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Accounting quality as mediating factor between the adoption of IFRS and cost of equity capital

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Date: 27 November 2016

Abstract

This thesis examines whether accounting quality is a mediating factor between the mandatory adoption of IFRS and cost of equity capital. This is done using the following research question: To what extent does accounting quality influence the relationship between the adoption of IFRS and cost of equity capital? The research sample consists of 162 firms from the Netherlands, Sweden and Finland that mandatory adopted IFRS in 2005. A total of 854 firm-years is used in this thesis. The research does not find evidence that accounting quality is a mediating factor between the mandatory adoption of IFRS and cost of equity capital. More specifically, the regression analysis does not show a significant increase in accounting quality after the mandatory adoption of IFRS. By contrast, the regression analysis shows a significant decrease in cost of equity capital after the mandatory adoption of IFRS. However, the significant effect on cost of equity capital disappears after controlling for several factors.

Contents

1 Introduction

One of the most important regulatory changes in accounting history is the implementation of International Financial Reporting Standards (IFRS) for public companies in many countries around the world (Daske, Hail, Leuz & Verdi, 2008). Regulators expected that the use of IFRS would improve corporate transparency, enhance the comparability of financial statements, and increase the quality of financial reporting. Therefore, it would benefit investors. However, the economic consequences of the mandatory adoption of IFRS reporting, such as the consequences for earnings management, cost of equity capital, and forecast errors, are not obvious (Soderstrom & Sun, 2007; Daske et al., 2008). There are, from an economic perspective, reasons to be skeptical about the expectations of the regulators. This is in particular the case for the premise that the mandatory adoption of IFRS makes corporate reporting more comparable or more informative (Daske et al., 2008). That is why there has been much research on the economic consequences of the adoption of IFRS. It is studied whether the adoption of IFRS increased the accounting quality. This effect has been confirmed by Barth, Landsman & Lang (2008), Chua, Cheong & Gould (2012) and Zéghal, Chtourou & Fourati (2012). Those studies show that the adoption of IFRS led to a decrease in earnings management and that the timeliness of loss recognition and the value relevance of financial statement information have improved. There are, however, also studies that did not find an increase in accounting quality after the adoption of IFRS (Van Tendeloo & Vanstraelen, 2005; Jeanjean & Stolowy, 2008; Doukakis, 2014). It is also studied whether the adoption of IFRS has resulted in a decrease in cost of equity capital, and Daske et al. (2008) and Li (2010) have confirmed that this is the case. Cost of equity capital can be seen as the minimum return that equity investors require on their investment in the firm. Daske et al. (2008) provide evidence that increased disclosure and enhanced comparability influence the cost of equity capital effects of mandatory IFRS adoption. However, no research has been done about accounting quality as possible factor through which the adoption of IFRS affects cost of equity capital. Therefore, accounting quality as a possible factor through which the adoption of IFRS affects cost of equity capital remains an important research gap, which this thesis aims to address. It is the first research that examines accounting quality as possible factor through which IFRS affects cost of equity capital. Therefore, the scientific relevance of this thesis is to increase the knowledge about how the adoption of IFRS influences the cost of equity capital. The research question of the thesis is as follows: To what extent does accounting quality influence the relationship between the adoption of IFRS and cost of equity capital? Besides the scientific relevance, the thesis also has practical relevance. The thesis contributes to the empirical research on the economic consequences of disclosure

regulation. This gives regulators insights in the impact of possible future changes in accounting standards.

The remainder of this thesis is organized as follows. In the next chapter, a literature review is given. In this literature review, two important attributes of accounting quality are discussed, which are earnings management and the timely recognition of losses. Furthermore, the advantages and disadvantages of IFRS are discussed and it is discussed what could be the effect of the mandatory adoption of IFRS on accounting quality and cost of equity capital. This is supported by empirical evidence from existing studies that are discussed in detail. Finally, it is hypothesized why accounting quality could be a mediating factor between the mandatory adoption of IFRS and cost of equity capital. In chapter 3, the research methodology is discussed. It is explained in detail why regression analysis is used and why this research method fits the research question best. To perform the regression analysis, data is used from Compustat Global and I/B/E/S. The countries that are researched are the Netherlands, Sweden, and Finland. There are 162 companies in the sample, that provide 854 firm-year observations. Chapter 4 shows the results of the research. The results do not show a significant increase in accounting quality after the mandatory adoption of IFRS. By contrast, the results show a significant decrease in cost of equity capital after the mandatory adoption of IFRS. However, the significant effect on cost of equity capital disappears after controlling for several factors. The thesis ends with a conclusion and discussion, which are given in chapter 5. The conclusion of this thesis is that accounting quality is not a factor through which the adoption of IFRS affects the cost of equity capital. In the discussion, the results of this thesis are compared and contrasted with several related papers, and possible explanations are given for the differences in results between this thesis and the related papers. Furthermore, the limitations of the thesis and recommendations for future research are given.

2 Literature review

Standard setters determine the accounting language that managers use to communicate with the external stakeholders of the firm. By setting a framework that independent auditors and regulators can enforce, accounting standards can offer a means for corporate managers to report information on the performance of their firm to external stakeholders in a relatively low-cost and credible manner. Therefore, financial reporting can help the best performing companies in the economy to distinguish themselves from underperforming firms and facilitates efficient allocation of resources and stewardship decisions by stakeholders (Healy & Wahlen, 1999).

The role of financial reporting and standard setting that is described above, implies that accounting standards add value if they ensure that financial statements effectively portray differences in performance and economic positions of firms in a timely and credible manner. In order to achieve these, standard setters face conflicts between the reliability and relevance of accounting information under alternative standards. Standards that focus too much on the credibility of accounting data may lead to financial statements that provide less timely and less relevant information on a firm's performance (Healy & Wahlen, 1999). On the other hand, standards that emphasize relevance and timeliness without sufficient consideration for credibility, generate accounting information that is viewed with skepticism by financial report users (Healy & Wahlen, 1999).

Managers can make financial reports more informative for users by using accounting judgment. This can be the case if certain accounting estimates or accounting choices are considered to be credible signals of the financial performance of a firm. Managers can for example select estimates, reporting methods, and disclosures that match the business economics of the firm, using their knowledge of the business and its opportunities. This potentially increases the importance of accounting as a communication tool. However, the managers' use of judgment also creates opportunities for earnings management, in which reporting methods and estimates are chosen that do not accurately reflect the underlying economics of the firm. The costs are then the potential misallocation of resources as a result of earnings management. For standard setters it is therefore critical to understand when accounting standards that give managers the possibility to exercise judgment in financial reporting increase the value of accounting information to users of the financial report and when the accounting standards reduce it (Healy & Wahlen, 1999).

In the next section, the accounting standard which this thesis focuses on, IFRS, is explained and it is argued what the advantages and disadvantages of this accounting standard are. After that, the term accounting quality is explained. Subsequent, the effects of IFRS on

accounting quality and cost of equity capital are discussed. Finally, it is argued why accounting quality could be a mediating factor through which IFRS affects the cost of equity capital.

2.1 IFRS

The implementation of IFRS in many countries around the world is one of the most important regulatory changes in accounting history (Daske et al., 2008). IFRS are accounting rules that are issued by the International Accounting Standards Board (IASB). IFRS are a set of accounting rules that would ideally apply equally to the financial reporting of public companies worldwide (Ball, 2006).

There are at least three advantages of uniform accounting standards. The first one is scale economies and underlies all forms of uniform contracting. Rules that are uniform only need to be invented once. Uniform rules are a type of public good. The marginal cost of an additional user that adopts the uniform rules is zero (Ball, 2006). The second advantage of uniform accounting standards is the protection they provide to auditors against managers that are 'opinion shopping'. Managers cannot threaten to move to another auditor who gives an unqualified opinion on a more favorable rule if all auditors are obliged to enforce the same rules (Ball, 2006). The third advantage is the elimination of informational externalities that arise from a lack of comparability (Ball, 2006; Lambert, Leuz, & Verrecchia, 2007; Daske et al., 2008). Firms and countries that use different accounting techniques can impose costs on others due to a lack of comparability. In economic terms, those costs are negative externalities. It is advantageous for firms to use the same standards to the extent that they internalize these negative effects (Ball, 2006; Lambert et al., 2007).

Furthermore, the widespread international adoption of IFRS offered equity investors several direct advantages:

1. Relative to the national standards, IFRS provide more comprehensive, accurate, and timely financial statement information (Ball, 2006; Daske et al., 2008). This leads to more-informed valuation in equity markets, because more firm-specific information is capitalized in stock prices (Ball, 2006; Kim & Shi, 2012). This lowers the risk to investors (Ball, 2006). It is, however, also argued that accounting standards give managers significant discretion and therefore it is not clear that IFRS improves disclosure quality as such (Burgstahler et al., 2006).
2. Small investors are less able to anticipate financial statement information than professionals (Ball, 2006). IFRS improves the quality of financial reporting compared to most local accounting standards (Daske, 2004). Improving the quality of financial

reporting allows smaller investors to compete better with professionals. Thus, IFRS reduce the information asymmetry among investors and therefore reduce the risk for small investors that they are trading with a professional who is better-informed (Ball, 2006; Daske et al., 2008).

3. IFRS make the companies' financials more comparable internationally, which makes it less difficult and less costly to process financial information (Daske, 2004; Ball, 2006). Investors are therefore better able to compare the opportunities and risks associated with investments in global markets (Daske, 2004; Covrig, DeFond, & Hung, 2007).
4. The reduction of the processing cost of financial information increases the efficiency with which stock prices incorporate the financial information in prices (Ball, 2006).
5. The reduction of international differences removes to some degree the barriers to cross-border acquisitions and divestitures. This leads in theory to increased takeover premiums for investors (Ball, 2006).

In general, the accounting literature states that IFRS increase the transparency and comparability of financial statement information and therefore reduce the information costs and information risk to investors (e.g. Daske, 2004; Ball, 2006; Lambert et al., 2007; Li, 2010).

IFRS offer also several indirect advantages to investors. Higher information quality should limit both the risk to all investors from owning shares and the risk of adverse selection that less-informed investors face (Ball, 2006; Lambert et al., 2007; Daske et al., 2008). In theory, this should reduce the firms' costs of equity capital (Francis, LaFond, Olsson, & Schipper, 2004, Ball, 2006; Daske et al., 2008). Other things being equal, this would lead to an increase in share prices, which makes new investments by firms more attractive (Ball, 2006).

Besides the direct and indirect advantages for investors, IFRS could also have disadvantages to investors. There are, for example, reasons why IFRS is not enforced equally around the world. Despite increased globalization, most economic and political influences on the *practice* of financial reporting remain local. Therefore there is concern that investors are misled into believing that the uniformity in financial reporting practice is higher than it actually is. In addition, international differences in reporting quality are now hidden behind the seemingly uniform standards. Furthermore, uneven implementation of IFRS could increase the costs of processing information for transnational investors, by hiding accounting inconsistencies at a less transparent level than differences in accounting standards (Ball, 2006).

2.2 Accounting quality

While no agreed-upon definition of accounting quality exists, faithful representation of the underlying economics is broadly accepted as an important feature of high-quality accounting by regulators, standard setters, practitioners, and academics. Accounting choices that result in greater earnings management compromise the faithful representation of the underlying economics and therefore reduces accounting quality. The delayed recognition of losses or the overstatement of earnings, the management of earnings to meet a target, and income smoothing are forms of earnings management (Ahmed, Neel & Wang, 2013).

2.2.1 Earnings management

Scott (2015, p. 445) defines earnings management as "the choice by a manager of accounting policies, or real actions, so as to achieve some specific reported earnings objective." Healy & Wahlen (1999) review the academic research on earnings management. They state that "earnings management occurs when managers use judgment 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."

Managers can use judgment in several ways in financial reporting. Judgment is for example required in estimating future economic events, like the expected life and salvage values of long-term assets, deferred taxes, obligations for pension benefits, and losses from asset impairments. Furthermore, managers have to choose the appropriate accounting methods to report these economic transactions. For instance, a choice have to be made between the LIFO, FIFO, and weighted-average inventory valuation method, and between the straight-line and accelerated depreciation method. Managers also need to choose whether they make or defer expenditures, such as advertising, maintenance, and research and development (R&D) (Healy & Wahlen, 1999).

According to the definition of Healy & Wahlen, earnings management is used to mislead stakeholders about the underlying economic performance of the firm. Earnings management may be used by managers to avoid reporting losses or to meet the earnings forecasts of analysts. This is done to avoid reputation damage and a strong share price decline that rapidly follows a failure to meet investor expectations (Scott, 2015, p. 444). This can occur if managers have access to certain inside information, information that is not available to outside investors, which makes earnings management opaque to those outsiders. Management may also use such inside information to report smooth and growing earnings over time and it is then likely that outside

investors anticipate and tolerate a certain quantity of earnings management (Healy & Wahlen, 1999; Scott, 2015, p. 444).

Beatty & Harris (1998) argue that there are two related control difficulties from which earnings management can arise. Those are information asymmetry and agency problems, and these control problems occur when equity ownership is separated from control (Beatty & Harris, 1998). Information asymmetry exists when there are one or more parties in a business transaction that may have an information advantage over other parties or may take actions that are not observable by others. Scott (2015) considers two types of information asymmetry. Those are adverse selection and moral hazard. In the case of earnings management, adverse selection arises because managers have better information regarding current conditions and future prospects of the company than outside investors. Moral hazard occurs when a party in a contractual relationship takes actions that are not observable by the other contracting parties (Scott, 2015, p. 22-23). The information asymmetry may lead to share prices that are different from what they would be under full information. Agency problems arise in case information asymmetry exists and managers have the opportunity to foster their own self-interest at the expense of the shareholders (Beatty & Harris, 1998).

There are several incentives for managers to manage earnings (Healy & Wahlen, 1999). In the next paragraph, three common incentives are explained in detail; (1) capital market expectations and valuations (Healy & Wahlen, 1999; Dechow & Skinner, 2000), (2) contracts that are written in terms of accounting numbers (Watts & Zimmerman, 1978; Healy & Wahlen, 1999), and (3) tax considerations (Ball & Shivakumar, 2005; Burgstahler et al., 2006).

Accounting information is used by investors and financial analysts to value stocks. Therefore, managers can have an incentive to manipulate earnings in an effort to influence the stock price performance in the short run (Healy & Wahlen, 1999).

Accounting data is also used to monitor and regulate contracts between companies and their many stakeholders. To coordinate the incentives of management and external stakeholders, implicit and explicit management compensation contracts are used. Lending contracts (with creditors) are written to limit the actions of managers that benefit the stockholders of the firm at the expense of its creditors (Healy & Wahlen, 1999). According to Watts & Zimmerman (1978), both the management compensation contracts and the lending contracts create earnings management incentives, because it is costly for creditors and compensation committees to undo earnings management. However, according to Dechow & Skinner (2000), academic research should pay more attention to capital market incentives for earnings management, rather than contractual arrangements. The increased importance of stock-based compensation made

managers increasingly sensitive to the stock price of their firm and the relation between stock price and key accounting numbers such as earnings. As a consequence, managers' incentives to manage earnings in order to maintain and improve the stock market valuations have also increased (Dechow & Skinner, 2000).

