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The Effects Of Mandatory IAS/IFRS Regulation On The Properties Of Earnings' Quality In Australia And Europe

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Abstract
The aim of this study is to investigate the impact of International Financial Reporting Standards (IFRS) on earnings' quality. More specifically, this paper aims at verifying whether the IFRS regulation produces better earnings' quality than local GAAP regulation for listed companies in 17 countries from Australia and Europe. For this purpose, we empirically investigate basic sets of earnings' quality attributes to provide evidence of the consequences of mandatory IFRS adoption. We focus on value relevance, predictability, persistence, timeliness, timely loss recognition, smoothing, earnings toward target and accruals quality. We include controls for factors that prior research identifies as associated with firms' earnings' quality like growth, leverage, size and audit quality. Through a dataset covering 1,901 firms from 2001 to 2010, we find mixed evidence of an increase in earnings' quality. More specifically, we get evidence supporting that 'ceteris paribus', the mandatory IAS/IFRS adoption improves the predictability of cash flows and future earnings, the persistence and the timeliness. As well, the results suggest that net income is less manipulated toward target and less smoothing under IAS/IFRS regulation. Nevertheless, we find that net income is better associated with the market value of equity under local GAAP regulation. Furthermore, evidence from the pre-IFRS and post-IFRS periods suggest that IFRS earnings are not more conservative than earnings based on local GAAP regulation. Likewise, the quality of accruals is better in local GAAP regulation. Taken together, our results are unable to support systematic evidence that IFRS results enhance earnings attributes quality for mandatory adopters. Overall, these findings maintain several evidence of accounting quality improvement following the IFRS implementation and highlight the importance of accountings standards for financial reporting quality.
Keywords: Earnings quality, IAS/IFRS regulation, financial statement presentation

1. Introduction

Since 2001, more or less 120 countries have required or permitted the use of IAS/IFRS standards by publicly listed companies (IASB, 2012). As well, the subject of IFRS[1] quality receives additional attention and is the center of debate for investors, regulators and researchers. Empirical studies on IFRS adoption have become more and more imperative in accounting literature.

The IFRS standards, issued by the International Accounting Standards Board (IASB) are strongly affected by the shareholder-oriented Anglo-Saxon accounting model (Balsari and al., 2010; Devalle and al., 2010; Gastón and al. 2010; Manganaris and al., 2011) and tilted toward a common-law sight of financial reporting. IFRS standards, which are often described as principle-based[2] system (Carmona and Trombetta, 2008; Chen and al. 2010; Atwood and al., 2011; Sun and al. 2011; Lin and al., 2012; IASB, 2012; Dimitropoulos and al., 2013) are intended to ensure a high degree of transparency of financial statements, to get better corporate transparency and to enhance the usefulness[3] of financial reporting. The purposes are to meet the needs of a wide range of users[4] in making economic decisions and to contribute to a better functioning of the financial markets. As well, several empirical and survey-based articles have examined the success of this new regulation. They widely support the hypothesis that IFRS standards emphasize the effectiveness of accounting numbers. Though, this view was not

[1] The expression IFRS is used all over this study to submit to the body of standards issued by the International Accounting Standards Board, and those in-force International Accounting Standards (IASs) issued by the IASB's precursor Accounting Standards Committee.

[2] As Carmona and Trombetta (2008) argue: "principles-based standards refer to fundamental understandings that inform transactions and economic events. Under a principles-based system, these understandings dominate any other rule established in the standard". This might suggest that IFRS have more accounting freedom and leaves more room for interpretation. Thus, principle-based standards engage more professional judgment and their value depends on how preparers react to the greater flexibility surrounded in those standards.

[3] The IASB conceptual framework (2010) defines the notion of usefulness as follows: "If financial information is to be useful, it must be relevant (ie must have predictive value and confirmatory value, based on the nature or magnitude, or both, of the item to which the information relates in the context of an individual entity's financial report) and faithfully represents what it purports to represent (ie information must be complete, neutral and free from error). The usefulness of financial information is enhanced if it is comparable, verifiable, timely and understandable".

[4] More specifically, the purposes are to meet the needs of investors. The IASB explains this election by the fact that "Many existing and potential investors, lenders and other creditors cannot require reporting entities to provide information directly to them and must rely on general purpose financial reports for much of the financial information they need. Consequently, they are the primary users to whom general purpose financial reports are directed".

fully supported by all academics, regulators and the business community. Much attention in current accounting research is addicted to the effect of accounting standards on earnings' quality to gain insight about how the IFRS may advance the usefulness of reported income. The emphasis of the fair value principle, which is regarded as the most important implication of IFRS, renovates this debate. The main purpose of this paper is to provide input to this debate by given evidence on the effectiveness of IFRS standards on earnings' quality.

The implementation of IFRS by many countries worldwide fuels the belief that financial accounting information might produce better earnings' quality (Callao and Jarne, 2010; Marra and al., 2011; Jarva and Lantto, 2012). Accordingly, this study seeks to determine whether IFRS adoption leads to higher quality accounting numbers. We compare the quality of earnings numbers under local regulation (GAAP) during 2001–2004 with those under International Financial Reporting Standards (IFRS) during (2005–2010). Clearly, we investigate whether earnings quality changed following a switch from local GAAP to IFRS regulation in Australia and Europe[5]. The 2005 swap to IFRS in Europe and Australia presents a natural quasi-experimental background (Clarkson and al., 2011). As well, our inquiry is motivated by the recent amendment of the International Accounting Standards (IAS) N° 1, "Presentation of Financial Statements" in (2007)[6] and the current revision of the "Conceptual Framework for Financial Reporting"[7] in (2010). Our focus on the association between accounting standards and earnings' quality is motivated also by the growing worldwide adoption of IFRS regulation; which has generated considerable attention and debate. We evaluate earnings' quality using a set of earnings attributes measures that have generally been allied with the quality of financial reporting including: value relevance, predictability, persistence, timeliness, timely loss recognition, smoothing, earnings toward target and accruals quality. Each dimension is estimated by using appropriate metrics initiated in earlier literature. Our research design allows us to directly compare earnings' quality properties prepared under local GAAP with those prepared under IFRS. Our findings get evidence that the implementation of IFRS regulation enhances the ability of earnings to predict upcoming operating cash flow and income. Moreover, we get evidence that accounting numbers under IFRS generally exhibit more persistence and timeliness earnings compared to those under local GAAP regulation. Besides, after controlling firm-specific factors we document that firms commonly exhibit less earnings management as smoothing and earnings toward a target in the post-adoption period when using IFRS relative to the pre-adoption period when using local GAAP. Nevertheless, we show that reported earnings are no more value relevant under IFRS than under local GAAP. We demonstrate too, that reported earnings exhibit weaker timely loss recognition in the post adoption period. Finally, we find that accounting numbers under IFRS appear to provide less accruals quality compared to accounting numbers reported under local GAAP. Overall, these findings maintain several evidence of accounting quality improvement following the IFRS and enrich the debate about which accounting standards is the best.

The results of our study weigh the costs and benefits of transitioning to IFRS and contribute to the large debate concerning the role of accounting standards in financial reporting quality. Thus, Investors may find this study of particular interest to discover whether regulation grants a better performance measure quality than local GAAP. As well, it provides policy makers with empirical answers which may support future decisions regarding financial statement reforms. More specifically, this empirical evidence should be of interest to the standard setters to improve the reforming of local standards in order to ensure convergence between them and IFRS. We contribute also to the growing literature on the effects of international accounting adoption on earnings quality, including Callao and Jarne (2010); Kabir and al. (2010); Gastón and al. (2010); Dimosthenis and Hevas (2011); Atwood and al. (2011) and Chua and al. (2012). Also, note that previous research usually focuses on individual countries using data from limited time periods, while this study employs a broad sample of firms in several countries adopting IFRS over many years. As well, we use an array of quality metrics drawn from a common time period and we employ a common set of control variables, while findings from prior research usually focus on a single earnings' quality attribute and ignore the features that's could affect earning's quality.

The next section of the paper outlines prior research on the impact of IFRS regulation on earnings' quality and is followed by sections addressing the hypotheses tested, population studied, data collection, methodology, and research findings. At the last, we present our conclusions with a focus on policy implications and recommendations for future research.

[5] Both the European Union (EU) and Australia approved regulations in 2002 requiring all companies listed on the regulated stock exchanges of these countries to apply IFRS for fiscal years beginning on or after January 1, 2005. The adoption of IFRS in the European Union and Australia is considerate as an important regulatory change in accounting history.

[6] These amendments are likely to affect the quality of accounting amounts as a result of IASB's increased orientation toward investor protection.

[7] The IASB Framework was approved by the IASC Board in April 1989 for publication in July 1989, and adopted by the IASB in April 2001. In September 2010, as part of a bigger project to revise the Framework the IASB revised the objective of general purpose financial reporting and the qualitative characteristics of useful information. The remaining of the document from 1989 remains effective.

