The Influence of Second Wave IFRS adoption on Earnings Management:

"A cross-country study"

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Master-Thesis Business Administration Financial Management

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Preface

"Holding a master degree in public administration I find it important to learn and familiarize myself in a more specific field of research. I have chosen to learn more in the field of finance. I started working full-time for an accountancy firm and planned to graduate within the financial sphere of influence with this thesis as a result"

Abstract

The main aim of this paper is to examine whether adopting the accounting standard of IFRS during the second wave of IFRS adoption has an influence on discretionary accruals, which is used as proxy to determine accrual-based earnings management. Results of this paper have been obtained among 3144 publicly listed firms from 8 different countries worldwide. However, the overall result was negative but not significant suggesting adopting IFRS during the second wave of IFRS adoption has no direct influence on earnings management used among publicly listed firms. In addition this paper examined the influence of investor protection, the interaction variable of IFRS adoption during the second wave adoption period and investor protection and the firm factors of growth, leverage and size on earnings management. Obtained results in this paper indicate that a country's investor protection is negatively related with earnings management. However, the interaction variable of IFRS adoption during the second wave adoption period and investor protection is positively related with earnings management. The firm factor of growth is both negatively and positively related with earnings management depending on the country. The firm factor of leverage is negatively related with earnings management which is similar to the firm factor of size.

Keywords:

IFRS, earnings management, investor protection, second wave of IFRS adoption, firm growth, firm leverage, firm size

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1. Introduction

The adoption of the International Financing Reporting Standards (IFRS) has caused a major impact for financial statement preparers worldwide over the last 30 years. At present approximately 120 countries permit or require their national accounting standards to be based on financial statements in line with IFRS. The international convergence to IFRS is being driven by two purposes: the call for high-quality accounting standards around the world and the international comparability of financial information (Cai et al., 2014). This convergence is of significance since financial statements can be regarded as important tools when evaluating the performance of a firm. Shareholders assess a company's performance by financial earnings data, lenders use this data for debt covenant agreements, customers evaluate financial statements on information of supply and product related services and investors evaluate financial statements and earning numbers for prospective investment opportunities.

Prior accounting research has examined whether IFRS adoption reduces the management of accrual-based earnings and the use of discretionary accruals. 'Earnings management' occurs when managers use judgement in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers (Healy and Wahlen, 1999). Closely related, 'discretionary accruals' are those components of reported income that are discretionary or abnormal and are due to management choices. Discretionary accruals are often used as proxy for discussing and measuring accrual-based earnings management. Cai et al. (2014) discuss accounting studies that examine whether IFRS influences earnings management provide inconclusive results since a couple of studies have provided evidence of IFRS adoption having a positive influence on earnings management among European Union (EU) member states (Chen et al., 2010; Zeghal et al., 2011; Zeghal et al.,2012) whereas on the contrary a couple of studies have provided evidence of IFRS adoption having a negative influence on earnings management among EU member states (Ahmed et al.,2013; Callao and Jarne 2010). A positive influence depicts that IFRS adoption reduces earnings management whereas a negative influence depicts that IFRS adoption stimulates earnings management. This inconclusive evidence shows that the influence of mandatory IFRS adoption on earnings management remains an open empirical issue that warrants further investigation.

Prior accounting research also underscores the potential role of institutional factors as well as firm-level incentives in determining firms' behaviour to manage earnings (e.g. Burgstahler et al., 2006; Cai et al., 2014; Chen et al., 2010; Doukakis, 2014). Holthausen (2009) discusses that mandating IFRS may not be sufficient to ensure changes to financial reporting unless underlying institutional factors evolve as well. Leuz et al. (2003) observe that across 31 countries during the period 1990-1999 earnings management is negatively associated with the institutional factor of investor protection[1]. Zeghal et al. (2012) observe that the factors of firm growth (explained as the annual percentage change in sales), firm leverage and firm size (explained as the amount of total assets) are positively related with earnings management during the period of IFRS adoption among firms in Europe in 2005. Houqe et al. (2012) obtained similar results for the firm factors of growth and size being positively related with earnings management whereas Doukakis (2014) obtained similar results for the firm factors of growth and leverage being positively related with earnings management. Both Houqe et al. (2012) as well as Doukakis (2014) found these results among firms in European Union countries when they adopted IFRS in 2005. Based on these results it thus seems that institutional and firm factors have an influence on a firms' management of earnings and should be taken into account when examining the influence of IFRS adoption on earnings management.

I will contribute to the debate about the influence of IFRS adoption on earnings management by conducting research on a '*different period'*. This is of importance since current research on the influence of IFRS on earnings management is all based on the first wave of IFRS adoption. The first wave of IFRS adoption is a period in the beginning of 2005 when most notably countries from Australia, Europe, Hong Kong and South Africa mandatorily adopted IFRS. Bruggemann et al. (2012) discuss that it is possible that research on the influence of IFRS on earnings management is tainted by the first wave adoption period where companies had to get acquainted with IFRS. Therefore, as Bruggemann et al. (2012) continue to discuss, the transition to IFRS likely represents a structural break in the time series of firms' accounting numbers that will take some years to wash out. Ahmed et al. (2013) discuss that their outcomes of IFRS on earnings management may not persist after the first wave of IFRS adoption as implementation guidance and preparer familiarity with IFRS standards increase over time and/or improvements in the institutional structures of financial reporting occur. Houqe et al.

[1] As Leuz et al. 2003 discuss, investor protection confers rights on investors and enforces contracts for firm insiders as to limit their private control benefits which decreases their incentive to manipulate earnings.

(2012) argue that it is doubtful whether observed effects of mandatory IFRS adoption in 2005 on earnings management are sustained in the future.

The objective of this paper is to examine whether the use of discretionary accruals as proxy for earnings management has increased, decreased or remained unchanged after IFRS adoption during the second wave of IFRS adoption. To put it differently, the objective of this paper is to examine whether managers involve more, less or not differently in earnings manipulation, measured by the use of discretionary accruals, after IFRS adoption during the second wave of IFRS adoption. The second wave of IFRS adoption is a period during 2009-2012 where a global financial recession had been apparent but countries such as Brazil, Canada and South-Korea mandatorily adopted IFRS for publicly listed enterprises. The second wave of IFRS adoption is a term first used in 2007 by the International Accounting Standards Board (IASB) who have issued IFRS to refer to the then upcoming period where Brazil, Canada and South-Korea have made plans to adopt IFRS (IFRS website, 2016). I will not only examine the influence of IFRS on discretionary accruals, but will also look how the institutional-specific factor of investor protection and the firm-specific factors of growth, leverage and size influence earnings management during the second wave of IFRS adoption.

I will concentrate on 8 countries, namely Brazil, Canada, France, Germany, Japan, South Korea, United Kingdom and the United States. Between these 8 countries there is a variety of institutional and geographical environments whereas furthermore some of these countries are first wave IFRS adopters (France, Germany, United Kingdom), some second wave IFRS adopters (Brazil, Canada, South-Korea) and some have not adopted IFRS (Japan, United States). Brazil, Canada and South-Korea have been chosen since they are considered as leading countries who adopted IFRS during the second wave of IFRS adoption (IFRS website, 2016). France, Germany and the United Kingdom have been chosen because of their widespread use in existing research that examined the influence of IFRS adoption on earnings management during the first wave of IFRS adoption (e.g. Bruggemann et al., 2012 who shows that previous research on IFRS adoption is primarily based on French, German and UK firms; Callao and Jarne, 2010 who use a sample of primarily French and UK firms to examine earnings management after IFRS adoption; Chen et al., 2010 who use a sample of primarily French, German and UK firms; Jeanjean and Stolowy, 2008 who examined French and German companies to examine earnings management after IFRS adoption; Zeghal et al., 2011 who used a sample of French firms to examine the effect of earnings management after IFRS adoption). Japan and the United States have been chosen since they can be considered as the most powerful

economies worldwide that have not adopted IFRS (Worldbank, 2015)[2]. Examining the countries of France, Germany, UK, Japan and the United States allows to compare second wave IFRS adoption countries with other countries that both adopted IFRS already and have not yet adopted IFRS. Hence results obtained can be traced back more accurately to the second wave of IFRS adoption when for example Brazil, Canada and South-Korea show distinctive results as compared to the other countries.

The study is based on a broad sample of 15.720 firm-year observations of available data from 8 countries. Some of these countries mandatorily adopted IFRS during the second wave of IFRS adoption, some of these countries mandatorily adopted IFRS in 2005 and some of these countries have thus far not adopted IFRS mandatorily. I will make use of a cross-country study for two reasons. First a cross-country study is useful in exploring mixed and contradicting evidence among the countries under study. Secondly a cross-country study entailing different countries provides more opportunity to reflect results with previous studies based on the first wave of IFRS adoption. This study will examine the influence of IFRS on earnings management by applying the linear expectation model first used by DeFond and Park (2001). This model implicitly controls for cross-country differences in accounting standards and is more suitable calculating discretionary accruals in an international setting (Francis and Wang, 2008; Houqe et al., 2012).

Research Question: *Does mandatory IFRS adoption have an influence on accrual-based earnings management during the second wave of IFRS adoption?*

The research question allows to investigate the influence of IFRS on earnings management during a different time-period. The overall result to this research question is neither positive nor negative. IFRS adoption has no significant influence on earnings management, although it is negatively related.

Section 2 discusses the theoretical framework for this thesis. Section 3 draws up hypotheses. Section 4 discusses the methodology including research design and sample selection. Section 5 presents the results. Section 6 discusses the conclusions.

[2] China has not been chosen since the adopted Chinese Accounting Standards for Business Enterprises (CASBE) in 2006 are converged with IFRS (IFRS website, 2016) and hence China already adopted IFRS for a large part.

2. Theoretical Framework

2.1. International Financing Reporting Standards: Background and existing Research

Accounting provides companies, investors, regulators and others with a standardised way to describe the financial performance of an entity (IFRS website, 2016). Accounting standards present preparers of financial statements with a set of rules to abide by when preparing an entity's accounts, ensuring this standardisation across the market. Companies listed on public stock exchanges are legally required to publish financial statements in accordance with the relevant accounting standards.

During the 1960s trading on a transnational scale had been very expensive since investors and global companies had to examine and apply different accounting standards of each new country they wanted to enter which increased the costs of international communication and increased transaction costs (Ball, 2006). Hence the International Accounting Standards Committee (IASC) had been formed to search for solutions in a world that experienced rapid globalization and economic integration. This International Standards Committee had introduced the International Accounting Standards (IAS) that countries should apply and use as their national accounting practices.

When the IASB took over the IASC in 2001 they continued the development of harmonized international accounting standards. The IASB has three main objectives (Ball, 2006): Firstly "*Develop high quality, understandable and enforceable global accounting standards that require high quality, transparent and comparable information to help participants in the world's capital markets and other users.*" Secondly "*Promote the use and rigorous application of those standards.*" Thirdly "*Bring about convergence.*" (p. 11).

With the introduction of IFRS in 2001 the IASB wants to apply a single set of international accounting standards being capable of being applied in a globally consistent basis, both in developed, emerging and developing economies. It thus provides investors and other users of financial statements with the ability to compare the financial performance of publicly listed companies on a like-for-like basis with their international peers (IFRS website, 2016).

For more than a decade researchers and scholars have studied IFRS as well as IFRS adoption contributing to over a 100 research papers published in scholarly journals. Many different countries have been studied from all over the world. Also different settings have been

studied, such as '*voluntary*' and '*mandatory*' IFRS adoption. Voluntary adoption is what IFRS have meant for companies that chose to adopt IFRS when they were permitted to do so, often before IFRS became mandatory at a later date (Brown, 2011). Mandatory adoption is what IFRS have meant for companies that had no choice and had to adopt IFRS, such as listed companies in Europe after 2005 (Brown, 2011). Different research methods had been used as well, varying from questionnaires to experimental designs although most studies related to IFRS have an archival nature (Brown, 2011).

The introduction of IFRS has entailed a switch between a rule-based accounting system to a principle-based accounting system (Callao and Jarne, 2010; Carmona and Trombetta, 2008). The global acceptance of IFRS largely rests on its principle-based nature whereas furthermore it drives on the notion of openness and flexibility (Carmona and Trombetta, 2008). Principles-based standards refer to fundamental understandings that inform transactions and economic events that dominate any other rule established in the standard. Principles-based standards thus issue generic accounting standards. Rule-based accounting systems include specific criteria, bright-line thresholds, examples, scope restrictions, exceptions, subsequent precedents, implementation guidance whereas principle-based standards refer to fundamental understandings that inform transactions and economic events (Carmona and Trombetta, 2008; Nelson, 2003). It is often suggested that IFRS adoption and its principle-based nature will lead to both managers and auditors to make use of their professional judgement in order to confirm whether financial statements reflect the economic substance of the transactions rather than using their rule-checking approach. (Callao and Jarne, 2010). In order to make IFRS internationally acceptable, principle-based standards had been chosen by the IASB (Barth et al., 2008). The inner flexibility of the principles-based approach allowed countries from diverse accounting and institutional environments to adopt IFRS.

Accordingly researchers have discussed that IFRS adoption both has advantages as well as disadvantages. Ball (2006) discusses that IFRS offers investors five potential advantages. Firstly the international character of IFRS provides more accurate, comprehensive and timely financial statement information. Secondly small investors are as equal as investment professionals when anticipating financial statement information since the risk that they are trading with a better-informed professional is reduced. Thirdly due to the elimination of international differences in accounting standards and standardizing reporting formats, IFRS eliminate many of the adjustments analysts historically have made in order to make companies financials more comparable internationally. IFRS adoption therefore could reduce the cost to

investors of processing financial information. Fourthly reducing the cost of processing financial information increases the efficiency with which the stock market incorporates it in prices. Fifthly reducing international differences in accounting standards assists in removing barriers to cross-border acquisitions and divestitures. As Brown (2011) discusses, the benefits typically sought by adopting IFRS are to eliminate barriers to cross-border investing, increase reliability, transparency, and comparability of financial reports, increase market efficiency, and decrease the cost of capital.

In contrast to the advantages of IFRS adoption, there had been disadvantages associated with IFRS as well. De George et al. (2012) discuss IFRS adoption is costly for a firm since it entails greater effort, knowledge and information systems to implement the new standards and requires additional effort to manage the risk of material misstatements appearing in IFRS-compliant financial statements. Ball (2006) discusses his concern about the uniformity of IFRS adoption since incentives of preparers (managers) and enforcers (auditors, courts, regulators, boards, block shareholders, politicians, analysts, rating agencies, the press) are primarily local based. Local economic and political forces determine how managers, auditors, courts regulators and other parties influence the implementation of rules and will remain to have substantial influence on financial reporting and IFRS adoption. In addition Ball (2006) discusses that the IASB is a standard-setter and does not have an enforcement mechanism for its standards: it can cajole counties and companies to adopt IFRS in name, but it cannot require their enforcement in practice. The IASB lacks the ability to penalize individual companies or counties that adopt its standards, but in which financial reporting practice is of low quality because managers, auditors and local regulators fail to fully implement the standards.

