 MVISU_{i,t} + \alpha_4 LEV_{i,t} \\ & + \alpha_5 DISSUE_{i,t} + \alpha_6 TURN_{i,t} + \alpha_7 CF_{i,t} + \alpha_8 AUD_{i,t} \\ & + \alpha_9 NUMEX_{i,t} + \alpha_{10} XLIST_{i,t} + \alpha_{11} BTMV_{i,t} + \alpha_{12} GDP_{i,t} \\ & + \alpha_{13} PW_i + \alpha_{14} I_i + \alpha_{15} M_i + \alpha_{16} U_i + \alpha_{17} L_i + \alpha_{18} Inn_i \\ & + \sum_{d=1}^{12} \alpha_{d+18} NAICS_i + \varepsilon_{i,t}\end{aligned} \quad (1)$$

where: $\Delta NI_{i,t}$ is change in net income for firm *i* at quarter *t*. $LogMV_{i,t}$ is the natural logarithm of the market value of equity for firm *i* at the end of the quarter *t*. $GROWTH_{i,t}$ is the percentage change in sales for firm *i* at quarter *t*. $MVISU_{i,t}$ is the change in quarterly common stock for firm *i* at quarter *t*. $LEV_{i,t}$ is end-of-quarter total liabilities divided by end-of-quarter book value of equity for firm *i* at quarter *t*. $DISSUE_{i,t}$ is percentage change in total liabilities for firm *i* at quarter *t*. $TURN_{i,t}$ is sales divided by end-of-quarter total assets for firm *i* at quarter *t*. $CF_{i,t}$ is quarterly net cash flow from operating activities for firm *i* at quarter *t*. $AUD_{i,t}$ is an indicator variable that equals one

if the firm's auditor is PwC, KPMG, Arthur Anderson, E&Y or D&T and zero otherwise, for firm *i* at quarter *t*. $NUMEX_{i,t}$ is the number of foreign exchange markets that the company *i* lists on, at quarter *t*. $XLIST_{i,t}$ is an indicator variable that equals one if the firm *i* is listed on any U.S. stock exchange at quarter *t*. $BTMV_{i,t}$ is book value divided by market value for firm *i* at quarter *t*. $GDP_{i,t}$ is the gross domestic product (GDP) growth rate for firm *i* at quarter *t*. PW_i, I_i, M_i, U_i, L_i, and Inn_i are Hofstede's culture dimensions of power distance, individualism, masculinity, uncertainty avoidance, long-term orientation, and indulgence[13], respectively for firm *i*. $NAICS_i$ are 12 dummies for industry activity: Dummy 1: Sector 11, agriculture, forestry, fishing & hunting; Dummy 2: Sector 21, mining, quarrying, oil & gas extraction; Dummy 3: Sector 22, utilities; Dummy 4: Sector 23, construction; Dummy 5: Sector 31-33, manufacturing; Dummy 6: Sector 42, wholesale trade; Dummy 7: Sector 44-45, retail trade; Dummy 8: Sector 48-49, transportation & warehousing; Dummy 9: Sector 51, information; Dummy 10: Sector 54, Professional scientific and technical services; Dummy 11: Sector 72, accommodation & food services; Dummy 12: Sector 81 other services (exclude public administration, repair & maintenance).

In order to compare the earnings management behaviour between the pre- and the post- adoption periods, this study estimates the regressions for the whole period (Barth et al., 2008). Then, the residuals of each equation are analysed according to the period (pre- or post- IFRS). Secondly, a bootstrap procedure of 1000 times is processed for each period (pre- and post-IFRS). That is, 1000 samples are randomly created based on the original sample for each period. This procedure is used to test the significance of the

[13] Hofstede, G. Cultural dimensions. The Hofstede Centre. Retrieved on 27th October 2015, from http://geert-hofstede.com/cultural-dimensions.html.

analysis. A "t" test of the variance of the residuals for the 1000 samples is employed in order to evaluate that they are different than 0.

It is worth noting that the proxies for culture provide similar results as if country dummies are included. Moreover, the enforcement and investor protection indexes of Brown et al. (2014) and La Porta et al. (1998) were also included in the regressions for robustness of the results. As there was not a significant change in these indexes around the adoption of IFRS according to the results of the questionnaire on Chapter 3, the results of this Chapter reflect the specific effect of the adoption of IFRS.

The second metric is based on the mean ratio of the residuals of equation 1 (the variability of the change in net income), to the residuals of equation 2 (the variability of the change in operating cash flows).

$$\begin{aligned}\Delta CF_{i,t} = {} & \alpha_0 + \alpha_1 LogMV_{i,t} + \alpha_2 GROWTH_{i,t} + \alpha_3 MVISU_{i,t} + \alpha_4 LEV_{i,t} \\ & + \alpha_5 DISSUE_{i,t} + \alpha_6 TURN_{i,t} + \alpha_7 CF_{i,t} + \alpha_8 AUD_{i,t} \\ & + \alpha_9 NUMEX_{i,t} + \alpha_{10} XLIST_{i,t} + \alpha_{11} BTMV_{i,t} + \alpha_{12} GDP_{i,t} \\ & + \alpha_{13} PW_i + \alpha_{14} I_i + \alpha_{15} M_i + \alpha_{16} U_i + \alpha_{17} L_i + \alpha_{18} Inn_i \\ & + \sum_{d=1}^{12} \alpha_{d+18} NAICS_i + \varepsilon_{i,t}\end{aligned} \tag{2}$$

where: $\Delta CF_{i,t}$ is change in annual cash flow from operations for firm *i* at quarter *t*.

Firms with high earnings volatility usually have high cash flow volatility; thus, this measure controls this behaviour (Barth et al., 2008). If the firm manages earnings via accruals, the variability of cash flows is higher than that of net income. Therefore, this ratio should be higher in the post-IFRS period.

The third metric is the Spearman's correlation between the residuals of equation 3 and 4. Barth et al. (2008) argue that if the firm manages earnings via accruals, the

accruals will present a higher correlation with cash flows. Hence, this coefficient should be less negative during the post-IFRS period.

$$\begin{aligned} CF_{i,t} = {} & \alpha_0 + \alpha_1 LogMV_{i,t} + \alpha_2 GROWTH_{i,t} + \alpha_3 MVISU_{i,t} + \alpha_4 LEV_{i,t} \\ & + \alpha_5 DISSUE_{i,t} + \alpha_6 TURN_{i,t} + \alpha_7 AUD_{i,t} + \alpha_8 NUMEX_{i,t} \\ & + \alpha_9 XLIST_{i,t} + \alpha_{10} BTMV_{i,t} + \alpha_{11} GDP_{i,t} + \alpha_{12} PW_i + \alpha_{13} I_i \\ & + \alpha_{14} M_i + \alpha_{15} U_i + \alpha_{16} L_i + \alpha_{17} Inn_i + \sum_{d=1}^{12} \alpha_{d+17} NAICS_i + \varepsilon_{i,t} \end{aligned} \quad (3)$$

$$\begin{aligned} ACC_{i,t} = {} & \alpha_0 + \alpha_1 LogMV_{i,t} + \alpha_2 GROWTH_{i,t} + \alpha_3 MVISU_{i,t} + \alpha_4 LEV_{i,t} \\ & + \alpha_5 DISSUE_{i,t} + \alpha_6 TURN_{i,t} + \alpha_7 AUD_{i,t} + \alpha_8 NUMEX_{i,t} \\ & + \alpha_9 XLIST_{i,t} + \alpha_{10} BTMV_{i,t} + \alpha_{11} GDP_{i,t} + \alpha_{12} PW_i + \alpha_{13} I_i \\ & + \alpha_{14} M_i + \alpha_{15} U_i + \alpha_{16} L_i + \alpha_{17} Inn_i + \sum_{d=1}^{12} \alpha_{d+17} NAICS_i + \varepsilon_{i,t} \end{aligned} \quad (4)$$

where: $ACC_{i,t}$ is net income less cash flow from operations for firm *i* at quarter *t*.

Finally, the last metric for earnings management is the coefficient of $SPOS_{i,t}$ in equation 5. This is a metric of earnings smoothing, as companies tend to disclose a small profit than a loss. Hence, the coefficient should be negative, which implies that companies manage earnings towards small positive net income more in the pre-adoption period than in the post-adoption period.

$$\begin{aligned} IFRS_{i,t} = {} & \alpha_0 + \alpha_1 SPOS_{i,t} + \alpha_2 LogMV_{i,t} + \alpha_3 GROWTH_{i,t} + \alpha_4 MVISU_{i,t} + \alpha_5 LEV_{i,t} \\ & + \alpha_6 DISSUE_{i,t} + \alpha_7 TURN_{i,t} + \alpha_8 AUD_{i,t} + \alpha_9 NUMEX_{i,t} + \alpha_{10} XLIST_{i,t} \\ & + \alpha_{11} BTMV_{i,t} + \alpha_{12} GDP_{i,t} + \alpha_{13} PW_i + \alpha_{14} I_i + \alpha_{15} M_i + \alpha_{16} U_i + \alpha_{17} L_i \\ & + \alpha_{18} Inn_i + \sum_{d=1}^{12} \alpha_{d+18} NAICS_i + \varepsilon_{i,t} \end{aligned} \quad (5)$$

where: $IFRS_{i,t}$ is set as 1 if it is the post-IFRS adoption period, otherwise zero, for firm *i* at quarter *t*; $SPOS_{i,t}$ is a dummy variable that equals one if net income scaled by total assets is between 0 and 0.01 for firm *i* at quarter *t* (Lang, Raedy and Yetman, 2003).

4.5.2 Metrics of timely recognition of losses

The first metric is derived from Barth et al. (2008). In equation 6, the coefficient of $LNEG_{i,t}$ should be positive following the adoption of IFRS. That is, this means that companies tend to recognize large losses more in the post-IFRS period.

$$\begin{aligned} IFRS_{i,t} = {} & \alpha_0 + \alpha_1 LNEG_{i,t} + \alpha_2 LogMV_{i,t} + \alpha_3 GROWTH_{i,t} + \alpha_4 MVISU_{i,t} \\ & + \alpha_5 LEV_{i,t} + \alpha_6 DISSUE_{i,t} + \alpha_7 TURN_{i,t} + \alpha_8 AUD_{i,t} \\ & + \alpha_9 NUMEX_{i,t} + \alpha_{10} XLIST_{i,t} + \alpha_{11} BTMV_{i,t} + \alpha_{12} GDP_{i,t} \\ & + \alpha_{13} PW_i + \alpha_{14} I_i + \alpha_{15} M_i + \alpha_{16} U_i + \alpha_{17} L_i + \alpha_{18} Inn_i \\ & + \sum_{d=1}^{12} \alpha_{d+18} NAICS_i + \varepsilon_{i,t} \end{aligned} \quad (6)$$

where: $LNEG_{i,t}$ is an indicator variable that equals one for observations for which quarterly net income scaled by total assets is less than –0.2, and zero otherwise, for firm *i* at quarter *t*.

The second metric is derived from Basu (1997). Equation 7 is to control for several factors that could affect the result such as industry, culture, enforcement and macroeconomic volatility. The residuals of equation 7 are the dependent variable in equation 8. This thesis argues that alongside recognising the bad news in the current quarter, the manager may delay the recognition of bad news in earlier quarters or recognise the bad news in future quarters. Thus, this study proposes a third metric (equation 9) in order to capture firm's behaviour in a timely manner by following the approach of Pope and Walker (1999), and Mak, Strong and Walker (2011). Equation 9

consists of the estimation of equation 8 with lagged returns in order to track the timely recognition of losses.

$$\begin{aligned} EPSP_{i,t} = {} & \alpha_0 + \alpha_1 LogMV_{i,t} + \alpha_2 GROWTH_{i,t} + \alpha_3 MVISU_{i,t} + \alpha_4 LEV_{i,t} \\ & + \alpha_5 DISSUE_{i,t} + \alpha_6 TURN_{i,t} + \alpha_7 CF_{i,t} + \alpha_8 AUD_{i,t} + \alpha_9 NUMEX_{i,t} \\ & + \alpha_{10} XLIST_{i,t} + \alpha_{11} BTMV_{i,t} + \alpha_{12} GDP_{i,t} + \alpha_{13} PW_i + \alpha_{14} I_i + \alpha_{15} M_i \\ & + \alpha_{16} U_i + \alpha_{17} L_i + \alpha_{18} Inn_i + \sum_{d=1}^{12} \alpha_{d+18} NAICS_i \\ & + \sum \alpha_y QuarterControls_t + \varepsilon_{i,t} \end{aligned} \tag{7}$$

$$EPSP^*_{i,t} = \alpha_0 + \alpha_1 D_{i,t} + \beta R_{i,t} + \gamma D_{i,t} R_{i,t} + \varepsilon_{i,t} \tag{8}$$

$$EPSP^*_{i,t} = \alpha_0 + \sum_{\tau=0}^{7} \alpha_{1+\tau} D_{i,t-\tau} + \sum_{\tau=0}^{7} \beta_\tau R_{i,t-\tau} + \sum_{\tau=0}^{7} \gamma_\tau D_{i,t-\tau} R_{i,t-\tau} + \varepsilon_{i,t} \tag{9}$$

where: $EPSP_{i,t}$ is the quarterly net income divided by end-of-quarter number of shares outstanding and scaled by stock price at the beginning of the quarter *t* for firm *i*. $D_{i,t}$ is the dummy variable for bad news for firm *i* at quarter *t*; that is when returns are less than 0, it is equal to 1, otherwise zero. $D_{i,t}R_{i,t}$ is the dummy $D_{i,t}$ multiplied by returns ($R_{i,t}$). $R_{i,t-\tau} = (P_{i,t-\tau} - P_{i,t-\tau-1})/P_{i,t-8}$ are the lagged returns; $D_{i,t-\tau}R_{i,t-\tau}$ are the lagged variables, which their coefficients of γ_τ denote bad news. β_τ measures the recognition of good news on the current quarter (τ = 0) and prior quarters (τ = 1 to 7). γ_τ measures the recognition of bad news on the current quarter (τ = 0) and prior quarters (τ = 1 to 7).[14]

[14] The delay in the recognition of bad news could extend further from quarter 7, but due to data limitation this is not explored in this thesis.

$QuarterControls_t$ are dummy variables for each quarter t to control for shocks throughout time. $EPSP^*_{i,t}$ is the residual of equation 7 for firm i at quarter t.

The coefficient of β and γ should be positive. A positive coefficient for β implies that the firm recognises good news. Moreover, a positive coefficient of γ implies recognition of conservative accounting. This is because returns are a proxy for the economic performance of the firm, and timely accounting will disclose bad news on a timely manner. That is, a positive significant coefficient for γ_0 implies that firms disclosed bad news on a timely manner as this news are recognised by the market. On the other hand, a negative coefficient for γ implies that managers choose to inflate earnings when they experience bad news. It is worth noting that when firms recognise bad news in prior quarters (a positive and significant coefficient for $\gamma_{1\ldots7}$), this might help to smooth earnings as the recognition of bad news is spread through several quarters. However, considering that the manager reduces the delay in recognising bad news, this can be a sign of improvement in accounting quality. This is because Ball et al. (2003) argue that firms may delay the recognition of bad news, in particular considering the institutional setting of Latin American countries. Therefore, a reduction in the delay represents an improvement as the recognition of losses is timelier than before.

4.5.3 Value relevance metrics

Regarding the value relevance approach, this thesis follows the approach of Barth et al. (2008), which is based on the framework of Ohlson (1995). The measures for value relevance are presented in equations 10, 11 and 12.

$$P_{i,t+2} = \alpha_0 + \alpha_1 LogMV_{i,t} + \alpha_2 GROWTH_{i,t} + \alpha_3 MVISU_{i,t} + \alpha_4 LEV_{i,t} + \alpha_5 DISSUE_{i,t} + \alpha_6 TURN_{i,t} + \alpha_7 CF_{i,t} + \alpha_8 AUD_{i,t} + \alpha_9 NUMEX_{i,t} + \alpha_{10} XLIST_{i,t} + \alpha_{11} BTMV_{i,t} + \alpha_{12} GDP_{i,t} + \alpha_{13} PW_i + \alpha_{14} I_i + \alpha_{15} M_i + \alpha_{16} U_i + \alpha_{17} L_i + \alpha_{18} Inn_i + \sum_{d=1}^{12} \alpha_{d+18} NAICS_i + \sum \alpha_y QuarterControls_t + \varepsilon_{i,t} \quad (10)$$

$$P^*_{i,t+2} = \alpha_0 + \beta_1 BVPS_{i,t} + \gamma_1 NIPS_{i,t} + \varepsilon_{i,t} \quad (11)$$

$$P^*_{i,t+2} = \alpha_0 + \sum_{\tau=0}^{7} \beta_\tau BVPS_{i,t-\tau} + \sum_{\tau=0}^{7} \gamma_\tau NIPS_{i,t-\tau} + \varepsilon_{i,t} \quad (12)$$

where: $P_{i,t+2}$ represents the share price of two quarters ahead. It is measured six months after the end of quarter *t* of firm *i,* in order to ensure that this information was available to the market (Lang et al., 2003; Lang et al., 2006). $BVPS_{i,t}$ is the book value per share for firm *i* at quarter *t*; $NIPS_{i,t}$ is the net income per share for firm *i* at quarter *t*; $BVPS_{i,t-\tau}$(τ = 0, 1 to 7) denotes $BVPS_{i,t}$ on current (τ = 0) and prior quarters (τ = 1 to 7); $NIPS_{i,t-\tau}$ (τ = 0, 1 to 7) denotes $NIPS_{i,t}$ on current (τ = 0) and prior quarters (τ = 1 to 7). $P^*_{i,t+2}$ is the residual of equation 10 for firm *i* at quarter *t*.

Equation 10 is the regression of share price with several control variables. This equation is estimated for the period before and after the IFRS adoption. Afterwards, the residuals of equation 10 are regressed as a dependent variable in equation 11. The coefficients of book value and net income per share should be positive, which indicate that investors rely on these accounting numbers. Considering that firms have the obligation to republish their past year financial statement in accordance to IFRS, the lagged $BVPS_{i,t}$ and $NIPS_{i,t}$ are introduced into the model in equation 12 in order to

capture this phenomenon. Based on the assumption of higher accounting quality, investors should rely more on these lagged variables in the post-adoption period than in the pre-adoption period. Afterwards, the differences in the coefficients between the pre- and post-IFRS adoption periods are analysed. An overall increase in the value relevance of accounting figures would be achieved by finding significant higher coefficients of $BVPS_{i,t}$ and $NIPS_{i,t}$ in the post-IFRS period. Moreover, a higher adjusted R^2 is also expected in the post-adoption period.

4.5.4 Accruals aggressiveness analysis

I measure accrual aggressiveness by modifying the models of Ahmed et al. (2013b) and Dechow et al. (1995) and develop model 13.

$$\begin{aligned} ACC_{i,t} = {} & \alpha_0 + \beta_1 IFRS_{i,t} + \beta_2 DIFFVC_{i,t} + \beta_3 PPE_{i,t} + \beta_4 INVTA_{i,t} \\ & + \alpha_1 LogMV_{i,t} + \alpha_2 GROWTH_{i,t} + \alpha_3 MVISU_{i,t} + \alpha_4 LEV_{i,t} \\ & + \alpha_5 DISSUE_{i,t} + \alpha_6 TURN_{i,t} + \alpha_7 CF_{i,t} + \alpha_8 AUD_{i,t} \\ & + \alpha_9 NUMEX_{i,t} + \alpha_{10} XLIST_{i,t} + \alpha_{11} BTMV_{i,t} + \alpha_{12} GDP_{i,t} \\ & + \alpha_{13} PW_i + \alpha_{14} I_i + \alpha_{15} M_i + \alpha_{16} U_i + \alpha_{17} L_i + \alpha_{18} Inn_i \\ & + \sum_{d=1}^{12} \alpha_{d+18} NAICS_i + \sum \alpha_y QuarterControls_t + \varepsilon_{i,t} \end{aligned} \quad (13)$$

where: $DIFFVC_{i,t} = \Delta Rev_{i,t} - \Delta Rec_{i,t}$, where $\Delta Rev_{i,t}$ is the change in quarterly revenue scaled by total assets in quarter *t-1* for firm *i*. $\Delta Rec_{i,t}$ is the change in quarterly account receivable deflated by total assets in quarter *t-1* firm *i*. $PPE_{i,t}$ is the quarterly gross property, plant and equipment deflated by end-of-quarter total assets for firm *i* at quarter *t*. $INVTA_{i,t}$ is the inverse of the logarithm of total assets for firm *i* at quarter *t*.

The aim of this analysis is to estimate the coefficient β_1 of $IFRS_{i,t}$. A significantly positive (negative) β_1 indicates an increase (decrease) in managers' discretionary use of

accruals. Thus, this coefficient is expected to be significantly negative as this illustrates that the mandatory adoption of IFRS is helpful to reduce firms' behaviour of accrual earnings management.

4.6 Data and sampling procedures

The target population of this research is all publicly listed companies excluding banks and financial institutions in Argentina, Brazil, Chile, Mexico, and Peru. The other Latin American countries are excluded because they adopt IFRS after 2014 and their required data was not available. The main data source is Economatica[15].

Table 2 reports that there are 116, 660, 241, 184 and 198 industrial firms respectively from Argentina, Brazil, Chile, Mexico and Peru. The total number of firms available are 1399 companies for these five countries in Economatica database. The data is winsorized at the 1% level in order to avoid the outlier's effect.

In order to examine the impact of the adoption of IFRS on accounting quality, the accounting and market data must be available in 2 years before and 2 years after the IFRS adoption. According to this criterion, the common sample size is 309 firms. Table 2, Panel A, illustrates the sample structure, and Panel B shows the common sample size after the sampling criterion.

[15] Economatica® is an international database founded in 1986. Economatica database contains more Latin American firms than other databases, such as Capital IQ and Datastream. Datastream does not provide quarterly information for the target firms, and Capital IQ has only 108 firms that suit the sampling criteria. It is noteworthy that similar empirical results were derived based on the data from Capital IQ.

Table 2. Sample structure

Panel A. Number of firms from Economatica

NAICS	Argentina	Brazil	Chile	Mexico	Peru	Total
11	7	7	31	6	19	70
21	27	43	47	10	65	192
22		61		1		62
23	4	38	7	23	4	76
31–33	35	253	29	52	40	409
42	2	18	9		2	31
44–45	2	20	12	21	6	61
48–49	3	32	11	7		53
51	3	57	10	19	3	92
54		1				1
72	16	24	19	6	26	91
81	17	106	66	39	33	261
Total	116	660	241	184	198	1399

Panel B. Number of firms whose data in two years pre- and two years post- the date of mandatory adoption of IFRS is available.

NAICS	Argentina	Brazil	Chile	Mexico	Peru	Total
11		2	7	3		12
21		12	13	7	11	43
22		17				17
23		15	1	12		28
31–33	1	47	11	20	1	80
42		2	3			5
44–45		7	4	10		21
48–49		8	5	4		17
51		4	3	7	1	15
54						0
72		7	8	1	3	19
81		33	13	4	2	52
Total	1	154	68	68	18	309

Note: Panel A reports the number of firms downloaded from Economatica for the sample period from the first quarter of 2003 to the fourth quarter of 2014. NAICS 11: agriculture, forestry, fishing & hunting; NAICS 21: mining, quarrying, oil & gas extraction; NAICS 22: utilities; NAICS 23: construction; NAICS 31–33: manufacturing; NAICS 42: wholesale trade; NAICS 44–45: retail trade; NAICS 48–49: transportation & warehousing; NAICS 51: information; NAICS 54: Professional scientific & technical services; NAICS 72: accommodation & food services; NAICS 81: other services (excluded public administration, religious organization, grantmaking & giving services, voluntary organization, social advisory services, human right organization, civil and social organization, business & professional, political & labour organization, business association, professional organization, private household etc.). Panel B displays the number of firms whose data in two years pre- and two years post the date of mandatory adoption of IFRS is available.

The IFRS adoption date for each country was retrieved from the official documents (IFRS, 2013; IFRS, 2014a; IFRS, 2014b; IFRS, 2015a; IFRS, 2015b) and are defined in table 3.

Table 3. The sample according to the mandatory adoption date of IFRS in Latin America

Country	Period classification	Time	Event
Argentina	Pre	2010q1-2011q4	Before IFRS adoption
	Post	2012q1-2013q4	Mandatory IFRS adoption
Brazil	Pre	2008q4-2010q3	Local GAAP - Before full mandatory IFRS adoption
	Post	2010q4-2012q3	Mandatory IFRS - Full adoption
Chile	Pre	2007q4-2009q3	Before IFRS adoption
	Post	2009q4-2011q3	Mandatory IFRS adoption
Mexico	Pre	2010q1-2011q4	Before IFRS adoption
	Post	2012q1-2013q4	Mandatory IFRS adoption
Peru	Pre	2010q1-2011q4	Before IFRS adoption
	Post	2012q1-2013q4	Mandatory IFRS adoption

"q1" to "q4" denote quarter one to quarter four.

In order to test the hypotheses (*H2a*, *H2b*, *H3a*, *H3b*, *H4a* and *H4b*), the sample firms are divided into three subsample groups as follows. Firstly, poorly performing firms and strongly performing firms; poorly performing firms are those that net income over total assets are less than the mean of its industry whereas strongly performing firms are the remaining firms. Secondly, firms with high bankruptcy possibility and firms with low bankruptcy possibility; a firm with high bankruptcy possibility is identified if its AZ score is less than 1.2. On the other hand, a firm with low bankruptcy possibility is identified if its AZ score is more than 1.2. Finally, the third group is formed of firms that list on U.S. stock exchanges and firms that do not list on U.S. stock exchanges prior to the date of the mandatory adoption of IFRS. According to these three sets of groups, the accounting quality between the pre- and post-IFRS adoption period is compared. Table 4 illustrates the number of firms defined in each of the three groups as follows.

Table 4. Classified sample groups

Situation	Number of Firms	Total
Poorly Performing firms	40	309
Strongly performing firms	269	
Firms with AZ < 1.2	30	309
Firms with AZ > 1.2	279	
List on U.S. stock exchanges	57	309
Do not list on U.S. stock exchanges	252	

4.6.1. Descriptive statistics

Table 5 presents the descriptive statistics of the variables employed in the models.

Table 5. Descriptive statistics of common size sample – 309 firms

		Pre			Post		
	Obs	Mean	Median	Std. Dev	Mean	Median	Std. Dev
Test variables							
$EPSP_{i,t}$	2472	0.063	0.046	0.501	**0.025*****	0.035	0.266
$R_{i,t}$	2472	0.078	0.034	0.319	**0.023*****	0.020	0.196
$D_{i,t}$	2472	0.428	0	0.495	0.447	0	0.497
$D_{i,t}R_{i,t}$	2472	–0.072	0	0.125	**–0.062*****	0	0.106
$P_{i,t+2}$	2472	5.388	2.866	6.921	**6.184*****	3.229	8.251
$BVPS_{i,t}$	2472	4.783	1.971	12.832	4.613	2.391	6.812
$NIPS_{i,t}$	2472	0.311	0.097	1.163	0.301	0.096	0.949
$CF_{i,t}$	2472	0.047	0.040	0.078	**0.043*****	**0.036*****	0.064
$\Delta CF_{i,t}$	2472	0.001	0.015	0.075	0.000	0.014	0.066
$NI_{i,t}$	2472	0.019	0.027	0.240	0.020	0.024	0.207
$\Delta NI_{i,t}$	2472	0.001	0.009	0.090	–0.002	0.008	0.081
$ACC_{i,t}$	2472	–0.021	–0.014	0.137	–0.019	–0.011	0.123
$SPOS_{i,t}$	2472	0.741	1.000	0.438	0.746	1.000	0.435
$LNEG_{i,t}$	2472	0.012	0	0.108	0.008	0	0.092
$INVTA_{i,t}$	2472	0.168	0.166	0.021	**0.164*****	**0.162*****	0.020
$PPE_{i,t}$	2472	0.360	0.356	0.231	**0.321*****	**0.309*****	0.234
$DIFFVC_{i,t}$	2472	0.007	0.117	0.384	0.004	0.114	0.361
AZ	2472	1.403	1.483	10.963	1.189	1.434	7.741
Control variables							
$LogMV_{i,t}$	2472	13.287	13.229	1.942	**13.739*****	**13.819*****	1.893
$BTMV_{i,t}$	2472	1.251	0.687	2.745	**1.000*****	0.679	1.311
$LEV_{i,t}$	2472	1.813	1.075	3.538	1.826	1.159	3.143
$GROWTH_{i,t}$	2472	0.337	0.441	0.724	**0.296*****	**0.409*****	0.671
$MVISU_{i,t}$	2472	0.053	0.036	0.251	**0.013*****	**0.017*****	0.205
$DISSUE_{i,t}$	2472	0.040	0.028	0.355	0.045	0.019	0.292
$TURN_{i,t}$	2472	0.462	0.350	0.385	**0.438*****	**0.341*****	0.360
$GDP_{i,t}$	2472	0.007	0.012	0.017	**0.007*****	**0.006*****	0.009
$AUD_{i,t}$	2472	0.625	1.000	0.484	0.625	1.000	0.484
$XLIST_{i,t}$	2472	0.184	0	0.388	0.184	0	0.388
$NUMEX_{i,t}$	2472	0.476	0	0.757	0.476	0	0.757
PW_i	2472	0.215	0.212	0.020	0.215	0.212	0.020
I_i	2472	0.207	0.248	0.047	0.207	0.248	0.047
M_i	2472	0.198	0.201	0.056	0.198	0.201	0.056
U_i	2472	0.192	0.197	0.011	0.192	0.197	0.011
L_i	2472	0.247	0.215	0.061	0.247	0.215	0.061
Inn_i	2472	0.207	0.178	0.048	0.207	0.178	0.048

*, **, *** significant difference between means (medians) in Pre and in Post at 10%, 5%, 1% level, two-tailed test.

Table 5 reports that earnings per share deflated by price in each quarter ($EPSP_{i,t}$), stock return ($R_{i,t}$), operating cash flow deflated by end-of-quarter total assets ($CF_{i,t}$), the

inverse of total assets ($INVTA_{i,t}$), and property, plant and equipment ($PPE_{i,t}$) are significantly lower in the post-adoption period in comparison to the pre-adoption period. The stock price in the post-adoption period is significantly higher than in the pre-adoption period. The firms of the sample presented insignificantly fewer periods of small positive earnings ($SPOS_{i,t}$) and insignificantly fewer periods of large negative earnings ($LNEG_{i,t}$) after the adoption of IFRS. Because there is no significant difference between the two periods, this implies that firms may manage their earnings to meet a target and may not recognize losses in a timely manner. This result contradicts the findings of Barth et al. (2008) for developed countries. Regarding the control variables, firm size ($LogMV_{i,t}$) is significantly larger during the period after the IFRS adoption. Book-to-market value ($BTMV_{i,t}$), the percentage change in sales ($GROWTH_{i,t}$), the percentage changes in common stock ($MVISU_{i,t}$), sales divided by end-of-quarter total assets ($TURN_{i,t}$) and gross domestic product growth rate ($GDP_{i,t}$) are significantly lower in the post-adoption period than in the pre-adoption period. End-of-quarter total liabilities, as divided by end-of-quarter equity book value ($LEV_{i,t}$) is insignificantly higher in the post-adoption period. This is consistent with the increase in the bankruptcy possibility assessed by the Altman Z-score (AZ) across the two periods.

4.7 Results

4.7.1 Earnings management and timely recognition of losses through Barth's et al. (2008) approach

Table 6 presents the results regarding the four measures of earnings management and one measure of timely recognition of losses according to the approach of Barth et al. (2008) for the common sample. It also reports the results of the subsample groups in terms of poorly performing firms, strongly performing firms, firms with A.Z < 1.2, firms with

A.Z > 1.2, firms listed on U.S. stock exchanges (Xlist), and firms that do not list on U.S. stock exchanges (Non-Xlist).

Table 6. Comparison of earnings management metrics in the pre- and post-mandatory adoption of IFRS

Metric	Prediction	Obs.			Pre	Post	Diff
		N	Pre	Post			
Variability of $\Delta NI^*_{i,t}$							
All firms	Post>Pre	309	2472	2472	**0.0064*****	**0.0057*****	**–0.0007*****
Poorly performing firms	Post>Pre	40	320	320	**0.0064*****	**0.0057*****	**–0.0007*****
Strongly performing firms	Post>Pre	269	2152	2152	**0.0066*****	**0.0055*****	**–0.0010*****
Firms' AZ<1.2	Post>Pre	30	240	240	**0.0065*****	**0.0055*****	**–0.0010*****
Firms' AZ>1.2	Post>Pre	279	2232	2232	**0.0064*****	**0.0057*****	**–0.0007*****
Xlist firms	Post>Pre	57	456	456	**0.0063*****	**0.0055*****	**–0.0007*****
Non–Xlist firms	Post>Pre	252	2016	2016	**0.0064*****	**0.0057*****	**–0.0007*****
Variability of $\Delta NI^*_{i,t}/\Delta CF^*_{i,t}$							
All firms	Post>Pre	309	2472	2472	**2.2720*****	**2.9209*****	**0.6490*****
Poorly performing firms	Post>Pre	40	320	320	**3.1640*****	**2.6761*****	**–0.4879*****
Strongly performing firms	Post>Pre	269	2152	2152	**2.2650*****	**2.9364*****	**0.6714*****
Firms' AZ<1.2	Post>Pre	30	240	240	**2.2995*****	**2.8386*****	**0.5391*****
Firms' AZ>1.2	Post>Pre	279	2232	2232	**2.3723*****	**2.9949*****	**0.6226*****
Xlist firms	Post>Pre	57	456	456	**2.2769*****	**2.9357*****	**0.6588*****
Non–Xlist firms	Post>Pre	252	2016	2016	**2.2827*****	**2.9334*****	**0.6507*****
Correlation of $ACC^*_{i,t}$ & $CF^*_{i,t}$							
All firms	Post>Pre	309	2472	2472	**–0.6025*****	**–0.6479*****	**–0.0454*****
Poorly performing firms	Post>Pre	40	320	320	**–0.6215*****	**–0.6539*****	**–0.0324*****
Strongly performing firms	Post>Pre	269	2152	2152	**–0.6028*****	**–0.6479*****	**–0.0452*****
Firms' AZ<1.2	Post>Pre	30	240	240	**–0.6250*****	**–0.6551*****	**–0.0302*****
Firms' AZ>1.2	Post>Pre	279	2232	2232	**–0.6026*****	**–0.6480*****	**–0.0454*****
Xlist firms	Post>Pre	57	456	456	**–0.6211*****	**–0.6512*****	**–0.0300*****
Non–Xlist firms	Post>Pre	252	2016	2016	**–0.6017*****	**–0.6481*****	**–0.0464*****
Small positive NI ($SPOS_{i,t}$)							
All firms	–	309	2472	2472		0.02	
Poorly performing firms	–	40	320	320		0.0787	
Strongly performing firms	–	269	2152	2152		0.0141	
Firms' AZ<1.2	–	30	240	240		0.0419	
Firms' AZ>1.2	–	279	2232	2232		0.0193	
Xlist firms	–	57	456	456		–0.0406	
Non–Xlist firms	–	252	2016	2016		0.0301	
Timely loss recognition - large negative NI ($LNEG_{i,t}$)							
All firms	+	309	2472	2472		0.0129	
Poorly performing firms	+	40	320	320		0.2333	
Strongly performing firms	+	269	2152	2152		0.0182	
Firms' AZ<1.2	+	30	240	240		0.1500	
Firms' AZ>1.2	+	279	2232	2232		–0.0592	
Xlist firms	+	57	456	456		–0.0409	
Non–Xlist firms	+	252	2016	2016		0.0026	

*** p<0.01, ** p<0.05, * p<0.1, two-tailed test.

The first set of findings regarding the variability of $\Delta NI^*_{i,t}$ is inconsistent with the prediction. That is, the changes in net income for all Latin American firms are significantly lower in the post-adoption period than in the pre-adoption period at the 1% level. This result is similar to the subsample groups. This finding suggests that firms may smooth earnings more in the post-adoption period; i.e. by allocating write-offs in subsequent periods via accruals.

The second set of findings shows that the variability of $\Delta NI^*_{i,t}$ over $\Delta CF^*_{i,t}$ is significantly higher for all firms in the post-adoption period than in the pre-adoption period at the 1% level. Similar results are found for the subsample groups, except for the poorly performing firms. It is worth noting that firms with good performance, low bankruptcy possibility, and Xlist firms present a higher variability of $\Delta NI^*_{i,t}$ over $\Delta CF^*_{i,t}$ in comparison with their counterparties. The result for Xlist firms is inconsistent. These firms should not present an increase in their accounting quality because they already adopt high-quality financial standards. The results for the other groups are consistent with the prediction that IFRS increases the accounting quality of Latin American firms. Moreover, for poorly performing firms, this finding may be lower in the post-adoption period because managers may be smoothing earnings via accruals. Overall, the results from the second finding contradict the first finding. This can be explained because although the $\Delta NI_{i,t}$ is lower in the post adoption period, the $\Delta CF_{i,t}$ is lower in the post-adoption period (the mean is 0.000) in comparison to the pre-adoption period (the mean is 0.001). Thus, this ratio is higher in the post-adoption period. It is worth noting that the difference is minor, and therefore the results of the first and second metrics are not significant two distinguish between the two periods.

The result of the correlation between accruals ($ACC^*_{i,t}$) and cash flow ($CF^*_{i,t}$) show that, the result of all firms is more negative after the IFRS adoption; the results of the

subsample groups remain similar. These set of findings are consistent with the first one that suggests companies may smooth earnings more in the post-adoption than in the pre-adoption. Furthermore, coherent with the hypotheses, the correlations of the accruals and cash flow are less negative for strongly performing firms, firms with low bankruptcy possibility and Xlist firms than those for their counterparties. This indicates that these firms smoothed their earnings to a lesser degree than their counterparties in the post-adoption period.

The fourth set of findings does not show that firms recognise more events of small positive net income in the post-adoption period than in the pre-adoption period. The coefficient of $SPOS_{i,t}$ is insignificant for the common sample. The results of subsample groups remain similar. There is no evidence to support that firms recognise fewer small positive net income events in the post-adoption period than in the pre-adoption period.

For the result of timely loss recognition – large negative, the coefficients ($LNEG_{i,t}$) of the common sample and of the subsample groups for all the groups of firms are statistically insignificant. This suggests that there is not a significant change in the firms' behaviour of timely loss recognition in the post-adoption period.

In summary, the results of these four earnings management metrics and the timely recognition metric are not sufficient to conclude that there is any improvement in accounting quality in the post-adoption period. The limitation of these metrics is that they are based on one current quarter only. However, the fact is that firms may undertake earnings smoothing and delay the recognition of good or bad news besides recognising them in the current period. This phenomenon is not captured by the earnings management metrics of Barth et al. (2008). Therefore, based on the thesis of Ball et al. (2003) and the work of Pope and Walker (1999) and Mak et al. (2011), this thesis develops further the Basu's (1997) model introducing independent lagged variables in order to capture the

delay in recognising good or bad news. According to Ball et al. (2003), for firms in Latin American countries, the mandatory adoption of IFRS may reduce the delay in recognising good or bad news. The following section discusses the results of this analysis.

4.7.2 Timely recognition of losses through Basu's (1997) approach

Table 7 reports the results of the timely loss recognition derived by Basu's (1997) model and the extended version with independent lagged variables. Table 7 contains four panels that illustrate the results based on all firms and on three subsample groups. They are: Panel A reports the results for all firms; Panel B presents the results of good and poor operating performance firms; Panel C displays those of firms with high and low bankruptcy possibility; and Panel D reports the results of firms that list or not list on U.S. stock exchanges. The results are discussed according to the order of the panels.

