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| Master thesis |
| Does the use of Earnings Management decline after the introduction of IFRS? |
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# 1 Introduction

In this introduction the topic of the use of earnings management is introduced and linked to the background conditions of ongoing financial scandals and the need for stricter regulations for accounting practices. With the introduction of International Financial Reporting Standards (IFRS) it was assumed that the quality and the reliability of financial reporting would increase and the use of earnings management was expected to be repulsed. However, as the problem definition will expose several theorists provide reasoning contrary to this assumption and existing research is not clear about the effect of the introduction of IFRS on the use of earnings management. Consequently, this study will further investigate this topic by investigating the case of the Netherlands. In the last paragraphs of the introduction the research objectives and the methodology will shortly be commented.

### 1.1 Background

During the last decade many financial scandals have occurred all over the world involving certain types of accounting fraud or manipulation of financial reports by managements of companies. These scandals caused much damage to the financial system and the interests of creditors and shareholders of the companies involved were damaged by those activities. Shareholders assume to receive returns on their investment in a corporation whereas managers are concerned about their benefit, promotion, and reputation. Immoral activities of executives, accountants and auditors can be considered at the centre of the scandals. Changing market attitudes and deficiencies in the controlling mechanisms create incentives to overrate prices and values of firms which created bubbles and finally a global financial crisis (Yilmaz et al. 2009, 142). In many of those scandals a specific type of reporting manipulation called ‘earnings management’ was involved. Earnings management can be described as a strategy of generating accounting earnings, which is accomplished through managerial discretion over accounting choices and operating cash flows (Philips et al. 2003) as well as production and investment decisions that reduce the variability of the published earnings (further defined in chapter 3). Under normal circumstances accurately provided reports about earnings and other financial facts provide shareholders with the opportunity to decide based on correct information. In addition, in order to create effective contracts, taking into account that within contracts not all future contingencies are specified, earning statistics are needed. This leaves room for managers to manage their expected earnings especially under changing economic circumstances. Companies attempted to present financial statements that with regard to the future show an overly optimistic view of the company’s financial situation. Consequently, a fundamental uncertainty about the value of the assets of firms arose that partly caused the financial crisis (Heemskerk 2009, 64).

Parmalat and Enron are particular international illustrations of the use of earnings management. Parmalat is an Italian company manufacturing dairy products and fruit-based beverages. This company reported bank possessions that in reality did not exist. On the other hand, Enron, which was an American energy company, lied about its revenues and did not place debts in the firm’s accounts that created a bankruptcy. Many other companies among which Freddie Mac, Halliburton, Worldcom, Norel, Madoff Investment Securities, Anglo Irish Bank and Lehman Brothers were involved in earnings management scandals (Forbes 2013). In addition in the Netherlands several companies were involved in accounting scandals. The biggest scandal occurred with the Dutch/US based company Ahold. The scary thing is that Ahold seemed to meet all the criteria of corporate governance. But this could not prevent a major accountancy scandal in which the Chief Executive Officer (CEO) van der Hoeven and Chief Financial Officer (CFO) Meurs were convicted (Heemskerk 2009, 67). In addition, due to financial mismanagement the taking over of Dutch banks like ABN-AMRO and Fortis caused major problems. Furthermore, the public resentment against officials of financial institutions and managers of big companies in the Netherlands is high. In spite of several measures that should have brought the increasing rise of incomes of top managers to a hold, the income differences between the managers of big companies and the normal employees are increasingly growing. Attention to good governance seems not to help. Due to these scandals the reliability and the quality of accounting information is being questioned (Van der Bauwhede 2003).

In order to create that the published financial information is more reliable one of the reactions of the financial markets and governments to accountings scandal was the call for higher quality standards in financial accounting. Adopting high quality standards might create high quality financial information (Ball et al. 2003). To increase the quality of the financial statements and the corporate governance the regulators enacted for instance in the US the Sarbanes-Oxley Act (SOX) and in the Netherlands the ‘Tabaksblat Code’. However, even more important was the introduction of the International Financial Reporting Standards (IFRS) from 2001 onwards which should provide for more reliable and better comparable financial information for the stakeholders. The IFRS are standards created by the International Accounting Standards Board (IASB). The main goals of IFRS are:

* To harmonize the international accounting standards
* To improve the comparability of the financial statements
* To increase the reliability and the transparency of the published financial information.

Since January 1, 2005, all stock exchange quoted firms in the European Union have to mandatorily arrange their annual consolidated financial reports conferring to the IFRS. The expectation was that after the introduction of IFRS the use of earnings management would decrease. Taking the fundamentals of IFRS into account the expectation seems to be reliable that the use earnings management would decrease, because of the comparability of the financial statements and the harmonization of the accounting standards.

### 1.2 Problem Definition

By the developers of IFRS and by the policy makers who determine that the adoption of FRS is mandatory is assumed that the introduction of IFRS creates harmonization, comparability, and reliability of the international financial standards and improves the overall quality of the financial accounting process. Subsequently, the introduction of IFRS is assumed to decrease the levels of the use of earnings management. However, it could be question whether IFRS actually supports increasing the reliability and the transparency of the published financial data, in particular the trustworthiness of the reported earnings. It is argued that in addition based on IFRS, managers of firms are still provided with substantial discretion, which offers opportunities to engage in earnings management. It is doubted whether simply changing the standards is a sufficient condition for improving a firms reporting behaviour. Firms opposing the switch to IFRS and firms that previously engaged in the use earnings management are communicate to be unlikely to perform fundamental changes in their reporting policies as long as they are not enforced to do that by some controlling mechanism (Ball 2006, Daske et al. 2008). In addition based on common standards the reporting behaviour of firms is expected to differ across firms as long as firms have different reporting incentives (Jeanjean and Stolowy 2008, 484). Other factors such as economic and institutional incentives and the countries’ legal institutions are supposed to be more important indicators of the use of earnings management than standardization of the accounting practices by some theorists. Existing empirical research at the effects of the introduction of IFRS on the levels of earnings management shows mixed findings. Several articles find that the use of earnings management based on IFRS decreases (e.g. Barth et al. 2006; 2008, Gassen and Sellhorn 2006, Hung and Subramayan 2007, Cai et al. 2008, Christensen et al. 2008) while many other publications claim that levels of the use of earnings management after the implementation of IFRS increase (e.g. Tendeloo and Vanstraelen 2005, Heemskerk and van der Tas 2006, Goncharov and Zimmerman 2006, Christensen et al. 2008, Paananen and Lin 2008, Jeanjean and Stolowy 2008, Lippens 2010).

The crux of this is that overwhelming evidence for or against the assumption that the introduction of IFRS decreases the levels of earnings management until this moment is not found. This debate has not yet been concluded. Consequently this study will investigate the question whether the introduction of IFRS will affect the use of earnings management. As the existing studies differ with regard to the countries that are studied, with regard to the question whether voluntary adopters of IFRS or mandatory adopters of IFRS are compared, and differ with regard to the methodological approaches used by those studies, studying this question using an original case and the latest data will add new and valuable knowledge to the current scientific debate. Using the case of the Netherlands, this research tries to answer the next main question:

*Does with the introduction of IFRS the use of Earnings Management among Dutch stock-exchange quoted firms decline?*

In order to answer the main question several sub-questions are developed. The next sub questions will be answered throughout the following chapters:

1) What is the theoretical background of financial accounting?

2) What is IFRS and what purpose does it serve?

3) What is the content of the term earnings management, which types of earnings management exist and what are the main incentives for engaging in earnings management?

4) In which way the use of earnings management can be measured best and in which way models to detect the use of earnings management over time have evolved?

5) Which effects of the introduction of IFRS upon the use of earnings management are found by previous research?

### 1.3 Objectives

The central objective of this study is to provide insight in the specific effect of the introduction of IFRS in the Netherlands. The purpose of the study is to investigate specifically at firms that had to adopt IFRS in 2005 after the standards became mandatory. Following the most appropriate methodology this study will contribute to the ongoing scientific debate in which way earnings management should be measured and whether the adoption of IFRS has a positive or a negative effect on the use of earnings management.

Providing insight in the effectiveness of IFRS in reducing the level of the use of earnings management in addition should contribute to the common social interests of the Dutch citizens. As many individuals as well as the Dutch state are financially damaged through financial mismanagement, further insight whether additional policies to enforce qualitatively good financial accounting reports are needed and will strongly contribute to the common good and societal interests.

### 1.4 Methodology

This research will use a positive empirical approach in which general statements on earnings management among Dutch stock exchange quoted firms will be deduced based on data observations from several firms in the period from 2001 up to and included 2007. This creates two periods of four years before and three years after the introduction of IFRS in January 2005. The type of research involved can be classified as a quantitative research approach. A basis aspect to assess information, quantitative data collection involves the use of numbers. This method fits the current purpose better than a qualitative approach as a large sample of firms will be used using data collected from several reporting years of those firms. The approach seems to fit in the Positive Accounting Theory that seeks to explain and to predict the managers' choices of accounting methods (Deegan and Unerman 2006, p. 252).

Several researchers investigated the impact of IFRS on the use of earnings management. In order to identify the use of earnings management most researchers have approached the issue by detecting discretionary accruals. Within those approaches discretionary accruals are estimated based on total accruals and the non-discretionary accruals. The exact model used to estimate discretionary accruals, the sample of companies and the data collection will be further explained in the research design chapter.

### 1.5 Demarcation and limitations

The focus of this research will be on determining the amount of earnings management in the Netherlands over the period from 2001 to 2007 containing the event of the adoption of IFRS. However, the methodology used in this study only measures the levels of accrual-based earnings management. The consequently called type of ‘real’ earnings management which can be distinguished from accruals based earnings management is neglected by this approach. Consequently the findings are limited to the concept of accrual-based earnings management.

The findings will in addition be limited to the Dutch case only. As the Dutch code law system and the Dutch institutional setting provide a specific background for the use of earnings management it deserves special considerations whether the findings can be compared with findings from other countries. The Dutch GAAP system of accounting that preceded the IFRS is in addition supposed not to differ much from the IFRS as some other predeceasing systems did in other countries. This might in addition influence the results.

Consistent with previous research financial institutions and utility companies will be excluded from the sample of firms. Financial institutions are subject to special accounting requirements and utility companies are a diverse category of firms. For those reasons those types of companies are usually excluded from samples used in these type of analyses (Tendeloo and Vanstraelen 2005). In addition voluntary adopters of IFRS in the years before 2005 will be excluded, as including those firms might bias the findings.

### 1.6 Structure of the research

This research will proceed using the following structure: The next chapter provides a background for understanding earnings management by discussing general accountancy theories such as the ‘positive accounting theory’, ‘the agency theory’, ‘stewardship theory’ and it further introduces the development of IFRS and the reasons for its mandatory introduction in several countries. Chapter 3 further introduces the concept of earnings management. Several definitions will be commented and distinctions between different types of earnings management and structural incentives to engage in earnings management are presented. Next, chapter 4 further explains IFRS and its characteristics. Chapter 5 deals with the question in which way earnings management can be measured. Firstly the concept of earnings management as accruals based accountancy is explained. Then, a distinction between non-discretionary accruals and discretionary accruals is presented. After that different models measuring earnings measurement by an estimation of discretionary accruals are presented. Finally the distinction between time-series models and cross-sectional models is commented. Chapter 6 gives a literature overview of previous studies based at the effects of introducing IFRS on the amount of earnings management used by firms in several countries. Consequently in the seventh chapter several hypotheses will be presented that will be tested in this study. Chapter 8 explains the whole research design and the results of the study are presented in chapter 9. Finally chapter 10 provides the conclusion.

# 2 Background Theory

Earnings management is a specific type of accounting. In order to fully understand all the implications of earnings management this chapter provides the background for understanding the use of earnings management by presenting an overview of certain more general types of accounting theories whereon the use of earnings management relies. This will answer the sub question what is the theoretical background of financial accounting?

Accountancy in its broadest sense can be defined as the production of information about an enterprise and the transmission of that information from the people within the enterprise who have access to the information to those persons who need the information but do not have immediate access to it (Lo and Fisher 2014). However, whether all information will be completely transmitted to persons who need the information is up to variation between enterprises and will be highly influenced by strategic concerns. Accounting choices are coupled to certain information/transaction costs (Watts and Zimmerman 1990, 133). As accounting costs affects the contracting parties’ accumulation of wealth, incentives arise to adopt accounting methods with the lowest transaction costs. Especially the agency theory and the positive accounting theory provide several basic assumptions relevant for the study of the use of earnings management. The agency theory is commented because of its focus on the core relationships in accounting between the principal and the agent which is in addition still the core relationship in modern theories on earnings management. Because the assumptions and several of the hypotheses are present in the current literature of the use of earnings management, the positive accounting theory is included in this overview. Some of these hypotheses are relevant in the research design of this thesis. Together those theories already give many explanations for the question why managers engage in earnings management. As the level of earnings management is the central focus of this thesis and explaining some variables that influence whether managers engage in earnings management is the central aim of this thesis those theories provide important information for the topic of interest in this thesis. The relevancy of the background theories commented in this chapter with regard to the current study on the use of earnings management will be further commented later in this thesis after the concept of earnings management is further defined.

### 2.1 The Agency Theory

The first background theory to be commented is the agency theory as this theory is one of the oldest theoretical frameworks in accounting theory which focusing on the core elements of the accounting practice; the transmission of information between people within an enterprise and people outside the enterprise who need the information but have no immediate access to it. “Agency theory is directed at the ubiquitous agency relationship, in which one party (the principal) delegates work to another party (the agent)” (Eisenhardt 1989, 58). Principals and agents in this theory resemble the ‘shareholder vs. managers’ distinction. Focusing on the relation between the principals and the agent, the agency theory with regard to accounting tries to resolve two types of problems. When the desires and goals of the principals and the agents conflict the first type of problem arises. This problem especially arises when it is difficult or expensive for the principal to verify what the agent is actually doing. The second type of problem has to do with risk sharing. Different actions may be preferred by the principal and the agent when they have different risk preferences (Eisenhardt 1989, 58). The underlying ‘model of man’ in agency theory is that of the self-interested actor rationally maximizing his own personal economic gain. As they both have their own interests the model is predicated upon the notion of an in-built conflict of interest between owner and manager. Those individuals are seeking to attain rewards and avoid punishment, especially financial ones (Donaldsen and Davies 1991). As managers try to maximize their own rewards and shareholders try to maximize the profit of the corporation their interest clearly are in conflict.

The agency theory now first predicts which situations will arise under the condition of conflicting interests between principals and agents. The most important point is that there is an agency loss which is the extent to which returns to the owners fall below what they would be if the owners exercised direct control of the corporation. Parts of the profits will be lost on the costs for the appointment of agents. Following these assumptions the agency theory holds that “managers will not act to maximize the returns to shareholders unless appropriate governance structures are implemented in the large corporation to safeguard the interests of shareholders” (Jensen and Meckling 1976). Consequently, the second central task of the agency theory is to specify mechanisms which reduce agency loss (Eisenhardt 1989). Among such mechanisms are incentive schemes for managers to give them financial rewards for maximizing shareholder interests. The financial interests of executives are then aligned with those of shareholders (Jensen and Meckling 1976). In order to make predictions and to specify mechanisms for agency loss reduction “the unit of analysis of the theory is the contract governing the relationship between the principal and the agent, the focus of the theory is on determining the most efficient contract between the principal and the agent” (Eisenhardt 1989, 58). The emphasis on contract between individuals follows from the fact that contracts can be used to establish measures causing agents to be motivated towards maximizing the value of the organization (Deegan and Unerman, 2006, p. 215).

Agency theory became an influential approach in organizational economics but in addition received substantial criticism. First of all the assumption that agent always act according to their self-interests is challenged. It is argued that even in cases were some actions are personally unrewarding; managers may nevertheless perform those actions from a sense of duty. Those managers feel themselves normatively complied to do what is best for the company (Etzioni 1975). It is in addition argued that some managers base their individual calculations of action on personal perceptions of long term motives. Some executives may feel that their future fortunes are bound to the long term performance of their company on which their future employment and pension rights rely. The interests of the agents are then aligned with the interests of the company and its shareholders (Donaldsen and Davies 1991). The classic defence of agency theorists is that “utility is defined with respect to the preferences of individuals, and preferences reflect whatever desires individuals happen to have, egoistic or altruistic” (Heath 2009, 500). Only an incorrect interpretation of the theory will claim that all individuals are prone to moral scepticism. To be more clear in which way agency theory should be applied, Heath (2009, 479) recommends that “agency theory should only be used as a critical-diagnostic tool, to identify the points at which both firms and markets will be vulnerable to breakdown in the absence of moral constraint.” As the early twenty-first-century wave of corporate scandals demonstrated once again the challenge for shareholders to exercise effective control of management is still as relevant as it was ever before.