2. Literature Review and Hypotheses development

Using various measures of properties of earnings' quality, such us value relevance, timeliness, conservatism, smoothing, prior research provides conflicting results. There are two opposing views regarding the influence of IFRS on accounting quality. Some research shows that IFRS implementation improves earnings' quality (Barth and al., 2008 ; Zhou and al., 2009 ; Balsari and al., 2010 ; Chen and al., 2010 ; Devalle and al., 2010; Iatridis, 2010 ; Kouser and Azeem, 2011; Houqe and al., 2012 ; Zéghal and al., 2012 ; Chua and al., 2012 ; Jarva and Lantto, 2012 ; Kang, 2013 ; Ferrari and al., 2012). Alternatively, another set of research gets proof that IFRS norms fall to enhance the earnings' quality (Tendeloo and Vanstraelen, 2005; Subramanyam, 2007; Van der Meulen and al., 2007; Duangploy and Gray, 2007; Goodwin and al., 2008; Gjerde and al., 2008; Jeanjean and Stolowy, 2008; Paananen and Lin, 2009; Callao and Jarne, 2010; Kabir and al., 2010; Gastón and al., 2010; Dimosthenis and Hevas, 2011; Atwood and al., 2011). A controversial debate has arisen in the academic and professional worlds about the benefits of IFRS regulation on earnings' quality. However, there is no clear evidence on how the implementation of IFRS impacts earnings' quality. There appears to be a long debate over whether IFRS are able to carry out better earnings measurements.

Worldwide researchers in the academic literature demonstrate that the implementation of (IFRS) leads to higher earnings' quality. For example, Barth and al. (2008) point out that companies applying international accounting standards exhibit less earnings smoothing, less managing of earnings towards a target, more timely recognition of losses and a higher association of accounting amounts with share prices and returns than those applying non-U.S. domestic standards. Zhou and al. (2009) document some improvement in the quality of accounting information associated with the adoption of IFRS. Clearly, they show that adopting Chinese firms are less likely to smooth earnings than their no adopting counterparts. However, they did not find that adopting firms have any lower tolerance for reporting losses or engage in more timely loss recognition. Devalle and al. (2010) studies whether earnings quality, has strengthened as a consequence of the adoption of IFRS by companies listed on five European stock exchanges. Results show that IFRS increase the value relevance of earnings across the entire sample. However results related to earnings smoothing and timely loss recognition does not suggest that accounting quality was improved after the implementation of IFRS. Armstrong and al. (2010) reveal that the stock market positively reacts to firms with lower quality pre-adoption information and higher pre-adoption information asymmetry, suggesting that investors understand net information quality benefits from IFRS adoption. They notice additionally a negative market reaction to IFRS adoption for firms domiciled in code law countries, sustaining that investors are apprehensive with the enforcement of IFRS in those countries. Chen and al. (2010) find that the majority of accounting quality indicators improved after IFRS adoption in the Europe. Explicitly, they get evidence that there is less of managing earnings toward a target, a lower magnitude of absolute discretionary accruals, and higher accruals quality. Nevertheless they also show that firms engage in more earnings smoothing and recognize large losses in a less timely manner in post-IFRS periods. Marra and al. (2011) support that board independence and audit committees play an important role in reducing earnings management after the introduction of IFRS for the Italian-listed firms. Balsari and al. (2010) demonstrate that IFRS adoption has increased both the timeliness and earnings' conservatism in Turkey. Iatridis (2010) conclude that the implementation of IFRS in UK reduces the scope for earnings management, is related to more timely loss recognition and leads to more value relevant accounting measures. Iatridis and Rouvolis (2010) provide evidence that the implementation of IFRS has reduced the level of earnings management (smoothing and earnings toward a target) as compared to what occurred under Greek GAAP. They show also, that the IFRS-based accounting numbers exhibit higher value relevance than those determined under Greek GAAP. Kouser and Azeem (2011) point out that IFRS adoption leads to a strong and increasing relationship of the share price with earnings and book value of equity in Pakistan. Houqe and al. (2012) demonstrate that earnings' quality increases for mandatory IFRS adoption when a country's investor protection regime provides stronger protection. Sun and al. (2011) examine the impact of IFRS implementation on earnings' quality of firms cross-listed in the United State that are domiciled in countries that have adopted IFRS on a mandatory basis. These authors find no difference in the change in earnings' quality from the pre- to post-IFRS period for the cross-listed firms and the matched United State firms in term of discretionary accruals and timely loss recognition. Furthermore they get evidence of improved earnings' quality for the cross-listed firms based on small positive earnings and earnings persistence. While, Shelton and al. (2011) show that the occurrence of earnings manipulation under IFRS is not significantly different than the occurrence under US GAAP. Manganaris and al. (2011) confirm that UK financial reporting (common law European country) becomes more conservative and more value relevant after the implementing of IFRS. Whereas, code law European countries (Germany, France and Greece) become less conservative and less value relevant. Zéghal and al. (2012) show that the mandatory adoption of IAS/IFRS is associated with a reduction in the earnings management level in France. Chua and al. (2012) find evidence that following the mandatory adoption of IFRS, Australian firms engage in less earnings management by way of income smoothing, better timely loss recognition, and improvement in value relevance of accounting information. Jarva and Lantto (2012) demonstrate that earnings under IFRS earnings provide marginally greater

information content than Finnish accounting standards earnings for predicting future cash flows. Nevertheless, IFRS earnings are no timelier in reflecting publicly available news than earnings under Finnish Accounting Standards. Liu and al. (2012) show that value relevance improved in Peru, from the IAS period to the early IFRS period (from 1999-2001 to 2002-2004) when the (IASB) took over the International Accounting Standards Committee (IASC), but worsened from the early IFRS period to the recent IFRS period (from 2002-2004 to 2005-2007) when more accounting standards started to reflect IASB's preference for fair value measurement of assets and liabilities. Ferrari and al. (2012) supports the idea that the IAS adopters are generally characterized by a level of earnings management lowers than or equal to the German local GAAP adopters. Landsman and al. (2012) show a positive association between the mandatory adoption of IFRS and the information content of earnings, as measured by both abnormal return volatility and abnormal trading volume. Kang (2013) investigates the impact of mandatory IFRS adoption on the value relevance of financial reports in 13 European countries by comparing the earnings–returns relation pre- and post-IFRS mandatory adoption in 2005. The authors demonstrate that the implementation of mandatory IFRS improves the value relevance of financial reports in Europe. Dimitropoulos and al. (2013) find convincing evidence that the implementation of IFRS contributed to less earnings management, more timely loss recognition and greater value relevance of accounting figures, compared to the Greek accounting standards.

Contrary to the above studies, others investigations document that IFRS adoption may not provide the projected benefits. For example Van Tendeloo and Vanstraelen (2005) conclude that voluntary adoption of (IFRS) by Germany listed firms is not associated with lower earnings' quality. They show that IFRS do not impose a significant constraint on earnings management, as measured by discretionary accruals. Also they demonstrate that companies that have adopted IFRS engage more in earnings smoothing. Hung and Subramanyam (2007) examine the effects of IAS adoption on the relative and the incremental value relevance of net income as well as the asymmetric timeliness of net income in Germany. They find no evidence that IAS improves the value relevance of net income. Van der Meulen and al. (2007) compare value relevance, timeliness, predictability and accrual quality between IFRS and US GAAP for German New Market firms. They demonstrate that U.S. GAAP and IFRS only differ with regard to predictive ability. Duangploy and Gray (2007) reveal that the mandated adoption of international accounting standards for Japanese corporations did not result in improved earnings that forecast predictability. Goodwin and al. (2008) provide evidence that IFRS earnings are not more value relevant than Australian Generally Accepted Accounting Principles earnings. This is consistent with Gjerde and al. (2008) which find little evidence of increased value-relevance after adopting IFRS by Norwegian listed firms. Jeanjean and Stolowy (2008) find that the pervasiveness of earnings management increased in France and remained stable in the UK and in Australia. Paananen and Lin (2009) compare the characteristics of accounting amounts using a sample of German companies reporting under IAS during 2000–2002 (IAS period), IFRS during 2003–2004 (IFRS voluntary period), and 2005–2006 (IFRS mandatory period). They get evidence that accounting quality has not improved but worsened over time. Gastón and al. (2010) observe that IFRS have negative effect on the relevance of financial reporting in Spain and UK. As well, the results obtained by Callao and Jarne (2010), show that earnings management[8] has intensified since the adoption of IFRS in Europe, as discretionary accruals have increased in the period following implementation. Similarly, Kabir and al. (2010) find that absolute discretionary accruals are significantly higher under IFRS than under pre-IFRS New Zealand GAAP. Also, they find no significant differences in signed discretionary accruals and the ability of earnings to predict one-year-ahead cash flows between the two kinds of standards. Dimosthenis and Hevas (2011) find insufficient empirical evidence to support that mandatory IFRS adoption had a positive impact on the value relevance and the conditional conservatism of accounting earnings reported by Greek firms. Atwood and al. (2011) examine earnings persistence and the association between earnings and future cash flows for firms reporting under IFRS relative to firms reporting under United States Generally Accepted Accounting Principles (U.S. GAAP) and firms reporting under non-U.S. domestic accounting standards (DAS). They find no difference in the persistence of positive earnings across firms reporting under the IFRS versus U.S. GAAP but they show that losses reported under IFRS are less persistent than the losses reported under U.S. GAAP. Future cash flows have a lower association with current earnings reported under IFRS than under U.S. GAAP. Also, they document no evidence of a systematic difference between IFRS and non-U.S. DAS in terms of earnings persistence and/or the association between current earnings and future cash flows. Wang and Campbell (2012) show that IFRS implementation does not seem to deter earnings management for the Chinese publicly listed companies. Lin and al. (2012) conclude that accounting numbers under IFRS generally exhibit more earnings management, less timely loss recognition, and less value relevance compared to those under U.S. GAAP. These results indicate that the application of U.S. GAAP generally resulted in higher accounting quality than the application of IFRS, and a transition from U.S. GAAP to IFRS reduced accounting quality.