Table 7. Timely loss recognition[16]

Panel A. All firms

$$EPSP^{*}_{i,t} = \alpha_0 + \sum_{\tau=0}^{7} \alpha_{1+\tau} D_{i,t-\tau} + \sum_{\tau=0}^{7} \beta_\tau R_{i,t-\tau} + \sum_{\tau=0}^{7} \gamma_\tau D_{i,t-\tau} R_{i,t-\tau} + \varepsilon_{i,t}$$

	All			All		
	Pre	Post	Diff	Pre	Post	Diff
$R_{i,t}$	0.0641**	0.0730**	0.0089	–0.0530	0.1200**	0.173
	(2.01)	(2.12)		(–0.32)	(2.59)	
$D_{i,t}R_{i,t}$	–0.1141	–0.0226	0.0915	0.1782	–0.0682	–0.2464
	(–1.11)	(–0.42)		(0.57)	(–0.56)	
$R_{i,t-1}$				0.0305	–0.1504	–0.1809
				(0.58)	(–0.77)	
$D_{i,t-1}R_{i,t-1}$				0.1565	0.2650	0.1085
				(1.19)	(1.00)	
$R_{i,t-2}$				0.0910	–0.1247	–0.2157*
				(1.19)	(–1.26)	
$D_{i,t-2}R_{i,t-2}$				0.0229	0.4987**	0.4758**
				(0.19)	(2.10)	
$R_{i,t-3}$				–0.0863	–0.2091	–0.1228
				(–0.72)	(–1.00)	
$D_{i,t-3}R_{i,t-3}$				0.2504**	0.5928	0.3424
				(1.97)	(1.30)	
$R_{i,t-4}$				–0.0452	–0.0120	0.0332
				(–0.30)	(–0.07)	
$D_{i,t-4}R_{i,t-4}$				0.5560	0.4426	–0.1134
				(1.47)	(0.87)	
$R_{i,t-5}$				0.2102	0.0207	–0.1895
				(1.33)	(0.41)	
$D_{i,t-5}R_{i,t-5}$				0.1605	0.0397	–0.1208
				(0.64)	(0.55)	
$R_{i,t-6}$				–0.0206	0.3020	0.3226
				(–0.09)	(1.15)	
$D_{i,t-6}R_{i,t-6}$				0.3383	–0.3241	–0.6624
				(1.34)	(–0.99)	
$R_{i,t-7}$				–0.1074	0.1972	0.3046
				(–0.80)	(1.12)	
$D_{i,t-7}R_{i,t-7}$				0.6092***	–0.2500	–0.8592***
				(2.64)	(–1.25)	
Cons	–0.0160	–0.0095		0.1257	0.0311	
	(–1.56)	(–1.60)		(1.16)	(0.36)	
Observations	2472	2472		2281	2472	
Adj. R^2	–0.000	0.001		0.053	0.054	

Robust t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

The first three columns of Panel A report the results of equation 8; these results do not show any significant difference in the good (bad) news coefficients "$R_{i,t}$" ($D_{i,t}R_{i,t}$) between the pre- and post-adoption period. Thus, there is no difference in the behaviour

[16] The dummies $D_{i,t}$, $D_{i,t-1}$, $D_{i,t-2}$,$D_{i,t-3}$, $D_{i,t-4}$, $D_{i,t-5}$, $D_{i,t-6}$, $D_{i,t-7}$ are not presented in the table (but included in the regressions) due to easiness of exposition as they are not the focus on this analysis. "All firms" refers to the 309 firms from the common size sample. It is worth noting that the delay in recognising bad news could go beyond the 7th quarter, however this is a limitation of the data.

of timely recognition of losses between the two periods. Moreover, the coefficients of good news "$R_{i,t}$" are significantly positive in both periods. This indicates that firms recognise good news in the current quarter when they experience good news, but do not recognise bad news on a timely manner. This behaviour is predicted by Ball et al. (2003) in developing countries, as firms may defer the recognition of bad news. Regarding this evidence, this model does not consider firms' delay in recognising good or bad news. Hence, equation 9 includes lagged variables to track the earnings management and timely recognition of losses behaviour in earlier quarters. These results are presented in the last three columns.

The results show that the coefficients of bad news ($D_{i,t-3}R_{i,t-3}$ and $D_{i,t-7}R_{i,t-7}$) are positive, and significant at 1% in the pre-adoption period only, and that $D_{i,t}R_{i,t}$ is insignificant. This implies that firms defer the recognition of bad news in earnings to the third and to the seventh quarter. In contrast, the bad news coefficient ($D_{i,t-2}R_{i,t-2}$) and the good news coefficient ($R_{i,t}$) are significantly positive at 5% after the IFRS adoption; however, the coefficients of $D_{i,t-3}R_{i,t-3}$ and $D_{i,t-7}R_{i,t-7}$ are no longer significant in the post-adoption period. The difference between the coefficients $D_{i,t-2}R_{i,t-2}$ and $D_{i,t-7}R_{i,t-7}$ across periods is significantly positive at 5% and 1%, respectively. This indicates that the delay in recognising news is reduced from up to seven quarters to up to two quarters. Therefore, this is evidence of improvement in the timely recognition of losses.

4.7.2.1 Effect of operating performance on timely loss recognition

The results from equation 9 for poorly and strongly performing firms are illustrated in Panel B of table 7.

Table 7. Timely loss recognition[17]

Panel B. Effects of operating performance.

$$EPSP^{*}_{i,t} = \alpha_0 + \sum_{\tau=0}^{7} \alpha_{1+\tau} D_{i,t-\tau} + \sum_{\tau=0}^{7} \beta_\tau R_{i,t-\tau} + \sum_{\tau=0}^{7} \gamma_\tau D_{i,t-\tau} R_{i,t-\tau} + \varepsilon_{i,t}$$

	Poor performance firms			Good performance firms		
	Pre	Post	Diff	Pre	Post	Diff
$R_{i,t}$	–0.7269**	0.1585	0.8854**	0.1114	0.1229***	0.0115
	(–2.41)	(0.66)		(1.17)	(3.24)	
$D_{i,t}R_{i,t}$	1.0735**	–0.3481	–1.4216	–0.0033	–0.0180	–0.0147
	(2.25)	(–0.56)		(–0.01)	(–0.29)	
$R_{i,t-1}$	–0.3028*	–1.0923	–0.7895*	–0.0047	0.0578	0.0625
	(–1.79)	(–1.58)		(–0.08)	(0.86)	
$D_{i,t-1}R_{i,t-1}$	0.6476**	1.8804	1.2328	0.1564	–0.0686	–0.225
	(2.70)	(1.87)		(1.05)	(–0.73)	
$R_{i,t-2}$	–0.4273**	–0.4305**	–0.0032	0.1340*	–0.0140	–0.148*
	(–2.41)	(–2.68)		(1.71)	(–0.53)	
$D_{i,t-2}R_{i,t-2}$	0.5618***	1.2531	0.6913	–0.0328	0.1821**	0.2149
	(2.75)	(1.84)		(–0.25)	(2.47)	
$R_{i,t-3}$	–0.2170	–0.5693	–0.3523	–0.0966	0.0156	0.1122
	(–0.79)	(–1.33)		(–0.75)	(0.47)	
$D_{i,t-3}R_{i,t-3}$	0.5039	2.1092	1.6053**	0.2674**	0.0803	–0.1871
	(1.32)	(1.62)		(2.17)	(1.11)	
$R_{i,t-4}$	0.1137	–0.8105	–0.9242	–0.0936	0.1330***	0.2266
	(1.11)	(–1.01)		(–0.58)	(2.95)	
$D_{i,t-4}R_{i,t-4}$	0.2797	3.0371	2.7574	0.5980	–0.0697	–0.6677
	(1.35)	(1.35)		(1.51)	(–1.24)	
$R_{i,t-5}$	0.2235*	–0.4921	–0.7156	0.2067	0.0455	–0.1612
	(1.90)	(–0.97)		(1.16)	(1.20)	
$D_{i,t-5}R_{i,t-5}$	0.3920**	1.1391	0.7471	0.1064	0.0059	–0.1005
	(2.15)	(1.26)		(0.36)	(0.09)	
$R_{i,t-6}$	0.4814**	1.6881*	1.2067	–0.0855	0.0177	0.1032
	(2.07)	(1.90)		(–0.34)	(0.79)	
$D_{i,t-6}R_{i,t-6}$	–0.2730	–1.1986	–0.9256	0.3971	–0.0181	–0.4152
	(–1.03)	(–1.57)		(1.49)	(–0.23)	
$R_{i,t-7}$	0.4633**	1.2366	0.7733	–0.1597	0.0032	0.1629
	(2.05)	(1.66)		(–1.06)	(0.13)	
$D_{i,t-7}R_{i,t-7}$	–0.0718	–1.3858	–1.314	0.6380**	–0.0351	–0.6731**
	(–0.24)	(–1.60)		(2.46)	(–0.41)	
Cons	0.2463	0.5962		0.1292	–0.0455	
	(1.55)	(1.11)		(1.16)	(–0.79)	
Observations	306	320		1975	2152	
Adj. R^2	0.307	0.326		0.071	0.059	

Robust t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

The bad news coefficients ($D_{i,t}R_{i,t}$, $D_{i,t-1}R_{i,t-1}$, $D_{i,t-2}R_{i,t-2}$, and $D_{i,t-5}R_{i,t-5}$) of poorly performing firms are significantly positive in the pre-adoption period. Moreover,

[17] The dummies $D_{i,t}$, $D_{i,t-1}$, $D_{i,t-2}$,$D_{i,t-3}$, $D_{i,t-4}$, $D_{i,t-5}$, $D_{i,t-6}$, $D_{i,t-7}$ are not presented in the table (but included in the regressions) due to easiness of exposition as they are not the focus on this analysis. It is worth noting that the delay in recognising bad news could go beyond the 7th quarter, however this is a limitation of the data.

the good news coefficients ($R_{i,t}$, $R_{i,t-1}$, and $R_{i,t-2}$) are negative and significant at 5%, and $R_{i,t-6}$ and $R_{i,t-7}$ are positive and significant at 5%. This implies that these firms may allocate the recognition of bad and good news in prior quarters alongside news in the current quarter. This behaviour might assist to smooth earnings in order to reduce its variability. In the post-adoption period, the good news coefficient $R_{i,t-2}$ is negative and significant at 5% whereas the coefficient $R_{i,t-6}$ is positive at 5% level. The latter suggests that firms defer the recognition of losses when they experience good news in the sixth previous quarter. The bad news coefficients ($D_{i,t}R_{i,t}$, $D_{i,t-1}R_{i,t-1}$, $D_{i,t-2}R_{i,t-2}$, and $D_{i,t-5}R_{i,t-5}$) are no longer significant in the post-adoption period. Therefore, there is no significant improvement in timely recognition of losses or earnings management for the poorly performing firms.

The bad news coefficients ($D_{i,t-3}R_{i,t-3}$ and $D_{i,t-7}R_{i,t-7}$) of strongly performing firms are significantly positive at 5%, while the good news coefficient $R_{i,t-2}$ is significantly positive at 10% in the pre-adoption period. This suggests that firms delay recognition of bad news to the third and to the seventh previous quarter and may choose to write off losses when they experience good news in previous two quarters. In the post-adoption period, the good news coefficients $R_{i,t}$, $R_{i,t-4}$ and the bad news coefficient $D_{i,t-2}R_{i,t-2}$ are significantly positive at 1% and 5%. It is worth noting that the bad news coefficients $D_{i,t-3}R_{i,t-3}$ and $D_{i,t-7}R_{i,t-7}$ are no longer significant, and this difference between these coefficients in the pre- and post-adoption periods is statistically significant. This implies that the delay in recognizing bad news is significantly reduced in the post-adoption period from up to seven quarters to up to two quarters.

4.7.2.2 Effects of probability of bankruptcy on timely loss recognition

Table 7. Timely loss recognition[18]

Panel C. Effects of probability of bankruptcy

$$EPSP^{*}_{i,t} = \alpha_0 + \sum_{\tau=0}^{7} \alpha_{1+\tau} D_{i,t-\tau} + \sum_{\tau=0}^{7} \beta_\tau R_{i,t-\tau} + \sum_{\tau=0}^{7} \gamma_\tau D_{i,t-\tau} R_{i,t-\tau} + \varepsilon_{i,t}$$

	Firms' AZ<1.2			Firms' AZ>1.2		
	Pre	Post	Diff	Pre	Post	Diff
$R_{i,t}$	–1.0166***	0.0441	1.0607**	0.1750**	0.1040***	–0.071
	(–4.00)	(0.12)		(2.10)	(2.85)	
$D_{i,t}R_{i,t}$	1.1778**	–0.6812	–1.859**	–0.2069	0.0169	0.2238
	(2.63)	(–0.78)		(–0.73)	(0.26)	
$R_{i,t-1}$	–0.2250	–1.465*	–1.2401**	0.0391	0.0512	0.0121
	(–0.88)	(–1.87)		(0.84)	(0.85)	
$D_{i,t-1}R_{i,t-1}$	0.5850**	1.2993	0.7143	0.0179	–0.0328	–0.0507
	(2.32)	(1.61)		(0.23)	(–0.45)	
$R_{i,t-2}$	–0.5524	–0.9480***	–0.3956	0.1032	–0.0064	–0.1096
	(–1.55)	(–3.51)		(1.54)	(–0.25)	
$D_{i,t-2}R_{i,t-2}$	0.8448*	0.9958*	0.151	–0.0512	0.2147***	0.2659*
	(1.81)	(1.72)		(–0.46)	(2.91)	
$R_{i,t-3}$	–0.8251**	–1.0521*	–0.227	–0.0728	0.0145	0.0873
	(–2.24)	(–1.90)		(–0.62)	(0.49)	
$D_{i,t-3}R_{i,t-3}$	0.7630*	2.4692**	1.7062*	0.1417	0.0841	–0.0576
	(1.77)	(2.02)		(1.41)	(1.14)	
$R_{i,t-4}$	–0.0676	–1.2321	–1.1645	–0.0608	0.1409***	0.2017
	(–0.25)	(–1.23)		(–0.34)	(3.11)	
$D_{i,t-4}R_{i,t-4}$	1.9483*	3.0678	1.1195	0.0981	–0.0872	–0.1853
	(1.89)	(1.43)		(0.37)	(–1.71)	
$R_{i,t-5}$	0.9549*	–0.6567	–1.6116	–0.0118	0.0582	0.07
	(2.03)	(–1.00)		(–0.13)	(1.53)	
$D_{i,t-5}R_{i,t-5}$	–0.1995	1.9453	2.1448	0.1568	–0.0056	–0.1624
	(–0.25)	(1.40)		(1.47)	(–0.09)	
$R_{i,t-6}$	–0.6587	2.0116**	2.6703*	–0.0173	0.0026	0.0199
	(–0.95)	(2.50)		(–0.11)	(0.12)	
$D_{i,t-6}R_{i,t-6}$	1.1293*	–1.3593**	–2.4886*	0.1330	0.0352	–0.0978
	(1.81)	(–2.24)		(0.63)	(0.53)	
$R_{i,t-7}$	–0.4820	1.5373**	2.0193**	0.0202	0.0058	–0.0144
	(–0.87)	(1.97)		(0.28)	(0.25)	
$D_{i,t-7}R_{i,t-7}$	1.3429**	–0.9640*	–2.3069**	0.1944***	–0.0238	–0.2182**
	(2.05)	(–1.89)		(3.73)	(–0.33)	
Cons	0.8105**	0.8977		0.0485	–0.0391	
	(2.72)	(1.28)		(0.42)	(–0.71)	
Observations	236	240		2045	2232	
Adj. R^2	0.481	0.399		0.022	0.064	

Robust t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

[18] The dummies $D_{i,t}$, $D_{i,t-1}$, $D_{i,t-2}$,$D_{i,t-3}$, $D_{i,t-4}$, $D_{i,t-5}$, $D_{i,t-6}$, $D_{i,t-7}$ are not presented in the table (but included in the regressions) due to easiness of exposition as they are not the focus on this analysis. It is worth noting that the delay in recognising bad news could go beyond the 7th quarter, however this is a limitation of the data.

The bad news coefficients of firms with high bankruptcy risk (AZ<1.2) are significantly positive at 5% and 10%, except for $D_{i,t-5}R_{i,t-5}$, in the pre-adoption period. This illustrates that these firms spread the recognition of bad news through the current quarter up to seven prior quarters. The same trend occurs through the recognition of good news as the coefficients $R_{i,t}$, $R_{i,t-4}$ and $R_{i,t-6}$ are significantly negative at 1%, 5%, and 10% respectively. This implies that these firms recognize news in different quarters in order to smooth earnings. In the post-adoption period, the bad news coefficients $D_{i,t-2}R_{i,t-2}$ and $D_{i,t-3}R_{i,t-3}$ are significantly positive at 10% and 5%, whereas $D_{i,t-6}R_{i,t-6}$ and $D_{i,t-7}R_{i,t-7}$ are significantly negative, at 5% and 10% respectively. This indicates that firms may inflate earnings when experiencing bad news in the sixth and in the seventh preceding quarter, and also recognise bad news in earlier two and three quarters. These results indicate that the timely recognition of losses has not improved in the post-adoption period. Thus, managers decide to recognise news according to their needs in order to signal better performance to the market. This is consistent because these firms need to meet the requirements of debt covenants, target debt holders, and shareholders. Hence, the manager may use his discretionary ability in order to attend these expectations.

For firms with a low probability of bankruptcy, the bad news coefficient $D_{i,t-7}R_{i,t-7}$ is significantly positive at 1%. The delay in recognition of bad news is significantly reduced from the previous seventh quarter to the previous second quarter in the post-adoption period. The difference between $D_{i,t-2}R_{i,t-2}$ ($D_{i,t-7}R_{i,t-7}$) in the post- and pre-adoption period is statistically significant at 10% (5%). Therefore, this result suggests a significant improvement in the recognition of bad news in the post-adoption period. Panel D of table 7 presents this result.

4.7.2.3 Effects of listing on U.S. stock exchanges

Table 7. Timely loss recognition (cont.)[19]

Panel D. Effects of listing on U.S. stock exchanges

$$EPSP^{*}_{i,t} = \alpha_0 + \sum_{\tau=0}^{7} \alpha_{1+\tau} D_{i,t-\tau} + \sum_{\tau=0}^{7} \beta_\tau R_{i,t-\tau} + \sum_{\tau=0}^{7} \gamma_\tau D_{i,t-\tau} R_{i,t-\tau} + \varepsilon_{i,t}$$

	Xlist firms			Non–Xlist firms		
	Pre	Post	Diff	Pre	Post	Diff
$R_{i,t}$	0.0220	0.0567	0.0347	–0.0630	0.1332**	0.1962
	(0.29)	(0.80)		(–0.33)	(2.29)	
$D_{i,t}R_{i,t}$	0.0035	0.1175	0.114	0.1788	–0.0945	–0.2733
	(0.02)	(0.72)		(0.50)	(–0.66)	
$R_{i,t-1}$	0.1666**	–0.0750	–0.2416**	–0.0131	–0.1592	–0.1461
	(1.97)	(–0.78)		(–0.22)	(–0.75)	
$D_{i,t-1}R_{i,t-1}$	–0.2481*	0.2044	0.4525***	0.2264	0.2699	0.0435
	(–1.77)	(1.59)		(1.49)	(0.91)	
$R_{i,t-2}$	0.0404	0.0667**	0.0263	0.1129	–0.1403	–0.2532*
	(0.90)	(2.17)		(1.37)	(–1.39)	
$D_{i,t-2}R_{i,t-2}$	–0.0265	0.0074	0.0339	0.0034	0.5553**	0.5519**
	(–0.40)	(0.10)		(0.02)	(2.17)	
$R_{i,t-3}$	0.0435	0.0944*	0.0509	–0.1026	–0.2489	–0.1463
	(0.84)	(1.84)		(–0.71)	(–1.09)	
$D_{i,t-3}R_{i,t-3}$	–0.1464	–0.1610*	–0.0146	0.3138**	0.6972	0.3834
	(–1.02)	(–1.85)		(2.13)	(1.37)	
$R_{i,t-4}$	0.1611	0.1487	–0.0124	–0.0829	–0.0348	0.0481
	(1.52)	(1.57)		(–0.49)	(–0.18)	
$D_{i,t-4}R_{i,t-4}$	–0.5004***	–0.2158*	0.2846	0.7168	0.5294	–0.1874
	(–2.77)	(–1.86)		(1.75)	(0.93)	
$R_{i,t-5}$	0.0382	0.0704	0.0322	0.2506	0.0278	–0.2228
	(0.33)	(1.51)		(1.33)	(0.54)	
$D_{i,t-5}R_{i,t-5}$	–0.1675	–0.0032	0.1643	0.1928	–0.0041	–0.1969
	(–0.80)	(–0.02)		(0.67)	(–0.05)	
$R_{i,t-6}$	0.0585	–0.0448	–0.1033	–0.0336	0.3396	0.3732
	(0.72)	(–1.08)		(–0.13)	(1.17)	
$D_{i,t-6}R_{i,t-6}$	–0.1194	0.0416	0.161	0.4276	–0.3997	–0.8273
	(–0.75)	(0.51)		(1.49)	(–1.02)	
$R_{i,t-7}$	0.0539	0.0283	–0.0256	–0.1227	0.2151	0.3378
	(0.52)	(0.62)		(–0.75)	(1.14)	
$D_{i,t-7}R_{i,t-7}$	0.0222	–0.1829	–0.2051	0.6765**	–0.2567	–0.9332
	(0.33)	(–1.06)		(2.58)	(–1.12)	
cons	–0.1592	–0.0589		0.1627	0.0383	
	(–1.69)	(–1.13)		(1.33)	(0.42)	
Observations	456	456		1825	2016	
Adj. R^2	0.039	0.065		0.070	0.061	

Robust t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

The results for Xlist firms are inconsistent. In the pre-adoption period, the bad

[19] The dummies $D_{i,t}$, $D_{i,t-1}$, $D_{i,t-2}$,$D_{i,t-3}$, $D_{i,t-4}$, $D_{i,t-5}$, $D_{i,t-6}$, $D_{i,t-7}$ are not presented in the table (but included in the regressions) due to easiness of exposition as they are not the focus on this analysis. It is worth noting that the delay in recognising bad news could go beyond the 7th quarter, however this is a limitation of the data.

news coefficients $D_{i,t-1}R_{i,t-1}$ and $D_{i,t-4}R_{i,t-4}$ are significantly negative at 10% and 1% respectively. In addition, the good news coefficient $R_{i,t-1}$ is significantly positive at 5%. These results indicate that firms choose to inflate earnings (write off losses) when they experience good (bad) news in the first previous quarter and in the fourth previous quarter. This behaviour continues throughout the post-adoption period. The bad news coefficients $D_{i,t-3}R_{i,t-3}$ and $D_{i,t-4}R_{i,t-4}$ are significantly negative at 10%, and the good news coefficients $R_{i,t-2}$ and $R_{i,t-3}$ are significantly positive at 5% and 10%. Therefore, these firms do not improve the timely loss recognition and earnings management practices in the post-adoption period.

For Non-Xlist firms, the bad news coefficients $D_{i,t-3}R_{i,t-3}$ and $D_{i,t-7}R_{i,t-7}$ are positive and significant at 5% in the pre-adoption period. These results indicate that these firms recognise bad news with a delay of up to seven quarters. In the post-adoption period, this delay is significantly reduced as these coefficients are no longer significant, and $D_{i,t-2}R_{i,t-2}$ is positive and significant at 5%. Nevertheless, the positive and significant coefficient of $R_{i,t}$ indicates that firms inflate earnings when they experience good news in the current quarter. Thus, these results suggest that the timely recognition of losses is improved; however, these firms still undertake earnings management after the IFRS adoption.

In summary, poorly performing firms, firms with a high bankruptcy probability, and Xlist firms do not show an improvement in the recognition of losses after the IFRS adoption. On the other hand, firms with good performance, low bankruptcy probability, and Non-Xlist firms show an improvement in the delay of recognizing bad news after the IFRS adoption.

4.7.3 Value relevance

The aim of this section is to investigate whether the accounting numbers are more value relevant in the post-IFRS period. Table 8 reports four different panels following the same fashion as table 7. Panel A presents the first set of results.

Table 8. Value relevance
Panel A. All firms

$$P^{*}_{i,t+2} = \alpha_0 + \sum_{\tau=0}^{7} \beta_\tau BVPS_{i,t-\tau} + \sum_{\tau=0}^{7} \gamma_\tau NIPS_{i,t-\tau} + \varepsilon_{i,t}$$

	All			All		
	Pre	Post	Diff	Pre	Post	Diff
$BVPS_{i,t}$	–0.0058	0.0457	0.515*	–0.0131	0.0508	0.0639
	(–1.05)	(0.99)		(–1.12)	(1.23)	
$NIPS_{i,t}$	0.0395	0.4038*	0.3643**	0.1437**	0.6993***	0.5556***
	(0.84)	(1.85)		(2.27)	(2.76)	
$BVPS_{i,t-1}$				–0.0196**	0.0117	0.0313
				(–2.58)	(0.33)	
$BVPS_{i,t-2}$				–0.0066	–0.0513	–0.0447
				(–0.62)	(–1.43)	
$BVPS_{i,t-3}$				0.0060	0.0075	0.0015
				(0.66)	(0.16)	
$BVPS_{i,t-4}$				0.0115	0.0126**	0.0011
				(1.01)	(1.99)	
$BVPS_{i,t-5}$				0.0097	0.0034	–0.0063
				(1.23)	(0.43)	
$BVPS_{i,t-6}$				0.0106	–0.0074	–0.018**
				(1.62)	(–0.98)	
$BVPS_{i,t-7}$				–0.0060	0.0014	0.0074
				(–1.15)	(0.24)	
$NIPS_{i,t-1}$				–0.0784	0.0288	0.1072
				(–1.50)	(0.19)	
$NIPS_{i,t-2}$				0.1095*	–0.1127	–0.2222
				(1.88)	(–1.20)	
$NIPS_{i,t-3}$				0.0667	0.4678***	0.4011**
				(0.88)	(3.02)	
$NIPS_{i,t-4}$				–0.1931	–0.0596	0.1335
				(–1.48)	(–0.29)	
$NIPS_{i,t-5}$				–0.1802**	–0.0288	0.1514
				(–2.39)	(–0.28)	
$NIPS_{i,t-6}$				–0.0503	0.1383**	0.1886
				(–1.39)	(2.20)	
$NIPS_{i,t-7}$				0.0610**	0.1525	
				(2.26)	(0.86)	0.0915
Cons	0.0238	–0.3406		0.0569	–0.5594*	
	(0.77)	(–1.60)		(0.59)	(–1.71)	
Observations	2472	2472		2426	2472	
Adj. R^2	0.001	0.028		0.046	0.042	

Robust t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

The first three columns report the results of equation 11, which show that there is an improvement in the value relevance of $NIPS_{i,t}$. The coefficient is not significant in the pre-adoption period; however, it is significant at 10% in the post-adoption period. The difference between these coefficients is 0.3643, and it is significant at 5% level. Moreover, the adjusted R^2 increases from 0.1% to 2.8%. Although the significance of the earnings coefficient in the post-adoption period is weak, the joint results indicate that earnings are more value relevant after the adoption of IFRS.

The other three columns report the results from the value relevance model that includes lagged earnings and book value per share. None of the $BVPS_{i,t}$ coefficients are statistically significant in the pre-adoption period. Nevertheless, in the post-adoption period, $BVPS_{i,t-4}$ is statistically significant, which indicates that investors rely on the book value of the last year for investment decisions. This is consistent with the legislation that requires companies to prepare the financial statements of last year in accordance with IFRS. In comparison with the two periods, the coefficient of $NIPS_{i,t}$ increases from 0.1437 to 0.6993 significant at 5% and 1%, respectively. This implies that investors rely more on the current earnings figures after the IFRS adoption. The coefficients of $NIPS_{i,t-3}$ and $NIPS_{i,t-6}$ are significant in the post-adoption period, which indicate that investors refer to the republished net income figures in accordance with IFRS. Nonetheless, there is a slight decrease in the adjusted R^2 in the post-adoption period; it decreases from 4.6% to 4.2%. This can be explained due to the number of significant variables in both periods. In the pre-adoption period, there are five significant coefficients, whereas there are only four significant coefficients for the post-adoption period. Recall that the adjusted R^2 includes a penalty for each additional variable; therefore, if the additional variables are not significant, the adjusted R^2 will decrease. It is worth noting that, during the pre-adoption period, the coefficients for $BVPS_{i,t-1}$ and

$NIPS_{i,t-5}$ are significantly negative at 5%. These non-expected results may be attributed to multicollinearity among the variables (Wooldridge, 2010). Although the variables are not perfectly collinear, the collinearity among them can interfere in the significance of the results. For instance, in the pre-adoption period, other variables such as $NIPS_{i,t-2}$ and $NIPS_{i,t-7}$ are significant, and incorporate explanatory power from other correlated variables, which in turn can exhibit a non-predictable coefficient[20]. Overall, the results indicate an improvement in the value relevance of accounting figures. In the post-adoption period, investors rely more on earnings and on the book value of last year. Panel B illustrates the effect of firms' operating performance on the value relevance analysis.

[20] Untabulated results from Variance Inflation Factor (VIF) indicates that the multicollinearity exists but is not very high. This explains the slightly weak negative coefficients and reassures the robustness of the analysis.

4.7.3.1 Effect of firms' operating performance on value relevance

Table 8. Value relevance

Panel B. Effect of firms' operating performance

$$P^{*}_{i,t+2} = \alpha_0 + \sum_{\tau=0}^{7} \beta_\tau BVPS_{i,t-\tau} + \sum_{\tau=0}^{7} \gamma_\tau NIPS_{i,t-\tau} + \varepsilon_{i,t}$$

	Poorly performing firms			Strongly performing firms		
	Pre	Post	Diff	Pre	Post	Diff
$BVPS_{i,t}$	0.1120	–0.4466*	–0.5586	0.0056	0.0517	0.0461
	(0.33)	(–1.73)		(0.64)	(1.23)	
$NIPS_{i,t}$	0.7557*	0.2773**	–0.4784	0.1028**	0.7099***	0.6071***
	(1.80)	(2.17)		(2.04)	(2.70)	
$BVPS_{i,t-1}$	0.1313	–0.4298***	–0.5611	–0.0082*	0.0170	0.0252
	(0.37)	(–3.20)		(–1.89)	(0.46)	
$BVPS_{i,t-2}$	–0.3538	–0.3225*	0.0313	–0.0116*	–0.0518	–0.0402
	(–0.94)	(–1.92)		(–1.79)	(–1.43)	
$BVPS_{i,t-3}$	0.5633	0.4579	–0.1054	0.0003	0.0096	0.0093
	(0.92)	(0.92)		(0.08)	(0.20)	
$BVPS_{i,t-4}$	0.4787	–0.2033	–0.682	–0.0021	0.0128*	0.0149*
	(1.48)	(–0.39)		(–0.32)	(1.95)	
$BVPS_{i,t-5}$	–0.2456	–0.6011	–0.3555	0.0009	0.0040	0.0031
	(–0.88)	(–1.24)		(0.15)	(0.53)	
$BVPS_{i,t-6}$	–0.2043	–0.4503	–0.246	0.0042	–0.0072	–0.0114
	(–0.69)	(–1.23)		(0.78)	(–0.95)	
$BVPS_{i,t-7}$	0.1465	–0.6121	–0.7586	0.0008	0.0016	0.0008
	(0.51)	(–0.97)		(0.15)	(0.28)	
$NIPS_{i,t-1}$	0.1598	0.7643	0.6045	–0.0549	0.0121	0.067
	(0.24)	(1.29)		(–1.31)	(0.08)	
$NIPS_{i,t-2}$	0.5270	–0.4235	–0.9505	0.0926**	–0.1070	–0.1996
	(0.81)	(–0.85)		(2.20)	(–1.11)	
$NIPS_{i,t-3}$	–0.1414	0.5703	0.7117	0.1481**	0.4662***	0.3181*
	(–0.24)	(0.94)		(2.56)	(2.94)	
$NIPS_{i,t-4}$	–0.8185***	0.2199	1.0384	0.0355	–0.0704	–0.1059
	(–11.05)	(0.39)		(0.62)	(–0.33)	
$NIPS_{i,t-5}$	0.1464*	–0.2899	–0.4363	–0.0141	–0.0192	–0.0051
	(1.94)	(–0.36)		(–0.32)	(–0.18)	
$NIPS_{i,t-6}$	–0.2891***	0.9343*	1.2234**	–0.0155	0.1315**	0.147
	(–4.87)	(1.94)		(–0.33)	(2.02)	
$NIPS_{i,t-7}$	0.1838***	0.2575	0.0737	0.0445	0.1523	0.1078
	(4.53)	(0.52)		(1.10)	(0.83)	
Cons	0.1248	2.4833		–0.1730***	–0.5820	
	(0.35)	(1.34)		(–2.67)	(–1.53)	
Observations	316	320		2110	2152	
Adj. R^2	0.463	0.164		0.006	0.044	

Robust t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

The poorly performing firms present a decrease in the value relevance of net income figures, except for the coefficient of $NIPS_{i,t-6}$, which increases between the periods, and the difference is significant. The other comparable net income coefficients are not significant during the post-adoption period. It is worth noting that similar to the past analysis, the significant negative coefficients of $NIPS_{i,t-4}$ and $NIPS_{i,t-6}$ can be

explained due to collinearity with $NIPS_{i,t-5}$ and $NIPS_{i,t-7}$. The coefficients of book value figures do not present any improvement across the two periods. Moreover, the adjusted R^2 decreases from 46.3% to 16.4%. In summary, these firms do not show any sign of improvement in the value relevance of accounting numbers.

The analysis of the strongly performing firms is similar to all firms. The coefficient (significance) of $NIPS_{i,t}$ increases across the periods from 0.1028 (5%) to 0.7099 (1%), and the difference between these coefficients is significant at 5%. In addition, the coefficients of $BVPS_{i,t-4}$, $NIPS_{i,t-3}$, and $NIPS_{i,t-6}$ increased in the post-adoption period. Finally, the adjusted R^2 increases from 0.6% to 4.4% across these periods. Thus, there is evidence of an improvement in the value relevance of accounting figures for these firms. Panel C illustrates the effect of bankruptcy possibility on the value relevance analysis.

4.7.3.2 Effect of bankruptcy possibility on value relevance

Table 8. Value relevance
Panel C. Effect of bankruptcy possibility

$$P^{*}_{i,t+2} = \alpha_0 + \sum_{\tau=0}^{7} \beta_\tau BVPS_{i,t-\tau} + \sum_{\tau=0}^{7} \gamma_\tau NIPS_{i,t-\tau} + \varepsilon_{i,t}$$

	Firms' AZ<1.2			Firms' AZ>1.2		
	Pre	Post	Diff	Pre	Post	Diff
$BVPS_{i,t}$	–0.0589*	0.0329	0.0918	0.0104	0.0515	0.0411
	(–1.69)	(0.28)		(1.14)	(1.19)	
$NIPS_{i,t}$	0.6171**	0.1948	–0.4223	0.1032*	0.7213***	0.6181***
	(2.30)	(1.13)		(1.95)	(2.66)	
$BVPS_{i,t-1}$	–0.0157	–0.1369	–0.1212	–0.0075	0.0181	0.0256
	(–0.68)	(–1.15)		(–1.61)	(0.49)	
$BVPS_{i,t-2}$	0.0835***	0.1725	0.089	–0.0123*	–0.0610	–0.0487
	(3.12)	(1.11)		(–1.86)	(–1.55)	
$BVPS_{i,t-3}$	–0.0065	0.0970	0.1035	–0.0004	0.0085	0.0089
	(–0.04)	(0.53)		(–0.09)	(0.17)	
$BVPS_{i,t-4}$	0.2709**	–0.0507	–0.3216*	–0.0027	0.0139**	0.0166*
	(2.16)	(–0.77)		(–0.42)	(1.99)	
$BVPS_{i,t-5}$	–0.1451	–0.0714**	0.0737	–0.0007	0.0042	0.0049
	(–0.73)	(–2.26)		(–0.11)	(0.55)	
$BVPS_{i,t-6}$	–0.0408	–0.0010	0.0398	0.0034	–0.0069	–0.0103
	(–0.57)	(–0.03)		(0.60)	(–0.87)	
$BVPS_{i,t-7}$	–0.0189	–0.0198	–0.0009	0.0021	0.0013	–0.0008
	(–0.44)	(–0.38)		(0.35)	(0.21)	
$NIPS_{i,t-1}$	–0.0422	0.1719	0.2141	–0.0413	0.0226	0.0639
	(–0.23)	(0.45)		(–1.00)	(0.14)	
$NIPS_{i,t-2}$	0.1754	–0.3804	–0.5558	0.0993**	–0.1224	–0.2217
	(0.76)	(–0.87)		(2.28)	(–1.28)	
$NIPS_{i,t-3}$	–0.1686	0.1058	0.2744	0.1617***	0.4778***	0.3161*
	(–0.49)	(0.21)		(2.68)	(2.87)	
$NIPS_{i,t-4}$	–0.6550***	0.0243	0.6793	0.0465	–0.0618	–0.1083
	(–3.52)	(0.07)		(0.82)	(–0.28)	
$NIPS_{i,t-5}$	–0.0154	–0.0944	–0.079	–0.0182	–0.0387	–0.0205
	(–0.07)	(–0.12)		(–0.40)	(–0.37)	
$NIPS_{i,t-6}$	–0.2038	0.4009**	0.6047	–0.0126	0.1463**	0.1589
	(–1.38)	(2.06)		(–0.26)	(2.23)	
$NIPS_{i,t-7}$	0.1272	0.5488	0.4216	0.0423	0.1476	0.1053
	(1.59)	(0.83)		(1.02)	(0.78)	
Cons	0.3236	–0.7498		–0.1364**	–0.5474	
	(0.29)	(–0.61)		(–2.16)	(–1.56)	
Observations	240	240		2186	2232	
Adj. R^2	0.555	–0.018		0.007	0.045	

Robust t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

There is no evidence that firms with high bankruptcy probability (AZ < 1.2) have more value relevant accounting amounts. The coefficient of $NIPS_{i,t}$ decreases from 0.6171 (significant at 5%) to 0.1948 (not significant). The coefficient of $NIPS_{i,t-6}$ increases from -0.2038 to 0.4009; however, this difference is not significant. Book value

figures present a similar trend as $NIPS_{i,t}$ after the adoption of IFRS. In addition, the adjusted R^2 decreases from 55.5% to -1.8%.

There is evidence of an increase in the value relevance of accounting numbers for firms with low bankruptcy possibility (AZ > 1.2). The coefficient for $NIPS_{i,t}$ ($NIPS_{i,t-3}$) increases from 0.1032 (0.1617) to 0.7213 (0.4778) and is significantly positive at 10% (1%) and 1% (1%). In the post-adoption period, the coefficients for $BVPS_{i,t-4}$ and $NIPS_{i,t-6}$ are significantly positive at 5%, and the adjusted R^2 increases from 0.7% to 4.5%. These results indicate that investors rely on accounting figures of earlier quarters. It is worth noting that this result is similar to the result for all firms. The last panel of table 8 (Panel D) shows the analysis for firms that list or do not list on U.S. stock exchanges.

4.7.3.3. Effect of listing on U.S. stock exchanges on value relevance

Table 8. Value relevance
Panel D. Effect of listing on U.S. stock exchanges

$$P^{*}_{i,t+2} = \alpha_0 + \sum_{\tau=0}^{7} \beta_\tau BVPS_{i,t-\tau} + \sum_{\tau=0}^{7} \gamma_\tau NIPS_{i,t-\tau} + \varepsilon_{i,t}$$

	Xlist firms			Non–Xlist firms		
	Pre	Post	Diff	Pre	Post	Diff
$BVPS_{i,t}$	0.1956**	–0.3587	–0.5543**	–0.0189	0.0625	0.0814
	(2.00)	(–1.14)		(–1.66)	(1.43)	
$NIPS_{i,t}$	–0.1236	1.7140***	1.8376***	0.1331**	0.6064**	0.4733**
	(–0.53)	(2.98)		(2.22)	(2.40)	
$BVPS_{i,t-1}$	–0.0275	–0.0558	–0.0283	–0.0191**	0.0238	0.0429
	(–0.28)	(–0.49)		(–2.25)	(0.62)	
$BVPS_{i,t-2}$	0.0770	0.1003	0.0233	–0.0053	–0.0764	–0.0711
	(0.75)	(1.02)		(–0.51)	(–1.64)	
$BVPS_{i,t-3}$	0.1657	–0.0763	–0.242	0.0086	0.0382	0.0296
	(1.45)	(–0.44)		(1.00)	(0.74)	
$BVPS_{i,t-4}$	0.1631	–0.1354	–0.2985*	0.0106	0.0148**	0.0042
	(1.37)	(–1.41)		(0.97)	(1.96)	
$BVPS_{i,t-5}$	0.0756	0.0989	0.0233	0.0128*	0.0033	–0.0095
	(0.57)	(1.45)		(1.78)	(0.43)	
$BVPS_{i,t-6}$	0.0989	–0.0401	–0.139	0.0097	–0.0062	–0.0159*
	(0.97)	(–0.38)		(1.49)	(–0.76)	
$BVPS_{i,t-7}$	0.0879	–0.1506	–0.2385	–0.0089*	0.0017	0.0106
	(1.35)	(–1.04)		(–1.77)	(0.30)	
$NIPS_{i,t-1}$	–0.0111	0.4184	0.4295	–0.0919*	0.0643	0.1562
	(–0.05)	(1.09)		(–1.67)	(0.34)	
$NIPS_{i,t-2}$	0.0398	0.2165	0.1767	0.1042	–0.1233	–0.2275
	(0.38)	(0.46)		(1.53)	(–1.23)	
$NIPS_{i,t-3}$	0.1557	1.1133*	0.9576**	0.0143	0.3945**	0.3802**
	(0.71)	(1.75)		(0.19)	(2.33)	
$NIPS_{i,t-4}$	–0.2260	–0.6784	–0.4524	–0.2098	0.0102	0.22
	(–1.04)	(–1.62)		(–1.61)	(0.04)	
$NIPS_{i,t-5}$	–0.3093*	–0.2310	0.0783	–0.1835**	–0.0693	0.1142
	(–1.76)	(–0.86)		(–2.55)	(–0.80)	
$NIPS_{i,t-6}$	–0.4862**	0.1576	0.6438	–0.0445	0.1369**	0.1814
	(–2.34)	(0.83)		(–1.22)	(2.07)	
$NIPS_{i,t-7}$	–0.2558	0.3535	0.6093	0.0658**	0.1426	0.0768
	(–1.28)	(0.83)		(2.54)	(0.66)	
Cons	–3.6563***	2.3016		0.1408	–0.6948	
	(–3.13)	(1.06)		(1.49)	(–1.84)	
Observations	456	456		1970	2016	
Adj. R^2	0.087	0.094		0.058	0.042	

Robust t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

There is evidence that earnings are more value relevant in the post-adoption period for both Xlist and Non-Xlist firms. For Xlist firms, the coefficient of $NIPS_{i,t}$ ($NIPS_{i,t-3}$) increases from -0.1236 to 1.7140 significant at 1% (0.1557 to 1.1133 significant at 10%). Book value amounts do not present any significant increase, and the adjusted R^2 increases

from 8.7% to 9.4%. For Non-Xlist firms, the coefficient of $NIPS_{i,t}$ increases from 0.1331 to 0.6064 significant at 5%. The coefficients of $NIPS_{i,t-3}$ and $NIPS_{i,t-6}$ also increase and are significant at 5%; in addition, the coefficient of $BVPS_{i,t-4}$ increases slightly. These indicate that investors rely on these past figures. Although the adjusted R^2 presents a slight decrease from 5.8% to 4.2%, the joint evidence indicates an overall improvement in the value relevance.

