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QUARTERLY EARNINGS PATTERNS AND EARNINGS MANAGEMENT

Evidence from Finland

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ABSTRACT
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Objectives:

This thesis has two main objectives. First, it aims to study the applicability of an innovative earnings management detection model invented by Das, Schroff and Zhang (2007) to a sample of publicly quoted firms in Finland. Second, it intends to determine whether the mandatory application of IFRS standards for publicly quoted firms has affected the level of earnings management in Finland.

Data:

Annual and interim financial data is obtained from Thomson Financial Worldscope database, and consensus EPS forecasts are from I/B/E/S database. The sample consists of 555 firm-year observations of firms publicly quoted in the Helsinki Stock Exchange between years 2002 and 2007. Firms representing banks, financial institutions and insurance companies are excluded from the sample.

Results:

Fourth-quarter earnings reversal is a common phenomenon among firms publicly quoted in Finland. Alternative benchmarks constructed to evaluate the expected level of the reversal frequency indicate that the observed fourth-quarter reversal is higher than would be expected by chance. Additional tests support the finding that the reversal pattern may well indicate the presence of earnings management. However, the results do not provide similar support for the model as documented in the U.S. The results further suggest that IFRSs may better restrict the possibilities to manage earnings compared to FAS.

Keywords:

Earnings management, International Financial Reporting Standards (IFRSs), accruals, Jones model, threshold-based earnings management

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NELJÄNNESVUOSITTAIN RAPORTOIDUISSA TULOKSISSA HAVAITTAVAT SARJAT JA TULOKSEN OHJAILU

Tutkimus suomalaisella aineistolla

Tutkimuksen tarkoitus:

Tämä tutkielma perehtyy tuloksen ohjailuun Suomessa sekä pyrkii tutkimaan mahdollisia tuloksen ohjailun määrässä havaittavia eroavaisuuksia raportoitaessa kansainvälisten tilinpäätösstandardien tai kansallisen lainsäädännön mukaisesti. Tavoitteena on selvittää, voiko Das, Schroff ja Zhangin (2007) kehittämää innovatiivista tuloksen ohjailun tutkimusmallia soveltaa Suomessa julkisesti listattuihin yrityksiin. Lisäksi tutkitaan, millaisia eroavaisuuksia mallilla havaitaan kansainvälisiä ja kansallisia raportointistandardeja soveltavien yritysten tuloksen ohjailun määrässä.

Aineisto:

Tutkimusaineisto muodostuu Suomessa vuosina 2002-2007 listatuille yrityksille kerätysta vuosittaisesta ja neljännesvuosittaisesta taloudellisesta informaatiosta. Aineisto on kerätty Thomson Financial Worldscope –tietokannasta. Lisäksi I/B/E/S –tietokantaa on käytetty kerättäessä aineistoa analyytikoiden tulosennusteista. Aineisto koostuu 555 havainnosta. Pankki-, rahoitus- ja vakuutustoimialoja edustavat yritykset on rajattu pois tutkimusaineistosta.

Tulokset:

Tutkimustulokset osoittavat, että neljännen vuosineljänneksen tuloksen vastakkainen muutos suhteessa kolmen aikaisemman vuosineljänneksen tuloksen muutokseen on yleinen ilmiö Suomessa listatuilla yrityksillä. Suoritetut testit osoittavat, että ilmiön yleisyys on suurempi kuin mitä sattumalta voisi olettaa. Vaihtoehtoisten tuloksen ohjailun havaitsemismallien antamien tulosten tukemana voidaan todeta, että neljännesvuosittain raportoiduissa tuloksissa havaittavat sarjat voivat toimia tuloksen ohjailun indikaattorina. Saavutetut tulokset eivät kuitenkaan ole yhtä merkittävästi mallia tukevia kuin amerikkalaisella aineistolla saadut tulokset. Tuloksen ohjailun määrässä on havaittavissa pieniä eroja kansainvälisen ja kansallisen lainsäädännön mukaisesti raportoivien yritysten välillä. Tulokset viittaavat siihen, että Suomen kansallinen lainsäädäntö saattaa mahdollistaa tuloksen ohjailun kansainvälistä standardistoa helpommin.