[8] Callao and Jarne (2010) define earnings management as "the use of accounting practices within the limits available within a comprehensive basis of accounting by management in order to achieve a desired result".

As shown previously, a wide literature has addressed the issue of IFRS impacts on earnings' quality. From this review, it seems clear that previous empirical studies are often conflicting. These studies do not provide clear evidence on how the IFRS adoption impacts the quality of the accounting amounts. Proponents support the claim that IFRS norms get better the earnings' quality properties. Opponents maintain that IFRS has had a tremendously beneficial impact on earnings' quality. This miscellaneous evidence can be explained by the fact that there is no agreed definition of the accounting quality concept (Dechow and al., 2010; DeFond, 2010). Thus, the prior literature findings cannot be interpreted homogeneously because they use various earnings' quality proxies, dissimilar institutional contexts, and different sample periods and research designs. As we can see, earnings' quality is a multidimensional concept and there is no agreed-upon meaning. Hence, these mixed findings highlight that the effect of the success of IFRS depends by a set of factors documented by prior studies. Explicitly, this achievement is influenced by the institutional features. Such factors include country's legal framework, enforcement regime, investor protection, culture, etc. (Boonlert-U-Thai and al., 2006; Carmona and Trombetta, 2008; Devalle and al., 2010; Callao and Jarne, 2010; Chen and al., 2010; Shelton and al,. 2011; Sun and al., 2011; Houqe and al., 2012). Hence, like Van Tendeloo and Vanstraelen (2005) note, the quality of financial statements prepared using IAS/IFRS depends on both the quality of these standards and their implementation. This paper attempts to contribute to the debate which involves professionals as well as academics, surrounding the value added of IFRS regulation. As well this research is aimed to answer following research question: are earnings' quality attributes as IFRS mandatory application are increasing?

Given earlier studies that supports the benefit of the international standards and consistent with the IASB goal to develop an internationally acceptable set of high quality financial reporting standards that better reflect a firm's economic position and performance; we expect IFRS earnings to be of higher quality than their local GAAP. These anticipated benefits are based on the premise that mandating the use of IFRS raises transparency and get better the quality of financial reporting. Consequently, we hypothesize better earnings' quality in reported financial performance resulting from IFRS adoption, stated in alternative form: 'Ceteris paribus', the implementation of IFRS regulation is likely to improve the earnings' quality properties.

This paper tries to give a general overview on the earning quality of IFRS and local-GAAP and cover numerous earning proxies which are widely applied in earning quality research. The properties of accounting earnings tested are: value relevance, predictability, persistence, timeliness, timely loss recognition, smoothing, managing earnings toward targets and accruals quality. In line with earlier assumption that justified the positive impacts of IFRS adoption on earnings quality, we deduce the following expectation for each earnings attribute. For that reason, we expect that all else equal, the implementation of IFRS regulation improves the value relevance of reported earnings. We assume IFRS-based earnings to be more predictable and persistent than local standards-based earnings. Furthermore we predict that firms applying IFRS exhibit more timeliness and timely loss recognition than those applying domestic standards. Regarding earnings smoothing, following prior research, we suppose that IFRS firms exhibit less earnings variability than those local GAAP earnings. We predict that firms managed earnings toward small positive amounts more frequently in the pre-adoption period than they did in the adoption period. As a final point, we presume that IFRS standards improve accruals quality.

Our anticipations align with the position of the IASB and of that part of the academic literature stating the constructive effects of IFRS implementation.

3. Empirical strategy

Following this section, we outline our methodology and explain the research design. More specifically we describe the sample selection procedure and establish our empirical models.

3.1. Sample selection procedure

As stated earlier, we investigate how the 2005 switch to IFRS has quantitatively impacted on the earnings quality properties. Our inferences are based on a sample of 1,901 listed firms from Australia and European countries that adopted IFRS for fiscal years ending in December, 2005. The analysis covers the period 2001–2010, split into two sub-periods (2001–2004 and 2005–2001) in order to reflect the earnings quality before and after the application of IFRS. Thus, we classify all firm-year observations prior to the mandatory adoption of IFRS by the European countries and Australia in 2005 as the pre-adoption period and all firm-year observations after as the post-adoption period. All accounting and market data are gathered from the January 2012 online version of the Thomson Thomson one – Company Analysis Advance database and any update to the database after this date is not included in the sample. This process permits us to collect a comprehensive data set and compare financial statements prepared under local GAAP with financial statements prepared under IFRS.

Our sample is determined in a series of steps. The initial sample consists of 6,323 firms from Australia and 16 European countries. Following prior studies (Barth et al. 2008; Chua and al. 2012; Houqe and al., 2012) we exclude financial institutions ($6000 \leq SIC \leq 6999$). Financial firms are subject to particulars financial reporting

rules that can influence the earnings' quality. Since 1 January 2005, European listed companies and Australian companies have been required to prepare their consolidated financial statement in accordance with IAS/IFRS norms. Hence, we remove firms that don't adopt IFRS regulation during the period beginning in 2005 and ending in 2010. Thus, we exclude firms that voluntarily adopted IFRS early (before year 2005). Deleting voluntary IFRS adopters allows us to avoid possible confusing effects of incentives for firms to adopt IFRS voluntarily (Barth et al., 2008; Landsman and al., 2012). The purpose is to look at the quality of earnings before and after the mandatory adoption of IFRS standard. This permits us to establish whether firms that apply IFRS have higher earnings quality than firms that do not. This procedure yields in total 1,901 public firms from 17 countries with data available on Thomson one- Company Analysis. Accounting and market data regarding companies have been collected for the year (2001-2010). Table 1 summarizes the sample selection procedure.

Table 1: Sample selection

Country	Initial Sample	Less Deleted Firm-Year		Final sample
		Non Financial Firms	Non IFRS Firms	
Germany	399	28	142	229
Australia	1197	37	1059	101
Belgium	172	25	87	60
Denmark	382	62	271	49
Spain	146	24	83	39
Finland	254	33	79	142
France	829	138	376	315
United kingdom	919	59	671	189
Greece	288	31	75	182
Ireland	142	22	87	33
Italy	284	62	102	120
Luxembourg	38	19	11	8
Norway	321	17	204	100
Netherland	156	31	55	70
Portugal	136	36	62	38
Sweden	374	9	198	167
Switzerland	286	88	139	59
Total	**6323**	**721**	**3701**	**1901 firms**

Following Goncharov and Hodgson (2011) firm-years with missing accounting or market data and firms in financial distress, signaled by a negative value of the book value of equity, were disqualified. To avoid problems with outliers we use the test of Hadi (1994) "multivariate's outliers test". Thus we drop observations identified by the outliers test Hadi (1994). To be included in the sample, a firm must also have all required data to calculate dependent and control variables for the regression analysis. Unfortunately, complete information is not available from databases, therefore, the actual sample size varies depending on the test procedures and the the availability of data from the database. We carry out the earnings' quality estimations on a panel data over the period from (2001) to (2010): four years of data before IFRS adoption and six years since then.

Table 2 presents a breakdown of the sample firms into industries based on the Standard Industrial Classification (SIC code).

Table 2: Distribution of Firms by Standard Industrial Classification (SIC code)

Standard Industrial Classification	SIC Code	Number of firms	Percentage
Manufacturing industry	20-39	861	45.29%
Services	70-89	430	22.62%
Transportation and public utilities	40-49	222	11.68%
Mining	10-14	146	7.68%
Wholesale trade	50-51	93	4.89%
Retail trade	52-59	74	3.89%
Construction	15-17	58	3.05%
Agriculture, forestry and fishing	01-09	17	0.89%
Total		**1901**	**100%**

Results reported above, get evidence that the largest number of firms in most countries is in the manufacturing sector (SIC codes 20–39).

3.2. Properties of earnings and empirical models

More recently, the development and implementation of a set of internationally accepted accounting standards has enthused growth in the earnings' quality literature (DeFond, 2010). The question of earnings' quality is perceptibly of major importance to users of financial information as well as to academics, practitioners, and regulators. However, the term of earning' quality in itself has no agreed definition and has come to represent different concepts across the studies that use this term. A series of empirical papers examining properties of earnings and different dimensions of this construct have been operationalized. In this context, Dechow and al. (2010) state "researchers have used various measures as indications of ''earnings quality'' including persistence, accruals, smoothness, timeliness, loss avoidance, investor responsiveness, and external indicators such as restatements and SEC enforcement releases". The empirical literature has developed several metrics to proxy for earnings' quality. These metrics are based on the qualitative characteristics in the conceptual framework[9]. More explicitly the IASB conceptual framework categorizes the qualitative characteristics of useful financial information into fundamental and enhancing qualitative characteristics. The fundamental qualitative characteristics are relevance and faithful representation while comparability, verifiability, timeliness and understandability are qualitative characteristics that enhance the usefulness of information that is relevant and faithfully represented.
This study attempts to explore the relationship between accounting standards and the qualitative characteristics of earnings as operationalized in the previous theoretical and empirical papers. Therefore we assess this concept by using eight proxies, explicitly: value relevance, predictability, persistence, timeliness, timely loss recognition, smoothing, managing earnings toward targets and accruals quality. We focus on the earnings' quality of 1,901 publicly listed companies in 17 countries coming from Europe and Australia, before and after the IFRS adoption in 2005. This analysis is designed to address the question as to which of two accounting standards (IFRS or GAAP) is preferable. We next present briefly each earnings' quality properties along with a description of the empirical models. In the estimation of each models we applied the Breush-Pagan test in order to control for heteroscedasticity and the Wooldrigde test in order to control for auto-correlation of the standard error.