Burgstahler, Hail & Leuz (2006) state the exact opposite as regards capital market incentives to manage earnings. In public equity markets, external financing creates demands for information that is useful to monitor and evaluate the firm. Equity investors are highly dependent on public information, such as reported earnings and financial statements, because they do not have private access to corporate information. Outside investors are reluctant to supply firms with capital if the quality of public information is poor. As a result, stock market listed companies have incentives to provide outside investors with financial statements that help assess economic performance. This gives outside investors the opportunity to determine whether an investment in the firm is profitable. Being public is therefore probably associated with higher reporting quality. Burgstahler et al. (2006) recognize, however, that there are trade-offs and countervailing effects. Controlling insiders in public firms might, for example, expropriate outsiders by consuming huge private control benefits. In an attempt to conceal these activities and prevent the intervention by outsiders, controlling insiders can mask firm performance by managing reported earnings. Another reason why capital markets provide incentives for earnings management is the achievement of certain earnings targets (Burgstahler et al., 2006). The earnings expectations of investors can be formed in several ways. They can for instance be based on recent analyst or company forecasts or on the earnings for the same period last year. Firms typically experience an increase in share price after reporting earnings that are greater than expected, because investors expect higher probabilities of good future returns. Conversely, firms that report negative unexpected earnings experience a significant decrease in share price. Therefore, managers have a strong incentive to make sure that earnings expectations are met, especially if their compensation is share-related. Managing earnings upward is one way to do this. However, rational investors are aware of this incentive. This makes it even more important for managers to meet expectations. Not meeting the expectations makes the market reason that if the manager could not avoid the shortfall with earnings management, the earnings outlook of the firm must be bleak indeed, or that the firm is not managed well since the firm cannot predict its own future. Thus, there are serious consequences if earnings expectations of investors are not met. There is a direct effect on the share price and the cost of capital of the firm, as investors revise their prospects of good future performance downward. There could also be an indirect effect through manager reputation. Consequently,

maintaining reputation and meeting earnings expectations are powerful incentives for earnings management (Scott, 2015).

Besides the incentives to manage earnings upward, there are also incentives to manage earnings downward. An example of such an incentive are tax considerations. Managing earnings downwards lowers the amount of corporate income tax that has to be paid. However, this incentive is more interesting for private firms than it is for public firms, while this thesis focuses on the latter. For instance, it is of lesser importance to private firms that managing earnings downward to minimize taxes can make earnings less informative to outside investors, since they are less dependent on external financing (Ball & Shivakumar, 2005; Burgstahler et al., 2006).

2.2.2 Timely loss recognition

Financial reporting can be evaluated by means of accounting income, because changes in balance sheet amounts flow through the income statement. A timely recognition of the income statement consequently implies a timely revision of the financial statement variables, such as total liabilities and total assets, and all financial ratios that are based on them. Timely loss recognition is therefore an important attribute of financial reporting quality (Ball & Shivakumar, 2005; Barth et al., 2008).

The timely recognition of gains and losses is partly based on revisions of cash flow prospects that were made prior to their actual realization. Therefore, timely recognition of gains and losses is partially accomplished through accounting accruals. Examples of timely recognition that involve working capital assets and liabilities are; (1) inventory write-downs as a result of factors such as obsolescence, spoilage, or declines in market value, (2) gains and losses on trading securities, and (3) receivable revaluations. Examples of timely recognition that involve long term assets and liabilities are; (1) restructuring charges arising from excessive staffing, (2) asset impairment charges originating from negative net present value investments in long term assets, and (3) goodwill impairment charges as a result of negative net present value acquisitions (Ball & Shivakumar, 2006).

Timely gain and loss accruals improve the timeliness of accounting earnings, and thereby increase the efficiency of debt and compensation contracting. Timely recognition of gains and losses also improves the effectiveness of contracting based on balance sheet variables. By contrast, untimely recognition of gains and losses revises the financial ratios with a delay, and therefore makes the financial ratios less effective. Untimely recognition of gains and losses therefore reduces the efficiency of debt contracts (Ball & Shivakumar, 2006).

2.3 The effect of IFRS on accounting quality

The accounting literature acknowledges that properties of accounting numbers are determined by multiple factors. Examples of those factors are managerial incentives, constraints on managers' financial reporting choices such as accounting standards, and the underlying economic environment and business model (Ahmed et al., 2013). Therefore, it is not evident that the change of one factor, in this case the accounting standard, necessarily results in higher accounting quality (Ball, 2006; Hail, Leuz, & Wysocki, 2010; Ahmed et al., 2013). The following sections give a brief overview why IFRS might improve or deteriorate accounting quality.

2.3.1 Reasons why IFRS might improve accounting quality

There are at least four reasons why the adoption of IFRS might improve accounting quality:

1. The elimination of certain accounting alternatives reduces managerial discretion and could therefore reduce the degree of opportunistic earnings management and hence improve accounting quality (Ewert & Wagenhofer, 2005; Bart et al., 2008; Ahmed et als., 2013)
2. IFRS are potentially more difficult to circumvent because they are considered as principles-based standards. For instance, the recognition of a liability through transaction structuring should be harder to avoid under a principles-based standard (Barth et al., 2008; Ahmed et al., 2013)
3. IFRS permit measurements that may give a better reflection of the underlying economics than domestic standards. An example of such a measure is fair value accounting (Barth et al., 2008; Ahmed et al., 2013).
4. The adoption of IFRS can also improve earnings quality through monitoring by investors, whose costs of obtaining expertise is reduced. The adoption of IFRS in EU countries might have reduced the cost of comparing firms across borders. As a consequence, the cost for investors to evaluate the quality of financial reports between two firms have reduced. The enhanced comparability puts pressure on managers to reduce earnings management (Soderstrom & Sun, 2007).

2.3.2 Reasons why IFRS might reduce accounting quality

Besides the reasons why the adoption of IFRS might improve accounting quality, there are at least two reasons why it might reduce accounting quality:

1. The most appropriate accounting alternatives for communicating the firm's underlying economics may be eliminated. Managers are forced to use less appropriate alternatives,

with a reduction in accounting quality as a result (Barth et al., 2008; Langmead & Soroosh, 2009; Ahmed et al., 2013).

2. IFRS are principles-based and therefore inherently lack detailed implementation guidance. Consequently, managers are afforded greater flexibility. Given the incentives managers have to use accounting discretion to their advantage, the increase in discretion as a result of the lack of implementation guidance probably leads to more earnings management and hence lowers accounting quality (Leuz et al., 2003; Barth et al., 2008; Ahmed et al., 2013).

2.3.3 Strength of legal enforcement

The above mentioned reasons why IFRS might improve or reduce accounting quality ignore the potential impact of institutional factors. Prior studies suggest that accounting quality is affected by several institutional factors, of which the strength of legal enforcement is very important (Ahmed et al., 2013). La Porta, Lopez-De-Silanes, Shleifer, and Vishny (1998, 1999, 2000, 2002) stress the importance of legal rules and their enforcement for understanding ownership structures and financing patterns across countries. Based on this work, accounting researchers found systematic differences in reporting quality among countries with different levels of investor protection. In countries with strong legal enforcement, accounting quality is generally higher than in countries with weak legal enforcement. (Ball, Kothari & Robin, 2000; Leuz, Nanda & Wysocki, 2003; Ball, Robin & Wu, 2003; Burgstahler et al., 2006). This suggests that the effect of IFRS adoption in countries with strong legal enforcement may be systematically different from the effect in countries with weak legal enforcement (Ahmed et al., 2013).

If the quality of IFRS is higher than the quality of domestic GAAP and if IFRS are appropriately enforced, accounting quality would improve in strong legal enforcement countries. Accounting quality would for example improve if IFRS eliminate accounting alternatives that managers use opportunistically. On the other hand, if the quality of IFRS is lower than the quality of domestic GAAP in the sense that IFRS increase managerial discretion, accounting quality would even decrease in countries with strong enforcement, given the incentives managers have to use their discretion in their own interests (Ahmed et al., 2013). Furthermore, accounting quality may decrease after mandatory adoption of IFRS because principles-based standards are on average looser than domestic standards and therefore they may be harder to enforce (Ahmed et al., 2013).

For countries with weak legal enforcement, prior studies argue that standards or rules are generally not effective. Even the best accounting standards are inconsequential without sufficient enforcement (Leuz et al., 2003; Hope, 2003; Burgstahler et al., 2006; Holthausen, 2009; Ahmed et al., 2013). Therefore it is unlikely that the adoption of IFRS improves accounting quality in weak legal enforcement countries. Even if the quality of IFRS is higher than the quality of domestic GAAP, it is unlikely that they are properly enforced in these countries (Ahmed et al., 2013).

2.3.4 Empirical evidence

Several studies examined the effect of IFRS on accounting quality, with mixed results. Barth et al. (2008) argue that accounting quality could be improved by eliminating alternative accounting methods that are used by managers to manage earnings and that are therefore less reflective of the firms' performance. They examine whether the voluntary adoption of International Accounting Standards (IAS) is accompanied by higher accounting quality. Their sample consists of firms in 21 countries that voluntary adopted IAS between 1994 and 2003. In their study, earnings management, timely loss recognition, and the value relevance of accounting numbers for firms that switch to IAS are compared with firms that use non-U.S. domestic accounting standards. They find that firms applying IAS exhibit less management of earnings towards a target, less earnings smoothing, more timely loss recognition, and a higher association of accounting numbers with share prices and returns. After IAS adoption, the variance of changes in net income is higher, the variance of changes in net income to variance of changes in cash flows is higher, the correlation between accruals and cash flows is higher, and the frequency of small positive net income is lower (Barth et al., 2008).

Chua et al. (2012) examine the impact of the mandatory implementation of IFRS in Australia on accounting quality. The study focuses on three perspectives: earnings management, value relevance, and timely loss recognition. The study examines whether there is a change in these three perspectives in the four years after the mandatory implementation of IFRS on January 1, 2005, compared to the four years before the mandatory implementation. The conclusion of the study is that the mandatory adoption of IFRS led to better accounting quality than previously under Australian GAAP. In particular, the findings of the study indicate that earnings management by means of earnings smoothing has reduced and that the timeliness of loss recognition and the value relevance of financial statement information have improved after the adoption of IFRS.

Zéghal et al. (2012) examine 15 countries in the European Union (EU) whether the mandatory adoption of IFRS is associated with higher accounting quality. More specifically, the study examines whether the mandatory adoption of IFRS is associated with less earnings management and higher timeliness and value relevance of accounting numbers. The analysis is based on data from 2002 to 2007. The results indicate some improvement in accounting quality after IFRS adoption. In particular, the study finds a decrease in earnings management after the adoption of IFRS in 2005. However, the study also finds a decrease in timeliness and value relevance of accounting numbers after the adoption of IFRS in 2005.

Van Tendeloo & Vanstraelen (2005) examine German firms whether voluntary adoption of IFRS is associated with lower earnings management. Their sample consists of listed German firms and their observations are related to the period 1999 to 2001. In contrast to Barth et al. (2008), they find that the discretionary accruals are higher and that the correlation between accruals and cash flows is lower after the adoption of IFRS. However, their use of the Jones (1991) model might lead to measurement errors for discretionary accruals. For the measurement of non-discretionary accruals, the Jones model requires fixed assets. A revaluation of fixed assets under IFRS may lead to errors in the non-discretionary accruals as a predicted value from revenue and fixed assets. Therefore, the empirical results of Van Tendeloo & Vanstraelen (2005) have to be interpreted with caution (Soderstrom & Sun, 2007).

Jeanjean & Stolowy (2008) analyze the effect of mandatory adoption of IFRS on earnings quality, and more particularly on earnings management. They focus on three countries; Australia, France, and the UK. Their data is obtained for the years 2002 to 2006. They find no decline in earnings management after the adoption of IFRS for Australia and the UK and even find an increase in earnings management for France. However, the study focused on a short period of two years after adopting IFRS. Therefore, it may not have allowed enough time for the effects of adoption to occur (Chua et al., 2012).

Doukakis (2014) examines the effect of mandatory adoption of IFRS on both accrual-based and real earnings management. The study focuses on firms from 22 European countries and the observations are related to the period between 2000 and 2010. The results of the study suggest that mandatory adoption of IFRS had no significant impact on either accrual-based earnings management or real based earnings management practices.

2.4 The effect of IFRS on firms' cost of equity capital

Easley and O'Hara (2004) study the role of information in affecting the cost of equity capital of a firm. They state that cost of equity capital is affected by differences in the composition of private and public information. Investors demand a higher return for holding shares with greater private, and hence, less public information. The demand for a higher return is based on the increased risk that uninformed investors face of holding stocks as a consequence of private information. Informed investors are better able to make changes in their portfolio weights in order to incorporate new information. The study of Easley & O'Hara (2004) suggests that the firms' cost of equity capital can be influenced by affecting the quantity and precision of information that is available to investors. The quality of information has an effect on asset pricing, so it is important in which way information is provided to the markets (Easley & O'Hara, 2004).

Francis et al. (2004) examine the relationship between cost of equity capital and seven characteristics which are related to earnings: accrual quality, predictability, smoothness, persistence, value relevance, timeliness, and conservatism. Based on theoretical models that predict a positive relation between information quality and the cost of equity capital, they find that firms which have the least favorable values of each characteristic, experience larger costs of equity capital than firms which have the most favorable values. This means that firms with the highest accrual quality, persistence, predictability, value relevance, timeliness, and conservatism of earnings and the lowest smoothness of earnings, experience the lowest cost of equity capital. The characteristics are considered individually. The accounting-based characteristics, especially accrual quality, have the greatest impact on cost of equity capital. A higher accrual quality means that the discretionary accruals, which is the part of the accruals that cannot be explained, are relatively low compared to the non-descretionary accruals (Francis et al., 2004). In another study, Francis, LaFond, Olsson, and Schipper (2005) also find a relation between accrual quality and cost of equity capital. Using accrual quality as a proxy for information risk, they find that firms with poorer accrual quality exhibit higher costs of equity capital than firms with better accrual quality.

Lambert et al. (2007) argue that the precision of information is the key factor of information risk affecting the cost of equity capital, rather than information asymmetry as such. Information precision is defined as the average information quality that investors have regarding the expected cash flows of the firm. Information asymmetry is defined as the difference in information precision between firms and investors. Lambert et al. (2007) argue

that the distribution of information across investors does not matter, but the precision of that information does.

The higher information quality of IFRS should limit both the risk to all investors from owning shares and the risk of adverse selection that less-informed investors face. In theory, this should reduce the firms' cost of equity capital (Ball, 2006).

While prior research provides evidence that the cost of equity capital reduces after voluntary IFRS adoption, skeptics of mandatory IFRS adoption note that these findings are not necessarily generalizable to mandatory IFRS adopters (Ball et al., 2003; Li, 2010). While voluntary adopters are self-selected to use IFRS after weighing the related costs and benefits, mandatory adopters are forced to use IFRS through a "one size fits all" regulation. The effectiveness of this regulation probably depends on political institutions and the underlying economic that influence the incentives of the managers and auditors which are responsible for the preparation of financial statements (Li, 2010).

2.4.1 Empirical evidence

Only two papers have studied the effect of mandatory adoption of IFRS on cost of equity capital. Li (2010) examines 18 EU countries for a period of 1995 to 2006 whether the cost of equity capital decreases after the mandatory adoption of IFRS. The cost of equity capital is calculated by using the average of four different models: (1) the industry return on equity model used in Gebhardt, Lee, & Swaminathan (2001), (2) the economy wide growth model used in Claus & Thomas (2001), (3) the unrestricted abnormal earnings growth model used in Gode & Mohanram (2003), and (4) the restricted abnormal earnings growth model used in Easton (2004). The conclusion of Li (2010) is that mandatory adoption of IFRS significantly reduces the cost of capital. He also finds evidence that increased disclosure and enhanced information are mechanisms behind this effect.