In summary, only the poorly performing firms and the firms with high bankruptcy probability do not present an improvement in the value relevance of accounting numbers; all the other groups present an improvement. It is worth noting that both Xlist and Non-Xlist firms present an improvement in the value relevance of accounting numbers. Overall, the results from the sample of all firms indicate an improvement in the value relevance of accounting numbers.

The next section illustrates the additional analysis regarding earnings management via accruals.

4.7.4 Additional accruals aggressiveness analysis

This section investigates the degree of the accrual analysis via equation 13. The results are presented in table 9.

Table 9. Effect of mandatory adoption of IFRS on accruals

$$ACC_{i,t} = \alpha_0 + \beta_1 IFRS_{i,t} + \beta_2 DIFFVC_{i,t} + \beta_3 PPE_{i,t} + \beta_4 INVTA_{i,t} + \alpha_1 LogMV_{i,t} + \alpha_2 GROWTH_{i,t} + \alpha_3 MVISU_{i,t} + \alpha_4 LEV_{i,t} + \alpha_5 DISSUE_{i,t} + \alpha_6 TURN_{i,t} + \alpha_7 CF_{i,t} + \alpha_8 AUD_{i,t} + \alpha_9 NUMEX_{i,t} + \alpha_{10} XLIST_{i,t} + \alpha_{11} BTMV_{i,t} + \alpha_{12} GDP_{i,t} + \alpha_{13} PW_i + \alpha_{14} I_i + \alpha_{15} M_i + \alpha_{16} U_i + \alpha_{17} L_i + \alpha_{18} Inn_i + \sum_{d=1}^{12} \alpha_{d+18} NAICS_i + \sum \alpha_y QuarterControls_t + \varepsilon_{i,t}$$

	Pred. Sign	All	Poorly performing firms	Strongly performing firms	Firms' AZ<1.2	Firms' AZ>1.2	Xlist firms	Non–Xlist firms
$IFRS_{i,t}$	–	–0.0080***	0.0091	–0.0108***	–0.0088	–0.0082***	–0.0043	–0.0086**
		(–2.72)	(1.57)	(–3.01)	(–0.62)	(–3.06)	(–1.01)	(–2.47)
$INVTA_{i,t}$	?	–1.6904**	–2.1895***	–1.4626	–10.9935**	–0.9893	0.5081	–1.8538**
		(–2.50)	(–3.31)	(–1.79)	(–2.20)	(–1.84)	(0.51)	(–2.55)
$PPE_{i,t}$	–	–0.0264**	–0.0032	–0.0283***	0.0305	–0.0365***	–0.0249	–0.0279**
		(–2.49)	(–0.07)	(–2.64)	(1.11)	(–3.17)	(–1.15)	(–2.38)
$DIFFVC_{i,t}$	+	–0.0083	–0.0215	–0.0053	–0.0672	–0.0101	–0.0147	–0.0074
		(–0.91)	(–1.20)	(–0.52)	(–1.30)	(–1.10)	(–1.59)	(–0.72)
$LogMV_{i,t}$	+	0.0038	–0.0005	0.0060***	–0.0059	0.0057***	0.0069	0.0033
		(1.73)	(–0.09)	(3.02)	(–1.00)	(3.04)	(1.13)	(1.44)
$BTMV_{i,t}$	–	–0.0006	0.0015	–0.0006	–0.0040	–0.0006	–0.0047***	–0.0006
		(–0.73)	(0.68)	(–0.64)	(–1.54)	(–0.68)	(–3.35)	(–0.63)
$LEV_{i,t}$	–	–0.0005	–0.0027	–0.0004	–0.0002	–0.0011	–0.0105**	–0.0004
		(–0.99)	(–0.94)	(–0.75)	(–0.37)	(–1.43)	(–2.43)	(–0.86)
$GROWTH_{i,t}$	+	0.0044**	0.0018	0.0046**	0.0090	0.0053**	0.0038	0.0045
		(2.11)	(0.39)	(1.98)	(1.89)	(2.36)	(1.17)	(1.93)
$MVISU_{i,t}$	+	0.0094	0.0253**	0.0061	–0.0290	0.0226***	0.0184	0.0077
		(0.65)	(2.50)	(0.35)	(–0.73)	(3.46)	(1.52)	(0.47)
$CF_{i,t}$	–	–0.7517***	–0.7306***	–0.7668***	–0.6159***	–0.7676***	–0.7372***	–0.7549***
		(–17.48)	(–7.38)	(–16.90)	(–6.77)	(–17.94)	(–20.62)	(–15.72)
$DISSUE_{i,t}$	–	–0.0003	0.0011	–0.0000	–0.0444	–0.0000	–0.0062	0.0001
		(–0.14)	(0.40)	(–0.01)	(–1.08)	(–0.01)	(–0.70)	(0.04)
$TURN_{i,t}$	–	0.0385***	0.0093	0.0432**	–0.0589	0.0482***	0.0555***	0.0358**
		(2.68)	(0.48)	(2.59)	(–0.55)	(3.39)	(4.67)	(2.22)
$GDP_{i,t}$	+	0.0188	0.3408	–0.0218	–0.2048	–0.0015	0.1730	–0.0112
		(0.23)	(1.58)	(–0.25)	(–0.38)	(–0.02)	(1.26)	(–0.12)
Fixed effects:								
AUD		Yes	Yes	Yes	Yes	Yes	Yes	Yes
XLIST		Yes	Yes	Yes	Yes	Yes	Yes	Yes
NAICS		Yes	Yes	Yes	Yes	Yes	Yes	Yes
NUMEX		Yes	Yes	Yes	Yes	Yes	Yes	Yes
P		Yes	Yes	Yes	Yes	Yes	Yes	Yes
I		Yes	Yes	Yes	Yes	Yes	Yes	Yes
M		Yes	Yes	Yes	Yes	Yes	Yes	Yes
L		Yes	Yes	Yes	Yes	Yes	Yes	Yes
Inn		Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cons		0.2384	0.3233	0.1799	1.8571*	0.1045	–0.1492	0.2793*
		(1.88)	(1.88)	(1.21)	(2.09)	(1.02)	(–0.67)	(2.03)
Observations		4944	640	4304	480	4464	912	4032
Adj. R^2		0.414	0.410	0.427	0.307	0.488	0.552	0.404

Robust t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Note that the coefficient of $IFRS_{i,t}$ indicates whether the level of accruals is higher or not after the adoption of IFRS. This coefficient is significantly negative for all firms, strongly performing firms, firms' AZ>1.2, and Non-Xlist firms. Thus, this is evidence

that the level of accruals is lesser after the IFRS adoption, and as such, the earnings management level is lower. In contrast, the coefficient of $IFRS_{i,t}$ is statistically insignificant for poorly performing firms, firms' AZ<1.2 and Xlist firms, which indicates that the earnings management level is not reduced after the IFRS adoption. Therefore, only the poorly performing firms, firms with high bankruptcy possibility and firms that list on U.S. stock exchanges do not present an improvement regarding the level of earnings management via accruals.

The next section discusses an additional analysis based on the external auditors' reports.

4.8 Additional analyses - auditors' reports regarding the quality of firms' financial statements

This thesis argues that managers can still utilise their discretion even under mandatory adoption of IFRS when the institutional environment (enforcement of accounting standards, investor protection) is weak. As such, this study investigates this behaviour by examining the auditors' reports of all firms in the population. The auditors' reports were manually collected from the official companies' websites, the securities market regulator and the stock exchanges' websites. This thesis investigates the auditors' reports for each firm in the first two years following the mandatory adoption of IFRS.

The auditors' reports are classified according to 13 categories as follows: (1) auditor agrees with the financial statements; (2) auditor's report is not provided; (3) auditor's report is not available for one of the years; (4) auditor's report is not provided because the firm has failed, or it has delisted or merged with another company; (5) the firm provides a non-audited statement; (6) the auditor does not agree with the financial statements; (7) the auditor indicates that several problems (tax issues, judicial actions or

loan issues) may affect the financial position and performance of the firm; (8) the auditor indicates that the firm does not comply with the IFRS requirements with regard to the recognition of "Investments in other societies"; (9) Auditor indicates that the firm does not perform an impairment test according to IFRS; (10) Auditor indicates that the firm does not recognise dividends according to IFRS; (11) Auditor indicates that the firm does not recognise depreciation according to IFRS; (12) Auditor does not have sufficient evidence to audit the statements; (13) Auditor agrees with the financial statements but reserves his report regarding tax issues/investments in other societies/judicial actions or due to the lack of information.

This analysis is shown for all firms from the population, all firms from the sample and the three sets of subsamples defined according to the hypotheses (section 4.5). Table 10, Panel A, reports the results of the population (1399 firms).

Table 10. Auditors' reports on the two years following the mandatory adoption of IFRS

Panel A. Population

Category	Situation of auditor's report	Argentina	Brazil	Chile	Mexico	Peru	Total
1	Auditor agrees with the financial statements	44	290	100	77	102	613
2	Auditor's report is not provided	11	1	37	15	7	71
3	Auditor's report is not available for one of the years	3	6	5	5	2	21
4	Auditor's report is not provided because firm has failed/delisted/merged	48	307	90	85	77	607
5	Firm provides a non-audited statement	0	0	0	1	0	1
6	Auditor does not agree with the financial statements	0	1	0	0	0	1
7	Auditor indicates that tax/judicial actions/loan problems may affect the financial position and performance of the firm	10	36	4	1	3	54
8	Auditor indicates that the firm does not follow IFRS regarding the recognition of "Investments in other societies"	0	1	2	0	0	3
9	Auditor indicates that the firm does not perform an impairment test according to IFRS	0	1	0	0	1	2
10	Auditor indicates that the firm does not recognise dividends according to IFRS	0	0	2	0	0	2
11	Auditor indicates that the firm does not recognise depreciation according to IFRS	0	0	0	0	1	1
12	Auditor does not have sufficient evidence to audit the statements	0	2	0	0	0	2
13	Auditor agrees with the financial statements but reserves his report regarding tax issues/investments in other societies/judicial actions or due to the lack of information	0	15	1	0	5	21
	Total	116	660	241	184	198	1399

Columns 1 and 2 refer to the situation of the auditor's report whereas columns 3 to 7 indicate the number of auditors' reports according to each category by each country. It is apparent from this table that a significant number of firms (43%) have failed, or have delisted during the sampling period. Thus, there are 792 active firms during this period. Additionally, companies and security market regulators do not provide several auditors' reports during this period. In total, category 1 indicates that 9% of the active firms do not provide an auditor's report. Additionally, 21 auditors' reports are not available for one of the years after the IFRS adoption. It is worth noting that one Mexican company provided a non-audited financial statement (category 5) to their stakeholders. These results might

be due to the lack of proper enforcement. There is also an issue regarding a Brazilian company in which the auditor does not agree with the financial statement. This illustrates that the manager might have manipulated the accounting figures in his own benefit, disregarding the accounting rules.

As discussed in the introduction (Chapter 1) of the thesis, Latin America has faced recession and stagnant GDP growth in recent years, which may contribute to decrease firms' performance. As such, this is consistent with the results reported in category 7, which shows that 7% of the firms face a risk of technical default and long-term continuity is at stake. It is worth noting that managers still have room upon the financial statements as categories 8 to 12 indicate that some companies did not follow IFRS regarding several aspects, which includes the recognition of investment in other societies, dividends, depreciation, and application of an impairment test. Moreover, two Brazilian firms have not provided sufficient evidence to auditors, which constrained these auditors' reports. Lastly, category 13 shows that auditors provide their opinion with reservations for approximately 3% of active firms.

Next, table 10, Panel B, addresses the auditors' reports regarding the sample following the same fashion. However, it is worth noting that the number of categories are reduced to 8 due to the limited number of firms in the sample (309).

Table 10. Auditors' reports on the two years following the mandatory adoption of IFRS
Panel B. All sampling firms (Common size sample – 309 firms)

Category	Description	Argentina	Brazil	Chile	Mexico	Peru	Total
1	Auditor agrees with the financial statements	1	146	61	55	18	281
2	Auditor's report is not provided	0	0	3	4	0	7
3	Auditor's report is not available for one of the years	0	0	2	6	0	8
4	Auditor's report is not provided because firm has failed/delisted/merged	0	3	0	2	0	5
5	Firm provides a non-audited statement	0	0	0	1	0	1
6	Auditor does not agree with the financial statements	0	1	0	0	0	1
7	Auditor indicates that tax/judicial actions/loan problems may affect the financial position and performance of the firm	0	3	0	0	0	3
8	Auditor indicates that the firm does not follow IFRS regarding the recognition of "Investments in other societies"	0	1	2	0	0	3
	Total	1	154	68	68	18	309

It is worth noting that 15 companies did not provide the auditor's report, or it is not available for one of the years following the mandatory adoption of IFRS. Five auditors' reports were not available because the companies were delisted. Only one company provided a non-audited financial statement. Moreover, there is evidence that three companies did not follow the IFRS requirements to recognise investments in other societies. In summary, 28 companies have an issue with their auditor's report; these are approximately 9% of the sample size. Overall, this evidence highlights that the enforcement in the implementation of IFRS in Latin American countries is weak and managers of listed industrial firms can use their discretion to report the financial statements. The next panel shows the situation for the poorly performing firms.

Table 10. Auditors' reports on the two years following the mandatory adoption of IFRS
Panel C. Poorly performing firms

Category	Description	Argentina	Brazil	Chile	Mexico	Peru	Total
1	Auditor agrees with the financial statements	0	9	8	14	2	33
2	Auditor's report is not provided	0	0	0	2	0	2
3	Auditor's report is not available for one of the years	0	0	0	1	0	1
4	Auditor's report is not provided because firm has failed/delisted/merged	0	1	0	1	0	2
5	Firm provides a non-audited statement	0	0	0	1	0	1
6	Auditor does not agree with the financial statements	0	0	0	0	0	0
7	Auditor indicates that tax/judicial actions/loan problems may affect the financial position and performance of the firm	0	0	0	0	0	0
8	Auditor indicates that the firm does not follow IFRS regarding the recognition of "Investments in other societies"	0	0	1	0	0	1
	Total	0	10	9	19	2	40

For the poorly performing firms, seven companies do not provide a fully compliant auditor's report (categories 2, 3, 4, 5, and 8); these represent approximately 17.5% of the sample size. This illustrates that a higher percentage of managers tend to utilise their discretion in order to boost the financial situation of the firm. This result is also consistent to those from the multivariate analysis as there are more firms involved in accounting irregularities, these firms do not present an improvement in their accounting quality. The next panel provides the results for the strongly performing firms.

Table 10. Auditors' reports on the two years following the mandatory adoption of IFRS
Panel D. Strongly performing firms

Category	Description	Argentina	Brazil	Chile	Mexico	Peru	Total
1	Auditor agrees with the financial statements	1	137	53	41	16	248
2	Auditor's report is not provided	0	0	3	2	0	5
3	Auditor's report is not available for one of the years	0	0	2	5	0	7
4	Auditor's report is not provided because firm has failed/delisted/merged	0	2	0	1	0	3
5	Firm provides a non-audited statement	0	0	0	0	0	0
6	Auditor does not agree with the financial statements	0	1	0	0	0	1
7	Auditor indicates that tax/judicial actions/loan problems may affect the financial position and performance of the firm	0	3	0	0	0	3
8	Auditor indicates that the firm does not follow IFRS regarding the recognition of "Investments in other societies"	0	1	1	0	0	2
	Total	1	144	59	49	16	269

For these firms, the results and inferences are similar to the one for all firms. That is, 21 (approximately 7.8%) of these firms do not have a fully compliant auditor's report. The next panel illustrates the situation classified for financial distress firms.

Table 10. Auditors' reports on the two years following the mandatory adoption of IFRS
Panel E. Financial distress firms

Category	Description	Argentina	Brazil	Chile	Mexico	Peru	Total
1	Auditor agrees with the financial statements	0	13	2	7	1	23
2	Auditor's report is not provided	0	0	0	2	0	2
3	Auditor's report is not available for one of the years	0	0	0	0	0	0
4	Auditor's report is not provided because firm has failed/delisted/merged	0	1	0	1	0	2
5	Firm provides a non-audited statement	0	0	0	1	0	1
6	Auditor does not agree with the financial statements	0	1	0	0	0	1
7	Auditor indicates that tax/judicial actions/loan problems may affect the financial position and performance of the firm	0	1	0	0	0	1
8	Auditor indicates that the firm does not follow IFRS regarding the recognition of "Investments in other societies"	0	0	0	0	0	0
	Total	0	16	2	11	1	30

From Panel E, seven firms out of 30 have an issue regarding the auditor's report (categories 2, 4, 5, 6 and 7); this represents approximately 23% of the sample size. It is worth noting that this percentage is much higher than that for all firms, which indicates that managers from these companies tend to utilise more their discretion over the implementation of IFRS in comparison with the analysis of Panel B. Similar to the results found for the poorly performing firms, as there are more firms involved in accounting irregularities, these firms do not present an improvement in their accounting quality, which is consistent with the evidence from the multivariate analysis. Next, Panel F shows the results of this analysis for non-financial distress firms.

Table 10. Auditors' reports on the two years following the mandatory adoption of IFRS

Panel F. Non-financial distress firms

Category	Description	Argentina	Brazil	Chile	Mexico	Peru	Total
1	Auditor agrees with the financial statements	1	133	59	48	17	258
2	Auditor's report is not provided	0	0	3	2	0	5
3	Auditor's report is not available for one of the years	0	0	2	6	0	8
4	Auditor's report is not provided because firm has failed/delisted/merged	0	2	0	1	0	3
5	Firm provides a non-audited statement	0	0	0	0	0	0
6	Auditor does not agree with the financial statements	0	0	0	0	0	0
7	Auditor indicates that tax/judicial actions/loan problems may affect the financial position and performance of the firm	0	2	0	0	0	2
8	Auditor indicates that the firm does not follow IFRS regarding the recognition of "Investments in other societies"	0	1	2	0	0	3
	Total	1	138	66	57	17	279

For this group of firms, the number of firms that do not have a fully compliant auditor's report is 21. The key issue is that this amount represents approximately 7.5% of the sample size. In other words, this amount is lower than the one found for all firms (9%), and much lower than the one for financial distress firms (23%). Thus, the number

of managers that tend to utilise their discretion is lower in comparison with financial distress firms. Panel G illustrates the results for companies that list on U.S. stock exchanges (Xlist).

Table 10. Auditors' reports on the two years following the mandatory adoption of IFRS

Panel G. Xlist firms

Category	Description	Argentina	Brazil	Chile	Mexico	Peru	Total
1	Auditor agrees with the financial statements	1	20	13	20	3	57
2	Auditor's report is not provided	0	0	0	0	0	0
3	Auditor's report is not available for one of the years	0	0	0	0	0	0
4	Auditor's report is not provided because firm has failed/delisted/merged	0	0	0	0	0	0
5	Firm provides a non-audited statement	0	0	0	0	0	0
6	Auditor does not agree with the financial statements	0	0	0	0	0	0
7	Auditor indicates that tax/judicial actions/loan problems may affect the financial position and performance of the firm	0	0	0	0	0	0
8	Auditor indicates that the firm does not follow IFRS regarding the recognition of "Investments in other societies"	0	0	0	0	0	0
	Total	1	20	13	20	3	57

It is worth noting that companies that list on the U.S. stock market have a fully compliant auditor's report. Thus, all auditors' reports of 57 companies are in accordance with the legislation. This indicates that the enforcement of this market is higher than in Latin American stock markets. The next panel shows the results for companies that do not list on U.S. stock exchanges (Non-Xlist).

Table 10. Auditors' reports on the two years following the mandatory adoption of IFRS

Panel H. Non-Xlist firms

Category	Description	Argentina	Brazil	Chile	Mexico	Peru	Total
1	Auditor agrees with the financial statements	0	126	48	35	15	224
2	Auditor's report is not provided	0	0	3	4	0	7
3	Auditor's report is not available for one of the years	0	0	2	6	0	8
4	Auditor's report is not provided because firm has failed/delisted/merged	0	3	0	2	0	5
5	Firm provides a non-audited statement	0	0	0	1	0	1
6	Auditor does not agree with the financial statements	0	1	0	0	0	1
7	Auditor indicates that tax/judicial actions/loan problems may affect the financial position and performance of the firm	0	3	0	0	0	3
8	Auditor indicates that the firm does not follow IFRS regarding the recognition of "Investments in other societies"	0	1	2	0	0	3
	Total	0	134	55	48	15	252

The result for firms that do not list on the U.S. stock market is similar to Panel A; that is, 11.1% do not provide a fully compliant auditor's report. This percentage is much higher than in comparison to Non-Xlist firms. Referring to the result for Xlist firms, this confirms that the enforcement of emerging markets is weaker than that in the U.S.

In conclusion, these findings suggest that the institutional settings in Latin American countries are weak, and as such, there are still opportunities for managers' discretion upon the financial statements.

The next section reports an overview of this study and the conclusions.

4.9 Conclusion

This study investigates whether the mandatory adoption of IFRS is associated with higher accounting quality in Latin America according to three accounting quality metrics based on quarterly data in order to track accurately managers' behaviour in adopting IFRS. Therefore, this approach provides new insights about earnings smoothing and the delay in recognition of bad news. Moreover, this work considers three firm-level factors

that would affect the IFRS adoption as follows: (i) operating performance, (ii) bankruptcy possibility and (iii) listing on U.S. stock exchanges. In addition, the value relevance approach of Barth et al. (2008) and the approach of Basu (1997) for timely recognition of losses are introduced with lagged independent variables in order to track managers' behaviour in a timely manner. Table 11 summarizes the main results of this chapter, which are discussed next.

Table 11. Summary of an improvement in accounting quality

Sample group	N	Barth et al. (2008) Models (1-6)	Model (9) Timely recognition of Losses	Model (12) Value Relevance	Model (13) Accruals Aggressiveness
All firms	309	Inconclusive	Yes	Yes	Yes
Poorly performing firms	40	Inconclusive	No	No	No
Strongly Performing firms	269	Inconclusive	Yes	Yes	Yes
Firms' AZ < 1.2	30	Inconclusive	No	No	No
Firms' AZ > 1.2	279	Inconclusive	Yes	Yes	Yes
Xlist Firms	57	Inconclusive	No	Yes	No
Non-Xlist Firms	252	Inconclusive	Yes	Yes	Yes

There is evidence that managers still undertake earnings management behaviour in the post-IFRS period. However, the degree of earnings management via accruals has decreased since the IFRS adoption (Model 13). Earnings are more value relevant in the post- than in the pre-IFRS adoption period (Model 12). The results indicate that the delay in recognising bad news is reduced from seven to three quarters in the post-IFRS period (Model 9). Conversely, there is evidence that firms may write off losses when they experience good news or inflate earnings when they experience bad news. These improvements in accounting quality are not valid for firms with poor operating performance and high bankruptcy possibility. Nevertheless, the results for Xlist firms are inconsistent; the only evidence of improvement in accounting quality is in the value relevance of accounting numbers.

From this set of results, this study concludes that the mandatory adoption of IFRS improved the accounting quality of Latin American firms. In addition, the findings show that firms still delay the recognition of bad news; however, this delay is reduced during the post-adoption period. Hence, an overall improvement is perceived. Moreover, firm-level factors affect the manager's behaviour in adopting IFRS. Financial characteristics of the firm such as poor performance and high bankruptcy possibility may constrain managers' willingness in adopting IFRS.

This study provides new insight regarding the effects of the IFRS adoption on accounting quality. Past literature argues that the improvement on accounting quality is due to a combination of factors such as enforcement, managers' incentives and the adoption of IFRS. As perceived in the results from the questionnaire (Chapter 3), it is worth noting that unlike developed countries where the degree of enforcement is high, the enforcement of these countries is weak, and it has not been substantially improved since the IFRS adoption. Thus, this illustrates that IFRS can improve the accounting quality in a country level. Considering firm-level factors, the results indicates that due to these factors influence managers' incentives to adopt IFRS. Thus, for strongly operating performing firms and for firms with a low bankruptcy possibility, the accounting quality increases. Thus, this might relate to managers' desire to attract overseas investment. Managers from poorly operating firms and firms with a high bankruptcy possibility may not have strong incentive to increase the accounting quality if the adoption of IFRS expose more the firms' financial woes. These results suggest that for developing countries, an increase in accounting quality might relate to managers' intention of attracting investments from the capital markets.

Chapter 5: The impact of mandatory IFRS adoption on analysts' information environment in Latin America

5.1 Introduction

After examining the impact of IFRS on accounting quality, this thesis turns to investigate the effect of IFRS on analysts' forecasts in Latin American countries. This Chapter begins by reviewing the literature regarding the role of analysts in the market and the changes in the analysts' information environment following the adoption of IFRS. Then, this study presents the research opportunities and investigates whether mandatory adoption of IFRS improves analysts' information environment in Latin American countries where institutional settings of enforcement and investor protection are weak. The aims of this study are as follows. Firstly, it examines whether the adoption of IFRS improves analysts' information environment measured in terms of earnings forecast accuracy and dispersion, analysts' target price forecast dispersion, as well as the number of analysts following firms. Secondly, this study investigates whether firm-level reporting incentives affect analysts' information environment. Thirdly, this study turns to re-examine the impact of mandatory adoption of IFRS on analysts' information environment after controlling for firm-level reporting incentives. Fourthly, this study also investigates whether mandatory adoption of IFRS improves the precision of public, private and consensus information based on the work of Barron et al. (1998) and Byard et al. (2011). This is important to evaluate whether the changes in properties of analysts' forecasts and information environment stem from changes on public information or private information.

This chapter is organised as follows. Section 5.2 discusses the literature review. Section 5.3 presents the research opportunities based on the gaps of previous literature.

Section 5.4 develops the hypotheses. Section 5.5 discusses the econometric methods employed. Section 5.6 illustrates the data and sampling procedures. Section 5.7 presents the results, which are presented according to the hypotheses of this study. Finally, Section 5.8 concludes.

5.2 Literature review

This section firstly reviews the role of analysts in the market and the purpose of the accounting information for market participants. Then, the studies that investigate the impact of mandatory adoption of IFRS on analysts' information environment are discussed. The summary of the empirical studies that investigate the impact of IFRS adoption on analysts' information environment are available on Appendix 3, section 2.

5.2.1 Accounting information and the role of analysts in the market

The two functions of accounting information are, first, to enable shareholders and creditors to evaluate a firm's financial performance and position; and second, to help investors to monitor their capital (Beyer et al., 2010). Analysts derive their forecasts based on two sources of information: public and private (Barron et al., 1998). Public information comprises all available information in the market such as public documents, financial statements and news etc. Private information is collected from private sources, such as via their relationship with the managers. Thus, analysts' forecasts reflect how well analysts can predict a firm's future based on these two types of information. It is worth noting that financial statements are a major source of public information to analysts. Consequently, it is important that accounting information be of high quality, because it has direct implications for analysts' forecasts (Jiao, Koning, Mertens and Roosenboom, 2012; Horton et al., 2013).

Analysts are responsible for several roles; to issue buy or sell recommendations, follow firms, follow news and their impact to the market, perform financial analysis of firms, and in particular, to issue accurate forecasts, which can enable investors to better assess their risks and investments. Thus, research in the past 40 years has focused on how analysts process and digest information in issuing their forecasts (Cragg and Malkiel, 1968; Brown and Rozeff, 1978; Fried and Givoly, 1982; Abarbanell, 1991; Beyer et al., 2010; Jiao et al., 2012; Horton et al., 2013). Prior literature has also investigated whether analysts' forecasts are more accurate than econometric forecasts (Brown and Rozeff, 1978; Fried and Givoly, 1982; Brown, Griffin, Hagerman and Zmijewski, 1987). The emphasis given on analysts by these studies relies on analysts' capacity to convey information to the market. This is based on the market efficient hypothesis, which argues that stock prices reflect all available information in the market (Kothari, 2001). Analysts issuing more accurate forecasts increase investors' confidence and may increase the flow of investments, which in turn could improve the market efficiency. Therefore, analysts have a key role in this environment, which can affect investors' valuation and drift stock prices (Jennifer and Leonard, 1997; Hou, Hung and Gao, 2014; Kim and Song, 2015). All these works highlight the importance of studying analysts' forecasts and their behaviour due to their capacity to affect market participants (Loh and Mian, 2006).

It is worth noting that the literature suggests that there is a caveat in investigating analysts' forecasts because some analysts have conflicts of interest in issuing forecasts. That is, Beyer (2008) and Beyer et al. (2010) argue that analysts' forecasts are usually optimistic, and analysts may be influenced by two factors: first, the expectations of companies' managers they follow, and second, by the managers of the investment banking industry (that is, the broker house that they work for). Firstly, companies' managers are constantly managing analysts' expectations in order to avoid negative

earnings surprises following the earnings' announcement. That is, if analysts issue a higher than expected earnings forecast, and the actual earnings fall below their expectation, this would cause a negative earnings surprise to the market. In order to try to avoid this, managers can try to persuade analysts who follow their firm (Abarbanell and Lehavy, 2003; Beaver, Cornell, Landsman and Stubben, 2008). Secondly, managers of the investment banking industry (broker house) seek the expansion of their business, and therefore, they may affect how analysts issue their forecasts (Guan, Lu and Wong, 2012). For example, analysts are more likely to issue a buy-side recommendation than a sell-side recommendation due to the concerns of their managers (Beyer et al., 2010). Although some studies indicate that analysts may have a conflict of interest in issuing forecasts and recommendations, this is not valid for all analysts. In general, independent analysts cover a broad range of firms, which they do not have a conflict of interest as well.

In summary, the literature illustrates that accounting information can have an impact on the quality of analysts' forecasts; as IFRS is expected to increase the quality, consistency, reliability of the accounting information, it should have an impact on analysts' forecasts.

5.2.2 Analysts' information environment and IFRS adoption

The key studies that focus on analysts' information environment after the mandatory IFRS adoption are those of Byard et al. (2011), Tan, Wang and Welker (2011), Jiao et al. (2012), Choi, Peasnell and Toniato (2013), Horton et al. (2013), Panaretou et al. (2013), Houqe, Easton and Zijl (2014), Liang and Riedl (2014), and Preiato et al. (2015), which are discussed next.

Byard et al. (2011) investigated the effect of the mandatory IFRS adoption in Europe between 2003 and 2006. The authors used voluntary adopters as a control group to assess the initial (2 years) effect of IFRS adoption. They employed three proxies to capture analysts' information environment as follows: absolute forecast errors, forecast dispersion and the number of analysts following a firm. These measures are more directly related to the impact of mandatory IFRS adoption than other analyst-related measures that also reflect non-accounting information (like stock recommendations, forecast revisions, and forecast frequency) (Byard et al., 2011). To control for institutional factors, the authors used the rule of law from Kaufmann et al. (2007), and the measure (GAPP differences) of Bae, Tan and Welker (2008) to control for differences in IFRS and local GAAP. Moreover, the authors control for firm-level reporting incentives through six measures as follows: profitability, growth opportunities, leverage, ownership concentration, international range, and quality of auditors. They find that analysts' forecast errors and analysts' forecast dispersion present a greater decrease for firms with stronger reporting incentives in countries where the enforcement is weak and the differences between IFRS and local GAAP are higher. The authors conclude that IFRS improves analysts' information environment only when it is properly enforced. However, this thesis argues that this might not always be the case, as in countries with weak enforcement, firms may have incentives to increase their accounting quality and attract foreign investments and this will likely enhance analysts' information environment.

Distinguished from Byard et al. (2011), Tan et al. (2011) focus on the location of the analysts covering a firm; that is, they measure whether the number of foreign and local analysts increased and whether their earnings forecast is improved. The authors investigated the effect of this issue on mandatory adopters. The authors find that the number of analysts following firms increases for both local and foreign analysts following

the mandatory IFRS adoption. On the other hand, the same trend did not occur prior to the IFRS in several countries and there is an improvement in earnings' forecast accuracy for foreign analysts. However, the forecast accuracy for local analysts does not improve. Therefore, this evidence illustrates that the comparability and usefulness of accounting information increased following the mandatory IFRS adoption for foreign analysts, but it has not impacted local analysts significantly. Jiao et al. (2012) investigated the year prior to the mandatory IFRS adoption and the year after the mandatory adoption in Europe. Like Byard et al. (2011), they find that the forecasts are more accurate and less dispersed after the IFRS adoption.

While the reported studies are international, Choi et al. (2013) focus on the UK market solely and argue that they hold constant "the legal environment, corporate governance structure and enforcement institutions." Although this might not necessarily be true, as these institutional factors could change over time. They focus on the value relevance of accounting information and whether the analysts' forecast accuracy increased after the mandatory adoption by analysing the period from 2003 to 2007. The authors find that the analysts' forecast accuracy increased, and dispersion decreased during these periods. These findings support IASB's objective of enhancing the usefulness of accounting information and are beneficial for analysts who can issue more accurate forecasts.

Horton et al. (2013) re-examined whether the mandatory IFRS adoption is really related to improvements on analysts' information environment. If so, which attributes of IFRS are associated with these improvements? They tested whether these findings were driven by increased comparability and higher accounting information quality or whether IFRS facilitated earnings management in order for managers to meet the earnings targets. They evaluated this situation by analysing the analysts' coverage in the following three

situations. Firstly, they examined whether the firm changed from local GAAP to IFRS, but also continued to report in local GAAP. For those analysts covering these firms, they expect comparability would decrease. Secondly, they investigated whether the firm changed from local GAAP to IFRS only. For those analysts covering these firms, they expect comparability would remain the same. Finally, they investigated whether the firm changed to report from multiple GAAP to IFRS only. For this case, they expect comparability to increase. They also compared whether reconciliation effects from local GAAP to IFRS affected earnings forecasts. They find that forecast accuracy increases more for firms with previous accounting choices that differ more from IFRS. Moreover, they find that forecast accuracy increases more for mandatory adopters than for voluntary adopters or non-adopters. Overall, considering evidence from the three situations, they argue that IFRS drives improvements in forecast accuracy due to increased comparability and higher informational benefits.

Panaretou et al. (2013) focus on a specific topic about whether the accounting for derivatives enhanced transparency, or it increased earnings volatility of the U.K market after the mandatory IFRS adoption. In particular, they investigated the effect of hedge accounting on asymmetry information (measured by analysts' forecast error and dispersion). According to the authors, they investigated the U.K because the use of hedge accounting in the U.K is widespread, and its disclosure has been mandatory since 1999. They find that firms reporting derivatives present significantly lower analysts' forecast error and dispersion in the post-IFRS adoption period than the control group. The authors conclude that the bid-ask spread of firms reporting hedge accounting reduces significantly in the post-IFRS period. The author's view is consistent with enhanced disclosure and transparent information following IFRS adoption.

Houqe et al. (2014) focus on the impact of the IFRS adoption on the analysts' forecast accuracy on weak investor protection countries (France, Germany, and Sweden). They only compared 2003 (pre-adoption) and 2011 (mandatory adoption). The sample size of forecast accuracy (dispersion) is 208 (196) for 2003 and 370 (337) for 2011. The overall finding is that both analysts' forecast error and dispersion are reduced in 2011. Moreover, France and Germany, which have the lowest investor protection score (index of La Porta et al. (1998)), present greater reduction on analysts' forecast error and dispersion. Authors' views of higher information environment after the IFRS adoption are similar to past studies of Horton et al. (2013) and Panaretou et al. (2013).

Liang and Riedl (2014) investigated whether the fair value measurement of IFRS affects analysts' forecast accuracy. Exploiting the property that U.K (U.S.) reports their assets using fair value (historical value); the authors investigated a balance sheet forecast net asset value (NAV) and EPS. Their sample consists of national U.K and U.S. firms from the real estate industry from 2002 to 2010. The authors find that the balance sheet forecast is greater for U.K firms, and the accuracy is attenuated during the financial crisis. Nevertheless, U.K firms that adopt the full fair value for measuring EPS demonstrate lower analysts' forecast accuracy than U.S. companies. This result is consistent despite the fact that the fair value introduces a few omitted and non-observable terms in the time-series trend. Therefore, this issue likely affects the accuracy of forecasts that are unable to predict such terms with high precision.

Preiato et al. (2015) investigated analysts' forecast accuracy and dispersion in the post-IFRS adoption period after controlling for various proxies of enforcement. They used the index of Brown et al. (2014) and other six enforcement indexes of which three vary over time, and the others are static. The three indexes that vary over time are as follows: the rule of law from Kaufmann, Kraay and Mastruzzi (2010); the measure based

on Jackson and Roe (2009) of resourcing of securities' market regulators, and the average size of a company's audit fee relative to its total assets. The three remaining are the origin of the country's legal system (La Porta et al., 1998); the public and private enforcement measures of La Porta, Lopez-De-Sinales and Shleifer (2006), and the survey of 2008 from the World Economic Forum (WEF, 2010). Overall, countries with higher scores on the enforcement index present higher improvements on both analysts' forecast accuracy and dispersion. Nevertheless, the authors do not find that IFRS per se is related to the improvements in analysts' forecast accuracy and dispersion. These results shed light on whether the empirical findings of past studies are indeed reliable. Therefore, the authors suggest that the past evidence should be revisited controlling for the factor of enforcement.

In summary, past studies report that there is an improvement in analysts' information environment (Horton et al., 2013; Panaretou et al., 2013; Houqe et al., 2014). However, Preiato et al. (2015) argue that the enforcement is responsible for this improvement. Consequently, past literature should be revisited by future studies controlling for enforcement. This generates new research opportunities, which are discussed in the next section.

5.3 Research opportunities

It is apparent from the literature review that research in emerging markets regarding this topic is very limited. Thus, an opportunity arising from emerging markets, in particular in Latin America, is the impact of the mandatory IFRS adoption on analysts' information environment. The past literature indicates that an improvement in analysts' information environment is due to a combination of factors such as firm-level reporting incentives, the enforcement of accounting standards, investor protection mechanisms and

the adoption of IFRS (Byard et al., 2011; Christensen, 2012; Christensen et al., 2013; Preiato et al., 2015). Enforcement and investor protection mechanisms of Latin American countries are weak in comparison with developed countries (La Porta et al., 1998; Brown et al., 2014). Moreover, according to Chapter 3, there is no significant difference in these institutional settings in the pre- and the post-IFRS adoption period. Thus, this situation allows this study to pinpoint the effects of IFRS and firm-level reporting incentives. Secondly, although analysts are responsible for many tasks, Beyer et al. (2010) argue that the literature has focused mostly on one role of analysts: providing earnings' forecasts. Thus, this implies other opportunities for research regarding the other types of forecasts that analysts issue. In particular, how would the IFRS adoption affect these other types of forecasts? Another avenue for research is to investigate how the IFRS adoption would affect the precision of public information in countries with weak institutional settings. This is helpful to examine whether any changes found on analysts' information environment is derived by changes in the precision of public information, private information, or both.