Value relevance as a proxy for earnings quality

In order to assess whether the earnings under IFRS are more or less meaningful for investment decisions, we examine the value relevance of earnings - an important attribute of financial reporting quality[10]. Value relevance of earnings estimates the degree of association between accounting and market data. Following similar studies (Goodwin and al., 2008; Iatridis, 2010; Iatridis and Rouvolis, 2010; Kouser and Azeem, 2011; Jarva and Lantto, 2012; Sun and al. 2011) a price level model based on Ohlson (1995) and a returns model are used. The value relevance is tested with coefficient estimates for interaction terms as Liu and al. (2012) framework.

Hence, our empirical models look as follows:

Model (1): $MVE_{it} = \alpha_0 + \alpha_1 IFRS_{it} + \alpha_2 NI_{it} + \alpha_3 BVE_{it} + \alpha_4 (IFRS*NI)_{it} + \alpha_5(IFRS *BVE)_{it} + \varepsilon_{it}$
Model (2): $RETURN_{it} = \beta_0 + \beta_1 IFRS_{it} + \beta_2 NI_{it} + \beta_3 \Delta NI_{it} + \beta_4(IFRS*NI)_{it} + \beta_5(IFRS *\Delta NI)_{it} + \zeta_{it}$

Where: MVE is market value of equity 9 month after the fiscal year end (t); BVE: is a book value of equity at time (t); NI is net income for the period from (t); RETURN is the stocks return for the period from (t); ΔNI is annual change in net income; IFRS is a dummy variable taking the value of 1 for the period since 2005 and 0 otherwise; ε and ζ equals other information about future abnormal earnings reflected in the firm's equity value but currently not in the firm's financial statements. All continuous variables are normalized by the market value of equity at time (t-1).

Our metrics for value relevance are regression coefficients (α_4 and β_4) values. Differences in value relevance between the two periods under study are expected to be reflected in significant positive coefficients for the terms interacting with IFRS: α_4 Equation 1 and β_4 in Equation 2. We interpret positive sign as evidence of more value relevance.

[9] The conceptual frameworks for financial reporting (2010) note that "the qualitative characteristics identify the types of information that are likely to be most useful to the existing and potential investors, lenders and other creditors for making decisions about the reporting entity on the basis of information in its financial report (financial information)'.
[10] The IASB conceptual framework (2010), recognizes value relevance and representational faithfulness as the fundamental qualitative characteristics that determine the usefulness of accounting information for making economic decisions

Predictability as a proxy for earnings quality

It is commonly accepted that predictability of financial information is a desirable property of financial reports. The IASB framework identifies predictability as one of the prime qualitative characteristics that make the information useful to users. The board argues that "existing and potential investors, lenders and other creditors need information to help them to assess the prospects for future net cash flows to an entity". The basic notion of predictability in the conceptual frameworks for financial reporting is that earnings have predictive value if it can be used as an input to process employed by users to predict future outcomes. This study employs tow approaches to assess change in the predictability of earnings numbers resulting from application of IFRS norms. These approaches are designed to operationalize the ability of earnings to predict future accountings values. Our first measure of predictability is based on the relation between future operating cash flow and current reported earnings. Our second measure of predictability is based on the relation between future and current reported earnings. Models are run separately for the pre-IFRS (2001–2004) and post-IFRS (2005–2009) periods. As prior research (Boonlert-U-Thai and al., 2006; Van der Meulen and al., 2007; Barton and al. 2010; Jarva and Lantto, 2012) we run the following models:

Model (3): $OCF_{it+1} = \alpha_0 + \alpha_1 NI_{it} + \varepsilon_{it}$
Model (4): $NI_{it+1} = \beta_0 + \beta_1 NI_{it} + \omega_{it}$

Where OCF is annual net cash flow from operating activities; NI is net income for the period from (t); ε and ω equals other information about future abnormal earnings reflected in the firm's equity value but currently not in the firm's financial statements. All variables are scaled by the total assets at time (t).

To assess whether IFRS has led to a change in the predictability of earnings numbers we interpret differences in the square root of the estimated error-variance from previous equations. Large values of the square root of the estimated error-variance imply less predictable earnings. More predictable earnings are viewed as higher quality, while less predictable earnings are viewed as lower quality.

Persistence as a proxy for earnings quality

As Sun and al. (2011) state "earnings persistence is important because more persistent earnings can result in better inputs to equity valuation models and to higher equity market valuations". Persistence measures the extent that current earnings persist or recur in the future. More persistence is associated with higher earnings' quality for the reason that transitory earnings components are believed to have been smoothed (Boonlert-U-Thai and al., 2006; Barth and al, 2008; Dechow and al., 2010; Atwood and al., 2011; Sun and al., 2011). As well, persistence is generally viewed as a desirable feature of earnings because it increases the accuracy of earnings forecasts. To provide insight into whether IFRS adoption increases the persistence, we assess the relation between future and current earnings. Persistence is estimated by the slope coefficient (β_1) of future earnings on current earnings from the regression (4) previously formulated. Higher coefficient is positively associated with higher earnings quality, since it indicates a more stable, sustainable and less volatile earnings generation process. Thus, a comparison of the results for the periods before and after adoption allows us to capture the effect of IFRS regulation on persistence.

Timeliness as a proxy for earnings quality

The objective of this study is to throw light on the effects of IFRS on earnings' quality. For this purpose, we compare the timeliness of earnings based on IFRS with those based on local GAAP regulation. As indicated by Barton and al. (2010); timeliness captures a performance measure's ability to reflect quickly both good and bad news about the firm's performance. Information should be available to decision makers before it loses its ability to influence decisions. Timely information is viewed not only more relevant in decision making, but also more reliable. Previous research generally presumes that firms with higher earnings' quality display more timeliness earnings (Francis and al., 2004; Ball and Shivakumar, 2005; Barth and al, 2008; Barton and al., 2010; Chen and al, 2010). We use the following regression to obtain measures of timeliness us Ball and Shivakumar, (2005) framework.

Model (5): $NI_{it} = \beta_0 + \beta_1 IFRS_{it} + \beta_2 NEG_{it} + \beta_3 OCF_{it} + \beta_4 (NEG*OCF)_{it} + \beta_5 (IFRS*OCF)_{it} + \beta_6 (IFRS*NEG*OCF)_{it} + \lambda_{it}$

Where: NI is net income for the period from (t); NEG is a dummy variable, which takes the value of 1 if Where NI is net income for the period from (t); NEG is a dummy variable, which takes the value of 1 if operating cash flows are negative and 0 otherwise; OCF is annual net cash flow from operating activities; IFRS is a dummy

variable taking the value of 1 for the period since 2005 and 0 otherwise; λ equal other information about future abnormal earnings reflected in the firm's equity value but currently not in the firm's financial statements. All continuous variables are scaled by the total assets at the time (t).

Our timeliness measures, good news (positive cash flows) and bad news (negative cash flows), are the coefficient β_5 from the equation 5. Positive and significant value indicates IFRS earnings that capture changes in the firm's economic performance in a more timely way.

Timely loss recognition as a proxy for earnings quality

Timely loss recognition reveals the differential ability of accounting earnings to capture economic losses versus economic gains (Ball and al., 2000; Francis and al., 2004; Basu, 1997; Ball and Shivakumar, 2005; Barth and al., 2008; Barton and al. 2010; Chen and al. 2010). Timely loss recognition (asymmetric timeliness or conditional conservatism) implies that earnings recognize bad news more quickly than good news. This study assesses timely loss recognition metric in two approaches.
Our primary metric is based on the framework of Ball and Sivakumar (2005). We measure timely loss as the coefficient of the interaction term (IFRS*NEG*OCF) from the model 5, which captures the extent of the incremental timely loss recognition of negative earnings for observations in the post-adoption period relative to those in the pre-adoption period[11]. A positive coefficient indicates that there is more timely loss recognition under IFRS Regulation while a negative coefficient implies that there is more timely loss recognition in the pre-adoption period. Our second measure for timely loss recognition is based on the fact that firms showing more timely loss recognition should discern large losses in the period in which they occur rather than deferring them to future periods (Lin, 2012). As well more timely recognition of losses implies more frequent incidences of extreme negative earnings. We interpret a higher frequency as evidence of more timely loss recognition. We assess the frequency of large losses, by using a dummy variable that sets to 1 for observations for which annual net income (scaled by total assets) is less than [-0.20] and sets to [0] otherwise.
Prior research (Barth and al., 2008; Callao and Jarne, 2010; Chua and al., 2012; Lin and al., 2012) finds that timely loss recognition is associated with several firm variables as size, leverage, growth and audit. In line with these studies we include several control variables that are identified to be unrelated to the earnings' quality attributes. For this reason, we evaluate the change in the likelihood of posting a large loss by running the following logistic regression:

Model (6) : $IFRS\ (0,1)_{it} = \alpha_0 + \alpha_1 LENTH_{it} + \alpha_2 AUDIT_{it} + \alpha_3 NUMEX_{it} + \alpha_4 XLIST_{it} + \alpha_5 TURN_{it} + \alpha_6 GROWTH_{it} + \alpha_7 EISSUE_{it} + \alpha_8 LEV_{it} + \alpha_9 DESSUE_{it} + \alpha_{10} OCF_{it} + \alpha_{11} SIZE_{it} + \alpha_{12} CLOSE_{it} + \zeta_{it}$

Where: where: LNETH is dummy variable that equals 1 if net income scaled by total assets is less than -0.20, and 0 otherwise ; IFRS is a dummy variable taking the value of 1 for the period since 2005 and 0 otherwise; SIZE is natural logarithm market value of equity; GROWTH is percentage change in sales; EISSUE is percentage change in common equity; is liabilities divided by equity book value; DESSUE is percentage change in total liabilities; TURN is sales divided by total assets; OCF is annual net cash flow from operating activities divided by total assets; AUDIT is dummy variable that equals 1 if the firm's auditor is PwC, KPMG, Arthur Andersen, Ernst and Young, or Deloitte Touche, and 0 otherwise; NUMEX is number of exchanges on which a firm's stock is listed; XLIST is dummy variable that equals 1 if the firm is listed on any U.S. stock exchange; CLOSE is percentage of closely held shares of the firm as reported by Thomson and ζ equal other information about future abnormal earnings reflected in the firm's equity value but currently not in the firm's financial statements.