Daske et al. (2008) study 26 countries around the world whether the mandatory adoption of IFRS decreases the cost of equity capital, also using the average cost of equity capital from four different models. Compared to Li (2010), Daske et al. (2008) use the abnormal earnings growth valuation model used in Ohlson and Juettner-Nauroth (2005), instead of the unrestricted abnormal earnings growth model used in Gode & Mohanram (2003). The study of Daske et al. (2008) focuses on the period of 2001 to 2005 and finds a decrease in firms' cost of capital after mandatory adoption of IFRS, but only if it is taken into account that the effect can occur prior to the official IFRS adoption date. This suggests that the market anticipates the economic consequences of the mandate.

2.5 Accounting quality as mediating variable

Regulatory environments characterized by non-selective disclosure of high-quality and timely information to capital markets are likely to constrain the incentives and opportunities for managerial discretion in financial reporting, so that earning are less managed (Gray, Koh & Tong, 2009; Barth et al., 2008). This reduces information asymmetry across investors and also increases the average information precision on firms' expected cash flows (Gray et al., 2009). The reduction of information asymmetry and the increase in precision of disclosed information reduces the firms' cost of equity capital (Easley & O'Hara, 2004; Francis et al., 2004, 2005; Ball, 2006; Lambert et al., 2007).

IFRS limit the discretion of managers to report earnings that are less reflective of the economic performance of the firm. Therefore it is expected that earnings are less managed under IFRS than under domestic standards (Barth et al., 2008). The higher information quality of IFRS should limit both the risk to all investors from owning shares and the risk of adverse selection that less-informed investors face. In theory, this should reduce the firms' cost of equity capital (Ball, 2006).

Ahmed et al. (2013) also argue that the improvements in capital market outcomes that are found for enforcement countries in prior IFRS research, such as cost of capital, could be driven by improved accounting quality. However, increased comparability could be an alternative explanation for improvements in capital market outcomes, rather than increased accounting quality (Ahmed et al., 2013).

2.6 Hypothesis

The main hypothesis that can be derived from the literature review is that the cost of equity capital decreases after the adoption of IFRS and that this decrease in cost of equity capital is driven by an increase in accounting quality. An institutional determinant for the effect of IFRS on both accounting quality and the cost of equity capital is the legal enforcement of a country. Companies domiciled in countries with relatively strong legal enforcement are expected to face a larger effect of IFRS on their accounting quality and cost of equity capital than companies domiciled in countries with relatively low legal enforcement.

3 Methodology

3.1 Research design

This chapter discusses the research methodology that is used to test the hypothesis. The main hypothesis is that the adoption of IFRS decreases the cost of equity capital through an increase in accounting quality. This hypothesis is tested for firms from the Netherlands, Sweden, and Finland that mandatorily adopted IFRS. Because of the regulatory homogeneity across EU countries and the relatively strong enforcement regimes in the EU (Daske et al., 2008), this thesis aims to generalize the results to all firms in the EU that have mandatorily adopted IFRS, even if these firms are not included in the sample. The best research paradigm to investigate this generalizability is a positivistic research paradigm. This paradigm uses quantitative methods of data collection and data analysis which allow generalization (Chua, 1986). The research method that is used in this paper is regression analysis. In this regression analysis, a mediator is used. A variable functions as a mediator to the extent that it affects the relation between the independent and outcome variable. Mediators explain how or why certain effects occur (Baron & Kenny, 1986). Baron & Kenny (1986) provide a path diagram to clarify the meaning of mediation, which is given in figure 1. A variable functions as a mediator when it meets three conditions:

1. Variations in the level of the independent variable significantly account for variations in the mediator (path a);
2. Variations in the mediator significantly account for variations in the outcome variable (path b);
3. When path a and b are controlled, the previously significant relation between the independent and outcome variable does not longer exist (Baron and Kenny, 1986).

Figure 1: Model with independent variable, mediator, and outcome variable

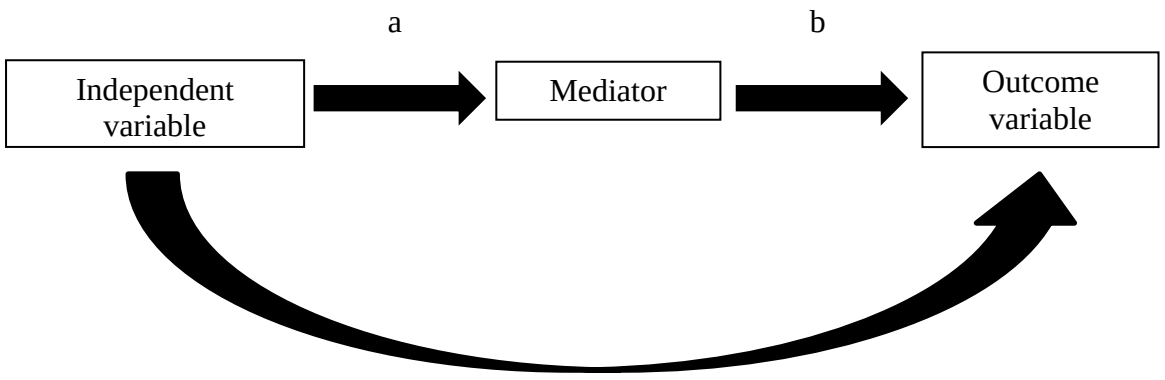
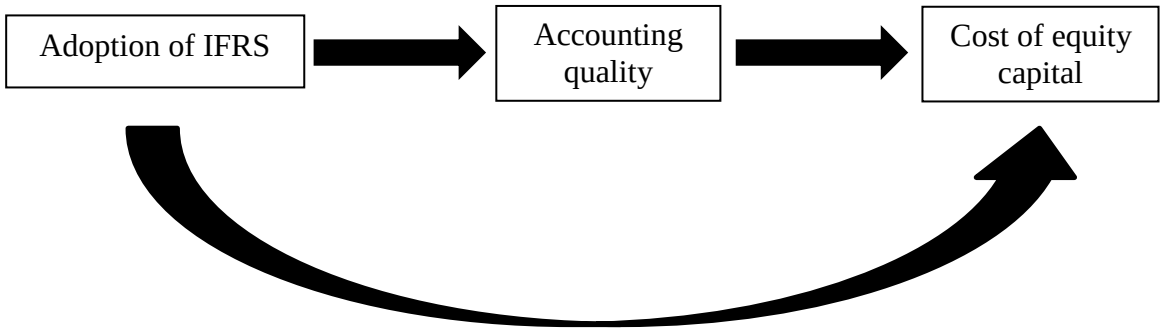


Figure 1: adapted from Baron and Kenny, 1986

In the regression analysis of the thesis, the adoption of IFRS is the independent variable, accounting quality is the mediator, and cost of equity capital is the outcome variable. Following the path diagram of Baron & Kenny (1986), this gives the model of figure 2.

Figure 2: Accounting quality as mediating variable between the adoption of IFRS and cost of equity capital



To test for mediation, three regression equations should be estimated:

1. The regression of the mediator on the independent variable;
2. The regression of the outcome variable on the independent variable;
3. The regression of the outcome variable on both the mediator and the independent variable (Baron & Kenny, 1986).

These three regression equations test the linkages of the mediation model. The following conditions must hold to establish mediation:

1. The independent variable must affect the mediator in the first equation;
2. The independent variable must affect the outcome variable in the second equation;
3. The mediator must affect the outcome variable in the third equation (Baron & Kenny, 1986).

If all conditions hold in the predicted way, then the effect of the independent variable on the outcome variable has to be less in the third equation than in the second equation. There is perfect mediation if the independent variable has no effect in case the mediator is controlled (Baron & Kenny, 1986).

Thus, to test whether accounting quality is a mediator between the adoption of IFRS and cost of equity capital, the following regression equations must be estimated:

1. The regression of accounting quality on the adoption of IFRS;
2. The regression of cost of equity capital on the adoption of IFRS;
3. The regression of cost of equity capital on both accounting quality and the adoption of IFRS.

To test whether the adoption of IFRS had an effect on accounting quality and cost of equity capital, a comparison is made between the pre-adoption and post-adoption period of IFRS. In order to do this, a dummy variable is created that indicates whether an observation occurs in the pre- or post-adoption period of IFRS. This is consistent with related studies that research the effect of IFRS adoption on accounting quality or cost of equity capital (e.g. Barth et al., 2008; Daske et al., 2008; Li, 2010; Chua et al., 2012).

3.2 Metrics

Accounting quality

As mentioned in the literature review, accounting choices that result in greater earnings management compromise the faithful representation of the underlying economics and therefore reduce accounting quality (Ahmed et al., 2013). Therefore, the timely recognition of losses and the presence of earnings management are used as proxies to compare the accounting quality before and after the adoption of IFRS.

Timely loss recognition

Following Barth et al. (2008) and Chua et al. (2012), a dummy variable is used to measure the timely recognition of losses. This dummy variable equals one for observations with a net income, scaled by total assets, that is less than -0,20, and zero otherwise (Barth et al., 2008; Chua et al, 2012). The frequency of large losses, LNEG, is the outcome variable. This variable is regressed on a dummy variable that indicates whether an observation occurs in the pre- or post-adoption period of IFRS, together with control variables, which leads to the following regression model:

Equation 1: $LNEG_{it} = \alpha + \beta_1 IFRS_{it} + \beta_2 SIZE_{it} + \beta_3 GROWTH_{it} + \beta_4 EISSUE_{it} + \beta_5 LEV_{it} + \beta_6 DISSUE_{it} + \beta_7 TURN_{it} + \beta_8 CFO_{it} + \varepsilon_{it}$

where:

LNEG = is a dummy variable that equals one for net income, scaled by total assets, that is less than -0,20, and zero otherwise (Barth et al., 2008; Chua et al., 2012).

IFRS = Indicator variable which equals one for observations in the post-adoption period of IFRS and zero otherwise (Barth et al., 2008; Chua et al., 2012);

SIZE = the natural logarithm of total assets (Barth et al., 2008; Chua et al., 2012;

GROWTH = percentage change in sales (Barth et al., 2008; Chua et al., 2012);

EISSUE = percentage change in common stock value (Barth et al., 2008; Chua et al., 2012);

LEV = end of year total liabilities divided by the end of year equity book value (Barth et al., 2008; Chua et al., 2012);

DISSUE = percentage change in total liabilities (Barth et al., 2008; Chua et al., 2012);

TURN = sales divided by the end of year total assets (Barth et al., 2008; Chua et al., 2012);

CFO = annual net cash flow from operating activities divided by the end of year total assets (Barth et al., 2008; Chua et al., 2012).

Earnings management

The analysis of earnings management often focuses on the use of discretionary accruals by managers. To perform such research, a model is needed to estimate the discretionary components of reported income. Total accruals are usually the starting point for the determination of discretionary accruals. A particular model is then used to generate the non-discretionary component of total accruals. That way, total accruals are decomposed into a non-discretionary component and a discretionary component (Dechow, Sloan & Sweeney, 1995). There are several competing models that are commonly used to measure earnings management. Dechow et al. (1995) test five of such models and find that the most powerful tests of earnings management are provided by a modified version of the model that is developed by Jones (1991). Therefore, the model that is used in this paper is the Modified Jones Model. This model is specified as follows:

Equation 2: $TA_{it} = \alpha + \beta_1 (1/AT_{it-1}) + \beta_2 (\Delta REV_{it} - \Delta AR_{it}) + \beta_3 PPE_{it} + \varepsilon_{it}$

where:

TA	=	total accruals scaled by 1 year lagged total assets (Dechow et al., 1995; Larcker & Richardson, 2004);
AT	=	total assets at t-1 (Dechow et al., 1995; Larcker & Richardson, 2004);
ΔREV	=	revenues in year t less revenues in year t-1 scaled by total assets at t-1 (Dechow et al., 1995; Larcker & Richardson, 2004);
ΔAR	=	change in accounts receivable from year t-1 to year t scaled by total assets at t-1 (Dechow et al., 1995; Larcker & Richardson, 2004);
PPE	=	gross property plant and equipment in year t scaled by total assets at t-1 (Dechow et al., 1995; Larcker & Richardson, 2004).

In the model above, TA_{it} is calculated by taking the difference between income before extraordinary items and operating cash flows for year t. The prediction error, ε_{it}, measures the quantity of discretionary accruals at time t. This discretionary portion of total accruals is used to capture earnings management (Jones, 1991). Therefore, a relatively high amount of discretionary accruals indicates a relatively low earnings quality. A relatively low amount of discretionary accruals, on the other hand, indicates that earnings quality is relatively high.

Three control variables are added to the Modified Jones Model. Those are the book-to-market ratio, operating cash flows and return on assets. These variables are included to mitigate the measurement error of the discretionary accruals.

The book-to-market ratio (BMR) controls for expected growth in the firm's operations (Larcker & Richardson, 2004). Growing firms are expected to have large accruals. It is likely that investment in inventory and other assets is done in the growth phases of the firm's life cycle. An increase in inventory is under these circumstances not necessarily a consequence of opportunistic managerial behavior. The Modified Jones Model, however, classifies such increases as unexpected (Larcker & Richardson, 2004).

Operating cash flows (CFO) and return on assets (ROA) control for current operating performance (Larcker & Richardson, 2004; Kothari, Leone, & Wasley, 2005). Accruals are expected to be systematically non-zero for firms that experience unusual performance, i.e. very high or very low earnings performance. Firm performance is therefore correlated with accruals (Kothari, Leone, & Wasley, 2005; Dechow et al., 1995). It is therefore important to control for current operating performance, because it is more likely that measures of discretionary accruals are misspecified for firms that have very high or very low earnings performance (Dechow et al., 1995; Larcker & Richardson, 2004; Kothari, Leone, & Wasley, 2005).

Taking the control variables into account, the regression equation becomes as follows:

Equation 3: $TA_{it} = \alpha + \beta_1 (1/AT_{it-1}) + \beta_2 (\Delta REV_{it} - \Delta AR_{it}) + \beta_3 PPE_{it} + \beta_4 BMR_{it} + \beta_5 CFO_{it} + \beta_6 ROA_{it} + \varepsilon_{it}$

To measure the effect of the adoption of IFRS on discretionary accruals, the discretionary accruals are regressed on IFRS using the following regression equation:

Equation 4: $DA_{it} = \alpha + \beta_1 IFRS_{it} + \varepsilon_{it}$

where:

DA = the absolute value of the error term of the regression of total accruals from equation 3 (Van Tendeloo & Vanstraelen, 2005; Doukakis, 2014).

According to the hypothesis, a negative and significant sign for β_1 is expected, which indicates that the discretionary accruals decrease after the adoption of IFRS. This shows that earnings management decreases and hence, the accounting quality increases after the adoption of IFRS.

Cost of equity capital

Following prior research, the cost of equity capital is determined using the Price/Earnings to Growth Ratio (PEG Ratio). Much prior research concerning the mandatory adoption of IFRS applied this model (Easton, 2004; Christensen et al., 2007). Another method which is often used in prior research is taking the average cost of equity capital of four existing proxy models (Daske et al., 2008; Li, 2010). However, there is a greater likelihood of data elimination using this method, since data is required for four different models. Furthermore, Botosan & Plumlee (2005) test five models and find that two models are dominant in providing the best estimation of cost of equity capital. One of these models is the PEG ratio method. According to Easton (2004), this method is also suitable for determining the effect of disclosure quality on the cost of equity capital. Based on the above reasons, the PEG ratio method seems to be the most appropriate method to study the effect of the adoption of IFRS on cost of equity capital.