### 2.2 Positive accounting theory

The consequently called Positive Accounting Theory was developed by Watts and Zimmerman (1986) and serves mainly as one of the first scientific efforts to empirically explain the accounting practices of firms and enterprises. The theory is derived from the agency theory and shares many of its assumptions. However, the focus of the theory is more on empirical research. As an empirical method the positive accounting theory was designed in order to be able to make predictions which particular accounting methods certain firms will use. Based upon variables such as the industry the company is in and the size of companies, Watts and Zimmerman (1986) were the first to note that variations in the choice for certain accounting methods could have an influence upon those variables.

As a scientific method Positive Accounting Theory distinguishes itself from normative theories of accounting. Normative theories describe in which way things should be. With regard to accounting practices a normative theory prescribes which particular accounting method should be chosen by firms in order to reach a societal desirable outcome. This prescription might deviate significantly from existing practices (Deegan and Unerman 2006). Gray *et al.* (1995, 51-52) are among the authors who dismiss the positive accounting literature as a basis for change and improvement because according to them the positive theories of accounting offer little or no development in corporate (social) reporting of information. “Positive theories are not about what (social) reporting should be, but rather about what it is” (1995, 52).

However, engaging in normative practices was never a concern for Watts and Zimmerman. Their whole positive accounting theory is based on the assumption that individuals act to maximize their own utility. Consequently managements will lobby for accounting standards based on their own self-interest (1978). As Sterling (1990, 117) points out, understanding ‘why’ firms choose certain accounting methods was not even the primary issue for Watts and Zimmerman as utility maximization is always the final answer to the why question according to their assumptions. The final objective of their research is to demonstrate a set of relationships consistent with the final principle of utility maximization. Of course self-interest is not always opposed to the disclosure of information. It can on the contrary be claimed that utility maximization lies at the heart of all voluntary disclosure behaviour. Sometimes openness and the disclosure of information create outcomes that are more valuable to managers such as organizational legitimacy. The assumptions hold as long as the final goal of the accounting manipulations serves the economic self-interests of the insiders who have access to the information. Developing a positive theory of accounting choice requires an understanding of the relative magnitudes of the various types of contracting costs involved (Watts and Zimmerman 1990, 135).

In order to demonstrate a set of relationships consistent with the final principle of utility maximization one of the main purposes is to identify factors which are likely to be important predictors of lobbying behaviour. Based on the accounting standards as indicators for the levels of management’s wealth, it is a key part of this task to examine in which way accounting standards affect management’s wealth. Three different hypotheses to test the effect of accounting choices on firm performance or firm specific variables are highlighted in the literature on positive accounting theories: The bonus plan hypothesis, the debt/equity hypothesis and the political cost/size hypothesis.

### 2.2.1 The bonus plan hypothesis;

This first hypothesis connects the central assumption of utility maximization of managers to the existence of bonus plans and the subsequent accounting methods chosen at a specific period in time. The central assumption of the bonus plan hypothesis is that managers of firms with bonus plans get strong incentives to use accounting methods that increase or maximizes current period reported income. Managers will choose an action that will meet their own needs and desires the best. The present value of bonuses can sometimes be increased when reported earnings are shifted from future periods to the current period (Watts and Zimmerman, 1990, 138). Bonus plans specifically reflect the empirical nature of the positive accounting theory because bonus plans were chosen as measures because they are observable phenomena (1990, 138). An empirical test by Healy (1985) showed that his results were consistent with managers manipulating net accruals to affect their bonuses.

Not in all cases will managers of firms with bonus plans shift reported earnings to current periods in order to increase the reported earnings. Managers can in addition have the intention to lower earnings in reported statements if the minimum required level for the bonus payments is likely to be not achievable. This is the case if earnings in the present year are below the payout level of bonuses. Managers will then be triggered to reduce the reported earnings because no bonuses will be paid anyhow. This tactic of reducing earnings is called ‘earnings bath’ and is known to increase future profits and bonuses as earnings are spread to upcoming years.

### 2.2.2 Debt / equity hypothesis;

A second structural characteristic of firms that is expected to be an indicator for the adopted accounting methods by that firm is the debt/equity ratio. The debt/equity hypothesis predicts the higher the firms debt/equity ratio the more likely managers use accounting methods that increase reported income in the current period (Watts and Zimmerman 1990, 139). When the value of the debt/equity ratio increases this implies that a firm will be stronger influenced by the constraints that debt covenants place on the free choices of managers. Covenant violations bring incurring costs and technical defaults. “Managers exercising discretion by choosing income increasing accounting methods, relax debt constraints and reduce the costs of technical default” (1990, 139). Bartov (1993) has tested the connection between income from assets and debt/equity ratios. Covenant requires borrowing firms to maintain some particular levels of the accounting-based debt/equity ratios. Debts in addition limit borrowing firms in the extent to which they can maintain financing and investing undertakings. The terms under which the covenants are set between the agreeing parties are costly to violate, and include accounting-based restrictions, defined in earnings. Bartov finds that managers try to minimize the violations of accounting-based covenant terms in debt agreements. They do consequently by manipulating the earnings.

### 2.2.3 Political cost hypothesis;

A third structural characteristic of firms that is expected to be an indicator for the adopted accounting methods by that firm is the increasing political visibility of firms relative to their size. Political costs can be imposed on firms or corporations because politicians have the power to impose wealth re-distributions by implementing corporate taxes, regulations, subsidies etc. When firms report increased earnings certain groups of voters have incentives to lobby for a societal more appropriate distribution of the accumulated resources, which in turn provides incentives to politicians to support those lobbies and ask for nationalizations, expropriations or break-up regulations of those firms (Watts and Zimmerman 1978, 115). This type of political costs is especially associated with ‘large profits’ and their association with monopoly power. It is the potential abuse of monopoly power that lies at the heart of Watts and Zimmerman’s notion of political costs. Following from this notion of political costs they then argue that managers of firms and corporations are given incentives by the political environment to select accounting procedures and to lobby with politicians and bureaucrats for accounting procedures which reduce the net income reported in financial statements. Deegan and Unerman (2006) add to this observation that managers under the pressure of political scrutiny will be motivated to adopt accounting methods that reduce reported income, and thereby reduce the possibility that people will argue that the organization is exploiting other parties.

In order to avoid political costs, a manager reducing reported income is the essence of the political costs hypothesis. However, this hypothesis is sometimes qualified in addition as the size hypothesis. It is then stated that large firms rather than small firms are more likely to use accounting choices that reduce reported profits. As large firms with large profits attract more political attention size seems to be a proxy for political attention. As individuals cannot be totally informed about the motives behind the level of accounting profits of all firms it is a normal reaction that they direct their attention to large firms. Firstly, individuals do not know whether the profits are driven by business activities or monopolistic behaviour. And secondly, individuals are hindered to contract with organizations to politically let pass laws and regulations that could provide welfare improvements. When seeking to explain the social disclosures Belkaoui and Karpik (1989) empirically investigated the political cost hypothesis. They indeed find that politically visible firms disclose more information. However, this is not immediate evidence for downgrading reported earnings as the political cost hypothesis predicts.

### 2.3 Stewardship theory

Based on the criticism against the agency theory that agents will not always base their motivations solely on utility maximization a new approach called stewardship theory appeared. Derived from psychology and sociology, this theory argues that it is the essential motivation of the executive manager to do a good job and to be a good steward of the corporate assets. This type of manager is far from being an opportunistic shirker. Under the right circumstances the manager will be motivated to achieve the good corporate performance which he aspires. Variations in performance of the managers arise from whether the structural situation in which the executive is located facilitates effective action by the executive. The organizational structure should offer possibilities to the manager to implement his plans for reaching high corporate performance. Under optimal circumstances this will lead to effectiveness and produces superior returns to shareholders (Donaldsen and Davies 1991, 51-52). The behaviour of managers who act according to the stewardship theory includes collective, pro-organizational behaviour that emphasizes goal convergence rather than self-interest. Due to rational reciprocity goal convergence between managers and owners will be developed based upon trust and collective goals (Kluvers and Tippett 2011, 278). Managers identify more with collective goals than with personal goals and see the success of the organization partly as their own success. “Agency theory assumes conflict between principal and agent, stewardship theory argues that conflict is not necessarily consequently” (2011, 278).

Donaldsen and Davies (1991) in an overview of empirical studies report that some mixed evidence is found with regard to the stewardship theory. In some cases explanations based on the stewardship theory performed much better to explain management behaviour than explanations based on the agency theory. More research has to be done in this area. Further investigation into stewardship theory has to be done to make clear that the premises in strategic management should not be restricted to the narrow confines of agency theory (1991, 60).

**2.4 Summary**This chapter first provided some background theories for a better understanding of earnings management. First accountancy itself was defined as the production of information about an enterprise and the transmission of that information from the people within the enterprise who have access to the information to those persons who need the information but do not have immediate access to it. Then, several theories describing in which way accountancy best can be studied were explained.

The agency theory is one of the oldest theories in accounting and focuses on the core relationship between actors inside and outside firms. Based upon the assumptions about the underlying ‘model of man’ the agency theory focuses explicitly on the relation between principals (the shareholders) and agents (the managers). As the theory predicts that managers will not act to maximize the returns to shareholders the theory tries to specify mechanisms that should reduce financial spoilage consequently of agency losses. However, this theory received criticism as being too much focused on individuals always pursuing their own self interests.

The positive accounting theory is an all containing theory that tries to make predictions which particular accounting methods a company will use on the basis of certain assumptions and empirical data. Starting with the assumption that all economic agents strive after utility maximization, the theory investigate for systematic factors that are predictors for certain types of accounting behaviour of managers. Three specific hypotheses in the theory are developed. The bonus plan hypothesis states that managers of firms with bonus plans get strong incentives to use accounting methods that increase or maximizes current period reported income. The debt/equity hypothesis states that the higher the firms’ debt/equity ratio the more likely managers’ use accounting methods that increase reported income. The political cost hypothesis predicts that the increasing political visibility of firms relative to their size determines the level of financial indicators that will be managed.

The stewardship theory argues that it is the essential motivation of the executive manager to do a good job and to be a good steward of the corporate assets. In this theory there is place for social behavior and identification with collective goals. The implications of the background theories for the understanding of the concept of earnings management will be commented in a later chapter after the concept of earnings management is further defined.

# 3 Implementation of IFRS

This chapter will investigate into the question what IFRS is and what purpose does it serve? International Financial Reporting Standards (IFRS) are accounting rules (‘standards’) issued by the International Accounting Standards Board (IASB). This is an independent organization based in London, UK. The purpose of these standards is that they would ideally apply equally to financial reporting by public companies all over the world (Ball 2006, 6). Besides harmonizing corporate accounting practices the standard are in addition supposed to answer the need for high quality standards to be adopted in the world’s major capital markets. The IFRS gathered major importance when the European parliament has issued in 2005 a regulation requiring all EU listed companies to prepare consolidated financial statements based on these standards (Tendeloo and Vanstraelen 2005). In 2008, already 113 countries around the world required IFRS reporting for all firms listed in their country.

### 3.1 Reasons for implementing IFRS

The main reasons for worldwide adoption of IFRS are reducing the costs of comparing alternative investments and increasing the quality of information (Ball 2006). Existing International accounting standards were mostly descriptive in nature and contained many alternative treatments. Those standards were flexible and caused a lack of comparability across countries. Heavy criticism befall on those standards after which the IASC started the comparability project in 1987 (Tendeloo and Vanstraelen 2005, 157). The major accountancy scandals in the late nineties and the early years of the new millennium intensified the call for more reliable international standards of reporting information.

It is in addition argued by proponents of the IFRS that a limitation of the accounting alternatives will increase the accounting quality and consequently decrease the occurrence of dubious accounting practices such as earnings management. The next paragraph provides a further overview of several reasons for implementing IFRS by summing up the supposed advantages of the system.

### 3.2 Advantages and disadvantages of IFRS

The advantages of the adoption of the international financial reporting system are considered to be the following:

* The improved comparability of the financial information should lead to more accurate, comprehensive and timely financial statements. Confusion arising from different measures of financial positions across countries will be eliminated which reduces the risks for companies. Companies entering the market with previously unintelligible financial reporting can now accurately be analyzed and offer opportunities for new investments (Tendeloo and Vanstraelen 2005).
* The introduction of the IFRS is expected to create an increase in the market efficiency. Reducing the number of differences in reporting standards across countries will reduce the costs for companies to process financial information. Especially institutions that create large standardized-format financial databases will be able to gain from this situation. Reducing the costs of processing financial information will in addition most likely increase the efficiency with which the stock market incorporates it in prices (Ball 2006, 11).
* Small investors will more easily get access to information which reduces the need for incorporating financial experts in order to make international investments. The improved financial reporting quality allows them to compete better with professionals and reduces risks of adverse selection (2006, 11).
* International investments will be encouraged which will in addition lead to more efficient allocation of savings worldwide (Tendeloo and Vanstraelen 2005).

Despite all the supposed advantages of the IFRS, critiques argue that adopting high quality standards might be a necessary condition for high quality information, but not necessarily a sufficient one (Ball et al. 2006). It can even be argued that the implementation of IFRS has a negative impact on the quality of information. Some disadvantages of the adoption of the IFRS are considered to be the following:

* Even sophisticated investors might be mislaid by believing that there is more uniformity in practice than actually is the case. Financial facts that are now reported in the same manner might still be based on an underlying difference in reporting quality. Simply reporting facts is not the same as reporting the right facts. Differences in reporting quality will be hidden under the rug of seemingly uniform standards (Ball 2006, 6).
* The supposed advantage of reducing information costs might turn into an disadvantage because uneven handling of the standards will exist and this could increase the information processing costs by burying accounting inconsistencies at a deeper and less transparent level than differences in standards did in the old situation (2006, 15).
* The ‘brand name’ of the IFRS runs the risk of deterioration. In the enthusiasm of the implementation of the system de IFRS brand name is currently riding high and perceived as a signal of quality. But because numerous companies with lower quality accounting practices in numerous countries will hide themselves behind these standards, this perception is expected not to last long (2006, 22).
* The IFRS are supposed to miss enforcement mechanism which makes it easy for firms to avoid parts of the standards disliked by firms. Without adequate enforcement “the rules remain requirements only on paper” (Hope 2003, 240).

There is some empirical evidence that the introduction of the IFRS had some positive effects. The market liquidity seemed to increase and a decrease in firms’ cost of capital was observed (Daske et al. 2008). However, those findings could be influenced by other factors. Ball (2006, 6) observes that a century ago there was a successful push for mandating uniformity in accounting at the national level. A century later there is an analogous push for mandating uniformity at the international level. However, in the meantime no substantial evidence or literature has emerged in favour – or against – uniformity in accounting standards. Whether international uniformity in accounting standards really is an improvement for international business is still a debatable question.

### 3.3 Similarities and differences between Dutch GAAP and IFRS

As the empirical part of this study focuses on the case of the Netherlands the differences between the IFRS and its predecessor the Dutch GAAP will shortly be commented. Before the introduction of IFRS, Dutch listed companies prepared their annual financial reports using the Dutch Generally Accepted Accounting Principles (Dutch GAAP). As the Dutch GAAP was supposed to be one of the accounting standards that already complied well with the IAS (international predecessor of OFRS), the step from Dutch GAAP to IFRS was smaller than in many other countries (Heller 2002, 170). The quality of the standard was already high. However, there are some important differences. Where Dutch GAAP is often just regarded as a set of recommendations, IFRS is much more in-depth and prescriptive. Business owners will feel more restricted in their actions (BDO Netherlands 2013). The most important change after the implementation of the IFRS was the valuation of assets and liabilities. IFRS prescribe the fair value method (actual market value) instead of the historical cost pricing which is prescribed in Dutch GAAP. The main advantage of the fair value principle is that accounts present the actual and relevant decision making amounts / information which improves the understandability, reliability and comparability of the accounts (PWC 2007). The main disadvantage is the subjective elements which are used in the fair value method, like the impairment test. Due to this subjectivity, companies can use this element in applying earnings management. Many more small technical differences on a detailed level exist between Dutch GAAP and IFRS.

### 3.4 Summary

In this chapter development of the IFRS and the purposes that it serves are described. It is argued that the main reasons for its implementation are the improved comparability, standardization and improvement of quality. Main advantages are further that the market is expected to be more efficient, small investors can more easily compare information and international investment will be encouraged. Supposed disadvantages are possible misleading numbers in the reported information, information costs may rise as there can be doubt about the transparency of reported numbers which requires further research, and the brand name runs the risk of deterioration. Finally it was set out that the main difference between Dutch GAAP and IFRS is the valuation method for assets and liabilities. The relation between the introduction of IFRS and levels of earnings management is further explained in subsequent chapters.

# 4 Earnings management

The previous chapter commented several background theories on accounting practices. Those theories showed some different interpretations of the underlying strategic considerations influencing the extent into which all the available information will be transmitted to shareholders and owners of companies by the management. In this chapter I turn to the concept of earnings management as a specific type of judgment by managers about the accounting information that will be reported to people who need it. By investigating into the concept of earnings management the sub question asking in which way the use of earnings management is defined, which types of earnings management exist and what the main incentives for engaging in earnings management are will be answered.