5.4 Hypotheses development

The first objective of this study is to examine whether mandatory adoption of IFRS can improve the quality of analysts' information environment in Latin American countries whose institutional settings of enforcement and investor protection are weak. This study conjectures that there is a positive effect of mandatory adoption of IFRS on the quality of analysts' information environment measured in terms of analysts' forecast accuracy, number of analysts following firms, dispersion of earnings forecasts and dispersion of target price forecasts. Firstly, this is because regulators expect that IFRS adoption will increase the transparency and quality of financial information of Latin

American firms in contrast with those prepared according to domestic GAAP (SVS, 2006; CNBV, 2008; CVM, 2008; CNV, 2009; CONASEV, 2010). Moreover, financial information is one of the major information sources for analysts (Jiao et al., 2012). Thus, as the quality of accounting information is expected to improve in the post-IFRS adoption period, analysts' earnings forecast accuracy should improve as well. Secondly, previous literature suggests that countries with a big gap between the local standards and IFRS, which is the case of Latin American countries, should present an improvement in analysts' forecast accuracy (Byard et al., 2011). Thus, the hypothesis is as follows:

H5a: The accuracy of earnings forecasts is higher in the post-adoption period than that in the pre-adoption period.

This thesis predicts that there is a reduction in analysts' forecast dispersion. First, as mandatory adoption of IFRS increases the comparability of accounting information among firms, analysts can compare target firms' information with other firms based on the same accounting standard. They can also compare their predictions with others, which would contribute to the improvement of their forecast accuracy and reduce dispersion (Houqe et al., 2014). Accordingly, the number of international analysts following Latin American firms could increase. Domestic analysts may also cover firms from other markets that published their financial reports according to IFRS, thus, they can also benefit from increased comparability (Tan et al., 2011). As such, the disagreement among them should reduce. Second, Jiao et al. (2012) suggest that analysts rely on both public and private information to generate forecasts. After the IFRS adoption, accounting information is expected to increase in quality and quantity, which would help to reduce the influence of private information and enhance the usefulness of public information, which leads to lower forecast dispersion (Ball, 2006; Jiao et al., 2012; Horton et al., 2013; Houqe et al., 2014). Third, this study argues that Latin American firms tend to increase

the quality of accounting information via mandatory adoption of IFRS in order to attract investments since the financial crisis in mid-2007. In turn, this situation helps to reduce analysts' forecast dispersion. This argument finds its support on the signalling theory, as firms can signal the quality of their equity to investors by disclosing extra information and adopting additional mechanisms when the cost to rely and verify the information is high (Ross, 1979; Barth et al., 2008), which is the case in countries with weak institutional settings. Furthermore, Hope, Jin and Kang (2006) and Houqe et al. (2012) suggest that, according to the bonding theory, countries with weak investor protection mechanisms may have incentives to adopt IFRS in order to improve the comparability of financial information. This is because they want to "bond" higher quality of financial statements to their weak institutional setting in order to attract investments and increase investors' confidence (Hope et al., 2006). Thus, information in higher quality and quantity help to reduce analysts' disagreement, which leads to the following hypothesis:

H5b: The dispersion of earnings forecasts is lower in the post-adoption period than that in the pre-adoption period.

According to Lang and Lundholm (1996), the number of analysts following firms will increase if there is an improvement in firms' information environment. Mandatory IFRS adoption may reduce analysts' time and effort in acquiring and processing firms' information (Tan et al., 2011). This reduces the costs and barriers for foreign analysts to cover more firms over the world. Prior to IFRS, as there was a huge gap between domestic GAAP (mainly suited for taxation purposes) and IFRS (investor and market-orientated), international analysts faced greater challenges to follow Latin American firms. However, under IFRS, the adaptation costs are lower as analysts are aware of this standard, which reduce the barriers for international analysts to follow Latin American countries. A

similar trend has occurred in European countries (Byard et al., 2011; Houqe et al., 2014). As such, the hypothesis is as follows:

H5c: The number of analysts following firms is higher in the post-adoption period than that in the pre-adoption period.

This study expands the measures of information environment to target price forecasts. It is noteworthy that prior research on the impact of the IFRS adoption examined analysts' information environment by using earnings forecasts only (Byard et al., 2011; Jiao et al., 2012; Horton et al., 2013; Preiato et al., 2015). This study conjectures that the disagreement among analysts' target price forecasts will decline in the post-IFRS adoption period. Firstly, this is because mandatory adoption of IFRS might improve the accounting quality, and thus analysts would generally have more high-quality information available from the financial statements. As firms need to disclose more information due to the IFRS requirements, the information asymmetry among firms and investors is expected to decline. This helps analysts to shape their target price forecast. As such, considering that analysts rely on the financial statements to issue their forecasts (Bandyopadhyay, Brown and Richardson, 1995; Loh and Mian, 2006), high-quality information and lower information asymmetry would help to reduce the dispersion of the forecasts (Jiao et al., 2012; Horton et al., 2013). Secondly, earnings forecasts are one of the key inputs for predicting target price (Bandyopadhyay et al., 1995; Brav and Lehavy, 2003; Loh and Mian, 2006), and IFRS leads to higher disclosure and transparency, which enables analysts to issue earnings forecasts that are more accurate and less disperse, the disagreement in issuing target price should decrease among analysts. Thus, the hypothesis is as follows:

H5d: The dispersion of target price forecast is lower in the post-adoption period than that in the pre-adoption period.

The second objective of this study is to investigate whether firm-level incentives on the implementation of IFRS affect analysts' information environment. Previous studies report that the effects of the adoption of IFRS may be due to firms' incentives, enforcement of accounting standards and investor protection mechanisms (Ball, Kothari and Robin, 2000; Ball et al., 2003; Byard et al., 2011; Christensen et al., 2012; Christensen et al., 2013; Christensen et al., 2015). As the institutional setting of Latin American countries is weak, there are opportunities for managers using their discretion on the implementation of IFRS. Moreover, domestic accounting standards were mainly focused to suit government and tax needs, and therefore differed from IFRS, which is mainly suited to inform investors and external users. Latin American countries experienced an economic recession during the post-IFRS period, thus, in order to maintain the business growth, managers' desire of attracting foreign investments becomes stronger. IFRS adoption becomes their key signal to investors about the quality of accounting information. Therefore, this study sets the following hypothesis:

H6a: Firms with stronger reporting incentives present a greater improvement in their information environment in the post-adoption period in comparison to that in the pre-adoption period.

Afterwards, this thesis turns to examine whether mandatory adoption of IFRS can improve analysts' information environment in Latin American countries with weak institutional settings of enforcement and investor protection mechanisms after controlling for firm-level reporting incentives. In other words, this study investigates whether mandatory adoption of IFRS alone can be effective in improving analysts' information environment. The hypothesis is in the following:

H6b: Overall, the adoption of IFRS alone improves analysts' information environment significantly.

This is because chapter 3 shows that there is no significant improvement in the enforcement of accounting standards and investors protection mechanisms between the pre- and post-mandatory IFRS adoption period for Latin American countries. This study also cannot find any other relevant event concurrent with the same period. Therefore, the remaining factors to be considered are the mandatory adoption of IFRS and firm-level reporting incentives.

The third objective of this chapter is to investigate how mandatory adoption of IFRS affects analysts' public information, private information, or both. According to Kim and Verrechia (1994) and Byard et al. (2011), IFRS adoption may increase the quality of public information, as firms are required to disclose more information in comparison to domestic standards. Thus, as financial information is expected to increase in quantity and in quality, the precision of analysts' public information about a firm could increase (Ball, 2006; Barth et al., 2008; Horton et al., 2013). Moreover, considering that the precision of public information increases, analysts could rely more on public information in relation to private information in the post-IFRS period. This does not imply that analysts would reduce their weighting on the private information. Thus, this study predicts that IFRS would improve the precision of public information as well as the precision of public information in relation to all available information (consensus)[21]. Therefore, the hypotheses are as follows:

H7a: The precision of public information is higher in the post-adoption period than that in the pre-adoption period.

H7b: The precision of consensus information is higher in the post-adoption period than that in the pre-adoption period.

[21] If the precision of public information increases after mandatory adoption of IFRS, this also further supports an improvement in the dispersion of analysts' forecasts.

The next section illustrates the econometric methodology applied to test the hypotheses.

5.5 Research design

5.5.1 Measures of analysts' information environment

In order to test hypothesis *H5*, this thesis adopts four metrics to evaluate whether analysts' information environment improved after the IFRS adoption. Several metrics are used to evaluate the analysts' information environment, this approach is also adopted seeking more robust results, and also it examines different perspectives of the analysts' information environment for which the results will be helpful for investors, analysts and policy makers.[22] First, following Lang and Lundholm (1996) and Panaretou et al. (2013), the earnings' unsigned forecast error is calculated as follows[23]:

$$FE_{i,t}^{t} = \left|\left(ActualEPS_{i,t}^{t} - MeanforecastEPS_{i,t}^{t}\right)/SharePrice_{i,t-1}\right| \qquad (14)$$

where: $FE_{i,t}^{t}$ denotes current-year (the superscript *t*) earnings' forecast error for firm *i* in year *t* (the subscript *t*). $MeanforecastEPS_{i,t}^{t}$ represents the mean of the current-year earnings per share for firm *i* in year *t*. $ActualEPS_{i,t}^{t}$ is the realised earnings per share collected from the Actual file of I/B/E/S. $SharePrice_{i,t-1}$ is the share price in year *t-1*.[24] The forecasts included are taken during the six months prior the earnings announcement date, for further clarification for this calculations and the following calculations, please

[22] As these metrics are used also used to investigate the analysts' information environment for international firms in the literature, these metrics are also applicable in investigating the topic in Latin America as analysts also cover Latin American and international listed firms.
[23] The share price is the share price of firm *i* at the beginning of the year *t*.
[24] This thesis also calculates the median of current-year and one-year-ahead earnings forecasts to estimate the forecast error, as it minimizes potential problems associated with mean calculations due to outliers (Preiato et al., 2015). The results are similar, which imply the same conclusion.

refer to figure 3. This study calculates the one-year-ahead earnings (the superscript *t+1*) forecast error for firm *i* in year *t* ($FE_{i,t}^{t+1}$) in the same fashion.

The second metric is the dispersion of current-year earnings forecasts ($DISPFE_{i,t}^{t}$) of firm *i* in year *t*. According to Lang and Lundholm (1996) and Panaretou et al. (2013), it equals the standard deviation of forecasted *EPS* divided by the absolute mean of *EPS* forecast in equation (15)[25]:

$$DISPFE_{i,t}^{t} = StDev\left(forecastEPS_{i,t}\right)/\left|\left(MeanforecastEPS_{i,t}^{t}\right)\right| \quad (15)$$

This thesis also calculates the dispersion of one-year-ahead earnings forecasts ($DISPFE_{i,t}^{t+1}$) of firm *i* in year *t* in the same fashion. The third metric is the log of the number of analysts following a firm in the following model (16).

$$LOGFOLLOW_{i,t}^{t} = \log\left(FOLLOW_{i,t}^{t}\right) \quad (16)$$

where $FOLLOW_{i,t}^{t}$ denotes the number of analysts following firm *i* at deriving current-year forecast (the superscript *t*) in year *t (*the subscript *t)*. This variable is calculated for analysts following firm *i* at deriving one-year-ahead forecasts in the same fashion.

The fourth metric is the dispersion of current-year target price forecasts of firm *i* in year *t* ($DISPFETP_{i,t}^{t}$) in model (17).

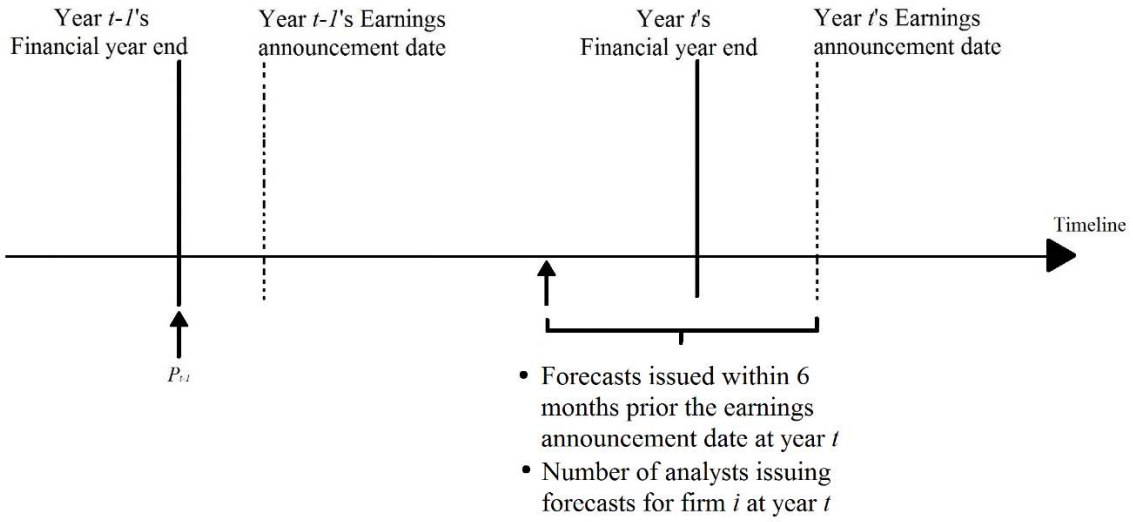
$$DISPFETP_{i,t}^{t} = StDev\left(forecastTP_{i,t}\right)/\left|\left(MeanforecastTP_{i,t}\right)\right| \quad (17)$$

where $StDev\left(forecastTP_{i,t}\right)$denotes the standard deviation of current-year target price of firm *i* in year *t*; $MeanforecastTP_{i,t}$ represents the absolute mean of target price forecasts of firm *i* in year *t*.

[25] This study also derives similar results scaling for stock price as in Byard et al. (2011) and Preiato et al. (2015). In order to calculate forecasts' dispersion, there is a requirement of a minimum of two analysts issuing forecasts for a firm.

This study calculates forecast errors and dispersion of forecasts according to forecast observations issued in the first six months[26] prior to the earnings announcement date of firm *i* in year t. Other market and accounting variables are calculated according to the financial year of firm *i*. Please also refer to Figure 3.

Figure 3. Illustration of the calculations of forecast error and forecast dispersion



Note: The observations of current-year and one-year-ahead earnings forecast errors, current-year target price are collected within the first six months prior to the earnings announcement date of firm *i* in year *t*. Then, the mean and median of forecast errors of current-year earnings and one-year-ahead earnings are calculated according to equation (14), dispersion of current-year earnings, one-year-ahead earning according to equation (15), number of analysts that issued forecasts according to model (16) and current-year target price according to equation (17). These are based on these observations with the first six months prior to the earnings announcement date of firm *i* in year *t*. Market and accounting variables are calculated according to the financial year end of firm *i* in year *t*.

The next section focuses on the approach to investigate hypothesis *H5*.

5.5.2 Overall impact of mandatory adoption of IFRS

To examine the overall impact of mandatory adoption of IFRS on analysts' information environment due to hypotheses *H5a, H5b, H5c and H5d*, this thesis estimates seven regressions according to models (18), (19) and (20) in the following.

[26] The criterion of the first six months was adopted because the aim is to evaluate the latest forecasts of the analysts which would better reflect the impact of IFRS. I did not have enough observations if one and three months before the earnings` announcement date were chosen as the cut-off point. As such, 6 months were adopted.

$$INFENV_{i,t}^{t} = \alpha + \beta_1 IFRS_{i,t} + \beta_2 EPS\Delta_{i,t} + \beta_3 LOGFOLLOW_{i,t}^{t} + \beta_4 R_{i,t-1} + \beta_5 SIZE_{i,t} + \beta_6 LOGHORIZON_{i,t}^{t} + \sum_{d=1}^{12} \beta_{d+6} NAICS_i + \sum_{c=1}^{5} \beta_{c+18} COUNTRY_i + \varepsilon_{i,t} \quad (18)$$

At model (18), $INFENV_{i,t}^{t}$ is a common variable, which denotes current-year earnings forecast error ($FE_{i,t}^{t}$), one-year-head earnings forecast errors ($FE_{i,t}^{t+1}$), dispersion of current-year earnings forecast error ($DISPFE_{i,t}^{t}$), or one-year-ahead earnings forecast error ($DISPFE_{i,t}^{t+1}$). $IFRS_{i,t}$ is equal to 1 if the forecasts are derived in the post-IFRS period and is 0 otherwise, for firm *i* at year *t*. The following variables are control variables. $EPS\Delta_{i,t}$ is the change in reported earnings of firm *i* from year *t-1* to *t* scaled by the share price in year *t-1*. It measures firms' performance (Liang and Riedl, 2014). $R_{i,t-1}$ are the stock returns of firm *i* in year *t-1*. It measures whether analysts incorporate all previous stock returns in their forecasts (Clement, Hales and Xue, 2011). $SIZE_{i,t}$ is the natural logarithm of market value of equity. This is because there are more analysts following large firms, who provide more information. $LOGHORIZON_{i,t}^{t}$ is the logarithm of 1 plus the average number of days between each analyst's earnings forecast, and the earnings announcement date for firm *i* in year *t*. It measures the forecast horizon between the date of the forecast and the earnings announcement date. Analysts' forecast error and dispersion may increase when the forecast horizon increases. There are twelve North American Industry Classification System ($NAICS_i$) group for the sampling firms. So, there are twelve industry dummies in the model: Dummy 1: Sector 11, agriculture, forestry, fishing & hunting; Dummy 2: Sector 21, mining, quarrying, oil & gas extraction; Dummy 3: Sector 22, utilities; Dummy 4: Sector 23, construction; Dummy 5: Sector 31-33, manufacturing; Dummy 6: Sector 42, wholesale trade; Dummy 7: Sector 44-45, retail

trade; Dummy 8: Sector 48-49, transportation & warehousing; Dummy 9: Sector 51, information; Dummy 10: Sector 54, Professional scientific and technical services; Dummy 11: Sector 72, accommodation & food services; Dummy 12: Sector 81 other services (exclude public administration, repair & maintenance). These industry dummies control for the effect of different operating risks in different industries and the effect of different regulations. $COUNTRY_i$ is a dummy variable for each country. It captures the effect of the institutional setting of the target countries. The results are similar when the enforcement proxy of Brown et al. (2014) is included.

$$LOGFOLLOW_{i,t}^{t} = \alpha + \beta_1 IFRS_{i,t} + \beta_2 SIZE_{i,t} + \sum_{d=1}^{12} \beta_{d+2} NAICS_i + \\ + \sum_{c=1}^{5} \beta_{c+14} COUNTRY_i + \varepsilon_{i,t} \quad (19)$$

Model (19) examines the impact of mandatory adoption of IFRS on the logarithm of the number of analysts issuing current-year earnings forecasts for the firms in the sample ($LOGFOLLOW_{i,t}^{t}$) due to hypothesis *H5c*. This study also examines the same impact on the number of analysts issuing one-year-ahead earnings forecasts ($LOGFOLLOW_{i,t}^{t+1}$).

$$DISPFETP_{i,t}^{t} = \alpha + \beta_1 IFRS_{i,t} + \beta_2 EPS\Delta_{i,t} + \beta_3 LOGFOLLOWTP_{i,t}^{t} + \beta_4 R_{i,t-1} \\ + \beta_5 SIZE_{i,t} + \beta_6 LOGHORIZONTP_{i,t}^{t} + \sum_{d=1}^{12} \beta_{d+6} NAICS_i \quad (20) \\ + \sum_{c=1}^{5} \beta_{c+18} COUNTRY_i + \varepsilon_{i,t}$$

Model (20) investigates the association between mandatory adoption of IFRS and dispersion of current-year target price forecasts ($DISPFETP_{i,t}^{t}$) due to the hypothesis *H5d*. $LOGFOLLOWTP_{i,t}^{t}$ denotes the logarithm of the number of analysts issuing current

year target price forecasts for firm *i* at year *t*. $LOGHORIZONTP_{i,t}^{t}$ is the logarithm of 1 plus the average number of days between each analyst's target price forecast, and the earnings announcement date for firm *i* at year *t*. The other independent variables are defined in the above models.

The next section focuses on investigating whether firm-level reporting incentives play a role in shaping analysts' information environment.

5.5.3 Firm-level reporting incentives

The second objective of this chapter is to investigate whether firms that have stronger incentives to adopt IFRS would perceive a greater improvement in analysts' information environment, which matches the hypothesis *H6a.* Prior research (Ashbaugh, 2001; Christensen et al., 2007; Barth et al., 2008; Byard et al., 2011; Daske et al., 2013) indicates that firms that: (1) are more profitable, (2) have more growth opportunities, (3) are more highly leveraged, (4) are more international, and (5) have higher-quality auditors have stronger incentives to provide high-quality financial reporting. As such, this study follows the model of Byard et al. (2011) by introducing the above five factors into the models (21), (22) and (23). They are in the following.

$$\begin{aligned} INFENV_{i,t}^{t} = {} & \alpha + \beta_1 AUD_{i,t} + \beta_2 BTMV_{i,t} + \beta_3 LEV_{i,t} + \beta_4 NUMEX_{i,t} + \beta_5 ROA_{i,t} \\ & + \beta_6 EPS\Delta_{i,t} + \beta_7 LOGFOLLOW_{i,t}^{t} + \beta_8 R_{i,t-1} + \beta_9 SIZE_{i,t} \\ & + \beta_{10} LOGHORIZON_{i,t}^{t} + \sum_{d=1}^{12} \beta_{d+10} NAICS_i \\ & + \sum_{c=1}^{5} \beta_{c+22} COUNTRY_i + \varepsilon_{i,t} \end{aligned} \tag{21}$$

$$LOGFOLLOW_{i,t}^{t} = \alpha + \beta_1 AUD_{i,t} + \beta_2 BTMV_{i,t} + \beta_3 LEV_{i,t} + \beta_4 NUMEX_{i,t} + \beta_5 ROA_{i,t} + \beta_6 SIZE_{i,t} + \sum_{d=1}^{12} \beta_{d+6} NAICS_i + \sum_{c=1}^{5} \beta_{c+18} COUNTRY_i + \varepsilon_{i,t} \quad (22)$$

$$DISPFETP_{i,t}^{t} = \alpha + \beta_1 AUD_{i,t} + \beta_2 BTMV_{i,t} + \beta_3 LEV_{i,t} + \beta_4 NUMEX_{i,t} + \beta_5 ROA_{i,t} + \beta_6 EPS\Delta_{i,t} + \beta_7 LOGFOLLOWTP_{i,t}^{t} + \beta_8 R_{i,t-1} + \beta_9 SIZE_{i,t} + \beta_{10} LOGHORIZONTP_{i,t}^{t} + \sum_{d=1}^{12} \beta_{d+10} NAICS_i + \sum_{c=1}^{5} \beta_{c+22} COUNTRY_i + \varepsilon_{i,t} \quad (23)$$

where $AUD_{i,t}$ equals one if firm *i* is audited by one of the big 4 auditors in year *t*, otherwise is 0. $BTMV_{i,t}$ is the book to market value ratio for firm *i* at year *t*. It is a proxy for growth opportunities. $LEV_{i,t}$ is equal to total liabilities divided by total assets; $NUMEX_{i,t}$ is the number of stock exchanges that a firm list on. It denotes a firm's internationality. $ROA_{i,t}$ is equal to net income divided by total assets.

This thesis expects that the coefficients on $AUD_{i,t}$, $LEV_{i,t}$, $ROA_{i,t}$ and $NUMEX_{i,t}$ at the above models 21 and 23 (22) will be significantly negative (positive) whereas the coefficient of $BTMV_{i,t}$ will be significantly positive (negative) if a firm has stronger reporting incentives and can improve analysts' information environment.

Afterwards, this study turns to investigate whether the adoption of IFRS can improve analysts' information environment in Latin American countries with weak institutional setting after controlling for the effect of firm-level reporting incentives, which is the hypothesis *H6b.* Therefore, the $IFRS_{i,t}$ dummy is introduced into the

following models (24), (25) and (26). These are the main models to investigate whether IFRS can be effective in improving analysts' information environment.

$$INFENV_{i,t}^{t} = \alpha + \beta_1 IFRS_{i,t} + \beta_2 AUD_{i,t} + \beta_3 BTMV_{i,t} + \beta_4 LEV_{i,t} + \beta_5 NUMEX_{i,t} + \beta_6 ROA_{i,t} + \beta_7 EPS\Delta_{i,t} + \beta_8 LOGFOLLOW_{i,t}^{t} + \beta_9 R_{i,t-1} + \beta_{10} SIZE_{i,t} + \beta_{11} LOGHORIZON_{i,t}^{t} + \sum_{d=1}^{12} \beta_{d+11} NAICS_i + \sum_{c=1}^{5} \beta_{c+23} COUNTRY_i + \varepsilon_{i,t} \quad (24)$$

$$LOGFOLLOW_{i,t}^{t} = \alpha + \beta_1 IFRS_{i,t} + \beta_2 AUD_{i,t} + \beta_3 BTMV_{i,t} + \beta_4 LEV_{i,t} + \beta_5 NUMEX_{i,t} + \beta_6 ROA_{i,t} + \beta_7 SIZE_{i,t} + \sum_{d=1}^{12} \beta_{d+7} NAICS_i + \sum_{c=1}^{5} \beta_{c+19} COUNTRY_i + \varepsilon_{i,t} \quad (25)$$

$$DISPFETP_{i,t}^{t} = \alpha + \beta_1 IFRS_{i,t} + \beta_2 AUD_{i,t} + \beta_3 BTMV_{i,t} + \beta_4 LEV_{i,t} + \beta_5 NUMEX_{i,t} + \beta_6 ROA_{i,t} + \beta_7 EPS\Delta_{i,t} + \beta_8 LOGFOLLOWTP_{i,t}^{t} + \beta_9 R_{i,t-1} + \beta_{10} SIZE_{i,t} + \beta_{11} LOGHORIZONTP_{i,t}^{t} + \sum_{d=1}^{12} \beta_{d+11} NAICS_i + \sum_{c=1}^{5} \beta_{c+23} COUNTRY_i + \varepsilon_{i,t} \quad (26)$$

This study expects that the coefficient on $IFRS_{i,t}$ will remain consistent to those in models (18), (19) and (20) due to the hypothesis *H6b*.

The next section examines whether there is a significant association between IFRS adoption and the changes in the precision of public, private and consensus information.

5.5.4 Analysis of the precision of public, private and consensus information

The above models demonstrate the impact of mandatory adoption of IFRS on analysts' information environment. This section further examines this topic in relation to the precision of the information in order to find whether the improvement on analysts' information environment is due to improvements in the public information, private information, or both. The models to investigate the precision of information started with Barry and Jennings (1992), and Abarbanell, Lanen and Verrechia (1995). Afterwards, Barron et al. (1998) extended their measure in order to model the type and the precision of information that analysts use to issue their forecasts. Barron et al. (1998) argue that analysts' forecasts errors are composed of a common and an idiosyncratic error. The common part reflects the error in the public information that analysts rely on, whereas the idiosyncratic error arises from the error in the private information that analysts rely upon[27]. As such, in order to examine the precision of information after the IFRS adoption, this study adopts the approach of Barron et al. (1998) and Byard et al. (2011), which is detailed as follows:

$$PUBLIC_{i,t} = \frac{SE_{i,t} - D_{i,t}/N_{i,t}}{\left[\left(1 - 1/N_{i,t}\right)D_{i,t} + SE_{i,t}\right]^2} \quad (27)$$

$$PRIVATE_{i,t} = \frac{D_{i,t}}{\left[\left(1 - 1/N_{i,t}\right)D_{i,t} + SE_{i,t}\right]^2} \quad (28)$$

$$CONSENSUS_{i,t} = \frac{PUBLIC_{i,t}}{PUBLIC_{i,t} + PRIVATE_{i,t}} \quad (29)$$

[27] Note that the measure for PUBLIC reflects the error arising from both common and private information. Nevertheless, the measure for private reflects the forecast dispersion, which only reflects the idiosyncratic error arising from private information (Barron et al., 1998).

where $D_{i,t}$ denotes variance of analysts' forecasts for firm *i* in year *t*. $SE_{i,t}$ is the squared error in the mean forecast, and $N_{i,t}$ is the number of forecasts for firm *i* in year *t*. Different from the approach of Barron et al. (1998) and Byard et al. (2011), this study standardizes[28] the variables of $PUBLIC_{i,t}$, $PRIVATE_{i,t}$ and $CONSENSUS_{i,t}$ after the calculations of models (27), (28) and (29). This is because the denominator of models (27) and (28) is too small in comparison to the numerator, which provides very large numbers and affects the scale of the variables in the following model (30).[29] After the procedure of standardization, this study estimates the association between $IFRS_{i,t}$, and $PUBLIC_{i,t}$, $PRIVATE_{i,t}$ and $CONSENSUS_{i,t}$ via model (30) respectively. $PRECISION_{i,t}$ is a common variable, which denotes $PUBLIC_{i,t}$, $PRIVATE_{i,t}$ and $CONSENSUS_{i,t}$.

$$PRECISION_{i,t} = \alpha + \beta_1 IFRS_{i,t} + \beta_2 SIZE_{i,t} + \sum_{d=1}^{12} \beta_{d+2} NAICS_i + \sum_{c=1}^{5} \beta_{c+14} COUNTRY_i + \varepsilon_{i,t} \quad (30)$$

In order to maintain the consistency, $SIZE_{i,t}$ is also standardized in the same fashion.[30] This study predicts that the coefficient of $IFRS_{i,t}$ associates with $PUBLIC_{i,t}$ or $CONSENSUS_{i,t}$ positively, which indicates an improvement in the precision of public information or consensus information brought by mandatory adoption of IFRS. As

[28] The standardization consists of subtracting for each variable the mean of the variable and scaling by its standard deviation.

[29] This study finds similar results by following the method of Byard et al. (2011), and by bootstrapping the sample 1000 times.

[30] As in Byard et al. (2011), $SIZE_{i,t}$ is used as the only control variable because it is the variable that has higher influence over the quantity and quality of the information available. Another variable such as the number of analysts following could also affect the precision of information, the inferences are similar if $LOGFOLLOW_{i,t}^{t}$ is included.

analysts may still rely on private information, therefore, this thesis does not exclude the possibility of the positive association between $IFRS_{i,t}$ and $PRIVATE_{i,t}$.

The data and sampling procedures of this study are presented in the next section.

5.6 Data and sampling procedures

The target population of this research is all publicly listed companies excluding banks and financial institutions in Argentina, Brazil, Chile, Mexico, and Peru. The other Latin American countries are excluded either because they adopted IFRS after 2014, or their required data was not available. Data for the sample were obtained from the Detail file of the Institutional Brokers' Estimate System (I/B/E/S). The actual earnings per share data are also taken from the Actual file of I/B/E/S. The market and financial data are from the DataStream database. Although I/B/E/S starts covering analysts' EPS forecasts since 1980, coverage in Latin America is limited because analysts tend to follow only large firms, which have higher trading volumes (Hayes, 1998). Therefore, the number of analysts following firms in Latin America is lower in comparison with developed nations. After the introduction of IFRS, the number of analysts following firms increases for all five countries in the sample. This thesis divides the sample period into two reporting regimes: the pre-adoption window is the last four fiscal years a firm reported using its domestic standards, whereas the post-adoption window is the first four years a firm reported using IFRS[31]. There are 618 firms on the Detail File of I/B/E/S, however, excluding the financial sector, there are 534 companies. Panel A of table 12 reports the sample structure of the five countries. In order to include as many sample firms as possible, this study includes firms whose data is available in at least one of the eight years

[31] Unlike the analyses on previous chapters, this thesis adopts 4 years before and after the IFRS adoption for this analysis in order to increase the sample size. This is due to limited number of analysts issuing forecasts for Latin American firms.

around the official date of IFRS adoption. Panel B shows that there is 1 firm from Argentina, 76 firms from Brazil, 17 firms from Chile, 3 firms from Mexico and no firms from Peru. The total number of sample firms is 97.[32]

[32] This is the number of firms with available data for all control variables regarding earnings forecasts. The number of firms for the other analyses is different due to data availability. The number of firms for each analysis is indicated at the bottom of each table.

Table 12. Sample structure 2003-2015

Panel A. Number of firms from I/B/E/S

NAICS	Argentina	Brazil	Chile	Mexico	Peru	Total
11	3	1	3	2		9
21	7	17	8	9	16	57
22	12	30	20	7	5	74
23	8	13	16	25	6	68
31–33	16	41	29	38	22	146
42						
44–45	1	18	9	17	1	46
48–49	3	11	8	4		26
51	1	2	2	7	1	13
54	1	3	1	2		7
72		4	6	10	2	22
81	3	34	6	19	4	66
Total	55	174	108	140	57	534

Panel B. Number of firms whose data is available at least for one of the years during the period of eight years around the date of mandatory adoption of IFRS.[33]

NAICS	Argentina	Brazil	Chile	Mexico	Peru	Total
11		1	1			2
21		5	2			7
22		5	6			11
23		6	0			6
31–33		17	3	1		21
42						
44–45		8	2	1		11
48–49		7	1	1		9
51	1	1				2
54		1				1
72			1			1
81		25	1			26
Total	1	76	17	3	0	97

Note: Panel A reports the number of firms downloaded from IBES for the sample period from 2004 to 2015. NAICS 11: agriculture, forestry, fishing & hunting; NAICS 21: mining, quarrying, oil & gas extraction; NAICS 22: utilities; NAICS 23: construction; NAICS 31–33: manufacturing; NAICS 42: wholesale trade; NAICS 44–45: retail trade; NAICS 48–49: transportation & warehousing; NAICS 51: information; NAICS 54: Professional scientific & technical services; NAICS 72: accommodation & food services; NAICS 81: other services (excluded public administration, religious organization, grantmaking & giving services, voluntary organization, social advisory services, human right organization, civil and social organization, business & professional, political & labour organization, business association, professional organization, private household etc.). Panel B shows the number of firms whose data is available for at least one year between the four years before and after the date of mandatory adoption of IFRS.

The next table illustrates the descriptive statistics of the variables.

[33] This thesis derives similar results for 115 firms which some of the control variables are not available through the 8 years of data. Respectively: Argentina: 1, Brazil: 82, Chile: 28, and Mexico: 4. Moreover, the sample size is higher for analysts issuing target price forecasts. There are 225 firms with data following the sampling criteria; however, this analysis is limited by the number of firms with available earnings' announcement dates. Moreover, the sample size is higher for the analysis regarding the number of analysts following Latin American firms.

Table 13. Descriptive statistics

	Pre				Post			
	Obs	Mean	Median	Std. Dev	Obs	Mean	Median	Std. Dev
Test variables								
$FE_{i,t}^{t}$	257	0.0415	0.0116	0.173	369	**0.0312****	0.00842	0.163
$FE_{i,t}^{t+1}$	267	0.103	0.0225	0.348	354	0.105	0.0187	0.517
$LOGFOLLOW_{i,t}^{t}$	264	1.394	1.386	1.006	371	**1.871*****	**2.079*****	1.001
$LOGFOLLOW_{i,t}^{t+1}$	272	1.412	1.386	1.005	354	**1.993*****	**2.197*****	0.964
$DISPFE_{i,t}^{t}$	202	0.0216	0.0107	0.0290	325	0.0199	0.0103	0.0280
$DISPFE_{i,t}^{t+1}$	223	0.0283	0.0168	0.0374	329	**0.0263****	**0.0125****	0.0446
$DISPFETP_{i,t}^{t}$	238	0.0850	0.0306	0.152	348	**0.0702****	**0.0444****	0.0993
$PUBLIC_{i,t}$	168	-0.125	0.259	1.018	308	**0.0682***	**0.356***	0.819
$PRIVATE_{i,t}$	168	0.0784	-0.298	0.973	308	-0.0428	-0.379	0.853
$CONSENSUS_{i,t}$	168	-0.246	-0.153	1.063	308	**0.134*****	**0.325*****	0.762
Incentives variables								
$AUD_{i,t}$	264	0.898	1	0.304	371	0.906	1	0.293
$BTMV_{i,t}$	234	0.647	0.495	0.547	366	0.683	**0.571****	0.602
$LEV_{i,t}$	259	1.431	0.970	2.301	369	1.641	1.230	1.830
$NUMEX_{i,t}$	264	0.345	0	0.707	371	0.240	0	0.605
$ROA_{i,t}$	259	0.0480	0.0497	0.0714	369	0.0404	0.0457	0.0872
Control variables								
$SIZE_{i,t}$	237	7.330	7.245	1.263	368	**7.535****	**7.527****	1.189
$EPS\Delta_{i,t}$	219	-0.00746	-0.00936	0.0590	360	**0.00833*****	**0*****	0.0576
$R_{i,t-1}$	144	0.0891	-0.00335	0.486	268	0.0295	**-0.0708***	0.446
$LOGHORIZON_{i,t}^{t}$	260	4.501	4.727	0.793	365	4.501	4.700	0.705
$LOGHORIZON_{i,t}^{t+1}$	289	6.243	6.256	0.232	365	6.238	6.240	0.257
$LOGHORIZONTP_{i,t}^{t}$	233	4.014	3.912	0.442	330	4.010	3.970	0.337
$LOGFOLLOW_{i,t}^{t}$	264	1.394	1.386	1.006	371	**1.871*****	**2.079*****	1.001
$LOGFOLLOW_{i,t}^{t+1}$	272	1.412	1.386	1.005	354	**1.993*****	**2.197*****	0.964
$LOGFOLLOWTP_{i,t}^{t}$	261	2.511	2.708	1.299	357	**3.237*****	**3.526*****	1.259

*, **, *** significant difference between means (medians) in Pre and in Post at 10%, 5%, 1% level, two-tailed test.

Table 13 shows that the current-year earnings forecast error ($FE_{i,t}^{t}$) is lower in the post-IFRS period, and the difference between the pre- and the post-adoption period is significant at 5%. In contrast, the one-year-ahead earnings forecast error ($FE_{i,t}^{t+1}$) is not significantly reduced in the post-IFRS adoption period. The dispersion of current-year earnings forecasts ($DISPFE_{i,t}^{t}$) is lower in the post-IFRS period; however, the difference is not statistically significant. The dispersion of one-year-ahead earnings forecasts ($DISPFE_{i,t}^{t+1}$) is lower in the post-adoption period and the difference between the two periods is statistically significant at 5%. The dispersion of current-year target price

forecasts ($DISPFETP_{i,t}^{t}$) is lower in the post-adoption period and the difference between the two periods is statistically significant at 5%. $LOGFOLLOW_{i,t}^{t}$ and $LOGFOLLOW_{i,t}^{t+1}$ are higher in the post-IFRS adoption period and their differences between the two periods are statistically significant at 1%. This suggests that the number of analysts following firms increased in the post-adoption period. The dispersion of current year target price forecasts declines in the post-IFRS period and its difference between the two periods is statistically significant at 5%. $PUBLIC_{i,t}$ and $CONSENSUS_{i,t}$ are higher in the post-IFRS adoption period than those in the pre-IFRS adoption period, and the difference is statistically significant at 10% and 1% respectively. These suggest that the precision of public and consensus information increased in the post-adoption period. However, there is no significant difference in $PRIVATE_{i,t}$ between the pre- and the post-IFRS adoption period. This suggests that there is no significant improvement in the precision of private information across the two periods. Overall, these results suggest that there is an improvement in analysts' information environment in the post-adoption period.

With regard to the incentives variables, only the difference of book-to-market value ($BTMV_{i,t}$) between the pre- and post-IFRS adoption periods is statistically significant at 5%. For the control variables, the differences of $LOGHORIZON_{i,t}^{t}$, $LOGHORIZON_{i,t}^{t+1}$ and for $LOGHORIZONTP_{i,t}^{t}$ between the pre- and post-IFRS adoption period are statistically insignificant. These suggest that there is no significant change in analysts' pattern of issuing forecasts. The differences of $LOGFOLLOW_{i,t}^{t}$, $LOGFOLLOW_{i,t}^{t+1}$ and $LOGFOLLOWTP_{i,t}^{t}$ between the pre- and post-IFRS adoption period are statistically significant at 1%. Moreover, the log of market value ($SIZE_{i,t}$), and the change in earnings per share ($EPS\Delta_{i,t}$) are higher in the post-adoption period in comparison to the pre-adoption period. Thus, firms are larger in the post-IFRS period and

there might be less earnings smoothing as the changes in earnings per share are significantly higher.

The next section examines whether firms' incentives play a role in shaping analysts' information environment.

5.6.1 Further univariate analysis for firm-level reporting incentives

In order to examine whether firm-level reporting incentives affect the analysts' information environment, this study compares analysts' earnings forecast errors and dispersion of earnings forecasts between firms with reporting incentives and firms without reporting incentives: (a) in 8 years around the IFRS adoption date, (b) in 4 years after the IFRS adoption date, and (c) only for firms with reporting incentives in 8 years around the IFRS adoption date. This study classifies a firm with or without reporting incentives based on five incentives variables as follows: (i) firms audited by big 4 audit firms versus the other audit firms, $AUD_{i,t}$; (ii) more internationalized firms versus less internationalized firms, $NUMEX_{i,t}$; (iii) more profitable firms versus less profitable firms, $ROA_{i,t}$; (iv) firms with a greater debt ratio versus firms with a lower debt ratio, $LEV_{i,t}$; and (v) firms with more growth opportunities versus their counterparties, $BTMV_{i,t}$. This thesis classifies a firm with reporting incentives if it is audited by one of the Big 4 auditing firms ($AUD_{i,t}$) or lists on foreign stock exchanges ($NUMEX_{i,t}$). It is classified as the one without reporting incentives if it is audited by other auditing firms or only lists on domestic stock exchange. Similarly, a firm is classified with reporting incentives if its $ROA_{i,t}$, or $LEV_{i,t}$ are above the average values of the variables in the same industry, otherwise it is classified as without reporting incentives. For $BTMV_{i,t}$, a firm is classified with reporting incentives if it has a lower than average value of the variable in the same industry, whereas their counterparties are those firms without reporting incentives.