The following formula is used to obtain the cost of capital:

$$r^2 - r(dps_1 / P_0) - (eps_2 - eps_1) / P_0 = 0$$

From this formula, the cost of equity capital is obtained as follows:

$$r = \sqrt{(eps_2 + rdps_1 - eps_1) / P_0}$$

where:

r = cost of equity capital (Easton, 2004; Hail & Leuz, 2006; Daske et al, 2008; Li, 2010);

eps_1 = forecasted earnings per share one year ahead (Easton, 2004; Hail & Leuz, 2006; Daske et al, 2008; Li, 2010);

eps_2 = forecasted earnings per share two years ahead (Easton, 2004; Hail & Leuz, 2006; Daske et al, 2008; Li, 2010);

dps_1 = forecasted dividends per share one year ahead (Easton, 2004; Hail & Leuz, 2006; Daske et al, 2008; Li, 2010);

P_0 = current price per share (Easton, 2004; Hail & Leuz, 2006; Daske et al, 2008; Li, 2010).

In accordance with previous research, the regression equations that contain cost of equity capital, have a number of control variables:

SIZE: Firm size is used as control variable in prior research regarding the mandatory adoption of IFRS. It is expected that firm size has a negative association with cost of equity capital, since it is expected that larger organizations bear less risk. Firm size is measured by the natural logarithm of total assets (Hail & Leuz, 2006; Daske et al., 2008; Li, 2010).

LEV: The firm's financial leverage is included as control variable, because a higher financial leverage is expected to be associated with higher risk. Therefore, it is expected that the firm's financial leverage has a positive association with cost of equity capital. Consistent with prior research, financial leverage is measured by the end of year total liabilities divided by the end of year total assets (Hail & Leuz, 2006; Daske et al., 2008; Li, 2010).

BMR: The book-to-market ratio is measured by the book value of common equity divided by the market value of common equity. The book-to-market ratio is used as control variable because it controls for differences in growth opportunities of organizations (Hail & Leuz, 2006; Daske et al., 2008; Li, 2010).

ROA: Return on assets is used as control variable because firms with a higher return on assets are expected to bear less risk. Therefore it is expected that return on assets is negatively associated with cost of equity capital. Return on assets is measured by dividing the firm's earnings before interest and taxes (EBIT) by the firm's total assets (Hail & Leuz, 2006; Daske et al., 2008; Li, 2010).

The variables are combined into the following regression model:

Equation 5: $COEC_{it} = \alpha + \beta_1 IFRS_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \beta_4 BMR_{it} + \beta_5 ROA_{it} + \varepsilon_{it}$

where:

COEC	=	Cost of equity capital measured by the PEG ratio;
IFRS	=	Indicator variable which equals one for observations in the post-adoption period of IFRS and zero otherwise;
SIZE	=	the natural logarithm of the end of year market value of equity;
LEV	=	end of year total liabilities divided by the end of year total assets;
BMR	=	Book-to-market ratio;
ROA	=	Return on assets.

According to the hypothesis, a negative and significant sign of β_1 is expected, which indicates that the cost of equity capital decreases after the adoption of IFRS.

Earnings management as mediating variable

If IFRS has both a significant effect on accounting quality and cost of equity capital, than accounting quality could be a mediator between IFRS and cost of equity capital.

To test for mediation, the independent variable, cost of equity capital, is regressed on the metrics of the mediator, accounting quality, and on the independent variable, the adoption of IFRS. Furthermore, the same control variables are used as in the last regression equation.

This leads to the following regression model:

Equation 6: $COEC_{it} = \alpha + \beta_1 DA_{it} + \beta_2 LNEG_{it} + \beta_3 IFRS_{it} + \beta_4 SIZE_{it} + \beta_5 LEV_{it} + \beta_6 BMR_{it} + \beta_7 ROA_{it} + \varepsilon_{it}$

According to the hypothesis, it is expected that the sign of β_3 in equation 5 is more negative than the sign of β_1 in equation 6, which indicates that the effect of IFRS on cost of equity capital is greater in equation 5 than in equation 6. It is also expected that the coefficients of β_1 and β_2 in equation 6 are significant and have a positive and negative sign respectively, which indicates that higher accounting quality is associated with lower cost of equity capital. If both expectations prove to be correct, there is evidence that IFRS affects the cost of equity capital through accounting quality, provided that the expectations in equations 1, 2, 4 and 5 also prove to be correct.

3.3 Data collection

This thesis is focused on firms from countries in the European Union. There are two important reasons for this. First, the regulatory homogeneity across EU countries, relative to other countries that have made IFRS mandatory, reduces the likelihood that accounting quality and cost of equity capital effects are subject to unspecified cross-country differences. Second, the legal systems and enforcement regimes in the EU are relatively strong, which provide a powerful setting to explore the effects of IFRS adoption (Daske et al., 2008).

Table 1 is retrieved from Leuz et al. (2003). In this table, for 14 EU countries, legal enforcement is scaled from 0 to 10. A higher value indicates a stronger legal enforcement. Leuz et al. (2003) measure the quality of legal enforcement is using the average score from La Porta et al. (1998) for the efficiency of the judicial system, corruption, and rule of law. Since it is expected that companies domiciled in countries with relatively strong legal enforcement are expected to face a larger effect of the mandatory adoption of IFRS on their accounting quality and cost of equity capital than companies domiciled in countries with relatively low legal enforcement, this thesis focuses on countries with a strong legal enforcement. Because of time reasons, only three countries are researched. Based on the table below, those three countries are the Netherlands, Sweden, and Finland, which all score a 10 for legal enforcement.

Table 1: Overview of the legal enforcement for 14 EU countries

Country	Legal enforcement
Austria	9.4
Belgium	9.4
Denmark	10
Finland	10
France	8.7
Germany	9.1
Greece	6.8
Ireland	8.4
Italy	7.1
The Netherlands	10
Portugal	7.2
Spain	7.1
Sweden	10
United Kingdom	9.2
Mean	8.74

Table 1: adapted from Leuz et al., 2003

3.3.1 Sample selection and description

The sample consists of all publicly traded companies in Sweden, the Netherlands, and Finland. They are analyzed during the years 2002 to 2007. This means that cost of equity capital and accounting quality are analyzed for a period of three years before and three years after the adoption of IFRS, since IFRS became mandatory in 2005 for publicly traded firms in the EU.

The earnings per share and dividend forecasts are obtained from the I/B/E/S database. The earnings per share and dividend forecasts are determined by taking the average of all analysts' forecasts, consistent with Daske et al. (2008) and Li (2010). The data for all other variables are obtained from Compustat Global.

Table 2 gives an overview of the number of companies that are included in the dataset and the companies that are eliminated. Financial institutions are excluded from the sample, because different rules and regulations apply in the financial sector, possibly affecting the results of this study. Since this study only focuses on the effects of mandatory adoption of IFRS, companies that voluntarily adopted IFRS prior to 2005 are eliminated and also companies that, according to the records of Compustat Global, did not adopt IFRS in 2005, are therefore eliminated. Also companies that only have sample years available in the pre-adoption period of IFRS or the post-adoption period of IFRS are eliminated. Finally, companies for which insufficient data is available to measure the cost of equity capital and the accounting quality, are excluded from the sample. This involves mainly companies for which no earnings per share and/or dividend forecasts are available on I/B/E/S. Table 3 gives an overview of the number of observations that are used in the research and the observations that are eliminated based on negative estimations.

Table 2: Overview of publicly traded companies in dataset

Elimination of companies	Eliminated companies	Companies after elimination
Dutch publicly traded companies		196
Financial institutions	38	158
Did not adopt IFRS since 2005	16	142
Voluntary adoption of IFRS prior to 2005	15	127
Insufficient sample years available	32	95
Insufficient data about variables	50	45
Total Dutch companies used in research		**45**
Swedish publicly traded companies		588
Financial institutions	79	509
Did not adopt IFRS since 2005	172	337
Voluntary adoption of IFRS prior to 2005	32	305
Insufficient sample years available	67	238
Insufficient data about variables	159	79

Total Swedish companies used in research		**79**
Finnish publicly traded companies		165
Financial institutions	19	146
Did not adopt IFRS since 2005	6	140
Voluntary adoption of IFRS prior to 2005	24	116
Insufficient sample years available	23	93
Insufficient data about variables	55	38
Total Finnish companies used in research		**38**
Total companies used in research		**162**

Table 3: Overview of the number of observations in the dataset

Elimination of observations	Eliminated observations	Observations after elimination
Amount of observations for the Netherlands		257
EPS_2 is smaller than EPS_1	20	237
Total observations used in the research		**237**
Number of observations for Sweden		455
EPS_2 is smaller than EPS_1	36	419
Total observations used in the research		**419**
Number of observations		217
EPS_2 is smaller than EPS_1	19	198
Total observations used in the research		**198**
Total observations used in research		**854**

3.3.2 Descriptive statistics

In tables 4 to 7, the descriptive statistics are shown for the whole sample and for each individual country. Furthermore, a t-test analysis is performed. This t-test shows a significant difference in cost of equity capital, firm size and book-to-market ratio for the total sample after the mandatory adoption of IFRS, compared to the pre-adoption period. This could be an indication that firm size and the book-to-market ratio have contributed to the decrease in cost of equity capital. The t-test shows no significant difference in financial leverage and return on assets for the post-adoption period of IFRS, compared the pre-adoption period. Therefore it is expected that those variables had a limited influence on cost of equity capital.

For the Netherlands, cost of equity capital and all control variables, except for financial leverage, show a significant difference after the mandatory adoption of IFRS, compared to the pre-adoption period. This could be an indication that all variables, except for financial leverage, have contributed to the decrease in cost of equity capital. Consequently, it is expected that the influence of financial leverage on cost of equity capital was limited for the Netherlands.

For Sweden, the t-test shows a significant difference in cost of equity capital, book-to-market ratio and return on assets after the mandatory adoption of IFRS, compared to the pre-adoption period. This could be an indication that book-to-market ratio and return on assets have contributed to the decrease in cost of equity capital. The t-test shows no significant difference in firm size and financial leverage for the post-adoption period of IFRS, compared the pre-adoption period. Therefore it is expected that those variables had a limited influence on cost of equity capital for Sweden.

For Finland, the t-test shows no significant difference for cost of equity capital after the mandatory adoption of IFRS, compared to the pre-adoption period. The t-test shows only a significant difference for firm size and book-to-market ratio.

Table 4: Aggregate table of descriptive statistics

	Prior to IFRS (2002-2004)			IFRS (2005-2007)			Total
	N	Mean	Std. Dev.	N	Mean	Std. Dev.	T-test
COEC	448	0.1395	0.0922	406	0.1264	0.0688	2.3392***
SIZE	448	6.866	1.9798	406	7.1303	1.9001	-1.986**
LEV	448	0.5347	0.1796	406	0.5343	0.1683	0.0336
BMR	448	0.6541	0.4953	406	0.4630	0.2656	6.9227***
ROA	448	0.0956	0.7153	406	0.1691	1.0712	-1.1876

*, **, *** represent significant difference between the pre-adoption and the post-adoption periods of IFRS at the 10 percent, 5 percent, and 1 percent confidence levels, respectively (two-tailed).

Variable Definitions:
COEC = Cost of equity capital measured by the PEG ratio
SIZE = the natural logarithm of the end of year market value of equity
LEV = end of year total liabilities divided by the end of year total assets
BMR = book-to-market ratio
ROA = return on assets

Table 5: Descriptive statistics of variables for the Netherlands

	Prior to IFRS (2002-2004)			IFRS (2005-2007)			Total
	N	Mean	Std. Dev.	N	Mean	Std. Dev.	T-test
COEC	128	0.1307	0.0624	109	0.1148	0.0478	2.1753**
SIZE	128	6.5975	1.8318	109	7.0284	1.6731	-1.8780**
LEV	128	0.6180	0.1772	109	0.5985	0.1421	0.9207
BMR	128	0.6603	0.4733	109	0.4717	0.2222	3.8157***
ROA	128	0.0767	0.0836	109	0.1094	0.0658	-3.3072***

*, **, *** represent significant difference between the pre-adoption and the post-adoption periods of IFRS at the 10 percent, 5 percent, and 1 percent confidence levels, respectively (two-tailed).
For variable definitions see table 4.

Table 6: Descriptive statistics of variables for Sweden

	Prior to IFRS (2002-2004)			IFRS (2005-2007)			Total
	N	Mean	Std. Dev.	N	Mean	Std. Dev.	T-test
COEC	220	0.1330	0.0870	199	0.1225	0.0758	1.3088*
SIZE	220	7.6866	1.7663	199	7.8590	1.7022	-1.0153
LEV	220	0.4951	0.1763	199	0.5153	0.1757	-1.1720
BMR	220	0.5911	0.4093	199	0.4146	0.2549	5.2337***
ROA	220	0.0458	0.1531	199	0.0889	0.1302	-3.0889***

*, **, *** represent significant difference between the pre-adoption and the post-adoption periods of IFRS at the 10 percent, 5 percent, and 1 percent confidence levels, respectively (two-tailed).
For variable definitions see table 4.

Table 7: Descriptive statistics of variables for Finland

	Prior to IFRS (2002-2004)			IFRS (2005-2007)			Total
	N	Mean	Std. Dev.	N	Mean	Std. Dev.	T-test
COEC	100	0.1652	0.1255	98	0.1472	0.0696	1.2414
SIZE	100	5.4045	1.6564	98	5.7640	1.7482	-1.4855*
LEV	100	0.5152	0.1542	98	0.5014	0.1621	0.6125
BMR	100	0.7846	0.6509	98	0.5515	0.3068	3.2120***
ROA	100	0.2296	1.4918	98	0.3982	2.1637	-0.6393

*, **, *** represent significant difference between the pre-adoption and the post-adoption periods of IFRS at the 10 percent, 5 percent, and 1 percent confidence levels, respectively (two-tailed).
For variable definitions see table 4.

3.3.3 Correlations

Tables 8 shows the aggregate correlation matrix. Tables 9 to 11 show the correlations matrices of the Netherlands, Sweden and Finland, respectively. The correlation matrices show that all variables have the expected association with cost of equity capital for the whole sample and for the Netherlands and Sweden, except for financial leverage. For Finland, all variables have the expected association with cost of equity capital.

Table 8: Aggregate correlation matrix

		COEC	IFRS	SIZE	LEV	BMR	ROA
COEC	Pearson Correlation	1.000					
	Sig. (2-tailed)						
IFRS	Pearson Correlation	-0.080**	1.000				
	Sig. (2-tailed)	0.020					
SIZE	Pearson Correlation	-0.209***	0.068**	1.000			
	Sig. (2-tailed)	0.000	0.047				
LEV	Pearson Correlation	-0.078**	-0.001	0.381***	1.000		
	Sig. (2-tailed)	0.023	0.973	0.000			
BMR	Pearson Correlation	0.316***	-0.231***	0.012	0.050	1.000	
	Sig. (2-tailed)	0.000	0.000	0.736	0.114		
ROA	Pearson Correlation	-0.058*	0.041	-0.096***	-0.056	-0.074**	1.000
	Sig. (2-tailed)	0.091	0.235	0.005	0.103	0.031	

*, **, *** represent the 10 percent, 5 percent and 1 percent level of significance in two-tailed tests, respectively.

Table 9: Correlation matrix for the Netherlands

		COEC	IFRS	SIZE	LEV	BMR	ROA
COEC	Pearson Correlation	1.000					
	Sig. (2-tailed)						
IFRS	Pearson Correlation	-0.141**	1.000				
	Sig. (2-tailed)	0.031					
SIZE	Pearson Correlation	-0.195***	0.122*	1.000			
	Sig. (2-tailed)	0.003	0.062				
LEV	Pearson Correlation	-0.091	-0.060	0.601***	1.000		
	Sig. (2-tailed)	0.163	0.358	0.000			
BMR	Pearson Correlation	0.385***	-0.242***	-0.152**	-0.112*	1.000	
	Sig. (2-tailed)	0.000	0.000	0.019	0.084		
ROA	Pearson Correlation	-0.270***	0.211***	-0.077	-0.105	-0.257***	1.000
	Sig. (2-tailed)	0.000	0.001	0.241	0.106	0.000	

*, **, *** represent the 10 percent, 5 percent and 1 percent level of significance in two-tailed tests, respectively.