### 4.1 Defining Earnings Management

The most commonly used definition of earnings management is 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 number” (Healy and Wahlen 1999, 368). The financial reporting process will always be up to some subjective interpretation, as reporting methods and estimates always have to be chosen by the agent who reports. As managers have to estimate several future economic developments related to the firm such as expected lives and salvage values of long-term assets, pension benefit obligations for employers and other post-employment benefits, deferred taxes, and losses from bad debts and asset impairments, it is inevitable that managerial judgment will be used because the exact value of those account is not known at the current moment. In addition expenditures on activities such as research and development and advertising rely on decisions by managers for their financing (Healy 1985, 369). As managers have some discretion available it is possible for them to involve themselves in some purposeful intervention in the firms reporting process. Under normal circumstances the judgments allowed to them enables mangers to choose the reporting methods, estimates, and disclosures that match the firm best and thereby provide the most information for financial statement users (1999, 366). But when managers use their judgment in order to mislead stakeholders or to influence contractual outcomes this is earnings management. A central aspect of this definition is the purposeful intervention into the accounting process by the management of a firm. Whether this intervention only serves the collective interests of the firm or the collective interests of the management or whether this intervention mainly serves the private interests of managers is unspecified.

Other scholars took it a bit further by especially emphasizing the role of aiming at acquiring private advantage by managers. Schipper (1989) has defined earnings management as an involvement on purpose in the financial statements with the purpose of acquiring private advantage. Matis, Vladu, Negrea and Sucala (2010) define earnings management as a practice of managers utilizing their discretion over accounting accruals and financial reporting choices, probably to gain private profits. In contrast to this opinion Mohanram (2003) states that managers make sometimes decisions which do not serve any strategic motives but have only the purpose of changing the income statement. This can from his point of view in addition be seen as earnings management. It is up to debate whether earnings management always solely involves aiming at acquiring private advantage by managers.

Based at the extent into which misleading shareholders is a serious crime it is said that earnings management can be either within or outside the boundaries of the law and standards. “Earnings management within the law implies that the rules are not crossed, because the regulator allows for a certain degree of interpretation. Manipulation outside the law constitutes fraud and is illegal” (Stolowy and Breton 2004). Based on this should not be concluded that earnings management within the rules of the law does not harm any of the interests of shareholders or other person involved. The distortion of firm’s financial reporting masks the true performance and may mislead the users. Lower (higher) earnings management indicates higher (lower) quality of financial reporting (Cai et al. 2008, 6). However, as Dechow and Skinner (2000) note it is hard to distinguish clearly between the practice of earnings management and the legal practicing of accounting discretion. Consequently it is to a certain extent presumed and tolerated by stakeholders that managers will adopt some reporting measures that fit their own or the companies’ purposes well. Stein (1989) noted that stakeholders are prepared and to a small extent will tolerate the use of earnings management.

### 4.2 Types of earnings management

In the given definition earnings management is still broadly defined. Within this definition two different more specific types of earnings management can be distinguished. Lippens (2010, 83) distinguishes between accounting earnings management or *accruals-based earnings measurement,* and on the other hand specially designed transactions or *real earnings management.* Accruals-based earnings management is based on the exercising of judgment in the accounting process. However, earnings management does not need to refer exclusively to this way of manipulation of earnings. In addition the strategically structuring of transactions is a way to manipulate earnings. Trying to increase the sales of a company by offering large discounts or cutting expenses on research and design to increase earnings are some examples of strategically structuring transactions in order to manage reported earnings. Strategic components that are of real economic value to the firm are consequently sacrificed by managers in order to manage the earnings. As a possible explanation for this trend Graham (2005) states that after the implementation of stricter laws as a reaction to accounting scandals at Enron and other firms, agents within companies are afraid to use their discretion to manage earnings. Real earnings management arises as the only alternative. In a study at the effects of tightening accounting standards Ewert and Wagenhofer (2005) find that real earnings management strictly increases, which can be interpreted as real earnings management becoming a possible substitution for the more difficult and consequently more expensive accounting based earnings management.

Accruals-based earnings management is the more traditional type of earnings management which is investigated in most empirical studies about earnings management. Within accruals based earnings management another distinction can be made between earnings smoothing and managing towards small positive earnings (Barth et al. 2008). Earnings smoothing is defined as “an attempt on the part of the firm’s management to reduce abnormal variations in earnings to the extent allowed under sound accounting and management principles” (Beidleman, 1973, 653). This is recognized as earnings management if managers have the intention of hiding the firm’s true economic condition. Managing towards small positive earnings is another strategy to show a steady financial development without attracting attention which could be consistent with the political cost hypothesis. Large profits and losses are avoided in this strategy. There are three constructs to measure earnings smoothing: the variability of changes in earnings, the variability of changes in earnings relative to the variability of changes in cash flows and the negative correlation between accruals and cash flows (Christensen 2008, 11). Nevertheless, a high variability of earnings is consistent with less smoothing of earnings. But a high variance is according to some theorists and in addition an indicator for the use of earnings management. Consistent with managers applying their discretion to take *big baths* or of errors in accruals, both are associated with a low quality of accounting (Leuz et al., 2003).

### 4.3 Incentives for earnings management

There are supposed to be several structural factors that provide incentives, or at least opportunities, for engaging in earnings management. This paragraph will discuss those incentives. Healy and Wahlen (1998, 370) distinguish three main types of incentives for earnings management: (1) capital market expectations and valuation; (2) contracts written in terms of accounting numbers; and (3) antitrust or other government regulation. Tendeloo and Vanstraelen (2005, 158) in addition in addition signalled those three types of incentives. They in addition add the need for external financing and other specific circumstances to this list of structural incentives for earnings management.

### 4.3.1 Capital market incentives

Capital market expectations and valuation provide an incentive for earnings management for the reason that accounting information is widely used by investors and analysts to value assets. Consequently, an attempt is made to change the stock price in the short term in order to influence investors (Healy and Wahlen 1998, 371). Another capital market incentive is a possible sale or turnover of a firm or a Management Buy Out (MBO). In the period before such an event might happen managers will be likely to force up the firm’s earning in order to increase the value of the firm or to decrease their own buyout price (Jackson and Pitman 2001). In addition around the situation that the firms offered new equities to potential stakeholders earnings were overemphasized. The period of the Initial Public Offering (IPO) is highly sensitive to earnings management as managers want to screw up prices of equities at the moment that full information is not available to them. Firms have the intention of reporting higher income that results in increased accruals. This leads to the maximization of returns before equity offers are taking place (Teoh et al. 1998). In addition to understate incomes managerial judgement is used. In order to be attractive for investors on the market they use this to signal to outsiders that in the firm a potential exists for more growth in the future.

#### 4.3.2 Contracting incentives

According to Healy and Wahlen (1998) two contracting incentives to engage in earnings management have been recognized. The first reason focuses on the process in which earnings management for any particular cause lead to untruthful financial statements and has a consequence to the allocation of capital. Secondly, financial statements are besides informing managerial information to stakeholders in addition used to inform debt investors. Most contracting incentives fit within the first category. A bonus plan contract is an example of a contract influencing the allocation of capital. The possibility exists that management will use earnings management in order to increase the loss in the current year so that it can increase the earnings in the next year and consequently meet the bonus targets. Closely linked to ‘bumping up’ and minimizing the income is income smoothing. Healy (1985) has analysed the set-up of typical contracts with bonus terms, to examine the accounting incentives of managers. They hypothesize that accrual plans of managers and the income reporting incentives are driven by their bonus contracts. In addition, changes in accounting report processes have a link with the acceptance or reform of their bonus plan. Managers are keen to smooth their income to hold between the lowest and highest level of their bonus plan. Additionally, Mohanram (2003) adds that if contractual target earnings levels are not achieved then this could have a bad effect on the stock price, i.e. a downfall. Consequently this fear of missing the target creates a drive to ‘bump up’ the earnings. Managers can use earnings management to maximize bonuses or comply with the terms of liquidity and solvability in loan contracts (Healy 1985; Dechow and Sloan 1995).

#### 4.3.3 Regulatory or government incentives

Regulation motives have been found to occur in case firms are likely to stay off from anti-trust investigation or when firms do not want any political intervention. Goncharov and Zimmerman (2008) state that governments and markets use various mechanisms to reduce the use of earnings management Firms in addition are found to report earnings less gainful to lay claim to governmental subsidiaries. In a previous section it has already been sketched that firms are, not willing to increase their earnings, to circumvent political costs and not to attract political attention. Mohanram (2003) pointed on this issue and stated that a firm earns no significant benefit from passing the benchmark level way too much. Put it differently, firms can do well and create hopes for the future, but this in addition makes it difficult to achieve future goals to realize better performance. Earnings management of this kind is called ‘cookie-jar’ accounting. Namely, by lowering the present period income, firms move up the excess money to the future.

### 4.4 Background theories and Earnings Management

After this broad discussion of the concept of earnings management the question rises in which way studying this concept fits within the background theories for accounting presented in the second chapter. It can be stated that studying earnings management totally fits within the approach of the ‘positive accounting theory’. In earnings management individuals can be assumed to act according to their own self-interests. The final objective of studying earnings management will in addition be to predict the relative magnitudes of earnings management and to explain which factors influence earnings management. This totally fits within the empirical approach of the positive accounting theory. Some of the incentives for earnings management commented in this chapter resemble the hypothesis for explaining certain accountancy decisions commented in paragraph 2.1. The contracting motives of Healy and Wahlen (1998) are similar to the bonus plan and debt to equity hypotheses of Watts and Zimmerman (1986). Besides that, the regulatory or government incentives for earnings management are comparable to the political cost hypothesis of Watts and Zimmerman (1986). The whole study of earnings management consequently seems a continuation of the positive accounting theory focusing on a more narrowly defined concept, namely earnings management. Earnings management in addition seems to fit partly within the agency theory as many explanations for earnings management deal with the relation between agents and principals. However, not all the reasons for earnings management can be explained from the agent-principal relation. And the assumption that agents always act in order to maximize their own utility is not necessarily assumed while studying earnings management. Managers might in addition base their decisions on the interests of the company or on the interests of the staff of the company and engage in earnings management based on those interests. In short, studying earnings management can be seen as a continuation of the positive accounting theory but it specifies its own object of study.

### 4.5 Summary

This chapter further introduced the concept of earnings management by answering the sub question in which way the use of earnings management is defined, which types of earnings management exist and what the main incentives for engaging in earnings management are? Following the commonly used definition by Healy and Wahlen (1999, 368) earnings management was defined in this chapter as a process in which 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. Some scholars hold that the private interests of managers are involved while others in addition allow other interests such as the interests of the company on the base of earnings management. Earnings management can in addition both happen within the limits of the law as well as being against the law when it is considered fraud. Within the concept of earnings management a distinction is made between real earnings management and accruals-based earnings management with this study focusing mainly on the last, more prominent, type of earnings management.

Several incentives for earnings management are distinguished that resemble with the hypothesis for certain types of accounting that were signalled in the chapter on the positive accounting theory. Capital market incentives, contracting incentives and regulatory incentives were distinguished as structural incentives for engaging in earnings management. Earnings management is then titled as a continuation of the positive accounting theory with a specific focus on earnings management.

# 5 Measuring earnings management

This chapter discusses the questions in which way the use of earnings management can best be measured and in which way models to detect the use of earnings management have evolved over time? It is first described in which way earnings management can be conceptualized as managing accruals; more specifically the management of discretionary accruals. Then several models to detect the use of earnings management will be introduced. Next, the distinction between the cross-sectional model and a time-series model will be commented. Finally, it will be argued which model serves best the purpose of the current study.

### 5.1 Accruals

In the previous chapter a distinction between *accruals-based earnings management* and *the use of real earnings management* was introduced*.* As this study mainly investigates the first type of earnings management it should be made clear what is meant by earnings management based on accruals. The total reported earnings of a firm include cash flows as well as changes in firm value that are not reflected in current cash flows. This part of total earnings that is not reflected in current cash flows is the accrual part of total earnings. “The accruals components of income capture the wedge between firms’ cash flows and income” (Bergstresser and Philippon 2006, 514).

Accruals themselves can be defined as accounts on a balance sheet consisting of liabilities and non-cash-based assets. Those accounts are used in accrual-based accounting (Kimmel et al. 2013). Accrual based accounting has to do with the time period between delivery of a certain service and the moment of payment. Before the use of accruals only cash transactions were recorded on accounting statements. But other important business activities, such as revenue based on credit and future liabilities, were neglected in these cash transaction based reports. Over small time horizons realized cash flows do not include valuable information since timing and matching problems occur (Dechow et al. 1995). The board of the Generally Accepted Accounting Principles (GAAP) has come with a significant solution to deal with these timing and matching issues. This principle - in addition defined as the revenue recognition principle - deals with the timing effect of earnings realization. The recognition of accruals on the balance sheet makes it possible to report earnings as revenues in its current income statement immediately after delivery of a product even though the payment in cash by the customer will only take place during the following accounting period. The proceeds are then an accrued income (asset) on the balance sheet for the delivery fiscal term, but not for the term that payment was received. It is important to add accruals to the balance sheet and to the reported information because they give more information about the future value of a firm than cash flows. Investments that cause a certain cash outflow can then be compensated on the balance by expected compensations consequently of the investment. Accrual accounting attempts to match the initial cash outflow against the future inflows from the investment (Bergstresser and Philippon 2006, 514). All balance sheet items other than cash can be seen as accruals; among which, accounts payable, goodwill, accounts receivable deferred tax liability and future interest expense (Ball and Shivakumar 2005).

While cash flows are relatively easy to measure, computing the change in accruals often involves a great deal of discretion. This offers opportunities to manage earnings. The use of accruals to temporarily boost or reduce reported income is consequently an important mechanism for earnings management. Accruals are components of earnings that are not reflected in current cash flows, and a great deal of managerial discretion goes into their construction (Bergstresser and Philippon 2006, 512). The existence of accruals gives managers the chance to modify or hide financial figures to exercise discretion with respect to the financial statements. By assuming higher or lower rates of depreciation of accruals the management can influence whether reported earnings will be reduced or increased. Another method of manipulating earnings is to take expenses that are not reasonably expected to generate future cash flows and label them as investment expenditures (2006, 514).

Accruals are consequently expected to be more subject to distortion as a measure of performance of a firm than cash flow from operations. Bernstein (1993, 461) states that: “this is so because the accrual system, which produces the income number, relies on accruals, deferrals, allocations and valuations, all of which involve higher degrees of subjectivity than what enters the determination of cash flow from operations”. Some analysts consequently look at the ratio between net income and cash flow as an indication of the quality of the income. Some firms might be suspect of managing earnings when those firms have high levels of net earnings and a low cash flows (1993, 461). Research consequently shows that “firms with relatively high (low) levels of accruals experience negative (positive) future abnormal stock returns that are concentrated around future earnings announcements” (Sloan 1996, 290). Consequently of this important role of using accruals to manage earnings many studies started to use a certain type of accruals as a proxy for earnings management (Healy and Wahlen 1999, 372). However, a further distinction that explains which specific accruals are used for earnings management has to be introduced first.

### 5.2 Discretionary and nondiscretionary accruals

Mohanram (2003) finds the view that total accruals can serve as proxy for earnings management naïve. He argues that firms can produce high earnings caused by sales growth (rise in the receivables) and growth of property plant and equipment (leading to increase in depreciation). Several other authors in addition argue that it is not total accruals which should serve as a proxy for earnings management but solely discretionary accruals. To reveal earnings management it is essential to distinguish between non-discretionary and discretionary (“abnormal”) accruals. Whereas discretionary accruals are used to manage earnings, non-discretionary accruals are commonly resulting from business operations and the accrual-based accounting in general (Bocking et al. 2005). They support the vision of Dechow and Dichev (2002) that there are factors which have an impact on the non-discretionary accruals quality. These are summarized by the firm’s size, standard deviation of cash flow from operations, standard deviation of sales income, and the time span of operating cycle and the occurrence of negative earnings realizations. The non-discretionary accruals are in addition called the economic accruals; on which the board and management of a firm have almost no control. These accruals come about through accruals sales, expected sales growth and current operating performance. The discretionary accruals are then the set of accounting decisions with regard to accruals selected by managers.

Total accruals exist of the sum of the non-discretionary accruals and the discretionary accruals. As a measure of accruals-based earnings management the magnitude of discretionary accruals should be considered (Lippens 2010, 88). It follows from prior earnings management studies that high discretionary accruals indicate earnings manipulations (Bartov et al. 2000, 5). However, as discretionary accruals will be partly hidden, only total accruals and non-discretionary accruals can be observed. This implies that discretionary accruals have to be estimated by subtracting the non-discretionary accruals from the total accruals. Several models to estimate the amount of discretionary accruals have been developed for this purpose (Lippens 2010, 88). These models will be commented in the next paragraphs.