Table 14. Changes in current year earnings forecast errors ($FE_{i,t}^{t}$) for firms with reporting incentives and firms without reporting incentives

Panel A. $FE_{i,t}^{t}$ of firms with and without reporting incentives in 8 years around the IFRS adoption date						
Period/Incentives	Statistics	$AUD_{i,t}$	$NUMEX_{i,t}$	$ROA_{i,t}$	$LEV_{i,t}$	$BTMV_{i,t}$
No incentives	obs	56	517	288	437	246
	Mean	0.0780	0.0372	0.0590	0.0245	0.0342
Incentives	obs	570	109	338	189	380
	Mean	0.0312	0.0268	0.0152	0.0606	0.0361
Incentives-No incentives	Dif.	**-0.0468*** **	**-0.0104***	**-0.0438*** **	**0.0361*** **	**0.0019*** **
	Z-Wilcoxon	**-5.426**	**-1.731**	**-5.833**	**5.378**	**7.223**
Panel B. $FE_{i,t}^{t}$ of firms with and without reporting incentives in 4 years after the IFRS adoption date						
No incentives	obs	33	313	178	244	147
	Mean	0.0497	0.0314	0.0529	0.0242	0.0301
Incentives	obs	336	56	191	125	222
	Mean	0.0293	0.0292	0.0108	0.0446	0.0317
Incentives-No incentives	Dif.	**-0.0204*** **	-0.0022	**-0.0421*** **	**0.0204*** **	**0.0016*** **
	Z-Wilcoxon	**-5.052**	-1.613	**-5.232**	**3.766**	**6.62**
Panel C. $FE_{i,t}^{t}$ of firms with incentives in 8 years around the IFRS adoption date						
Pre-adoption period	obs	234	53	147	64	158
	Mean	0.0338	0.0242	0.0209	0.0918	0.0423
Post-adoption period	obs	336	56	191	125	222
	Mean	0.0293	0.0292	0.0108	0.0446	0.0318
Post-Pre	Dif.	**-0.0045*** **	0.0050	**-0.0101*** **	**-0.0472** **	**-0.0105*** **
	Z-Wilcoxon	**-3.169**	0.485	**-3.157**	**-2.526**	**-3.535**

*** p<0.01, ** p<0.05, * p<0.1 significant difference between means in Pre and in Post, two-tailed test.

Panel A of table 14 reports that the differences in the mean of current-year forecast errors ($FE_{i,t}^{t}$) between firms with incentives and firms without incentives in 8 years around the IFRS adoption date defined by the above five variables are statistically significant at 1% and 10% respectively. Nevertheless, the forecast error for highly leveraged firms and with more growth opportunities is bigger, and the difference is significant at 1%. This implies that analysts have a challenging time to issue forecasts for these firms, as highly leveraged firms may defer the recognition of news in case this news does not help to improve the firms' financial position, whereas there are higher expectations for firms with more growth opportunities, which can affect the forecasting ability of analysts.

Panel B shows the difference of current year forecast errors $FE_{i,t}^{t}$ between firms with incentives and firms without incentives in 4 years after the IFRS adoption date are statistically significant at 1%, except the firms classified by $NUMEX_{i,t}$. This suggests that the current earnings forecast errors for firms with incentives are significantly lower than that for firms without incentives in 4 years after the IFRS adoption date. The results of firms classified by $LEV_{i,t}$ and $BTMV_{i,t}$ are similar to that in Panel A.

Panel C reports that the current year forecast errors for firms with incentives in the post-adoption period is lower than that in the pre-adoption period and this difference is statistically significant at 1%, except the firms classified by $AUD_{i,t}$. This suggests that for firms with incentives, there is a greater improvement in analysts' information environment in the post-adoption period. These suggest that firms' reporting incentives help to shape analysts' information environment besides the impact of mandatory adoption of IFRS.

Table 15 reports the same analysis in the same fashion with regard to one-year-ahead forecasts.

Table 15. Changes in one-year-ahead earnings forecast errors ($FE_{i,t}^{t+1}$) for firms with reporting incentives and firms without reporting incentives

Period/Incentives	Statistics	$AUD_{i,t}$	$NUMEX_{i,t}$	$ROA_{i,t}$	$LEV_{i,t}$	$BTMV_{i,t}$
Panel A. $FE_{i,t}^{t+1}$ of firms with and without incentives in 8 years around the IFRS adoption date						
No incentives	obs	56	518	277	440	244
	Mean	0.2071	0.1157	0.1562	0.0890	0.1411
Incentives	obs	565	103	344	181	377
	Mean	0.0944	0.0486	0.0630	0.1424	0.0809
Incentives-No incentives	Dif.	**-0.1127*** **	-0.0672	**-0.0933*** **	**0.0534*** **	**-0.0602*** **
	Z-Wilcoxon	**-4.774**	-0.024	**-5.823**	**5.158**	**-5.022**
Panel B. $FE_{i,t}^{t+1}$ of firms with and without incentives in 4 years after the IFRS adoption date						
No incentives	obs	30	302	164	237	140
	Mean	0.1557	0.1131	0.1479	0.0990	0.1631
Incentives	obs	324	52	190	117	214
	Mean	0.1008	0.0610	0.0689	0.1186	0.0678
Incentives-No incentives	Dif.	**-0.0548*** **	-0.0522	**-0.0790*** **	**0.0196*** **	**-0.0953*** **
	Z-Wilcoxon	**-4.446**	-0.345	**-5.154**	**4.385**	**-4.926**
Panel C. $FE_{i,t}^{t+1}$ of firms with incentives in 8 years around the IFRS adoption date						
Pre	obs	241	51	154	64	163
	Mean	0.0858	0.0359	0.0557	0.1860	0.0982
Post	obs	324	52	190	117	214
	Mean	0.1008	0.0610	0.0689	0.1186	0.0678
Post-Pre	Dif.	**0.0150** **	0.0250	**0.0131** **	-0.0674	**-0.0304*** **
	Z-Wilcoxon	**2.363**	0.053	**2.606**	-0.789	**2.764**

*** p<0.01, ** p<0.05, * p<0.1 significant difference between means in Pre and in Post, two-tailed test.

It is worth noting that the results of table 15 are similar to those of table 14. Next, table 16 reports the changes in dispersion of current-year earnings forecasts ($DISPFE_{i,t}^{t}$) for firms with incentives and firms without incentives in the same fashion of table 14.

Table 16. Changes in the dispersion of current year earnings forecasts ($DISPFE_{i,t}^{t}$) for firms with reporting incentives and firms without reporting incentives

Panel A. $DISPFE_{i,t}^{t}$ of firms with and without incentives in 8 years around the IFRS adoption date						
Period/Incentives	Statistics	$AUD_{i,t}$	$NUMEX_{i,t}$	$ROA_{i,t}$	$LEV_{i,t}$	$BTMV_{i,t}$
No incentives	obs	40	437	234	371	199
	Mean	0.0407	0.0195	0.0268	0.0173	0.0299
Incentives	obs	487	90	293	156	328
	Mean	0.0188	0.0255	0.0154	0.0281	0.0148
Incentives-No incentives	Dif.	**-0.0219*****	**0.0060****	**-0.0114*****	**0.0108*****	**-0.0151*****
	Z-Wilcoxon	**-4.035**	**2.038**	**-4.634**	**3.615**	**-7.046**
Panel B. $DISPFE_{i,t}^{t}$ of firms with and without incentives in 4 years after the IFRS adoption date						
No incentives	Obs	25	274	154	216	123
	Mean	0.0403	0.0188	0.0271	0.0269	0.0299
Incentives	Obs	310	51	171	109	202
	Mean	0.0181	0.0252	0.0133	0.0162	0.0137
Incentives-No incentives	Dif.	**-0.0222*****	0.0064	**-0.0138*****	**-0.0107****	**-0.0162*****
	Z-Wilcoxon	**-3.724**	1.59	**-4.514**	**-2.314**	**-6.78**
Panel C. $DISPFE_{i,t}^{t}$ of firms with incentives in 8 years around the IFRS adoption date						
Pre	Obs	187	39	122	47	126
	Mean	0.0200	0.0259	0.0184	0.0309	0.0165
Post	Obs	300	51	171	109	202
	Mean	0.0181	0.0252	0.0133	0.0269	0.0137
Post-Pre	Dif.	-0.0019	-0.0007	**-0.0051****	-0.0040	**-0.0028****
	Z-Wilcoxon	1.44	0.313	**-2.283**	1.574	**-2.44**

*** p<0.01, ** p<0.05, * p<0.1

According to table 16, Panel A, firms with stronger auditors, greater profitability, and more growth opportunities present a significantly lower dispersion. Nevertheless, the analysts' forecast dispersion is higher for firms that list on foreign stock exchanges as well as highly leveraged firms. This might relate to the number of analysts that cover firms that are more international, which creates room for more differing opinions, and a higher forecast dispersion. Moreover, similar to the analysis regarding forecast error, highly leveraged firms are under the scrutiny of debt holders, and might delay the recognition of news, which creates room for more differing opinions. Panel B shows that in the post-adoption period all subsample groups, apart from firms that are more international, present a lower forecast dispersion. Similar to the analysis of table 14, this indicates that firms' incentives play a role in shaping their information environment.

Finally, Panel C shows that the forecast dispersion is lower for highly profitable firms in the post-adoption period in comparison to the pre-adoption period, and the difference is significant at 5%.

Table 17 illustrates the same analysis regarding the dispersion of one-year-ahead forecasts.

Table 17. Changes in the dispersion of one-year-ahead earnings forecasts ($DISPFE_{i,t}^{t+1}$) for firms with reporting incentives and firms without reporting incentives

Panel A. $DISPFE_{i,t}^{t+1}$ of firms with and without incentives in 8 years around the IFRS adoption date						
Period/Incentives	Statistics	$AUD_{i,t}$	$NUMEX_{i,t}$	$ROA_{i,t}$	$LEV_{i,t}$	$BTMV_{i,t}$
No incentives	Obs	43	461	240	393	213
	Mean	0.0446	0.0261	0.0358	0.0235	0.0352
Incentives	obs	509	91	312	159	339
	Mean	0.0256	0.0324	0.0204	0.0360	0.0220
Incentives-No incentives	Dif.	**-0.0190*****	**0.0063***	**-0.0154*****	**0.0125*****	**-0.0132*****
	Z-Wilcoxon	**-3.503**	**1.926**	**-4.471**	**3.239**	**-5.869**
Panel B. $DISPFE_{i,t}^{t+1}$ of firms with and without incentives in 4 years after the IFRS adoption date						
No incentives	obs	23	280	151	221	127
	Mean	0.0456	0.0253	0.0372	0.0216	0.0366
Incentives	obs	306	49	178	108	202
	Mean	0.0249	0.0323	0.0171	0.0360	0.0199
Incentives-No incentives	Dif.	**-0.0207*****	**0.007***	**-0.0202*****	**0.0143****	**-0.0167*****
	Z-Wilcoxon	**-3.207**	**1.836**	**-3.667**	**2.134**	**-6.239**
Panel C. $DISPFE_{i,t}^{t+1}$ of firms with incentives in 8 years around the IFRS adoption date						
Pre	obs	203	42	134	51	137
	Mean	0.0268	0.0324	0.0248	0.0362	0.0251
Post	obs	306	49	178	108	202
	Mean	0.0249	0.0323	0.0171	0.0360	0.0199
Post-Pre	Dif.	**-0.0019****	-0.0001	**-0.0078****	**-0.00024***	**-0.0053*****
	Z-Wilcoxon	**-2.654**	-0.151	**-2.466**	**-1.88**	**-3.687**

*** p<0.01, ** p<0.05, * p<0.1 significant difference between means in Pre and in Post, two-tailed test.

The results are similar to those of table 16. The next analysis is with regard to the dispersion of target price forecasts.

Table 18. Changes in the dispersion of target price forecasts ($DISPFETP_{i,t}^{t}$) for firms with reporting incentives and firms without reporting incentives

Period/Incentives	Statistics	$AUD_{i,t}$	$NUMEX_{i,t}$	$ROA_{i,t}$	$LEV_{i,t}$	$BTMV_{i,t}$
Panel A. $DISPFETP_{i,t}^{t}$ of firms with and without incentives in 8 years around the IFRS adoption date						
No incentives	obs	52	481	269	411	230
	Mean	0.0666	0.0781	0.0955	0.0680	0.0756
Incentives	obs	534	105	317	175	356
	Mean	0.0771	0.0674	0.0598	0.0953	0.0765
Incentives-No incentives	Dif.	0.0105	-0.0107	**-0.0357*** **	**0.0332*** **	**0.0009***
	Z-Wilcoxon	1.04	-1.296	**-3.345**	**2.831**	**1.687**
Panel B. $DISPFETP_{i,t}^{t}$ of firms with and without incentives in 4 years after the IFRS adoption date						
No incentives	obs	29	290	166	230	208
	Mean	0.0701	0.0726	0.0949	0.0626	0.0869
Incentives	obs	319	58	182	118	140
	Mean	0.0702	0.0582	0.0476	0.0849	0.0589
Incentives-No incentives	Dif.	0.0001	-0.0144	**-0.0473*** **	0.0288	**-0.0340*** **
	Z-Wilcoxon	0.301	-1.144	**-4.081**	1.55	**-3.414**
Panel C. $DISPFETP_{i,t}^{t}$ of firms with incentives in 8 years around the IFRS adoption date						
Pre	obs	215	47	135	57	148
	Mean	0.0874	0.0788	0.0762	0.1168	0.1013
Post	obs	319	58	182	118	208
	Mean	0.0702	0.0582	0.0476	0.0849	0.0589
Post-Pre	Dif.	**-0.0172** **	-0.0207	-0.0286	-0.0319	-0.0424
	Z-Wilcoxon	**-2.044**	-0.982	-0.75	-0.134	-0.236

*** p<0.01, ** p<0.05, * p<0.1 significant difference between means in Pre and in Post, two-tailed test.

From table 18, Panel A, the dispersion of target price forecast is lower for firms with greater profitability. However, highly leveraged firms and firms with bigger growth opportunities present larger dispersion in comparison with their counterparties. These illustrate a greater disagreement among analysts in relation to target price forecasts for these firms. Panel B shows that the target price dispersion is significantly reduced for highly profitable firms and firms with bigger growth opportunities in the post-IFRS period. These illustrate that firms with stronger reporting incentives perceive a greater improvement in their information environment. Finally, Panel C indicates that analysts' target price dispersion improves in the post-adoption period in relation to that in the pre-adoption period for firms that are audited by stronger auditors. Thus, this further

illustrates that IFRS can improve analysts' information environment even for firms with incentives.

In summary, the results of tables 14, 15, 16, 17 and 18 suggest that IFRS can bring further improvement in analysts' forecasts dispersion for firms with stronger reporting incentives.

The next section presents the results of these analyses.

5.7 Results

5.7.1 Overall effect of the IFRS adoption (*H5*)

Table 19 reports the results of estimating models (18), (19) and (20), which regress the analysts' information environment (measured by $FE_{i,t}^{t}$, $FE_{i,t}^{t+1}$, $DISPFE_{i,t}^{t}$, $DISPFE_{i,t}^{t+1}$, $DISPFETP_{i,t}^{t}$, $LOGFOLLOW_{i,t}^{t}$ and $LOGFOLLOW_{i,t}^{t+1}$) on $IFRS_{i,t}$ and the control variables. These results demonstrate whether the mandatory adoption of IFRS could improve the analysts' information environment in Latin American countries, whose institutional settings of enforcement and investor protection are weak.

Table 19. Overall impact of Mandatory adoption of IFRS

Independent Variables	Pred. Sign	Dependent Variables						
		$FE_{i,t}^{t}$	$FE_{i,t}^{t+1}$	$DISPFE_{i,t}^{t}$	$DISPFE_{i,t}^{t+1}$	$DISPFETP_{i,t}^{t}$	$LOGFOLLOW_{i,t}^{t}$	$LOGFOLLOW_{i,t}^{t+1}$
$IFRS_{i,t}$	-/+	-0.0472**	0.0736	-0.00782**	0.00893	-0.0328*	0.406***	0.406***
		(-1.993)	(0.872)	(-2.106)	(1.347)	(-1.759)	(4.954)	(5.661)
$SIZE_{i,t}$	-/+	0.0311*	-0.133	-0.00476*	-0.0114*	0.00522	0.283***	0.324***
		(1.698)	(-1.290)	(-1.836)	(-1.710)	(0.242)	(3.203)	(4.343)
$R_{i,t-1}$	+	0.0317	0.165	0.00623	0.0214**	0.0448***		
		(0.577)	(1.547)	(1.042)	(2.049)	(3.025)		
$EPS\Delta_{i,t}$	+/-	0.602	0.320	0.00781	-0.0196	0.0475		
		(1.250)	(0.852)	(0.264)	(-0.403)	(0.309)		
$LOGFOLLOW_{i,t}^{t}$	-	-0.0109		0.00566***				
		(-0.949)		(2.776)				
$LOGHORIZON_{i,t}^{t}$	+	0.00287		-0.00268				
		(0.487)		(-1.137)				
$LOGFOLLOW_{i,t}^{t+1}$	-		0.0126		0.000791			
			(1.603)		(0.995)			
$LOGHORIZON_{i,t}^{t+1}$	+		-0.0691		-0.00355			
			(-1.115)		(-0.231)			
$LOGFOLLOWTP_{i,t}^{t}$	-					0.000410		
						(1.185)		
$LOGHORIZONTP_{i,t}^{t}$	+					0.0383*		
						(1.948)		
Fixed effects								
NAICS		YES	YES	YES	YES	YES	YES	YES
COUNTRY		YES	YES	YES	YES	YES	YES	YES
Constant		-0.206	1.347	0.0698**	0.119	-0.128	-1.656**	-0.873
		(-1.315)	(1.647)	(2.420)	(1.318)	(-0.942)	(-2.346)	(-1.597)
Adjusted R-squared		0.115	0.084	0.044	0.046	0.038	0.192	0.216
Observations		400	402	385	394	523	605	599
Number of firms		98	96	94	96	110	115	112

Robust t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

The results show that the coefficients on $IFRS_{i,t}$ are significantly negative for the regressions on $FE_{i,t}^{t}$ and $DISPFE_{i,t}^{t}$, as well as for the regression of $DISPFETP_{i,t}^{t}$ at 5% and 10%, respectively. These indicate that analysts' forecast errors and dispersion decrease in the post-IFRS adoption period. In contrast, for the regressions of $FE_{i,t}^{t+1}$ and $DISPFE_{i,t}^{t+1}$, the coefficients on $IFRS_{i,t}$ are insignificantly positive. This indicates that there are no significant changes in analysts' one-year-ahead earnings forecast errors and dispersion in the post-IFRS adoption period. This may be because analysts already digest the effect of IFRS adoption on firms' accounting information quality in the year of

adoption. This good accounting information quality could be maintained in the future. In other words, they already reflect this consideration in one-year-ahead earnings forecasts.

For the regressions of $LOGFOLLOW_{i,t}^{t}$ and $LOGFOLLOW_{i,t}^{t+1}$, the estimated coefficients on $IFRS_{i,t}$ are significantly positive at 1%. These suggest that there are more analysts following firms in the post-IFRS adoption period. This may be due to increased disclosed financial information according to IFRS. In summary, the above results indicate that analysts' information environment improves in the post-IFRS adoption period. As Chapter 6 shows that there are no significant changes in the enforcement of accounting standards and investor protection mechanisms around the IFRS adoption date, this thesis attributes these results to be the cause of IFRS adoption and firm-level reporting incentives. This study further investigates which of these two factors explain the changes in analysts' information environment in the following sections.

The coefficients on $SIZE_{i,t}$ are statistically significant for the regressions of $FE_{i,t}^{t}$, $DISPFE_{i,t}^{t}$ and $DISPFE_{i,t}^{t+1}$ at 10% respectively. These suggest that the current-year earnings forecast error of analysts following bigger firms is slightly higher whereas their dispersion is lower. Moreover, the coefficients on $SIZE_{i,t}$ for the regressions of $LOGFOLLOW_{i,t}^{t}$ and $LOGFOLLOW_{i,t}^{t+1}$ are significantly positive, which illustrates that larger firms have more analysts following them. The estimated coefficients on $R_{i,t-1}$ are significantly positive at 5% and 1% for the regressions on $DISPFE_{i,t}^{t+1}$ and $DISPFETP_{i,t}^{t}$. These indicate that analysts refer to stock returns to derive their forecasts. However, this result illustrates that if analysts rely more on stock returns, their disagreement increases. The estimated coefficient on $LOGFOLLOW_{i,t}^{t}$ is only significant for the regression of $DISPFE_{i,t}^{t}$. This coefficient is significantly positive, which is against the prediction. However, it is worth noting that more analysts following firms create room for increased disagreement among analysts (Houqe et al., 2014), which explains these results. Lastly,

the estimated coefficient on $LOGHORIZONTP_{i,t}^{t}$ is significantly positive, which indicates that the dispersion of target price forecasts is higher if the forecast horizon is longer. The above results are consistent with hypotheses, *H5a, H5b, H5c, H5d.*

The next section reports the tests on firm-level reporting incentives, and if firms' incentives affect the overall effect of the IFRS adoption.

5.7.2 The impact of firm-level reporting incentives on analysts' information environment

This section investigates how firm-level reporting incentives affect analysts' information environment based on models (21), (22) and (23) by regressing the analysts' information environment (measured by $FE_{i,t}^{t}$, $FE_{i,t}^{t+1}$, $DISPFE_{i,t}^{t}$, $DISPFE_{i,t}^{t+1}$, $DISPFETP_{i,t}^{t}$, $LOGFOLLOW_{i,t}^{t}$ and $LOGFOLLOW_{i,t}^{t+1}$) on variables that denote firm-level reporting incentives ($AUD_{i,t}$, $BTMV_{i,t}$, $LEV_{i,t}$, $NUMEX_{i,t}$, $ROA_{i,t}$) and the control variables.

Table 20. The impact of firm-level reporting incentives on analysts' information environment

Independent Variables	Pred. sign	Dependent Variables						
		$FE_{i,t}^{t}$	$FE_{i,t}^{t+1}$	$DISPFE_{i,t}^{t}$	$DISPFE_{i,t}^{t+1}$	$DISPFETP_{i,t}^{t}$	$LOGFOLLOW_{i,t}^{t}$	$LOGFOLLOW_{i,t}^{t+1}$
$AUD_{i,t}$	-/+	-0.0935	0.0140	0.0136	-0.0253	0.00140	-0.270	0.595***
		(-1.261)	(0.0630)	(1.342)	(-1.282)	(0.0309)	(-1.184)	(5.567)
$BTMV_{i,t}$	+/-	-0.00215	-0.0530	0.0106*	0.0162	-0.00625	0.318***	0.220**
		(-0.137)	(-0.520)	(1.873)	(1.239)	(-0.304)	(2.640)	(1.983)
$LEV_{i,t}$	-/+	-5.43e-05	0.0787	-0.000660	2.92e-05	-0.0147***	0.0138	0.125
		(-0.00784)	(1.122)	(-0.820)	(0.00402)	(-3.608)	(0.522)	(1.498)
$NUMEX_{i,t}$	-/+	-0.0193	-0.0394	-0.00385*	0.00429	0.0210	0.0594	0.000180
		(-1.326)	(-0.773)	(-1.905)	(0.895)	(1.607)	(0.645)	(0.00793)
$ROA_{i,t}$	-/+	-0.289	-0.843	-0.0196	-0.127	-0.262***	-0.744	-0.524
		(-1.147)	(-0.893)	(-0.835)	(-1.575)	(-3.671)	(-1.245)	(-0.975)
$SIZE_{i,t}$	-/+	0.0276	-0.103	-0.00140	-0.000453	0.00144	0.555***	0.550***
		(1.307)	(-1.064)	(-0.425)	(-0.0477)	(0.0892)	(6.063)	(6.500)
$R_{i,t-1}$	+	0.0237	0.105	0.00721	0.0205**	0.0476***		
		(0.421)	(1.338)	(1.104)	(2.074)	(3.188)		
$EPS\Delta_{i,t}$	-/+	0.525	0.192	0.00788	-0.0659	-0.00430		
		(1.414)	(0.453)	(0.287)	(-0.999)	(-0.0288)		
$LOGFOLLOW_{i,t}^{t}$	-	-0.0369		0.000793				
		(-1.518)		(0.333)				
$LOGHORIZON_{i,t}^{t}$	+	0.00431		-0.00270				
		(0.786)		(-1.240)				
$LOGFOLLOW_{i,t}^{t+1}$	-		0.0163		0.000502			
			(1.098)		(0.384)			
$LOGHORIZON_{i,t}^{t+1}$	+		-0.0724		0.00381			
			(-0.932)		(0.221)			
$LOGFOLLOWTP_{i,t}^{t}$	-					7.19e-05		
						(0.273)		
$LOGHORIZONTP_{i,t}^{t}$	+					0.0260		
						(1.485)		
Fixed Effects								
NAICS		YES	YES	YES	YES	YES	YES	YES
COUNTRY		YES	YES	YES	YES	YES	YES	YES
Constant		-0.132	1.348	0.0349	0.0168	0.0896	-2.617***	-2.429***
		(-0.979)	(1.439)	(1.087)	(0.119)	(0.649)	(-3.560)	(-3.572)
Adjusted R-squared		0.102	0.130	0.038	0.110	0.094	0.146	0.151
Observations		399	401	384	393	520	600	594
Number of Firms		97	95	93	95	109	114	111

Robust t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 20 shows that $AUD_{i,t}$ is significantly associated with the number of analysts issuing one-year-ahead earnings forecasts ($LOGFOLLOW_{i,t}^{t+1}$) at 1%. $BTMV_{i,t}$ is significantly associated with $DISPFE_{i,t}^{t}$, $LOGFOLLOW_{i,t}^{t}$ and $LOGFOLLOW_{i,t}^{t+1}$ at 10%, 1% and 5% respectively. These suggest that the dispersion of current-year earnings forecasts is lower for firms with greater growth opportunities, whereas there are more analysts following firms with lower growth opportunities. The coefficient of $LEV_{i,t}$ is

significantly negative in the regression of $DISPFETP_{i,t}^{t}$, which indicates that the dispersion of current-year target price forecasts is higher for highly leveraged firms. The coefficient on $NUMEX_{i,t}$ is significantly negative at 10% in the regression of $DISPFE_{i,t}^{t}$, which indicates that the dispersion of current-year earnings forecasts is lower for firms that list on foreign exchange markets. Lastly, the coefficient of $ROA_{i,t}$ is significantly negative at 1% for the regression of $DISPFETP_{i,t}^{t}$, which indicates that the dispersion of target price forecasts is lower for firms with greater profitability. Overall, these results indicate that firms' reporting incentives do affect analysts' information environment to a certain degree. This is consistent to the hypothesis *H6a* and the results of the univariate analysis at Section 5.7.1.

The next section focuses on identifying the effect of IFRS controlling for firm-level reporting incentives.

5.7.3 Impact of mandatory adoption of IFRS on analysts' information environment after controlling for firm-level reporting incentives

According to the results in tables 19 and 20, this study turns to examine whether mandatory adoption of IFRS helps to improve analysts' information environment after controlling for firm-level reporting incentives based on models (24), (25) and (26), which regress the analysts' information environment (measured by $FE_{i,t}^{t}$, $FE_{i,t}^{t+1}$, $DISPFE_{i,t}^{t}$, $DISPFE_{i,t}^{t+1}$, $DISPFETP_{i,t}^{t}$, $LOGFOLLOW_{i,t}^{t}$ and $LOGFOLLOW_{i,t}^{t+1}$) on $IFRS_{i,t}$, firm-level reporting incentives ($AUD_{i,t}$, $BTMV_{i,t}$, $LEV_{i,t}$, $NUMEX_{i,t}$, $ROA_{i,t}$) as well as the other control variables.

Table 21. Impact of mandatory adoption of IFRS on analysts' information environment after controlling for firm-level reporting incentives

Independent variables	Pred. Sign	Dependent Variables						
		$FE_{i,t}^{t}$	$FE_{i,t}^{t+1}$	$DISPFE_{i,t}^{t}$	$DISPFE_{i,t}^{t+1}$	$DISPFETP_{i,t}^{t}$	$LOGFOLLOW_{i,t}^{t}$	$LOGFOLLOW_{i,t}^{t+1}$
$IFRS_{i,t}$	-/+	-0.0487**	0.0687	-0.00877**	0.00784	-0.0528***	0.380***	0.406***
		(-1.962)	(0.922)	(-2.475)	(1.227)	(-3.139)	(4.676)	(5.664)
$AUD_{i,t}$	-/+	-0.0878	0.0314	0.0159	0.0193	-0.0357	0.0285	0.0689
		(-1.198)	(0.132)	(1.462)	(1.273)	(-0.754)	(0.120)	(0.434)
$BTMV_{i,t}$	+/-	0.00778	-0.0634	0.0129**	0.0150	0.00984	0.173*	0.0614
		(0.499)	(-0.679)	(2.195)	(1.331)	(0.476)	(1.680)	(0.648)
$LEV_{i,t}$	-/+	-0.000614	-0.0378	-0.000821	0.00449	-0.0156***	0.0121	-0.00176
		(-0.0722)	(-0.889)	(-0.831)	(1.124)	(-4.021)	(0.711)	(-0.118)
$NUMEX_{i,t}$	-/+	-0.0204	0.111	-0.00462**	0.00374	-0.0123	-0.205	0.356***
		(-1.249)	(1.091)	(-2.213)	(0.422)	(-0.595)	(-0.393)	(4.342)
$ROA_{i,t}$	-/+	-0.322	-0.797	0.00694	0.0214**	-0.325***	0.253***	0.0229
		(-1.189)	(-0.993)	(1.088)	(2.419)	(-5.168)	(2.786)	(0.0499)
$SIZE_{i,t}$	-/+	0.0442	-0.122	0.00212	-0.00258	0.0220	0.372***	0.356***
		(1.555)	(-1.224)	(0.626)	(-0.292)	(1.205)	(4.164)	(4.415)
$R_{i,t-1}$	+	0.0238	0.113	-0.0304	-0.122*	0.0463***		
		(0.432)	(1.522)	(-1.129)	(-1.803)	(3.059)		
$EPS\Delta_{i,t}$	+/-	0.516	0.191	0.00679	-0.0655	0.00899		
		(1.417)	(0.519)	(0.233)	(-1.166)	(0.0621)		
$LOGFOLLOW_{i,t}^{t}$	-	-0.00378		0.000525				
		(-1.255)		(1.032)				
$LOGHORIZON_{i,t}^{t}$	+	0.00429		-0.00287				
		(0.814)		(-1.365)				
$LOGFOLLOW_{i,t}^{t+1}$	-		0.0105		-0.000169			
			(1.268)		(-0.161)			
$LOGHORIZON_{i,t}^{t+1}$	+		-0.0717		0.00395			
			(-0.997)		(0.226)			
$LOGFOLLOWTP_{i,t}^{t}$	-					0.000382		
						(1.485)		
$LOGHORIZONTP_{i,t}^{t}$	+					0.0301*		
						(1.815)		
Fixed Effects								
NAICS		YES	YES	YES	YES	YES	YES	YES
COUNTRY		YES	YES	YES	YES	YES	YES	YES
Constant		-0.265	1.449	-0.00320	0.00137	-0.0416	-1.408**	-1.149*
		(-1.373)	(1.513)	(-0.108)	(0.0104)	(-0.263)	(-2.052)	(-1.842)
Adjusted R-squared		0.123	0.137	0.056	0.1151	0.125	0.210	0.223
Observations		399	401	384	393	520	600	594
Number of Firms		97	95	93	95	109	114	111

Robust t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 21 shows that $IFRS_{i,t}$ is negatively associated in the regressions of $FE_{i,t}^{t}$ and $DISPFE_{i,t}^{t}$ as well as in the regression of $DISPFETP_{i,t}^{t}$, at 5% and 1% respectively. Moreover, it is positively associated with $LOGFOLLOW_{i,t}^{t}$ and $LOGFOLLOW_{i,t}^{t+1}$ at 1%. On the other hand, the association between $IFRS_{i,t}$ and $FE_{i,t}^{t+1}$

as well as $IFRS_{i,t}$ and $DISPFE_{i,t}^{t+1}$ is positive but insignificant. These results are consistent with those at table 19. This implies that mandatory adoption of IFRS can improve analysts' information environment after controlling for firms' incentives, where the institutional settings of Latin American countries, such as enforcement of accounting standards and investor protection mechanisms are weak and without significant changes in the pre- and post-IFRS adoption period.

The next section reports the precision of the information under the new information environment.

5.7.4 The precision of the information environment (H7)

Table 21, along with the previous sections, shows that mandatory adoption of IFRS can improve the analysts' information environment in Latin American countries after controlling for firm-level reporting incentives and under a weak institutional setting without significant changes in enforcement and investor protection in the pre- and post-IFRS adoption period. This section further investigates how mandatory adoption of IFRS affects analysts' public, private and consensus information based on the work of Barron et al. (1998) and Byard et al. (2011). According to model (30), table 22 presents the association between $IFRS_{i,t}$, $PUBLIC_{i,t}$, $PRIVATE_{i,t}$ and $CONSENSUS_{i,t}$ respectively.

Table 22. The impact of mandatory adoption of IFRS on analysts' public, private and consensus information

$$PRECISION_{i,t} = \alpha + \beta_1 IFRS_{i,t} + \beta_2 SIZE_{i,t} + \sum_{d=1}^{12} \beta_{d+2} NAICS_i + \sum_{c=1}^{5} \beta_{c+14} COUNTRY_i + \varepsilon_{i,t}$$

Independent variables	Pred. Sign	Dependent variables		
		$PUBLIC_{i,t}$	$PRIVATE_{i,t}$	$CONSENSUS_{i,t}$
$IFRS_{i,t}$	+	0.191**	-0.117	0.383***
		(1.998)	(-1.362)	(3.600)
$SIZE_{i,t}$	+/?	0.0214	-0.0360*	0.0467*
		(1.171)	(-1.941)	(1.860)
Constant		-0.124**	0.0763	-0.222*
		(-1.991)	(1.360)	(-1.716)
NAICS		YES	YES	YES
COUNTRY		YES	YES	YES
Adjusted R-squared		0.007	0.002	0.013
Observations		476	476	476
Number of firms		93	93	93

Robust t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

The results show that $IFRS_{i,t}$ impacts positively on $PUBLIC_{i,t}$ at 5% statistical significance level. This suggests that the precision of public information is higher in the post-IFRS adoption period in comparison to that in the pre-IFRS adoption period. This is consistent with the hypothesis *H7a*. On the other hand, the association between $IFRS_{i,t}$ and $PRIVATE_{i,t}$, is insignificantly negative. This suggests that mandatory adoption of IFRS can improve the precision of public information, but it does not affect analysts gathering information from private sources.

$IFRS_{i,t}$ is positively associated with $CONSENSUS_{i,t}$ at 1%. This suggests that the precision of consensus information increased in the post-IFRS adoption period in comparison to that in the pre-IFRS adoption period. This implies that analysts may rely more on public information in relation to private information in the post-IFRS adoption period.

In summary, mandatory adoption of IFRS improves the precision of public and consensus information. Together with the results in tables 19 and 21, this study concludes that mandatory adoption of IFRS improves the analysts' information environment in

Latin American countries after controlling for firm-level reporting incentives. This improvement is mainly reflected in the precision of public information and consensus information.

5.7.5 Additional robustness tests

Regarding the concern that the relevant findings on this chapter may be due to a time trend (analysts could improve their forecast accuracy over time) and not due to IFRS, I generate another set of results (untabulated) by estimating all models including a time trend variable. This time trend variable is set as a continuous increasing trend over the years. For instance, it is set as 1 if the year is 2006, 2 if the year is 2007, 3 if the year is 2008, and this procedure continues until the last year (2015). This variable captures whether the metrics employed in this study suffer from a time trend. The results remain consistent to those presented here as this variable has proven to be insignificant.

Due to the reduced sample, I also generate another set of results by estimating all the regressions according to the I/B/E/S summary file. There are 285 firms with data available regarding the earnings' forecasts (accuracy, dispersion and number of analysts following), and 278 firms with data available regarding target price forecasts. The inferences are qualitatively unchanged, and for easiness of exposition, these results are not presented here.

The next section discusses the conclusion and implications of this study.

5.8 Conclusion

This study investigates whether mandatory adoption of IFRS can improve analysts' information environment in Latin American countries whose institutional settings of enforcement and investor protection are weak. As Chapter 3 shows that there is no significant change in the enforcement of accounting standards and investor

protection mechanisms between the pre- and post-IFRS adoption period in these countries; this situation allows us to focus on the impact of mandatory adoption of IFRS and firm-level reporting incentives exclusively. This study expands the measures of analysts' information environment from the number of analysts following the firms, errors and dispersion of current-year earnings forecasts to one-year-ahead earnings forecasts as well as to the dispersion of current-year target price forecasts. Moreover, this study also extends the measurement period to four years prior to and four years after the official date of mandatory adoption of IFRS. This research design allows for the examination of the long-term effect of IFRS adoption. The next table illustrates the summary of the main empirical results of this chapter.

Table 23. Summary of empirical findings regarding analysts' information environment

Panel A. Analysts' information environment metrics

Models/Dependent Variables	Model (24) Forecast Accuracy (Current-Year)	Model (24) Forecast Accuracy (One-year-ahead)	Model (24) Reduction in Forecast dispersion (Current-Year)	Model (24) Reduction in Forecast dispersion (One-year-ahead)	Model (25) Analysts following (Current-Year)	Model (25) Analysts following (One-Year-Ahead)	Model (26) Dispersion of Target Price (Current-Year)
Improvement	Yes	No	Yes	No	Yes	Yes	Yes

Panel B. Precision of Information

Model/Dependent Variables	Model (30) Public information	Model (30) Private information	Model (30) Consensus information
Improvement	Yes	No	Yes

First, the results confirm that mandatory adoption of IFRS can improve analysts' information environment in Latin American countries after controlling for firm-level reporting incentives. Second, firm-level reporting incentives can improve analysts' information environment to a certain degree. That is, the joint effect of IFRS adoption and firm-level incentives can improve analysts' information environment. Third, the results also show that analysts issue more accurate and less dispersed forecasts. The

number of analysts following Latin American firms in the post-IFRS adoption period increases, and target price forecasts are less dispersed. This might suggest that previous evidence of an improvement in analysts' information environment might not only be due to increased informative capacity of earnings forecasts, but also due to increased informative capacity of target price forecasts. Fourth, the improvement in analysts' information environment brought by mandatory adoption of IFRS is reflected in the precision of public and consensus information.

The significant contributions of this study are, first, according to the economic condition and firms' strong incentives of adopting IFRS, Latin American countries with weak institutional settings can still benefit from mandatory adoption of IFRS. This is different from the previous studies that emphasize strict enforcement regimes and strong investor protection mechanisms as the conditions for adopting IFRS successfully. As the time span of past studies is relatively short, the benefits of mandatory IFRS adoption could take more time to appear. Therefore, secondly, this study contributes to IASB and the regulators of Latin American countries. The results confirm the positive impact of the mandatory adoption of IFRS as well as the governments' policies regarding the implementation of these standards. Thirdly, as there is an improvement in analysts' information environment, investors will realise the benefits of making investment decisions, and in return the capital market efficiency will improve. Finally, this study can provide support for other developing countries, which have not yet adopted IFRS, and which share the characteristics of similarly weak institutional settings of enforcement and investor protection mechanisms. Thus, these countries may consider adopting IFRS, and expect an improvement in their information environment in order to attract foreign investments.

The next Chapter focuses on the impact of the IFRS adoption on the cost of equity.

Chapter 6: The impact of mandatory IFRS adoption on the cost of capital in Latin America

6.1 Introduction

After examining the impact of IFRS on analysts' forecasts, this thesis turns to investigate the effect of mandatory IFRS adoption on the cost of capital (equity and debt). Equity is an important source of funding for firms and investors require a premium to invest on public companies due to the perceived risk of operations and the reliability of financial statements. As the reliability of financial statements can signal to investors the quality of a firm, a change in accounting quality brought by IFRS could have affected investors' perception of riskiness in Latin America. Thus, this topic has direct implications for investors' decisions in investing in these markets. This also highlights the importance of understanding the implications of the changes brought by IFRS for investors, governments, regulators and other users of accounting. Governments and regulators can assess whether the goal of IFRS has been achieved in Latin America, whereas investors can better assess their risks based on the findings of this study.