Table 10: Correlation matrix for Sweden

		COEC	IFRS	SIZE	LEV	BMR	ROA
COEC	Pearson Correlation	1.000					
	Sig. (2-tailed)						
IFRS	Pearson Correlation	-0.064	1.000				
	Sig. (2-tailed)	0.191					
SIZE	Pearson Correlation	-0.255***	0.050	1.000			
	Sig. (2-tailed)	0.000	0.311				
LEV	Pearson Correlation	-0.130***	0.057	0.416***	1.000		
	Sig. (2-tailed)	0.008	0.242	0.000			
BMR	Pearson Correlation	0.222***	-0.248***	0.148***	0.118**	1.000	
	Sig. (2-tailed)	0.000	0.000	0.002	0.015		
ROA	Pearson Correlation	-0.318***	0.150***	0.224***	0.131***	-0.147***	1.000
	Sig. (2-tailed)	0.000	0.002	0.000	0.007	0.003	

*, **, *** represent the 10 percent, 5 percent and 1 percent level of significance in two-tailed tests, respectively.

Table 11: Correlation matrix for Finland

		COEC	IFRS	SIZE	LEV	BMR	ROA
COEC	Pearson Correlation	1.000					
	Sig. (2-tailed)						
IFRS	Pearson Correlation	-0.088	1.000				
	Sig. (2-tailed)	0.216					
SIZE	Pearson Correlation	-0.030	0.106	1.000			
	Sig. (2-tailed)	0.678	0.139				
LEV	Pearson Correlation	0.082	-0.044	0.411***	1.000		
	Sig. (2-tailed)	0.250	0.541	0.000			
BMR	Pearson Correlation	0.372***	-0.224***	0.243***	0.081	1.000	
	Sig. (2-tailed)	0.000	0.002	0.001	0.255		
ROA	Pearson Correlation	-0.077	0.046	-0.153**	-0.134	-0.125*	1.000
	Sig. (2-tailed)	0.280	0.523	0.032	0.059	0.080	

*, **, *** represent the 10 percent, 5 percent and 1 percent level of significance in two-tailed tests, respectively.

4 Results

4.1 Accounting quality

In this section, the results are discussed for the regressions regarding the effect of IFRS on accounting quality, which is divided in timely loss recognition and earnings management.

4.1.1 Timely loss recognition

Table 12 shows the regressions of the timely loss recognition (LNEG) on IFRS and the control variables for the whole sample and for the individual countries. Timely loss recognition is a dummy variable which equals one for observations with a net income, scaled by total assets, that is less than -0.20, and zero otherwise.

In model 1, the aggregate model, no significant effect of the adoption of IFRS on LNEG is found. There are, however, four control variables which have a significant effect on LNEG. Those are EISSUE, LEV, TURN, and CFO. LEV and TURN have a positive significant effect on LNEG. This means that the timely recognition of losses is significantly higher for firms which total liabilities, relative to the equity book value, is higher and for firms which sales, relative to total assets, is higher. EISSUE and CFO have a negative significant effect on LNEG. This means that the timely recognition of losses is significantly lower for firms with a growing common stock value, and for firms which annual net cash flow from operating activities, relative to total assets, is higher. For SIZE, GROWTH and DISSUE, no significant effect is found on the timely recognition of losses.

Models 2 to 4 show the country differences regarding the regression of LNEG on IFRS and the control variables. As in the aggregate model, for none of the researched countries a significant effect of the adoption of IFRS on LNEG is found.

For the Netherlands, all control variables have a significant effect on the timely recognition of losses, except for firm leverage. As in the aggregate model, EISSUE and CFO have a significant negative effect on LNEG, and TURN has a significant negative effect on LNEG. SIZE and GROWTH have a significant positive effect on LNEG for the Netherlands. This means that the timely recognition of losses is significantly higher for Dutch firms which are bigger, in terms of total assets, and for Dutch firms which have a percentage growth in sales. DISSUE has a significant negative effect on LNEG for the Netherlands, which means that the timely recognition of losses is significantly lower for Dutch firms which have a percentage growth in liabilities.

For Sweden, EISSUE and CFO have a significant negative effect on LNEG, while LEV and DISSUE have a significant positive effect on LNEG. These effects are all consistent with the aggregate model, except for the significant positive effect of DISSUE on LNEG. The significant positive effect of DISSUE on LNEG means that the timely recognition of losses is significantly higher for Swedish firms which have a percentage growth in liabilities. This effect is opposite to the effect of DISSUE on LNEG for the Netherlands.

For Finland, only CFO has a significant effect on LNEG, which is negative. This significant negative effect is also found for Sweden and the Netherlands.

Table 12: Effect of IFRS on the timely recognition of losses

	Model 1: Regression of LNEG on IFRS for whole sample	Model 2: Regression of LNEG on IFRS for the Netherlands	Model 3: Regression of LNEG on IFRS for Sweden	Model 4: Regression of LNEG on IFRS for Finland
	LNEG	LNEG	LNEG	LNEG
IFRS	-0.0127 (-1.08)	0.0021 (0.10)	-0.0191 (-1.03)	-0.0068 (-0.31)
SIZE	-0.0259 (-0.96)	0.1140** (2.10)	-0.0695 (-1.61)	-0.0594 (-1.27)
GROWTH	-0.0000 (-0.21)	0.0010* (1.75)	-0.0000 (-0.70)	0.0005 (1.14)
EISSUE	-0.0011*** (-5.61)	-0.0009*** (-3.56)	-0.0018*** (-5.43)	-0.0005 (-0.99)
LEV	0.3200*** (3.75)	0.246 (1.59)	0.4460*** (3.52)	0.2630 (1.58)
DISSUE	0.0001 (0.83)	-0.0007* (-1.82)	0.0006** (2.37)	-0.0001 (-0.33)
TURN	0.0576** (2.05)	0.1420*** (3.11)	-0.0009 (-0.02)	0.0174 (0.26)
CFO	-0.683*** (-8.19)	-0.495*** (-2.78)	-0.7790*** (-6.85)	-0.6030*** (-3.34)
Cons	0.0490 (0.25)	-1.0690*** (-2.67)	0.4510 (1.28)	0.2730 (0.96)
N	854	237	419	198
Adj. R^2	0.474	0.265	0.563	0.459

*, **, *** represent the 10 percent, 5 percent and 1 percent level of significance in two-tailed tests, respectively.

The coefficient estimates are obtained from linear regressions, absorbing the indicator variable company using the command areg.

Regression model:

$LNEG_{it} = \alpha + \beta_1 IFRS_{it} + \beta_2 SIZE_{it} + \beta_3 GROWTH_{it} + \beta_4 EISSUE_{it} + \beta_5 LEV_{it} + \beta_6 DISSUE_{it} + \beta_7 TURN_{it} + \beta_8 CFO_{it} + \varepsilon_{it}$

Variable definitions:
LNEG = a dummy variable that equals one for net income, scaled by total assets, that is less than -0.20, and zero otherwise
IFRS = an indicator variable which equals one for observations in the post-adoption period of IFRS and zero otherwise
SIZE = the natural logarithm of total assets
GROWTH = percentage change in sales
EISSUE = percentage change in common stock value
LEV = end of year total liabilities divided by the end of year equity book value
DISSUE = percentage change in total liabilities
TURN = sales divided by the end of year total assets
CFO = annual net cash flow from operating activities divided by the end of year total assets

4.1.2 Earnings management

Table 13 shows the regression of total accruals on determinants of total accruals for the whole sample and for the individual countries. This means that it is tested to what extent the variation in total accruals can be explained by the determinant factors that are discussed in the methodology. For the whole sample, the explanatory power (adjusted R-squared) of the model is nearly zero. This means that the determinant factors can hardly explain the variation in total accruals and this is mainly caused by the negative explanatory power of the model for Finland. Therefore, an aggregate model that excludes Finland (model 2) is added and the explanatory power of that model is much higher than the explanatory power of the aggregate model that includes all three countries. The negative explanatory power of the model for Finland can be due to several reasons. Either the model is not valid for Finland, for example because there are factors that explain the total accruals for Finland which are not in this model, or the discretionary part of accruals is very large for Finland. For Sweden and the Netherlands, the determinant factors predict 34.5% and 30.3% of the variance in total accruals respectively. The error term from this regression is the unexplainable part of total accruals, the discretionary accruals. This discretionary portion of total accruals is used to measure earnings management. Since earnings can be managed upward and downward, the absolute value of the error term is taken as the discretionary portion of total accruals. This is consistent with existing studies (e.g. Van Tendeloo & Vanstraelen, 2005; Doukakis, 2014). After the discretionary accruals are determined for each company and each year, the discretionary accruals are regressed on IFRS. In this way it is analyzed if there is a difference in discretionary accruals before and after the adoption of IFRS. This indicates whether the level of earnings management has changed after the adoption of IFRS and therefore it indicates whether IFRS improved the accounting quality.

The results from the regression of discretionary accruals on IFRS for the whole sample and for the individual countries is shown in table 14. Because this regression builds on the preceding regression, an aggregate model that excludes Finland is added again (model 2). The coefficients and the explanatory power of this model are about the same as the coefficients and explanatory power of the aggregate model that includes all three countries (model 1). In none of the regressions, IFRS has a significant effect on discretionary accruals. Therefore, there is no evidence found that IFRS has a significant effect on earnings management for any of the researched countries. Since there was also no evidence that the timely recognition of losses changed significantly after the adoption of IFRS, no evidence is found that IFRS has a significant effect on accounting quality. This means that the first of the three conditions, the independent variable (the adoption of IFRS) must affect the mediator (accounting quality), does not hold.

Table 13: Regression of total accruals

	Model 1: Regression of AT for whole sample	Model 2: Regression of AT for the Netherlands and Sweden	Model 3: Regression of AT for the Netherlands	Model 4: Regression of AT for Sweden	Model 5: Regression of AT for Finland
	AT	AT	AT	AT	AT
1/AT	-2.5060*	9.661***	11.750***	4.263	-5.521**
	(-1.94)	(4.66)	(4.84)	(1.06)	(-2.48)
ΔREV - ΔAR	-0.0642***	-0.117***	-0.174***	-0.0065	0.0240
	(-2.79)	(-5.71)	(-5.40)	(-0.26)	(0.31)
PPE	0.0110	-0.0246	-0.0850	-0.0080	-0.0014
	(0.29)	(-0.67)	(-1.35)	(-0.20)	(-0.02)
BMR	-0.0265	-0.0242	-0.0510*	0.0158	-0.0316
	(-1.38)	(-1.36)	(-1.95)	(0.72)	(-0.65)
CFO	-0.1310***	-0.146***	-0.0677**	-0.7720***	-0.4180*
	(-3.36)	(-4.87)	(-2.02)	(-10.57)	(-1.68)
ROA	0.0048	0.344***	0.2500	0.6510***	0.0013
	(0.52)	(5.29)	(1.83)	(8.93)	(0.09)
Cons	-0.0059	-0.0487**	-0.0398	-0.0187	0.0872
	(-0.25)	(-2.29)	(-0.99)	(-0.84)	(1.24)
N	854	656	237	419	198
Adj. R^2	0.003	0.215	0.303	0.345	-0.121

*, **, *** represent the 10 percent, 5 percent and 1 percent level of significance in two-tailed tests, respectively.

The coefficient estimates are obtained from linear regressions, absorbing the indicator variable company using the command areg.

Regression model:

$TA_{it} = \alpha + \beta_1 (1/AT_{it-1}) + \beta_2 (\Delta REV_{it} - \Delta AR_{it}) + \beta_3 PPE_{it} + \beta_4 BMR_{it} + \beta_5 CFO_{it} + \beta_6 ROA_{it} + \varepsilon_{it}$

Variable definitions:
AT = total accruals scaled by one year lagged total assets
1/AT = 1 divided by total assets at t-1
ΔREV - ΔAR = change in revenues from year t-1 to year t, scaled by total assets at t-1 minus the change in accounts receivable from year t-1 to year t, scaled by total assets at t-1
PPE = percentage change in sales
BMR = percentage change in common stock value
CFO = end of year total liabilities divided by the end of year equity book value
ROA = percentage change in total liabilities

Table 14: Effect of IFRS on discretionary accruals

	Model 1: Regression of DA on IFRS for whole sample	Model 2: Regression of DA on IFRS for the Netherlands and Sweden	Model 3: Regression of DA on IFRS for the Netherlands	Model 4: Regression of DA on IFRS for Sweden	Model 5: Regression of DA on IFRS for Finland
	DA	**DA**	**DA**	**DA**	**DA**
IFRS	-0.0050	-0.0041	0.0053	-0.0067	-0.0143
	(-0.78)	(-0.86)	(0.70)	(-1.28)	(-0.69)
Cons	0.0584***	0.0542***	-0.0578***	0.0397***	0.0700***
	(13.29)	(16.66)	(11.36)	(11.07)	(4.86)
N	854	656	237	419	198
Adj. R^2	0.310	0.348	0.351	0.419	0.342

*, **, *** represent the 10 percent, 5 percent and 1 percent level of significance in two-tailed tests, respectively.

The coefficient estimates are obtained from linear regressions, absorbing the indicator variable company using the command areg.

Regression model:

$DA_{it} = \alpha + \beta_1 IFRS_{it} + \varepsilon_{it}$

Variable definitions:
DA = the absolute value of the error term of the regression of total accruals
IFRS = an indicator variable which equals one for observations in the post-adoption period of IFRS and zero otherwise

4.2 Cost of equity capital

Table 15 shows the regression of cost of equity capital on IFRS and all control variables; firm size, firm leverage, book-to-market ratio and return on assets for the whole sample and for the individual countries.

In model 1, the aggregate model, no significant effect of the adoption of IFRS on cost of equity capital is found. There are, however, three control variables which have a significant effect on cost of equity capital. Those are firms size, firm leverage and the book-to-market ratio. Firm size has a significant negative effect on cost of equity capital, which means that bigger firms, in terms of total assets, have on average a lower cost of equity capital. Firm leverage has a significant positive effect on cost of equity capital, which means that firms with more debt have on average a lower cost of equity capital. The book-to-market ratio has also a significant positive effect on cost of equity capital, which means that firms which have a higher book value of common equity, compared to the market value of common equity, have on average a higher cost of equity capital. These effects are all consistent with the theoretical expectations that are discussed in the methodology section. The model explains 62% of the variation in cost of equity capital.

Models 2 to 4 show the country differences regarding the regression of cost of equity capital on IFRS and the control variables. For the Netherlands and Finland, only control variable book-to-market ratio shows a significant effect on cost of equity capital, which has a positive direction. This is consistent with the aggregate model. For Sweden, all control variables show a significant effect on cost of equity capital. Unlike the aggregate model, return on assets shows a significant negative effect on cost of equity capital for Sweden. This means that firms which have a higher return on assets, have on average a lower cost of equity capital. This is consistent with the theoretical expectation that is discussed in the methodology section. The significant effects of the other control variables are consistent with the aggregate model.