Based on the disadvantages associated with IFRS, why do countries opt to make IFRS mandatory for publicly listed enterprises located in their country? As Brown (2011) discusses, the demand of mandatory IFRS adoption has been driven primarily by the needs of large corporations seeking access to international public equity markets, and large corporations seeking access to international public equity markets, and large financial intermediaries (institutions) seeking global investment opportunities. In some cases market providers, such as the Australian Securities Exchange, have promoted adoption of IFRS in the hope of deepening their own markets. Alternatively, countries within the EU were of the opinion and agreed in 2002 that mandatory adopting IFRS helps eliminating barriers to cross-border trading in securities and to ensures accounts throughout the EU are more reliable, transparent and more easily comparable (Brown, 2011). Accordingly this would result in increased market efficiency,

reduced costs of raising capital, ultimately improving competitiveness and helping boost growth. (Brown, 2011). The Korean Accounting Standards Board discusses that one of the reasons to adopt IFRS in their country is that these accounting standards can help expand IFRS adoption experience to countries that are considering adopting and develop new global market opportunities through utilizing the common platform of IFRS (Brown, 2011).

But has there been evidence of this optimism by countries who mandatorily adopt IFRS? One benefit sought by adopting IFRS is to eliminate barriers to cross-border investing since differences in accounting standards have made it more difficult for financial analysts to forecast a firm's future earnings (Brown, 2011). Horton et al. (2010) have found evidence of mandatory IFRS adoption decreasing forecast errors relative of forecast errors of firms that did not mandatorily adopt IFRS. Their sample include firms located in countries all over the world such as Australia, France, Germany, Hong Kong and the United Kingdom and that adopted IFRS between 2001 and 2007. Karamanou and Nishiotis (2009) have found that analysts upgrade recommendations following the adoption of international accounting standards, which is consistent with there being signalling and bonding benefits. The study of Karamanou and Nishiotis (2009) is based on 7 European countries and South Africa from 1986 to 1996. Florou and Pope (2009) used a global ownership database to study changes in equity ownership following the adoption of IFRS. As their findings suggest, ownership increased in the adoption year and the next year as well. Since ownership has increased, these findings suggest that international investors increase equity ownership suggesting a removal of barriers to cross-border investing after IFRS adoption. Concluded it thus seems that IFRS adoption has contributed to the elimination of barriers to cross-border investing.

Another potential benefit of adopting IFRS is comparability (Brown, 2011). Cascino and Gassen (2010) found that comparability of German and Italian accounting numbers have improved after IFRS adoption although they emphasize that incentives at country, regional and firm levels remain influential. Jones and Finley (2011) found among EU and Australian companies between 1994 and 2006 statistically significant reductions in the variability of ratio measures in the post-IFRS period, where variability was measured by the coefficient of variation (the ratio of the standard deviation to the mean) both across industry groups and across countries. It thus seems that IFRS enhances comparability as well.

It is also believed that IFRS adoption signals transparency and openness for firm's dealings with outside investors leading to a reduction of the cost of equity capital (Daske, 2006). However, results obtained by Daske (2006) among German firms from 1993-2002 adopting

IAS fail to document lower expected cost of equity capital but in fact document increased cost of equity capital. The results of Daske (2006) stand in contrast with the results of Castillo-Merino et al. (2014) who found that the cost of equity capital decreased after IFRS adoption among Spanish companies observed during the period of 1999 till 2009. Daske et al. (2008) also found a decrease in the firms' cost of capital after IFRS adoption among 26 countries that had to adopt IFRS. The period under study were 15 months in 2006 till 2007. There thus seems to be contradicting evidence of IFRS adoption and its influence on the cost of equity capital.

This contradicting evidence of IFRS adoption is not only related to the cost of equity capital. It is believed that IFRS adoption decreases earnings management (Ahmed et al., 2013; Brown, 2011). However, as will become clear in the remaining of this paper, the influence of IFRS adoption on earnings management is not a predetermined story as evidence reveal inconclusive results.

2.2. Earnings Management and Discretionary Accruals

Earnings provide critical information for investment decisions. Analysts, investors and boards are interested in financial reports of earnings (Degeorge et al., 1999). Board of directors charged with monitoring executives performance recognize the importance of earnings to the firm's claimants and link managerial rewards to earnings outcomes. Investors base their decisions on information received from analysts and through published earnings announcements. However, earnings are not always providing the desired result, which provide incentives to 'manage earnings'. 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*" (p. 160). Earnings management often occurs when managers use judgement in financial reporting and when they structure transactions (Healy and Wahlen, 1999).

Earnings management is related to 'earnings quality'. This is so since highly managed earnings have low earnings quality (Lo, 2008). It is also possible to measure the quality of reported earnings by examining to what extent earnings are managed with the intention to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcome that depend on reported accounting numbers. (Healy and Wahlen, 1999; Tendeloo and Vanstraelen, 2005). However, this does not mean that the lack of earnings management is sufficient to guarantee high-quality earnings. Other factors can contribute to lower earnings quality as well, such as accountants fastidiously following a poor

set of standards (Lo, 2008). Higher quality earnings provide useful information about the financial performance of a firm which can be relevant to a specific decision made by a specific decision-maker (Dechow et al., 2010). Dichev et al. (2013) suggest that Chief Financial Officers often associate high earnings-quality with sustainability, earnings that are repeatable hence exclude one-item or specific items, reflect consistent reporting choices, are backed by actual cash flows and avoid unreliable long-term estimates.

There are two important ways financial statement preparers can manage earnings: They can involve in accrual-based earnings management and real earnings management (Doukakis, 2014). Accrual-based earnings management involves using increasing or decreasing estimates of accruals created to manipulate reported earnings such as bad debt reserves, warranty costs and inventory write-downs (Li et al., 2008). Cassel et al. (2015) discuss accrual based earnings management takes place at valuation allowances and reserves since they provide managers with substantial flexibility to manage earnings because they are based on subjective estimates and are evaluated at higher levels of materiality, making them inherently difficult to audit. In addition differences identified by the auditor are more likely to be waived when underlying accruals are more subjective. Real earnings management involves the manipulation of earnings by real economic decisions, transactions or activities rather than accounting accruals (Zamri et al., 2013). Real earnings management involves the timing and structuring of actual business activities in order to achieve a desired financial reporting result (Li et al., 2008). Examples of real earnings management are timing the sale of equipment that will result in a gain in a quarter in which extra earnings are needed or meeting analyst forecasts by delaying repair, advertising and research and development expenses (Li et al., 2008).

Manipulation of accruals by management is the most common form of earnings management (Beneish, 2001). According to Dechow et al (1995) accrual-based earnings management mitigate timing and mismatching problems over short intervals that are not apparent in real earnings management. Furthermore measuring accrual-based earnings will be more informative since it measures more accurate the economic performance of a firm (Dechow et al., 1995). Lo (2008) discusses that to take part in real earnings management is more costly for the firm as compared to accrual-based earnings management and hence companies have a higher tendency to take part in accrual-based earnings management. Zarowin (2015) discusses that accrual-based earnings management is likely more prevalent than real earnings management, which involves manipulation of actual transactions, affects cash flows, and must be done before year-end. As Zarowin (2015) continues to discuss, research on accrual-based

earnings management is far more plentiful in the financial accounting literature. Based on these discussions, I will only focus on accrual-based earnings management.

Discretionary accruals' are those components of reported income that are discretionary or abnormal (Dechow et al., 1995) and are often used for measuring accrual-based earnings management (e.g. Doukakis, 2014; Dechow et al., 1995; Subramanyam, 1996; Teoh et al., 1997). Discretionary accruals can be defined as actual total reported accruals less expected normal accruals (Tendeloo and Vanstraelen, 2005). Nondiscretionary accruals can be seen as accruals that derive from the operational activities of a firm whereas the accruals that remain can be seen as discretionary. Discretionary accruals include the involvement of management discretion (Healy and Wahlen, 1999).

But why then do financial statement preparers manipulate earnings. Healy and Wahlen (1999) discuss that manipulation of earnings is carried out by financial statement preparers to mislead stakeholders about the underlying performance of a firm with the aim of influencing contractual outcomes that depend on accounting numbers. Tendeloo and Vanstraten (2005) discuss managers may be inclined to manage earnings due to existence of explicit and implicit contracts, the relation between a firm and capital markets; the need for external financing; and the influence from the political, institutional, and regulatory environment. Healy and Wahlen (1999) discuss three main reasons as of why earnings management occur. Firstly the widespread availability and use of accounting information by investors, financial analysts and capital market authorities that aim to help value stocks create an incentive for managers to manipulate earnings in order to influence short-term stock price performance. Secondly accounting data and earnings management are used to help monitor and regulate contracts between firm and stakeholders. Thirdly accounting standard setters have demonstrated an interest in earnings management to circumvent industry regulation (e.g. firms vulnerable to anti-trust investigation manage earnings to appear less profitable).

3. Drawing up Hypotheses

3.1. IFRS and Earnings Management

Currently, there are two main schools of thought in the debate on the possible influence of IFRS on earnings management: Proponents who discuss IFRS reduces earnings management and opponents who discuss that IFRS increases earnings management (Chen et al., 2010). Since

there is only little research on the second wave of IFRS adoption and no research that has examined the influence of IFRS during the second wave of IFRS adoption, I will draw up hypotheses based on the research that is at hand including research based on the first wave of IFRS adoption.

Proponents discuss that IFRS reduces earnings management and reduces reporting discretion. Ewert and Wagenhofer (2005) have developed a rational expectations model that shows that accounting standards that limit reporting discretion result in accounting earnings that are more reflective of a firm's underlying economics and have a higher earnings quality. Doukakis (2014) discuss that IFRS contains higher disclosure requirements which narrow the room to exercise judgement and reduce the freedom to manage earnings. Barth et al. (2008) discuss that IFRS eliminate accounting alternatives which reduces managerial discretion. Proponents also provide other motivations as of why IFRS reduces earnings management. Ahmed et al. (2013) argue that IFRS entails principle-based standards, which are more difficult to circumvent. It is therefore more difficult to avoid recognition of a liability through transaction structuring, making it more difficult to use accounting techniques that may paint an overly positive picture of a firm. Ahmed et al. (2013) also discuss that IFRS permits measurements, such as fair value accounting, that may reflect the underlying economics better than domestic standards. Soderstrom and Sun (2007) discuss that IFRS reduces the costs of acquiring expertise. As they argue, IFRS reduces the cost of comparing firms and financial reports across borders and the cost to evaluate the quality of financial reports between two firms. This cost-reduction and ease of comparing financial reports puts pressure on managers to reduce earnings management (Soderstrom and Sun, 2007).

Previous findings confirm the statement as brought forward by proponents that IFRS reduces earnings management. Chen et al. (2010) have conducted research on publicly listed companies among 15 member states of the European Union during the first wave of IFRS adoption. They found that IFRS reduces earnings management by limiting opportunistic management discretions in determining accounting numbers. Houqe et al. (2012) have found that first wave IFRS adoption increases earnings quality and reduces earnings management when there is no strong protection for investors within the investor protection regime. Zeghal et al. (2011) using a sample selection of French companies and Zeghal et al. (2012) using a sample selection of 15 EU countries both found higher accounting quality and lower earnings management after IFRS adoption during the first wave of IFRS adoption.

In contrast to the discussion of proponents, opponents discuss that IFRS increases earnings management. Jeanjean and Stolowy (2008) discuss that the openness and flexibility of IFRS provide greater scope for choice and involve a higher degree of implicit subjectivity in the application of criteria. This greater scope provides managers more opportunity to exercise their discretion. Callao and Jarne (2010) discuss that principle-based accounting models leave more scope for earnings management since they provide more flexibility in interpretation, include implicit subjectivity in the application of certain criteria and includes more relaxation of requirements concerning the presentation of financial statements. As Callao and Jarne (2010) continue to discuss, relatively young standard-setting regimes, such as IFRS in the EU, appear more principles-based since they have not had as much time to accrete rules. Over time implementation guidance, interpretations and technical rules develop and IFRS tend to become more rules-based. Therefore adoption of IFRS will increase the scope for earnings management whereas accordingly this scope will degrade over time.

Previous findings confirm the statement as brought forward by opponents that IFRS increases earnings management. Ahmed et al. (2013) have found among their sample size of 20 countries that firms that have adopted IFRS in 2005 increasingly make use of income smoothing and accrual aggressiveness as well as a significant decrease in timeliness of loss recognition. This suggests a decrease in earnings quality. Jeanjean and Stolowy (2008), doing research on the first adopter countries of Australia, France and the United Kingdom during the first IFRS adoption wave, use the statistical properties of earnings method to identify thresholds. Their findings suggest that the pervasiveness of earnings management did not decline after IFRS adoption and even increased in France. Callao and Jarne (2010) found that earnings management has intensified since the adoption of IFRS in 2005 among their sample size of 11 European countries.

Given the competing arguments throughout current research based on the first wave of IFRS adoption, it remains an empirical question whether IFRS increases or decreases earnings management. As Doukakis (2014) discuss, mandatory IFRS adoption on earnings management remains an open empirical question and a subject of debate among academics and practitioners. It is doubtful whether previous and competing findings on the influence of IFRS on earnings management persist in the future (Ahmed et al., 2013; Bruggemann et al. 2012; Chen et al. 2010; Houqe et al., 2012). Furthermore, since there has been no previous research during the second wave of IFRS adoption period, it remains uncertain how IFRS has an influence on earnings management during the second wave of IFRS. However, Nelson (2003) discusses that

IFRS adoption in the EU appear more principles-based in the beginning, but are likely to become more rules-based as implementation guidance, interpretations and technical rules are likely to improve. This improvement of implementation guidance, interpretations and technical rules could have an effect on the influence of IFRS adoption for second wave IFRS adopting countries. However, Nelson (2003) stays out of the discussion whether the switch from principles-based to rules-based entangles an increase or decrease in the management of earnings.

Due to all competing arguments, I will formulate the hypothesis about the influence of IFRS on earnings management in the null form:

Hypothesis 1: Earnings management does not change after mandatory IFRS adoption during the second wave of IFRS adoption.

3.2. The Importance of Investor Protection on Earnings Management

Despite the inconclusive evidence and the discussion between proponents and opponents, it is hard to circumvent the discussion that the influence of IFRS adoption on earnings management is determined by local institutional frameworks (Ahmed et al., 2013; Callao and Jarne, 2010; Chen et al., 2010; Doukakis, 2014; Houqe et al., 2012; Zeghal et al., 2011; Zeghal et al., 2012). As Houqe et al. (2012) discuss, accounting does not exist in a vacuum but is determined as a product of its environment. An important country-specific factor examined by previous research is the factor of investor protection regime (e.g. Houqe et al., 2012; La Porta et al., 1998; Leuz et al., 2003).

Investor protection signifies the extent to which rights and enforcement of these rights protect investors from expropriation by company insiders. La Porta et al. (1998) discuss that rights give investors the power to extract from managers the returns on their investment. Shareholders receive dividends because they can vote out the directors who do not pay them and creditors are paid because they have the power to repossess collateral. Without these rights, investors would not be able to get paid and hence firms would find it harder to raise external finance. Leuz et al. (2003) argue that strong and well-enforced outsider rights limit firm-insiders' acquisition of private control benefits which consequently mitigate firm-insiders' incentives to manage accounting earnings because they have little to conceal from outsiders. Managing earnings by managers and business controllers mask true firm performance which

accordingly conceal their private control benefits from outsiders. For instance, insiders can use financial reporting discretion to overstate earnings and conceal unfavourable earnings realizations that would prompt outsider interference. Investor protection rights provide outsiders rights to discipline insiders such as the right to replace managers or enforce contracts to limit insiders' private control benefits (La Porta et al., 1998; Leuz et al., 2003). Thus, as Leuz et al. (2003) discuss, strong investor protection rights effectively reduce insiders need to conceal their activities whereas weak investor protection rights provide opportunities for insiders to use private control benefits and provides a higher tendency to manipulate earnings.