Avainsanat:

Tuloksen ohjailu, kansainväliset tilinpäätösstandardit (IFRS), jaksotuserät, Jonesin malli

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ABBREVIATIONS USED

Big 4 auditor	Includes the four largest auditing firms KPMG, PwC, E&Y and Deloitte
EAA	European Economic Area
FAA	Finnish Accounting Act
FAS	Finnish Accounting Standards
FASB	Financial Accounting Standards Board
FIN-FSA	Finnish Financial Supervision Authority (Rahoitustarkastus)
IASB	International Accounting Standards Board
IASC	International Accounting Standards Committee
IFRS	International Financial Reporting Standards
KILA	Kirjanpitolautakunta (the Accounting Practice Board of the Ministry of Trade and Industry)
US GAAP	United States Generally Accepted Accounting Principles

1. INTRODUCTION

This chapter begins this thesis by introducing the topic and the objectives of the empirical study. First, the reasoning behind the topic is given, and the motivation for the study is discussed. Second, the two objectives of the study are introduced. Last, a brief look into the structure of this paper is taken.

1.1 MOTIVATION

Financial reporting is important means for management to communicate the performance of the firm to its investors. The Finnish Accounting Act (30.12.1997/1336) states that the annual accounts and the report of operations should be prepared so that they provide a true and fair view of the operations of the reporting entity (3:2§). However, as the management of a firm holds inside knowledge about the firm's current state and business circumstances, and does not necessarily mediate this information to its investors, information asymmetry between the management and the investors occurs. Healy and Palepu (2001) argue that the demand for financial reporting and disclosure originally arises from information asymmetry and agency conflicts between managers and outside investors. Healy and Wahlen (1999) argue that because financial reporting standards permit managers to exercise judgment in reporting, the room for judgment may also be used by the management to conduct manipulation of figures for other purposes than ensuring the true and fair view of published reports. In an ideal case, the management uses its insider information and its ability to use judgment when preparing the external accounts to reflect the true condition of the firm as closely as possible. However, earnings are often managed for selfish purposes to, for example, meet or beat certain earnings thresholds ensuring the management their incentive bonuses, or to avoid reporting negative news to the public.

Opportunism in external reporting is attempted to be limited both by the accounting standards and by compulsory independent audit. Healy and Wahlen (1999) argue that the central question for standard setters and regulators is to decide how much judgment to allow management to exercise in financial reporting. The complete elimination of management judgment is not an optimal situation from the investors' perspective, nor is the alternative of unlimited judgment given that the confidence of auditing is always limited. The issue is made more difficult by the differences of opinions between the practitioners and academics, who do not currently agree with the seriousness of earnings management as a phenomenon. Where the practitioners and regulators see earnings management as pervasive and problematic, academic research has shown little evidence on significance of earnings management. Differences in opinions are mainly caused by the different scope of research between practitioners and academics. The empirical procedures in use and the institutional knowledge on means of earnings management are not currently at the same level. McNichols (2000) notes that a potential to reduce the existing comprehension gap lies in the development and use of richer research designs and in the measures of earnings management behavior, which condition on more information than the current research methods.

Spohr (2005) notes that the public discussion and the efforts made by regulators to restrict earnings management signal that the importance of the earnings management phenomenon has been widely recognized outside the academia. The major accounting scandals (e.g. Enron and Worldcom) have taught that the manipulation of reporting figures may have tremendous effects on individual wealth, local or national economy. The issue is neither trivial nor irrelevant. As the current earnings management detection models have not proven to be fully reliable, the continuous development and introduction of new potential research methods and models is welcomed.

International Financial Reporting Standards (IFRSs) became mandatory for EU listed companies as of the beginning of 2005. As the standards have now been in used for three complete fiscal years, the evaluation regarding their applicability and quality is now desirable and justifiable. One of the objectives of the International Accounting Standards Board (IASB) responsible for introduction and further improvement of IFRSs is to develop a single high set of global accounting standards. This objective may also be interpreted as an aim to develop the standards towards a direction restricting practice of earnings management better than they currently do. An interesting reference point is to compare the IFRSs and national standards, and determine whether or not the European countries applying IFRSs benefit from the use of the international standards from the earnings management perspective.