The probability that firms report large losses differently under IFRS and local GAAP is interpreted based on the coefficient α_1. Because more timely loss recognition will result in more firms having large negative net income, a positive α_1 would be consistent with IFRS enhancing earnings' quality. A negative coefficient indicates that firms are more likely to recognize large losses in the pre-adoption period than in the post-adoption period.

Smoothing as a proxy for earnings quality

We compare the pervasiveness of earnings management under local GAAP and IFRS, by examining the extent in which earnings are smoothed. We interpret earnings that exhibit less earnings smoothing as of higher quality. In other words, high earnings' quality is synonymous with low earnings smoothing. As Francis and al., 2004 argue; arguments that smoothness is desirable earnings attribute draw from the view that managers use their private

[11] This measure is supported by the fact that conservative reporting leads to bad news being impounded in earnings in a timelier manner relative to good news (Lin, 2012).

information about future income to smooth our transitory fluctuation and thereby realize a more useful earnings number. The smoothness construct is often considered as the ability to provide more stable earnings metrics. Thus, if managers get no discretionary action to smooth earnings, then they should be relatively unstable and fluctuate over time. So, we understand a smaller variability in reported earnings as indicative of earnings smoothing. Barth and al. (2008) state that 'change in net income is likely to be sensitive to a variety of factors unattributable to the financial reporting system". Hence, we include a number of control variables identified in prior literature (Barth and al., 2008; Liu and al, 2012; Lin, 2012; Chua and al., 2012) to partially mitigate the basic differences among firms. Our metrics for earnings smoothing are based on the variance of the change in net income and the ratio of the variance of the change in net income to the variance of the change in cash flows.
We base our main inferences on tests of whether IFRS adoption reduces earnings smoothing. To obtain our inferences, we estimate the following models:

Model (7): $\Delta NI_{it} = \alpha_0 + \alpha_1 AUDIT_{it} + \alpha_2 NUMEX_{it} + \alpha_3 XLIST_{it} + \alpha_4 TURN_{it} + \alpha_5 GROWTH_{it} + \alpha_6 EISSUE_{it} + \alpha_7 LEV_{it} + \alpha_8 DESSUE_{it} + \alpha_9 OCF_{it} + \alpha_{10} SIZE_{it} + \alpha_{11} CLOSE_{it} + \varepsilon_{it}$

Model (8): $\Delta OCF_{it} = \alpha_0 + \alpha_1 AUDIT_{it} + \alpha_2 NUMEX_{it} + \alpha_3 XLIST_{it} + \alpha_4 TURN_{it} + \alpha_5 GROWTH_{it} + \alpha_6 EISSUE_{it} + \alpha_7 LEV_{it} + \alpha_8 DESSUE_{it} + \alpha_9 SIZE_{it} + \alpha_{10} CLOSE_{it} + \varepsilon_{it}$

Where: the variables are as previously defined except that: ΔNI is annual change in net income divided by total assets; ΔOCF is annual change in net cash flow from operating activities divided by total assets.

The first earnings smoothing measure is based on the variability of the change in annual net income (ΔNI) [scaled by total assets]. The earnings smoothing measure is taken as the variance of the residuals from a regression of the changes in annual net income on the control variables. We denote our first metric as (ΔNI*); the variance of the residuals estimated from the model (7). The second earnings smoothing measure is based on the variability of the change in annual operating cash flow (ΔOCF) [scaled by total assets]. We take the variance of the residuals as the measure of variability in cash flows (ΔOCF*). Hence, the second earnings smoothing measure is taken as the ratio of the variance of the residuals from a regression of the change in annual net income on the control variables (ΔNI^*) to the variance of the residuals from a regression of the change in annual operating cash flow on the control variables (ΔOCF^*). These above regressions are run one by one of the pre-adoption periods (2001-2004) and the post-adoption periods (2005-2010) by using the firm-year observations that have been pooled into the respective time periods. The variance of the residuals is calculated for each respective group. We interpret a higher variance of the changes in net income and a higher ratio of the variances of the change in net income and change in cash flows, between the two periods as evidence of higher earnings' quality. We test whether the ratio of variances is significantly less than 1 for each group respectively using a variance ratio F-test following Chua and al. (2012).

We interpret a higher variance of the changes in net income and a higher ratio of the variances of the change in net income and change in cash flows, between the two periods as evidence of higher earnings' quality. We test whether the ratio of variances is significantly less than 1 for each group respectively using a variance ratio F-test following Chua and al. (2012).

Earnings toward target as a proxy for earnings quality

We examine whether the transition to IFRS deters or assists greater earnings toward target. This construct assess the potential of earnings management in order to achieve positive income (to avoid losses). Following prior research (Barth and al., 2008; Chen and al. 2010; Chua and al., 2012; Lin and al., 2012) we use the frequency of small positive net income as a measure of earnings management. This measure is based on the assumption that managers prefers to report small positive net income rather than negative net income. We group all observations for the pre-adoption and the post-adoption periods to compute the frequency of small positive earnings (SPOS). Low frequencies of small negative earnings suggest less earnings management. Therefore, we define a dummy variable for small positive earnings (SPOS) in the regressions given by equation 9, that sets to 1 for observations for which annual net income (scaled by total assets) is between 0 and 0.01, and sets to 0 otherwise. A negative coefficient on SPOS indicates that IAS/IFRS firms manage earnings toward small positive amounts less frequently than local GAAP firms. To examine whether IFRS adoption reduces firms' managing of earnings toward small positive earnings, this study control for possible incentives for managing earnings toward targets.

We follow prior research to estimate earnings toward a target on variables to control for factors affecting earnings' quality (Barth and al., 2008; Chen and al., 2010 Chua and al., 2012; Lin and al., 2012) using the following logistic regression:

Model (9): $IFRS\ (0,1)_{it} = \alpha_0 + \alpha_1 SPOS_{it} + \alpha_2 AUDIT_{it} + \alpha_3 NUMEX_{it} + \alpha_4 XLIST_{it} + \alpha_5 TURN_{it} + \alpha_6 GROWTH_{it} + \alpha_7 EISSUE_{it} + \alpha_8 LEV_{it} + \alpha_9 DESSUE_{it} + \alpha_{10} OCF_{it} + \alpha_{11} SIZE_{it} + \alpha_{12} CLOSE_{it} + \varepsilon_{it}$

Where: the variables are as previously defined except that: SPOS is dummy variable that equals 1 if net income scaled by total assets is between 0 and 0.01, and 0 otherwise.

Accruals quality as a proxy for earnings quality

Assuming that operating cash flow cannot be manipulated, prior studies show that earnings which maps more closely into cash is more desirable (Francis and al., 2004; Boonlert-U-Thai and al., 2006). Thus accruals would provide a way to manipulate earnings (Callao and Jarne, 2010). As well, previous studies frequently used accruals quality to measure the extent of earnings management. Higher level of accrual quality suggests a higher degree of earnings' quality. We follow Dechow and Dichev (2002) framework and we assume that change of working capital in a period is expected to relate to lagged, contemporaneous and leading operating cash flow. McNichols (2002) develops a modified Dechow and Dichev (2002) model, stating that the change in sales revenue and property, plant, and equipment are imperative in forming expectations about current accruals and the impacts of operating cash flows. Accordingly, to test the change of accruals quality after IFRS implementation we employ the modified Dechow and Dichev (2002) model proposed by McNichols (2002). As prior studies (Dechow and Dichev, 2002; McNichols (2002); Francis and al., 2004; Van der Meulen and al., 2007; Ferrari and al., 2012) we estimate discretionary part of working capital accruals based on the following regression:

Model (10): $\Delta WK = \alpha_0 + \alpha_1 OCF_{it-1} + \alpha_2 OCF_{it} + \alpha_3 OCF_{i+1} + \alpha_4 PROP_{it} + \alpha_5 \Delta SAL_{it} + \lambda_{it}$

Where: the variables are as previously defined except that: ΔWK is annual change in working capital accruals for company in Year (t); PROP is property, plant, and equipment in year t and ΔSAL is change in sale between year (t−1) and (t).

To assess whether the change in accounting standards has affected the accruals quality, we interpret the standard deviation of the estimated residuals from the above regression. We infer a lower value of standard deviation as evidence of higher accruals quality. While, a higher amount of standard deviation of residuals, corresponds to a greater level of earnings management, or poorer earnings quality.

4. Findings

In this section, we provide descriptive data about our sample and present the main results of our empirical testing.