### 5.3 Models to detect the use of earnings management

I have now described the measurement of earnings management as an estimation of the magnitude of discretionary accruals. Despite there being other approaches to estimate levels of earnings management, the accrual based approach seems to be the most dominant and most reliable approach described in the accountancy literature yet. Consequently, this thesis focusses on the accrual based approach of measuring earnings management. In the next paragraphs some models for estimating discretionary accruals will be presented as they have evolved over the last decades. This is done to provide further insight into the underlying concepts and variables on which the estimation of the discretionary accruals is based. The specific models chosen show in which way the calculation of discretionary accruals has been improved in subsequent models and in order to estimate discretionary accruals will help to determine which empirical model can best be adopted in this thesis. The presented models all focus on estimating the magnitude of accruals.

As stated in the previous section total accounting earnings are decomposed into cash flows from operations (Ct), non-discretionary accruals (NDAt) and discretionary accruals (DAt). Discretionary accruals are considered to be a proxy for earnings management. As the discretionary accruals cannot be directly observed they have to be estimated from the values of the total accruals and the non-discretionary accruals. Most of the empirical models to estimate earnings management try to identify the discretionary part of the accruals by determining the non-discretionary accruals, given the formula for discretionary accruals;





The first step in the computation of the discretionary accruals, and consequently earnings management, is to compute the total accruals. Total accruals cannot be directly investigated from the balance sheets of firms as it is not a balance sheet item in itself. Total accruals can be computed as the sum of several balance sheet items. Dechow et al (1995), Healy (1985) and Jones (1991) all use almost the same formula for calculating total accruals. The computation of the total accruals is well defined as:

|  |  |
| --- | --- |
| Where, | Eq. 1 |
|  | firm’s total accruals in year *;* |
|   | firm ’s change in current assets in year ; |
|  | firm ’s change in current liabilities in year ; |
|  | firm ’s change in cash in year ; |
|  | firm ’s change in short-term debt in year ; |
|  | firm ’s depreciation and amortization expense in year . |

The variables in this equitation are constructed using information from the balance sheet and income statement, as is common in the earnings management literature (Dechow et al, 1995). Two specific types of balance sheet items are excluded from this formula. Debt in current liabilities is not taken to be an accrual because it relates to financing transactions as opposed to operating transactions. In addition income taxes that have to be paid are not seen as an accrual for reasons of consistency with the definition of earnings employed in most empirical tests (Sloan 1996).

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### 5.4 The Healy model

The first serious attempt to measure earnings management is made by Healy (1985). He tries to estimate earnings management by estimating deviations from normal levels of accruals. In his model he does not actually test whether earnings management actually exist during the entire period under investigation; Healy assumes that earnings management occurs during the whole time interval under investigation. However, during some periods earnings will be managed upwards and during other periods earnings will be managed downwards. Systematic earnings management happens during both of these periods. Further, the model assumes that accruals are a constant fraction of lagged assets. Any deviation from the average value of total accruals is seen as earnings management. The positively and negatively managed earnings balance each other out in the mean score of normal levels of accruals (Dechow et al 1995, 197; Van Praag 2001, 56).

The procedure to measure earnings management in the Healy model starts from the common statement that the difference between the total accruals and the non-discretionary accruals leaves the discretionary accruals. Healy (1985) defined the total accruals in a year by the following formula that slightly deviates from the previously signalled formula for total accruals:





The Healy Model uses the mean of total accruals scaled by lagged total assets from the estimation period as the measure of non-discretionary accruals (Dechow et al. 1995, 197). It is then stated that the next formula for estimating the nondiscretionary accruals can be derived:





### 5.5 DeAngelo model

The DeAngelo (1986) model is just a special case of the Healy Model, in which the estimation period for nondiscretionary accrual is restricted to the previous year’s observation and not, as in the Healy Model to the average of the years in the estimation period (Dechow et al. 1995, 198). Both models use total accruals from the estimation period to proxy for non-discretionary accruals. In addition both models assume that nondiscretionary accruals are constant over time and discretionary accruals have a mean of zero in the estimation period. The supposed difference between the models has to do with the nature of the time-series process generating non-discretionary accruals. The DeAngelo model is supposed to be a better model when non-discretionary accruals follow a random walk instead of following a white noise process around a constant mean, as is the case in the Healy model. The DeAngelo (1986) Model uses the last period’s total accruals (TAt - 1) scaled by lagged total assets (At-2) as the measure of non-discretionary accruals. The discretionary portion of accruals is the difference between total accruals in the event year t scaled by At-1 and NDAt (Bartov et al. 2000). Consequently, the model for non-discretionary accruals (NDAt) is:





Both the Healy Model as the DeAngelo model only measure non-discretionary accruals without error if the assumptions hold that non-discretionary accruals are constant over time and discretionary accruals have a mean of zero in the estimation period. This can both lead to considerable errors in measurement if these assumptions do not hold (Böcking et al. 2012, 14). It was often argued that it is unlikely that the argument that non-discretionary accruals are constant over time is empirically sound. Kaplan (1985) argues that the level of non-discretionary accruals should change in response to changing economic circumstances. Jones (1991) will work this criticism further out and develops a new model. Another point of criticism besides the simplified assumptions is the disregard of company-specific circumstances like company size, cash flows or growth (Böcking et al. 2012, 14).

### 5.6 Jones-model

Based on the criticism upon the static assumptions of the early models to measure earnings management, a number of studies started to develop regression-based models which encompass the variability of accruals over time. Jones (1991) designed a model that has become the basis for one of the most influential models in the earnings management literature. The Jones-Model incorporates the influence of gross property, plant, equipment and the change in revenues on the magnitude of non-discretionary accruals. Doing consequently, it allows variation of the amount of non-discretionary accruals in the model. The non-discretionary accruals are determined through a regression using the time-series model (Böcking et al 2012, 14). As reported in Dechow et al. (1995, 198) the Jones model for non-discretionary accruals in the event year is:





The following formula is used in the estimation period in order to generate the firm-specific parameters:





In this last equation vt is the residual, which represents the firm-specific discretionary portion of total accruals. This model was supposed to be successful at explaining around one quarter of the variance in total accruals (Dechow et al. 1995, 199). However, it is assumed by the Jones model that revenues are non-discretionary. But managements have always the opportunities to manage some accruals discretionary. “If earnings are managed through discretionary revenues then the Jones model will not accurately reflect parts of the managed earnings through the discretionary accruals proxy” (1995, 199). There is a tendency in the Jones model that discretionary accruals are not accurately measured when discretion is exercised over revenues recognition (Bartov et al. 2000, 9). To overcome this limitation the first Jones’s model was developed further into the modified Jones model.

### 5.7 Modified Jones model

Dechow, Sloan and Sweeney (1995, 199) developed the modified Jones model in order to overcome the assumptions that all revenues are nondiscretionary. They clarify that when managers want to adjust their revenue, it is easier to manage the credit sales instead of the cash sales. Consequently, it is assumed by the Modified Jones Model that all variations in the variable credit sales are attributable to earnings management. The change in receivables is as an independent variable added in the regression. To compute this variable the change in borrowers () is subtracted from the change in revenues . “The rationale for this is the expectation that an increase in revenues triggered by earnings management in addition increases the amount of receivables outstanding” (Bocking 2012, 14). First, total accruals will be measured using the familiar formula. Then, nondiscretionary accruals are measured during the event period as:





Remember that the dependent variable and the second and third independent variables in the equation are in addition scaled by total assets at t-1. The estimates of α1, α2, α3 and nondiscretionary accruals during the estimation period are those obtained from the original Jones model. The only adjustment relative to the original Jones Model is that the variable change in revenues is adjusted for the change in receivables in the event year (Dechow et al. 1995, 199). Another way to note the whole process of the modified Jones model is given by the following three subsequent formulas. The model parameters are predicted by:

|  |  |
| --- | --- |
|  | Eq. 2 |

Where,

|  |  |
| --- | --- |
|  | firm ’s total accruals in year ; |
|  | firm ’s total assets in year ; |
|  | firm ’s change of the revenues in year ; |
|  | firm ’s change of the receivables in year ; |
|  | firm ’s properties, plants and equipment in year ; |
|  | firm ’s error term in year . |

 is computed by the parameter estimations of the Modified Jones Model in :

|  |  |
| --- | --- |
|  |  Eq. 3 |

are the coefficient estimates of  in .

The discretionary accruals are then designed by the formulation:

|  |  |
| --- | --- |
|  | Eq. 4 |

### 5.8 Cross sectional and time series analysis

The Jones Model and the Modified Jones Model were originally developed as time-series models. Time-series require that the data is firm specific over all the years of measurement in the whole measurement period of the model. Consequently, data from all the years of the measurement period has to be available of every firm included in the sample. This approach is said to possibly reduce the sample size and can be subject to survivorship bias (Bartov et al. 2000, 6). Recently in addition the Cross-Sectional Jones Model and the Cross-Sectional Modified Jones Model were used. Those cross sectional models only used data that were industry and year specific rather than firm specific. For every year an equal sample of firms from a specific industry can be used to obtain data from that year. Using the cross-sectional model brings forth that a larger sample size can be used in the analysis. A larger sample size improves both the efficiency and reliability of the findings (Lippens 2010, 89). Bartov et al. (2000, 6) claim that the Cross-Sectional Jones Model and the Cross-Sectional Modified Jones Model perform better than their time-series counterparts in detecting earnings management. As it is easier to increase the sample size using cross sectional data this finding is particularly important when data sources are small.

However, the cross sectional model in addition received criticism. In the case that the researchers focuses on the effect of the introduction of a certain measure on earnings management of the same group of firms before and after the event the time-series design will be more appropriate. , The possible difference in results might be biased when the sample of the two periods is not the same. McNichols (2000, 324) signalled that the cross sectional model “may well overstate the magnitude of non-discretionary accruals and understate the magnitude of discretionary accruals, because industry-level controls include the average level of discretion exercised by the industry."

### 5.9 Explanatory power of the models

Several studies tested differences between, or at least stated preferences for one of the models to measure discretionary accruals and consequently earnings management. Most articles argue in favour of the Modified Jones Model. Dechow et al. (1995) conclude that they cannot provide evidence that one particular model would be clearly preferable. Instead, they conclude that the most fitting model would be either the modified Jones-Model. Bartov et al. (2000, 1) state that the Modified Jones Model provides the most powerful test of earnings management. Stolowy (2004) confirmed this by stating that the Modified-Jones-model has the most explanatory power. Guay et al. (1996, 104) say that they cannot distinguish the Healy and the De Angelo model from a model that randomly splits accruals into discretionary and non-discretionary accruals. They conclude that only the Jones model and the Modified Jones model appear to have the potential to provide reliable estimates of discretionary accruals.

### 5.10 Summary

This chapter started with an explanation of the concept of accruals on which accruals-based earnings management is based. Accruals are accounts on a balance sheet that represent liabilities and non-cash-based assets. Accrual based accounting exists when there is a difference between the moment that a certain service is delivered and the moment of payment. As computing the change in accruals often involves great deals of discretion, managers have the opportunities to influence the accruals and thereby engage themselves in earnings management. Especially discretionary accruals are subject to influence practices by managers. Discretionary accruals are distinguished from non-discretionary accruals which are commonly resulting from business operations and the accrual-based accounting in general. The discretionary accruals are then the set of accounting decisions with regard to accruals selected by managers

As discretionary accruals serve as a proxy for earnings management it is this concept that several models want to estimate in order to detect the use of earnings management. Discretionary accruals can be estimated by subtracting the non-discretionary accruals from the total accruals. The values for total accruals and non-discretionary accruals can be estimated on the basis of existing data on the financial parameters of the firms. The Healy model and the DeAngelo model estimate non-discretionary accrualsby estimating deviations from normal levels of accruals. However, those models are not considered to be accurate anymore as they assume that non-discretionary accruals are constant over time. The more recently developed Jones model overcame this problem by incorporating the influence of gross property, plant, equipment and the change in revenues on the magnitude of non-discretionary accruals. The Modified Jones Model further added the change in receivables to the equation. A cross sectional and a time series variant exist of the last two models. Both variants have advantages and disadvantages. The explanatory power of the Modified Jones Model is supposed to be most reliable according to some comparative studies on the performance of the different models.

# 6 Prior research

In this study the influence of the introduction of IFRS on earnings management among Dutch firms listed at the AEX and AMX index will be studied. However, this will not be the first study that looks at the effect of the introduction of IFRS on levels of earnings management. This chapter provides an overview of prior empirical research investigating the effect of introducing IFRS on levels of earnings management. Doing consequently will provide a further context wherein which the own results of this study can be placed. Many extensive studies at the magnitude of the use of earnings management and the methods to estimate the use of earnings management exist. However, as the central research question focuses on the effect of adopting IFRS on the use of earnings management this literature overview focuses explicitly on other studies who investigated this relationship. The objective of this literature review was to describe the objectives, sample, methods and findings of articles which are most similar to this study in terms of the object of study, period of study and methodology. Based on these specific studies the results of the empirical analysis of this thesis are comparable with previous findings.

The first criteria for articles to use in this review were that they especially focused on the mandatory introduction of IFRS in 2005 as in addition is in this thesis. However, only a limited number of articles reported findings regarding the mandatory introduction of IFRS in 2005. All these articles are included in the review. Those articles are supplemented by a couple of articles based on the effect of voluntary early adoption of IFRS on earnings management. Because they used a comparable methodology as this thesis intent or because they focused on a single case (mostly Germany) which is comparable with this study which solely focuses on the Dutch case, those articles were selected. The articles presented in this overview were not primarily selected on the basis of their findings. Nevertheless it is decided to represent four articles reporting decreasing levels of earnings management after IFRS adoption in the overview and four articles that report increasing levels of earnings management. This will reflect well that the findings in earnings management research are mixed up to this moment. In the first part of this chapter studies reporting a decreasing level of earnings management after the introduction of IFRS will be commented. The second part discusses studies that report an increasing level of earnings management after the introduction of IFRS.

### 6.1 Decrease in earnings management

The central assumption behind the introduction of IFRS is that it improves the quality of the reported information and that it will require that firms provide more information in their reports. People in favour of IFRS consequently assume that earnings management will decrease after the introduction of IFRS.

**6.1.1 Barth, Landsman and Lang**

Barth, Landsman and Lang (2006; 2008) looked at an international sample of firms from 21 countries that voluntarily adopted IFRS (or its predecessor IAS) from 1994 up to 2003. The total sample comprises 1,896 ﬁrm-year observations for 327 ﬁrms. They especially looked at the effects on earnings smoothing and managing towards positive earnings. They hypothesized that adoption of IAS limits management’s discretion to report earnings that are less reflective of the firm’s economic performance (2008, 475). In order to test their main hypothesis they compared metrics for ﬁrms applying IAS and ﬁrms applying non-U.S. domestic standards. Matching procedures were used to select a sample of firms that did not adopt IAS. The metric for measuring earnings variability is the variance of the residuals from the regression of change in net income on variables identiﬁed in prior research as controls for these factors. Among those control variables are the size of the firm, growth, percentage of change in total liabilities, the auditor of the firm and many others. The study finds that applying IFRS generally provide higher quality in accounting, i.e. less earnings management, more timely loss recognition and more value relevance of accounting amounts than a matched sample of non-U.S.-firms that do not apply IFRS. However, the authors note that they cannot be sure that their ﬁndings are attributable to the change in the ﬁnancial reporting system rather than to changes in ﬁrms’ incentives and the economic Environment.

**6.1.2 Gassen and Sellhorn**

Gassen and Sellhorn (2006) studied what the determinants were of voluntary IFRS adoption by publicly traded German firms during the period 1998-2004. Various sources to obtain time-series information on the accounting standards followed by German public firms were used. Their final sample consist of 1176 firm year observations of firms reporting under German GAAP and 630 firm year observations of firms that voluntarily adopted IFRS. In the first part of the research they conclude on the basis of descriptive statistics that size, international exposure, dispersion of ownership, and recent IPOs are important drivers of voluntarily adopting IFRS.

In the second part of the analysis the two samples are compared in order to test whether the change to IFRS altered the quality of the financial reporting information. In this second step the researchers constructed propensity score-matched samples of IFRS and German-GAAP (HGB) firms. This is done to address the problem of self-selection bias. As the firms who voluntarily adopted IFRS selected these reporting standards by themselves it can be expected that those firms differ from firms who did not adopt IFRS. The propensity score-matched samples controls for this problem by matching firms consequently that we can expect the matched firms to differ only in terms of the accounting standards followed and of the effects of this difference . Based on the new matched samples from these procedures they then perform the Dechow/Dichev (2002) measure of accrual quality which helps them to report “significant differences in terms of earnings quality: IFRS firms have more persistent, less predictable and more conditionally conservative earnings” (2006, 1). These are pooled results as the time series and samples are too small to estimate firm-specific or industry specific models.