Debt is an important source of funding for firms, and lenders require a premium to lend to companies due to the risk involved; that is, a company can become insolvent and fail to pay the debt. Another situation that concerns lenders is the quality of financial statements (Florou and Kosi, 2015). As the reliability of financial statements can signal to lenders the financial position of the firm, an increase on accounting quality brought by IFRS could have affected how lenders perceive a firms' riskiness in Latin America. This topic has direct implications for lenders' decisions and it highlights the importance of understanding these implications of the changes brought by IFRS for lenders, governments, regulators and other users of accounting. Additionally, the effects of IFRS on debt contracting are not completely clear (Florou and Kosi, 2015).

This chapter is organised as follows. Section 6.2 discusses the studies that focus on the implications of mandatory adoption of IFRS on the cost of equity. Section 6.3 reviews the implications of IFRS for lenders and debt holders as well as the few studies that investigated the impact of mandatory IFRS adoption on the cost of debt and credit risk. Section 6.4 presents the research opportunities. Section 6.5 develops the hypotheses. Section 6.6 discusses the econometric approach employed to investigate the cost of equity. Section 6.7 reports the methodology adopted to investigate the cost of debt. Section 6.8 illustrates the data and sampling procedures. Section 6.9 discusses the results. Finally, section 6.10 concludes.

6.2 Literature review: IFRS adoption and the cost of equity

The literature shows that country and institutional differences are drivers of financial reporting quality (Ball et al., 2003; Nobes, 2006). These institutional factors alongside firms' incentives are also valid when investigating the effects of the IFRS adoption on the cost of equity. For instance, Daske et al. (2013) studied firm-level incentives that could show a difference in incentives that increase reporting quality. They investigated whether voluntary adopters presented a change in the bid-ask spread and on the cost of equity. Overall, the findings on all firms indicate that firms do not present an increase in liquidity and a reduction in the cost of equity. On the other hand, "Serious" adopters presented an increase in market liquidity and a decline in the cost of equity compared to "label" adopters. These findings indicate that the accounting standard itself is not responsible for increased transparency. Increased transparency may also occur concurrently with the change in the standards; however, the incentives are a determinant factor to the reporting quality.

Unlike Daske et al. (2013), Kim et al. (2014) find that the implied cost of equity is significantly lower for voluntary IFRS adopters. They find that the cost of equity

reduces more for firms with weak institutional settings than those from strong institutional settings. This is consistent with firms' incentives playing a strong role in demonstrating high-quality accounting, which in turn would signal higher reliability to investors who would perceive a lesser risk in investing in these companies. Moreover, the cost of equity capital is lower (greater) for firms in strong (weak) institutional environment. Even considering that these inferences arise from voluntary adopters, in the case of mandatory adoption, firms' incentives can still play a significant role in order to signal high-quality accounting, which in turn would reduce the perceived risk in investing in these companies and hence the cost of equity could reduce.

Although Daske et al. (2013) and Kim et al. (2014) show that firms' incentives and institutional settings affect the cost of equity for voluntary IFRS adopters, Daske et al. (2008), Lee, Walker and Christensen (2008), Li (2010), and Persakis and Iatridis (2017) also show that for mandatory IFRS adopters, a reduction of the cost of equity is valid only in countries with strong enforcement and investor protection as well as it is related to firms' incentives.

Daske et al. (2008) investigated this topic for a sample of 26 countries that were mandated to adopt IFRS. The authors claimed to be the first study to investigate the early capital market effects of mandatory IFRS adoption on a global sample of firms. They focus specifically on market liquidity, the cost of equity and Tobin's *q*, and investigate whether institutional factors such as enforcement provide any discernible effects. For research design purposes, they utilised a benchmark of firms that had not adopted IFRS in order to compare the results. On the year of the mandate, the results indicate that mandatory adopters present an increase in market liquidity in comparison to the benchmark firms. However, the Tobin's *q* does not present a change between mandatory adopters and the benchmark firms (i.e. statistically not different than zero), and their cost

of equity increases in relation to benchmark firms. The authors argue that these results are due to market anticipation phenomena, as the market anticipates the fact that the firms will adopt IFRS in the next year. To support this claim, they find that the cost of equity decreases by 26 basis points and Tobin's *q* increases by 7% on the year that precedes the adoption. Another finding is that these changes only occur in countries with strict enforcement regimes (measured by the rule of law drawn from Kaufmann et al. (2007)). Moreover, the changes are higher for voluntary adopters than for mandatory adopters. This is consistent with firm's incentives driving financial reporting quality.

Lee et al. (2008) studied the impact of IFRS on the cost of equity in Europe in 17 countries. There is evidence of a reduction in the cost of equity in Ireland, Portugal, Norway, Switzerland and the U.K. through the price earnings growth (PEG) model. Nevertheless, only Portugal and the U.K. present a decrease through the abnormal earnings growth (AEG) model. The authors also find that the reduction in the cost of equity is more pronounced for companies with greater foreign capital demand in the U.K. The authors conclude that the influence of IFRS on the cost of equity is weak and that firm's incentives and institutional factors are drivers of financial reporting even under the situation of mandatory adoption of IFRS.

Covering a broad range of countries as Lee et al. (2008) and Daske et al. (2008), Li (2010) investigated whether the cost of equity has decreased following the mandatory IFRS adoption. Li (2010) found evidence that mandatory adopters presented a reduction in the cost of equity by 47 basis point in 2005. However, voluntary adopters did not present any reduction. This is because the cost of equity probably had already been reduced during the years before the mandatory adoption. Therefore, it is unlikely to find significant results when analysing firms that previously reduced their cost of equity prior to the mandatory adoption. Li (2010) finds evidence that only countries with strong

enforcement mechanisms present a significant reduction on the cost of equity. As a result, this highlights the importance of institutional factors in the implementation of IFRS. Li (2010) extends the work of Daske et al. (2008) by showing that increased disclosure and comparability are two possible ways that contributed to a reduction of the cost of equity.

Persakis and Iatridis (2017) investigated whether IFRS adoption implied lower cost of equity and higher accounting quality in 11 European and 8 Asian countries. The authors found evidence that IFRS is associated with lower cost of equity in these countries. However, these findings are not valid for countries where the enforcement is weak (Greece, Portugal, Philippines and Sri Lanka). For these countries, the cost of equity increased. This implies that institutional settings do affect whether IFRS is effective in reducing firms' cost of equity.

Although the literature indicates that a reduction in the cost of equity only was perceived on countries with strict enforcement regimes (Daske, et al., 2008; Li, 2010; Persakis and Iatridis, 2017), this thesis argues that firms in a weak institutional setting could also perceive a reduction in the cost of equity based on the assumption that increased accounting quality would reduce firms' riskiness, which in turn could lower the cost of equity. Consistent with this argument, Eliwa, Haslam and Abraham (2016) examined the relationship between several earnings management metrics (accruals quality following Dechow and Dichev (2002), earnings predictability, earnings smoothing and earnings persistence) and the mean of several cost of equity models (the PEG and the modified PEG of Easton (2004), the model of Gode and Mohanram (2003) and the Ohlson and Juettner-Narouth (2005)); they find a negative association between the metrics of earnings management and cost of equity, which indicates that higher accounting quality is associated with lower cost of equity. This is consistent with IFRS increasing the quality of financial statements and might be related to improvements in the

disclosure and comparability of the standards as indicated by Li (2010). Similar evidence was found by Houqe et al. (2016) who investigated whether mandatory IFRS adoption can reduce firms' cost of equity of New Zealand companies. Using a sample of 29 firms with data available for 5 years before and 5 years after IFRS adoption, and based on the model of Easton (2004) the authors find evidence that IFRS reduces the cost of equity significantly. It is worth noting the study would have benefited regarding robustness of the results if it had compared the estimates of the cost of equity with other methods.

The next section discusses the studies with regard to this topic in Latin America.

6.2.1 Literature review in Latin America

There is limited evidence with regard to this topic in Latin America. The study of Gatsios, Silva, Ambrozini, Neto and Lima (2016) investigated the impact of IFRS adoption on the cost of equity of Brazilian firms through the period of 2004-2013. Using the Capital Asset Pricing Model (CAPM) to calculate the cost of equity, the authors do not find a significant decrease in the cost of equity capital. The authors argue that the benefits of the adoption could take a longer time to appear, which explains the findings of the study. Therefore, it is still possible that IFRS could help in reducing the cost of equity significantly if the long-term is examined.

The summary of the empirical studies that investigated the impact of IFRS adoption on cost of equity are available on Appendix 3, section 3. The next section discusses the models used by prior literature to calculate the cost of equity.

6.2.2 Overview of the cost of equity metrics

There are several methods to investigate the cost of equity. The residual income valuation (RIV) model; the Gebhardt, Lee and Swaminathan (2001), henceforth GLS; the

economy-wide growth model of Claus and Thomas (2001), henceforth (EWG); the model of Easton, Taylor, Shroff and Sougiannis (2002), henceforth ETSS; the AEG model; the PEG model; the unrestricted AEG model of Gode and Mohanram (2003), henceforth GM; the restricted AEG of Easton (2004), and the model of Ohlson and Juettner-Nauroth (2005). In order to provide consistent estimation results about the cost of equity, the literature often utilises either several methods or the average of a range of methods (Daske, 2006; Daske et al., 2008; Li, 2010; Daske et al., 2013). This method is more accurate than using only one model as this reduces the bias in the estimation of the cost of equity.

Daske (2006) used the RIV model, the GLS, the ETSS, the AEG, the GM, and the model of Easton (2004). The author adjusted the models to monthly estimations in order to increase sample size and power of the tests. Lee et al. (2008) investigated the topic through the PEG and AEG models. While the reported studies rely on the analysis of these models individually, Daske et al. (2008), Li (2010) and Daske et al. (2013) argue that all models have limitations. Therefore, the estimation error can be reduced when the average of several models is used instead of just one. Thus, Li (2010) followed the average of four estimation models: the GLS, EWG, GM, and the restricted AEG of Easton (2004). Daske et al. (2008) and Daske et al. (2013) computed the cost of equity as the mean of four models as follows: EWG, GLS, Easton (2004) and Ohlson and Juettner-Nauroth (2005). This approach is different from Li (2010) where the unrestricted AEG of Gode and Mohanram (2003) was used instead of the model of Ohlson and Juettner-Narouth (2005).

Kim, Shi and Zhou (2014) investigated the issue through the PEG model of Easton (2004). Although they recognise that past studies compute this as the average of several models, they prefer to rely on this model. This is because according to Botosan and

Plumlee (2002), this model has a stable association with firm risk measures (i.e., market risk, leverage, information risk, firm size, and growth) in a theoretically consistent way. Moreover, it is the only one that shows a positive correlation with one-year-ahead average realised risk premium.

In summary, although Kim et al. (2014) and Houqe et al. (2016) adopted the model of Easton (2004), a more robust way to investigate the cost of equity is to compute the average of several models (Daske et al., 2008; Li, 2010; Daske et al., 2013). It is worth noting that because the cost of equity is not observable directly, some models rely on accounting and analysts' forecast data. As this data may not be available for many firms, the implementation of several models is constrained by data availability. The models adopted in this thesis are further discussed in section 6.5.

6.3 Literature review: IFRS adoption and the cost of debt

Standards-setters argue that IFRS can reduce information asymmetry and the risk in assessing a firm's performance due to high-quality standards, which in turn can facilitate financing (IASB, 2008). Past literature has focused mainly on the effect of IFRS on the cost of equity (Daske et al., 2008; Li, 2010; Daske et al., 2013). However, debt users have different needs than equity users (Florou and Kosi, 2015), and as such prior literature raised a question whether IFRS would meet creditors needs (Ball, Li and Shivakumar, 2015). This question arises because there are both positive and negative implications regarding the features of IFRS that concern lenders and debt holders. Lenders and debt holders concern about the book value of assets as a proxy to determine if a firm has the capacity to cope with future debt payments (Armstrong et al., 2010; Florou and Kosi, 2015). Thus, they require reliable estimates to evaluate debt contracting (Watts, 2003a). On one hand, features of IFRS such as fair value, recognition of impairment under IAS 36 and pension liabilities under IAS 19, would lead to an increase

in timely recognition of losses (Florou and Kosi, 2015). These would benefit debt holders and lenders as timely recognition of losses implies recognition of bad news in a timelier manner, and are in line with the expectations of debt holders for conservative accounting (Ball, Bushman, and Vasvari, 2008; Florou and Kosi, 2015). On the other hand, Ball et al. (2015) indicate at least three consequences of fair value accounting that would concern debt holders and lenders as follows. Firstly, fair value accounting of trading securities and other financial instruments may result in unrealized gains, which may alert the reliability of the financial instruments under IFRS. Secondly, under IFRS transitory gains and losses are recognized on the income statement, but this can be tricky for lenders to evaluate a firms' capacity to pay the debt. Lastly, fair value accounting is subject to managers' discretion in the evaluation of assets and liabilities, which would lead lenders to cast doubt in the reliability of the statements. Due to these reasons, the effect of IFRS on debt contracting is not completely clear (Florou and Kosi, 2015). Despite this, there are few studies regarding the impact of IFRS adoption on credit risk (Wu and Zhang, 2014; Bhat, Callen and Segal, 2014) and the cost of debt itself (Moscariello, Skerratt and Pizzo, 2014; Florou and Kosi, 2015; Persakis and Iatridis, 2017).

With respect to the credit risk, Wu and Zhang (2014) evaluated the effect of IFRS adoption on the credit rating of firms. The authors evaluated the topic through Moody's credit rating and compared with accounting ratios such as return on assets, leverage, and interest coverage. The sample contained Moody's ratings history for 883 firms that adopted IFRS voluntarily and 1,917 firms for mandatory adoption from 1990 to 2007. The authors found evidence that voluntary adopters presented a significant increase in the sensitivity of credit ratings to the accounting factor (combination of ROA, leverage, and interest coverage). Nevertheless, mandatory adopters only presented an increase in the sensitivity of credit ratings on countries with a strong rule of law. The authors point out

to the importance of institutional factors (i.e. rule of law) that are related to the adoption of IFRS.

Bhat et al. (2014) evaluated whether mandatory IFRS adoption had an impact on the pricing of credit risk. The authors focused on three accounting variables that inform about credit risk: earnings, leverage, and book value of equity. The sample is composed of 105 firms from 12 countries that adopted IFRS mandatorily, and 234 firms from the U.S. as a control group. The authors found that the three accounting metrics are significant determinants of credit risk both pre- and post-IFRS. However, IFRS did not cause an impact on the credit risk informative capacity of these metrics. This research evidence is conflicting from that of Wu and Zhang (2014) who found that IFRS increased the sensitivity of credit ratings. Moreover, the authors argue that the origin of law, legal system, earnings management, and other institutional factors affect credit risk. Wu and Zhang (2014) also found that these institutional factors do affect IFRS adoption.

Overall, this literature (Wu and Zhang, 2014; Bhat et al., 2014) indicates that the effect of mandatory adoption of IFRS on credit risk is affected by institutional factors, and it is mixed.

Moscariello et al. (2014) investigated the impact of IFRS on the cost of debt of 88 UK and 74 Italian listed companies from 2002 to 2008. In addition to regressing the cost of debt with control variables and the dummy of IFRS, the authors also consider the interactive terms between IFRS and accounting variables (Log of sales, interest coverage, current ratio and tangibility). They argue that changes in these interaction variables could show whether lenders rely more on these figures in the post-adoption period in order to show that IFRS influences the accounting quality and as such on the cost of debt. The authors do not find any reduction on the cost of debt in the U.K. consistent with the standards being very similar to previous U.K. GAAP. They do not find that IFRS is

directly significant in explaining a reduction on the cost of debt in Italy. Nevertheless, they found that the interactive variable of interest cover and IFRS, which is a measure of borrower risk, is statistically significant in explaining the cost of debt in the post-IFRS period for the Italian sample. This illustrates that lenders rely more on accounting figures prepared under IFRS in debt contracting. This also highlights that as Italy has a weak institutional setting, lenders could also rely more on financial statements under IFRS in other countries with weak institutional setting. This is based on the presumption of higher quality of IFRS in comparison to domestic standards (Barth et al., 2008).

Florou and Kosi (2015) focus on debt markets and examine debt financing consequences of mandatory IFRS adoption. They evaluate whether firms are more likely to issue bonds rather than obtain loans and its relation to the cost of debt in the post-IFRS adoption period, and whether there is a difference between public and private debt markets. The authors investigated private loan agreements and public bond issues from 35 countries from 2000 to 2007. They find evidence that there is an increase of 8.4% in the likelihood that a firm will access the bond market after mandatory adoption. Secondly, the public debt market increases public debt by 9.7%. Not surprisingly, the cost of bonds under IFRS reduces by 36.6% compared to non-adopters. However, the authors did not find a relation between IFRS and loan rates. These results suggest that IFRS contributes to an improvement on the bond market where reliance on public financial reports is more frequent than private reports. Moreover, the authors provide evidence that it is more likely that first-time adopters will issue bonds and its costs are lower in countries where the discrepancies between domestic GAAP and IFRS are higher. The most striking feature is that debt-financing effects do not vary as a function of the enforcement level. These findings, however, are constrained as the authors cannot rule out the possibility of concurrent changes in institutional factors in their results (Florou and Kosi, 2015).

Persakis and Iatridis (2017) investigated whether IFRS is associated with lower cost of debt. Using a sample of 11 European countries and 8 Asian countries from 2000 to 2014, the authors find that the cost of debt overall decreases in the post-IFRS period. However, the results among these countries are mixed.

Overall, the literature shows that the impact of IFRS on the cost of debt is affected by institutional factors, and it is mixed (Moscariello et al., 2014; Florou and Kosi, 2015; Persakis and Iatridis, 2017).

The summary of the empirical studies that investigated the impact of IFRS adoption on cost of debt and credit risk are available on Appendix 3, section 4. The next section presents the research opportunities.

6.4 Research opportunities

Prior research on developed markets has found contradictory evidence regarding the impact of mandatory IFRS adoption on the cost of equity. Daske et al. (2008) find that the cost of equity decreases by 26 basis points only for countries with strict enforcement regimes on the year before the mandate, and find an increase in the cost of equity in the year of the mandate. Lee et al. (2008) document conflicting evidence about a decrease and an increase in the cost of equity for different countries. However, Li (2010), Houqe et al. (2016) and Persakis and Iatridis (2017) document a reduction on the cost of equity following the mandatory adoption of IFRS. Besides, there is a lack of studies regarding this topic in Latin American markets, which represents an opportunity for this thesis to fill that gap. This is also important in terms of examining the relationship between accounting quality and cost of capital (Beyer et al., 2010). An opportunity arising from the methods used is that most of the studies relies on pseudo forecasts. That is, they estimate analysts forecast data using the long-term growth rate when the third-year-ahead through five-year-ahead earnings are missing (Claus and Thomas, 2001; Li, 2010).

However, considering only forecasts issued by analysts better represent analysts' expectation of firms' future and avoid potential measurement errors when the researcher forecasts the missing estimates. This method improves the calculation of the cost of equity according to analysts' expectation.

Regarding the cost of debt, there are only a few studies investigating the impact of IFRS on the cost of debt. This topic is important because this represents an important source of financing for firms and the cost of debt is associated with the reliability of the financial statements (Holthausen and Leftwich, 1983; Moscariello et al, 2014). Beyer et al. (2010) argue that research should consider the role of accounting information in debt markets. However, the effects of IFRS on debt contracting are not completely clear (Florou and Kosi, 2015). Additionally, the literature regarding this topic for Latin American markets is scarce. Thus, this is an opportunity for this thesis to analyse whether the cost of debt has decreased since the adoption of IFRS in Latin America as debt covenants will be more confident in firms' financial statements and, as a result, may lower the interests on debt contracting. Florou and Kosi (2015) also indicate that they cannot rule out the possibility that their results are affected due to concurrent institutional changes. Persakis and Iatridis (2017) rely on static proxies of enforcement, and not directly related to the enforcement of accounting standards, which could cause bias in the results (Brown et al., 2014). This also is an opportunity to investigate the impact of IFRS more accurately as Chapter 3 shows that there were no concurrent changes in enforcement and investor protection mechanism of Latin American countries. The next sections address this research opportunity.

6.5 Hypotheses development

There are two main theoretical arguments supporting why this thesis expects the cost of equity to be lower after the mandatory IFRS adoption: enhanced disclosure and comparability, which affect pricing of estimation risk and pricing of information quality. First, disclosure and the cost of equity are related to estimation risk (Barry and Brown, 1985). This stream of research suggests that a firm can reduce investors' estimation risk by providing enhanced disclosures. Thus, considering that estimation risk is priced, enhanced disclosure may reduce firms' cost of equity (Li, 2010). Consistent with this view, prior research provides evidence that IFRS requires greater financial disclosure than most local accounting standards (Ashbaugh and Pincus, 2001), and that increased disclosure reduces the cost of equity (Botosan, 1997; Botosan and Plumlee, 2002; Easley and O'Hara, 2004; Francis, Khurana and Pereira, 2005a; Lambert, Leuz and Verrecchia, 2007). Moreover, the information asymmetry literature suggests that enhanced disclosure helps to mitigate the adverse selection problem and enhances liquidity; as a result, it can reduce the cost of equity through lower transaction costs (Diamond and Verrecchia, 1991; Easley and O'Hara, 2004; Muller, Riedl and Sellhorn, 2011). Thus, this illustrates that the mandatory adoption of international standards can reduce information asymmetry, which is consistent with investors' expectation (Armstrong et al., 2010). Second, prior literature argues that one set of accounting standards can improve information comparability for firms over the globe, which in turn could reduce the cost of equity (Barth et al., 2008; Armstrong et al., 2010; Li, 2010). Barth, Clinch and Shibano (1999) argue that investors expect that international accounting harmonization is likely to reduce the expertise acquisition costs incurred in order to examine financial statements. Li (2010) argues that as more countries adopt IFRS, the comparability effects are magnified, and as such could help to reduce the cost of equity. Consistent with this view, several studies

have documented that IFRS helps to increase comparability of accounting information (Dargenidou and McLeay, 2010; Cairns, Massoudi, Taplin and Tarca, 2011; Jones and Finley, 2011; DeFond, Hu, Hung and Li, 2011; Yip and Young, 2012; Barth, Landsman, Lang and Williams, 2012; Brochet, Jagolinzer and Riedl, 2013; Wang, 2014; Cascino and Gassen, 2015)[34]. Although previous literature focuses mostly on developed nations, their findings are consistent with the expectations of regulators in Latin America (SVS, 2006; CNBV, 2008; CVM, 2008; CNV, 2009; CONASEV, 2010). The regulators expect an increase of accounting quality in Latin America, and previous research show that increased accounting quality is related to a reduction on the cost of equity (Eliwa et al., 2016). Although Latin American countries are in a weak institutional setting, information asymmetry problems should reduce by adopting high-quality accounting standards due to improvements in disclosure and comparability of information. Therefore, considering that IFRS requires greater disclosure in comparison with previous domestic accounting standards, and it has the capacity to increase comparability across firms, which in turn can reduce information asymmetry, the hypothesis is as follows:

H8: IFRS can reduce the cost of equity significantly.

The second objective of this chapter is to investigate the impact of IFRS on the cost of debt. Generally, lenders face challenging situations when lending money to companies because they do not have complete information about the company, which can increase the perceived risk in debt contracting (Moscariello et al., 2014). Thus, lenders need to evaluate the quality and reliability of firms' financial statements, and this generates risks and costs because information is costly to acquire and verify (Moscariello et al., 2014). This situation is worsened in particular if firms do not disclose relevant information or if the accounting standards are not perceived as high-quality; that is,

[34] The summary of the empirical studies that investigated the impact of IFRS adoption on comparability are available on Appendix 3, section 3.

accounting quality can be a measure of information risk (Bharath, Sunder and Sunder, 2008). Consistent with this view, past literature also shows that information quality affects firms' estimated risk (Barry and Brown, 1985; Coles and Loewenstein, 1988; Coles, Loewenstein and Suay, 1995), and lower accounting quality is associated with higher debt interest rates (Francis, LaFond, Olsson and Schipper, 2005b).

In Latin America, the previous domestic GAAPs were designed to meet tax regulations, and as such, poorly prepared to inform the external users. For instance, in Brazil, prior to the adoption of IFRS, there was no separation between short-term and long-term liabilities, leasing contracts as well as intangibles were not properly recognised. These issues of previous GAAPs did not help to reflect complete and accurate information about a firm in comparison to IFRS. Thus, these issues could increase lenders' costs and time in acquiring information, which also illustrates an information asymmetry problem. In turn, lenders would increase the debt rates as the perceived risk is high. The shift to IFRS is expected to increase firms' accounting quality and hence firms would disclose more reliable and material information (SVS, 2006; CNBV, 2008; CVM, 2008; CNV, 2009; CONASEV, 2010). As such, more reliable and material disclosures help to mitigate the information asymmetry problem and reduce the risk (Easley and O'Hara 2004; Lambert et al., 2007) that lenders perceive when lending money. In Chile, Bertin and Moya (2013) document higher timely recognition of losses after IFRS adoption, which may facilitate debt contracting. This is consistent with high-quality accounting, which in turn can reduce debt interest rates (Bharath et al., 2008; Schenone, 2010). Following the adoption of IFRS, Florou and Kosi (2015) also provide evidence of reduced debt interest rates in countries with weak institutional settings and big gap between previous GAAPs and IFRS. Thus, the hypothesis is set as follows:

H9: The cost of debt is lower after the IFRS adoption.

6.6 Research design on the impact of IFRS on the cost of equity

As described in the last section, all models that estimate the cost of equity are subject to econometric estimation errors. For instance, Easton and Monahan (2005) show that accounting based proxies are biased in estimating the expected rate of return in cost of equity studies. As discussed in the literature review, it is more accurate to investigate the topic based on an average of several models as this approach reduces the risk of estimation error (Daske et al., 2008; Li, 2010; Daske et al., 2013). According to Li (2010) the cost of equity can be estimated by the mean of the four models proposed by Claus and Thomas (2001), Gebhardt et al. (2001), Gode and Mohanram (2003), and Easton (2004).

The first model that this study adopts is from Claus and Thomas (2001) whose proposal was to calculate the cost of equity through the abnormal earnings approach. Equation 31 illustrates the abnormal earnings as follows:

$$ae_{i,t} = e_{i,t} - ke_{1_{i,t}} * bv_{i,t-1} \tag{31}$$

where: $ae_{i,t}$ is the abnormal earnings per share for firm *i* at time *t*; $e_{i,t}$ is the earnings per share for firm *i* at time *t*; $ke_{1_{i,t}}$ is the expected rate of return on the market portfolio (cost of equity), derived from the abnormal earnings model for firm *i* at time *t*, $bv_{i,t-1}$ is the book value per share for firm *i* at time *t*-1.

It is worth noting that the model of Claus and Thomas (2001) requires clean surplus accounting. They derive the following equation to calculate the cost of equity:

$$P_{i,t} = bv_{i,t} + \frac{ae_{1_{i,t}}}{1 + ke_{1_{i,t}}} + \frac{ae_{2_{i,t}}}{(1 + ke_{1_{i,t}})^2} + \frac{ae_{3_{i,t}}}{(1 + ke_{1_{i,t}})^3} + \frac{ae_{4_{i,t}}}{(1 + ke_{1_{i,t}})^4} \tag{32}$$

$$+ \frac{ae_{5_{i,t}}}{(1 + ke_{1_{i,t}})^5} + \frac{ae_{5_{i,t}}(1 + gae_{i,t})}{(ke_{1_{i,t}} - gae_{i,t})(1 + ke_{1_{i,t}})^5}$$

where: $P_{i,t}$ is the stock price for firm *i* at time *t*, $ae_{1\ldots5_{i,t}}$ is the one-year-ahead through five-year-ahead abnormal earnings for firm *i* at time *t*, $gae_{i,t}$ is the long-term growth rate provided by analysts for firm *i* at time *t*.

The second model to calculate the cost of equity is from Gebhardt et al. (2001), which is illustrated as follows in equation 33 and 34.

$$P_{i,t} = B_{i,t} + \frac{FROE_{i,t+1} - ke_{2_{i,t}}}{1 + ke_{2_{i,t}}} B_t + \frac{FROE_{i,t+2} - ke_{2_{i,t}}}{(1 + ke_{2_{i,t}})^2} B_{i,t+1} + TV \quad (33)$$

$B_{i,t}$ = book value divided by the number of shares outstanding for firm *i* at time *t*; $ke_{2_{i,t}}$ = the cost of equity for firm *i* at time *t*; $FROE_{i,t+h}$= forecasted return on equity (ROE) for firm *i* for period *t* + *h*. For the first three years, this variable is computed as $FEPS_{i,t+h}/B_{i,t+h-1}$, where $FEPS_{i,t+h}$ is the I/B/E/S mean forecasted EPS for firm *i* for year *t*+*h* and $B_{i,t+h-1}$ is the book value per share for firm *i* for year *t*+*h*-1. Beyond the third year, $FROE$ is forecasted using a linear interpolation to the industry median ROE; $B_{i,t+h} = B_{i,t+h-1} + FEPS_{i,t+h} + FDPS_{i,t+h}$, where $FDPS_{i,t+h}$ is the forecasted dividend per share for firm *i* for year *t*+*h*, estimated using the current dividend payout ratio (*dk*). This study assumes that $FDPS_{i,t+h} = FEPS_{i,t+h} * dk$.

The terminal value (TV) is given for any horizon T as follows:

$$TV = \sum_{h=3}^{T-1} \frac{FROE_{i,t+h} - ke_{2_{i,t}}}{(1 + ke_{2_{i,t}})^h} B_{i,t+h-1} + \frac{FROE_{i,t+T} - ke_{2_{i,t}}}{ke_{2_{i,t}}(1 + ke_{2_{i,t}})^{T-1}} B_{i,t+T-1} \quad (34)$$

It is worth noting that the model from Gebhardt et al. (2001) also requires clean surplus accounting. This model relies on the industry growth rate as a long-term growth rate. The third model this thesis relies on is from Gode and Mohanram (2003). Unlike the previous models of Claus and Thomas (2001) and Gebhardt et al. (2001), the model of Gode and Mohanram (2003) does not require the clean surplus accounting assumption.

They present an adapted version of the Ohlson and Juettner-Narouth (2005) model as follows:

$$P_{i,t} = \frac{eps_{1_{i,t}}}{ke_{3_{i,t}}} + \frac{(eps_{2_{i,t}} - eps_{1_{i,t}} - ke_{3_{i,t}}(eps_{1_{i,t}} - dps_{1_{i,t}}))}{(ke_{3_{i,t}}(ke_{3_{i,t}} - g_{p_{i,t}})} \quad (35)$$

where: $P_{i,t}$ is the stock price for firm *i* at time *t*; $ke_{3_{i,t}}$ is the cost of equity for firm *i* at time *t*; $eps_{1_{i,t}}$ is the one-year-ahead earnings per share for firm *i* at time *t*; $eps_{2_{i,t}}$ is the two-year-ahead earnings per share for firm *i* at time *t*; $dps_{1_{i,t}}$ is the one-year-ahead dividend per share for firm *i* at time *t*; $g_{p_{i,t}}$ is the long-term growth rate for firm *i* at time *t*.

Rearranging the equation in function of the cost of equity $\left(ke_{3_{i,t}}\right)$, one gets the following:

$$ke_{3_{i,t}} = A + \sqrt{A^2 + \frac{eps_{1_{i,t}}}{P_{i,t}}(g_{2_{i,t}} - g_{p_{i,t}})} \quad (36)$$

where: $A = \frac{1}{2}\left(g_{p_{i,t}} + \frac{dps_{1_{i,t}}}{P_{i,t}}\right)$

$g_{2_{i,t}}$ is the short-term growth rate for firm *i* at time *t*.

In comparison to the previous models, this model requires two growth rates, a short-term and long-term. The short term is defined as the growth ratio between the one-year-ahead and two-year-ahead earnings forecast whereas the long-term growth rate is for periods over five-years-ahead. The fourth model that this thesis adopts is the price earnings growth model (PEG) from Easton (2004), which is described as follows in equation 37.

$$ke_{4_{i,t}}^2 - ke_{4_{i,t}}\left(\frac{dps_{1_{i,t}}}{P_{i,t}}\right) - (eps_{2_{i,t}} - eps_{1_{i,t}})/P_{i,t} = 0 \quad (37)$$

The cost of equity is denoted by the variable ($ke_{4_{i,t}}$) for firm *i* at time *t*, and is the positive real root of this equation. Afterwards, this thesis calculates two different averages

of the cost of equity, denoted by a common variable $KE_{i,t}$, and regress it according to equation 8 (Li, 2010). The first average is denoted by the variable $KE_{1234_{i,t}}$, which is the average of the cost of equity calculated based on the four models described in this section. The second average is calculated based on the average of the third model (GM) and the fourth model (Easton, 2004) adopted in this study, which is denoted by the variable $KE_{34_{i,t}}$. This is because these models do not rely on the clean surplus accounting assumption, as this assumption does not hold in Latin America (Pinheiro et al., 2012).[35]

$$KE_{i,t} = \alpha + \beta_1 IFRS_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 RETVAR_{i,t} + \beta_4 LEV_{i,t} + \beta_5 INFLA_{i,t} + \beta_6 RFR_{i,t} + \sum_{d=1}^{12} \beta_{d+6} NAICS_i + \sum_{c=1}^{5} \beta_{c+18} COUNTRY_i + \sum \beta_y YearControls_t + \varepsilon_{i,t} \quad (38)$$

where: $KE_{i,t}$ denotes a common variable for $KE_{1234_{i,t}}$, which is the cost of equity achieved by calculating the mean of the four models proposed by Claus and Thomas (2001), Gebhardt et al. (2001), Gode and Mohanram (2003), and Easton (2004) for firm *i* at time *t*, and for $KE_{34_{i,t}}$, which is the cost of equity achieved by the mean of models 3 (GM) and 4 (Easton, 2004) for firm *i* at time *t*. $IFRS_{i,t}$ is the variable of interest, which is equal to 1 if the cost of equity is calculated in the post-IFRS period and is 0 otherwise for firm *i* at time *t*. There are several control variables. 1) Variables controlling for firms' financial and risk characteristics that would impact the variation of stock returns (Fama and French, 1992; Fama and French, 1993), which in turn would affect the cost of equity (Li, 2010). There are 3 variables to control for this as follows: $SIZE_{i,t}$ is the natural

[35] Models 3 and 4 are more suitable for investigating the cost of equity in Latin America, however the other two methods are also adopted for comparison and for robustness.

logarithm of market value of equity for firm *i* at time *t*. $RETVAR_{i,t}$ is the annual standard deviation of monthly stock returns at year-end[36] for firm *i* at time *t*. $LEV_{i,t}$ estimated as the ratio of total liabilities over total assets at year-end for firm *i* at time *t*. 2) Variables to control for the expected return of buying the stock and to account for the cross-country variation as firms' cost of equity are calculated in local currencies and nominal terms (Hail and Leuz, 2006; Hail and Leuz, 2009). There are two variables to control for this as follows. First, the expected one-year-ahead inflation ($INFLA_{i,t}$) defined as the country-year annual one-year-ahead inflation for firm *i* at time *t*, provided by Datastream. Second, the risk-free rate ($RFR_{i,t}$) defined as the country-year risk-free rate for firm *i* at time *t*, calculated using the yields of local treasury bills or central bank papers provided by Datastream. As the expected inflation may not be the only factor affecting nominal interest rates, previous studies (Hail and Leuz, 2006; Li, 2010) include the risk-free rates as they could affect the real interest rates. Consistent to the previous chapters, there are twelve North American Industry Classification System ($NAICS_i$) dummies that classify the industrial firms (for firm *i*). These industry dummies control for the effect of different operating risks in different industries and the effect of different regulations. $COUNTRY_i$ is a dummy variable for each country (for firm *i*). It captures the effect of the institutional setting of the target countries. The results are similar if the enforcement proxy of Brown et al. (2014) is used. Additionally, there are year-fixed effects to control for specific shocks over time. This is particularly helpful as a control for macroeconomic shocks in specific years, through long-term analysis.

In order to reflect the macroeconomic situation experienced by Latin American countries in recent years, this study also includes an interactive variable into the model,

[36] As in Li (2010), this study also includes the book to market value ratio ($BTMV_{i,t}$) as another control to substitute for $RETVAR_{i,t}$. The results are similar.

which is $IFRSINFLA_{i,t}$ (represented by the product of $IFRS_{i,t}$ and $INFLA_{i,t}$); this is to control for the joint effect of these two variables. After introducing this variable into the model, this study expects that the coefficient on $IFRS_{i,t}$ will be significantly negative, which would indicate that even considering the strong effect of the expected one-year-ahead inflation, the adoption of IFRS can still contribute to reduce the cost of equity.

6.6.1 Cost of equity and firm-level reporting incentives

An additional check is to investigate whether IFRS can still contribute to reduce firms' cost of equity after controlling for firms' incentives. Previous studies report that the effects of the adoption of IFRS may be due to firms' incentives (stronger operating performance, increased internationality, audited by strong auditors), enforcement of accounting standards and investor protection mechanisms (Ball et al., 2000; Ball et al., 2003; Daske et al., 2008; Byard et al., 2011; Christensen, 2012; Christensen et al., 2013; Christensen et al., 2015). Thus, this study conjectures that firms' incentives can play a significant role in affecting a firms' cost of equity considering that the institutional setting is weak and has not changed significantly after the adoption of IFRS. Thus, in order to control for this, equation 39 includes proxies for firms with regard to: (1) operating performance measured in terms of return on assets ($ROA_{i,t}$), (2) internationality measured by the number of stock exchanges that a firm lists on ($NUMEX_{i,t}$), and (3) stronger auditors measured by a firm being audited by the big 4 auditors ($AUD_{i,t}$). They are in the following.

$$KE_{i,t} = \alpha + \beta_1 IFRS_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 RETVAR_{i,t} + \beta_4 LEV_{i,t} + \beta_5 INFLA_{i,t} + \beta_6 RFR_{i,t} + \beta_7 AUD_{i,t} + \beta_8 NUMEX_{i,t} + \beta_9 ROA_{i,t} + \sum_{d=1}^{12} \beta_{d+9} NAICS_i + \sum_{c=1}^{5} \beta_{c+21} COUNTRY_i + \sum \beta_y YearControls_t + \varepsilon_{i,t} \quad (39)$$

where $AUD_{i,t}$ equals one if firm *i* is audited by one of the BIG 4 auditors in year *t*, otherwise is 0. It is proxy for growth opportunities. $NUMEX_{i,t}$ is the number of stock exchanges that a firm *i* list on year *t*. It denotes a firm's internationality. $ROA_{i,t}$ is equal to net income divided by total assets.

This study expects that the coefficient on $IFRS_{i,t}$ will remain significantly negative. Moreover, this thesis expects that the coefficients on $AUD_{i,t}$, $ROA_{i,t}$ and $NUMEX_{i,t}$ will be negative indicating that firms with stronger reporting incentives present a lower cost of equity. This is because these firms disclose more information, and increased disclosure can help to mitigate information asymmetry problems, which in turn can reduce the cost of equity.

The next section illustrates the research design employed to investigate the impact of IFRS on the cost of debt.