1.2 OBJECTIVES AND CONTRIBUTION

The objectives of this thesis are two-fold. The first objective is to study the applicability of an innovative earnings management detection model invented by Das, Scroff and Zhang (2007) to a sample of publicly quoted firms in Finland. Different from the majority of earnings management research methodology based on estimating discretionary accruals, Das et al. use a pattern of quarterly earnings changes as an indicator of earnings management in their study conducted in a large sample of American firms. In their paper the authors show that firms presenting reversal pattern on fourth-quarter earnings relative to earnings of interim quarter are more likely to have practiced earnings management than firms not showing the reversal pattern of earnings. As the models based on approximating accruals contain several problems and therefore are not solid methods to detect earnings management, a need to explore alternative methods exists. Also McNichols (2000) suggests that further development in the field of earnings management study requires departure from reliance on aggregate accruals approaches.

Das et al. (2007) find their research design to be successful in specifying firms potentially engaged with earnings management from a large sample. Their research design enables the authorities and researchers interested in earnings management to efficiently limit the number of firms suspected of earnings manipulation, to save valuable resources and time, and to reduce the number of inconclusive investigations conducted. Therefore, testing this research design with the sample of publicly quoted firms in Finland proves interesting.

The second objective is to study whether the mandatory application of International Financial Reporting Standards (IFRSs) for the publicly quoted firms in Finland has affected the level of earnings management. E.g. Kallunki and Martikainen (2003) argue that the Finnish national accounting legislation is rather vague compared to the internationally used IFRSs. Ewert and Wagenhofer (2005) further state that detailed accounting standards restrict the discretion for accounting earnings management. These arguments would intuitively lead to a conclusion that IFRSs are a better set of standards in limiting earnings management compared to the Finnish Accounting Standards (FAS). However, in their study conducted in German institutional setting, Goncharov and Zimmermann (2006) find that, in fact, no significant difference in earnings management exists between financial reports prepared according to German GAAP and IFRS. The similar comparison between FAS and IFRS has not been conducted in Finland, and thus it provides an interesting subject for research.

The final sample consists of publicly quoted firms in the Helsinki Stock Exchange for years 2002 to 2007. However, firms representing banks, investment or insurance firms (primary SIC codes 60-67) are excluded from the study. The final sample consists of 555 firm-year observations, which are divided into two separate samples according to the accounting standard used when testing for the second objective.

The results show that fourth-quarter earnings reversal is a common phenomenon among firms publicly quoted in Finland. Alternative benchmarks constructed to evaluate the expected level of the reversal frequency prove to some extent that the observed fourth-quarter reversal is higher than would be expected by chance. Other common indicators of earnings management used to further tests the functionality of the fourth-quarter earnings reversal pattern support the finding that the reversal pattern may well indicate the presence of earnings management also in the Finnish institutional setting. However, the results do not provide similar support for the model as documented in the U.S. by Das, et al. The results further suggest that IFRSs may be better in restricting the possibilities to manage earnings compared to FAS. Firms reporting according to FAS are found to present the reversal patterns more frequently than firms reporting according to IFRS.

1.3 STRUCTURE

The study is structured the following way. In chapter two, the regulation on financial reporting in Finland is introduced with emphasis on the changes occurred in financial reporting due to the mandatory application of IFRSs. In chapter three, previous earnings management literature is discussed from various perspectives. The fourth chapter discusses the hypothesis development, data, and research design of this study. In chapter five, the results of the empirical study are analyzed. Lastly, the conclusions on the findings of the study are drawn, and directions for future research are given.

2. FINANCIAL REPORTING REGULATION IN FINLAND

Different factors have affected the national financial reporting practices. Providers of finance, tax system, role of accountancy profession, and the legal system have influenced financial reporting practices (Troberg 2007, 19). The Finnish reporting environment has been historically characterized by the role of banks and tax authorities. Even today, the capital structure of Finnish firms is relatively debt-intensive compared to equity-intensive capital structures e.g. in the U.S. and the U.K., and corporate taxation is still tightly connected with the annual financial statements of firms.