Appendix 3 shows the regression of cost of equity capital on IFRS for the whole sample and for the individual countries in five different models. In the first model, no control variable is used. In the subsequent models, one control variable is added per model to a total of four control variables in the last model. In the first model, IFRS shows a significant negative effect on cost of equity capital for the whole sample. This means that the firms show on average a significant lower cost of equity capital for the post-adoption period of IFRS, compared to the pre-adoption period. This could be an indication that the adoption of IFRS has indeed decreased the cost of equity capital. However, the significant negative effect disappears after adding the control variables into the regression. This could indicate multicollinearity. Table 8 shows that

there is a significant positive correlation between IFRS and firms size and a significant negative correlation between IFRS and book-to-market ratio. This could indicate that the size of the firms in the sample is bigger in the post-adoption period of IFRS, in terms of total assets, compared to the pre-adoption period of IFRS. For the book-to-market ratio it could indicate the opposite: the book value of common equity is relatively lower than the market value of common equity in the post-adoption period, compared to the pre-adoption period of IFRS. This could explain why the significant effect of the adoption of IFRS on cost of equity capital disappears after adding the control variables into the regression: the cost of equity capital decreased because firm size increased and the book-to-market ratio decreased after the adoption of IFRS. The cost of equity capital did not decrease because of the adoption of IFRS itself.

On country level, IFRS has only a significant negative effect on cost of equity capital in the first model for Sweden and the Netherlands, and not for Finland. As in the regression for the whole sample, this significant negative effect disappears after adding the control variables into the regression. The significant negative effect for Sweden becomes even a significant positive effect in models 4 and 5. For both countries, IFRS has a significant negative correlation with the book-to-market ratio and a significant positive correlation with return on equity. As in the whole sample, this could indicate that the book value of common equity is relatively lower than the market value of common equity in the post-adoption period, compared to the pre-adoption period of IFRS for Sweden and the Netherlands. It is also an indication that the return on assets is higher in the post-adoption period of IFRS, compared to the pre-adoption period for Sweden and the Netherlands. Therefore, a possible explanation for the disappearing significant negative effect of the adoption of IFRS on cost of equity capital for the Netherlands and Sweden is as follows: for the Netherlands, the cost of equity capital decreased because the book-to-market ratio decreased after the adoption of IFRS. The cost of equity capital did not decrease because of the adoption of IFRS itself. For Sweden, the cost of equity capital decreased because return on assets increased and the book-to-market ratio decreased after the adoption of IFRS. The cost of equity capital did not decrease because of the adoption of IFRS itself. Furthermore, the cost of equity capital is significantly lower for Swedish firms that are relatively big, in terms of total assets, and the cost of equity capital is significantly higher for Swedish firms that have a relatively high debt.

To summarize; on average, the cost of equity capital did indeed decrease after the adoption of IFRS, but this is due to a change in firm characteristics, rather than the adoption of IFRS itself.

Table 15: Effect of IFRS on cost of equity capital

	Model 1: Regression of COEC on IFRS for whole sample	Model 2: Regression of COEC on IFRS for the Netherlands	Model 3: Regression of COEC on IFRS for Sweden	Model 4: Regression of COEC on IFRS for Finland
	COEC	COEC	COEC	COEC
IFRS	0.0068	0.0069	0.0166***	0.0002
	(1.55)	(1.10)	(2.71)	(0.02)
SIZE	-0.0271***	-0.0133	-0.0494***	0.0117
	(-3.12)	(-1.02)	(-4.23)	(0.54)
LEV	0.0692**	0.0582	0.1070***	0.0040
	(2.56)	(1.39)	(2.96)	(0.06)
BMR	0.0770***	0.0791***	0.0783***	0.0772***
	(10.17)	(7.80)	(6.29)	(4.64)
ROA	0.0010	-0.0284	-0.1390***	0.0024
	(0.30)	(-0.62)	(-4.31)	(0.52)
Cons	0.2390***	0.1320	0.4190***	0.0364
	(3.98)	(1.48)	(4.70)	(0.30)
N	854	237	419	198
Adj. R^2	0.620	0.587	0.681	0.555

*, **, *** represent the 10 percent, 5 percent and 1 percent level of significance in two-tailed tests, respectively.

The coefficient estimates are obtained from linear regressions, absorbing the indicator variable company using the command areg.

Regression model:

$COEC_{it} = \alpha + \beta_1 IFRS_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \beta_4 BMR_{it} + \beta_5 ROA_{it} + \varepsilon_{it}$

Variable definitions:
COEC = Cost of equity capital measured by the PEG ratio
IFRS = an indicator variable which equals one for observations in the post-adoption period of IFRS and zero otherwise
SIZE = the natural logarithm of the end of year market value of equity
LEV = end of year total liabilities divided by the end of year total assets
BMR = book-to-market ratio
ROA = return on assets

4.3 Accounting quality as mediating factor

Section 4.1 provided evidence that accounting quality did not change significantly after the adoption of IFRS for any of the researched countries. Section 4.2 provided evidence that, on average, the cost of equity capital did indeed decrease after the adoption of IFRS, but this is due to a change in firm characteristics, rather than the adoption of IFRS itself. This means that the first and second condition do not hold. The independent variable, the adoption of IFRS,

does not affect the mediator, accounting quality. Furthermore, the independent variable does not affect the outcome variable, the cost of equity capital. Therefore, it can already be concluded that accounting quality is not a mediating factor between the adoption of IFRS and cost of equity capital. It is not necessary to perform the last part of the regression analysis.

5 Conclusion and discussion

5.1 Conclusion

The main goal of this thesis is the examination of accounting quality as a possible factor through which the adoption of IFRS affects the cost of equity capital. To examine the extent to which this is the case, the following regression analyses are performed: a regression analysis to examine the effect of the adoption of IFRS on accounting quality and a regression analysis to examine the effect of the adoption of IFRS on cost of equity capital. These regressions did not show a significant effect of the adoption of IFRS on both accounting quality and cost of equity capital, making the regression analysis to examine the effect of both IFRS and accounting quality on the cost of equity capital unnecessary for drawing a conclusion. Since the performed regressions failed to confirm the first and second condition that must hold in order to examine mediation, from these regressions can already be concluded that accounting quality is not a factor through which the adoption of IFRS affects the cost of equity capital. Therefore, the results from this thesis do not confirm the theory that accounting quality is a mediating factor between the adoption of IFRS and the cost of equity capital.

More specifically, no evidence is found that the adoption of IFRS has a significant effect on accounting quality. Considering the accounting theory regarding the effect of IFRS on accounting quality, this is not surprising, since the accounting theory mentions both reasons why IFRS might improve accounting quality and reasons why IFRS might reduce accounting quality.

For Sweden and The Netherlands, the cost of equity capital is significantly lower after the adoption of IFRS compared to the pre-adoption period. This is, however, not due to the adoption of IFRS, since the effect disappears after controlling for firm size, firm leverage, book-to-market ratio, and return on assets. Therefore, the results from this thesis do not confirm the theory and prior research about the influence of the adoption of IFRS on cost of equity capital. It is more likely that the lower cost of equity capital in the post-adoption period of IFRS, compared to the pre-adoption period of IFRS, is due to a change in firm characteristics, rather than the adoption of IFRS itself.

5.2 Discussion

5.2.1 Interpretation of the results

That no evidence is found for accounting quality as possible factor through which the adoption of IFRS affects cost of equity capital is not in line with the hypothesis that is based on the literature study, although there is accounting literature that argues that the implementation of IFRS could reduce accounting quality. It is therefore not surprising that the results of this study are both consistent with previous research and in contradiction with previous research.

The results of this thesis are in line with the results of Van Tendeloo & Vanstraelen (2005), Jeanjean & Stolowy (2008), and Doukakis (2014), who all did not find a significant improvement in accounting quality after the adoption of IFRS.

In accordance with this thesis, Jeanjean & Stolowy (2008) and Doukakis (2014) make a comparison between the pre-adoption period and post-adoption period of IFRS in order to research the effect of mandatory IFRS adoption on accounting quality. The period examined by Jeanjean & Stolowy (2002-2006) is about the same as the period examined in this thesis. The period examined by Doukakis (2000-2010) is longer than the period examined in this paper. Van Tendeloo & Vanstraelen, Jeanjean & Stolowy and Doukakis all use discretionary accruals to measure earnings management. Although Jeanjean & Stolowy and Doukakis have studied other countries, it is not surprising that their results are in accordance with this thesis, given the research design and period are similar to those of this thesis.

Van Tendeloo & Vanstraelen (2005) studied the effect of voluntary adoption of IFRS on earnings management. They studied German firms for a period of 1999-2001, which is completely before the period that is studied in this thesis. Even Van Tendeloo & Vanstraelen use discretionary accruals to measure earnings management as in this thesis, their study is less comparable with this thesis than the studies of Jeanjean & Stolowy and Doukakis.

The results of this thesis are, however, in contradiction with the results of Barth et al. (2008), Chua et al. (2012) and Zéghal et al. (2012), who all find a significant improvement in accounting quality after the adoption of IFRS.

The method for the timely recognition of losses that is used in this thesis is the same as the method used in Barth et al. (2008), Chua et al. (2012), and Zéghal et al. (2012). Regarding the timely recognition of losses, the results of this thesis are, however, in contrast with Barth et al. (2008) and Chua et al. (2012), but consistent with Zéghal et al. (2012). While this thesis, as Zéghal et al. (2012), did not find a significant increase in the timely recognition of losses after the adoption of IFRS, Barth et al. and Chua et al. did find this effect.

A possible explanation for the contrary results with Barth et al. (2008), is that this thesis examines the effect of timely loss recognition for mandatory adopters of IFRS, while Barth et al. examine the effect for voluntary adopters. Therefore, the results of Barth et al. could be due to self-selection (Daske et al., 2008; Chua et al., 2012). Furthermore, the period that Barth et al. study (1994-2003) is different from the period that is studied in this thesis (2002-2007), which could be another explanation for the contrary results.

The period that Chua et al. (2012) study (2001-2008) is about the same as the period that is studied in this thesis. Moreover, Chua et al. examine only mandatory adopters, as this thesis does. However, Chua et al. study the effects of mandatory adoption in Australia, while this thesis examines three EU countries. This could be a possible explanation for the contrary results of Chua et al. and this thesis.

The proxy that is used for earnings management in this thesis is also used by Zéghal et al. (2012). Furthermore, the research period of Zéghal et al. is the same as the research period in this thesis and also the researched countries in this thesis are among the researched countries in Zéghal et al and make up 22% of the total sample. Nevertheless, Zéghal et al. find a significant decrease in earnings management after the adoption of IFRS, while this thesis did not. A possible explanation for the contrary results, is that the significant decrease in Zéghal et al. comes from the countries that are not researched in this thesis and make up 78% of the total sample of Zéghal et al. Another possible reason is that this thesis controls the discretionary accruals for growth and current operating performance, while Zéghal et al. do not. Therefore, their estimation of discretionary accruals may not be accurate.

Barth et al. (2008) and Chua et al. (2012) use different methods to detect earnings management and both studies find a significant decrease in earnings management after the adoption of IFRS, in contrast with this thesis. Therefore, the difference in research method could be another explanation for the contrary results of this thesis and the studies of Barth et al. and Chua et al. regarding the effect of the adoption of IFRS on earnings management, besides the possible self-selection bias in Barth et al., the difference in research period between Barth et al. and this thesis, and the difference in researched countries between this thesis and Chua et al.

The results are also in contradiction with the results of Daske et al. (2008) and Li (2010). In contrast to this thesis, those studies did find a significant decrease in cost of equity capital after the adoption of IFRS. There are several possibilities for the contrary results. One possible explanation is that the studies of Daske et al. (2008) and Li (2010) use the average of four different proxies for the estimation of the cost of equity capital, instead of using one proxy, like this thesis does. A second reason could be the difference in research period. Daske et al. (2008)

only include one post-IFRS year in their study and Li (2010) only two post-IFRS years, while this thesis includes three post-IFRS years. The short post-IFRS period of Daske et al. and Li could have influenced the results. The proxies for cost of equity capital reflect the expectations of investors about the future (Daske et al., 2008). Therefore, it is possible that the capital market effects, like the cost of equity capital, is captured short after the mandatory adoption of IFRS, or even prior to the actual adoption date, like Daske et al. (2008) argue. It is, however, hard to forecast the consequences of the adoption of an accounting standard before it is implemented. If the real benefits of IFRS did not match the expectations of the investors, it could be possible that the effect of mandatory IFRS adoption on cost of equity capital disappears over a longer time period. A third possibility for the contrary results of this thesis and the studies of Daske et al. (2008) and Li (2010), is the difference in researched countries. Daske et al. (2008) study 26 countries around the world and Li (2010) studies 18 EU countries. Since this thesis only studies three EU countries, it is possible that the significant decrease in cost of equity capital that Daske et al. (2008) and Li (2010) find after the mandatory adoption of IFRS, comes from the countries that are not included in this thesis.

5.2.2 Limitations

This thesis has several limitations. First, due to data unavailability, the role of legal enforcement could not be taken into account, while the accounting literature mentions the strength of legal enforcement as an important institutional factor in determining the effect of the adoption of IFRS on accounting quality. Furthermore, the sample size is heavily reduced due to data unavailability. An important reason for this is that data is needed for both the proxies for accounting quality and cost of equity capital. Only 162 companies from a total of 949 listed companies could be used for the research. Third, only one proxy is used to measure the cost of equity capital, to make sure that the sample size is not further reduced due to data unavailability. However, the use of multiple proxies could make the results more convincing. Fourth, the tests are based on only three years of pre-adoption data and three years of post-adoption data. The results could be different if a longer time period is researched.

5.2.3 Recommendations for future research

This research is an exploratory research and therefore there are several directions for future research. First, if the data unavailability can be overcome, it can be examined what role legal enforcement plays. Second, the role of other institutional factors can be examined. Third, the role of the previous accounting standard can be examined. The countries that are used for this thesis did already have a good domestic accounting standard before IFRS was adopted. It is

possible that the effect of the adoption of IFRS on accounting quality and cost of equity capital is stronger for countries that had a relatively weak domestic accounting standard before the adoption of IFRS.

6 Literature

Ahmed, A. S., M. Neel, & D. Wang (2013). Does mandatory adoption of IFRS improve accounting quality? Preliminary evidence. *Contemporary Accounting Research*, *30*, (4), 1344–1372.

Ball, R., S. P. Kothari & A. Robin (2000). The effect of international institutional factors on properties of accounting earnings. *Journal of Accounting and Economics*, *29*, (1), 1–51.

Ball, R., A. Robin, & J. S. Wu (2003). Incentives versus standards: properties of accounting income in four East Asian countries. *Journal of Accounting and Economics*, *36*, (1), 235–270.

Ball, R., & L. Shivakumar (2005). Earnings quality in UK private firms: comparative loss recognition timeliness. *Journal of Accounting and Economics*, *39*, (1), 83–128.

Ball, R., & Shivakumar, L. (2006). The role of accruals in asymmetrically timely gain and loss recognition. *Journal of Accounting Research*, *44*, (2), 207–242.

Ball, R. (2006). International Financial Reporting Standards (IFRS): pros and cons for investors. *Accounting and Business Research*, *36*, (1), 5–27.

Baron, R. M., & D. A. Kenny (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*, (6), 1173–1182.

Barth, M. E., W. R. Landsman, & M. H. Lang (2008). International accounting standards and accounting quality. *Journal of Accounting Research*, *46*, (3), 467–498.

Beatty, A., & D. G. Harris (1999). The effects of taxes, agency costs and information asymmetry on earnings management: A comparison of public and private firms. *Review of Accounting Studies*, *4*, (3-4), 299–326.

Burgstahler, D. C., L. Hail, & C. Leuz (2006). The importance of reporting incentives: Earnings management in European private and public firms. *The Accounting Review, 81*, (5), 983–1016.