This last argument by Leuz et al. (2003) is approved by results obtained by Callao and Jarne (2010); Ding et al. (2007); Francis and Wang (2008); Houqe et al. (2012) and Leuz et al. (2003) who have found evidence of earnings management holding a negative relation with investor protection. Houqe et al. (2012) also examined whether investor protection determine the influence of IFRS adoption on earnings management. Their results suggest that IFRS does not influence earnings management, but when a country has strong investor protection, adopting IFRS results in an increase of earnings quality and a decrease of earnings management. Francis and Wang (2008) discuss that their results suggest that countries with stronger investor protection environments have higher earnings quality and that the stronger these investor protection rights the higher earnings quality will be.

Houqe et al. (2012) discuss that the investor protection variable exists out of 6 broader factors that accordingly determine whether investor protection rights are strong or weak. Firstly strong investor protection is based on boards that independently scrutinize management action and protect shareholder wealth. The level of independency in boards determine the ability to reduce agency problems, which occur due to divergent interests of shareholders and company management. Secondly strong investor protection includes the enforcement of securities laws, which stands in one line with the discussion of Burgstahler et al. (2006) that securities laws deter insiders from manipulating earnings. Thirdly a strong investor protection depicts protection of minority shareholders' interest, which discusses that stronger protection rights for investors provide less incentives and opportunities for managers to engage in corrupt accounting practices. Fourthly strong investor protection includes the enforcement of accounting and auditing standards since, as the authors discuss, proper enforcements of these standards puts more pressure on management and auditors who accordingly have less scope to exercise discretion. Fifthly strong investor protection has judicial independence which guarantees efficiency and integrity of the legal environment as it affects business. The higher

judicial independence, the more efficient and integer the legal environment is working which has a direct influence on the level of legal enforcement. Sixthly strong investor protection provides freedom of the press which indicates freedom of expression, freedom of association and a free media, which are important determinants of democratic institutions and open market economies (Houqe et al., 2012).

Based on the discussion that both investor protection is negatively associated with earnings management, I can draw up a hypothesis. I argue that lower investor protection breeds managerial discretion within an organization that impedes production of high quality accounting numbers and increases the incentive to manipulate earnings.

Hypothesis 2a: Earnings management increases (decreases) with reduced (enhanced) investor protection.

As Daske et al. (2008) discuss, investigating the joint effect of investor protection and IFRS adoption is an interesting avenue for future research. Prior accounting research underscores the potential role of institutional factors in determining firms' behaviour to manage earnings (Burgstahler et al., 2006; Cai et al., 2014; Chen et al., 2010; Doukakis, 2014). Holthausen (2009) discusses that mandating IFRS may not be sufficient to ensure changes to financial reporting unless underlying institutional factors such as investor protection evolve as well. Hence I will draw up a second hypothesis on the interaction effect of IFRS adoption and investor protection.

To date Houqe et al. (2012) are the only researchers that have examined the interaction effect of IFRS adoption and investor protection on earnings management. Houqe et al. (2012) found that IFRS adoption per se does not lead to increased earnings quality. They have found that the interaction of IFRS adoption and stronger investor protection reduces earnings management. According to their results earnings management is a joint function of stronger investor protection and IFRS adoption. As Houqe et al. (2012) discuss, lower investor protection breeds managerial discretion within an organization that impedes production of earnings quality and provides opportunity to earnings management despite high quality accounting standards such as IFRS. Therefore clean and reliable financial information remains elusive in a low investor protection environment. However, Houqe et al. (2012) are to

date the only researchers that have examined the interaction effect of investor protection and IFRS adoption on earnings management.

Hence I will draw up the following interaction hypothesis:

Hypothesis 2b: Earnings management is negatively associated with the interaction effect between IFRS adoption and investor protection.

3.3. The Importance of Firm Factors

In addition to the country attribute of investor protection, there are also firm factors that determine the management of earnings for firms. Important firm specific factors that have been examined in previous research are growth, leverage and size (e.g. Doukakis, 2014; Tendeloo and Vanstraelen, 2005).

A firsm's growth is explained as the annual percentage change in sales. Growth has an influence on earnings management since managers of growth firms may manage earnings in such a way as to raise the value of their shares and attract more investors to meet capital needs (Doukakis, 2014; Houqe et al., 2012). I will follow Callao and Jarne (2010); Doukakis (2014) and Houqe et al. (2012) and discuss that growth is explained as the annual change in sales. McNichols (2000) is among the first to recognize the effects of growth on discretionary accrual estimates. She has found evidence of firms having greater expected growth use more discretionary accruals than firms with less expected growth. Skinner and Sloan (2002) and Callao and Jarne (2010) discuss that growth stocks normally demonstrate an asymmetrically large negative price response to negative earnings surprises. Accordingly managers of growth firms have incentives to manage earnings to avoid disappointments and large downward adjustments of a firm's stock prices. Lee et al. (2005) discuss that firms with higher performance and growth over-report earnings by a larger mount because price responsiveness increases. Accordingly managers manipulate earnings to influence the valuation of a firms' equity. Madhogarhia et al. (2009) discuss that growth firms are more likely to manage their earnings given the greater information asymmetries that are commonly associated with them. This is so since when there is a high information asymmetry, managers are more easily being able to manage earnings without being detected. High information asymmetry is namely associated with less firm management and shareholders monitoring. Due to the arguments of

growth having a positive influence on earnings management, I will draft the following hypothesis:

Hypothesis 3a: The firm factor of growth is positively associated with earnings management.

The firm factor of leverage explains debt-contracting motivations for earnings management (Doukakis, 2014). I follow the concept of leverage as discussed by Callao and Jarne (2010); Doukakis (2014) and Houqe et al. (2012) who discuss that leverage represents the total of long-term debt divided by total assets. Leverage has an influence on earnings management since highly leveraged firms tend to use their strong incentives to use earnings management practices to avoid debt covenant violation (Callao and Jarne, 2010; DeFond and Jiambalvo, 1994; Doukakis, 2014; Francis and Wang, 2008; Tendeloo and Vanstraelen, 2005; Watts and Zimmerman, 1990; Young, 1999). The higher the leverage, the tighter the covenant constraint and the greater the probability of covenant violation. Managers manipulate earnings to avoid such violation. In addition Jaggi and Lee (2002) discuss that managers of highly leveraged firms increasingly make use of discretionary accruals as to convince creditors that a possible financial distress is only temporary and that the firm will recover in a short notice. Due to these arguments that high-leveraged firms have an increased incentive to involve in earnings management, I will draft the following hypothesis:

Hypothesis 3b: The firm factor of leverage is positively associated with earnings management.

I will follow the concept of size as discussed by Callao and Jarne (2010) and Houqe et al. (2012) who discuss that size represents the amount of total assets. Tendeloo and Vanstraelen (2005) and Watts and Zimmerman (1990) discuss that larger firms as opposed to smaller firms are more likely to manipulate earnings downward and therefore engage in earnings management activities. They do so because the potential for government scrutiny increases as firms are larger and more profitable. Given the associated costs of information and monitoring, managers and financial statement preparers have an incentive to exercise discretion over accounting profits. In addition Doukakis (2014) mentions that larger firms may be more inclined into earnings management because the complexity of their operations makes detecting overstatement more difficult. Callao and Jarne (2010) discuss that larger firms have a higher incentive to manipulate earnings to decrease the tax burden. Due to these arguments of larger firms having a positive relation with earnings management, I will draft the following hypothesis:

Hypothesis 3c: The firm factor of size is positively associated with earnings management.

4. Research Design

4.1. Choosing a Model to Estimate Earnings Management

Different methods have been discussed that can be used to measure discretionary accruals. DeAngelo (1986) and Healy (1985) developed a model that use total accruals from the estimation period to proxy for expected nondiscretionary accruals. However, one major deficit of the model exist. According to Dechow et al. (1995) the nature of the accrual accounting process dictates that the level of nondiscretionary accruals should change in response to changes in economic circumstances. As Dechow et al. (1995) continue to discuss, failure to model the impact of economic circumstances on nondiscretionary accruals will cause inflated standard errors due to the omission of relevant (uncorrelated) variables, which accordingly lead to biased estimates. Due to this failure, I will not choose for the DeAngelo or Healy model to estimate discretionary accruals.

The Jones (1991) model controls for the effect of changes in a firm's economic circumstances on nondiscretionary accruals. She has proposed a model that relaxes the assumption that nondiscretionary accruals are constant, using firm-specific parameters to estimate discretionary accruals. However, one deficit of the Jones model is that it orthogonalizes total accruals with respect to revenues (Dechow et al., 1995). This means that the Jones model tends to extract the discretionary component from accruals, causing the estimate of earnings management to be biased towards zero (Dechow et al., 1995). Hence a modified Jones version has been proposed by Dechow et al., 1995 that eliminate the conjectured tendency of the Jones model and relaxes the assumption that nondiscretionary accruals are constant. However, Houqe et al. (2012) and Wysocki (2004) argue that the modified Jones model is not sufficient in cross-country study designs. The modified Jones-model uses two digit SIC indicators to estimate parameters among industries. Since the number of industry observations per country are likely to be quite small in cross-country study designs and likely to be smaller than the recommended ten observations (Kothari et al. 2005), I argue that the modified Jones model might not be the best estimation model for measuring cross-country discretionary accruals during the second IFRS adoption wave.

Furthermore Francis and Wang (2008) and Wysocki (2004) even argue that using the modified Jones model in an international setting has provided unreliability among the results.[3]An alternative method used to measure discretionary accruals is the Kothari et al. (2005) model. Kothari et al. (2005) discuss that firms with extreme performance are also likely to engage in earnings management. Kothari et al. (2005) have developed a performance-matched discretionary-accrual method where ROA is added to the modified-Jones model as an additional regressor. However, according to Collins et al. (2012) and Dechow et al. (2012) the model causes a substantial reduction in power and is only effective when the matching procedure employs the relevant omitted variable. In addition, the Kothari et al. (2005) model might scale earnings management upward (downward) with a negative (positive) error (Keung and Shih, 2014).

As I have argued, the Healy (1985); DeAngelo (1985); Jones (1991); Dechow et al. (1995) and Kothari et al. (2005) models all have their deficits and hence could provide results that are biased or provide unwanted errors. I therefore will choose a different model apart from these model which is also most appropriate in cross-country study designs. I will use the 'linear expectation model' used by DeFond and Park (2001); Francis and Wang (2008); Houqe et al. (2012) that uses a firm's own prior year accruals in estimating the benchmark parameters. In specific, expected accruals in this model are based on a firm's prior year ratio of current accruals to sales and the prior year's ratio of depreciation expense to gross property, plant and equipment (PPE). In addition to the benefit of using this model in an international context, the model implicitly controls for cross-country differences in accounting standards since it uses a firm as its own control to compute abnormal accruals, which are contextualized relative to the specific accounting standards of a particular country (Francis and Wang, 2008).

[3] In this thesis I have checked for both two digit and one digit SIC indicators and have tried to apply the modified Jones model, but observations among the industries were so low that countries such as Brazil and Canada only included three specific first digit industry classifications as compared to the 9 that are existing (see for first digit and second digit SIC classifications Bhojraj et al., 2003). As a result, I can conclude that the modified Jones model is not the most appropriate model to use.

4.2. Explanation of the Measurement Models

According to Houqe et al. (2012) the linear expectation model uses three steps to calculate the amount of discretionary accruals[4]. The first step is to measure total accruals. Calculating total accruals requires three separate calculations as can be found in Equation 1, Equation 2 and Equation 3. Equation 1 measures total accruals[5;6]. Though, equation 2 measures operating cash flow used to measure total accruals[7;8]. Equation 3 measures current accruals, which on its turn is necessary for calculating operating cash flow[9].

$$Total\ Accruals = (Operating\ Income - Operating\ Cash\ Flow) \ / \ Total\ Assets\ in\ year\ t\text{-}1 \qquad \textbf{[Equation 1]}$$

$$Operating\ Cash\ Flow = Operating\ Income + Depreciation\ and\ Amortization + \Delta\ Deferred\ Tax + \Delta\ Other\ Liabilities + Minority\ Interest - Current\ Accruals \qquad \textbf{[Equation 2]}$$

$$Current\ Accruals = \Delta\ [Current\ Total\ Assets - Cash\ and\ Cash\ Equivalents] - \Delta\ [Current\ Liabilities - (Loans\ included\ in\ Current\ Liabilities + Creditors\ included\ in\ Current\ Liabilities)]. \qquad \textbf{[Equation 3]}$$

Having provided equations for total accruals, operating cash flow and current accruals, the second step is to calculate non-discretionary accruals (Equation 4), also called predicted accruals (Francis and Wang, 2008)[10]:

[4] I will use the Orbis to collect the necessary data for the linear expectation model.
[5] Francis and Wang (2008) use the item of extraordinary items when calculating total accruals which they directly derive from the Compustat database. However, I will follow Houqe et al. (2012) and calculate total accruals as the difference between operating income and cash flow from operations, scaled by lagged total assets.
[6] Operating Income as used in equation 1 will be calculated using EBIT since operating income is not included as an item in the Orbis database.
[7] The items of change in deferred income tax and change in untaxed reserve, which are used in the original linear expectation model, are non-existent in Orbis. However, I will use the total change of deferred tax as an alternative.
[8] Following Ali and Hwang (2000) and Francis and Wang (2008), missing values on deferred taxes and minority interests will not be excluded from the data sample, but will be treated as zero.
[9] To calculate current accruals, which is similar to the change in non-cash working capital (Francis and Wang, 2008), one normally needs to calculate treasury stock and proposed dividends. However, using these data reduces the total sample size of firms available for this study substantially (i.e. a reduction of 2743 firms from the total of 3232 available). I therefore follow the argument of Dechow et al. (1995) and Thomas and Zhang (2000) who discuss that current accruals ignore all other accrual items except for the proxy of change in working capital excluding cash. In their discussion current accruals are based on current assets minus cash minus current liabilities. However, Sloan (1996) argues that in the original linear expectation model debt in current liabilities should be excluded from accruals in order to measure current accruals since it relates to financing transactions as opposed to operating transactions. I will follow Sloan and estimate this item by adding loans included in current liabilities with creditors included in current liabilities. This is so since Orbis does not allow for an item which includes debt in current liabilities. The resulting equation (Equation 3) is not new: Teoh et al. (1998) have used this formula in their estimation of current accruals in their study on the use of earnings management and underperformance of seasoned equity offerings.
[10] The necessary items for the linear expectation model of predicted accruals can be directly derived from Orbis except for gross PPE. Hence I will add depreciation to the net PPE, two items that are available in Orbis.

$$Non\text{-}Discretionary\ Accruals = \{[Sales\ in\ year\ t * (Current\ Accruals\ in\ year\ t-1\ /\ Sales\ in\ year\ t-1)] - [(net\ PPE\ in\ year\ t + Depreciation\ in\ year\ t) * (Depreciation\ in\ year\ t-1\ /\ (net\ PPE\ in\ year\ t-1 + Depreciation\ in\ year\ t-1))]\}\ /\ Total\ Assets\ in\ year\ t-1. \quad \textbf{[Equation 4]}$$

The last step is to calculate discretionary accruals, or abnormal accruals:

$$Discretionary\ Accruals = Total\ Accruals - Non\text{-}Discretionary\ Accruals. \quad \textbf{[Equation 5]}$$

Having discussed all steps in calculating discretionary accruals, the model below, which is adapted from Doukakis (2014) and Houqe et al. (2012), tests whether earnings management is a function of IFRS, the period after 2009, IFRS adoption after 2009, investor protection, the interaction of investor protection and IFRS adoption after 2009, growth, leverage and size.

$$DACCR = \beta_0 + \beta_1 ACCOUNTINGPRACTICE + \beta_2 POST2009 + \beta_3 ACCOUNTINGPRACTICE*POST2009 + \beta_4 INVPRO + \beta_5 INVPRO*IFRS*POST2009 + \beta_6 GROWTH + \beta_7 LEVERAGE + \beta_8 SIZE.$$

[Equation 6]

DACCR represent the discretionary accruals scaled by lagged total assets for firm *i* in year *t* (Houqe et al., 2012). 'ACCOUNTINGPRACTICE' represents a dummy variable that is given a 1 when a firm is using IFRS and a 0 when otherwise. This means that a 1 is given to firms that have adopted IFRS both voluntary as mandatory. 'POST2009' is a variable adapted from Doukakis (2014) and represents a dummy variable given a 1 after 2009 and a 0 before 2009. The period of 2009 has been chosen since afterwards the second wave of IFRS adoption started and the countries of Brazil, Canada and South-Korea adopted IFRS. 'IFRS*POST2009' is adapted from Houqe et al. (2012) and represents the interaction variable of 'IFRS' and 'POST2009'. The variable takes the value of 1 for a given country in the years after IFRS adoption.