**6.1.3 Cai, Courtenay and Rahman**

Cai, Courtenay and Rahman (2008) studied the effects of the introduction of IFRS and its enforcement on earnings management in financial reporting using over 100,000 firm-year observations from 2000 to 2006 across 32 countries. With mandatory IFRS adoption becoming a fairly common phenomenon, it is now possible to conduct comparative empirical tests on in which way enforcement plays a crucial role towards the effective implementation of IFRS. This study is consequently internationally oriented including firms from a broad range of countries. Their sample included firms who voluntarily adopted IFRS adoption as well as firms who had to adopt IFRS mandatorily. The authors follow the formula developed by Dechow et al. (1995) to measure accounting accruals and magnitude of accruals. Based on an examination by using a modified measure of enforcement developed by Hope (2003) the country specific level of enforcement of IFRS is calculated. Financial market development, ownership structure, capital structure and tax systems are included as independent control variables. The results of a final regression analyses indicate that earnings management in IFRS adoption countries has been decreasing in recent years. Both voluntary and mandatory adoption of IFRS can reduce earnings management (2008, 19). However, those findings are intertwined with the fact that countries with stronger enforcement mechanisms have generally less earnings management. IFRS adoption and its enforcement explain a substantial portion of the variation in earnings management. Strong enforcement is an effective factor for reducing earnings management. Those findings are robust after controlling for country specific variables such as a country’s financial market development, ownership structure, capital structure, and tax system. The study consequently shows that cross-country differences in accounting quality are likely to remain after IFRS adoption until all institutional differences are removed. It is suggested that future improvement of accounting quality should focus on the enforceability of IFRS (2008, 19). This seems to be in contradiction with the observation made by previous studies that voluntary adoption of IFRS in addition decreases earnings management.

**6.1.4 Christensen, Lee and Walker (2009)**

In another study Christensen et al. (2009) provide evidence from the U.K.. The U.K. is an interesting case as IFRS adoption became mandatory for all U.K. firms at the same moment. There were almost no voluntary adopters consequently there is no self-selection bias (2009, 1168). The technical changes involved in the transition to IFRS from U.K. GAAP may affect the distribution of wealth between managers and shareholders. The primary topic studied here is the effect of IFRS on covenant violation. Using a sample of 137 British firms observed between January and October 2005 market reactions on the adoption of IFRS are studied. Doing consequently, a different methodology is adopted than in the common earnings management studies. Christensen et al. link earnings reconciliations to market reactions. They test the hypothesis that “the news content in IFRS earnings reconciliations is positively associated with the change in shareholder wealth on the announcement day” (2005, 1170). Using a normal OLS regression model to test the effects of IFRS reconciliations and contracting cost variables on market reactions they find that market reactions are greatest among those firms for whom covenant violations are expected to be most costly. This finding is supposed to support the assumption that both IFRS reconciliations change shareholder’s wealth and that the information content of these reconciliations is at least partly unanticipated by investors before the announcement (1177). The transitions from U.K. GAAP to IFRS alter the likelihood of technical covenant violation. Firms expect higher costs of contract violations. Consequently through contract violations the introduction of IFRS will in addition have an indirect negative effect upon the use of earnings management (1196).

### 6.2 No decrease in earnings management

In this paragraph four studies reporting an increasing level of earnings management after the introduction of IFRS are reported.

### 6.2.1 Tendeloo and Vanstraelen

Tendeloo and Vanstraelen (2005) address the question whether voluntary adoption of International Financial Reporting Standards (IFRS) is associated with lower earnings management in Germany. They in addition compare differences in the use of earnings management under German GAAP and IFRS. Their data contains 636 firm-year observations relating to the period 1999-2001. Financial institutions and utility companies were excluded from entering the sample. Using the cross-sectional Jones model (Jones, 1991) to estimate discretionary accruals the results suggest that IFRS-adopters do not present different earnings management behaviour compared to companies reporting under German GAAP. Voluntary adopters of IFRS in Germany cannot be associated with lower levels of earnings management. It is even claimed that without the possibility of using hidden reserves to manage earnings, IFRS-adopters turn more to discretionary accruals to manage their earnings. Only when a firm is under the supervision of one of the big 4 auditors in Germany, earnings smoothing is significantly reduced (2005, 177; Lippens 2010, 84). The authors than claim that their findings contribute to the current debate on whether high quality standards are sufficient and effective measures to prevent earnings management in countries with weak investor protection rights such as Germany. They suggest that high quality standards are necessary but not sufficient measures. However, their study does not offer a comparative perspective with other countries. Possibly the German earning management levels were comparable to other countries already quite high under German GAAP. This would leave little room for improvement under the introduction of IFRS. As an implementation period of IFRS probably causes a short period of being unaccustomed with the new rules, it is probably not strange that earnings management even increases during the transition period towards IFRS. Potentially a longer time interval should be studied.

### 6.2.2 Christensen, Lee and Walker (2008)

Christensen, Lee and Walker (2008) in addition turned their attention to the German case. Their objective is in addition to test the effect of the introduction of IFRS on the use of earnings management. But besides based at firms voluntarily adopting IFRS before 2005 they in addition looked at firms that were forced to comply with IFRS as of 2005. This makes the German setting unique. They consider firms only complying at the moment IFRS became obligatory to be firms that perceive no benefits of doing consequently (2008, 1). As they state that German accounting regulation is generally perceived as lower quality than IFRS given its code-law origin and insider orientation (see Leuz and Wüstemann 2004), it can be expected that accounting quality will increase under IFRS and earnings management will decrease.

Data was obtained from Datastream and all firms domiciled in Germany could potentially be included in the sample. After several selection criteria were applied to the data the final sample consist of 177 firms that did not adopt IFRS until 2005, and 133 firms that adopted IFRS voluntary before 2005. The total period under investigation runs from 1998 to 2005. The most important indicator for measuring earnings management in this study is earnings smoothing. Three constructs are used as a proxy for earnings smoothing: the variability of changes in earnings, the variability of changes in earnings relative to the variability of changes in cash flows and the negative correlation between accruals and cash flows. Adopting the regression method in addition used by Barth et al. (2008) which estimates the effects of independent variables and control variables on change in net income of the firms (as reported in Christensen et al. 2008), the study reports some mixed findings. Consistent with prior literature and with the assumed effect of the introduction of IFRS Christensen et al. find that voluntary adoption of IFRS is associated with decreased earnings management and more timely loss recognition. “In stark contrast, we find no evidence of such accounting quality improvements for firms that are forced to adopt IFRS” (2008, 2). It is supposed that flexibility embedded in IFRS gives firms that do not want to comply with it possibilities to avoid the supposed restrictions of earnings management. It is claimed that among firms under the same institutional setting, incentives dominate accounting standards in determining accounting quality (2008, 3). Accounting standards should be coupled to an enforcement system.

### 6.2.3 Paananen and Lin

However, Paananen and Lin (2008) compare the quality of accounting numbers under International Accounting Standards (IAS) during 2000-2002 with those under International Financial Reporting Standards (IFRS) during 2003-2006. The distinction between voluntary and mandatory adoption is in addition brought within the research design. They conduct a case study of German companies reporting under IFRS and find a decrease in accounting quality after the mandatory EU-adoption in 2005. They show that this decrease is driven by the change of the IFRS-standards over time. Their analysis is based on a comparison of 107 German firms reporting in three different time periods. They studied firms reporting under IAS during 2000-2002, voluntarily reporting under IFRS during 2003-2004 and mandatory reporting under IFRS during 2005-2006. The study is limited to the German case in order to hold institutional factors that may confound the results constant. This strengthens the reliability of the results.

Using the variability of the change in net income scaled by total assets method developed by Barth et al. (2008), this study consequently reports that accounting quality has not improved but worsened over time. The main cause of this development is believed to be driven by changes of the standard of IFRS and not by new adopters. “Contrary to the intention with the adoption of the European adoption of IFRS, this makes it harder for investors to base their decisions on the IFRS financial reporting” (2008, 1). The comparison between the voluntary adopters in the period 2003-2004 and mandatory adopters in the period 2005-2006 showed only weak that the decrease in quality was caused by the mandatory adopters.

### 6.2.4 Lippens

Lippens (2010) investigated whether the mandatory adoption of IFRS from 1 January 2005 by all listed companies in the European Union led to significantly lower levels of earnings management. Based on a sample of listed firms from Belgium, Denmark, Finland, Italy, Sweden and The Netherlands he compares the pre-IFRS period from 2000-2004 with the post-IFRS period extending from 2005 through 2006. A total number of almost 1200 firm year observations are used in the analyses. Besides to investigate the use of accrual based management in this thesis in addition the use of real earnings management was investigated. It is hypothesized that accruals-based earnings management decreases and real earnings management increases as a consequence of the adoption of IFRS. Lippens assumes that there will be a substitution effect between both manifestations of earnings management as managements will turn to other ways of managing accruals as a consequence of stricter standards. Using different methodologies among which the Modified Jones Model, the results indicate that both accrual-based earnings management as well as real earnings management have strictly increased after the adoption of IFRS (2010, 97). Some additional tests showed that there indeed is a substitution effect between the two types of earnings management despite the growing rate of both types. IFRS is concluded not to be successful in restricting earnings management.

### 6.3 Suggestions and support for a Dutch study

The literature overview shows that the evidence whether the mandatory introduction of IFRS decreased the level of earnings management is mixed. However, the studies in the overview themselves are in addition mixed with regard to their methodology used to measure discretionary accruals, the cases on which their samples were based and whether they looked at the voluntary adoption of IFRS or the effects of mandatory adoption of IFRS. Adopting a different methodological framework, Tendeloo and Vanstraelen (2005) for example reach the opposite conclusion as the conclusion reached by Gassen and Sellhorn (2006) while based at the same case. This mixed findings show that the debate whether the introduction of IFRS influences earnings management is far from settled.

Further study at the subject is consequently still welcome. Adopting the most appropriate methods and specifically based at the effect of mandatory adoption of IFRS on earnings management will provide extra evidence as an addition to some previous findings. Based on a new case in addition will extent the current understanding as the effects of mandatory adoption are not extensively studied in all EU countries yet. The case of the Netherlands was only part of the sample of Lippens (2010), but is not yet analyzed as a case on its one with regard to the mandatory adoption of IFRS. Some of the specific country related factors make the Netherlands an interesting case to include in the set of countries in which the effect of mandatory adoption in 2005 is studied.

Soderstrom and Sun (2007) derive three main country related factors of importance: (1) the quality of the standards that were used before IFRS, (2) the country’s legal and political system and (3) the financial reporting incentives of companies in that country. As commented in paragraph 2.5.3 the quality of the Dutch standards used before the introduction of IFRS already can be considered as high. Consequently the effect of the introduction of IFRS on earnings management will probably be smaller or non-existent in comparison with other countries. This makes the Netherland an interesting case to see whether there is any effect at all. With regard to the second factor it can be said that the Netherlands is a French civil law country in which legal protection of investors is commonly low (La Porta et al. 2000). Such a system would let some room for earnings management as the importance that investors are well informed is lower than in common law countries. With regard to the financial reporting incentives in the Netherlands it can be said that the Netherlands is commonly believed to be a transparent country and companies are encouraged by regulations to deliver high quality financial information. Earnings management will consequently not be sky-high in the Dutch case. Nevertheless, earnings management will exist and as this study looks for the relative levels before and after the introduction of IFRS this is not a problem.

### 6.4 Summary

This chapter provided an overview of prior empirical research investigating the effect of introducing IFRS on levels of earnings management. Based on this overview it can be concluded that the findings presented in the literature are mixed. Some studies conclude that the introduction of IFRS indeed causes decreasing levels of earnings management as assumed, while many other studies observed an increasing level of earnings management after the introduction of IFRS. However, the existing studies in addition differ from each other regarding the adopted methodology and models used to measure discretionary accruals, case selection, and whether they looked at the voluntary adoption of IFRS or the effects of mandatory adoption of IFRS.

Barth et al. (2006; 2008) find that applying IFRS generally provide higher quality in accounting and less earnings management based at firms from 21 countries who voluntarily adopted IFRS. Gassen and Sellhorn (2006) and Hung and Subramanyam (2007) in addition conclude that earnings management decreases after voluntary adoption of IFRS based at a sample of German companies. The sample of companies studied by Cai, Courtenay and Rahman (2008) included besides voluntary adopters in addition firms that mandatorily adopted IFRS. Based on a large sample of firms over 32 countries they find that both voluntary and mandatory adoption of IFRS can reduce earnings management. However, they acknowledge that the existence of strong enforcement mechanisms in addition play a strong role in decreasing earnings management. Finally Christensen et al. (2009) find in a study based at mandatory adoption of IFRS in the U.K. that through the increased possibility of contract violations the introduction of IFRS will in addition have an indirect effect upon earnings management.

Against those studies that support the assumed effect of introducing IFRS on accounting quality and earnings management several other studies claim that the effect of IFRS works the other way around. Tendeloo and Vanstraelen (2005) in addition looked at voluntary adoption of IFRS in the German case. Contrary to the previously presented findings they concluded that that IFRS-adopters do not present different earnings management behaviour compared to companies reporting under German GAAP. Those findings were supported by Heemskerk and van der Tas (2006) who investigate firms in Germany and in Switzerland. They even find that with the implementation of IFRS, the use of accruals to smooth earnings has even increased. Goncharov and Zimmerman (2006) expanded the German case with in addition firms based under US GAAP regulation. They conclude that US GAAP is more effective at mitigating earnings management than either German GAAP or IAS. Other studies by Christensen et al. (2008), Paananen and Lin (2008), Jeanjean and Stolowy (2008) and Lippens (2010) turned their attention to the mandatory adoption of IFRS in many different countries under EU regulation. Those studies all found that accrual-based earnings management has increased after the mandatory introduction of IFRS in 2005. Because of the mixed findings it is still valuable to perform more research in this field by adopting the most up to date methods for estimating earnings management.

# 7 Hypotheses

In this chapter the main hypotheses that will be tested in this study are presented. As stated earlier, the main goal of this thesis is to investigate whether the use of earnings management with the introduction of IFRS among Dutch stock-exchange listed firms’ declines. As it is assumed by the developers and supporters of IFRS that IFRS represent reporting standards of higher quality than previous standards it is assumed that financial reporting quality will improve and earnings management will decrease after the introduction of IFRS. I will consequently test whether companies that mandatorily adopted IFRS engage significantly less in earnings management after the adoption of IFRS compared to the period that they reported under Dutch GAAP. Earnings management is here measured trough discretionary accruals. It is hypothesized that:

*Hypothesis 1*

*Dutch firms listed on the AEX and AMX engaged significantly less in earnings management after the introduction of IFRS.*

Besides the standard accounting standards companies operating in particular industries have sometimes in addition to comply with industry specific reporting requirements. In addition potential differences might exist between different particular industries and the effects of introducing IFRS. In order to control for a possible influence of different industries in which a firm operates on the effect of IFRS on earnings management the following null-hypothesis is added to this study:

*Hypothesis 2*

*The industry in which a firm operates has no significant influence on the level of earnings management.*

As signalled in the second chapter the political cost hypothesis states that larger firms are more visible and consequently more sensible to different kind of political pressures. Consequently managers of large firms were expected to reduce reported incomes and smooth earnings in order to avoid political costs. Because firm size can be expected to influence the effect of the adoption of IFRS on the level of earnings management this potential effect will be controlled in this study by testing the political cost hypothesis:

*Hypothesis 3*

*The size of the firm has a significant influence on the level of earnings management.*

The next chapter contain the research design

# 8 Research design

This chapter describes in which way the empirical research that will provide an answer to the main research question in this thesis is performed. First it will be explained which type of approach this research has and what the general methodology is that will be used to perform the empirical research. Next it will be explained which model will be used and why this specific model is chosen to estimate the level of earnings management. In order to determine the effect of a set of independent variables on the level of the use of discretionary accruals the next paragraph describes the control variables included in the last step of the study. The fifth paragraph explains in which way the data for this study will be obtained and in which way the final sample of companies included in the analysis is constructed.

### 8.1 Research approach

The first step in designing a research is to determine what type of research approach serves best the purpose of answering the research question. Several different research approaches exist. The difference between normative theories who want to prescribe in which way things should be and positive empirical theories who describe in which way things are was already explained in paragraph 2.2 discussing the Positive Accounting theory. As the research question of this study want to explain in which way things are and not in which way they should be, and as studying the level of earnings management originates from the Positive accounting theory it is clear that the current study is a positive empirical research.

Within this type of research a further distinction can be made between qualitative and quantitative approaches. Qualitative research is more in depth research trying to identify the meaning, the concepts, and other descriptions of elements under investigation using a low number of cases. Quantitative research is more ‘hard’ science. Quantitative data collection involves the use of numbers and data is collected and a substantial number of observations in this type of research are used. The obtained information can be evaluated using statistical analyses to look for further meaning and associations. This study is clearly a quantitative study as we look for answers on general research questions on the basis of large amounts of numbered data. This study tries to give meaning to the relations of several different variables involved in the determination of levels of earnings management. Consequently we look for the relationship between one element (the independent variable) and another element (the dependent variable). Substantial numbers of observations are included in the obtained data.