6.7 Research design on the cost of debt

It is worth noting that unlike the cost of equity that needs to be estimated, the cost of debt is directly observable and could be calculated using the interest rates charged in the lending contracts. In order to investigate this topic, this thesis adopts the methodology of previous studies of Francis et al. (2005b), Christensen et al. (2009), Taylor (2013), Moscariello et al. (2014) and Florou and Kosi (2015) as follows.

$$K_{D\,i,t} = \alpha + \beta_1 IFRS_{i,t} + \beta_2 INFLA_{i,t} + \beta_3 RFR_{i,t} + \beta_4 LOGNIBE_{i,t} + \beta_5 BTMV_{i,t} + \beta_6 SIZE_{i,t} + \beta_7 LOGSALES_{i,t} + \beta_8 INTCOV_{i,t} + \beta_9 TANGIBILITY_{i,t} + \beta_{10} CURRRATIO_{i,t} + \sum_{d=1}^{12} \beta_{d+10} NAICS_i + \sum_{c=1}^{5} \beta_{c+22} COUNTRY_i + \sum \beta_y YearControls_t + \varepsilon_{i,t} \quad (40)$$

In Equation 40, the dependent variable ($K_{D\,i,t}$) is given by firm *i*'s net interest expense in year *t* to the average interest-bearing overall debt (short-term and long-term) outstanding during years *t* and *t-1* (Francis et al., 2005b; Moscariello et al., 2014; Persakis and Iatridis, 2017). $IFRS_{i,t}$ is a dummy variable indicating 0 for local GAAP and 1 for IFRS, for firm *i* at time *t*. Following Moscariello et al. (2014), the control variables included in Equation 40 represent controls for five factors: economy-wide influences; company-specific risk; the sensitivity of debt payments to company-specific risk; the security of debt holders in the face of default; country and industry dummy variables; and year-fixed effects. *Economy-wide influences*: risk-free rates ($RFR_{i,t}$) and one-year-ahead expected inflation ($INFLA_{i,t}$) as lenders will take into consideration these factors prior to lend money to a firm. These factors capture the economic influences on a firm's borrowing costs, and are similar to those used in previous studies to control for economic effects (Moscariello et al., 2014; Florou and Kosi, 2015). This study expects both variables to be positive as the cost of debt will rise if the risk-free-rate and expected inflation increase. *Company-specific risk*: This study includes the log of the standard deviation of net income before extraordinary items in the prior five-year period ($LOGNIBE_{i,t}$) in order to capture the effect of income volatility on the price terms of debt contracts as in Francis et al. (2005b) and Moscariello et al. (2014). This variable is expected to have a positive association with $K_{D\,i,t}$. This study also includes the book to

market value ratio ($BTMV_{i,t}$) to control for company risk (Li, 2010), and it is expected that it would be negatively associated with $K_{D\,i,t}$. *The sensitivity of debt payments to company-specific risk*. This study uses firm size ($SIZE_{i,t}$) denoted as the log of total assets for firm *i* at year *t*, the log of sales ($LOGSALES_{i,t}$, defined as the log of net sales for firm *i* at year *t*) and interest cover ($INTCOV_{i,t}$, defined as operating income divided by interest expense for firm *i* at year *t*) to control for firms' specific performance factors that could affect the interest payments. Interest cover is largely used by bank covenants and in previous studies (Francis et al., 2005b; Christensen et al., 2009; Taylor, 2013; Moscariello et al., 2014). These variables are expected to be negatively related to $K_{D\,i,t}$. *Security in the face of default*: Considering that there is a risk that a firm defaults on a loan, this study includes two variables to control for this. The percentage of property, plant and equipment in relation to total assets ($TANGIBILITY_{i,t}$) and the ratio represented by current assets over current liabilities ($CURRRATIO_{i,t}$). $TANGIBILITY_{i,t}$ is expected to be negatively related to $K_{D\,i,t}$, as the higher is the ratio, there is a lesser risk in lending to that firm. $CURRRATIO_{i,t}$ is expected to be positive (Florou and Kosi, 2015), as firms with more current liabilities would need to disclose more information to get access to borrowings, which may imply lower debt costs. Consistent to the previous chapters and equations, there are twelve North American Industry Classification System ($NAICS_i$) dummies that classify the industrial firms. $COUNTRY_i$ are dummy variables for each country. It captures the effect of the institutional setting of the target countries. The results are similar if the enforcement proxy of Brown et al. (2014) is used. Additionally, there are year-fixed effects to control for specific shocks over time.

At this analysis, the variable of interest is $IFRS_{i,t}$. This study expects that the coefficient of $IFRS_{i,t}$ would be negatively significant, which would indicate that IFRS has contributed to a reduction on the cost of debt.

6.8 Data and sampling procedures

Data for the sample of cost of equity were obtained from the Institutional Brokers' Estimate System (I/B/E/S) whereas data for the sample of cost of debt were obtained from DataStream (Thomson Reuters).

To estimate the cost of equity measures, this thesis obtains analyst forecasts from the I/B/E/S detail file and price information from Datastream. This study obtains the other estimation inputs, including the dividend pay-out ratio and book value of equity, from Datastream. These price and forecast data are in local currencies and are from 7 months[37] after the fiscal year-end in order to ensure the financial data are publicly available and priced at the time of estimation (Hail and Leuz, 2006; Li, 2010). In order to construct the sample, this study requires each firm-year observation to have current stock price data and at least two analysts issuing earnings forecasts for at least two periods ahead. This study also requires the availability of five-year-ahead forecast or long-term growth rate available from I/B/E/S (Gode and Mohanram, 2003). Following Li (2010), all earnings forecasts are restricted to be positive. Unlike previous research (Claus and Thomas, 2001; Li, 2010), this study relies only on the forecasts issued by the analysts. That is, this study does not use the long-term earnings growth rate to forecast the three-year through five-year-ahead earnings forecasts if they are missing. This is because using only forecasts as

[37] Li (2010) uses the data after 7 months of the financial year-end, whereas Hail and Leuz (2006) use 7 and 10 months after the financial year-end.

generated by the analysts better reflect their expectation for the firms' future. Pseudo forecasts do not have this key feature.[38]

In order to calculate the mean of the cost of equity, this study further requires that the data must be available for all models. This study produces two sets of results, first in order to mitigate the estimation problems incurred in the calculation of the cost of equity, I estimate the mean of the four methods. Secondly, considering that there is evidence that clean surplus accounting does not hold before the IFRS adoption (Pinheiro et al., 2012) in Brazil, I also estimate the average of models 3 (Gode and Mohanram, 2003) and 4 (Easton, 2004). It is worth noting that cost of equity estimates below 0 and above 1 are excluded (Li, 2010).

The sample for the analyses of the cost of equity is illustrated in the next table.

[38] As an additional robustness test, this study forecasts the third-year through five-year-ahead if they are missing using the long-term growth rate. The results are similar and the inferences remain unchanged.

Table 24. Sample structure for the analyses on the cost of equity (2003-2015)

Panel A. Number of firms from I/B/E/S

NAICS	Argentina	Brazil	Chile	Mexico	Peru	Total
11	3	1	3	2		9
21	7	17	8	9	16	57
22	12	30	20	7	5	74
23	8	13	16	25	6	68
31–33	16	41	29	38	22	146
42						
44–45	1	18	9	17	1	46
48–49	3	11	8	4		26
51	1	2	2	7	1	13
54	1	3	1	2		7
72		4	6	10	2	22
81	3	34	6	19	4	66
Total	55	174	108	140	57	534

Panel B. Number of firms whose data is available at least for one of the years during the period of eight years around the date of mandatory adoption of IFRS.

NAICS	Argentina	Brazil	Chile	Mexico	Peru	Total
11			1			1
21		5	2			6
22		3	6			10
23		6	0			8
31–33		16	3	1		20
42						0
44–45		9	2	1		12
48–49		5	1	1		6
51	1	1				2
54		1				1
72			1			1
81		22	1			23
Total	1	68	17	3	0	89

Note: Panel A reports the number of Latin American firms downloaded from I/B/E/S for the sample period from 2003 to 2015. North American Industry Classification System (NAICS) 11: agriculture, forestry, fishing & hunting; NAICS 21: mining, quarrying, oil & gas extraction; NAICS 22: utilities; NAICS 23: construction; NAICS 31–33: manufacturing; NAICS 42: wholesale trade; NAICS 44–45: retail trade; NAICS 48–49: transportation & warehousing; NAICS 51: information; NAICS 54: Professional scientific & technical services; NAICS 72: accommodation & food services; NAICS 81: other services (excluded public administration, religious organization, grantmaking & giving services, voluntary organization, social advisory services, human right organization, civil and social organization, business & professional, political & labour organization, business association, professional organization, private household etc.). Panel B shows the number of firms whose I/B/E/S data is available for at least one year between the four years before and after the date of mandatory adoption of IFRS.

It is worth noting that the data for the analyses on the cost of equity is limited, with a reduced sample size. There are only 89 firms for which a meaningful[39] cost of

[39] There are companies with data available to calculate the cost of equity, however the root of the equation calculated as the cost of equity is a complex number, and thus it is excluded.

equity could be calculated and the control variables are available. This study winsorizes the data at 1% level to mitigate the influence of outliers.

With regard to the analyses on the cost of debt, initially there were 1226 companies with data available for at least one of the years during the period of 2003 to 2015. In order to evaluate the long-term effects of the IFRS adoption, this study requires the data to be available 4 years before and 4 years after the IFRS adoption date. It is worth noting that according to Florou and Kosi (2015), the financial crisis affected the interest rates for lenders, so an analysis in the period through 2008 to 2010 would affect the results. As such, this study adopts as the pre-adoption window the span from 2004 to 2007 and as the post-adoption window the period from 2011 to 2015 (varying according to the date of mandatory IFRS adoption for each country). Following these criteria, there are 279 firms with data available.[40] The advantage of this analysis is that it avoids the intense macroeconomic shocks following the financial crisis on debt interest rates. The disadvantage is that the periods investigated as pre- and post-adoption present a gap of 3 years between them (2008 to 2010). This could weaken the inferences, if any, that would be attributable to the IFRS adoption. In order to mitigate this, this study also investigates the pre-adoption period immediately before the IFRS adoption and achieves similar results.[41] The next table illustrates the sample size.

[40] For an additional analysis, this study considers firms with at least one year of data available in the 4 years before and after the IFRS adoption date following the set of criteria. There are 898 firms with data available that matches these criteria. The inferences are similar.

[41] For example, similar results are achieved if this study considers the pre-adoption window from 2006 to 2009 for Brazil and the post adoption period from 2010 to 2013.

Table 25. Sample structure for the analyses on the cost of debt (2003-2015)

Panel A. Number of firms from Datastream

NAICS	Argentina	Brazil	Chile	Mexico	Peru	Total
11	9	3	4	4		20
21	20	46	12	25	41	144
22	39	66	37	25	18	185
23	12	33	18	61	14	138
31–33	42	100	44	90	79	355
42	1	4	3	6		14
44–45	3	29	11	44	4	91
48–49	5	17	12	12	1	47
51	4	3	3	22	1	33
54	1	6	2	4		13
72	1	10	19	23	3	56
81	9	49	17	37	18	130
Total	146	366	182	353	179	1226

Panel B. Number of firms whose data in four years pre- and four years post- the date of mandatory adoption of IFRS are all available.

NAICS	Argentina	Brazil	Chile	Mexico	Peru	Total
11	1		1			2
21	4	14	6	6	9	39
22	5	15	14	5	3	42
23	5	9	8	14	6	42
31–33	11	29	20	17	15	92
42		2	2	4		8
44–45	1	6	5	7	1	20
48–49	1	1	7			9
51		1	1	6		8
54	1					1
72			3	6	2	11
81		2	3			5
Total	29	79	70	65	36	279

Note: Panel A reports the number of Latin American firms downloaded from Datastream for the sample period from 2003 to 2015. North American Industry Classification System (NAICS) 11: agriculture, forestry, fishing & hunting; NAICS 21: mining, quarrying, oil & gas extraction; NAICS 22: utilities; NAICS 23: construction; NAICS 31–33: manufacturing; NAICS 42: wholesale trade; NAICS 44–45: retail trade; NAICS 48–49: transportation & warehousing; NAICS 51: information; NAICS 54: Professional scientific & technical services; NAICS 72: accommodation & food services; NAICS 81: other services (excluded public administration, religious organization, grantmaking & giving services, voluntary organization, social advisory services, human right organization, civil and social organization, business & professional, political & labour organization, business association, professional organization, private household etc.). Panel B shows the number of firms whose data is available in four years pre- and four years post- the date of mandatory adoption of IFRS.

There are 279 firms with data available for this analysis. This study winsorizes the data at 5% level in order to mitigate the effect of outliers.[42] The next section illustrates the descriptive statistics of the variables of interest in this study.

[42] This study also winsorizes the data at 1% and achieve similar results.

6.8.1 Descriptive statistics for the analysis on the cost of equity

Table 26 reports the descriptive statistics for all variables used in this study with regard to the analysis on the cost of equity in the pre- and post-adoption periods.

Table 26. Descriptive statistics for the analysis on the cost of equity

	Pre				Post			
	N	Mean	Median	Std. Dev	N	Mean	Median	Std. Dev
Test variables								
$KE_{1234_{i,t}}$	134	0.213	0.183	0.0946	208	**0.181*****	**0.168****	0.0666
$KE_{34_{i,t}}$	143	0.246	0.210	0.120	222	**0.208*****	**0.184***	0.0940
Control Variables								
$INFLA_{i,t}$	166	0.0481	0.0489	0.0126	256	**0.0544*****	**0.0540****	0.0247
$SIZE_{i,t}$	166	7.428	7.320	1.247	256	**7.649****	**7.596***	1.176
$RFR_{i,t}$	166	0.0903	0.102	0.0475	256	**0.0875*****	**0.0900*****	0.0268
$LEV_{i,t}$	165	1.614	1.074	2.529	254	1.340	1.148	0.913
$RETVAR_{i,t}$	154	0.132	0.119	0.0643	254	**0.0888*****	**0.0833*****	0.0301
Incentives Variables								
$AUD_{i,t}$	166	0.928	1	0.260	256	0.949	1	0.220
$NUMEX_{i,t}$	166	0.373	0	0.742	256	0.266	0	0.638
$ROA_{i,t}$	165	0.0640	0.0579	0.0463	254	0.0688	0.0635	0.0498
Cost of Equity								
$ke_{1_{i,t}}$	158	0.235	0.186	0.160	241	**0.203*****	0.183	0.112
$ke_{2_{i,t}}$	165	0.147	0.128	0.0894	254	**0.122*****	**0.112*****	0.0681
$ke_{3_{i,t}}$	146	0.325	0.261	0.188	228	**0.275****	0.242	0.148
$ke_{4_{i,t}}$	146	0.166	0.148	0.0824	227	**0.141*****	0.135	0.0607

*, **, *** significant difference between means (medians) in Pre and in Post at 10%, 5%, 1% level, two-tailed test. Where: $ke_{1_{i,t}}$ is the average of the cost of equity calculated according to Claus and Thomas (2001); $ke_{2_{i,t}}$ is the average of the cost of equity calculated according to Gebhardt et al. (2001); $ke_{3_{i,t}}$ is the average of the cost of equity calculated according to Gode and Mohanram (2003); and $ke_{4_{i,t}}$ is the average of the cost of equity computed according to the model of Easton (2004).

About the test variables, table 26 shows that $KE_{1234_{i,t}}$ is lower in the post-IFRS period by approximately 3%, and the difference between the pre- and the post-adoption period is significant at 1%. As this represents the average of the four models, this study also presents the descriptive statistics of each model, and presents the average of models 3 and 4 because these do not rely on the clean surplus accounting assumption. The average of model 3 and 4 ($KE_{34_{i,t}}$) is significantly lower in the post-IFRS period by approximately 3.8%, and the difference between the pre- and the post-adoption period is significant at

1%. These illustrate that these two metrics provide consistent results that the cost of equity is lower after the IFRS adoption. The end of table 26 shows the average of each model adopted to compute the averages of $KE_{1234_{i,t}}$ and $KE_{34_{i,t}}$. Although this study does not regress each of these averages separately, it is illustrated here to indicate that all four models show that the cost of equity is lower after the IFRS adoption. Model 1 of Claus and Thomas (2001) is denoted by the variable $ke_{1_{i,t}}$ and it is significantly lower in the post-IFRS period by approximately 3.2%, at a significance level of 1%. Model 2 of Gebhardt et al. (2001) is denoted by the variable $ke_{2_{i,t}}$, which is significantly lower in the post-IFRS period by approximately 2.5%, at 1% significance level. Model 3 of Gode and Mohanram (2003) is represented by the variable $ke_{3_{i,t}}$, which is significantly lower in the post-IFRS period by approximately 5%, at 5% significance level. Lastly, the variable $ke_{4_{i,t}}$ that represents the cost of equity calculated according to the approach of Easton (2004) is significantly negative in the post-IFRS period by approximately 2.5%, at 1% significance level. These indicate that the cost of equity is indeed lower in the post-IFRS period in comparison to the pre-IFRS period.

The descriptive statistics for the control variables indicate that the one-year-ahead inflation ($INFLA_{i,t}$) and $SIZE_{i,t}$ are significantly higher in the post-IFRS period, at 1% significance level. The higher inflation reflects the instability of Latin American countries and stagnant GDP in the recent years, whereas size indicates that firms are slightly bigger in the post-IFRS period. The variable $RETVAR_{i,t}$, which represents the standard deviation of stock returns, is lower in the post-adoption period and significant at 1%. Moreover, the risk-free rate ($RFR_{i,t}$) is also lower and significant at 1% in the post-adoption period.

With regard to the incentives variables, the variables $AUD_{i,t}$, $NUMEX_{i,t}$ and $ROA_{i,t}$ are similar between the pre- and post-IFRS adoption periods. These suggest that

there is no significant change in firms changing auditors, or listing in other markets or performing a higher return on assets in the post IFRS period.

6.8.2 Descriptive statistics for the analysis on the cost of debt

Table 27 reports the descriptive statistics for all variables used in this study with regard to the analysis on the cost of debt in the Pre and Post adoption periods.

Table 27. Descriptive statistics for the analysis on the cost of debt

	Pre				Post			
	N	Mean	Median	Std. Dev	N	Mean	Median	Std. Dev
Test variable								
$K_{D\,i,t}$	1,116	0.135	0.0826	0.146	1,116	**0.104*****	**0.0672*****	0.117
Control Variables								
$INFLA_{i,t}$	1,116	0.0437	0.0397	0.0218	1,116	**0.0635*****	**0.0411*****	0.0703
$RFR_{i,t}$	1,116	0.0745	0.0668	0.0613	1,116	0.0744	**0.0659*****	0.0489
$LOGSALES_{i,t}$	1,116	12.94	12.89	1.825	1,116	**13.55*****	**13.57*****	1.901
$TANGIBILITY_{i,t}$	1,116	0.464	0.470	0.217	1,116	**0.426*****	**0.420*****	0.228
$CURRRATIO_{i,t}$	1,116	1.705	1.500	0.982	1,116	**1.668*****	1.428	1.015
$INTCOV_{i,t}$	1,116	3.993	2.708	4.019	1,116	**3.489*****	**1.960*****	4.215
$LOGNIBE_{i,t}$	1,116	9.754	9.574	1.836	1,116	**10.33*****	**10.41*****	1.786
$SIZE_{i,t}$	1,116	5.550	5.605	2.332	1,116	**6.360*****	**6.474*****	2.406
$BTMV_{i,t}$	1,116	1.542	0.832	1.873	1,116	**1.320*****	**0.733*****	1.659

*, **, *** significant difference between means (medians) in Pre and in Post at 10%, 5%, 1% level, two-tailed test.

With regard to the test variable, table 27 shows that the ($K_{D\,i,t}$) is lower in the post-IFRS period by approximately 3.1%, and the difference between the pre- and the post-adoption period is significant at 1%. This illustrates that the cost of debt is lower after IFRS adoption, which suggest that lenders and banks perceive a lesser risk to lend to Latin American firms after IFRS adoption.

The descriptive statistics on the control variables indicate that the one-year-ahead inflation ($INFLA_{i,t}$) and $SIZE_{i,t}$ are significantly higher in the post-IFRS period, at 1% significance level. As in the analysis of the cost of equity, the higher inflation reflects the instability of Latin American countries and stagnant GDP in the recent years, whereas size indicates that firms are slightly bigger in the post-IFRS period. The risk-free rate also increased in the post-adoption period, but only the median value is significant at 1%. The $LOGSALES_{i,t}$ and $LOGNIBE_{i,t}$ also increased in the post-adoption period, and the

difference is significance at 1%. These indicate that the operational activity increases in the post-adoption period, as well as the volatility of the net income. Moreover, $TANGIBILITY_{i,t}$, $CURRRATIO_{i,t}$ decreased in the post-adoption period and the difference is significant at 1%. These facts indicate that companies lost fixed assets over the period from Pre to Post, and overall the current liabilities are bigger than the current assets in Post. This might be due to the stagnant GDP in recent years and economic and political instability in Latin America. Lastly, $BTMV_{i,t}$ is lower in the post adoption period, indicating that there are higher growth opportunities for Latin American companies, and the difference is significant at 1%.

6.9 Results

This section reports the results regarding the impact of IFRS on the cost of equity.

6.9.1 Overall effect of the IFRS adoption (*H8*)

Table 28 reports the results of estimating the equation (38), which regress the average of the implied cost of equity (measured by $KE_{1234_{i,t}}$ (average of all 4 models), and $KE_{34_{i,t}}$ (average of models 3 and 4 that do not require clean surplus assumption to hold)) on $IFRS_{i,t}$ and the control variables. These results demonstrate whether the mandatory adoption of IFRS could reduce the cost of equity in Latin American countries.

Table 28. Overall impact of Mandatory adoption of IFRS on the cost of equity

$KE_{1234_{i,t}}$ or $KE_{34_{i,t}} = \alpha + \beta_1 IFRS_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 RETVAR_{i,t} + \beta_4 LEV_{i,t} + \beta_5 INFLA_{i,t} + \beta_6 RFR_{i,t} + \sum_{d=1}^{12} \beta_{d+6} NAICS_i + \sum_{c=1}^{5} \beta_{c+18} COUNTRY_i + \sum \beta_y YearControls_t + \varepsilon_{i,t}$

		Dependent Variables			
Independent Variables	Pred. Sign	$KE_{1234_{i,t}}$	$KE_{1234_{i,t}}$	$KE_{34_{i,t}}$	$KE_{34_{i,t}}$
$IFRS_{i,t}$	-	-0.0206	-0.104**	-0.0313*	-0.118**
		(-1.593)	(-2.284)	(-1.768)	(-2.078)
$INFLA_{i,t}$	+	0.694***	-1.155	0.731**	-1.179
		(2.700)	(-0.957)	(2.570)	(-0.838)
$SIZE_{i,t}$	-	-0.00245	-0.00399	-0.0334	-0.0347
		(-0.141)	(-0.227)	(-1.470)	(-1.527)
$IFRSINFLA_{i,t}$	+		1.762*		1.823
			(1.773)		(1.570)
$RFR_{i,t}$	+	0.0985	-0.0144	-0.141	-0.255
		(0.561)	(-0.0788)	(-0.633)	(-1.106)
$RETVAR_{i,t}$	+	0.0721	0.111	0.194	0.229
		(0.474)	(0.752)	(0.884)	(1.053)
$LEV_{i,t}$	-	0.00266	0.00229	0.00430	0.00394
		(1.237)	(1.055)	(1.230)	(1.153)
Fixed Effects					
YEAR		YES	YES	YES	YES
NAICS		YES	YES	YES	YES
COUNTRY		YES	YES	YES	YES
Constant		0.0437	0.102	0.307*	0.358**
		(0.342)	(0.745)	(1.800)	(1.995)
Adjusted R-squared		0.109	0.115	0.088	0.090
Observations		339	339	361	361
Number of Firms		90	90	94	94

Robust t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

It is worth noting that because inflation could affect results, the second and fourth column of table 28 include the interactive variable $IFRSINFLA_{i,t}$ for robustness of results. These results show that the coefficients on $IFRS_{i,t}$ are significantly negative for the regressions on $KE_{1234_{i,t}}$ and $KE_{34_{i,t}}$, except in the first regression. The second and fourth columns include the interactive variable $IFRSINFLA_{i,t}$, in these cases the coefficient of $IFRS_{i,t}$ is negatively significant at 10%. The coefficient of $INFLA_{i,t}$ is positively significant, which indicates that the cost of equity increases if the expected inflation increases. Thus, the results indicate that IFRS has an overall effect of reduction

on the cost of equity in the post-IFRS adoption period, which is consistent to the hypothesis *H8*.

The next section focuses on whether IFRS is still effective in reducing firms' cost of equity after controlling for firm-level reporting incentives.

6.9.2 The impact of IFRS after controlling for firm-level reporting incentives on the cost of equity

According to the results in table 28, this study turns to examine whether mandatory adoption of IFRS helps to reduce firms' cost of equity after controlling for firm-level reporting incentives based on equation (39), which regress the average of the cost of equity (measured by $KE_{1234_{i,t}}$ and $KE_{34_{i,t}}$) on $IFRS_{i,t}$, firm-level reporting incentives ($AUD_{i,t}$, $NUMEX_{i,t}$ and $ROA_{i,t}$) as well as the other control variables. These are presented in table 29.

Table 29. Impact of mandatory adoption of IFRS on the cost of equity after controlling for firm-level reporting incentives

$KE_{1234_{i,t}}$ or $KE_{34_{i,t}} = \alpha + \beta_1 IFRS_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 RETVAR_{i,t} + \beta_4 LEV_{i,t} + \beta_5 INFLA_{i,t} + \beta_6 RFR_{i,t} + \beta_7 AUD_{i,t} + \beta_8 NUMEX_{i,t} + \beta_9 ROA_{i,t} + \sum_{d=1}^{12} \beta_{d+9} NAICS_i + \sum_{c=1}^{5} \beta_{c+21} COUNTRY_i + \sum \beta_y YearControls_t + \varepsilon_{i,t}$

Independent Variables	Pred. Sign	Dependent Variables			
		$KE_{1234_{i,t}}$	$KE_{1234_{i,t}}$	$KE_{34_{i,t}}$	$KE_{34_{i,t}}$
$IFRS_{i,t}$	-	-0.0171	-0.0960**	-0.0341*	-0.126**
		(-1.285)	(-2.037)	(-1.800)	(-2.185)
$INFLA_{i,t}$	+/-	0.673**	-1.074	0.755**	-1.265
		(2.599)	(-0.882)	(2.602)	(-0.895)
$SIZE_{i,t}$	-	-0.00538	-0.00658	-0.0292	-0.0302
		(-0.285)	(-0.348)	(-1.220)	(-1.262)
$RFR_{i,t}$	+	0.0717	-0.0327	-0.120	-0.239
		(0.389)	(-0.172)	(-0.533)	(-1.029)
$RETVAR_{i,t}$	+	0.0795	0.116	0.203	0.241
		(0.516)	(0.775)	(0.917)	(1.097)
$LEV_{i,t}$	-	0.00380*	0.00335	0.00319	0.00271
		(1.823)	(1.521)	(1.164)	(0.991)
$AUD_{i,t}$	-	-0.0181	-0.0194	0.0703	0.0743
		(-0.383)	(-0.413)	(0.813)	(0.861)
$ROA_{i,t}$	-	0.203	0.186	-0.191	-0.208
		(0.794)	(0.714)	(-0.693)	(-0.743)
$NUMEX_{i,t}$	-	-0.0136**	-0.00979	-0.0411***	-0.0368***
		(-1.990)	(-1.539)	(-4.347)	(-3.856)
$IFRSINFLA_{i,t}$	+		1.665		1.929
			(1.656)		(1.646)
Fixed Effects					
YEAR		YES	YES	YES	YES
NAICS		YES	YES	YES	YES
COUNTRY		YES	YES	YES	YES
Constant		0.176	0.238	0.395**	0.464**
		(1.304)	(1.662)	(2.297)	(2.597)
Adjusted R-squared		0.092	0.099	0.093	0.097
Observations		328	328	350	350
Number of Firms		89	89	94	94

Robust t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Similar to the results of the overall impact of IFRS on the cost of equity, table 29 shows that $IFRS_{i,t}$ is negatively associated in the regressions on $KE_{1234_{i,t}}$ and $KE_{34_{i,t}}$, except in the first regression. The second and fourth column, which include the interactive variable $IFRSINFLA_{i,t}$, indicate that for both models $IFRS_{i,t}$ is still significantly negative at 5%, which illustrates that IFRS can contribute to reduce the cost of equity. It is worth noting that as the clean surplus accounting relation may not hold in the pre-adoption period, both regressions on $KE_{34_{i,t}}$ report the coefficient of $IFRS_{i,t}$ is negative and

significant. These indicate that IFRS can still be beneficial in reducing the cost of equity even controlling for firms' incentives, which confirms *H8*. It is worth noting that this result is valid, in particular, taking into consideration the institutional settings of Latin American countries where the enforcement of accounting standards and investor protection mechanisms are weak and without significant changes in the pre- and post-IFRS adoption period. Table 29 shows that the coefficient on $NUMEX_{i,t}$ is significantly negative for almost all regressions at 5% and 1%. This illustrates that firms listed on foreign stock exchanges present a lower cost of equity in comparison to the others. This fact may arise due to increased comparability of accounting standards. As these firms are listed on overseas stock exchanges, investors can easily compare and rely more on their financial statements, which would imply lower premium to invest in these companies in comparison to other Latin American firms that only list on domestic stock exchanges. The coefficients on $AUD_{i,t}$ and $ROA_{i,t}$ are insignificant, which indicate that firms audited by big 4 auditors or with greater performance do not present a statistically different cost of equity. In other words, investors do not necessarily imply that the amount of information disclosed by these firms is sufficient for them to demand a lower premium to invest in these firms.

6.9.3 Overall effect of the IFRS adoption on the cost of debt (*H9*)

Table 30 reports the results of estimating equation (40), which regress the cost of debt (measured by $K_{D\,i,t}$) on $IFRS_{i,t}$ and the control variables.

Table 30. Impact of mandatory adoption of IFRS on cost of debt

$K_{D_{i,t}} = \alpha + \beta_1 IFRS_{i,t} + \beta_2 INFLA_{i,t} + \beta_3 RFR_{i,t} + \beta_4 LOGNIBE_{i,t} + \beta_5 BTMV_{i,t} + \beta_6 SIZE_{i,t} + \beta_7 LOGSALES_{i,t} + \beta_8 INTCOV_{i,t} + \beta_9 TANGIBILITY_{i,t} + \beta_{10} CURRRATIO_{i,t} + \sum_{d=1}^{12} \beta_{d+10} NAICS_i + \sum_{c=1}^{5} \beta_{c+22} COUNTRY_i + \sum \beta_y YearControls_t + \varepsilon_{i,t}$

Independent Variables	Pred. Sign	$K_{D_{i,t}}$
$IFRS_{i,t}$	-	-0.0355***
		(-2.623)
$SIZE_{i,t}$	-	-0.0138
		(-1.640)
$BTMV_{i,t}$	-	-0.00550
		(-1.029)
$INFLA_{i,t}$	+	0.0558
		(0.516)
$RFR_{i,t}$	+	0.652***
		(5.950)
$LOGNIBE_{i,t}$	+	0.00638
		(1.213)
$INTCOV_{i,t}$	-	-0.00586***
		(-5.161)
$LOGSALES_{i,t}$	-	0.00207
		(0.185)
$TANGIBILITY_{i,t}$	-	-0.0276
		(-0.665)
$CURRRATIO_{i,t}$	+	0.0135**
		(2.351)
Fixed Effects		
COUNTRY		YES
NAICS		YES
YEAR		YES
Constant		0.0847
		(0.661)
Adjusted R-squared		0.130
Observations		2,232
Number of Firms		279

Robust t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

This result indicates that the coefficient of $IFRS_{i,t}$ is negatively significant. In particular, the coefficient is significant at 1% for the regression with all sample firms. The results illustrate that the adoption of IFRS can benefit Latin American firms in reducing their cost of debt. These results are consistent to *H9*. With regard to the control variables, the coefficient on $RFR_{i,t}$ is positive and significant at 1%, which indicate that the cost of debt is higher if the risk-free rates increases. This is consistent to the prediction and the rationale of the lender in agreeing the interest rate with the firm. Additionally, $INTCOV_{i,t}$ is significantly negative, which indicates that if a company has higher capacity of

payment with regard to the debt, lenders would reduce the interest rates for these firms, as these firms are less risky. Moreover, $CURRRATIO_{i,t}$ is positive and significant, which indicates that firms with greater current liabilities in relation to current assets may disclose more information in order to achieve lower debt costs (Florou and Kosi, 2015). These firms with greater liabilities must disclose more information to get access to loans, which would also imply lower debt costs.

6.10 Conclusion

This chapter provides evidence regarding whether mandatory adoption of IFRS can contribute to a reduction on the cost of equity and debt in Latin American countries whose institutional settings of enforcement and investor protection are weak. As Chapter 3 shows that there is no significant change in the enforcement of accounting standards and investor protection mechanisms between the pre- and post-IFRS adoption period in these countries; this situation allows this study to focus on the impact of mandatory adoption of IFRS and firm-level reporting incentives exclusively. In contrast to previous literature, the results reported on this thesis of the cost of equity are based solely on data provided by the analysts, and this study also achieves similar results by calculating the cost of equity using the long-term growth rate to forecast the four-year through five-year ahead earnings forecasts if they are not available. Table 31 shows the summary of the results according to the models adopted.

Table 31.Summary of the results on the cost of equity and debt

Models	Model (38) Cost of equity $KE_{1234_{i,t}}$	Model (38) Cost of equity $KE_{34_{i,t}}$	Model (39) Cost of equity controlling for firms' incentives $KE_{1234_{i,t}}$	Model (39) Cost of equity controlling for firms' incentives $KE_{34_{i,t}}$	Model (40) Cost of debt
Reduction on the cost of capital	Yes	Yes	Yes	Yes	Yes

Firstly, the results confirm that mandatory adoption of IFRS can contribute to a reduction on the cost of equity in Latin American countries. Secondly, firm-level reporting incentives can affect the cost of equity to a certain degree. That is, the joint effect of IFRS adoption and firm-level incentives can reduce the cost of equity. Thirdly, mandatory adoption of IFRS can contribute to a reduction on the cost of debt of Latin American firms.

The significant contributions of this study are, firstly, according to the economic condition and firms' strong incentives of adopting IFRS, the Latin American countries with weak institutional settings can still present a reduction on the cost of equity due to the mandatory adoption of IFRS. Secondly, this study contributes to IASB and the regulators of Latin American countries. The results confirm the positive impact of the mandatory adoption of IFRS as well as the governments' policies regarding the implementation of these standards on a long-term approach.

Chapter 7: Conclusion

7.1 Introduction

This Chapter provides a brief synopsis of the main findings and conclusion of the thesis, as well as illustrating the implications, limitations and recommendations for future research. This study deals with six measures of accounting quality and economic consequences: earnings management, value relevance, accounting conservatism, analysts' information environment, cost of equity, and cost of debt in Latin America. This thesis starts by discussing the theoretical framework on Chapter 2, which is based on the theory of agency, positive accounting theory, equity valuation theory as well as the works of Ball et al. (2003) and Nobes (2006). Chapter 3 then presents the background of Latin American countries and the factors that may affect the adoption of IFRS, and investigates through a questionnaire whether there were any changes in the institutional setting around the years of mandatory IFRS adoption. After presenting these foundations and supports for this thesis, this thesis starts by investigating the impact of IFRS adoption on accounting quality (earnings management, accounting conservatism, and value relevance) in Latin America, which is presented in Chapter 4. The second study (Chapter 5) investigates whether IFRS improved the analysts' information environment in Latin America. The third study (Chapter 6) investigates whether IFRS affected the cost of equity and on the cost of debt in Latin America.

This Chapter is structured as follows: Section 7.2 discusses the main conclusions. Section 7.3 presents the implications of this study. Section 7.4 illustrates the limitations of the study; Finally, section 7.5 makes recommendations for future research.

7.2 Conclusions

The findings of this study extend our knowledge with regard to the mandatory adoption of IFRS, the factors affecting the adoption of IFRS in emerging economies, and show that IFRS can still be beneficial for countries with weak enforcement of accounting standards and weak investor protection mechanisms. Thus, unlike developed countries where the degree of enforcement is higher than in emerging countries, these results suggest that IFRS can improve the accounting quality of Latin American firms. This is also more apparent as the institutional setting has not improved significantly in the years around the mandatory adoption of IFRS as illustrated in Chapter 3.

In summary, the results indicate that IFRS does indeed improve the accounting quality of Latin American firms. The big gap between previous domestic standards, which were suited for attending taxation and other government needs in comparison to IFRS, which is market oriented and focused on better informing market users, is a key reason which explains this result. Moreover, following the financial crisis, strongly performing firms need to attract foreign investments in order to support firms' growth. This is an incentive to adopt IFRS and increase accounting quality in order to attract investments. This argument is supported by the findings based on firm-level factors of Chapter 4. Additionally, the improvement on accounting quality is also supported by consistent findings of an improvement on the analysts' information environment, reflected also in higher precision stemming from public information, which is derived under IFRS, as well as a reduction on firms' cost of equity and debt. Analysts have benefited from the new information environment under IFRS and this has implications for their forecast accuracy and their forecast dispersion. Moreover, this also benefits investors in assessing whether or not to invest in Latin American firms. As the cost of equity and the cost of debt reduced, this illustrates that not only investors but also debt holders likely perceive more

transparent and reliable information stemming from the financial statements, which is in line with the regulators' expectation and the premium required to invest in or lend to these companies is reduced. In conclusion, the adoption of IFRS, as well as firm-level factors, which represent firms' incentives to a certain degree, are key in deriving an improvement in accounting quality. Overall the effects of IFRS are more pronounced for the external users such as analysts, investors and debt holders, this is also consistent with the purpose of IFRS that is designed to suit more the external users of accounting. As such, an overall improvement is perceived and IFRS has proven to benefit more Latin American firms in comparison to previous domestic accounting standards.

7.3 Implications

Overall, according to the economic and financial condition, Latin American countries with weak institutional settings can still benefit from the mandatory adoption of IFRS. This is different from previous studies that emphasize strict enforcement regimes and strong investor protection mechanisms as the conditions for adopting IFRS successfully. As the time span of past studies is relatively short, the benefits of mandatory IFRS adoption could take more time to appear. Therefore, this study supports the beneficial aspects of the adoption of IFRS in helping Latin American firms in securing higher accounting quality, which in turn implies greater analysts' forecasts accuracy, lower costs of equity and debt. Besides helping the growth of Latin American firms, the results also suggest that IFRS contributed by strengthening and developing the capital markets. This evidence contributes to the IASB, which called for research in emerging markets and required evidence to support the adoption by other countries. It also has several implications for the regulators of Latin American countries, as this confirms the positive impact of the mandatory adoption of IFRS as well as the governments' policies

regarding the implementation of these standards. The evaluation on the auditors' reports also provides compelling evidence by showing the most common cases of irregularities and could be helpful for these governments should they wish to increase the penalties and financial consequences for firms caught by these irregularities. For investors, it could be beneficial for forming portfolios and achieving higher yields as they compare the performance of these firms with other international firms. Following the economic and political crisis that these countries have faced, in recent years, lower inflation rates and higher growth rates alongside the increase in the reliability of financial statements of public companies may attract more investments. For debt holders, banks and other lenders, the results illustrate that the cost of debt declines in the post-IFRS period, which suggest that lenders would be more confident in providing funding for Latin American firms. The increase in the funding and lower rates can help Latin American firms to grow and to develop their capital markets, with more external users demanding information of high-quality in order to continue their funding operations. Finally, the results of this study support the beneficial outcome of the IFRS adoption, which is a reference point for the IASB in supporting the adoption of IFRS for other developing countries.

7.4 Limitations of the thesis

i) The main limitation of this study relates to data availability. In particular, the data of analysts' forecasts that is used on the analyses of the analysts' information environment and on the analyses of the cost of equity. Data availability in developing countries such as Latin American countries is very limited, which affected the scope of this study, as I could not include more countries in the sample. In order to overcome this limitation, this study included data available from several sources, and tested the hypotheses in different types of databases: DataStream and WorldScope, Capital IQ, Economática, I/B/E/S detail and summary file.

ii) Calculations of the cost of equity are subject to advantages and disadvantages for each method. Thus, previous studies (Daske et al., 2008; Li, 2010) used the average of the cost of equity according to several methods. Following previous research, this thesis employs the average of four methods comparing the results with the average of two methods that do not rely on the clean surplus assumption as it may not hold in the period before the IFRS adoption.

iii) The concept of accounting quality is broad and may rely on other factors that this thesis does not focus on such as disclosure; that is, the extent to which firms disclose the requirements of IFRS fully. The measures adopted in this thesis are related to the faithful representation of firms' economic performance, which is broadly accepted by international regulators, investors, and academics, as an important feature of high-quality accounting (Ahmed et al., 2013b). In order to overcome this issue, this study includes 6 measures of accounting quality and economic consequences in order to provide a broad view of the impact of IFRS adoption. Moreover, this study also collected qualitative data with regard to the institutional setting and auditors' reports, which gives insight with regard to the compliance of the accounting standards across firms with different level-factors, as well as it enhances the robustness of the analyses.

iv) The standards and the process of convergence to IFRS are ongoing. As the IASB issues corrections or adjustments to the existing standards, each country has a different timing in approving and issuing the new legislation. This thesis cannot exclude the fact that the standards adopted during the sampling period for each country may still differ slightly due to the different time in its implementation. This limitation however, is not

sufficient to overrule the fact that the standards can still be fully compliant to IFRS (IFRS, 2017).

7.5 Recommendations for future research

This study proposes the following recommendations for future research:

i) A new avenue for research is to investigate the impact of IFRS in Latin American on the cost of debt with regard to the type of debt (public or private) of the firm. After the adoption of IFRS the cost of debt could have reduced more for firms that rely on public debt as the quality of their financial statements increased. On the other hand, the cost of debt of firms that rely on private sources may have reduced less in comparison to those firms that rely on public sources. This is because firms relying on private sources of funding may have less incentives to improve disclosure.

ii) Other studies examining the impact of IFRS on real earnings management in Latin America could further contribute to the international evidence.

iii) The liquidity and the amount of foreign direct investments could also be examined in the post-IFRS period for Latin American firms. According to an improvement in the accounting quality brought via IFRS, the liquidity of Latin American markets and the amount of foreign direct investments could have increased.

Appendix 1: Questionnaire

This is a questionnaire regarding the enforcement of International Financial Reporting Standards (IFRS), shareholder protection and legislation in Latin American countries[43].