'INVPRO' stands for the investor protection a country contains and is adapted from the standard of Houqe et al. (2012), who include board of independence (WEF, 2012), enforcement of securities laws (WEF, 2012), protection of minority shareholders' interest (WEF, 2012), enforcement of accounting and auditing standards (WEF, 2012), judicial independence (WEF, 2012) and freedom of the press (FH, 2015). The average of these six variables make up the investor protection of a country. INVPRO*IFRS*POST2009 is the interaction variable of IFRS adoption and the level of investor protection in a country adapted from Houqe et al. (2012).

The variable of 'GROWTH' directly derives from Ahmed et al. (2013); Callao and Jarne (2010); Doukakis (2014) and Houqe et al. (2012) and stands for the sales growth rate, which

is defined as the difference in sales from year t – 1 towards t and which is accordingly scaled by sales in year t – 1. The variable of 'LEVERAGE' derives from Ahmed et al. (2013); Doukakis (2014) and Houqe et al. (2012) and represents the amount of leverage used by a firm, also called gearing. It is calculated by 1 – (shareholders' funds / total assets) for a firm in year t. The variable of 'SIZE' directly derives from Ahmed et al. (2013); Doukakis (2014) and Houqe et al. (2012) and represents the size of a firm estimated by the natural logarithm of total assets for firm *i* in year *t*.

Table 1 shows a description of all variables used.

Variable	Measure	Description	Data Source
Dependent Variables: *Earnings Management*	Discretionary Accruals	Linear Expectation Model used by Francis and Wang (2008); Houqe et al. (2012) and adapted from DeFond and Park (2001).	Orbis Company Database (2015)
Independent Variables:	ACCOUNTINGPRACTICE	Dummy variable representing 1 for a country that has adopted IFRS and 0 otherwise.	Deloite IAS Plus Website (2015)
	Post2011	Binary variable that equals 1 for observations after 2011.	Deloite IAS Plus Website (2015)
	ACCOUNTINGPRACTICE* Post2011	Interaction term that equals one for mandatory adopters in the post-adoption period.	Deloite IAS Plus Website (2015)
	Investor Protection	Average of board of independence; enforcement of securities laws; protection of minority shareholders' interest; enforcement of accounting and auditing standards; judicial independence; and freedom of the press. Measurement used by Houqe et al. (2012).	See Below…
	INVPRO*IFRS*Post2011	Interaction variable of IFRS adoption and investor protection in a country.	Deloite IAS Plus Website (2015) and World Economic Forum (2012)
	Board of Independence	Measurement of corporate governance by investors and boards of directors in a country. Measurement used ranges from 1-7 (1=management has little accountability to investors and/or boards; 7=investors and boards exert strong supervision of management decisions).	World Economic Forum (2012)
	Enforcement of Securities Laws	Measurement of regulation and supervision of securities exchanges in a country. Measurement used ranges from 1-7 (1= ineffective; 7= effective).	World Economic Forum (2012)
	Protection of Minority Shareholder's' Interest	Measurement on to what extent the interests of minority shareholders are protected by the legal system. Measurement used ranges from 1-7 (1= not protected at all; 7= fully protected).	World Economic Forum (2012)
	Enforcement of Accounting and Auditing Standards	Measurement of how financial auditing and reporting standards are assessed regarding company financial performance. Measurement used ranges from 1-7 (1= extremely weak; 7= extremely strong).	World Economic Forum (2012)
	Judicial Independence	Measurement on to what extent the judiciary in a country is independent from influences of members of government, citizens or firms. Measurement used ranges from 1-7 (1= heavily influenced; 7= entirely independent).	World Economic Forum (2012)
	Freedom of the Press	Measures the extent to which there is a free media and the freedom to express oneself according to legal, political and economic environments without any kind of pressure on the flow of objective information or the fear of repercussion. Original measurement ranges from 1-100, but in this thesis I have scaled it down to a rank of 1-7 (1= not free at all; 7= completely free).	Freedom of the Press (2015)
	Growth	Difference in sales from year t-1 towards t scaled by lagged sales.	Orbis Company Database (2015)
	Leverage	1 – (shareholders' funds/total assets) for a firm in year t.	Orbis Company Database (2015)
	Size	Natural logarithm of total assets for a firm in year t.	Orbis Company Database (2015)

Table 1: Description of variables used.

I will perform two tests in order to discuss the influence of IFRS adoption on earnings management. The first will be a dependent t-test or paired samples t-test (which had also been used by Jiao et al., 2012 in their study on the influence of IFRS adoption on analysts' forecasts examined among 19 European countries) and the second will be an ordinary least squares (OLS) analysis (which had also been used by Ahmed et al., 2013; Chen et al., 2010; and Zeghal et al., 2012)[11]. The main reason to perform two tests is to better understand and interpret the influence of IFRS on earnings management. The first test namely allows us to examine the difference of the earnings management mean before and after IFRS adoption. Doing an OLS regression analysis allows us to examine the relation between earnings management and IFRS adoption. Besides that, an OLS regression analysis allows us to examine the relation between earnings management and the different industry and firm factors.

A dependent t-test allows to compare the means between two related groups on the same continuous dependent variable, which are in our case discretionary accruals. The first group represents data obtained during the period from 2008-2009. During this period countries from Brazil, Canada and South Korea have not made IFRS mandatory and hence this period features a pre-adoption period of second wave IFRS adopters[12]. The second period is from 2011 – 2013. During this period countries from Brazil, Canada and South Korea have adopted IFRS[13].

By using the dependent t-test it is possible to observe whether there had been a difference in earnings management before and after IFRS adoption. This allows us to test the first hypothesis of earnings management not changing after mandatory IFRS adoption during the second wave of IFRS adoption. However, before using this test there are four conditions one should take into account (LaerdStatistics, 2016). The first is that the dependent variable is measured on a continuous scale, which includes an interval or ratio level. Since the dependent variable of discretionary accruals includes an interval ratio where the difference between attributes can be interpreted meaningfully, this assumption is passed. The second is that the independent variable consist in both two categorical groups. Since exactly the same firms are apparent in group 1 and group 2, and are measured on two occasions on the same dependent variable, I argue this assumption has been passed. The third is that there are no significant

[11] Both tests are performed using SPSS version 23.
[12] Although the pre-adoption period used in this study lasts from 2008-2009, data from 2006 and 2007 will be collected using Orbis in order to calculate t – 1 items such as current accruals.
[13] The year 2010 will be left out of the study since it can be considered as a transition period where Brazilian, Canadian and South-Korean firms adapted to IFRS. This is not new, choosing two time periods that vary from the extent in years (in this case 2008-2009 vs 2011-2013) and omitting the transition year had previously been performed by Ahmed et al. (2013).

outliers in the differences between the two related groups. Since I have winsorized values above and below the studentized residual of three, I have removed certain outliers. The fourth is that the distribution of the differences in the dependent variable are approximately normally distributed. I have checked this assumption doing a Shapiro-Wilk test of normality[14]. However, the Shapiro-Wilk test of normality have showed negative results suggesting that the distribution is not normal. However, since LaerdStatistics (2016) suggests that the distribution should only be approximately normally distributed since violated results often tend to provide valid results, I take the Shapiro-Wilk test for granted and argue I can use the dependent t test.

After having conducted a dependent t test, I will perform an OLS analysis in order to assess the influence of IFRS adoption on earnings management[15;16] In order to conduct a linear regression analysis, 7 conditions need to be checked (Poole and O'Farrel, 1971). *Firstly* there is no measurement error when collecting value X and Y. *Secondly* to the specific functional form chosen, the relationship between X and Y is linear. *Thirdly* the conditional distribution has a mean of zero. *Fourthly* for all conditional distributions, the variance is constant (i.e. the homoscedasticity assumption). *Fifthly* serial independency is important (i.e. the autocorrelation assumption). *Sixthly* independent variables are linearly independent of each other (i.e. the multicollinearity assumption). *Seventhly* marginal and conditional distributions are normal in form (i.e. the normally distribution assumption).

Results show one main concern among the seven conditions. I argue to have passed the first condition since I have checked all data twice and rely on previous measurement models. I argue to have passed the second condition, although I have hypothesized that the two variables have no relation with each other. Since I am interested in to what extent IFRS adoption, a dichotomous variable, has an influence on discretionary accruals, which will result to either a positive or negative relation which is a linear function. I therefore expect to have a linear relationship between the two variables. The third assumption has been tested by plotting residuals against the independent variable to check whether residuals have a constant mean around zero (i.e. means can conditionally have a mean at a distance from zero). The resulting scatterplot suggested that almost no conditional mean exist form a distance of zero, except for a few variables[17]. I therefore argue to have passed the third assumption. The fourth assumption

[14] For an overview of these results, see Appendix A.
[15] Conducting an OLS analysis to examine the influence of IFRS on earnings management is similar to Ahmed et al. (2013); Doukakis (2014); Houqe et al. (2012).
[16] I will not use the groups of DACCR, but use the total DACCR instead being able to observe a difference for the IFRS, Post 2011, IFRS*Post 2011 and INVPRO*IFRS*Post2011 variables.
[17] For an overview of the scatterplot, see Appendix B.

has been tested by plotting a linearity line around Y[18]. This results in a linear line. The fifth assumption of autocorrelation has been tested by doing a Durban-Watson test[19]. I argue that I should be cautious on the autocorrelation assumption since its value of 1.710 is below 2, but it is not near 0 indicating positive autocorrelation. The sixth assumption of multicollinearity has been tested using the method of Hayduk (1987) who states that none of the items exceed a Pearson R of above 0,900 in order to avoid multicollinearity. However, the results suggest that multicollinearity exists among the six INVPRO measurements and between the IFRS*Post2011 and Post 2011 variables[20]. Although the Hayduk test suggests that multicollinearity exists, I have done a variance inflation factor (VIF) test as proposed by Pan and Jackson (2008) to observe if VIF exceed the value of 4. VIF measures to what extent the variance of a regression coefficient is increased by collinearity. However, results indicated that multicollinearity in the dataset is a problem[21]. The seventh assumption of normality had already been failed when testing the condition for the dependent t-test and will not be different when using the overall discretionary accruals component.

Concluded the OLS analysis might not be the strongest model to predict the influence of IFRS on earnings management since there are problems regarding multicollinearity. Though, I will continue to perform an OLS analysis to compare the results with previous research, although they should be interpreted with caution. Therefore I will make use of a robustness check afterwards to see what occurs when the data is amended.

4.3. Sample Selection

Financial data from the Orbis database are collected for the period 2006 – 2013, which includes the period of second wave IFRS adoption[22]. Following Daske et al. (2008), Houqe et al. (2012) and Francis and Wang (2008), financial service firms have been excluded. Among these are banks, insurance firms, pension funds, private equity or other investment firms. Following Houqe et al. (2012) utility firms were also excluded, such as research institutes, foundations, public authorities and other governmental entities. The main reason for excluding these industries is that they are regulated and hence are likely to differ from other companies in

[18] This has been tested by using discretionary accruals as a dependent variable, IFRS adoption as independent variable, plotting zresiduals around the X-axis and the dependent variable around the Y-axis. For an overview of the result, see Appendix C.
[19] For an overview of the result, see Appendix D.
[20] For an overview of the results, see Appendix E.
[21] For an overview of the results, see Appendix F.
[22] For an overview of the output file of Orbis, please see Appendix G.

their incentive to manage earnings. Observations where there were missing values for the variables in the study were excluded except for the items of deferred taxes and minority interest.

Data is collected from 8 countries that can be categorized in three groups. The first group includes the second wave adopters of Brazil, Canada and South-Korea. Since 31 December 2010 the Brazilian GAAP had been fully converged with IFRS for companies whose debt or equity securities trade in the public markets. However, early adoption of IFRS was permitted, but only after 31 December 2007. Canada has adopted IFRS for financial years of publicly accountable enterprises on or after 1 January 2011. As Christensen et al. (2013) mention, the proportion of firms that voluntary report under IFRS was virtually non-existent in Canada before 2011 although voluntary adoption had been possible for a couple of years. This meant that the majority of firms had to adapt their financial reporting standards from one time to the other during the second wave of IFRS adoption. Listed companies in South Korea are required to apply IFRS since 2011. According to a report of the KASB (Korean Accounting Standards Board, 2013), only 73 entities adopted IFRS voluntary before 2011 compared with a total of 3126 entities that applied IFRS during 2011. Both Canada and South-Korea are member of the OECD (Organisation for Economic Cooperation and Development) meaning they commit themselves to democracy and the market economy. Brazil is a BRIC country meaning they belong to a group of countries that are at a stage of newly advanced economic development. Since there is a difference between the IFRS adoption period of Brazil (2010) and Canada and South-Korea (2011), I will do a robustness check afterward to check whether this difference in adoption year has no influence on the obtained results.

The second group includes the first wave adopters of France, Germany and the United Kingdom that are, based on population and gross domestic product, one of the larger countries in Europe that adopted IFRS in 2005.There has been plenty of research available that have used the examples of France, Germany and the United Kingdom to observe the influence of IFRS on earnings management (e.g. Callao and Jarne, 2010; Doukakis, 2014; Houqe et al., 2012; Jeanjean and Stolowy, 2008). Although all three countries are member of the European Union, there is one important institutional differences among them. Cormier et al. (2015) and Ding et al. (2007) argue that common law countries, such as the UK, exhibit greater shareholder protection than French civil law countries. German-Scandinavian civil law countries have an average investor protection. This is so since common law countries rely heavily on public shareholders and creditors as sources of capital whereas code law countries, such as France and

Germany, rely on employees, banks and governments for financing (Cormier et al., 2015; Ding et al., 2007).