Christensen, H. B., E. Lee, & M. Walker (2007). Cross-sectional variation in the economic consequences of international accounting harmonization: The case of mandatory IFRS adoption in the UK. *The International Journal of Accounting, 42*, (4), 341–379.

Chua, W. F. (1986). Radical developments in accounting thought. *The Accounting Review*, 601–632.

Chua, Y. L., C. S. Cheong, & G. Gould (2012). The impact of mandatory IFRS adoption on accounting quality: Evidence from Australia. *Journal of International Accounting Research, 11*, (1), 119–146.

Claus, J., & J. Thomas (2001). Equity premia as low as three percent? Evidence from analysts' earnings forecasts for domestic and international stock markets. *The Journal of Finance, 56*, (5), 1629–1666.

Covrig, V. M., M. L. Defond, & M. Hung (2007). Home bias, foreign mutual fund holdings, and the voluntary adoption of international accounting standards. *Journal of Accounting Research, 45*, (1), 41–70.

Daske, H. (2006). Economic benefits of adopting IFRS or US-GAAP – Have the expected cost of equity capital really decreased? *Journal of Business Finance & Accounting, 33*, (3-4), 329–373.

Daske, H., L. Hail, C. Leuz, & R. Verdi (2008). Mandatory IFRS reporting around the world: Early evidence on the economic consequences. *Journal of accounting research, 46*, (5), 1085–1142.

Dechow, P. M., R. G. Sloan, & A. P. Sweeney (1995). Detecting earnings management. *The Accounting review*, 193–225.

Dechow, P. M., & D. J. Skinner (2000). Earnings management: Reconciling the views of accounting academics, practitioners, and regulators. *Accounting Horizons*, *14*, (2), 235–250.

Doukakis, L. C. (2014). The effect of mandatory IFRS adoption on real and accrual-based earnings management activities. *Journal of Accounting and Public Policy*, *33*, (6), 551–572.

Easley, D., & M. O'hara (2004). Information and the cost of capital. *The Journal of Finance*, *59*, (4), 1553–1583.

Easton, P. D. (2004). PE ratios, PEG ratios, and estimating the implied expected rate of return on equity capital. *The Accounting Review*, *79*, (1), 73–95.

Ewert, R., & A. Wagenhofer (2005). Economic effects of tightening accounting standards to restrict earnings management. *The Accounting Review*, *80*, (4), 1101–1124.

Francis, J., R. LaFond, P. M. Olsson, & K. Schipper (2004). Costs of equity and earnings attributes. *The Accounting Review*, *79*, (4), 967–1010.

Francis, J., R. LaFond, P. M. Olsson, & K. Schipper (2005). The market pricing of accruals quality. *Journal of Accounting and Economics*, *39*, (2), 295–327.

Gebhardt, W. R., C. Lee, & B. Swaminathan (2001). Toward an implied cost of capital. *Journal of Accounting Research*, *39*, (1), 135–176.

Gode, D., & P. Mohanram (2003). Inferring the cost of capital using the Ohlson–Juettner model. *Review of Accounting Studies*, *8*, (4), 399–431.

Gray, P., P. S. Koh, & Y. H. Tong (2009). Accruals quality, information risk and cost of capital: Evidence from Australia. *Journal of Business Finance and Accounting*, *36*, (1-2), 51–72.

Hail, L., & C. Leuz (2006). International differences in the cost of equity capital: Do legal institutions and securities regulation matter?. *Journal of Accounting Research, 44,* (3), 485–531.

Hail, L., & C. Leuz (2009). Cost of capital effects and changes in growth expectations around US cross-listings. *Journal of Financial Economics, 93,* (3), 428–454.

Hail, L., C. Leuz, C., & P. Wysocki (2010). Global accounting convergence and the potential adoption of IFRS by the US (Part I): Conceptual underpinnings and economic analysis. *Accounting Horizons, 24,* (3), 355–394.

Healy, P. M., & J. M. Wahlen (1999). A review of the earnings management literature and its implications for standard setting. *Accounting Horizons, 13,* (4), 365–383.

Hope, O. K. (2003). Disclosure practices, enforcement of accounting standards, and analysts' forecast accuracy: An international study. *Journal of Accounting Research, 41,* (2), 235-272.

Jeanjean, T., & H. Stolowy (2008). Do accounting standards matter? An exploratory analysis of earnings management before and after IFRS adoption. *Journal of Accounting and Public Policy, 27,* (6), 480–494.

Jones, J. J. (1991). Earnings management during import relief investigations. *Journal of Accounting Research, 29,* (2), 193–228.

Kim, J. B., & Shi, H. (2012). IFRS reporting, firm-specific information flows, and institutional environments: International evidence. *Review of Accounting Studies, 17,* (3), 474-517.

Kothari, S. P., A. J. Leone, & C. E. Wasley (2005). Performance matched discretionary accrual measures. *Journal of Accounting and Economics, 39,* (1), 163–197.

Lambert, R., C. Leuz, & R. E. Verrecchia (2007). Accounting information, disclosure, and the cost of capital. *Journal of Accounting Research, 45,* (2), 385–420.

Lang, M., J. S. Raedy, & M. H. Yetman (2003). How representative are firms that are cross-listed in the united states? An analysis of accounting quality. *Journal of Accounting Research, 41*, (2), 363–386.

Lang, M., J. S. Raedy, & W. Wilson (2006). Earnings management and cross listing: Are reconciled earnings comparable to US earnings? *Journal of accounting and economics, 42*, (1), 255–283.

Langmead, J. M., J. & Soroosh (2009). International financial reporting standards: The road ahead. *The CPA Journal, 79*, (3), 16.

La Porta, R., F. Lopez-De-Silanes, A. Shleifer, & R. Vishny (1998). Law and finance. *Journal of Political Economy, 106,* (6), 1113–55.

La Porta, R., F. Lopez-De-Silanes, A. Shleifer, & R. Vishny (1999). The quality of government. *Journal of Law, Economics, and Organization, 15*, (1), 222–79.

La Porta, R., F. Lopez-De-Silanes, A. Shleifer, & R. Vishny (2000). Investor protection and corporate governance. *Journal of Financial Economics, 58*, (1-2), 3–27.

La Porta, R., F. Lopez-De-Silanes, A. Shleifer, & R. Vishny (2002). Investor protection and corporate valuation. *The Journal of Finance, 57*, (3), 1147–70.

Larcker, D. F., & S. A. Richardson (2004). Fees paid to audit firms, accrual choices, and corporate governance. *Journal of Accounting Research, 42*, (3), 625–658.

Leuz, C., D. Nanda & P. D. Wysocki (2003). Earnings management and investor protection: an international comparison. *Journal of Financial Economics, 69*, (3), 505–527.

Li, S. (2010). Does mandatory adoption of International Financial Reporting Standards in the European Union reduce the cost of equity capital? *The Accounting Review, 85,* (2), 607–636.

Ohlson, J. A., & B. E. Juettner-Nauroth (2005). Expected EPS and EPS growth as determinants of value. *Review of Accounting Studies*, *10*, (2-3), 349–365.

Ross, S. A. (1973). The economic theory of agency: The principal's problem. *The American Economic Review*, *63*, (2), 134–139.

Scott, W. R. (2015). *Financial accounting theory*. Toronto: Pearson (seventh edition, first edition from 1997).

Soderstrom, N. S., & K. J. Sun (2007). IFRS adoption and accounting quality: a review. *The European Accounting Review*, *16*, (4), 675–702.

Tendeloo, B. van, & A. Vanstraelen (2005). Earnings management under German GAAP versus IFRS. *The European Accounting Review*, *14*, (1), 155–180.

Zéghal, D., S. M. Chtourou, & Y. M. Fourati (2012). The effect of mandatory Adoption of IFRS on earnings quality: evidence from the European Union. *Journal of International Accounting Research*, *11*, (2), 1–25.

7 Appendix

7.1 Appendix 1 – Regressions of LNEG on IFRS

Table 16: Regression of LNEG on IFRS and control variables for the whole sample

	Model 1:	Model 2:	Model 3:	Model 4:	Model 5:	Model 6:	Model 7:	Model 8:
	LNEG	LNEG	LNEG	LNEG	LNEG	LNEG	LNEG	LNEG
IFRS	-0.0297***	-0.0181	-0.0181	-0.0159	-0.0137	-0.0138	-0.0138	-0.0127
	(-2.72)	(-1.40)	(-1.40)	(-1.28)	(-1.11)	(-1.12)	(-1.12)	(-1.08)
SIZE		-0.0436	-0.0438	-0.0019	-0.0227	-0.0265	-0.0257	-0.0259
		(-1.64)	(-1.64)	(-0.07)	(-0.87)	(-0.97)	(-0.91)	(-0.96)
GROWTH			-0.0000	-0.0000	-0.0000	-0.0000	-0.0000	-0.0000
			(-0.20)	(-0.18)	(-0.25)	(-0.32)	(-0.32)	(-0.21)
EISSUE				-0.0015***	-0.0013***	-0.0013***	-0.0013***	-0.0011***
				(-7.92)	(-6.58)	(-6.52)	(-6.51)	(-5.61)
LEV					0.3390***	0.3220***	0.3210***	0.3200***
					(4.16)	(3.66)	(3.60)	(3.75)
DISSUE						0.0001	0.0001	0.0001
						(0.49)	(0.50)	(0.83)
TURN							0.0027	0.0576**
							(0.10)	(2.05)
CFO								-0.683***
								(-8.19)
Cons	0.0539***	0.3530*	0.3550*	0.0738	0.0358	0.0700	0.6200	0.0490
	(7.23)	(1.93)	(1.93)	(0.41)	(0.20)	(0.37)	(0.30)	(0.25)
N	854	854	854	854	854	854	854	854
Adj. R^2	0.357	0.359	0.358	0.411	0.424	0.424	0.423	0.474

*, **, *** represent the 10 percent, 5 percent and 1 percent level of significance in two-tailed tests, respectively.

The coefficient estimates are obtained from linear regressions, absorbing the indicator variable company using the command areg.

Variable definitions:
LNEG = a dummy variable that equals one for net income, scaled by total assets, that is less than -0.20, and zero otherwise
IFRS = an indicator variable which equals one for observations in the post-adoption period of IFRS and zero otherwise
SIZE = the natural logarithm of total assets
GROWTH = percentage change in sales
EISSUE = percentage change in common stock value
LEV = end of year total liabilities divided by the end of year equity book value
DISSUE = percentage change in total liabilities
TURN = sales divided by the end of year total assets
CFO = annual net cash flow from operating activities divided by the end of year total assets

Table 17: Regression of LNEG on IFRS and control variables for the Netherlands

	Model 1:	Model 2:	Model 3:	Model 4:	Model 5:	Model 6:	Model 7:	Model 8:
	LNEG	LNEG	LNEG	LNEG	LNEG	LNEG	LNEG	LNEG
IFRS	-0.0191	-0.0275	-0.0304	-0.0292	-0.0250	-0.0120	-0.0006	0.0021
	(-1.05)	(-1.28)	(-1.41)	(-1.43)	(-1.20)	(-0.57)	(-0.03)	(0.10)
SIZE		0.0354	0.0096	0.0354	0.0275	0.0718	0.1280	0.1140**
		(0.73)	(0.18)	(0.72)	(0.55)	(1.38)	(2.32)	(2.10)
GROWTH			0.0008	0.0012**	0.0012**	0.0015	0.0008	0.0010*
			(1.42)	(2.30)	(2.27)	(2.69)	(1.43)	(1.75)
EISSUE				-0.0013***	-0.0012***	-0.0011***	-0.0010***	-0.0009***
				(-4.85)	(-4.25)	(-4.12)	(-3.74)	(-3.56)
LEV					0.1420	0.2970	0.2230	0.246
					(0.96)	(1.89)	(1.42)	(1.59)
DISSUE						-0.0010***	-0.0006	-0.0007*
						(-2.61)	(-1.41)	(-1.82)
TURN							0.1260***	0.1420***
							(2.72)	(3.11)
CFO								-0.4950***
								(-2.78)
Cons	0.0299**	-0.2070	-0.0323	-0.1990	-0.2350	-0.6320*	-1.1700***	-1.069***
	(2.45)	(-0.64)	(-0.09)	(-0.60)	(-0.71)	(-1.75)	(-2.88)	(-2.67)
N	237	237	237	237	237	237	237	237
Adj. R^2	0.088	0.086	0.091	0.187	0.187	0.212	0.238	0.265

*, **, *** represent the 10 percent, 5 percent and 1 percent level of significance in two-tailed tests, respectively.

The coefficient estimates are obtained from linear regressions, absorbing the indicator variable company using the command areg.

Variable definitions:
LNEG = a dummy variable that equals one for net income, scaled by total assets, that is less than -0.20, and zero otherwise
IFRS = an indicator variable which equals one for observations in the post-adoption period of IFRS and zero otherwise
SIZE = the natural logarithm of total assets
GROWTH = percentage change in sales
EISSUE = percentage change in common stock value
LEV = end of year total liabilities divided by the end of year equity book value
DISSUE = percentage change in total liabilities
TURN = sales divided by the end of year total assets
CFO = annual net cash flow from operating activities divided by the end of year total assets

Table 18: Regression of LNEG on IFRS and control variables for Sweden

	Model 1:	Model 2:	Model 3:	Model 4:	Model 5:	Model 6:	Model 7:	Model 8:
	LNEG	LNEG	LNEG	LNEG	LNEG	LNEG	LNEG	LNEG
IFRS	-0.0398**	-0.0128	-0.0128	-0.0175	-0.0217	-0.0197	-0.0134	-0.0191
	(-2.32)	(-0.60)	(-0.60)	(-0.87)	(-1.10)	(-1.00)	(-0.68)	(-1.03)
SIZE		-0.0911**	-0.0916**	-0.0170	-0.0480	-0.0754*	-0.1080**	-0.0695
		(-2.13)	(-2.13)	(-0.41)	(-1.15)	(-1.74)	(-2.36)	(-1.61)
GROWTH			-0.0000	-0.0000	-0.0000	-0.0000	-0.0000	-0.0000
			(-0.28)	(-0.27)	(-0.40)	(-0.88)	(-0.73)	(-0.70)
EISSUE				-0.0022***	-0.0018***	-0.0021***	-0.0021***	-0.0018****
				(-6.62)	(-5.49)	(-5.98)	(-5.98)	(-5.43)
LEV					0.5110***	0.4060***	0.4280***	0.4460***
					(4.00)	(2.99)	(3.17)	(3.52)
DISSUE						0.0006**	0.0005*	0.0006
						(2.24)	(1.69)	(2.37)
TURN							-0.0979**	-0.0009
							(-2.10)	(-0.02)
CFO								0.7790***
								(-6.85)
Cons	0.0714***	0.7660**	0.7700	0.2130	0.1940	0.4550	0.8150**	0.4510
	(6.07)	(2.34)	(2.35)	(0.67)	(0.62)	(1.37)	(2.19)	(1.28)
N	419	419	419	419	419	419	419	419
Adj. R^2	0.397	0.404	0.402	0.469	0.492	0.498	0.503	0.563

*, **, *** represent the 10 percent, 5 percent and 1 percent level of significance in two-tailed tests, respectively.

The coefficient estimates are obtained from linear regressions, absorbing the indicator variable company using the command areg.