Please answer the following questions	Reference
ENFORCEMENT	Adapted From
1) Did the security market regulator or other body monitor financial reporting of public companies in 2009[44]?	Brown et al. (2014)
2) Has this situation changed since the mandatory IFRS adoption in 2010? If yes, please specify, and provide a particular month and year when the change happened. For example, the regulator was not responsible for this role before IFRS, however after the mandatory adoption of IFRS the regulator became responsible for it, or the regulator appointed a consultant to do this work.	
3) If there is a regulator monitoring the compliance behaviour of a firm after mandatory adoption of IFRS, how many firms did not comply with IFRS in the post mandatory adoption period (for example in 2011 and 2012)?	Hope (2003)-Rule of Law
4) What are the consequences for firms' noncompliance behaviours with the financial reporting and auditing requirements (e.g., fines, loss of limited liability status, loss of licenses, prison sentences for managers, claims for reparation by shareholders or others)?	World Bank (2008)
5) Which legislation outlines/presents the consequences (e.g., in the Acts or Codes, in a civil code, criminal code, capital markets legislation, stock exchange listing rules, etc.)?	
6) Have there been any changes at the above legislation(s) concerning the consequences of noncompliance since IFRS adoption? If yes, please specify.	
7) Has the regulator taken judicial action against a firm for a non-compliant financial statement? If yes, how many times during each individual year between 2009 and 2012? If not, please specify the reason.	Hope (2003)-Rule of Law

[43] The questionnaire was issued in Portuguese and Spanish, according to the local language in the target countries.
[44] The date of each question is adjusted for each country according to the official IFRS adoption date.

8) Has there been any increase in the number of staff employed by the regulator or monitoring body in order to enhance the enforcement of IFRS? If yes, could you specify a particular month and year when the hires took place?	Brown et al. (2014)
INVESTOR PROTECTION	
Please answer the following questions related to shareholder protection.	
9) What kind of voting mechanism does your country adopt? How does it work (for example, the shareholder's number of votes is equal to his number of shares, or there is a distinction between shares, or shareholders that have older shares have higher number of votes)?	La Porta et al. (1998) and Hope (2003) - Shareholder Protection
10) Is a shareholder able to vote through the mail?	
11) In order to be eligible to vote, does a shareholder need to deposit his shares in the company prior to a shareholder meeting, ensuring that the shares temporarily cannot be sold?	
12) Is there any legal regulation allowing the minority shareholders to challenge the directors' decision in the court? If yes, please specify.	
13) What is the minimum percentage of share capital needed in order to call for an extraordinary shareholder meeting?	
14) Is there any regulation regarding the minimum mandatory dividend percentage to be distributed to shareholders? If yes, please specify.	
15) Have there been any changes on the outlined voting and protection mechanisms after IFRS adoption? If yes, please specify which changes were made and the particular month and year they took place.	
16) Has the level of shareholder protection been improved since mandatory IFRS adoption? If yes, please specify how it has improved and provide the particular month and year that the improvement was made.	
17) How many insider trading events were caught by the regulator in each individual year between 2009 and 2012?	Hope (2003) - Insider Trading Laws
18) Did the regulator take further actions to court? If yes, please indicate. If no, please explain why.	

19) Have these insiders been convicted? If yes, how many were convicted in each individual year between 2009 and 2012?	
LEGISLATION	
20) Regarding the mandatory adoption of IFRS, please provide the name(s) of the related laws, decrees, circulars, other regulations, and describe the process involved. Please provide a copy of the regulations if they are available.	World Bank (2008)

Appendix 2: Results of the questionnaire

QUESTIONS	COUNTRIES				
ENFORCEMENT	ARGENTINA	BRAZIL	CHILE	MEXICO	PERU
1)	Yes	Yes	Yes	Yes	Yes
2)	No	No	No	No	No
3)	None	Please refer to footnote 1	Many firms, but an exact statistic was not provided	NA	3 firms and 1 auditor's firm for providing inaccurate evidence of a firm's financial statement
4)	Fines and charges, however shareholders need to prosecute managers in order to claim for refunds and/or for the manager to go to prison	Fines, charges, manager can be temporary suspended	Fines and charges	Fines and charges	Fines and charges

5)	Law N. 26.832. (Legislación y normas de Mercado de Capitales)	Law N. 6.385/76, art. 11	Law N. 3538. (Ley Orgánica de la Superintendencia de Valores y Seguros)	Law of Stock Markets/05 (Ley del Mercado de Valores/2005)	Norm. CONASEV N° 0055-2001
6)	No	No	No	No	No
7)	NA	Please refer to footnote 2	None, only before the IFRS adoption and the number of firms has not been informed	NA	Only 1 in 2010, prior to the IFRS adoption
8)	No	In January 2012, there was an increment of 3 staff members, but they were relocated to other roles in due course	No	NA	1 in July 2014
INVESTOR PROTECTION	ARGENTINA	BRAZIL	CHILE	MEXICO	PERU
9)	One-Share-One-Vote	One-Share-One-Vote	One-Share-One-Vote	One-Share-One-Vote	One-Share-One-Vote
10)	No	No	Yes	No	Yes
11)	Yes	No	No	No	No

12)	Yes, Law of Societies (Ley de Sociedades) N. 19.550/84 establishes 5%	Yes, Law N. 6.404/76, art 159 defines 5% of minimum share capital	Art. 133 of Law of Public Societies (Ley sobre Sociedades Anonimas) establishes 5%	Yes, Law of Stock Markets (Ley de Mercado de Valores), art. 36 establishes that 5% of shares are required to start a prosecution against the director	Yes, Law of Societies (Ley General de Sociedades) N. 26887/97, art 219. However, it does not define a minimum percentage of share capital
13)	60% in a first call, and 30% in a second call	10%	10%	Unless defined in the statute, it is required 75% of the shareholders	20% according to art. 117 of Law of Societies (Ley General de Sociedades - Ley N. 26887/97)
14)	No	Yes. Law N. 6404/76 establishes 25%	Yes. Art 79 of Law of Public Societies defines 30%	Yes, 5%. According to Art. 113, 2nd paragraph of General Law of Societies (Ley General de Sociedades Mercantiles) and art. 117, 6th paragraph of Law of Stock Markets (Ley de Mercado de Valores)	Yes, 50% if 20% of the shareholders demand for it
15)	No	No	No	No	No
16)	No	No	No	No	No
17)	NA	Please refer to footnote 3	32	NA	NA

18)	NA	No. Because it is not a responsibility of the regulator. It is a duty of the Public Ministry of Brazil.	No. Because it is not a responsibility of the regulator.	NA	NA
19)	NA	Please refer to footnote 4	NA	NA	NA
LEGISLATION	ARGENTINA	BRAZIL	CHILE	MEXICO	PERU
20)	Law N. 17811/68 and Norm 562	Laws N. 6404/76, 11938/07 and 11941/09	Norms 384, 427, 438, 456, 457 and 485. In 2009, norms 544 and 549, for funds and banking institutions. Finally, norm 653 of 2010 for insurance companies.	Law of Stock Markets/05 (Ley del Mercado de Valores/2005, art. 104, fracción III, inciso a), first and second paragraphs	Norm CONASEV N° 102-2010-EF/94.01.1(See appendix A of the norm) - Norm Nº 304 -2010-EF/94.06.3 (See appendix B of the norm)

NA: Not available;
Footnote 1: 2010: 2, 2011: 3, 2012: 2, 2013: 4, 2014: 18, 2015: 12;
Footnote 2: 2010: 2, 2011: 3, 2012: 2, 2013: 4, 2014: 18, 2015: 12;
Footnote 3: 2009: 4, 2010: 9, 2011: 3, 2012: 8, 2013: 15;
Footnote 4: The regulator caught the first case of insider trading in 2009, and the first conviction was only in November 2016.

Appendix 3: Summary of literature review

Section 1. Literature review (Chapter 4)

Panel A. Studies that focused on broad topics of accounting quality				
Author (s)	**Research Objective**	**Sample**	**Methodology and Accounting quality metrics**	**Main Findings/Arguments**
Devalle et al. (2010)	Investigated the value relevance of accounting data after IFRS adoption.	3,721 firms of 5 countries from 2002-2007.	Earnings smoothing, Value relevance and timely recognition of losses.	The authors found mixed accounting quality results. The authors argue that they did not find evidence that supports the goal of enhancing accounting quality of IASB.
Iatridis and Rouvolis (2010)	Investigated earnings management, timely recognition of losses and value relevance after mandatory IFRS adoption.	254 Greek firms from 2004 to 2006.	Earnings smoothing, Value relevance and timely recognition of losses.	Firms presented reduced level of earnings management, higher value relevance and higher timeliness of losses after first year of mandatory adoption. On the year of the mandate, the accounting quality was reduced due to transition costs that affected firm's behaviour.
Gebhardt and Novotny-Farkas (2011)	Investigated the impact of mandatory IFRS adoption on banking industry.	90 E.U banks from 2000 to 2007.	Earnings management, and timely loss recognition.	Banks with highly ownership dispersion keep higher levels of loan loss provisions and as a result smooth income even after IFRS. Moreover, the timely loss recognition is reduced after IFRS adoption. Authors criticise the IFRS standards that are incurring lower accounting quality for banks.

Ahmed et al. (2013b)	Investigated whether the quality of accounting increased after mandatory IFRS adoption.	3,262 firms from 20 countries from 2002-2004 and 2006-2007.	Earnings management and timely recognition of losses through Barth et al. (2008) and Basu (1997).	Higher earnings management and lower timely recognition of losses for firms in strong enforcement countries, and no improvement on weak enforcement countries. IFRS does not improve accounting quality because it is looser than local standards.
Christensen et al. (2015)	Investigated whether the adoption of IFRS increases the accounting quality per se.	177 firms in Germany from 1993-2006.	Several models to investigate Earnings management, timeliness and value relevance (follow the approach of Barth et al. 2008).	Accounting quality does not improve for mandatory adopters. Firms' incentives to adopt IFRS are the ones which drive the improvement on the quality of accounting.
Panel B. Studies that focused on accounting conservatism				
André et al. (2015)	Investigated the level of conditional conservatism after mandatory IFRS adoption.	7,251 firm-year observations from 16 countries during 2002-2007.	Conditional conservatism through the model of Khan and Watts (2009) and others.	There is evidence of a decline of the degree of conditional conservatism. This is stronger in strong enforcement countries. This situation is enhanced with firms that have high values of intangible assets and goodwill.

Panel C. Studies that focused on earnings management				
Author (s)	**Research Objective**	**Sample**	**Methodology and Accounting quality metrics**	**Main Findings**
JeanJean and Stowloy (2008)	Investigated whether there was a significant impact on earnings management after mandatory IFRS adoption.	1,146 firm-year observations from Australia, France, and the UK from 2005 to 2006.	Earnings Management through the properties of earnings studies (Burgstahler and Dichev, 1997).	There is an increase in earnings management in France. Moreover, there is no evidence of a decrease in the earnings management in the UK and in Australia.
Zéghal et al. (2011)	Investigated whether the level of earnings management decreased in France after IFRS adoption.	353 French firms from 2003-2006.	Earnings Management based on the method of Kothari et al. (2005).	There is a decrease in earnings management after mandatory IFRS adoption.
Houqe et al. (2012)	Investigated the relation between earnings management and investor protection after mandatory IFRS adoption.	104,348 firm-year observations from 46 countries from 2000-2007.	Earnings Management through the model of DeFond and Park (2001).	Companies from strong investor protection countries that were mandated to adopt IFRS presented a decrease on earnings management.

Doukakis (2014)	Investigated the level of earnings management after mandatory IFRS adoption.	15,206 firm-year observations from 22 countries in 2005.	Accruals aggressiveness following Dechow et al. (1995), and real earnings management following Roychowdhury (2006).	IFRS had no significant impact on the level of earnings management.
Capkun et al. (2016)	Investigated whether the adoption of IFRS increases earnings smoothing.	3,853 firms from 29 countries between 1994-2009.	Earnings management and timely recognition of losses through the metrics of Barth et al. (2008).	The level of earnings smoothing is greater after IFRS adoption for both mandatory and voluntary adopters.
Panel D. Studies that focused on Value Relevance				
Callao et al. (2007)	Investigated comparability and value relevance after mandatory IFRS adoption.	35 Spanish companies from 2004-2005.	Value relevance and Comparability through financial statement analysis.	There are changes in comparability of accounting figures and financial ratios. Moreover, there is no improvement on the value relevance after IFRS adoption. The authors argue that it is too early to draw any conclusion.

Gjerde et al. (2008)	Investigated if there is higher value relevance on the conversion from NGAAP to mandatory IFRS.	145 restatements from Norwegian Generally Accepted Accounting Principles (NGAAP) from 2004.	Value relevance.	Accounting numbers under IFRS are less value relevant than under previous standards. Nevertheless, as intangible assets are more capitalized under IFRS, there is evidence of higher value relevance with companies that have higher intangibles. They argue that the reason is because capitalizing intangible assets is more value-relevant than expensing them as incurred or through goodwill amortization.
Horton and Serafeim (2010)	Investigated if there is higher value relevance on the mandatory IFRS reconciliation disclosure compared with UK GAAP.	297 UK firms from LSE350.	Value Relevance and Timeliness of accounting.	The authors found that share-based payments, goodwill amortization and deferred tax are value relevant to investor in the market. The value relevance increased under the disclosure of IFRS compared to previous standard. This confirms IASB goal of enhancing the usefulness of accounting.

Armstrong et al. (2010)	Investigated investor's perception about IFRS in Europe.	16 events covering several European countries from 2002-2005.	Market reaction to 16 events(news) related with IFRS.	Investors react positively with events that enhance the probability of adoption of IFRS in common law countries. Nevertheless, this trend does not happen in code law countries. Authors argue that investors are expecting benefits with IFRS adoption.
Dobija and Klimczak (2010)	Investigated the value relevance over time in Poland.	856 firm-year observations of Polish firms from 1997 to 2008.	Unexpected and simple return model to measure Value Relevance.	Although there is a positive relation between accounting numbers and market returns, there is no significant improvement on the value relevance after mandatory IFRS adoption.
Aharony et al. (2010)	Investigated the value relevance of 3 items between local GAAP and mandatory IFRS adoption.	2,298 of 14 countries from 2004-2005.	Value Relevance.	The adoption of mandatory IFRS has increased the value relevance of goodwill, research and development expense, and revaluation of property, plant and equipment. This confirms that IFRS indeed brings higher transparency and reliability to accounting numbers.

Tsalavoutas et al. (2012)	Assessed whether IFRS has increased the value relevance of book value and net income in Greece.	210 Greek firms from 2001 to 2008.	Value relevance.	Investors perceive value on the disclosure of specific IAS norms; however, there is no improvement on the overall value relevance after IFRS adoption. Authors highlight the fact that markets with different characteristics such as Greece can indeed perceive different outcomes of mandatory IFRS adoption.
Barth et al. (2014)	Investigated whether the net income reconciliation of mandatory IFRS is value relevant.	1201 firms from 15 countries during 2003 to 2005.	Value relevance.	Both differences of book value of equity and net income are positively associated with share price. IFRS is indeed more useful for investors.
Panel E. Literature Review on Emerging Markets				
Dobija and Klimczak (2010)	Investigated whether IFRS increased value relevance of accounting numbers.	856 year-firms from Poland from 1997 to 2008.	Value Relevance.	There is a positive and significant relation between earnings and returns, but they do not find an improvement in its strength over time.
Liu et al. (2011)	Investigated the accounting quality after mandatory IFRS adoption.	870 Chinese firms from 2005 to 2008.	Earnings Management, value relevance through the metrics of Barth et al. (1998) and timely recognition of losses through the model of Basu (1997).	Reduced earnings management, higher value relevance but no improvement in timely recognition of losses.

He et al. (2012)	Investigated whether fair value adjustments under IFRS are related with earnings management.	Around 1,275 Chinese firm-year observations from 2005 to 2008.	Earnings Smoothing through fair value adjustments.	Firms do smooth earnings through fair value adjustments under IFRS.
Cang et al. (2014)	Investigated whether IFRS creates new earnings management opportunities.	4,587 Chinese firm-year observations from 2003 to 2009.	Analyst coverage and Earnings management.	IFRS creates new earnings management opportunities.
Panel F. Literature Review in Latin America				
Santos and Calixto (2010)	Investigated the level of disclosure of reconciliation notes between IFRS and BRGAAP.	318 Brazilian firms in the first phase of the adoption (2008).	Disclosure.	Compliance to the standards was found to be very low.
Becerra (2010)	To investigate the compliance and implementation issues in adopting IFRS in Peru.	Peruvian companies.	Questionnaire approach, implementation and compliance issues.	Many companies had problems with tax and legal issues involving the implementation of the standards.
Macedo et al. (2013)	Investigated whether IFRS increased value relevance of accounting numbers.	433 Brazilian firms between 1997 and 2009.	Value Relevance.	Improvement in value relevance of earnings.

Bertin and Moya (2013)	Investigated whether IFRS increased conditional conservatism.	95 Chilean Firms between 1999 and 2010.	Conditional conservatism through Basu (1997)	Improvement in conditional conservatism.
Santos and Cavalcante (2014)	Investigated whether IFRS increased value relevance of accounting numbers.	246 Brazilian firms between 1999 and first quarter of 2013.	Value Relevance.	Controversial findings, the results are conflicting depending on the metrics adopted.
Pelucio-Grecco et al. (2014)	Investigated whether IFRS decreased the level of earnings management.	317 Brazilian firms from 2006 to 2011.	Earnings Management based on Dechow et al. (1995) and Kang and Sivaramakrishnan (1995).	Controversial findings, the results are conflicting depending on the metrics adopted.
Klann and Beuren (2015)	Investigated whether IFRS decreased the level of earnings management.	133 Brazilian firms from 2005-2007 (Pre) and 106 companies from 2010-2012 (Post).	Earnings Management based on the metrics of Barth et al. (1998).	Earnings management increased, but authors' point out that this could vary according to firms' incentives and enforcement issues.
Black and Nakao (2017)	Investigated whether IFRS improved accounting quality.	Around 5,000 quarterly observations from Brazilian companies from 2003 to 2014.	Earnings Management, timely recognition of losses and value relevance.	Companies with incentives improved their accounting quality, but other companies did not.

Panel G. Other key studies quoted in the thesis but focused on voluntary adoption of IFRS				
Barth et al. (2008)	Investigated whether voluntary adoption of IFRS increases the overall quality of accounting.	361 firms in 21 countries with voluntary adopters of IFRS and control groups.	Several equations to investigate Earnings management, timeliness and value relevance.	Firms that adopted IFRS voluntarily presented less earnings management, higher value relevance and higher timeliness of losses in comparison with those that did not adopt it.

Section 2. Literature review (Chapter 5)

Panel A. Studies that investigated analysts' information environment under mandatory IFRS adoption				
Author (s)	**Research Objective**	**Sample**	**Metrics**	**Main Findings**
Byard et al. (2011)	Investigated the effect of mandatory IFRS adoption in Europe.	1,168 mandatory adopters from 20 European countries from 2003 to 2006.	Analysts' forecast accuracy, dispersion and analysts following.	IFRS improves the analysts' information environment only when it is properly enforced.
Tan et al. (2011)	Measured whether the number of foreign and local analysts has increased and whether their earnings forecasts are improved after mandatory IFRS adoption.	25 countries that mandated IFRS and 9 that did not.	Analysts' forecast accuracy.	The number of analysts following a firm increases for both local and foreign analysts following mandatory IFRS adoption. There is also an improvement on the earnings forecast accuracy for foreign analysts.
Jiao et al. (2012)	Investigated the effect of mandatory IFRS adoption on analysts' forecast accuracy.	Around 700 firms for 2004 and 2006 covering 19 European countries.	Analysts' forecast accuracy and dispersion.	The forecasts are more accurate and less dispersed after IFRS adoption.
Choi et al. (2013)	Investigated the effect of mandatory IFRS adoption on analysts' forecast accuracy in the U.K.	U.K. firms from 2003 to 2007.	Analysts' forecast accuracy and Value relevance.	Analysts' forecast accuracy has increased and dispersion has decreased. Moreover, the actual earnings were more value relevant than the forecasted earnings.

Horton et al. (2013)	Investigated which aspects of IFRS are related with improvements in analysts' forecast accuracy.	8,124 firms from 41 countries from 2001 to 2007.	Analysts' forecast accuracy.	Overall, there is evidence that IFRS indeed is responsible for improvements in forecast accuracy due to increased comparability and higher informational benefits.
Panaretou et al. (2013)	Investigated whether the accounting for derivatives has enhanced transparency or it has increased earnings volatility on the U.K. market.	Around 1,000 firm-year observations from 2003 to 2008.	Analysts' forecast accuracy and dispersion.	Firms that measure and report derivatives under IFRS present significantly lower analysts' forecast error and dispersion compared to the others.
Houqe et al. (2014)	Focused on the impact of IFRS on the analysts' forecast accuracy in weak investor protection countries (France, Germany, and Sweden).	Around 200 companies from 2003 to 2011.	Analysts' forecast accuracy and dispersion.	Both analysts' forecast error and dispersion are reduced following mandatory adoption.
Preiato et al. (2015)	Investigated analysts' forecast accuracy and dispersion under IFRS controlling for various proxies of enforcement.	10,769 firm-year observations of 39 countries covering mandatory, voluntary and non-adopters of IFRS from 2003 to 2009.	Analysts' forecast accuracy and dispersion.	The authors did not find that IFRS per se is related with improvements on analysts' forecast accuracy and dispersion. They argue that the enforcement is key issue on this topic.

Panel B. Other key studies that focused on voluntary IFRS adoption				
Ashbaugh and Pincus (2001)	Investigated the relationship between analysts' forecast accuracy and the early stage of IFRS adoption.	80 non-U.S. firms that adopted IAS voluntarily from 13 countries from 1990 to 1993.	Analysts' forecast accuracy.	Earnings forecast accuracy increases after firms voluntarily adopt IAS.
Bae et al. (2008)	Investigated the relation of differences between local standards and IAS with analysts' forecast accuracy on voluntary adopters of IAS.	6,888 analysts for 6,169 firms from 49 countries during 1998–2004.	Analysts' forecast accuracy.	GAAP differences are positively related with analysts' forecast error following IAS adoption.
Hogdon et al. (2008)	Investigated the relationship between analysts' forecast accuracy and enhanced disclosure of IFRS.	Annual reports of 89 voluntary adopters of IFRS from 13 non-U.S. countries from 1999 to 2000.	Analysts' forecast accuracy and Disclosure.	Analysts' forecast error is negatively related with firm compliance to IFRS.
Glaum et al. (2013)	Investigated the relation between quality of disclosure and analysts' forecast accuracy, and the role of IFRS.	1,908 German firm-year observations from 1997-2005.	Analysts' forecast accuracy and Disclosure.	Forecast accuracy is improved under IFRS, and the quality of disclosure is significant but explains only a small portion of the improvement in forecast accuracy.

Section 3. Literature review (Chapter 6)

Panel A. Studies that focused on Cost of equity				
Author (s)	**Research Objective**	**Sample**	**Methodology and metrics**	**Main Findings**
Daske et al. (2008)	Investigated the impact of mandatory IFRS adoption over the world.	8,726 firms from several countries.	Share liquidity, cost of equity and Tobins' Q.	Market liquidity increases around the time of the introduction of IFRS. There is evidence of reduction of cost of equity and a rise in equity valuations before the mandatory adoption date. Nevertheless, the changes are more evident on countries with strong enforcement and transparency.
Lee et al. (2008)	Studied the impact of mandatory IFRS adoption on the cost of equity in Europe.	17 European countries from 1995 to 2006.	Cost of equity - PEG and AEG model.	The influence of IFRS on the cost of equity is weak, and that firm's incentives and institutional factors are drivers of financial reporting.
Li (2010)	Investigated whether the cost of equity has decreased following mandatory IFRS adoption.	18 countries covering 6,456 firm-year observations from 1995 to 2006.	Cost of equity by the average of the industry ROE model of Gebhardt et al. (2001), the economy wide growth model of Claus and Thomas (2001), the unrestricted AEG of Gode and Mohanram (2003), and the restricted AEG of Easton (2004).	Only countries with strong enforcement mechanisms present a significant reduction on the cost of equity.

Eliwa et al. (2016)	Investigated the interaction of the cost of equity and earnings quality.	3,527 firm-year observations from the U.K. over 2005-2011.	Earnings quality, and cost of equity calculated as the average of: the PEG and the modified PEG of Easton (2004), the model of Gode and Mohanram (2003) and the Ohlson and Juettner-Narouth (2005).	There is a negative association between earnings quality and cost of equity. That is, higher earnings quality is associated with lower cost of equity.
Houqe et al. (2016)	Investigated whether the cost of equity has decreased following mandatory IFRS adoption.	29 Companies from New Zealand.	Cost of equity through the model of Easton (2004).	There is a reduction on the cost of equity in the post-adoption period.
Persakis and Iatridis (2017)	Investigate the impact of IFRS on the cost of equity.	199,516 firm-year observations from 11 European countries and 8 Asian countries from 2000-2014.	Cost of equity by the average of the models of Gode and Mohanram (2003) and Easton (2004).	There is a reduction on the cost of equity in the post-adoption period.
Panel B. Evidence on Latin America				
Gatsios et al. (2016)	Investigated the impact of IFRS adoption on the cost of equity of Brazilian firms.	1,325 firm-year observations from Brazilian Companies from 2003 to 2014.	Cost of equity through the CAPM model.	No evidence of a reduction on the cost of equity. Authors point out that the effect of IFRS will take more time to appear.

Panel C. Studies that focused on comparability				
Author (s)	**Research Objective**	**Sample**	**Metrics**	**Main Findings**
Dargenidou and McLeay (2010)	Evaluated the comparability aspect of mandatory IFRS analysing whether changes in stock prices from various countries affect analysts' earnings forecast.	Firms from 14 European countries from 2000 to 2006.	Comparability.	The comparability of accounting information was enhanced.
Cairns et al. (2011)	Evaluated whether the accounting policy choices and fair value measurement produced comparable outcomes for assets and liabilities in the U.K and Australia after mandatory adoption.	114 firms from each country from 2004-2005.	Comparability - T indices developed by Taplin (2004).	There was an increase in the use of fair value measurement for financial instruments and share-based payments, which led to higher comparability within and between countries.
Jones and Finley (2011)	Investigated whether the comparability has increased after the mandate.	81,560 firm-year observations from 19 European countries and Australia from 1994 to 2006.	Comparability - Coefficient of variation (CV) on 21 balance sheet, income and cash flow statement ratios (used as proxies).	IFRS has reduced the diversity of financial reporting at an intra-country and intra-industry level.
DeFond et al. (2011)	Investigated comparability by examining if cross-border investments have increased after IFRS adoption in countries with credible uniformity.	5,460 firm-year observations in 14 E.U. countries from 2003 to 2004 and from 2006 to 2007.	Comparability.	Firms from countries with less earnings management (more credible) that experienced higher increases in uniformity had an increase in foreign investment.

Yip and Young (2012)	Investigated the comparability after mandatory IFRS adoption using 3 metrics.	2,562 firms from 17 European countries from 2002 to 2007.	Comparability - Similarity of information and accounting functions, and degree of information transfer.	Accounting earnings are more comparable among firms within the same industry and country. However, no improvement was found when comparing accounting information across countries.
Barth et al. (2012)	Investigated whether the information is more comparable after IFRS adoption.	U.S. firms and firms from 26 countries that adopted IFRS from 1995-2006.	Comparability and value relevance.	IFRS increased the comparability of net income and book value of equity.
Landsman et al. (2012)	Examined whether the information content of earnings announcements increased after mandatory IFRS adoption.	20,517 earnings announcements from 16 countries that adopted IFRS and 11 countries that did not.	Comparability - Abnormal trading value and return volatility.	Higher increase in these two factors on countries that adopted IFRS compared to those which did not.
Brochet et al. (2013)	Investigated the degree of comparability after mandatory IFRS adoption.	663 firms from the U.K. market from 2003 to 2006.	Comparability - Relationship between the change in abnormal returns following insiders' equity market purchases of their own firms' shares and IFRS adoption.	Insiders' purchases of shares face statistically lower abnormal returns after mandatory IFRS adoption which is consistent with enhanced comparability and lower information asymmetry.
Wang (2014)	Investigated the market reaction of local and foreign firms after mandatory IFRS adoption.	575 earnings announcements from industry leaders from 2001 to 2008.	Comparability	Abnormal price reactions to earnings announcements are higher for firms using the same standards rather than different standards, which are consistent with higher comparability.

Cascino and Gassen (2015)	Investigated the role of firms' incentives on comparability after mandatory IFRS adoption.	61,544 firm-year observations from 29 countries (14 IFRS adopters and 15 non-IFRS adopters) from 2001 to 2008.	Comparability - New model to investigate the issue by following Ball and Shivakumar (2005).	The improvement on comparability is small.
Panel D. Other key studies that investigated cost of equity and voluntary IFRS adoption				
Daske (2006)	Investigated whether the cost of equity was reduced for voluntary adopters of IFRS.	735 German companies from 1993 to 2002.	Cost of equity - RIV model, the GLS, (2001); the ETSS, (2002), the AEG, the GM, (2003); and Easton (2004).	No evidence of a reduction on the cost of equity for German firms that apply IAS.
Daske et al. (2013)	Studied the firm-level incentives of voluntary IFRS adopters and its impacts on the cost of equity.	Voluntary adopters of 30 countries from 1990 to 2005.	Cost of equity - Mean of four models suggested by Claus and Thomas (2001), Gebhardt, et al. (2001), Easton (2004), and Ohlson and Juettner-Nauroth (2005).	Overall, firms do not present an increase in liquidity and a reduction on the cost of equity. Nevertheless, only firms that committed to adopt IFRS presented an increase in market liquidity and a decline in the cost of equity.
Kim et al. (2014)	Focused on the impact of voluntary adoption of IFRS on the cost of equity.	21,608 firm-years from 34 countries from 1998 to 2004.	Cost of equity - PEG model of Easton (2004).	The implied cost of equity is significantly lower for voluntary IFRS adopters. Nonetheless, the cost of equity reduces more for firms with weak institutional infrastructures than those from strong infrastructures.

Panel E. Studies that focused on credit markets and cost of debt				
Author (s)	**Research Objective**	**Sample**	**Metrics**	**Main Findings**
Wu and Zhang (2014)	Evaluated what was the effect of IFRS adoption on the credit rating of firms.	883 voluntary and 1,917 mandatory adopters from 1990 to 2007.	Capital market effects - Debt Market - Moody's credit rating.	Voluntary adopters presented a significant increase in the sensitivity of credit ratings in relating to the accounting factor (combination of ROA, leverage, and interest coverage).
Bhat et al. (2014)	Evaluated whether mandatory IFRS adoption had an impact on pricing of credit risk.	105 firms from 12 countries.	Capital market effects - Credit risk.	IFRS did not cause an impact on the credit risk's informative capacity.
Moscariello et al. (2014)	Investigated the impact of IFRS on the cost of debt.	88 U.K. and 74 Italian listed companies from 2002 to 2008.	Capital market effects - Cost of Debt.	The authors do not find any improvement on accounting relevance on the UK consistent with standards being very close to previous UK GAAP.
Florou and Kosi (2015)	Focus on debt markets and examine debt financing consequences of IFRS adoption.	Private loan agreements and public bond issued from 35 countries from 2000 to 2007.	Debt Markets - Cost of Debt.	The cost of bonds under IFRS reduces by 36.6% compared to non-adopters. Moreover, debt-financing effects do not vary as a function of enforcement level.

Persakis and Iatridis (2017)	Investigate the impact of IFRS on the cost of debt.	199,516 firm-year observations from 11 European countries and 8 Asian countries from 2000-2014.	Cost of debt.	There is a reduction on the cost of debt in the post-adoption period.

Appendix 4: Definition of variables

Section 1. Definition of variables (Chapter 4)

Test variables	
$EPSP_{i,t}$	Quarterly net income divided by end-of-quarter number of shares outstanding and scaled by stock price at the beginning of the quarter.
$R_{i,t-1}$	Quarterly stock return = (price in end-of-quarter *t* – price in end-of-quarter *t-1*)/ price in end-of-quarter *t-1*.
$D_{i,t}$	Dummy is set as 1 if R <0, otherwise as 0.
$D_{i,t}R_{i,t}$	Product of $R_{i,t}$ and $D_{i,t}$.
$P_{i,t+2}$	Quarterly stock price of two quarters ahead.
$BVPS_{i,t}$	Quarterly book value of equity scaled by end-of-quarter number of shares outstanding.
$NIPS_{i,t}$	Quarterly net income scaled by end-of-quarter number of shares outstanding.
$CF_{i,t}$	Quarterly operating cash flow scaled by end-of-quarter total assets.
$\Delta CF_{i,t}$	= (Quarterly operating cash flow in quarter *t* –quarterly operating cash flow in quarter *t-1*)/total assets in quarter *t-1*.
$NI_{i,t}$	Quarterly net income scaled by end-of-quarter total assets.
$\Delta NI_{i,t}$	= (Quarterly net income in quarter *t* –quarterly net income in quarter *t-1*)/total assets in quarter *t-1*.
$ACC_{i,t}$	=NI–CF.
$SPOS_{i,t}$	An indicator that equals 1 for observations with quarterly earnings scaled by the end-of-quarter total assets is between 0 and 0.01, otherwise 0.
$LNEG_{i,t}$	An indicator that equals 1 for observations with quarterly earnings scaled by end-of-quarter total assets is less than –0.20, otherwise 0.
$INVTA_{i,t}$	The inverse of the quarterly natural logarithm of total assets.
$PPE_{i,t}$	Quarterly gross property, plant and equipment deflated by end-of-quarter total assets. Similar results are derived using the denominator as average of quarterly total assets.
$DIFFVC_{i,t}$	= ΔRev–ΔRec, where ΔRev is the change in quarterly revenue scaled by total assets in quarter *t-1*. ΔRec is the change in quarterly account receivable deflated by total assets in quarter *t-1*. Similar results are derived scaling ΔRev and ΔRec using average of quarterly total assets.
AZ	Altman Z-score (Altman, E. (1983)).
Control variables	
$LogMV_{i,t}$	Quarterly natural logarithm of market value of equity at the end of quarter *t*.
$BTMV_{i,t}$	The ratio of book value of equity to market value of equity at the end of quarter *t*.
$LEV_{i,t}$	The ratio of end-of-quarter total liabilities divided by end-of-quarter book value of equity.
$GROWTH_{i,t}$	Percentage change in quarterly sales.
$MVISU_{i,t}$	Percentage change in quarterly common stock.
$DISSUE_{i,t}$	Percentage change in quarterly total liabilities.
$TURN_{i,t}$	Quarterly sales scaled by end-of-quarter total assets.
$GDP_{i,t}$	Annual Gross Domestic Product (GDP) at each quarter.
$AUD_{i,t}$	An indicator equals 1 if the auditor is one of the big multinational accounting firms, e.g. Ernst & Young (E&Y), Klynveld Peat Marwick Goerdeler (KPMG), PricewaterhouseCoopers (PwC), Deloitte Touche (D&T) or Arthur Anderson, otherwise 0.
$XLIST_{i,t}$	An indicator that equals 1 if the firm is listed on any U.S. stock exchanges, otherwise 0.
$NUMEX_{i,t}$	Number of foreign exchange listings.
Codes of Hofstede's culture dimension downloaded from http://geert-hofstede.com/cultural-dimensions.html:	
PW_i	Power distance.
I_i	Individualism.
M_i	Masculinity.
U_i	Uncertainty avoidance.
L_i	Long-term orientation.
Inn_i	Indulgence.

Section 2. Definition of variables (Chapter 5)

Test variables	
$FE_{i,t}^{t}$	The absolute value of the mean of the forecast of earnings per share minus actual earnings per share divided by stock price at *t-1* for current-year forecasts.
$FE_{i,t}^{t+1}$	The absolute value of the mean of the forecast of earnings per share minus actual earnings per share divided by stock price at *t-1* for one-year ahead forecasts.
$LOGFOLLOW_{i,t}^{t}$	The natural logarithm of the number of analysts who generate current-year forecasts.
$LOGFOLLOW_{i,t}^{t+1}$	The natural logarithm of the number of analysts who generate one-year ahead forecasts.
$DISPFE_{i,t}^{t}$	The standard deviation of forecasts of earnings per share divided by the absolute mean of current-year earnings forecasts.
$DISPFE_{i,t}^{t+1}$	The standard deviation of forecasts of earnings per share divided by the absolute value of the mean of one-year-ahead earnings forecasts.
$DISPFETP_{i,t}^{t}$	The standard deviation of forecasts of target price per share divided by the absolute mean of current-year target price forecasts.
$PUBLIC_{i,t}$	Standardized values of PUBLIC.
$PRIVATE_{i,t}$	Standardized values of PRIVATE.
$CONSENSUS_{i,t}$	The ratio that equals to PUBLIC divided by PUBLIC plus PRIVATE.
Incentives variables	
$AUD_{i,t}$	An indicator equals 1 if the auditor is one of the big multinational accounting firms, e.g. Ernst & Young (E&Y), Klynveld Peat Marwick Goerdeler (KPMG), PricewaterhouseCoopers (PwC), Deloitte Touche (D&T) or Arthur Anderson, otherwise 0.
$BTMV_{i,t}$	The ratio of book value of equity to market value of equity at the end of year *t*.
$LEV_{i,t}$	The ratio of end-of-year total liabilities divided by end-of-year assets.
$NUMEX_{i,t}$	Number of foreign exchange listings.
$ROA_{i,t}$	The ratio of end-of-year net profit divided by end-of-year assets.
Control variables	
$SIZE_{i,t}$	Natural logarithm of market value of equity at the end of year *t*.
$R_{i,t-1}$	Stock return at *t-1*.
$EPS\Delta_{i,t}$	The change in earnings per share between *t* and *t-1* scaled by stock price at *t-1*.
$LOGFOLLOW_{i,t}^{t}$	The natural logarithm of the number of analysts who generate current-year forecasts.
$LOGFOLLOW_{i,t}^{t+1}$	The natural logarithm of the number of analysts who generate one-year-ahead forecasts.
$LOGFOLLOWTP_{i,t}^{t}$	The natural logarithm of the number of analysts who generate current-year target price forecasts.
$LOGHORIZON_{i,t}^{t}$	Log of 1 plus the average number of days between each analysts' forecast, and earnings announcement date for year *t*.
$LOGHORIZON_{i,t}^{t+1}$	Log of 1 plus the average number of days between each analysts' forecast, and earnings announcement date for year *t+1*.
$LOGHORIZONTP_{i,t}^{t}$	Log of 1 plus the average number of days between each analysts' forecast of target price, and target price of year *t*.

Section 3a. Definition of variables (Chapter 6 - Cost of Equity)

Test variables	
$KE_{1234_{i,t}}$	The mean of the cost of equity calculated according to Claus and Thomas (2001), Gebhardt et al. (2001), Gode and Mohanram (2003), and Easton (2004).
$KE_{34_{i,t}}$	The mean of the cost of equity calculated according to Gode and Mohanram (2003), and Easton (2004).
Incentives variables	
$AUD_{i,t}$	An indicator equals 1 if the auditor is one of the big multinational accounting firms, e.g. Ernst & Young (E&Y), Klynveld Peat Marwick Goerdeler (KPMG), PricewaterhouseCoopers (PwC), Deloitte Touche (D&T) or Arthur Anderson, otherwise 0.
$NUMEX_{i,t}$	Number of foreign exchange listings.
$ROA_{i,t}$	The ratio of end-of-year net profit divided by end-of-year assets.
Control variables	
$SIZE_{i,t}$	Natural logarithm of market value of equity at the end of year *t*.
$INFLA_{i,t}$	Country-year one-year-ahead inflation provided by Datastream.
$RFR_{i,t}$	Country-year risk-free rate calculated using the yields of local treasury bills or central bank papers provided by Datastream.
$RETVAR_{i,t}$	The annual standard deviation of monthly stock returns at year-end.
$LEV_{i,t}$	The ratio of end-of-year total liabilities divided by end-of-year assets.

Section 3b. Definition of variables (Chapter 6 – Cost of debt)

Test variables	
$K_{D\,i,t}$	Net interest expense in year *t* to the average interest-bearing overall debt (short-term and long-term) outstanding during years *t* and *t-1*.
Control variables	
$INFLA_{i,t}$	Country-year one-year-ahead inflation provided by Datastream.
$RFR_{i,t}$	Country-year risk-free rate calculated using the yields of local treasury bills or central bank papers provided by Datastream.
$LOGNIBE_{i,t}$	Log of the standard deviation of net income before extraordinary items in the prior five-year period.
$BTMV_{i,t}$	The ratio of book value of equity to market value of equity at the end of year *t*.
$SIZE_{i,t}$	Natural logarithm of total assets.
$LOGSALES_{i,t}$	Natural logarithm of net sales.
$INTCOV_{i,t}$	Operating income divided by interest expense.
$TANGIBILITY_{i,t}$	The percentage of property, plant and equipment in relation to total assets.
$CURRRATIO_{i,t}$	The ratio calculated as current assets over current liabilities.

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