The third group includes the non-IFRS adopters of Japan and the United States. Both Japan and the United States are in the top three of countries with the highest gross domestic product. Though, they both have not yet adopted IFRS (Worldbank Data, 2015). Japan has been using Japanese GAAP since 2001. However, the Accounting Standards Board of Japan had been working towards converging the requirements of Japanese Accounting Standards with IFRS under the Tokyo Agreement in 2007. Since 2010 eligible listed companies in Japan are permitted to use IFRS in their consolidated financial statements in lieu of Japanese GAAP. Although Japan has considered possible mandatory adoption of IFRS by public companies for some time now, a decision is yet to be made (Deloitte IASplus website, 2016). Public listed companies in the United States are not permitted to use IFRS and are required to use US GAAP but non-listed companies, which are required to use IFRS (Deloitte IASplus, 2016). Although differences still exist between IFRS and the US GAAP, the US Securities and Exchange Commission (SEC) has argued in 2015 that significant progress has been made in converging IFRS and GAAP (Halter and Griswold, 2015). In light of this continued collaboration between the IASB and the US Financial Accounting Standards Board (FBAS) is expected in order to promote unbiased accounting standards and transparency on a global scale. However, full convergence towards IFRS and the use of a single global accounting standard is still far away (Halter and Griswold, 2015).

A total of 3.232 companies were suitable for this research. A total of 88 companies were removed since they had outliers on the discretionary accrual variable[23]. Accordingly table 2 shows an overview of firm observations and firm-year observations.

Table 2: Firm observations and firm-year observations.

Country	***Main Exchange***	***Firm Observations (Sample Distribution)***	***Firm-Year Observations***
Brazil	BM&F Bovespa	80	400
Canada	Toronto Stock Exchange; TSX Venture Exchange	118	590
South-Korea	Korea Stock Exchange; KOSDAQ	284	1420
France	Euronext Paris	197	985
Germany	Boerse Berlin; Boerse Düsseldorf; Boerse Frankfurt; Boerse Hamburg; Boerse München; Boerse Stuttgart	239	1195
United Kingdom	London Stock Exchange	189	945
Japan	Fukuoka Stock Exchange, Nagoya Stock Exchange, Sapporto Stock Exchange, Tokyo Stock Exchange	1621	8105
United States	NASDAQ; NYSE	416	2080
TOTAL	-	3144	15720

[23] Following Houqe et al. (2012) I have removed all companies with a studentized residual larger than 3 or -3

Table 3: Descriptive statistics.

-	μ	σ	25th percentile	Median	75th percentile
ACCR	-0,059	0,052	-0,083	-0,056	-0,031
NONDACCR	0,042	0,049	0,021	0,042	0,065
DACCR	-0,101	0,150	-0,167	-0,099	-0,037
Group1	-0,111	0,108	-0,157	-0,106	-0,060
Group2	-0,095	0,070	-0,129	-0,092	-0,057
INPRO	5,083	0,358	5,082	5,142	5,142
GROWTH	0,026	0,497	-0,095	-0,000	0,091
LEVERAGE	0,554	0,228	0,406	0,558	0,699
SIZE	13,658	1,902	12,334	13,451	14,877

μ stands for mean. σ stands for standard deviation. ACCR are total accruals scaled by lagged total assets. NONDACCR are non-discretionary accruals scaled by lagged total assets. DACCR are discretionary accruals scaled by lagged total assets. Group 1 represents the discretionary accruals of the first group of examined firms for the period of 2008-2009 used in the dependent t-test. Group 2 represents the discretionary accruals of the second group of examined firms for the period of 2011-2013 used in the dependent t-test. INVPRO represents an average measure of board of independence; enforcement of securities laws; protection of minority shareholders' interest; enforcement of accounting and auditing standards; judicial independence; and freedom of the press. GROWTH is the sales difference from year t-1 towards t scaled by lagged sales. Leverage is 1 – (shareholders' funds/total assets) for year t. Size is the natural logarithm of total assets for a firm in year t.

5. Empirical Results

5.1. Descriptive Results and Pearson R

Descriptive statistics on the variables used can be found in table 3. The overview of this table is adapted from Francis and Wang (2008) and Houqe et al. (2012). The mean of discretionary accruals scaled by lagged total assets is -0,101, which is lower as compared to the mean discretionary accruals of 0,073 (Chen et al., 2010); 0,058 (Doukakis, 2014); and -0,012 (Houqe et al., 2012) in their first wave IFRS adoption studies. However, the low mean of discretionary accruals is not exceptional since Zeghal et al. (2011) worked with a mean of -0,085 for non-IFRS adopters and -0,059 for IFRS adopters for their research on first wave IFRS adoption among French firms. In total 14,92% of the firms under study had a positive DACCR as compared to 85,08% of the firms that had a negative DACCR. When observing the DACCR for the group before IFRS adoption, DACCR was lower (-0,111) as opposed to the group after IFRS adoption (-0,095). The average INVPRO is 5,083 which is above the average of 3,5 (see table 1). Firms under study witnessed on average a sales growth rate of 2,6%. This is lower as compared to results of Chen et al. (2010; 11,82%), Doukakis (2014; 8,5%) and Houqe et al. (2012; 11,6%). This difference is likely the influence of the financial crisis that started in 2007. The average leverage ratio is 55,4%, which means that firms under study provide more liability financing than equity financing. This result is, compared to previous studies, not uncommon as Doukakis (2014) found a leverage ratio of 56,70% and Chen et al. (2010) found a ratio of

55,60%. However, Houqe et al. (2012) found a leverage ratio of 47,30%. Size as measured by the natural log of total assets has a mean of 13,658. This is above the mean of previous research such as Chen et al. (2010) who observed a mean of 5,47; Doukakis (2014) who observed a mean of 5,50; and Houqe et al. (2012) who observed a mean of 5,11. Zeghal et al. (2011) observed a mean of 9,04. The reason for the high mean on the variable of size is unknown, but that this study uses Japanese and US firms as opposed to the studies of Chen et al., Doukakis, Houqe et al. and Zeghal et al.

Table 4: Country-level descriptive statistics.

Factor	*Brazil*	*Canada*	*South-Korea*	*France*	*Germany*	*United Kingdom*	*Japan*	*United States*
DACCR mean	-0,095	-0,113	-0,060	-0,092	-0,107	-0,093	-0,104	-0,123
DACCR median	-0,081	-0,116	-0,060	-0,090	-0,101	-0,085	-0,101	-0,112
Board of independence	4,9	5,5	4,0	5,2	5,2	5,3	5,1	5,1
Enforcement of securities laws	5,8	5,4	4,0	5,1	4,8	5,2	4,7	4,8
Protection of minority shareholder's interest	4,7	5,4	3,7	4,6	4,9	5,2	4,9	4,8
Enforcement of accounting and auditing standards	5,1	6,1	4,5	5,3	5,5	5,9	5,1	5,2
Judicial independence	3,8	6,3	3,7	4,9	6,2	6,2	5,8	4,9
Freedom of the press	3,85	5,74	4,69	5,39	5,74	5,32	5,25	5,46
INVPRO	4,692	5,740	4,098	5,082	5,390	5,520	5,142	5,043
GROWTH	0,145	0,103	0,064	0,078	0,057	0,059	-0,025	0,094
LEVERAGE	0,662	0,507	0,577	0,638	0,566	0,586	0,519	0,060
SIZE	14,214	13,698	13,528	13,963	12,379	14,142	13,378	15,087

DACCR are discretionary accruals scaled by lagged total assets. INVPRO represents an average measure of board of independence; enforcement of securities laws; protection of minority shareholders' interest; enforcement of accounting and auditing standards; judicial independence; and freedom of the press. GROWTH is the sales difference from year t-1 towards t scaled by lagged sales. Leverage is 1 – (shareholders' funds/total assets) for year t. Size is the natural logarithm of total assets for a firm in year t.

Country-level variables can be found in table 4. The mean of discretionary accruals is the lowest in the United States (-0,123) and the highest in South-Korea (-0,060). The variable of board of independence is the lowest in South Korea (4,0), but the highest in Canada. Enforcement of securities laws is the highest in Brazil (5,8), but the lowest in South Korea (4,0). Protection of minority rights is the highest in Canada (5,4), but the lowest in South-Korea (3,7). Enforcement of accounting and auditing standards is the highest in Canada (6,1), but the lowest in South-Korea (4,5). Judicial independence is the highest in Canada (6,3) and the lowest in South-Korea (3,7). Freedom of the press is the highest in Canada (5,74) but the lowest in Brazil (3,85). On average, investor protection is the highest in Canada (0,5740) followed by the United

Kingdom (5,520) and Germany (5,390). Investor protection is the lowest in South-Korea (4,098) followed by Brazil (4,692) and the United States (5,043).

Firms under study in Brazil tend to have the highest growth (14,5%) as opposed to Japanese firms (-2,5%) who are experiencing a decline rather than growth rate. Firms within Brazil are financed the most with debt as compared to equity (66,2%) as compared to Japan (51,9%). Lastly firms under study had the largest size in the United States (15,087) and had the smallest size in Germany (12,379).

Table 5 shows the results of the Pearson Correlation test. The accounting practice of IFRS is positively and significantly correlated with discretionary accruals (R=0,046). This is the same for the period after 2011 (R=0,053) and IFRS adoption after the period of 2011 (R=0,072). I can thus conclude that based on the correlation coefficient discretionary accruals do not decrease after IFRS adoption but do increase. However, investor protection is correlated negatively and significantly with discretionary accruals (R= - 0,072), but the interaction variable of investor protection after IFRS adoption does not correlate negatively but rather positively and significantly with discretionary accruals (R=0,067). The variables of growth, leverage and size are all negatively significantly correlated with discretionary accruals (respectively R= - 0,017; R= - 0,053; R= - 0,051).

Apart from the correlations on the discretionary accruals, growth, leverage and size among firms listed on the stock exchanges are negatively and significantly related with investor protection (respectively R= - 0,017; R= - 0,055; R = - 0,038). However, they are positively and significantly related with the interaction variable of investor protection after IFRS adoption (respectively R= 0,056; R= 0,057; R= 0,19).

5.2. Empirical Findings

Dependent T- test:

Table 6 shows the results of the dependent t-test on discretionary accruals comparing discretionary accruals among group 1 and group 2. This table shows the difference in means between the pre and post period of second wave IFRS adoption. Results indicate a significant decrease ($\mu = -0,052; p < 0,05$) in the use of discretionary accruals in Brazil after the second IFRS adoption period. However, results for Canada ($\mu = -0,000; p > 0,1$) indicate no difference among the pre and post adoption period whereas results for South-Korea ($\mu = 0,013; p > 0,1$) indicate that the mean of discretionary accruals has increased, although the result is not

-	*Discretionary Accruals*	*Accounting Practice*	*Post2011*	*Accounting Practice * Post 2011*	*INVPRO*	*INVPRO * Accounting Practice * Post 2011*	*GROWTH*	*LEVERAGE*	*SIZE*
Discretionary Accruals	X	0,046****	0,053****	0,072****	-0,072****	0,067****	-0,017**	-0,053****	-0,051****
Accounting Practice	0,046****	X	0,158****	0,811****	-0,014*	0,804****	0,049****	0,096****	0,009
Post2011	0,053****	0,158****	X	0,407****	0,000	0,404****	0,015*	-0,036****	0,043****
*Accounting Practice * Post 2011*	0,072****	0,811****	0,407****	X	-0,142****	0,991****	0,057****	0,059****	0,020*
INVPRO	-0,072****	-0,014*	0,000	-0,142****	X	-0,042****	-0,017**	-0,055****	-0,038****
*INVPRO * Accounting Practice * Post 2011*	0,067****	0,804****	0,404****	0,991****	-0,042****	X	0,056****	0,057****	0,19**
GROWTH	-0,017**	0,049****	0,015*	0,057****	-0,017**	0,056****	X	-0,001	0,029**
LEVERAGE	-0,053****	0,096****	-0,036****	0,059****	-0,055****	0,057****	-0,001	X	0,196****
SIZE	-0,051****	0,009	0,043****	0,020*	-0,038****	0,19**	0,029**	0,196****	X

*Table 5: Outcomes of the Pearson R Correlation test. Accounting practice represents a dummy variable representing 1 for a country that has adopted IFRS and 0 otherwise. Post 2011 is a binary variable that equals 1 for observations after 2011. Accounting Practice * Post 2011 is an interaction variable that equals one for mandatory adopters in the post-adoption period of 2011. INVPRO represents an average measure of board of independence; enforcement of securities laws; protection of minority shareholders' interest; enforcement of accounting and auditing standards; judicial independence; and freedom of the press. INVPRO * Accounting Practice * Post 2011 is an interaction variable of IFRS adoption and investor protection in a country. * = significant at the 0,1 level. GROWTH is the sales difference from year t-1 towards t scaled by lagged sales. Leverage is 1 – (shareholders' funds/total assets) for year t. Size is the natural logarithm of total assets for a firm in year t.. ** = significant at the 0,05 level. *** = significant at the 0,01 level. **** = significant at the 0,001 level.*

Table 6: Results of the dependent t test on the discretionary accrual component

GROUP 1 – GROUP 2	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Brazil	-0,052	0,187	0,021	-0,094	-0,010	-2,481	79	0,015**
Canada	-0,001	0,218	0,020	-0,0400	0,0400	-0,012	117	0,990
South-Korea	0,013	0,134	0,008	-0,003	0,028	1,581	283	0,115
Total Second Wave IFRS Adopters	-0,001	0,169	0,008	-0,016	0,014	-0,162	481	0,871
France	-0,043	0,087	0,006	-0,055	-0,030	-6,870	196	0,001****
Germany	-0,060	0,156	0,010	-0,080	-0,040	-5,993	238	0,001****
United Kingdom	-0,004	0,092	0,007	-0,018	0,009	-0,652	188	0,515
Total First Wave IFRS Adopters	-0,038	0,121	0,005	-0,047	-0,028	-7,796	624	0,001****
Japan	-0,014	0,075	0,002	-0,017	-0,010	-7,236	1620	0,001****
United States	-0,013	0,101	0,005	-0,022	-0,003	-2,534	415	0,012**
Total Non-IFRS Adopters	-0,013	0,081	0,002	-0,017	-0,010	-7,410	2036	0,001****
Total all Countries	-0,016	0,108	0,002	-0,020	-0,013	-8,479	3143	0,001****

*Df refers to degrees of freedom and t refers to test-statistic. * = significant at the 0,1 level. ** = significant at the 0,05 level. *** = significant at the 0,01 level. **** = significant at the 0,001 level.*

significant. Because Brazil, Canada and South-Korea have divergent results, results on the comparison of means for the total of second wave IFRS adopters (μ = *-0,001; p > 0,1*) indicate no significant difference. However, on a country-level IFRS adoption does seem to have a negative influence on earnings management for Brazil. Therefore results of the dependent t-test indicate that IFRS adoption will have a different influence among different countries.

Table 5 also shows divergent results related to first wave adopters. Results obtained from France (μ = *-0,043; p < 0,001*) and Germany (μ = *-0,060; p < 0,001*) suggest that there had been a further decrease in the use of discretionary accruals between the pre and post second wave adoption period. However, the United Kingdom (μ = *-0,004; p > 0,01*) does not follow this pattern. The total of first wave IFRS adopters show that altogether discretionary accruals had decreased (μ = *-0,038; p < 0,001*). The same pattern can be observed by the total non-IFRS adopters (μ = *-0,016; p < 0,001*) both for Japan (μ = *-0,014; p , 0,001*) and the United States (μ

= -0,013; p < 0,05). Overall it thus seems that Brazil and Germany have the highest significant decrease in discretionary accruals as compared to Canada and South Korea which did not experience a significant difference in discretionary accruals.