Within the category of quantitative research a further distinction can be made between surveys and experiment (Verschuren and Doorewaard 2007) Survey research is a method that collects data by doing interviews and sending questionnaires. Survey research tries to identify and interpret the behaviour, beliefs and observations of specific groups of persons (Babbie, 2007). However, survey research is not a feasible option for the measurement of discretionary accruals. Managers will not always be willing to admit that they engaged in earnings management and asking persons about earnings management will never be able to collect exact levels of earnings management. Survey research is in addition expensive and time consuming when a large research sample is involved. A direct measurement of earnings management through a survey design is consequently not a good research strategy for this study. Another type of research fitting within the quantitative research approach is experiments. Experiments are used to establish causal relations between independent and dependent variables. Most experimental design randomly assigns subjects to experimental conditions and then observes current or future behaviour of the subjects. However, investigating the use of earnings management looks at a phenomenon that happened in the past. This research works with existing groups of subjects and existing data and does not randomly assign subjects to experimental conditions. A third approach that can be used within quantitative analyses in which no new data is collected is the desk research approach. In desk research existing data will be gathered and used for analyses (Verschuren and Doorewaard 2007). As this thesis uses existing data from the annual financial reports of firms in order to perform causal analyses the applied method of this thesis is a desk research.

### 8.2 Research methodology

The previous paragraph established that this research is a desk research using existing data sources to analyse the cause-effect relationship between the introduction of IFRS and levels of earnings management. In order to follow the quantitative nature of this study the next step is to determine what the most important concepts are in the study and in which way they can be operationalized in observable numbers. In chapter 5 it was signalled that the concept of earnings management can best be observed by focusing on accruals. Accruals based earnings management is the specific type of earnings management which matches the classic description of earnings management best and which is used most often in the studies on the use of earnings management. The accruals method is consequently the standard in measuring earnings management. In order to make this study comparable to existing publications the accrual method is used in order to measure earnings management.

As signalled is the chapter describing the models to detect the use of earnings management, this concept is best determined by using discretionary accruals as a proxy for earnings management. Discretionary accruals are estimated by calculating the total accruals minus the non-discretionary accruals. Specific models using the accruals based approach to detect the use of earnings management evolved from the Healy (1985) and DeAngelo (1986) model to the Jones (1991) and modified Jones model (Dechow et al. 1995). The modified Jones model was developed in order to overcome a problematic assumption incorporated in the Jones model that all revenues are nondiscretionary. The modified Jones Model assumes that all variations in credit sales are attributable to earnings management. After its development by Dechow et al. (1995) the modified Jones model became quickly considered to be the most powerful method in measuring earnings management. As was explained in paragraph 5.9, most researchers studying the comparative power and reliability of the different models to detest the use of earnings management concluded that the modified Jones model provides the most reliable estimates of discretionary accruals.

This thesis uses the Modified Jones model in order to estimate the discretionary accruals, which serves as a proxy for the use of earnings management. The most important reason for adopting this model is the abovementioned fact that this model is considered to be the most powerful method in measuring earnings management by estimating discretionary accruals. As this thesis focuses on the accrual based earnings management approach this is certainly the most appropriate method for this thesis. The obtained values for the discretionary accruals can be used as the dependent variable in order to test the effect of the introduction of IFRS. A second reason to choose this model is that several other recent publications on the use of earnings management used this model which makes comparison of the results with existing findings easier. A third reason to choose this model is that this model fits well with the comparison over time which this research intends to do. As a period in which Dutch firms used NL GAAP and a period in which the same Dutch firms used IFRS will be compared the Time-Series variant of the modified Jones Model is in this study preferred over the cross-sectional model. As the use of earnings management by the same firms before and after the introduction of IFRS is the objective of the research the same firms have to remain in the sample over time. The aim of this research is consequently to measure the use of earnings management by specific firms over time. The time-series approach of the modified Jones model fits best with this objective.

Some authors criticized the modified Jones model. Especially when firms with large differences in financial performances are included in the sample the model will not work appropriately. However this criticism is supposed to be especially relevant for the cross-sectional variant of the model. This criticism is not really relevant for the time-series approach (Heemskerk and Van der Tas 2006). Because firms that have no data available for all the years of observation have to be excluded, the most prominent problem with the time series approach is that the sample size can be too small. But in this research most companies included in the sample have data available for all the years under investigation.

### 8.3 Measuring earnings management

The procedure to estimate the different type of accruals using the modified Jones Model was already set out in paragraph 5.7 and is repeated in this paragraph in exactly the way as the model is used in the empirical analysis to determine the discretionary accruals. The model distinguishes between total accruals, non-discretionary accruals and discretionary accruals. The first step is measuring the total accruals (TACC) using the next formula:

|  |  |
| --- | --- |
| Where, | Eq.1 |
|  | firm’s total accruals in year *;* |
|   | firm ’s change in current assets in year ; |
|  | firm ’s change in current liabilities in year ; |
|  | firm ’s change in cash in year ; |
|  | firm ’s change in short-term debt in year ; |
|  | firm ’s depreciation and amortization expense in year . |

When the total accruals are estimated the second step in the process is to estimate the firm-specific parameters for three variables that explain the amount of total accruals in a year scaled by firms total assets reported in the previous year (lagged total assets t-1). As the value of the dependent variable and the independent variables are known from the data or the first formula the firm-specific parameters can be obtained performing the next regression equation:

|  |  |
| --- | --- |
|  | Eq.2 |

Where,

|  |  |
| --- | --- |
|  | firm ’s total accruals in year ; |
|  | firm ’s total assets in year ; |
|  | firm ’s change of the revenues in year ; |
|  | firm ’s change of the receivables in year ; |
|  | firm ’s properties, plants and equipment in year ; |
|  | firm ’s error term in year . |

Ordinary Least Squares regression will be used to obtain the parameters. In the third step those firm specific parameters of α1, α2 and α3 will be filled in in the formula. Al other variables such as the change in revenue and change in receivables and gross property, plant and equipment are in addition known consequently the non-discretionary accruals can be calculated using the following formula:

 is computed by the parameter estimations of the Modified Jones Model in :

|  |  |
| --- | --- |
|  |  Eq.3 |

are the coefficient estimates of  in .

Finally, the discretionary accruals can be calculated using the fourth formula:

|  |  |
| --- | --- |
|  | Eq. 4 |

### 8.4 Independent variables

When the discretionary accruals are calculated not all the work is performed yet. With the value of the discretionary accruals known it is time to check whether the amount of discretionary accruals is influenced by the factors signalled in the hypotheses. The influence of those factors on the level of discretionary accruals will be investigated using regression analyses.

**The mandatory adoption of IFRS**

The most important independent variable in this study that is needed to answer the main question is the adoption of IFRS. The study wants to investigate whether the level of discretionary accruals is different for the period before 2005 in which the companies used NL GAAP and the period from 2005 onwards when the companies mandatorily adopted IFRS. The first hypothesis expects that the level of discretionary accruals will decrease after the implementation of IFRS. Including an independent variable with the value 0 for the years before 2005 and 1 for the years 2005 and onwards allows testing the hypothesis.

**Industry**

The independent variable industry investigates whether different levels of discretionary accruals exist between groups of firms belonging to specific branches of industry. Potentially industry specific reporting requirements might influence in which way companies report their figures. In addition different moral standards might exist within branches of industry. However, it is hypothesized that the specific industry in which a firm operates has no effect on the level of earnings management. The variable measuring the type of industry to which a firm belongs is a nominal variable containing the following categories: oil and gas, basic materials, industrial, consumer goods, consumer services, telecommunication and technology.

**Size**

It was signalled in the theoretical section that larger firms are more visible and consequently more sensible to different kinds of political pressures. Size is consequently a proxy for political sensitivity. The third hypothesis in this research resembled the political cost hypothesis by stating that the size of a firm has a significant influence on the level of earnings management. Following Watts and Zimmerman (1990) the variable size is constructed in this research by taking the natural log of the total assets of the firms o proxy for the size of a company, which itself is a proxy variable for political attention. It is expected that larger firms manage their earnings downwards.

### Final Regression Model

Based on the presented variables the following basis regression formula will be used in order to estimate the effects of the independent variables on the level of discretionary accruals:

##

*Discretionary Accruals or* |*DAP t*| *= β0 + β1(IFRS)t + β2(Industry)t + β3(Size)t + ε t*

Where:

|*DAP t*|= absolute value of the proxy for discretionary accruals standardized by lagged total assets;

IFRS = dummy variable (IFRS = 0 during the period in which the companies used NL GAAP 2002-2004, IFRS = 1 in the period in which the companies used IFRS 2005-2007)

INDUSTRY = variable measuring the specific branch of industry to which a firm belongs

SIZE = LN (total assets) in year t;

*ε* = error, and

β0, β1, β2, β3 = parameters.

### 8.5 Time interval of the research

In order to be able to observe the impact of the adoption of the mandatory adoption of IFRS in 2005 on levels of earnings management this study should include a certain observation period before and after the event of the introduction of IFRS. This research will consequently focus on the period from 2001 to 2007. This gives an observation period of four years before the introduction of IFRS and an observation period of four years after the introduction of IFRS. Most other studies based at the effect of the introduction of IFRS included time intervals of 2 or 3 years before and after the event, taking a total time interval of 7 years should consequently be sufficient for the purpose of this study and it offers enough firm specific data points to perform a reliable analysis. Nevertheless, it should be signalled that the period before 2005 includes actually not four but three years for which we can calculate the discretionary accruals. As the calculation of all the different types of accruals relies on the change (Δ) variables the data collected for 2001 would require data from the year 2000 to calculate the discretionary accruals for 2001. As the available data decreased further by going back further in time the start of the data used in this study was set on 2001 in order to keep a substantial number of companies with data available in all years of observation in the sample as is required by the time-series approach. In order not to compare different time periods before and after the adoption of IFRS in addition three years after 2005 in the analysis were included. Beneish (1999) stated that the practice of the use of earnings management becomes public on average 19 months after the end of the fiscal year of the first reporting. Grounded on the 19 months that it will take for manipulations and earnings management to become public it appears adequate that studying at least three years prior and three years after the introduction of the IFRS in 2005 is a sufficient period. Holding the compared time periods equal makes the comparison more reliable. Another reason not to include data from later years than 2007 is that the global financial crises started in 2008. Crisis related incentives might influence the reported facts and figures by companies which might intervene into the relation between IFRS and earnings management studied by this thesis.

### 8.6 Data collection and data sample

Based on a sample of the 50 Dutch companies listed on the Dutch AEX and AMX index from 2001 to 2007 Statistical analysis will provide parameter estimates for all the variables in the Modified Jones Model. On the basis of those estimates the discretionary accruals can be calculated. All data will be obtained from the Thomson One Banker Database.

The final sample meets the next criteria:

* Dutch listed companies on the AEX and AMX index
* Financials and Utilities are excluded
* Firms will be first-time adopters of IFRS as of January1, 2005
* Data points are available for the whole period of observation from 2001 to 2007

This study follows the Dutch stock exchange quoted companies listed on the Dutch AEX and AMX index. The 50 companies that were listed on those two indexes in the year 2007 form the basis of the dataset. The data was obtained from the Thomson One Banker Database and has been transferred to Microsoft Excel and later to the SPSS statistics program. Here in a first elimination round a total of 5 financial institutions and 6 utility companies were eliminated from the dataset. Those companies were identified on the basis of the ICB subsector codes provided in the dataset. It is common practice in models to detect the use of earnings management to exclude financial institutions because of their specific accounting requirements. Those requirements differ substantially from the accounting requirements of industrial and commercial companies which makes it more difficult for financial institutions to select freely the accounting standards they apply. Utility companies are excluded because of the high diversity within this category. They cannot be classified within one type of a specific industry which is a problem when estimating discretionary accruals per industry and year (VanderBauwhede et al. 2003; Tendeloo and Vanstraelen 2005). In a second elimination round 5 companies were eliminated from the dataset because they entered the AEX or AMX index in a later year than 2001 and had consequently no data points available for all the years in the research period. After these eliminations 34 companies remained in the sample.

As this study explicitly focuses on the effect of the introduction of IFRS in 2005 on the use of earnings management only companies who mandatorily adopted IFRS in 2005 may be included in the sample. However, as voluntary adoption of IFRS in the period before 2005 was not prohibited for companies listed on the Dutch stock exchange it has to be investigated whether any of the 34 companies that remained in the sample are early adopters. For the next selection round I looked up the exact moment of adoption of IFRS and the reporting system used before the adoption of IFRS by based at the annual reports of 2004 or other direct sources coming from the remaining 34 companies in the sample. The results of this investigation are presented in table 1.

|  |  |  |
| --- | --- | --- |
| Reporting system | Frequency | Valid percent |
| NL GAAP to 2004 / IFRS from 2005 | 24 | 70.6% |
| UK GAAP to 2004 / IFRS from 2005 | 3 | 8.8% |
| US GAAP to 2004 / IFRS from 2005 | 2 | 5.9% |
| French GAAP to 2004 / IFRS from 2005 | 1 | 2.9% |
| Early adopter of IFRS | 4 | 11.7% |
| **Total** | **34** | **100%** |

**Table 1:** Reporting system used by the 34 companies

The study of the annual reports of the companies showed that 4 companies voluntarily adopted IFRS. Those four companies were eliminated from the sample. It was in addition noticed that several companies used a different standard than NL GAAP before they changed to IFRS. These were mainly companies with a foreign partner (KLM-Air France) of companies in addition listed on foreign stock exchanges. 3 companies used UK GAAP as primary reporting system, 2 companies US GAAP and one company French GAAP. As especially US GAAP is considered to be different than the principles based NL GAAP including those companies might bias the analysis. Consequently those 6 companies in addition are eliminated from the sample. After all the eliminations, the initial group of 50 firms was reduced to a total sample of 24 Dutch companies that meet all selection criteria. A summary of the selection process is presented in table 2.

|  |  |
| --- | --- |
| Sample Selection | Netherlands |
| All companies AEX and AMX in 2007 | **50** |
| Excluded because of being a financial company | -5 |
| Excluded because of being a utility company | -6 |
| Excluded because no data was available for one of the years between 2001-2007 | -5 |
|  | **34** |
| UK-GAAP, US-GAAP, French GAAP | -6 |
| Early adopters | -4 |
| Total Sample | **24** |

**Table 2:** Selection process of the sample

The next chapter contains the results.

# 9 Results

In this chapter finally the results of the empirical analyses will be presented. In the first part of the chapter the results of the calculation process of the discretionary accruals will be presented. In the second part of the chapter the values of the discretionary accruals will be used to test the hypotheses. The effects of the introduction of IFRS, the size of the company and the type of industry to which the company belongs on the discretionary accruals will then be tested.

### 9.1 Calculating the discretionary accruals

In the first step of the calculation of the discretionary accruals the total accruals are calculated using the formula previously presented. In order to use this formula the change (Δ) variables Δ*CA*it, Δ*CLit*, Δ*CASHit* and Δ*STDEBTit* were calculated in SPSS by subtracting the value of the lagged variable (t – 1) from the value of the subsequent variable at the moment t. For example Δ*CA*it = CAit – CAit-1. After the construction of the change variables all the variables were entered in the formula and the Total Accruals (*TACCit*) were calculated for every firm in every data year resulting in 24 x 6 = 144 firm year observations of the total accruals. The average values of the total accruals of the 24 companies per year are presented in table 3. It should be noticed that on average the values of the Total Accruals are negative. Barth et al. (2006, 26) note that this is consistent with prior research. According to them the negative value of Total Accruals “is attributable to depreciation expense being included in accruals, but capital expenditures being included in investing cash flows”. As most formulas in the process of calculating the discretionary accruals do not deal with the full value of the accruals but with the accruals scaled by the total assets of the previous year TAit-1, the average total accruals scaled by the lagged total assets per year are presented in table 4.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | *N* | *TACCt-i* | *NDACCt-i* | *DACCt-i* |
| 2002 | 24 | -249,05 | -196,76 | -52,29 |
| 2003 | 24 | -552,52 | -234,01 | -318,51 |
| 2004 | 24 | -256,94 | -245,24 | -111,699 |
| 2005 | 24 | -298,97 | -255,65 | -43,32 |
| 2006 | 24 | -374,05 | -160,16 | -213,90 |
| 2007 | 24 | -379,93 | -268,37 | -111,56 |

**Table 3**: Average values of TACC, NDACC and DACC per year.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | N | TACCt-i / TAt-1 | NDACCt-i / TAt-1 | DACCt-i / TA t-1 |
| 2002 | 24 | -.043 | -,044 | ,001 |
| 2003 | 24 | -,083 | -.026 | -,057 |
| 2004 | 24 | -,053 | -.034 | -.020 |
| 2005 | 24 | -.002 | -.034 | ,032 |
| 2006 | 24 | -,025 | -.015 | -.010 |
| 2007 | 24 | -,048 | -.019 | -.029 |

**Table 4**: Average values of TACC, NDACC and DACC scaled by lagged TA per year.

In the following step the total accruals scaled by total assets in the year t – 1 are used as the dependent variable in the regression equation (Eq. 2) that computes the parameter estimations of the Modified Jones model. The three independent variables were constructed trough the SPSS compute option and then entered into the regression equation in order to obtain the values for . Ordinary Least Squares (OLS) regression is used to obtain the parameter estimates. Normally, before this regression is performed regression assumptions for OLS have to be checked. The following assumptions apply (Norusis 2008, 246):

* All observations are independent of one another (Discretionary accrual scores for one firm do not affect scores in another firm)
* In the population there is a linear relationship between the dependent variable and the independent variables.
* For each combination of values of the independent variables in the population, there is a normal distribution of values of the dependent variable.