The regulatory environment of financial statements in Finland has gone through several changes during the past two decades. The regulation concerning financial statements in Finland comprises of legislation and provisions set by public authorities and recommendations issued by public and private institutions. Finnish financial statements are regulated by the Accounting Act (FAA) and the Companies Act, which both have been recently amended in order to comply with directives of the European Union. Finnish companies listed on Stock Exchanges in the European Economic Area (EEA) must also comply with the regulations of the Securities Markets Act. (KHT-yhdistys 2004, 7-8) In addition, the Business Taxation Act, decrees of the Ministry of Finance and the Ministry of Trade and Industry, and the rules set by the Finnish Financial Supervision Authority (FIN-FSA) create complementary requirements to financial reporting.

In the first section, the principal sources of accounting regulation in Finland are briefly discussed. After that, introduction to IFRS is given, and the most significant differences between the Finnish Accounting Act and IFRS are discussed from the perspective of earnings management.

2.1 NATIONAL LEGISLATION

The Finnish Accounting Act (30.12.1997/1336) regulates accounting and bookkeeping in general, and includes provisions concerning accounting, annual accounts, valuation and matching, and consolidation. With latest amendment (30.12.2004/1304), the Accounting Act was revised to allow preparation of financial statements in accordance with IFRS for the consolidated statements of publicly quoted firms. Chapter 7a added to the Accounting Act in the amendment obliges firms which shares are subject to public trading to apply IFRSs in their accounting and financial reporting.

The Limited Liability Companies Act (21.7.2006/624) regulates the equity of limited liability companies as well as their distribution of profit. It also includes some specific provisions for limited liability companies concerning consolidated accounts, the report of the Board of Directors, and interim reporting.

The Business Income Taxation Act (24.6.1968/360) indirectly influences the financial statements as taxation is based on the annual accounts. According to the tax legislation, most of deductions and depreciation for tax purposes have to be taken into the annual accounts.

The Securities Markets Act (26.5.1989/495) includes special provisions for the financial statements, and regulates the obligation of disclosure of publicly quoted firms. It includes regulation regarding e.g. the frequency and content of interim financial reports requiring the publicly quoted firms to prepare interim financial reports for the first three, six and nine months of the financial period. As stated in the act, interim financial report shall be prepared in compliance with the same principles for recording and valuation as in the annual accounts. The act makes all the companies listed in the OMX Helsinki obliged to preparing their interim financial reports according to international IFRS standards. The Ministry of Finance has further defined the regulations of the Securities Markets Act regarding the regular duty of disclosure of an issuer of a security by a decree (9.2.2007/153).

The Finnish Financial Supervision Authority (FIN-FSA) is a legal authority that supervises and regulates financial markets and those who participate in those markets. FIN-FSA has published its own set of standards, which guide the financial markets. FIN-FSA is also vested with the task of promoting knowledge about the financial markets. National oversight bodies, like FIN-FSA, have been mandatory within the EU since the mandatory application of IFRS in 2005. The Committee of European Security Regulators is the coordinating body between different national oversight bodies.

Disclosure obligation of the issuer and shareholder –standard by FIN-FSA (5.2b/19.10.2004, latest amendment on 8 January 2008) aims to promote market discipline through enhanced market transparency, and details the disclosure obligations of both the issuer and the shareholder. The objective of the standard is to promote consistent and clear information policy to ensure that investors have access to reliable information as a basis for monitoring developments in the issuing company (5.2b, chapter 5.1). Issuers of securities admitted to public trading are obliged to disclose both *regular* and *ongoing* information. Regular reporting requirements refer to the issuer's obligation to provide information on its financial performance on a regular basis. This involves the disclosure of financial statements, annual reports, financial statement announcements, interim financial reports, interim management statements and annual summaries (5.2b, chapter 2). The ongoing disclosure obligation puts the issuer under an obligation to publish any such information related directly to the issuer that is of a precise nature and likely to have a material effect on the value of its security (5.2b, 5.1). Ongoing disclosure requirements are designed to ensure that investors have equal and simultaneous access to information.