Ordinary Least Squares Analysis:

Table 7 shows the results of the ordinary least squares analysis. Results suggest that IFRS is not significantly related and only marginally positively related to discretionary accruals (β = 0,008 *unstandardized* and β = 0,022 *standardized* p > 0,1). The adoption period of 2011 is significantly and positively related to discretionary accruals (β = 0,012 *unstandardized* and β = 0,039 *standardized* p < 0,001). This suggests that discretionary accruals have increased from the period before 2011 as compared to the period after 2011. This stands in contrasts to the results received from the dependent t test which show a decrease among the mean of discretionary accruals from group 1 to group 2. However, the interaction variable of IFRS adoption and the adoption period of 2011 show a significant and negative relation (β = -0,117 *unstandardized* and β = -0,310 *standardized* p < 0,01). The variable of investor protection also shows a significant and negative relation (β = -0,045 *unstandardized* and β = -0,107 *standardized* p < 0,001). Despite these two significant and negative relations of discretionary accruals, the interaction variable between investor protection, IFRS and adoption period is negatively and significantly related with earnings management (β = 0,026 *unstandardized* and β = 0,341 *standardized* p < 0,001).

Second-wave adopters show some differences as compared to the all countries. Accounting practice is slightly positively but not significantly related (β = 0,032 *unstandardized* and β = 0,071 *standardized* p > 0,1). The adoption period of 2011 is only slightly negatively related, but not significantly (β = -0,01 *unstandardized* and β = -0,02 *standardized* p > 0,1). The interaction variable is negatively related, but results are not significant (β = -0,109 *unstandardized* and β = -0,244 *standardized* p > 0,1). The variable of investor protection is the only variable that is significantly related with discretionary accruals. (β = -0,045 *unstandardized* and β = -0,140 *standardized* p <0,001). The interaction variable between investor protection, IFRS and adoption period is positively related, but not significantly related (β = 0,018 *unstandardized* and β = 0,184 *standardized* p > 0,1).

There are many differences among second-wave adopters, first-wave adopters and non-adopters. Interesting fact is that some first-wave adopters do not use the IFRS standards whereas some US firms use the IFRS standard, which therefore have resulted in positive or negative

	Dependent Variable: Discretionary Accruals															
	Total				Second-Wave Adopters				First-Wave Adopters				Non-Adopters			
	Unstandardized		Standardized		Unstandardized		Standardized		Unstandardized		Standardized		Unstandardized		Standardized	
Variables	Model 1.1	Model 1.2	Model 1.1	Model 1.2	Model 1.1	Model 1.2	Model 1.1	Model 1.2	Model 1.1	Model 1.2	Model 1.1	Model 1.2	Model 1.1	Model 1.2	Model 1.1	Model 1.2
Constant	-0,040****	0,184****			0,009	0,211****			-0,063****	-0,131			-0,043****	-5,565****		
Control Variables																
Growth	-0,005**	-0,006***	-0,016**	-0,021***	0,016*	0,17**	0,39*	0,43**	0,007	0,19	0,005	0,13	-0,016****	-0,016****	-0,065****	-0,063****
Leverage	-0,029****	-0,034****	-0,044****	-0,051****	-0,069****	-0,081****	-0,079****	-0,093****	-0,024**	-0,024**	-0,037**	-0,036**	-0,023****	-0,020****	-0,040****	-0,035****
Size	-0,003****	-0,004****	-0,042****	-0,046****	-0,004	-0,003	-0,029	-0,022	-0,002	-0,003*	-0,023	-0,036*	-0,004****	-0,003****	-0,056****	-0,048****
Independent Variables																
Accounting Practice		0,008		0,022		0,032		0,071		0,046**		0,076**		-0,010		-0,005
Post 2011		0,012****		0,039****		-0,01		-0,02		0,072****		0,218****		0,013****		0,054****
Accounting Practice*Post2011		-0,117***		-0,310***		-0,109		-0,244		0,142		0,436		0,000		0,000
INVPRO		-0,045****		-0,107****		-0,045****		-0,140****		0,003		0,003		0,098***		0,032***
INVPRO*ACC*Post2011		0,026****		0,341****		0,018		0,184		-0,034		-0,551		0,006		0,014
Model	Model 1.1		Model 1.2		Model 1.1		Model 1.2		Model 1.1		Model 1.2		Model 1.1		Model 1.2	
ModelF	24,783		33,429		7,528		6,881		2,704		7,143		0,010		0,014	
FChange	-8,646				0,647				-4,439				-0,004			
R^2	0,005		0,017		0,009		0,022		0,003		0,018		35,960		21,273	
ΔR^2	-0,012				-0,013				-0,015				14,687			

*Table 7: Results on the ordinary least squares analysis. GROWTH is the sales difference from year t-1 towards t scaled by lagged sales. Leverage is 1 – (shareholders' funds/total assets) for year t. Size is the natural logarithm of total assets for a firm in year t.. Accounting practice represents a dummy variable representing 1 for a country that has adopted IFRS and 0 otherwise. Post 2011 is a binary variable that equals 1 for observations after 2011. Accounting Practice * Post 2011 is an interaction variable that equals one for mandatory adopters in the post-adoption period of 2011.. INVPRO represents an average measure of board of independence; enforcement of securities laws; protection of minority shareholders' interest; enforcement of accounting and auditing standards; judicial independence; and freedom of the press. INVPRO * Accounting Practice * Post 2011 is an interaction variable of IFRS adoption and investor protection in a country. * = significant at the 0,1 level. ** = significant at the 0,05 level. *** = significant at the 0,01 level. **** = significant at the 0,001 level.*

relations for accounting practice in table 7 for these groupings. After having observed the firms that have used a different accounting practice, it became known that primarily some German and US firms originally were categorized in the correct group based on their nationality, but trade shares on a foreign market or are exempted for using the correct accounting practice based on their expected national accounting standards. The adoption period is for both first-wave adopters and non-adopters significantly and positively related (β = 0,072 *unstandardized* and β = 0,218 *standardized* p < 0,001; β = 0,013 *unstandardized* and β = 0,054 *standardized* p < 0,001). The interaction variable between IFRS and adoption period is positively related among second-wave adopters (β = 0,142 *unstandardized* and β = 0,436 *standardized* p > 0,1) and not positively or significantly related among non-adopters. This last feature is expected since non-adopters have not adopted IFRS after the adoption period of 2011. Results of first wave adopters on investor protection is neither positively nor negatively significantly related (β = 0,003 *unstandardized* and β = 0,003 *standardized* p > 0,1). This is different for non-adopters, where discretionary accruals are significantly and positively related with investor protection. (β = 0,098 *unstandardized* and β = 0,032 *standardized* p < 0,001). The interaction variable of IFRS, adoption period and investor protection is negatively related with discretionary accruals for first-wave adopters (β = -0,034 *unstandardized* and β = -0,551 *standardized* p > 0,1) and slightly positively related with non-adopters (β = 0,006 *unstandardized* and β = 0,014 *standardized* p > 0,1).

All three control variables of growth, leverage and size are negatively and significantly correlated with discretionary accruals among the total of all countries (respectively β = -0,006 *unstandardized* and β = -0,021 *standardized* p < 0,01; β = -0,034 *unstandardized* and β = -0,051 *standardized* p < 0,001; β = -0,004 *unstandardized* and β = -0,046 *standardized* p < 0,001). This is similar for non-adopters (respectively β = -0,016 *unstandardized* and β = -0,063 *standardized* p < 0,01; β = -0,020 *unstandardized* and β = -0,035 *standardized* p < 0,001; β = -0,003 *unstandardized* and β = -0,048 *standardized* p < 0,001). Second-wave adopters are different in that regard that the variable of growth is positively related (β = 0,017 *unstandardized* and β = 0,043 *standardized* p < 0,05). First-wave adopters only have a significant negative relation with leverage (β = -0,024 *unstandardized* and β = -0,036 *standardized* p < 0,05).

5.3. Hypotheses Testing and Discussion of the Results

The first hypothesis stated that earnings management does not change after mandatory IFRS adoption during the second wave of IFRS adoption. Results of the dependent t-test show divergent results among the three countries that had adopted IFRS mandatorily. For Brazilian firms results suggest discretionary accruals do decrease after the adoption. However, results from Canadian firms show no trend at all whereas South-Korean firms show a positive difference among discretionary accruals, but this result is not significant. The result on the comparison of means for the total of second wave IFRS adopters therefore indicated no significant difference. Hence, based on the dependent t-test, hypothesis 1 can be accepted.

Based on the ordinary least squares regression analysis a different conclusion can be made. Since the intervening variable of accounting practice and second wave adoption period is negatively associated with discretionary accruals, it seems that discretionary accruals are indeed decreasing after IFRS adoption during the second wave. However, although negatively associated, it is not significantly associated. This suggests that the outcome is not reliable, hence it is questionable if similar results are obtained among other second-wave IFRS adopters or firms outside the stock-market that have adopted IFRS during the second-wave. Hence I can accept hypothesis 1 as well based on the ordinary least squares regression analysis. The outcome of both the dependent t-test and ordinary least squares stand in line with results obtained by Doukakis (2014) whose results suggest that IFRS adoption has no significant impact on accrual-based earnings management.

Hypothesis 2a stated that investor protection is negatively associated with investor protection. Investor protection is negatively associated among the total group of countries and second-wave adopters based on the ordinary least squares analysis partially confirming hypothesis 2a. However, the opposite result is obtained for non-adopters and no significant result for first-wave adopters. Based on current research it is difficult to provide motivation for the distinctive results. Results obtained by Houqe et al. (2012) on investor protection were not significant and only marginally positive on their study on IFRS adoption and investor protection around countries worldwide. Results obtained by Francis and Wang were significant and negative, but results were tested along Big 4 audits around the world and not IFRS adoption. Hence further research is necessary to discuss how it is possible that investor protection among second-wave adopters has a negative influence on earnings management.

Along hypothesis 2a, hypothesis 2b stated that the interaction effect between IFRS adoption during the second wave and investor protection is negatively associated with discretionary accruals. Results obtained in this paper stand in contrast with hypothesis 2b and show significant positive results for the total group of countries, although no significant results are obtained for the sub-groups of second-wave adopters, first-wave adopters and non-adopters. Hypothesis 2b can thus be rejected. This stands in contrast as well with results obtained by Houqe et al. (2012) who did a similar study but during the first wave of IFRS adoption. It is difficult to motivate this result based on prior research since research on the interaction effect between investor protection and IFRS adoption is primarily based on the first wave. Further research is necessary to examine the positive influence of the interaction variable on discretionary accruals during the second wave focussing in more depth on the apparent financial crisis that might function as a third variable explaining both variables. During a financial crisis, governance variables, such as investor protection and the quality of law enforcement, are important predictors of the extent of market declines (LaPorta et al., 2000). To overcome a financial crisis, it is important to stabilize those government factors. This increases investor protection on the one hand, but time is needed to lower earnings management on the other. Companies make use of earnings management during a financial crisis to evanescence lower earnings to compensate for the decrease of operational performance and avoid a decline in the firm's stock price (Filip and Raffournier, 2014). However, more research is needed on this discussion of investor protection during the second wave of IFRS adoption and the increase of discretionary accruals during a financial crisis.

Hypothesis 3a stated that the firm factor of growth is positively associated with earnings management. Results obtained are mixed: The total group have a significant negative relation on the firm factor of growth, second-wave adopters a significant positive relation, first-wave adopters a positive but not significant relation and non-adopters a negative significant relation. Since Japan is well represented in this study, it seems that the negative significant relation of non-adopters heavily influences the total group as well. However, based on these results, it seems that the firm factor of growth has a different influence along countries, being able to accept hypothesis 3a partly. Further research should however examine why growth among non-IFRS adopters is negatively related with earnings management.

Hypothesis 3b stated that the firm factor of leverage is positively associated with earnings management. Results obtained among all four groups show the complete opposite: highly leveraged firms tend to manipulate earnings less. Therefore hypothesis 3b is rejected. Although

not in line with the expectation, results are in line with the discussion of Becker et al. (1998) and Tendeloo and Vanstraelen (2005). Based on the 'contractual renegotiations theory' highly leveraged firms during a financial recession tend not to manipulate earnings to increase the likelihood of contractual renegotiations. Another motivation might be increased scrutiny for highly leveraged firms that are financially distressed which decreases the likelihood for earnings management. However, there is no research existent that motivates this last argument.

As similar to hypothesis 3b, results obtained in hypothesis 3c, which stated that the firm factor of size is positively associated with earnings management, shows complete opposite results. Therefore hypothesis 3c is rejected. However, this discussion is motivated by Doukakis (2014) who discusses that larger firms face greater political costs as compared to smaller firms which they owed to greater analyst following and larger investor scrutiny. This reduces the tendency to manipulate earnings.

5.4. Robustness Check

Throughout the current paper there have been two major issues that, if addressed, might provide different outcomes. Firstly Japan holds a majority of firms under study encompassing more than the half of all firms under study. The robustness check will leave out the country of Japan and focus only on the United States as non IFRS adoption country. Secondly I have examined the periods of 2008-2009 and 2011-2013, although Canadian and South-Korean firms adopted IFRS one year later than Brazilian firms, meaning there might be an adoption-gap among second-wave adopters that could have an influence on the outcomes. The robustness check will leave out the year of 2011 and examine the periods of 2008-2009 and 2012-2013.

Results of the robustness check show no main differences[24]. The pearson r correlation test shows nearly identical results besides that some results are less significant. The dependent t-test shows three main differences. South Korea has changed from $\mu = 0{,}013;\ p > 0{,}1$ to $\mu = -0{,}001;\ p > 0{,}1$, although results became less significant, from 0,115 to 0,997. The total for second wave IFRS adopters has changed from $\mu = -0{,}001;\ p > 0{,}1$ to $\mu = -0{,}011;\ p > 0{,}1$ but became more significant, from 0,871 to 0,227. The United Kingdom had no difference in μ, but its significance increased from 0,515 to 0,173. The ordinary least squares analysis under the

[24] For an overview of the Pearson R Correlation Test, Dependent T Test, and Ordinary Least Squares Analysis, please see Appendix H; I; J respectively.

robustness check results in no changes that are worth mentioning. Concluded, based on the robustness check, it seems that results can be accepted and leaving out Japan and using a different period do not have a major impact on the results.

6. Conclusion

6.1. Implications for Theory and Interpreting the Results for Practice

Current research on the influence of IFRS on earnings management is based on the first wave of IFRS adoption. As this paper has discussed, results that were based on discretionary accruals during the first wave IFRS adoption research are not consistent. For instance Chen et al. (2010) found evidence of IFRS reducing earnings management based on 15 EU member states, which is similar to Zeghal et al. (2011) among French companies and Zeghal et al. (2012) among 15 EU member states. On the contrary Jeanjean and Stolowy (2008) doing research on Australia, France and the UK and Callao and Jarne (2010) doing research among 11 European countries found that earnings management increased after IFRS adoption during the first wave. Doukakis (2014) therefore discusses that the influence of IFRS adoption on earnings management remains an open empirical question and a subject of debate among academics and practitioners. Holthausen (2009) already recognized that IFRS adoption alone may not be sufficient to ensure changes to financial reporting unless institutional and economic factors evolve as well.

I have contributed to this open empirical question by investigating the influence of IFRS adoption during the second wave of IFRS adoption period, which provides a contribution to the current research available. Results have shown that Doukakis (2014) discussion on the influence of IFRS adoption on earnings management being an open empirical question cannot easily be solved. Results in the paper at hand indicate no significant influence of IFRS adoption on earnings management during the second wave of IFRS adoption, which therefore stand in contrast with results of Ahmed et al. (2013) who's results suggested that IFRS reduces earnings management. However, the results are in line with results obtained by Doukakis (2014) during the first wave of IFRS adoption among 22 European countries. Ahmed et al. (2013) questioned whether their results are sustained in the future. This paper has answered that question negatively.