Variable definitions:
LNEG = a dummy variable that equals one for net income, scaled by total assets, that is less than -0.20, and zero otherwise
IFRS = an indicator variable which equals one for observations in the post-adoption period of IFRS and zero otherwise
SIZE = the natural logarithm of total assets
GROWTH = percentage change in sales
EISSUE = percentage change in common stock value
LEV = end of year total liabilities divided by the end of year equity book value
DISSUE = percentage change in total liabilities
TURN = sales divided by the end of year total assets
CFO = annual net cash flow from operating activities divided by the end of year total assets

Table 19: Regression of LNEG on IFRS and control variables for Finland

	Model 1:	Model 2:	Model 3:	Model 4:	Model 5:	Model 6:	Model 7:	Model 8:
	LNEG	LNEG	LNEG	LNEG	LNEG	LNEG	LNEG	LNEG
IFRS	-0.0208	-0.0152	-0.0151	-0.0092	-0.0073	-0.0073	-0.0073	-0.0068
	(-1.02)	(-0.67)	(-0.66)	(-0.40)	(-0.32)	(-0.32)	(-0.32)	(-0.31)
SIZE		-0.0248	-0.0248	-0.0121	-0.0270	-0.0249	-0.0249	-0.0594
		(-0.56)	(-0.55)	(-0.27)	(-0.60)	(-0.54)	(-0.53)	(-1.27)
GROWTH			0.0001	0.0002	0.0002	0.0002	0.0002	0.0005
			(0.19)	(0.59)	(0.59)	(0.64)	(0.58)	(1.14)
EISSUE				-0.0010**	-0.0008	-0.0008	-0.0008	-0.0005
				(-2.03)	(-1.57)	(-1.52)	(-1.51)	(-0.99)
LEV					0.2600*	0.2770*	0.2770	0.2630
					(1.82)	(1.69)	(1.61)	(1.58)
DISSUE						-0.0001	-0.0001	-0.0001
						(-0.21)	(-0.18)	(-0.33)
TURN							-0.0003	0.0174
							(-0.00)	(0.26)
CFO								-0.6030***
								(-3.34)
Cons	0.0457***	0.1810	0.1800	0.1130	0.0618	0.0417	0.0421	0.2730
	(3.20)	(0.74)	(0.74)	(0.46)	(0.25)	(0.16)	(0.15)	(0.96)
N	198	198	198	198	198	198	198	198
Adj. R^2	0.417	0.414	0.411	0.422	0.430	0.427	0.423	0.459

*, **, *** represent the 10 percent, 5 percent and 1 percent level of significance in two-tailed tests, respectively.

The coefficient estimates are obtained from linear regressions, absorbing the indicator variable company using the command areg.

Variable definitions:
LNEG = a dummy variable that equals one for net income, scaled by total assets, that is less than -0.20, and zero otherwise
IFRS = an indicator variable which equals one for observations in the post-adoption period of IFRS and zero otherwise
SIZE = the natural logarithm of total assets
GROWTH = percentage change in sales
EISSUE = percentage change in common stock value
LEV = end of year total liabilities divided by the end of year equity book value
DISSUE = percentage change in total liabilities
TURN = sales divided by the end of year total assets
CFO = annual net cash flow from operating activities divided by the end of year total assets

7.2 Appendix 2 – Regressions of total accruals

Table 20: Regression of total accruals for the whole sample

	Model 1:	Model 2:	Model 3:	Model 4:
	AT	AT	AT	AT
1/AT	-2.7700**	-2.6970**	-2.5440**	-2.506*
	(-2.13)	(-2.08)	(-1.97)	(-1.94)
ΔREV - ΔAR	-0.0710***	-0.0721***	-0.0642***	-0.0642***
	(-3.08)	(-3.13)	(-2.79)	(-2.79)
PPE	0.0055	0.0066	0.0118	0.0110
	(0.15)	(0.17)	(0.31)	(0.29)
BMR		-0.0293	-0.0272	-0.0265
		(-1.52)	(-1.42)	(-1.38)
CFO			-0.1300***	-0.1310***
			(-3.34)	(-3.36)
ROA				0.0048
				(0.52)
Cons	-0.0294	-0.0137	-0.0053	-0.0059
	(-1.37)	(-0.58)	(-0.22)	(-0.25)
N	854	854	854	854
Adj. R^2	-0.012	-0.011	0.004	0.003

*, **, *** represent the 10 percent, 5 percent and 1 percent level of significance in two-tailed tests, respectively.

The coefficient estimates are obtained from linear regressions, absorbing the indicator variable company using the command areg.

Variable definitions:
AT = total accruals scaled by one year lagged total assets
1/AT = 1 divided by total assets at t-1
ΔREV - ΔAR = change in revenues from year t-1 to year t, scaled by total assets at t-1 minus the change in accounts receivable from year t-1 to year t, scaled by total assets at t-1
PPE = percentage change in sales
BMR = percentage change in common stock value
CFO = end of year total liabilities divided by the end of year equity book value
ROA = percentage change in total liabilities

Table 21: Regression of total accruals for the Netherlands

	Model 1:	Model 2:	Model 3:	Model 4:
	AT	AT	AT	AT
1/AT	12.07***	12.24***	12.18***	11.75***
	(4.89)	(4.99)	(5.01)	(4.84)
ΔREV - ΔAR	-0.1390***	-0.148***	-0.1530***	-0.174***
	(-4.61)	(-4.89)	(-5.05)	(-5.40)
PPE	-0.0752	-0.0747	-0.6860	-0.0850
	(-1.19)	(-1.19)	(-1.10)	(-1.35)
BMR		-0.0496*	-0.0497*	-0.0510*
		(-1.87)	(-1.89)	(-1.95)
CFO			-0.0675**	-0.0677**
			(-2.00)	(-2.02)
ROA				0.2500
				(1.83)
Cons	-0.0623	-0.0348	-0.0298	-0.0398
	(-1.65)	(-0.87)	(-0.74)	(-0.99)
N	237	237	237	237
Adj. R^2	0.274	0.283	0.294	0.303

*, **, *** represent the 10 percent, 5 percent and 1 percent level of significance in two-tailed tests, respectively.

The coefficient estimates are obtained from linear regressions, absorbing the indicator variable company using the command areg.

Variable definitions:
AT = total accruals scaled by one year lagged total assets
1/AT = 1 divided by total assets at t-1
ΔREV - ΔAR = change in revenues from year t-1 to year t, scaled by total assets at t-1 minus the change in accounts receivable from year t-1 to year t, scaled by total assets at t-1
PPE = percentage change in sales
BMR = percentage change in common stock value
CFO = end of year total liabilities divided by the end of year equity book value
ROA = percentage change in total liabilities

Table 22: Regression of total accruals for Sweden

	Model 1:	Model 2:	Model 3:	Model 4:
	AT	AT	AT	AT
1/AT	-0.7250	-0.3750	3.0370	4.263
	(-0.16)	(-0.08)	(0.68)	(1.06)
ΔREV - ΔAR	-0.0230	-0.0230	0.0404	-0.0065
	(-0.87)	(-0.87)	(1.50)	(-0.26)
PPE	0.0698	0.0714	0.0698	-0.0080
	(1.50)	(1.53)	(1.58)	(-0.20)
BMR		-0.0229	-0.0167	0.0158
		(-0.90)	(-0.69)	(0.72)
CFO			-0.4520	-0.7720***
			(-6.39)	(-10.57)
ROA				0.6510***
				(8.93)
Cons	-0.0707***	-0.0602**	-0.0276	-0.0187
	(-3.11)	(-2.36)	(-1.12)	(-0.84)
N	419	419	419	419
Adj. R^2	0.096	0.095	0.191	0.345

*, **, *** represent the 10 percent, 5 percent and 1 percent level of significance in two-tailed tests, respectively.

The coefficient estimates are obtained from linear regressions, absorbing the indicator variable company using the command areg.

Variable definitions:
AT = total accruals scaled by one year lagged total assets
1/AT = 1 divided by total assets at t-1
ΔREV - ΔAR = change in revenues from year t-1 to year t, scaled by total assets at t-1 minus the change in accounts receivable from year t-1 to year t, scaled by total assets at t-1
PPE = percentage change in sales
BMR = percentage change in common stock value
CFO = end of year total liabilities divided by the end of year equity book value
ROA = percentage change in total liabilities

Table 23: Regression of total accruals for Finland

	Model 1:	Model 2:	Model 3:	Model 4:
	AT	AT	AT	AT
1/AT	-5.959***	-5.901***	-5.536**	-5.521**
	(-2.69)	(-2.66)	(-2.50)	(-2.48)
ΔREV - ΔAR	-0.0155	-0.0107	0.0236	0.0240
	(-0.21)	(-0.14)	(0.31)	(0.31)
PPE	-0.0268	-0.0273	-0.0011	-0.0014
	(-0.30)	(-0.30)	(-0.01)	(-0.02)
BMR		-0.0389	-0.0320	-0.0316
		(-0.81)	(-0.67)	(-0.65)
CFO			-0.4160*	-0.4180*
			(-1.68)	(-1.68)
ROA				0.0013
				(0.09)
Cons	0.0466	0.0717	0.0877	0.0872
	(0.75)	(1.03)	(1.26)	(1.24)
N	198	198	198	198
Adj. R^2	-0.124	-0.126	-0.113	-0.121

*, **, *** represent the 10 percent, 5 percent and 1 percent level of significance in two-tailed tests, respectively.

The coefficient estimates are obtained from linear regressions, absorbing the indicator variable company using the command areg.

Variable definitions:
AT = total accruals scaled by one year lagged total assets
1/AT = 1 divided by total assets at t-1
ΔREV - ΔAR = change in revenues from year t-1 to year t, scaled by total assets at t-1 minus the change in accounts receivable from year t-1 to year t, scaled by total assets at t-1
PPE = percentage change in sales
BMR = percentage change in common stock value
CFO = end of year total liabilities divided by the end of year equity book value
ROA = percentage change in total liabilities

7.3 Appendix 3 – Regressions of COEC on IFRS

Table 24: Regression of COEC on IFRS and control variables for the whole sample

	Model 1:	Model 2:	Model 3:	Model 4:	Model 5:
	COEC	COEC	COEC	COEC	COEC
IFRS	-0.0141***	-0.0067	-0.0065	0.0069	0.0068
	(-3.74)	(-1.49)	(-1.44)	(1.57)	(1.55)
SIZE		-0.0283***	-0.0295***	-0.0271***	-0.0271***
		(-3.07)	(-3.18)	(-3.12)	(-3.12)
LEV			0.0286	0.0689**	0.0692**
			(1.00)	(2.56)	(2.56)
BMR				0.0769***	0.0770***
				(10.18)	(10.17)
ROA					0.0010
					(0.30)
Cons	0.1400***	0.3340***	0.3270***	0.2390***	0.2390***
	(54.00)	(5.28)	(5.14)	(3.99)	(3.98)
N	854	854	854	854	854
Adj. R^2	0.559	0.564	0.564	0.621	0.620

*, **, *** represent the 10 percent, 5 percent and 1 percent level of significance in two-tailed tests, respectively.

The coefficient estimates are obtained from linear regressions, absorbing the indicator variable company using the command areg.

Variable definitions:
COEC = Cost of equity capital measured by the PEG ratio
IFRS = an indicator variable which equals one for observations in the post-adoption period of IFRS and zero otherwise
SIZE = the natural logarithm of the end of year market value of equity
LEV = end of year total liabilities divided by the end of year total assets
BMR = book-to-market ratio
ROA = return on assets

Table 25: Regression of COEC on IFRS and control variables for the Netherlands

	Model 1:	Model 2:	Model 3:	Model 4:	Model 5:
	COEC	COEC	COEC	COEC	COEC
IFRS	-0.0126**	-0.0074	-0.0090	0.0061	0.0069
	(-2.28)	(-1.14)	(-1.35)	(0.99)	(1.10)
SIZE		-0.0218	-0.0197	-0.0142	-0.0133
		(-1.48)	(-1.33)	(-1.10)	(-1.02)
LEV			-0.0513	0.0594	0.0582
			(-1.14)	(1.42)	(1.39)
BMR				0.0787***	0.0791***
				(7.79)	(7.80)
ROA					-0.0284
					(-0.62)
Cons	0.1290***	0.2750***	0.2930***	0.1360	0.1320
	(34.73)	(2.79)	(2.94)	(1.52)	(1.48)
N	237	237	237	237	237
Adj. R^2	0.454	0.457	0.458	0.588	0.587

*, **, *** represent the 10 percent, 5 percent and 1 percent level of significance in two-tailed tests, respectively.

The coefficient estimates are obtained from linear regressions, absorbing the indicator variable company using the command areg.

Variable definitions:
COEC = Cost of equity capital measured by the PEG ratio
IFRS = an indicator variable which equals one for observations in the post-adoption period of IFRS and zero otherwise
SIZE = the natural logarithm of the end of year market value of equity
LEV = end of year total liabilities divided by the end of year total assets
BMR = book-to-market ratio
ROA = return on assets

Table 26: Regression of COEC on IFRS and control variables for Sweden

	Model 1:	Model 2:	Model 3:	Model 4:	Model 5:
	COEC	COEC	COEC	COEC	COEC
IFRS	-0.0145***	0.0015	0.0006	0.0122**	0.0166***
	(-2.84)	(0.24)	(0.10)	(1.97)	(2.71)
SIZE		-0.0540***	-0.0575***	-0.0562**	-0.0494***
		(-4.32)	(-4.60)	(-4.74)	(-4.23)
LEV			0.0947**	0.1180***	0.1070***
			(2.45)	(3.18)	(2.96)
BMR				0.0776***	0.0783***
				(6.08)	(6.29)
ROA					-0.1390***
					(0.30)
Cons	0.1350***	0.547***	0.526***	0.460***	0.4190***
	(38.53)	(5.73)	(5.54)	(5.06)	(4.70)
N	419	419	419	419	419
Adj. R^2	0.604	0.623	0.629	0.665	0.681

*, **, *** represent the 10 percent, 5 percent and 1 percent level of significance in two-tailed tests, respectively.

The coefficient estimates are obtained from linear regressions, absorbing the indicator variable company using the command areg.

Variable definitions:
COEC = Cost of equity capital measured by the PEG ratio
IFRS = an indicator variable which equals one for observations in the post-adoption period of IFRS and zero otherwise
SIZE = the natural logarithm of the end of year market value of equity
LEV = end of year total liabilities divided by the end of year total assets
BMR = book-to-market ratio
ROA = return on assets* Significant effect at 10% level

Table 27: Regression of COEC on IFRS and control variables for Finland

	Model 1:	Model 2:	Model 3:	Model 4:	Model 5:
	COEC	COEC	COEC	COEC	COEC
IFRS	-0.0152	-0.0169	-0.0170	0.0007	0.0002
	(-1.47)	(-1.46)	(-1.46)	(0.06)	(0.02)
SIZE		0.0072	0.0078	0.0116	0.0117
		(0.32)	(0.34)	(0.54)	(0.54)
LEV			-0.0145	0.0023	0.0040
			(-0.20)	(0.03)	(0.06)
BMR				0.0767***	0.0772***
				(4.63)	(4.64)
ROA					0.0024
					(0.52)
Cons	0.1640***	0.1250	0.1280	0.0390	0.0364
	(22.69)	(1.01)	(1.02)	(0.33)	(0.30)
N	198	198	198	198	198
Adj. R^2	0.505	0.502	0.499	0.557	0.555

*, **, *** represent the 10 percent, 5 percent and 1 percent level of significance in two-tailed tests, respectively.

The coefficient estimates are obtained from linear regressions, absorbing the indicator variable company using the command areg.

Variable definitions:
COEC = Cost of equity capital measured by the PEG ratio
IFRS = an indicator variable which equals one for observations in the post-adoption period of IFRS and zero otherwise
SIZE = the natural logarithm of the end of year market value of equity
LEV = end of year total liabilities divided by the end of year total assets
BMR = book-to-market ratio
ROA = return on assets