4.1. Descriptive statistics

We split sample firms into two groups by standard regulation, depending on whether the firms prepare the financial statement; IFRS or local GAAP norms. The purpose of this partition is to assess the relative influence of IFRS adoption on accountings and market variables. We infer differences in a variety of summary statistics (Mean, Median) relating to our data between the pre- and post-adoption periods as evidence of impacts of regulation switch. Table 3 shows descriptive statistics for the remaining independent and dependent variables used in our analyses, across the pre-adoption and the post-adoption periods.

Data from the descriptive accounting and financial market information shows a first indication that IFRS and local-GAAP accounting information are significantly different. Thus, a comparison between the two periods reveals that descriptor values are significantly different. The results show that market value of equity (MVE), book value of equity (BVE), stocks return (RETURN), net income (NI), change in working capital accruals (ΔWK), change in sale (ΔSAL) are all significantly higher in the adoption period than in the pre-adoption period, while operating cash flow (OCF), change in net income (ΔNI), change in operating cash flow (ΔOCF), property, plant, and equipment (PROP) are significantly lower in the adoption period than in the pre-adoption period. In terms of control variables, results show that the sample firms have grown significantly larger (SIZE), higher sales growth (GROWTH), greater change in total common equity (EISSUE), higher change in total liabilities (DESSUE) and more closely held share (CLOSE) after moving toward IFRS, while the leverage ratio (LEV) and sale ratio (TURN) decreased following the IFRS adoption. The Mann Whitney test and the equality of medians test demonstrate that the difference (Mean and Median) is often statically significant. As well, the Fisher test displays that accounting and market data are significantly more volatile during the IFRS regulation than the GAAP regulation. These results can be explained by the fact that the use of the fair value principal contributes to the increase of the value of accountings numbers and contribute to greater volatility of accountings numbers.

To summarize, we point up that IFRS reports significantly higher numbers for the accounting data compared with the reported numbers for local-GAAP accounting data. This finding is consistent with the past literature.

Table 3: Descriptive statistics

Variables	Regulation	Mean	Mann Whitney Test (Z)	Q1	Q2	Equality of medians test (chi2)	Q3	SD	Fisher test
MVE	GAAP	1.069	-4.815***	0.718	1.003	29.8885***	1.308	0.539	0.8965***
	IFRS	1.107		0.739	1.049		1.379	0.569	
BVE	GAAP	0.876	-3.778***	0.372	0.647	2.5160 NS	1.072	0.831	0.8666***
	IFRS	0.949		0.391	0.664		1.164	0.893	
RETURN	GAAP	0.105	-5.954***	-0.287	0.018	24.4123***	0.308	0.805	1.0175***
	IFRS	0.147		-0.244	0.062		0.380	0.798	
NI	GAAP	0.009	-7.860***	-0.006	0.026	52.4397***	0.059	0.108	1.0226***
	IFRS	0.021		-0.003	0.032		0.068	0.106	
ΔNI	GAAP	0.003	-0.843***	-0.019	0.004	4.6870***	0.026	0.081	1.1385***
	IFRS	0.002		-0.017	0.003		0.068	0.106	
OCF	GAAP	0.058	4.982***	0.015	0.072	30.6158***	0.122	0.120	1.1575***
	IFRS	0.056		0.011	0.064		0.112	0.112	
ΔOCF	GAAP	0.013	6.439***	-0.030	0.009	46.7445***	0.055	0.109	1.3131***
	IFRS	0.004		-0.033	0.002		0.042	0.095	
ΔWK	GAAP	-0.001	-1.191NS	-0.047	0.0036	0.0010***	0.052	0.120	0.9039***
	IFRS	0.003		-0.046	0.0037		0.054	0.126	
PROP	GAAP	0.549	6.438***	0.224	0.490	23.0743***	0.805	0.379	1.0538**
	IFRS	0.504		0.194	0.431		0.759	0.369	
ΔSAL	GAAP	0.051	-3.282***	-0.027	0.033	10.5960***	0.127	0.239	0.976NS
	IFRS	0.059		-0.016	0.239		0.137	0.236	
GROWTH	GAAP	0.072	-4.299***	-0.041	0.045	40.2687***	0.158	0.267	0.8394***
	IFRS	0.079		-0.042	0.064		0.186	0.291	
EISSUE	GAAP	0.035	-13.517***	-0.075	0.031	168.7693***	0.130	0.331	0.9227***
	IFRS	0.098		-0.040	0.065		0.194	0.345	
DESSUE	GAAP	0.056	-9.169***	-0.106	0.008	72.3453***	0.165	0.331	0.8815***
	IFRS	0.101		-0.083	0.041		0.216	0.352	
LEV	GAAP	1.699	4.036***	0.651	1.327	15.9149*	2.303	1.546	0.0256***
	IFRS	1.602		0.625	1.246		2.150	1.442	
TURN	GAAP	0.976	10.627***	0.498	0.877	76.0113***	1.287	0.699	1.0559**
	IFRS	0.869		0.405	0.775		1.167	0.681	
CLOSE	GAAP	0.276	-15.474***	0	0.150	164.757 NS	0.544	0.304	1.0286***
	IFRS	0.334		0	0.316		0.589	0.299	
SIZE	GAAP	2.363	-7.872***	1.699	2.274	40.9691***	2.978	0.973	1.0067***
	IFRS	2.481		1.811	2.398		3.109	0.969	

Notes: *** Denotes p-value < 0.01. ** Denotes p-value < 0.05 * Denotes p-value < 0.1.

Where: MVE is market value of equity 9 month after the fiscal year end (t); BVE: is a book value of equity at time (t); NI is net income for the period from (t); RETURN is the stocks return for the period from (t); ΔNI is annual change in net income; OCF is annual net cash flow from operating activities ; SIZE is natural logarithm market value of equity; GROWTH is percentage change in sales; EISSUE is percentage change in common equity; is liabilities divided by equity book value; DESSUE is percentage change in total liabilities; TURN is sales divided by total assets; OCF is annual net cash flow from operating activities divided by total assets; CLOSE is percentage of closely held shares of the firm as reported by Thomson ; ΔNI is annual change in net income divided by total assets; ΔOCF is annual change in net cash flow from operating activities divided by total assets; ΔWK is annual change in working capital accruals for company in Year (t) ; PROP is property, plant, and equipment in year t and ΔSAL is change in sale between year (t−1) and (t).

3.2. Empirical Results

We investigate the claim that IFRS regulation is a better measure of earnings' quality than local GAAP regulation. For this purpose, we estimate numerous regression models that test eight earnings attributes. We next present results referring for each earnings properties and we discuss the impact of IFRS adoption on earnings' quality.

Value relevance

This paper compares the value relevance of earnings amounts based on IFRS with those based on local GAAP regulation. Table 4 Panel 1 shows the value relevance model results (price and return levels models). Both the returns and price results models indicate no significant difference between local GAAP and IFRS earnings' value relevance. The coefficients of the interaction variables (NI*IFRS) from models 1 is negative and statistically not significant [α_4 = -0.023; P = 0.589] indicating rejection evidence of higher value relevance for firms reporting under IFRS versus local GAAP. A similar conclusion is drawn concerning the return model. The coefficients of the interaction variables (NI*IFRS) from models 2 is not significantly different from zero [β_4 = -0.059; P =0.527)] demonstrating no difference in the value relevance across firms reporting under the two standards. Consequently, the price model and the return model provide clear evidence that there are fewer associations between financial statement information and market-based data after IFRS adoption.
Based on these results, earnings appear to have lower value relevance to investors in the post-adoption period than in the pre-adoption period[12]. These results confirm prior studies (Hung and Subramanyam, 2007; Van der Meulen and al., 2007; Goodwin and al., 2008; Gjerde and al., 2008; Gastón and al., 2010 Dimosthenis and Hevas, 2011), however they don't corroborate our expectations. These results can be explained by the fact that the financial crises contributes to the decrease of the connection between earnings statement and market-based data as demonstrated by Bepari and al. (2013).

Table 4: Multivariate's analysis

Table 4 Panel 1: Value relevance[13]

Model 1	**Predicted**	**Nbr**	**α_4**	**Z**	**P**	**α_5**	**Z**	**P**	**Realized**
	Sign (+)	14568	-0.0235 ^{NS}	0.54	(0.589)	-0.028	-2.56 *	(0.010)	Sign (-)
Wald chi2			2289.42***						
P			(0.0000)						
Model 2	**Predicted**	**Nbr**	**β_4**	**t**	**P**	**β_5**	**t**	**P**	**Realized**
	Sign (+)	14334	-0.059 ^{NS}	-0.63	(0.527)	-0.097	-0.99 ^{NS}	(0.321)	Sign (-)
Fisher			98.60***						
P			(0.0000)						

Notes: *** Denotes p-value < 0.01. ** Denotes p-value < 0.05 * Denotes p-value < 0.1.
Nbr= Number of observations

Where: Model (1): $MVE_{it} = \alpha_0 + \alpha_1 IFRS_{it} + \alpha_2 NI_{it} + \alpha_3 BVE_{it} + \alpha_4 (IFRS*NI)_{it} + \alpha_5 (IFRS*BVE)_{it} + \varepsilon_{it}$; Model (2): $RETURN_{it} = \beta_0 + \beta_1 IFRS_{it} + \beta_2 NI_{it} + \beta_3 \Delta NI_{it} + \beta_4 (IFRS*NI)_{it} + \beta_5 (IFRS*\Delta NI)_{it} + \zeta_{it}$; MVE is market value of equity 9 month after the fiscal year end (t); BVE: is a book value of equity at time (t); NI is net income for the period from (t); RETURN is the stocks return for the period from (t); ΔNI is annual change in net income; ε and ζ equals other information about future abnormal earnings reflected in the firm's equity value but currently not in the firm's financial statements. IFRS is a dummy variable taking the value of 1 for the period since 2005 and 0 otherwise. All continuous variables are normalized by the market value of equity at time (t-1).