However, the dependent t-test shows an interesting result: the first wave adopters mean has been decreased significantly during the pre and post adoption period. Cai et al. (2014) have examined the influence of IFRS adoption on earnings period across 31 countries globally during 2000 and 2009. As their results indicate, the mean of earnings management had increased from 2007 till 2009 among IFRS adoption countries. However, in this study results indicate that earnings management will decrease after 2009. Together with the results obtained by Cai et al. (2014) it seems that earnings management during the financial recession had been higher than during the first wave of IFRS adoption.

Results of Houqe et al. (2012) and Francis and Wang (2008) indicated that investor protection leads to a positive reduction of earnings management when IFRS is adopted. However results of this paper show different results among first wave, second wave and non-IFRS adopting countries. Investor protection is negatively related with earnings management among second-wave adopting countries and to the overall group of countries in this study indicating that higher investor protection leads to a lower degree of earnings management. However, first-wave and non-IFRS adopters show respectively no significant and significant positive results. The implication for theory is that investor protection has a different influence on discretionary accruals among different countries. When looking in specific on the interaction variable of IFRS adoption and investor protection, significant positive results were received which stand in contrast with Houqe et al. (2012). Although it is difficult to motivate this result, the relationship between investor protection and earnings management is not as clear as had been motivated by Houqe et al. (2012) and Francis and Wang (2008) and does not necessary lead to a reduction to discretionary accruals. Further research is necessary to examine the possible negative influence of earnings management and investor protection among second-wave adopting countries and the positive influence of earnings management on the interaction variable between IFRS adoption and earnings management. However, Houqe et al. (2012) issued whether their results are sustained in the future. As results in this paper have shown, results obtained by Houqe et al. (2012) during the first wave of IFRS adoption stand in contrast with results obtained in this paper during the second wave of IFRS adoption.

Results on the variable of investor protection are similar to the results on the variable of growth since they are mixed among first wave, second wave and non-IFRS adopters. These results can also be traced back on current available research: Doukakis (2014), Houqe et al. (2012) have shown that growth has a positive influence on discretionary accruals, but on the

contrary Chen et al. (2010) and Zeghal et al. (2011) have shown different results among IFRS adopters and non-adopters.

Results on the variable of leverage, which signifies a negative result of discretionary accruals and earnings management, are similar to the results of Houqe et al. (2012) but different to the results of Doukakis (2014) and Zeghal et al. (2011). It thus seems that results on the variable of leverage are different throughout research. Further research is necessary to examine the differences throughout current research.

The variable of size has also different results among current research available. This thesis has shown that size is negatively related with earnings management meaning the larger the size of a firm, the lower earnings management will be. These results are motivated by Zeghal et al. (2011), but are not in line with results obtained by Chen et al. (2010); Doukakis (2014) and Houqe et al. (2012).

From a practical point of view, countries considering adopting IFRS should take into account that adoption will not directly reduce the amount of discretionary accruals among firms. However, this does not mean IFRS does not have its share of benefits: IFRS can help expand IFRS adoption experience across countries and develop new global market opportunities through utilizing the common platform of IFRS (Brown, 2011). It helps eliminate barriers to cross-border trading in securities and ensures accounts to be more reliable, transparent and more easily comparable (Brown, 2011). But adopting IFRS with the aim of reducing the manipulation of earnings might not be the best thing to realize since this paper has provided no significant results and previous research provide ambiguous evidence.

6.2. Limitations of this Study

This research has some caveats. Firstly results were received during the financial recession and therefore it is possible that discretionary accruals were influenced by the financial recession as a kind of mediator rather than by IFRS adoption. Although this cannot be confirmed based on the results, Filip and Raffournier (2014) found evidence of earnings management being lower during a financial crisis based on 16 European listed firms. However, the outcomes of Filip and Raffournier (2014) stand in contrast with obtained results in this paper as first wave adoption countries whiteness a decrease in earnings management after the financial crisis period of 2008-2009. However, results of Filip and Raffournier (2014) also stand in contrast with obtained results by Cai et al. (2014) who observe an increase in earnings management during 2008-2009. Secondly it can be difficult to estimate discretionary accruals

based on simple models. This caveat has been discussed by Callao and Jarne (2010) and Doukakis (2014) as well. It is also possible that managers apply other earnings management techniques outside the measurement range of discretionary accruals. For instance, managers are more likely to engage in classification shifting or expectations management than to accrual based earnings management (Doukakis, 2014). Thirdly results of this study should be interpreted with caution due to obtaining no significant result. It is possible that obtained results are based on the sample used, the methodology applied, proxies for accrual-based earnings management, time period, empirical setting etc. Also the choice of control variables and control samples used might have an influence on results received (Doukakis, 2014). Fourthly this study is solely based on accrual-based earnings management whereas Graham et al. (2005) have provided survey evidence among 400 executives from US firms which suggests that managers are much more willing to engage in real earnings management than accrual-based earnings management. Being not able to discuss whether there would had been a difference between accrual-based earnings management and real earnings management, this leads to a caveat in this study.

6.3. Further Research

Further research suggestions partly derive from limitations of this research. Firstly further research might focus on the influence of the financial recession on discretionary accruals during the second wave of IFRS adoption. Secondly other methods to measure earnings management might be used to estimate discretionary accruals during the second wave of IFRS adoption such as measuring statistical properties of earnings to identify thresholds or using a method to measure real earnings management. A different method for measuring discretionary accruals other than the linear expectation model could also be used in further research to see if results obtained are similar, such as the Kothari et al. (2005) model or the modified-Jones model. Thirdly this study is based on only three second wave adoption countries. Further research might include more countries in the data sample to observe whether there are geographical differences on IFRS adoption. Furthermore, the database used in this study is based on firms listed on the stock exchange. Further research might examine whether a study under small and medium enterprises provide similar results. Fourthly, in addition to different countries, further research might also examine the influence of IFRS adoption on earnings management over a longer time period or even a complete new time scale outside the second wave adoption period. Fifthly, further research is necessary to investigate why the interaction variable of IFRS adoption during the second wave and investor protection has a positive relationship on

discretionary accruals. Further research migt also examine the possible influence of the financial recession on this result. Sixthly more research is necessary on the relationship between the firm factors of growth, leverage and size on discretionary accruals since results obtained in this paper are not unambiguous and in line with previous research. It could well be that the influence of these firm factors on earnings management vary among different countries or different measurements of earnings management. More research is necessary if and how this is possible.

6.4. Conclusion

This study has examined whether IFRS adoption during the second wave of IFRS adoption has an influence on discretionary accruals as a proxy for earnings management used among publicly listed firms. The data sample includes second wave IFRS adoption countries (Brazil, Canada and South-Korea), first wave IFRS adoption countries (France, Germany and the United Kingdom) and non-IFRS adoption countries (Japan and the United States). Although a negative relationship has been received among second wave IFRS adoption countries, this result is not significant suggesting there has been no influence of IFRS adoption on earnings management among second wave IFRS adoption countries during the second wave of IFRS adoption.

In addition this study has examined the relationship between investor protection and earnings management. Results obtained suggest investor protection is negatively associated with investor protection. This means that the higher the level of investor protection in a country, the lower the level of earnings management. In addition the interaction variable of investor protection after IFRS adoption during the second wave of IFRS adoption has been examined in this study as well. Results are positive, suggesting that IFRS adoption during the second wave has resulted in a rather positive relationship with discretionary accruals.

Lastly this study has examined the relationship between discretionary accruals and the firm factors of growth, leverage and size. Growth has a different influence on discretionary accruals among different countries. Second wave IFRS adoption countries hold a significant positive relationship between growth and discretionary accruals whereas non-IFRS adopters hold a significant negative relationship. The firm factor of leverage is significantly and negatively related with discretionary accruals. The firm factor of size is also significantly and negatively related with discretionary accruals.

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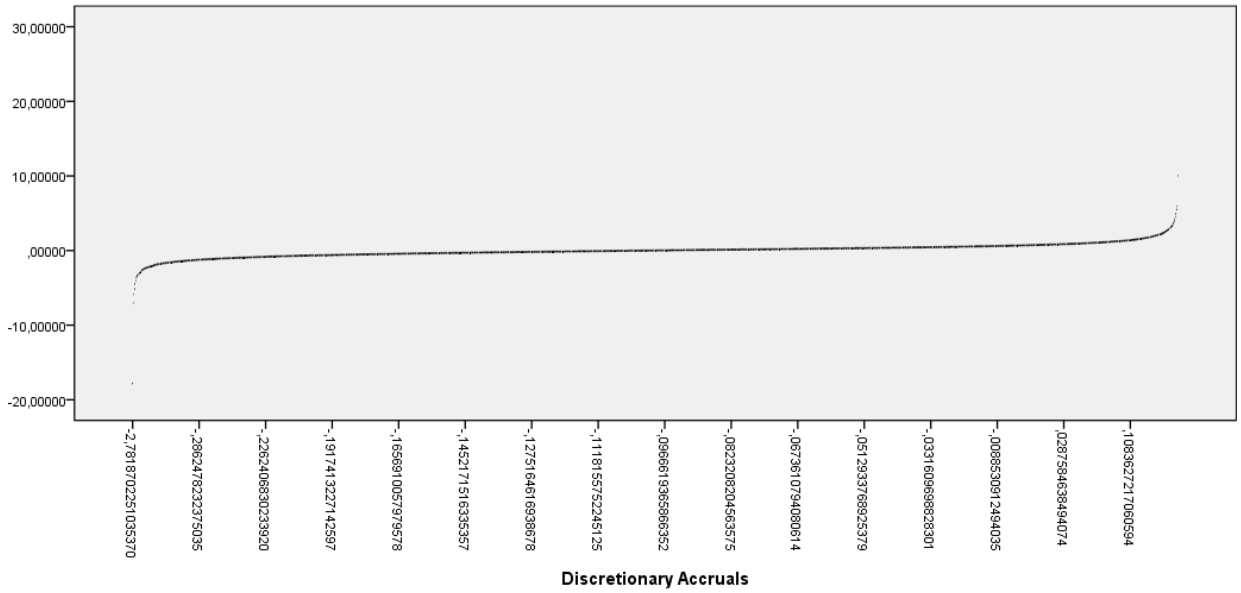
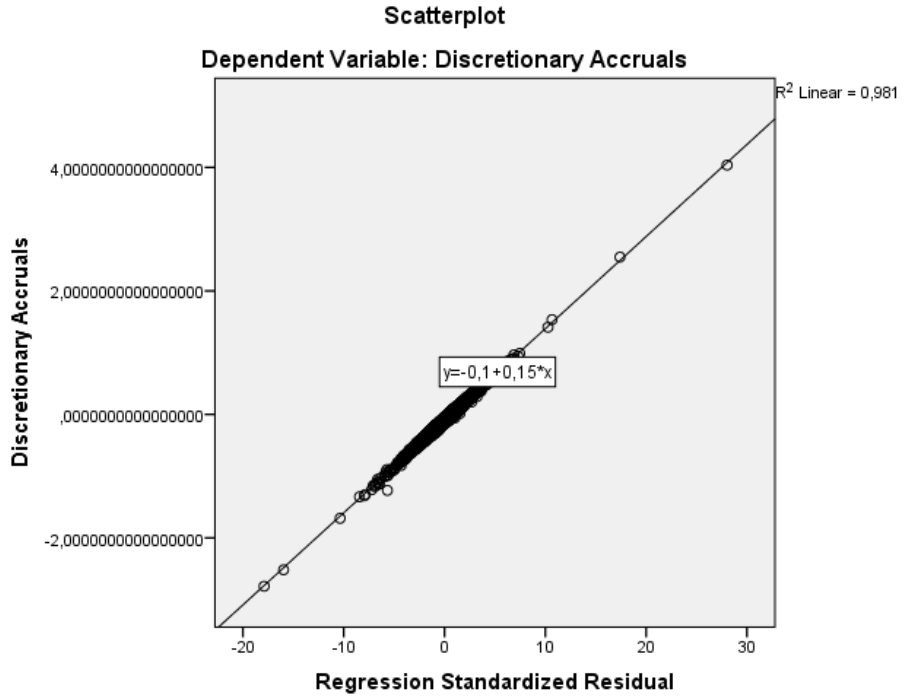
Appendix A: Shapiro-Wilk test for testing assumption of normality on dependent t-test.

	Shapiro-Wilk		
	Statistic	df	Sig.
Discretionary Accruals 2008	,720	3144	,000
Discretionary Accruals 2011	,964	3144	,000
Discretionary Accruals 2009	,894	3144	,000
Discretionary Accruals 2012	,795	3144	,000
Discretionary Accruals 2013	,901	3144	,000

Appendix B: Testing whether the conditional distribution has a mean of zero



Appendix C: Testing homoscedasticity.



Appendix D: Testing the autocorrelation assumption with the Durbin-Watson test.

Model Summary[d]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,084[a]	,007	,007	,149980442280741	
2	,119[b]	,014	,013	,149478451919934	
3	,137[c]	,019	,018	,149137684154987	1,710

*a. Predictors: (Constant), INVPRO*ACC*Post2011, Post2011, Accounting Practice, Accounting Practice * Post 2011*

*b. Predictors: (Constant), INVPRO*ACC*Post2011, Post2011, Accounting Practice, Accounting Practice * Post 2011, INVPRO:FotP, INVPRO:EoSL, INVPRO:JI, INVPRO:EoAaAS, INVPRO:PoMSI, INVPRO:BoI*

*c. Predictors: (Constant), INVPRO*ACC*Post2011, Post2011, Accounting Practice, Accounting Practice * Post 2011, INVPRO:FotP, INVPRO:EoSL, INVPRO:JI, INVPRO:EoAaAS, INVPRO:PoMSI, INVPRO:BoI, GROWTH, LEVERAGE, SIZE*

d. Dependent Variable: Discretionary Accruals

Appendix E: Testing multicollinearity by using the Hayduk (1987) test:

Correlations

		SIZE	LEVERAGE	GROWTH	INVPRO:FotP	INVPRO:JI	INVPRO: EoAaAS	INVPRO: PoMSI	INVPRO: EoSL	INVPRO:BoI	INVPRO*ACC *Post2011	INVPRO	Accounting Practice * Post 2011	Post2011	Accounting Practice
SIZE	Pearson Correlation	1	,196**	,029**	-,025**	-,151**	,024**	-,005	,087**	,013	,019*	-,038**	,020*	,043**	,009
	Sig. (2-tailed)		,000	,000	,002	,000	,002	,493	,000	,092	,018	,000	,010	,000	,280
	N	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720
LEVERAGE	Pearson Correlation	,196**	1	-,001	-,042**	-,118**	,008	-,065**	,054**	-,032**	,057**	-,055**	,059**	-,036**	,096**
	Sig. (2-tailed)	,000		,938	,000	,000	,296	,000	,000	,000	,000	,000	,000	,000	,000
	N	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720
GROWTH	Pearson Correlation	,029**	-,001	1	-,007	-,056**	,029**	-,025**	,038**	-,013	,056**	-,017*	,057**	,015	,049**
	Sig. (2-tailed)	,000	,938		,408	,000	,000	,002	,000	,091	,000	,036	,000	,054	,000
	N	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720
INVPRO:FotP	Pearson Correlation	-,025**	-,042**	-,007	1	,685**	,616**	,587**	,179**	,666**	-,061**	,731**	-,135**	,000	-,012
	Sig. (2-tailed)	,002	,000	,408		,000	,000	,000	,000	,000	,000	,000	,000	1,000	,125
	N	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720
INVPRO:JI	Pearson Correlation	-,151**	-,118**	-,056**	,685**	1	,661**	,866**	,363**	,803**	-,146**	,900**	-,232**	,000	-,141**
	Sig. (2-tailed)	,000	,000	,000	,000		,000	,000	,000	,000	,000	,000	,000	1,000	,000
	N	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720
INVPRO:EoAaAS	Pearson Correlation	,024**	,008	,029**	,616**	,661**	1	,800**	,788**	,808**	,230**	,880**	,137**	,000	,304**
	Sig. (2-tailed)	,002	,296	,000	,000	,000		,000	,000	,000	,000	,000	,000	1,000	,000
	N	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720
INVPRO:PoMSI	Pearson Correlation	-,005	-,065**	-,025**	,587**	,866**	,800**	1	,710**	,958**	-,157**	,963**	-,252**	,000	-,178**
	Sig. (2-tailed)	,493	,000	,002	,000	,000	,000		,000	,000	,000	,000	,000	1,000	,000
	N	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720
INVPRO:EoSL	Pearson Correlation	,087**	,054**	,038**	,179**	,363**	,788**	,710**	1	,758**	,174**	,684**	,101**	,000	,222**
	Sig. (2-tailed)	,000	,000	,000	,000	,000	,000	,000		,000	,000	,000	,000	1,000	,000
	N	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720
INVPRO:BoI	Pearson Correlation	,013	-,032**	-,013	,666**	,803**	,808**	,958**	,758**	1	-,111**	,961**	-,208**	,000	-,091**
	Sig. (2-tailed)	,092	,000	,091	,000	,000	,000	,000	,000		,000	,000	,000	1,000	,000
	N	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720
INVPRO*ACC*Post2011	Pearson Correlation	,019*	,057**	,056**	-,061**	-,146**	,230**	-,157**	,174**	-,111**	1	-,042**	,991**	,404**	,804**
	Sig. (2-tailed)	,018	,000	,000	,000	,000	,000	,000	,000	,000		,000	,000	,000	,000
	N	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720
INVPRO	Pearson Correlation	-,038**	-,055**	-,017*	,731**	,900**	,880**	,963**	,684**	,961**	-,042**	1	-,142**	,000	-,014
	Sig. (2-tailed)	,000	,000	,036	,000	,000	,000	,000	,000	,000	,000		,000	1,000	,090
	N	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720
Accounting Practice * Post 2011	Pearson Correlation	,020*	,059**	,057**	-,135**	-,232**	,137**	-,252**	,101**	-,208**	,991**	-,142**	1	,407**	,811**
	Sig. (2-tailed)	,010	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000		,000	,000
	N	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720
Post2011	Pearson Correlation	,043**	-,036**	,015	,000	,000	,000	,000	,000	,000	,404**	,000	,407**	1	,158**
	Sig. (2-tailed)	,000	,000	,054	1,000	1,000	1,000	1,000	1,000	1,000	,000	1,000	,000		,000
	N	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720
Accounting Practice	Pearson Correlation	,009	,096**	,049**	-,012	-,141**	,304**	-,178**	,222**	-,091**	,804**	-,014	,811**	,158**	1
	Sig. (2-tailed)	,280	,000	,000	,125	,000	,000	,000	,000	,000	,000	,090	,000	,000	
	N	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720	15720

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Appendix F: Testing multicollinearity by using a variance inflation factor test:

	Tolerance	VIF
GROWTH	,987	1,013
LEVERAGE	,937	1,068
SIZE	,837	1,195
INVPRO:PoMSI	,013	79,631
INVPRO:EoAaAS	,018	55,373
INVPRO:JI	,043	23,153
INVPRO:FotP	,025	40,627
INVPRO*ACC*Post2011	,006	156,704
INVPRO:BoI	,005	182,546
INVPRO:EoSL	,011	94,593
Accounting Practice	,130	7,686
Post2011	,683	1,463
Accounting Practice * Post 2011	,006	176,619

Appendix G: Search criteria used in Orbis

Product name	Orbis		
Update number	145		
Software version	129.00		
Data update	11/03/2016 (n° 14508)		
Username	Universiteit Twente-3171		
Export date	13/03/2016		
		Step result	Search result
1.	All active companies and companies with unknown situation	1,635,868	1,635,868
2.	Accounting practice: IFRS (International Financial Reporting Standards), Local GAAP (Generally Accepted Accounting Principles)	1,118,312	953,179
3.	World region/Country/Region in country: Brazil, Canada, France, Germany, Japan, Korea, Republic of, United Kingdom, United States of America	801,495	303,412
4.	Listed/Unlisted companies: Publicly listed companies	65,805	16,797
5.	Type of entities: Industrial companies	1,603,427	13,407
6.	Main stock exchange: BM&F Bovespa, Boerse Berlin, Boerse Duesseldorf, Boerse Frankfurt, Boerse Hamburg, Boerse Munchen, Boerse Stuttgart, Canadian National Stock Exchange, Euronext Paris, Fukuoka Stock Exchange, Korea Stock Exchange, KOSDAQ, London Stock Exchange, Nagoya Stock Exchange, NASDAQ Capital Market, New York Stock Exchange (NYSE), NASDAQ National Market, NASDAQ/NGS (Global Select Market), NASDAQ/NMS (Global Market), NYSE Amex Equities, Sapporo Stock Exchange, Tokyo Stock Exchange, Toronto Stock Exchange, TSX Venture Exchange	18,647	11,157
7.	Sales: All companies with a known value, 2013, 2012, 2011, 2010, 2009, 2008, 2007, for all the selected periods, exclusion of companies with no recent financial data and Public authorities/States/Governments	295,861	7,356
8.	Depreciation: All companies with a known value, 2013, 2012, 2011, 2010, 2009, 2008, 2007, for all the selected periods, exclusion of companies with no recent financial data and Public authorities/States/Governments	29,120	6,459
9.	Net Property, Plant&Equipment: All companies with a known value, 2013, 2012, 2011, 2010, 2009, 2008, 2007, for all the selected periods, exclusion of companies with no recent financial data and Public authorities/States/Governments	27,986	6,306
10.	Total assets: All companies with a known value, 2013, 2012, 2011, 2010, 2009, 2008, 2007, for all the selected periods, exclusion of companies with no recent financial data and Public authorities/States/Governments	420,903	6,306
11.	Depreciation&Amortization: All companies with a known value, 2013, 2012, 2011, 2009, 2008, for all the selected periods, exclusion of companies with no recent financial data and Public authorities/States/Governments	241,429	6,224
12.	Deferred Taxes: All companies with a known value, 2013, 2012, 2011, 2010, 2009, 2008, 2007, for at least one of the selected periods, exclusion of companies with no recent financial data and Public authorities/States/Governments	32,705	4,974
13.	Other LT Non-Interest Bearing Debt: All companies with a known value, 2013, 2012, 2011, 2010, 2009, 2008, 2007, for at least one of the selected periods, exclusion of companies with no recent financial data and Public authorities/States/Governments	34,729	4,442
14.	Minority Interest: All companies with a known value, 2013, 2012, 2011, 2009, 2008, for at least one of the selected periods, exclusion of companies with no recent financial data and Public authorities/States/Governments	37,260	3,434
15.	Current assets: All companies with a known value, 2013, 2012, 2011, 2010, 2009, 2008, 2007, 2006, for all the selected periods, exclusion of companies with no recent financial data and Public authorities/States/Governments	364,450	3,312
16.	Current liabilities: All companies with a known value, 2013, 2012, 2011, 2010, 2009, 2008, 2007, 2006, for all the selected periods, exclusion of companies with no recent financial data and Public authorities/States/Governments	322,784	3,312
17.	Cash&cash equivalent: All companies with a known value, 2013, 2012, 2011, 2010, 2009, 2008, 2007, 2006, for all the selected periods, exclusion of companies with no recent financial data and Public authorities/States/Governments	279,827	3,261
18.	Loans: All companies with a known value, 2013, 2012, 2011, 2010, 2009, 2008, 2007, 2006, for all the selected periods, exclusion of companies with no recent financial data and Public authorities/States/Governments	291,389	3,238
19.	Creditors: All companies with a known value, 2013, 2012, 2011, 2010, 2009, 2008, 2007, 2006, for all the selected periods, exclusion of companies with no recent financial data and Public authorities/States/Governments	294,566	3,232
20.	Operating P/L [=EBIT]: All companies with a known value, 2013, 2012, 2011, 2009, 2008, for all the selected periods, exclusion of companies with no recent financial data and Public authorities/States/Governments	443,948	3,232
21.	Shareholders funds: All companies with a known value, 2013, 2012, 2011, 2009, 2008, for all the selected periods, exclusion of companies with no recent financial data and Public authorities/States/Governments	497,634	3,232

Appendix H: Robustness Check, the Pearson R Correlation Test:

-	*Discretionary Accruals*	*Accounting Practice*	*Post2011*	*Accounting Practice * Post 2011*	*INVPRO*	*INVPRO * Accounting Practice * Post 2011*	*GROWTH*	*LEVERAGE*	*SIZE*
Discretionary Accruals	X	0,048****	0,058****	0,090****	-0,102****	0,081****	-0,041***	-0,071****	-0,041***
Accounting Practice		X	0,291****	0,670****	0,177****	0,663****	-0,019	0,003	-0,140****
Post2011			X	0,716****	0,000****	0,708****	0,011	-0,018	0,058****
*Accounting Practice * Post 2011*				X	-0,059****	0989****	0,010	-0,028**	-0,070****
INVPRO					X	0,043****	-0,009	-0,040***	-0,025
*INVPRO * Accounting Practice * Post 2011*						X	0,008	-0,029**	-0,072****
GROWTH							X	-0,025*	0,010
LEVERAGE								X	0,184****
SIZE									X

*Outcomes of the Pearson R Correlation test (Robustness Check). Accounting practice represents a dummy variable representing 1 for a country that has adopted IFRS and 0 otherwise. Post 2011 is a binary variable that equals 1 for observations after 2011. Accounting Practice * Post 2011 is an interaction variable that equals one for mandatory adopters in the post-adoption period of 2011. INVPRO represents an average measure of board of independence; enforcement of securities laws; protection of minority shareholders' interest; enforcement of accounting and auditing standards; judicial independence; and freedom of the press. INVPRO * Accounting Practice * Post 2011 is an interaction variable of IFRS adoption and investor protection in a country. * = significant at the 0,1 level. GROWTH is the sales difference from year t-1 towards t scaled by lagged sales. Leverage is 1 – (shareholders' funds/total assets) for year t. Size is the natural logarithm of total assets for a firm in year t.. ** = significant at the 0,05 level. *** = significant at the 0,01 level. **** = significant at the 0,001 level.*

Appendix I: Robustness Check: the Dependent T Test:

GROUP 1 – GROUP 2	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Brazil	-0,074	0,205	0,023	-0,119	-0,028	-3,219	79	0,002***
Canada	0,005	0,233	0,021	-0,037	0,048	0,252	117	0,802
South-Korea	-0,001	0,178	0,011	-0,021	0,021	-0,003	283	0,997
Total Second Wave IFRS Adopters	-0,011	0,199	0,009	-0,029	0,007	-1,208	481	0,227
France	-0,040	0,096	0,007	-0,053	-0,026	-5,824	196	0,001****
Germany	-0,055	0,171	0,011	-0,077	-0,034	-5,008	238	0,001****
United Kingdom	-0,010	0,100	0,007	-0,024	0,004	-1,368	188	0,173
Total First Wave IFRS Adopters	-0,037	0,132	0,005	-0,047	-0,026	-6,965	624	0,001****
United States	-0,122	0,112	-0,006	-0,023	-0,001	-2,208	415	0,028**
Total Non-IFRS Adopters	-0,122	0,112	-0,006	-0,023	-0,001	-2,208	415	0,028**
Total all Countries	-0,022	0,152	0,004	-0,029	-0,014	-5,598	1522	0,001****

*Results of the dependent t test (Robustness Check) on the discretionary accrual component. Df refers to degrees of freedom and t refers to test-statistic. * = significant at the 0,1 level. ** = significant at the 0,05 level. *** = significant at the 0,01 level. **** = significant at the 0,001 level.*

Appendix J: Robustness Check: Ordinary Least Squares Analysis:

Dependent Variable: Discretionary Accruals																
	Total				Second-Wave Adopters				First-Wave Adopters				Non-Adopters			
	Unstandardized		Standardized		Unstandardized		Standardized		Unstandardized		Standardized		Unstandardized		Standardized	
Variables	Model 1.1	Model 1.2	Model 1.1	Model 1.2	Model 1.1	Model 1.2	Model 1.1	Model 1.2	Model 1.1	Model 1.2	Model 1.1	Model 1.2	Model 1.1	Model 1.2	Model 1.1	Model 1.2
Constant	-0,034**	0,188***			0,020	0,228***			-0,072***	0,004			-0,143***	-0,141***		
Growth	-0,011***	-0,011***	-0,042***	-0,043***	0,022**	0,023**	0,050**	0,053**	0,005	0,004	0,015	0,011	-0,025***	-0,025***	-0,201***	-0,200***
Leverage	-0,051***	-0,054***	-0,067***	-0,072***	-0,089***	-0,102***	-0,098***	-0,112***	-0,027*	-0,026*	-0,039*	-0,037*	-0,036**	-0,034**	-0,062**	-0,058**
Size	-0,002**	-0,002	-0,028**	-0,021	-0,003	-0,003	-0,024	-0,020	-0,001	-0,002	-0,015	-0,029	0,003	0,002	0,037	0,029
Accounting Practice		0,012		0,032		0,033		0,070		0,045**		0,071**		-0,019		-0,007
Post 2011		0,006		0,015		-0,005		-0,010		0,070***		0,205***		0,011*		0,041*
Accounting Practice*Post2011		-0,070		-0,178		-0,061		-0,129		0,103		0,300		0,000		0,000
INVPRO		-0,049***		-0,131***		-0,047***		-0,136***		0,009		0,009		0,000		0,000
INVPRO*ACC*Post2011		0,018*		0,227*		0,010		0,097		-0,026		-0,406		-0,030		-0,038
Model	Model 1.1		Model 1.2		Model 1.1		Model 1.2		Model 1.1		Model 1.2		Model 1.1		Model 1.2	
ModelF	15,635		20,279		8,683		7,394		1,835		4,980		25,183		13,581	
FChange	-4,644				1,289				-3,145				11,602			
R^2	0,008		0,026		0,013		0,030		0,002		0,016		0,044		0,047	
ΔR^2	-0,018				-0,017				-0,014				-0,003			

*Results on the ordinary least squares analysis (Robustness Check). GROWTH is the sales difference from year t-1 towards t scaled by lagged sales. Leverage is 1 – (shareholders' funds/total assets) for year t. Size is the natural logarithm of total assets for a firm in year t.. Accounting practice represents a dummy variable representing 1 for a country that has adopted IFRS and 0 otherwise. Post 2011 is a binary variable that equals 1 for observations after 2011. Accounting Practice * Post 2011 is an interaction variable that equals one for mandatory adopters in the post-adoption period of 2011.. INVPRO represents an average measure of board of independence; enforcement of securities laws; protection of minority shareholders' interest; enforcement of accounting and auditing standards; judicial independence; and freedom of the press. INVPRO * Accounting Practice * Post 2011 is an interaction variable of IFRS adoption and investor protection in a country. * = significant at the 0,1 level. ** = significant at the 0,05 level. *** = significant at the 0,01 level. **** = significant at the 0,001 level.*