However, none of the articles using the modified Jones model that were studied, reports any information concerning these assumptions. Any violation of the assumptions does not seem to influence in which way the formula should be used and which firm year observations should be included in the data entered in the equation. None of the studies using the Modified Jones Model excludes outliers in this stage of the research. Consequently I did not check the assumptions in this stage of the hypotheses testing. When the influence of IFRS, Industry and Size on the discretionary accruals is tested in a second regression equation the assumptions will properly be tested. The output for the regression estimation in Eq. 2 shows that the overall model significantly predicts the independent variable. This is shown by the ANOVA test for the whole model which reports an F test score of 7,294 which is significant at the .000 level. This implies that the independent variables together significantly explain a part of the variance in the dependent variable. The R2 value is ,135. This indicates that the amount of variation in the dependent variable explained by the three independent variables is 13,5%. The individual regression coefficients of the independent variables are presented in table 5.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | *Regression Coefficient* | *Beta* | *t* | *Sig.* |
| Constant | -,014 |  | -,686 | ,494 |
|  | -3,233 | -,052 | -,622 | ,535 |
|  | ,139\*\* | ,311 | 3,811 | ,000 |
|  | -,056\* | -,186 | -2,278 | ,024 |

**Table 5:** Regression results for the equation needed to obtain the parameter estimates for determining *NCACC*ti.

Table five reports the regression coefficients which show in which way much the individual variables in the model influence the variance in the dependent variable. In this case we are particularly interested in the values of the unstandardized regression coefficients as these values will be used as the parameter estimates for α1, α2 and α3 in the next equation. Two of those three coefficients are significant at the 0.05 level but this is not consequently important as all coefficients have to be used in the next formula to calculate NDACCit regardless of them being significant. With regard to this point de Vocht (2009, 202) notes that “all variables should be included in the regression formula, in addition the ones that are not significant because the parameters of the significant variables are corrected for these effects”. It can be obtained from the model that the value of α1= -3.233, the value of α 2= .139 and the value of α3= -.056. The values of the parameter estimates are then used in the formula to calculate the non-discretionary accruals. The formula is then:



The average values per year of the calculated non-discretionary accruals scaled by the lagged total assets and the non-discretionary accruals are reported in table 3 and 4. Using Eq. 4 the discretionary accruals scaled by the lagged total assets are calculated. The product of this value and the scaled total asset gives the discretionary accruals. The discretionary accruals are now calculated for 144 firm year observations. The average values for the discretionary accruals and the discretionary accruals scaled by lagged total assets per year are in addition presented in tables 3 and 4. It should be noted that the values of the discretionary accruals might be negative or positive. Positive discretionary accruals represent income increasing accruals and negative discretionary accruals represents income decreasing accruals. As most averages per year show a negative value, income decreasing accruals are on average more used than income increasing discretionary accruals. Further interpretation of the levels of discretionary accruals is provided in the next paragraph.

### 9.2 Testing the impact of the independent variables on the level of discretionary accruals

With the discretionary accruals for every firm year now known I finally arrived at the point that the hypotheses of this study can be tested. As explained in paragraph 8.4 the following regression equation will be used:

*Discretionary Accruals or* |*DAP t/ Ta t-1*| *= β0 + β1(IFRS)t + β2(Industry)t + β3(Size)t + ε t*

### 9.2.1 The dependent variable

It is important to notice that the dependent variable used in this regression equation is the absolute value of the proxy for discretionary accruals standardized by lagged total assets. In the previous chapter it was already noticed that discretionary accruals can be negative or positive. The mean of these scores not properly represent the total amount of discretionary accruals as the negative and positive values will be eliminated against each other. It is signalled for this reason that consequently the absolute value of the discretionary accruals should be taken (Heemskerk and van der Tas 2006, 576). Based on this the absolute value of the negative discretionary accruals are added to the positive discretionary accruals which calculates the real total value of the discretionary accruals.

Before entering the |DAP t/ Ta t-1| variable into the regression equation the regression assumption that the values of the dependent variable are normally distributed has to be checked. Using a boxplot and a Q-Q plot the distribution of the variable containing 144 data points is shown in figures 1 and 3 of appendix 3. The first box-plot shows that there are several outliers. A total number of 9 data points were identified as outliers and eliminated from the dataset. A Q-Q plot of residual weights is a special test to check for normality. The differences between the observed values and the predicted values of a variable are called the residuals. Using those residuals each observed weight difference can be plotted against the expected weight difference if the data is from a normal distribution. The sample should more or less cluster around the straight line in order to assume normality (Norusis 2008, 149). Figure 3 in appendix 3 shows that the values in the lower left section of the line deviate from the line. However, this is normal as the absolute observed values of |DAP t/ Ta t-1| can’t be lower than 0. However, in addition in the upper right section of the line of the observed values in addition deviated from the line. This is due to outliers. In order to improve the normal distribution those outliers have to be eliminated. The nine specific outliers identified in the boxplot were eliminated from the dataset. Figure 2 shows the boxplot after the elimination of those 9 data points. The Q-Q plot in figure 4 in appendix 3 shows that the observed values of the dependent variable now cluster much better around the straight line (the scale of the observed values in this figure 4 is much smaller than the scale in figure 3 which can distort the interpretation on the first view). Normality can now be assumed.

Based on the remaining 135 observations some more information can be given on the absolute values of the discretionary accruals scaled by the lagged total assets. Table 6 presents the average absolute values per year of the discretionary accruals scaled by the lagged total assets and the discretionary accruals. It is important to observe the differences between the two variables. When scaled by lagged total assets the value for discretionary accruals for example increases from ,066 to ,086 between 2004 and 2005 while based at the variable that is not scaled by lagged total assets the value of accruals decreases from 429,41 to 240, 60 between 2004 and 2005. These patters can in addition be observed in figures 1 and 2 in which the values presented in the table are graphically plotted against the time. Based at figure 1 it seems to be the case that discretionary accruals decrease between 2003 and 2004 and then increase again in 2005. After 2005 the level of discretionary accruals decreases again. But it the level of discretionary accruals never gets much lower in the IFRS period than it once was in 2004 in the period before IFRS was introduces. Figure 2 in which the discretionary accruals are not scaled by the lagged total assets shows a different pattern

|  |  |  |  |
| --- | --- | --- | --- |
|  | N | |*DAP t/ Ta t-1*| | |*DAP t*| |
| 2002 | 23 | ,089 | 405,60 |
| 2003 | 21 | ,092 | 531,83 |
| 2004 | 23 | ,066 | 429,41 |
| 2005 | 23 | ,086 | 240,60 |
| 2006 | 22 | ,071 | 384,34 |
| 2007 | 23 | ,063 | 259,28 |

**Table 6:** Absolute values of discretionary accruals variables per year



**Figure 1**: Graphical representation of average DACC scaled by TAt-1 per year



**Figure 2**: Graphical representation of average DACC per year

All the values of the discretionary accruals in the period in which IFRS was introduced compared to the period before IFRS was introduced are lower. Based on this second figure it can indeed be expected that earnings management has decreased after the adoption of IFRS. It consequently distinctively matters which variable will be used for interpretation. Confusion arises on this point when based at most existing articles reporting results of the modified Jones Model. While talking about discretionary accruals, in fact it is the DACC scaled by TAt-1 variable which is referred to most often. As this last variable is the one used in hypotheses testing by most articles (see Heemskerk and van der Tas 2006) this variable will be considered in this thesis as the most appropriate for interpretation.

### 9.2.2 The independent variables: IFRS, Industry and Size

The independent variables that will be included in the regression model are IFRS, Industry and Size. The variable IFRS is straightforwardly measured by coding the years 2002 to 2004 when the companies used NL GAAP with value 0 and coding the years 2005 to 2007 when the companies used IFRS with value 1. The proxy variable size is measured by first calculating the average total asset of each company in the sample over all the years in the study. In order to measure size of the company next the natural logarithm of these average values for each company was calculated. The independent variable industry is a nominal variable including several industry branches. The distributions of the 135 firm year observations over the different categories of this variable are presented in table 7. Most company year observations can be classified as industrial companies (42,2%). The category with the lowest amount of cases is the telecommunications (3,7%). However, as nominal variables with several categories cannot as such be included in regression analyses and as the reliability increases when categories contain at least 10% of the cases it is decided to take together some of the categories into larger umbrella categories into which the more specific types of industry theoretically fit (Norusis 2008, 251). The categories oil and gas, basic materials and industrial are taken together into the industrial group. Consumer goods and Consumer services make up the consumer group and telecommunications and technology are taken together as the Technology group. In order to include the industry groups in the regression equation three dummy variables are created. The first has code 1 for belonging to the industrial group and code 0 for belonging to another group. The second has code 1 for belonging to the consumer group and code 0 for belonging to another group. The third dummy variable has code 1 for belonging to the technology group and code 0 for belonging to another group.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Type of industry | Frequency | Valid Percent | Recode into: |  |
| Oil and Gas | 6 | 4,4 | Industrial Group | 54% |
| Basic Materials | 10 | 7,4 | Industrial Group |  |
| Industrial | 57 | 42,2 | Industrial Group |  |
| Consumer Goods | 35 | 25,9 | Consumer Group | 34.8% |
| Consumer services | 12 | 8,9 | Consumer Group |  |
| Telecommunication | 5 | 3,7 | Tech. Group | 11.1% |
| Technology | 10 | 7,4 | Tech. Group |  |
| Total | 135 | 100,0 |  |  |

**Table 7:** Frequencies of type of industry

### 9.2.3 The regression model

The regression model was now constructed in SPSS. The assumption that the dependent variable is normally distributed is met as previously explained. The second assumption whether all observations are independent from one another is more difficult to assume. Observations within one company are clearly independent from the observations in another company. But it is less clear whether observations in one year within a specific company are totally independent from observations in a previous year. Sometimes the fact and figures of one year might influence the ones of the next year within the same company. It is consequently not totally clear whether this assumption is met. The assumption that there is a linear relation between the independent variables and the dependent variable is less relevant as most variables are dummy variables. As dummies only have to categories the relationship is always linear. Two different regression models were constructed. They are presented in table 8. In the first model the independent variables IFRS, Size and the dummy variable Industry-group were entered. However, as the ANOVA analysis for the overall significance of the model shows those three variables do together not significantly explain any variance in the dependent variable DACC / TAt-1. Consequently the overall explained variance is low as the R2 value of ,040 is indicate. (The R2 explains how much of the variance in the dependent variable is together explained by all the independent variables in the model) This implies that the used independent variables together are weak predictors of discretionary accruals scaled by lagged total assets. Only size, based on the individual independent variables, has a significant negative impact on the absolute value of the discretionary accruals scaled by lagged total assets.

|  |  |  |
| --- | --- | --- |
|  | **Model I** | **Model II** |
|  | *Coefficient* | *Beta* | *Sig* | *Tolerance* | *Coefficient* | *Beta* | *Sig* | *Tolerance* |
| Constant | ,112 |  | ,000 |  | ,108 |  | ,000 |  |
| IFRS | -,002 | -,018 | ,831 | ,997 | -,002 | -,022 | ,798 | ,996 |
| Size | -,006\* | -,199 | ,031 | ,880 | -,006 | -,180 | ,054 | ,853 |
| Industry-group | -,001 | -,007 | ,941 | ,882 |  excluded |  |  | ,000 |
| Consumer-group |  |  |  |  | ,108 | -,040 | ,674 | ,798 |
| Technology-group |  |  |  |  | -,002 | ,084 | ,346 | ,926 |
|  |  |  |  |  |  |  |  |  |
| R-square | .040 |  |  |  | .050 |  |  |  |
| Adjusted R2 | .018 |  |  |  | .020 |  |  |  |
| ANOVA | F=1.797Sig =.151 |  |  |  | F=1.697Sig. =.155 |  |  |  |
|  |  |  |  |  |  |  |  |  |

**Table 8**: Regression models testing the impact of IFRS, Size and Industry on DACC/TAt-1 ABS

 \* = significant at the 95% reliability level.

The introduction of IFRS has no significant impact nor has the difference between companies belonging to the industry group and other companies. The tol. = tolerance value is an indicator that tests whether there is any collinear relation between the independent variables. Collinearity refers to the situation in which a high multiple correlation exists when one of the independent variables is regressed on the others. The problem with collinear variables is that they provide similar information, and it is difficult to separate the effects of the independent variables (Norusis 2008, 271). Tolerance values close to 0 tell you that the variable is strongly related to the other independent variables in the model. A value close to 1 tells that there is no collinearity. As all tolerance values for the variables in model I are close to 1 collinearity is no problem.

In the second model the dummy variables consumer-group and technology-group are added to the model. However, in this model a problem with the collinearity arises. The SPSS procedure excludes the variable industry-group from the model as this variable is collinear with other variables. Four variables remain in the model. But in addition this model is not overall significant and the R2 is again low. None of the individual predictors is significant consequently any change in the dependent variable cannot be explained by the adoption of IFRS, the Size of the company or one of the industry variables consumer-group or technology-group. The implications of these results with regard to the stated hypotheses will be discussed in the next paragraph.

### 9.3 Answering the hypotheses

In this study three different hypotheses were tested. The first and most important hypothesis tested in this research states that: *Dutch firms listed at the AEX and AMX engaged significantly less in earnings management after the introduction of IFRS.* A decreasing trend of the level of earnings management was expected because IFRS was supposed to introduce higher quality standards and improved comparability between firms. The results of the empirical analyses showed however that this hypothesis should be rejected. Based on a regression equation it can be said that the introduction of IFRS by Dutch companies previously using Dutch GAAP did not lead to a significant negative or positive effect on the absolute level of scaled discretionary accruals. None of the obtained models showed an effect of the IFRS variable. The level of earnings management remained constant. Probably the qualitative differences between using NL GAAP and IFRS are consequently small that a significant effect on the use of earnings management is not reached with only changing the standards. As some articles argued there might be a larger role of enforcement mechanisms instead of only updating the accountancy standards. With this main finding this study seems to be somewhere in the middle between the eight studies commented in the theoretical section. Neither an increasing pattern nor a decreasing pattern of the use of earnings management was observed. With the finding that earnings management more or less remains constant after adopting IFRS this study does neither confirm the four articles showing a positive effect of IFRS nor does the study confirm a negative effect of IFRS on earnings management.

The article by Tendeloo and Vanstraelen (2005) comes closest to the findings of this thesis as they stated that the adoption of IFRS in Germany cannot be associated with lower levels of earnings management. However, under some conditions IFRS adopters even used more discretionary accruals than based on German GAAP. A significant increasing pattern under the specific condition of possibilities of using hidden reserves was not studied in this thesis. But in general, comparable results were found. The German case and the Dutch case in addition show many similarities as they both prior to IFRS used a principles based reporting system. Both studies in addition used comparable research models although differences exist between the cross sectional Jones model and the time series based modified Jones model. Another major difference between the two studies is that Tendeloo and Vanstraelen investigated the voluntary adoption of IFRS while this thesis focused on mandatory adoption of IFRS.

Comparing the current findings with other studies that investigated the mandatory adoption of IFRS shows that the findings of this study deviate from previous findings. Cai et al. (2008) showed that the use of earnings management decreased after the mandatory adoption of IFRS. However, they investigated 32 different countries with different quality standards before the adoption of IFRS. In addition, a different methodology was used. Consequently comparison with the current study is difficult. Christensen at al. (2009) in addition investigated the mandatory adoption of IFRS and only investigated the U.K, a case with qualitatively high standards before adopting IFRS. However, as they used a totally different methodology not based on the estimating accruals, comparing the current findings with this study is not useful. The study by Paananen and Lin (2008) more resembles the current research approach as they only investigated the comparable case of Germany and used a method based on the income scaled by total assets. However this study showed that after the introduction of IFRS accounting quality worsened over time. It is difficult to explain why this finding deviates from the findings of this research. Probably the fact that their study period only reaches to the year 2006, which might be a too short period for investigating the effect of the mandatory adoption, can be an explanation.

As was already suggested in the first chapter it might well be the case that the previously used NL GAAP standards did not deviate much from the quality of IFRS. The introduction of IFRS consequently might not have shown the same effects on the use of earnings management as some other studies observed investigating other cases. In addition differences in the used methods might explain why after the mandatory adoption of IFRS in 2005 in the Netherlands a different trend in the use of earnings management was not observed.