[12] In order to examine whether our main results are sensitive to alternative econometric models we perform robustness tests by examining the same firms before and after IFRS adoption. More specifically, we repeat our analyses using data from the pre-IFRS adoption period (2001–2004) and from the post-IFRS adoption period (2005–2010). We assess change in R^2 between the pre and post-IFRS periods by employing the Vuong's likelihood ratio test for non-nested models. A positive and significant Z-Vuong's statistic suggests that the residuals produced by the regression during the pre-IFRS period are larger in magnitude than those during the post-IFRS period. Hence, a positive and significant Z-statistic indicates that IFRS adoption has contributed to increased value relevance. Our results confirm previous conclusions.
[13] We analyze the data used in the equation (1) by using a General least squares panel regression approach and Ordinary least squares (OLS) regression approach in the equation (2), with a correction for the heteroscedasticity and correlation of the standard error.

Predictability

We investigate whether the predictive ability of reported earnings has strengthened as a consequence of the adoption of IFRS. As exposed in Table 4 Panel 2, results get evidence that the square root of the estimated error-variance from models 3 referring to the predictability of future cash flows is lower in the adoption period [0.0402] than in the pre-adoption period [0.0424]. The Fisher test reveals that the magnitude of the difference in the square root of the estimated error-variance is statistically significant ($p < 0.01$). Consequently, the IFRS adoption improves significantly the ability of earnings to predict future cash flows.
Furthermore, the results obtained from the model 4 show that the predictive ability of reported earnings differs in statistically significant terms before and after the adoption of IFRS. The square root of the estimated error-variance from the model 4 referring to the predictability of future earnings is lower in the adoption period [0.069] than in the pre-adoption period [0.074]. In the other words, we find consistent evidence of greater earnings predictability of future earnings after the 2005 transition to IFRS. These findings provide evidence that the predictability of earnings numbers has improved after IFRS adoption, which is in line with Jarva and Lantto, (2012) framework. These results are consistent with our expectations and support the view that managers use the increased reporting flexibility under IFRS to convey private information in order to enhance the predictive value of accounting numbers.

Persistence

This paper studies the link between the persistence of earnings and IFRS adoption. The findings in Table 4 Panel 2 reveal that the slope coefficient on current earnings referring to model 4 is much higher in the adoption period [$\beta_1 = 0.770$; Z-statistic =102.0] than in the pre-adoption period [$\beta_1 = 0.5284$; Z-statistic =57.26]. Consequently, our results advocate that listed firms which adopted IFRS after its inauguration in 2005, report more persistent reported earnings under IFRS standards. Our findings consistent with our assumption that maintain that IFRS adoption lead to a higher earnings' quality.

Table 4 Panel 2: Predictability and persistence

	Predicted	GAAP		IAS/IFRS		Fisher test	Realized
		Nbr	$\left(\sqrt{\sigma^2(\hat{\varepsilon})}\right)$	Nbr	$\left(\sqrt{\sigma^2(\hat{\varepsilon})}\right)$		
Model 3	IFRS<GAAP	5497	0.04247	8885	0.04024	1.1137^{***}	IFRS<GAAP
		Wald chi2 = 1498.4^{***}		Wald chi2=3570.3^{***}			
Model 4	IFRS<GAAP	6083	0.0740	8828	0.0695	1.055^{***}	IFRS<GAAP

	Predicted	GAAP		IAS/IFRS		Realized
		Nbr	β_1	Nbr	β_1	
Model 4	IFRS>GAAP	6083	0.5284^{***} Z = 57.26	8828	0.7703^{***} Z = 102.0	IFRS>GAAP
		Wald chi2 = 3278.9^{***}		Wald chi2=10421.8^{***}		

Notes: *** Denotes p-value < 0.01. ** Denotes p-value < 0.05 * Denotes p-value < 0.1.
Nbr= Number of observations

Where: Model (3): $OCF_{it+1} = \alpha_0 + \alpha_1 NI_{it} + \varepsilon_{it}$; Model (4): $NI_{it+1} = \beta_0 + \beta_1 NI_{it} + \omega_{it}$; OCF is annual net cash flow from operating activities; NI is net income for the period from (t); ε and ω equals other information about future abnormal earnings reflected in the firm's equity value but currently not in the firm's financial statements. All variables are scaled by the total assets at time a (t).

Timeliness

We investigate the effects of the transition from local GAAP to IFRS regulation on the timeliness of reported earnings. Table 4 panel 3 reports the results of the estimation of models 5. The results of measure of timeliness based on the Ball and Sivakumar (2005) model, show that the coefficient of the interaction term (IFRS*OCF) is positive [$\beta_5 = 0.108$; Z= 8.77] and statistically significant (the Z- statistic is significant at the 1 percent level).

Therefore, our result suggests a higher degree of timeliness in the pre-adoption period. Consequently, our findings allow us to accept our expectation and the claim that earnings figures prepared under IFRS regulation are of a higher quality than those prepared under the local GAAP standards.

Timely loss recognition

Table 4 Panel 3 displays multivariate's analysis for the timely loss recognition earnings attributes. The results of the first measure of timely loss recognition metric based on the Ball and Sivakumar model, show that the coefficient of the interaction term (NEG*IFRS*OCF) is negative and statistically significant [β_6 = -0.143 ; Z-statistic = -4.86]. Contrary to our prediction, this result suggests a lower degree of timely loss recognition in the pre-adoption period. Our results are consistent with local GAAP recognizing economic losses in a timelier manner than IFRS, which suggests that IFRS income is less conditionally conservative than its local GAAP counterpart. The results of the second measure of timely loss recognition metric based on the frequency of large negative income show a significant negative coefficient for the dichotomous variable (LENTH) from the logistic regression [β_6 = -0,665 ; Z-statistic = -0,665]. Consistent with the first measure of this construct, this result reveals that firms recognize large losses in a timely manner more frequently in the pre adoption period than they did in the post-adoption period. This finding suggests that there is no improvement in earning's quality as timely loss recognition following the adoption of IFRS regulation. Our findings are contrary to the conventional wisdom that the IFRS adoption would lead to a reduction in accounting conservatism. The reason for this surprising finding is that IFRS' extensive use of the fair value principle reduces accounting conservatism since the fair value principle dictates that potential gain should be recorded in the financial statement.

Table 4 Panel 3: Timeliness and Timely loss recognition

Models	Attributes	Nbr	Chi2	Predicted	Coefficient	Z	P	Realised
Model 5	Timeliness	16 049	12721***	Sign (+)	β_5 = 0.108***	8.77	(0.000)	Sign (+)
Model 6	Timely loss recognition	16 049	19224***	Sign (+)	β_6 = -0.143***	-4.86	(0.000)	Sign (-)
		12457	543.31***	Sign (+)	α_1 = -0.665***	-12.77	(0.000)	Sign (-)

Notes: *** Denotes p-value < 0.01. ** Denotes p-value < 0.05 * Denotes p-value < 0.1.
Nbr= Number of observations

Where : Model (5): $NI_{it} = \beta_0 + \beta_1 IFRS_{it} + \beta_2 NEG_{it} + \beta_3 OCF_{it} + \beta_4 (NEG*OCF)_{it} + \beta_5 (IFRS*OCF)_{it} + \beta_6 (IFRS*NEG*OCF)_{it} + \lambda_{it}$; NI is net income for the period from (t); NEG is a dummy variable, which takes the value of 1 if operating cash flows are negative and 0 otherwise; OCF is annual net cash flow from operating activities; IFRS is a dummy variable taking the value of 1 for the period since 2005 and 0 otherwise; λ equal other information about future abnormal earnings reflected in the firm's equity value but currently not in the firm's financial statements. All continuous variables are scaled by the total assets at the time (t).

Where : Model (6) : $IFRS\ (0,1)_{it} = \alpha_0 + \alpha_1 LENTH_{it} + \alpha_2 AUDIT_{it} + \alpha_3 NUMEX_{it} + \alpha_4 XLIST_{it} + \alpha_5 TURN_{it} + \alpha_6 GROWTH_{it} + \alpha_7 EISSUE_{it} + \alpha_8 LEV_{it} + \alpha_9 DESSUE_{it} + \alpha_{10} OCF_{it} + \alpha_{11} SIZE_{it} + \alpha_{12} CLOSE_{it} + \zeta_{it}$; LNETH is dummy variable that equals 1 if net income scaled by total assets is less than -0.20, and 0 otherwise ; SIZE is natural logarithm market value of equity; GROWTH is percentage change in sales; EISSUE is percentage change in common equity; is liabilities divided by equity book value; DESSUE is percentage change in total liabilities; TURN is sales divided by total assets; OCF is annual net cash flow from operating activities divided by total assets; AUDIT is dummy variable that equals 1 if the firm's auditor is PwC, KPMG, Arthur Andersen, Ernst and Young, or Deloitte Touche Tohmatsu, and 0 otherwise; NUMEX is number of exchanges on which a firm's stock is listed; XLIST is dummy variable that equals 1 if the firm is listed on any U.S. stock exchange; CLOSE is percentage of closely held shares of the firm as reported by Thomson- Company Analysis.