The second hypothesis was adopted in the study in order to control whether differences between branches of industry influence to what extent firms use discretionary accruals. Potentially industry specific reporting requirements might influence in which way companies report their figures. In order to control for this potential influence this study tested the null-hypothesis that industry differences do not influence the main relations in the study. The second hypothesis states: *The industry in which a firm operates has no significant influence on the level of earnings management.* This hypothesis cannot be rejected. The regression models showed that differences between industry-groups never had a significant effect upon the absolute values of discretionary accruals scaled by lagged total assets. Any evidence that the hypothesis should be rejected was not found. The industry in which a firm operates has no influence on the level of the use of earnings management. The exclusion of financial institutions and utility companies from the sample might be one of the main causes for the fact that industry differences have no significant impact on the levels of the use of earnings management. With the exclusion of these two types of companies the variance in the industry branch differences variable is likely to be reduced to a large extent. The industry branches remaining in the sample might not differ so much with regard to industry specific reporting requirements which reduce the variance between the industry branches. This eliminates the underlying logic of the hypothesis. As exclusion of the two types of industries with the most deviating specific reporting requirements is commonplace. As exclusion of these two types of companies is commonplace in the sampling procedure for this kind of studies, the fact that most articles now neglect the possible disturbing impact of industry difference can be explained. The finding that the null hypothesis cannot be rejected consequently is not surprising. Probably for this reason few other resent publications included this variable in their analyses.

The last hypothesis served as a proxy for the political cost hypothesis. Larger firms were expected to manage their earnings downwards in order not to attract to much political attention. The third hypothesis states: *The size of the firm has a significant influence on the level of earnings management.* Some evidence that this hypothesis cannot be rejected was found in the first regression model. The variable size had a significant negative impact on the absolute value of the discretionary accruals scaled by the lagged total assets. This surprisingly implies that when firms grow larger the absolute amount of managing the discretionary accruals decreases a bit. Opposed to the political cost hypothesis larger firms do not engage more in earnings management in order to manage their accruals downwards. This evidence can be used against the theoretical expectations by Watts and Zimmerman (1978) and Deegan and Unerman (2006) that larger firms attract more political attention and consequently are more likely to manage their earnings downwards. The finding in addition contradicts the empirically investigated findings by Belkaoui and Karpik (1989) who found that politically visible firms disclose more information. Potentially the logic behind the political cost hypothesis has reversed over the last decades. It can now be the case that politically visible firms have to be more cautious with engaging in earnings management as their accounting procedures will be better checked and will be more prone to media attention than the reported statements by smaller firms. However, this conclusion should be taken with some caution as the overall regression model was not significant and the explanatory power of the size variable is in addition low.

The next chapter contains the conclusion.

# 10 Conclusion

In this chapter the final conclusions will be presented. First, a summary of the first chapters of the thesis is provided by shortly signalling the main conclusions of the chapters on the theoretical background, the supposed role of adopting IFRS and the concept of earnings management. Next the main conclusions with regard to measurement methods and the empirical research within this thesis are shortly summarized. In the second paragraph the answer to the main research question is shortly formulated. In the third paragraph the limitations to this thesis will be commented. The final paragraph concludes with providing recommendations for further research.

### 10 .1 Summary of the research

In this research the following main question was studied: *Does with the introduction of IFRS the use of Earnings Management among Dutch stock-exchange quoted firms decline?* This question was asked from the background perspective that accounting regulations were increasingly strengthened during the last decade as an answer to major accounting scandals occurring during the first decade of the new millennium. Due to those scandals the reliability and the quality of the accounting standards used by the involved companies was being questioned. The concept of earnings management was the central concept under investigation in this study.

The second chapter provided several background theories from which the study of earnings management is developed. After commenting on the relation between the concept of earnings management and the background theories it was concluded that the theoretical approaches studying earnings management strongly rely upon many of the assumptions and hypotheses in the agency theory and in the positive accounting theory. The theoretical field studying the use of earnings management can be qualified as a continuation of those theoretical approaches with a more narrowly focuses on the specific topic of earnings management.

The third chapter further introduced the international financial reporting standards (IFRS). IFRS was introduced to harmonize international accounting standards, improve the comparability, and increase the reliability and the transparency of published financial information. However, it was shown in this chapter that considerable doubts existed whether IFRS was really the improvement as expected by some. Supposed disadvantages are possible misleading numbers in the reported information, rising information costs and doubts about the transparency of reported numbers. Consequently, studying the actual effect of the adoption of IFRS on the use of earnings management was concluded to be a valuable enterprise.

The fourth chapter introduced the distinction between real earnings management and accruals based earnings management. It was concluded that the focus of the research should be on the last type as this type of earnings management is more prominently present in current practices. The way in which earnings management should be measured by estimating accruals was further explained in chapter 5. It was explained that especially discretionary accruals are likely to be managed by agents within companies and consequently serve as a proxy for the use of earnings management. The Jones Model and the Modified Jones Model were concluded to be the most up to date and accurate measurement instruments for measuring the level of discretionary accruals. Based on findings by other researchers that the Modified Jones Model showed out to be the most reliable way to estimate discretionary accruals it was later in the methodological section concluded that the Modified Jones Model is the best model that could be adopted by this study. The time series variant fits best with the structure of this thesis in which companies are compared over time before and after the adoption of IFRS.

Studying several articles by different authors it was in the sixth chapter shown that the findings reported in the literature are mixed. Some studies conclude that the introduction of IFRS indeed causes decreasing levels of earnings management as assumed, while many other studies observed an increasing level of earnings management after the introduction of IFRS. However, those studies in addition used different methodologies, looked at different cases, included voluntary and mandatory adopters of IFRS and studied different time intervals. It was concluded that those mixed findings show that the debate on the effect of adopting IFRS is far from settled and that providing further research in this field will be valuable. As the case of the Netherlands was not extensively studied before this case was adopted by this thesis. As standards in the Netherlands were supposed to be high before the adoption of IFRS it might be questionable whether there will be any effect at all. But when on the other end an influence of IFRS on the use of earnings management will be found, the case of the Netherlands provides strong evidence that adopting IFRS matters as the Netherlands can be qualified as a hard case because of its previous high standards.

The seventh chapter developed three hypotheses with regard to the introduction of IFRS, the industry branch of firms and the size of firms. In the research design section of the thesis the total approach of this study was explained to be a quantitative approach; more specifically a desk research approach. With regard to the time interval of the research it was concluded that the period from 2002 to 2004 in which NL GAAP was used will be compared with the period from 2005 to 2007 in which all companies used IFRS. The last issue of the research design was sampling. Starting from a set of 50 companies the sample was reduced to 24 companies meeting all research criteria. Finally all the statistical analyses and corresponding checks were presented in chapter nine. The main findings showed that adopting IFRS has no significant effect on the absolute levels of discretionary accruals scaled by lagged total assets, differences between industries do not affect the analysis, and the size of the firm has a significant negative effect on the use of earnings management.

### 10.2 Conclusion

In answer to the main question it can now be concluded that with the introduction of IFRS the use of Earnings Management among Dutch stock-exchange quoted firms did not decline. A pattern of the growth of the use of earnings management could however not be observed too. This main finding does not strongly support most previous findings which found or a significant negative effect or a significant positive effect of the adoption of IFRS on the use of earnings management. The most likely reason to explain this finding is that the differences between NL GAAP and IFRS are so small that adopting the latter did not really effect the margins for managers to engage in the use of earnings management.

### 10.3 Limitations

Some limitations apply to the empirical and the statistical part of this research. With regard to the adopted methodology and the statistical analyses it can be signalled that the overall explanatory power of the independent variables used in this study was low. It is likely that other factors have a much stronger effect on the use of earnings management such as incentives and enforcement *mechanisms*. However, the current research approach based on estimated accruals cannot detect those factors.

Another limitation of this research is that the final sample of 24 companies is a bit small. On the other hand 135 firm year observations were included in the analyses which are not consequently low. In addition sufficient variation in the independent variables could be observed which allows for reliable analyses of the effects of the independent variables on the use of earnings management. More problematic in the whole study field using accruals based models is that it is sometimes unclear whether the studies use the actual observed values of accruals or the values of accruals scaled by lagged total assets. Some articles use the former terminology while they in fact adopt the later values in their result sections. This research showed that large differences exist between the two measures. It is better to use the indicator for accruals that is scaled by lagged total assets as scaling by lagged total assets reduces the strong influence of large companies on the scores for accrual indicators.

A next limitation might be that not all regression assumptions might be met by this research. As explained in paragraph 9.2 it is not clear whether all the observations are really independent from each other. Observed accruals in a certain year within one company might well be influenced by the accruals of the previous year within this same company. It can be the case that this problem influences the outcomes of the regression analyses more than scholars noticed until now.

Another limitation of using the formulas from the Modified Jones Model for calculating the discretionary accruals is that calculating the accruals for year *t* requires that data should use from the year *t*-1. Calculating the discretionary accruals for 2005 consequently uses data from the year 2004. In other words, the calculation of discretionary accruals that are based on IFRS in 2005 uses data that was calculated based on financial reports using NL GAAP as a standard. This creates a bias in the supposed sharp distinction amongst the period 2002 up to and included 2004 in which NL GAAP was used and the period 2005 up to and included-2007 in which IFRS was used. Due to the study of the annual reports of the companies of 2004, in addition it was noticed by the author that several companies already anticipated in their reports on 2004 on the required introduction of IFRS in 2005. Some companies added a report in IFRS to their reports based on NL GAAP. And it is likely that companies already anticipated on changes in their balance because of the introduction of IFRS. It is consequently questionable whether a sharp distinction between the two periods is possible in the way performed in this research.

### 10.4 Recommendations for further research

Several recommendations for further research follow from the limitations presented in the previous paragraph.

* As the effects of the introduction of IFRS, size and industry are likely to be small when only including the variables studied in this thesis it might be worthwhile to start focusing on other factors in order to explain better the use of earnings management. Some authors signalled the role of enforcement mechanisms. Including this concept in the analysis might for example be considered.
* This research showed that large differences exist between the use of an indicator for discretionary accruals that is scaled by lagged total assets and an indicator that is not scaled. It is better to use the indicator for accruals that is scaled by lagged total assets as scaling by lagged total assets reduces the strong influence of large companies on the scores for accrual indicators. In addition misunderstanding which indicator is actually used sometime exists. Future research should be clearer about this and can be recommended to use the indicator for discretionary accruals that is scaled by lagged total assets.
* The regression assumption that all observations are independent from each other might not be met by the models used in order to estimate the discretionary accruals. I order to ensure the analysis is not biased by this problem further research should consult some statistical experts on this issue.
* Because of the possible bias in the sharp distinction between the two periods in the data that are compared with each other it can be suggested to future research to leave the years 2004 and 2005 out of the test and consider them as transition years. Testing the difference between 2002 up and included 2003 and 2006 up an included 2007 might realize a more reliable indication whether any differences in the levels of the use of earnings management based on NL GAAP and IFRS can be observed.

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### Appendix 1 - Literature review of prior research

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| Authors  | Object of study  | Sample  | Methodology  | Outcome  |
| Barth, Landsman and Lang (2006; 2008) | Study of the effect of voluntary adoption of IFRS (or its predecessor IAS) on earnings smoothing and managing towards positive earnings. | An international sample of firms from 21 countries from 1994 up to 2003. The sample comprises 1,896 ﬁrm-year observations for 327 ﬁrms. | Regression model estimating the effects of independent variables and control variables on change in net income of the firms. | Applying IFRS generally provide higher quality in accounting, i.e. less earnings management, more timely loss recognition and more value relevance of accounting amounts than a matched sample of non-U.S.-firms that do not apply IFRS |
| Gassen and Sellhorn (2006) | The first object of the study is to determine what the determinants were of voluntary IFRS adoption by publicly traded German firms during the period 1998-2004. The second object is to investigate the effects of introducing IFRS on the quality of reporting earnings. | The final sample consist of 1176 firm year observations of firms reporting under German GAAP and 630 firm year observations of firms that voluntarily adopted IFRS during the period 1998-2004. | Propensity-score matching procedure and the *Dechow/Dichev* (2002) measure of accrual quality.  | IFRS firms have more persistent, less predictable and more conditionally conservative earnings than firms reporting under German GAAP.  |
| Cai, Courtenay and Rahman (2008) | The object of this study is to study the effects of IFRS adoption and its enforcement on earnings management in financial reporting across 32 countries. Voluntary as well as mandatory adoption is the object of study.  | 100,000 firm-year observations from 2000 to 2006 across 32 countries | Dechow et al. (1995) method of estimating accounting accruals. Modified measure of enforcement developed by Hope (2003) to capture the country specific levels of enforcement. OLS regression model to detect the effects of the independent variables on the estimated accounting accruals.  | The level of earnings management in IFRS adoption countries has been decreasing in recent years. The results in addition show that countries with stronger enforcement generally have less earnings management. |

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| Authors  | Object of study  | Sample  | Methodology  | Outcome  |
| Christensen, Lee and Walker (2009)  | The object of study in this research is whether the technical changes involved in the transition to IFRS from U.K. GAAP may affect the distribution of wealth between managers and shareholders in the U.K. The primary topic studied is the effect of adopting IFRS on covenant violation. | A sample of 137 British firms observed between January and October 2005 is used. | OLS Regression models and correlation analysis.  | The transitions from U.K. GAAP to IFRS alter the likelihood of technical covenant violation. Firms expect higher costs of contract violations. Consequently through contract violations the introduction of IFRS will in addition have an indirect negative effect upon the use of earnings management |
| Tendeloo and Vanstraelen (2005)  | The object of this study is to investigate whether voluntary adoption of IFRS is associated with lower earningsManagement among German firms. | 636 firm-year observations of German firms relating to the period 1999-2001 | Cross-sectional Jones Model to estimate discretionary accruals | IFRS-adopters do not present different earnings management behavior compared to companies reporting under German GAAP. Voluntary adopters of IFRS in Germany cannot be associated with lower levels of earnings management. |
| Christensen, Lee and Walker (2008) | To test the effect of the introduction of IFRS on the use of earnings management among German firms who voluntarily or mandatorily adopted IFRS | The final sample consists of 177 firms that did not adopt IFRS until 2005, and 133 firms that adopted IFRS voluntary before 2005.  | Regression model (developed by Barth et al. 2008) estimating the effects of independent variables and control variables on change in net income of the firms. | Voluntary adoption of IFRS is associated with decreased earnings management and more timely loss recognition. In stark contrast the study finds no evidence of such accounting quality improvements for firms that are mandatorily forced to adopt IFRS. |
| Paananen and Lin (2008) | The main objective of this study is to examine and compare the quality of accounting numbers under IAS during 2000-2002with those under IFRS during 2003-2006 | The sample consists of 107 German firms reposting in three different time periods. Firms reporting under IAS (2000-2002); Voluntary reporting under IFRS (2003-2004); mandatory reporting under IFRS (2005-2006).  | Variability of the change in net income scaled by total assets method developed by Barth et al. (2008) | Accounting quality has not improved but worsened over time. The main cause of this development is believed to be driven by changes of the standard of IFRS and not by new adopters.  |

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| Lippens (2010) | The main object of this study is to investigate whether the mandatory adoption of IFRS from 1 January 2005 by all listed companies in the European Union led to significantly lower levels of earnings management in six of those EU countries.  | Based on a sample of listed firms from Belgium, Denmark, Finland, Italy, Sweden and The Netherlands he compares the pre-IFRS period from 2000-2004 with the post-IFRS period extending from 2005 through 2006. A total number of almost 1200 firm year observations are used in the analyses | Modified Jones Model | The results indicate that both accrual-based earnings management as well as real earnings management has strictly increased after the adoption of IFRS. Some additional tests showed that there is a substitution effect between accruals based earnings management and real earnings management despite the growing rate of both types. |

### Appendix 2: List of 24 companies included in the sample

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| Aalberts Industries NV |
| Akzo Nobel NV |
| Arcadis NV |
| Asml Holding NV |
| Brunel International NV |
| CSM NV |
| Heijmans NV |
| Heineken NV |
| Koninklijke Ahold NV |
| Koninklijke BAM Groep NV |
| Koninklijke DSM |
| Koninklijke KPN NV |
| Koninklijke Ten Cate NV |
| Koninklijke Vopak NV |
| Koninklijke Wessanen NV |
| Nutreco NV |
| Randstad Holding NV |
| Royal Boskalis Westminster NV |
| Royal Imtech |
| SBM Offshore NV |
| Unilever NV |
| Unit 4 NV |
| USG People NV |
| Wolters Kluwer NV |
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|  |

### Appendix 3: Boxplots and Q-Q plots

**Figure 1:** Boxplot containing 144 observations **Figure 2:** Boxplot containing 135 observations



**Figure 3**: Q-Q Plot with 144 observations **Figure 4:** Q-Q Plot with 135 observations



### Appendix 4: data sample

The data used for this research is attached on a cd-rom.