Smoothing

We test whether IFRS have mitigated earnings management behavior. Table 4 Panel 4 exhibits multivariate's analysis of the smoothing earnings attributes. Based on the first earnings smoothing measure, results show that the variability of the change in net income (ΔNI*) is significantly higher in the post-adoption period (0.0006) than in the pre-adoption period (0.0005). This comparison of the residual variance proves that income-smoothing behavior has reduced following IFRS adoption. Fisher test shows that the magnitude of the difference is significant at the 1 percent level. In accordance with previous results, we obtain identical inferences when we

compare the second earnings smoothing measure. Results show that the ratio of the variance of the change in net income (ΔNI*) to the variance of the change in operating cash flows (ΔOCF*) is considerably higher in the post-adoption period (0.3840) than in the pre-adoption period (0.2923). These results suggest that net income variability is not simply a result of cash flow variability and that earnings smoothing decreased after the adoption of IFRS. Taken together, these findings confirm that the implementation of IFRS reduces the scope for managerial earnings management and in this sense increase the quality of corporate earnings. This finding confirms our exceptions.

Table 4 Panel 4: Smoothing

Model 7	**Predicted**	**GAAP**		**IAS/IFRS**		**Fisher test**	**Realized**
		Nbr	$\sigma^2(\Delta NI^*)$	**Nbr**	$\sigma^2(\Delta NI^*)$		
Residuals	IFRS>GAAP	3847	0.00055	8487	0.00064	0.8564***	IFRS>GAAP
		F=19,80 P=(0.000)		F=59.54 P=(0.000)			
Models 7 and 8	**Predicted**	**GAAP**		**IFRS**			**Realized**
		Nbr	**Ratio of residuals**	**Nbr**	**Ratio of residuals**		
Ratio of residuals	IFRS>GAAP	3512	0.29231	8191	0.38406		IFRS>GAAP
		Wald chi2= 1819.21 P=(0.000)		Wald chi2= 4098.7 P=(0.000)			

Notes: *** Denotes p-value < 0.01. ** Denotes p-value < 0.05 * Denotes p-value < 0.1.
Nbr= Number of observations

Where : Model (7): $\Delta NI_{it} = \alpha_0 + \alpha_1 AUDIT_{it} + \alpha_2 NUMEX_{it} + \alpha_3 XLIST_{it} + \alpha_4 TURN_{it} + \alpha_5 GROWTH_{it} + \alpha_6 EISSUE_{it} + \alpha_7 LEV_{it} + \alpha_8 DESSUE_{it} + \alpha_9 OCF_{it} + \alpha_{10} SIZE_{it} + \alpha_{11} CLOSE_{it} + \varepsilon_{it}$; Model (8): $\Delta OCF_{it} = \alpha_0 + \alpha_1 AUDIT_{it} + \alpha_2 NUMEX_{it} + \alpha_3 XLIST_{it} + \alpha_4 TURN_{it} + \alpha_5 GROWTH_{it} + \alpha_6 EISSUE_{it} + \alpha_7 LEV_{it} + \alpha_8 DESSUE_{it} + \alpha_9 SIZE_{it} + \alpha_{10} CLOSE_{it} + \varepsilon_{it}$; the variables are as previously defined except that: ΔNI is annual change in net income divided by total assets; ΔOCF is annual change in net cash flow from operating activities divided by total assets.

Earnings toward a target

Table 4 Panel 5 shows the results of the likelihood of small positive earnings regression. We find a significant negative association between managing earnings toward small positive amounts and IFRS adoption. The coefficient on (SPOS) is negative and significantly different from zero, as predicted [coefficient = -0.5266, Z-statistic = -7.26]. The negative and significant coefficient on (SPOS) is suggestive of less earnings management to achieve positive income in the pre adoption period, which is consistent with our hypothesis. In other words, we get evidence that firms engage in managing earnings toward targets to a less extent during the adoption period. Thus, we get convincing evidence that the implementation of IFRS contributed to further earnings' quality compared to the local accounting standards.

These results align with the position of the IASB and of that part of the academic literature stating the IASB's better quality. We consider that such decrease in earnings toward target following IFRS adoption is mainly due to the higher level of disclosure and transparency inherent in IFRS.
The findings for earnings management metrics give support that IFRS regulation has generally enhanced accounting quality, chiefly in the form of less earnings smoothing behavior and in terms of less earnings managing toward a positive target.

Table 4 Panel 5: Earnings toward a target

	Predicted	**Nbr**	**α_1**	**Z**	**P**	**Realized**
Model 9	Sign (-)	12457	-0.5266***	-7.26	(0.000)	Sign (-)
			LR chi2= 425.12***			

Notes: *** Denotes p-value < 0.01. ** Denotes p-value < 0.05 * Denotes p-value < 0.1.
Nbr= Number of observations

Where: Model (9): IFRS $(0,1)_{it} = \alpha_0 + \alpha_1 SPOS_{it} + \alpha_2 AUDIT_{it} + \alpha_3 NUMEX_{it} + \alpha_4 XLIST_{it} + \alpha_5 TURN_{it} + \alpha_6 GROWTH_{it} + \alpha_7 EISSUE_{it} + \alpha_8 LEV_{it} + \alpha_9 DESSUE_{it} + \alpha_{10} OCF_{it} + \alpha_{11} SIZE_{it} + \alpha_{12} CLOSE_{it} + \varepsilon_{it}$; the variables are as previously defined except that: SPOS is dummy variable that equals 1 if net income scaled by total assets is between 0 and 0.01, and 0 otherwise.

Accruals quality

Table 4 Panel 6 presents the results for the model (10), comparing accruals quality for observations reported under IFRS versus local GAAP regulation. Our results show that the standard deviation of residuals in the post adoption period [0.0254] is higher than the pre adoption period [0.0243]. In more detail, the Fisher variance comparison test shows that the magnitude of the difference is significant at the 1 percent level. This result indicates that firms have lower accruals quality in the adoption period. These findings are not consistent with predictions that presume that IFRS adoption enhances accruals quality. Hence, results support the view that managers use their discretion to report earnings opportunistically.

Table 4 Panel 6: Quality of accruals

	Predicted	GAAP		IAS/IFRS		Fisher test	Realized
		Nbr	$\left(\sqrt{\sigma^2(\hat{\varepsilon})}\right)$	Nbr	$\left(\sqrt{\sigma^2(\hat{\varepsilon})}\right)$		
Model 10		4179	0.02438	7760	0.02544		
	IFRS<GAAP					f = 0.9186***	IFRS>GAAP
Fisher		F=19.64***		F=40.10***			

Notes: *** Denotes p-value < 0.01. ** Denotes p-value < 0.05 * Denotes p-value < 0.1.
Nbr= Number of observations

Where : Model (10): $\Delta WK = \alpha_0 + \alpha_1 OCF_{it-1} + \alpha_2 OCF_{it} + \alpha_3 OCF_{i+1} + \alpha_4 PROP_{it} + \alpha_5 \Delta SAL_{it} + \lambda_{it}$; the variables are as previously defined except that: WK is working capital accruals measured as the change in working capital for company in Year (t); PROP is property, plant, and equipment in year (t) and ΔSAL is change in sale between Years (t−1) and (t).

Conclusion

It is important for accounting producers, standard-setters and users to gain insight about how the accounting reform within the IFRS adoption may improve the earnings' quality. Research efforts in this area have tended to evaluate the impact of adoption of IFRS on earnings' quality. This study focused on the value added of IFRS regulation and attempted to provide empirical evidence of the consequences of IFRS adoption. Thus, our key objective was to compare earnings' quality under IFRS and local GAAP regulation in Europe and Australia, to conclude on the supposed superiority of international standards. The main result of this study advocates that, all else equal, accounting standards generate a difference in accounting quality. More specifically, the key findings of the current study support the argument that IFRS adoption improves the predictability, the persistence, the timeliness, the smoothing and the earnings towards a positive target. On the other hand, results show that IFRS implementation fall to get better the value relevance, the timely loss recognition and the accruals quality.

These answers shed light on the relation between the accounting standards used and that financial reporting quality and make available important insights for regulators regarding guidance and strategies for corporate disclosure. Accordingly, these findings suggest that the benefits of better earnings' quality cannot be achieved by the common standards alone. As indicated by Jarva and Lantto (2012); it is well known that high-quality accounting standards are not sufficient to ensure high-quality financial reporting. There are other macro-economic factors that may impact accounting quality. Like Jeanjean and Stolowy (2008) state; sharing rules is not a sufficient condition to create a common business language, and that management incentives and national institutional factors play an important role in framing financial reporting characteristics. Previous studies (Devalle and al. 2010; Callao and Jarne, 2010; Chen and al., 2010; Shelton and al. 2011; Sun and al., 2011; Houqe and al. 2012) highlight the importance of institutional characteristics in determining the level of earnings. As well they agree that the achievement of IFRS in enhancing accounting information is affected by factors such as national culture, the legal and institutional framework, enforcement mechanisms and reporting incentive. Thus, IFRS might not effectively reveal regional differences in economies. Thus, we believe it is valuable to acquire knowledge about the effect of implementing IFRS in a given country and evaluate results across nations.

Hence, the main limitation of the study relates to the consideration that the effects of IFRS adoption would vary from country to country. Future research might resolve this problem by examining the impact of IFRS adoption on accounting quality among dissimilar countries which share matching accounting characteristics.

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