2.2 DIFFERENCES BETWEEN FAS AND IFRS

International Financial Reporting Standards (IFRSs), formerly known as International Accounting Standards (IASs), have been developed by the International Accounting Standards Board (IASB, predecessor International Accounting Standards Committee IASC) to harmonize corporate accounting practice and to answer the need for high quality standards to be adopted in the world's major capital markets (Van Tendeloo and Vanstraelen 2005). The regulation of European Parliament and Council to apply IFRSs has been effective since September 2002 (EY 1006/2002). This has placed requirements to all EU companies listed on regulated European markets to prepare consolidated financial statements according to IFRSs since 2005.

Also in Finland, publicly quoted firms have had to adapt their accounting and reporting systems to the new reporting requirements. Where the IFRSs take an explicit investor approach, the Finnish accounting regulation concentrates more on protecting the rights of the creditor. The IFRSs give more importance on the balance sheet, different from the Finnish income statement –

dominant approach. IFRSs are also more detailed than the Finnish national regulation. (Räty and Virkkunen 2005)

Based on FIN-FSA (2006), Räty and Virkkunen (2005), and Troberg (2007) the most significant differences between IFRSs and Finnish Accounting Standards (FAS) are discussed next in order to build understanding about their possibly differing effects regarding earnings management, and further to enable understanding of the results of the empirical part of this thesis.

2.2.1 Valuation principles

The valuation basis and principles are those that determine the method according to which an item is recorded in the balance sheet. Probably the most extensively used valuation principle globally is the *acquisition cost*, which is also the principal valuation method in the Finnish accounting regulation (FAA 5:1-10§). The use of acquisition cost can be easily supported by the fact that it can be verified by a document, which proves the transaction and the price paid for an item. However, the acquisition cost might not always represent the true economic value of the item, and therefore alternative valuation principles, such as *replacement cost*, *net realizable value*, *value in use,* and *fair value* are also in use. (Troberg 2007, 45-47)

The Finnish Accounting Act (later Accounting Act of FAA) applies the acquisition cost as the main valuation principle. Items are to be carried mainly at their depreciated and impaired acquisition value (5:5§ and 5:13§). Rather inconsistently, the national accounting legislation lacks detailed impairment rules. The only notion regarding impairment is given in 5:13§ which simply states that if the estimated future revenue generated by a non-current asset is estimated to be permanently lower than the undepreciated balance of the acquisition cost, and adjustment to the value must be made to write off the difference as an expense. To a limited extent, when land, waters, or certain financial instruments are in question, revaluation of assets has been also allowed (5:17§). In addition, certain financial instruments are allowed to be carried at their fair values (5:2a§). Intangible assets are allowed to be capitalized on a strictly prudent basis, except for the intangible rights, which shall always be activated (5:5a§).

The International Accounting Standards Board (IASB) has chosen to move more and more towards the fair value approach with the IFRSs. The reasoning behind the choice is the relevancy of fair values for economic decision making, as they provide more accurate information on the value of the item, if properly evaluated. However, several problems exist in application of fair valuation. Troberg (2007, 47) argues that fair values are not often auditable, because there often are no readily available market values for the items. In cases when a market value is not available, the value in use, in other words the net present value, is the valuation alternative to estimate the fair value. Value in use is dependent on the management's estimation of future cash flows and is therefore a favorable basis of earnings management. Nevertheless, it must be remembered that the relevance and usefulness of fair values is not questionable, if the values are objectively determinable. Accounting Act allows the use of fair values only with certain financial instruments (5:2a§).

In November 2006 the IASB issued a discussion paper regarding fair value measurements. The paper closely followed the *Fair value measurements* -standard (SFAS 157) of the United States Generally Accepted Accounting Principles (US GAAP) issued in September 2006 by Financial Accounting Standards Board (FASB). As IFRSs require measurement of some assets, liabilities and equity instruments at their fair values, but the guidance of how to measure fair values is dispersed throughout IFRSs and is not always consistent, the IASB is willing to establishing a single source of guidance similar to that of SFAS 157 for all fair value measurements required by IFRSs (IASB 2006, 6).

The discussion paper raises discussion on the hierarchy of fair value determination. Following that of SFAS 157, the discussion paper questions whether fair values should be consistently determined according to the hierarchy presented in Figure 1. The IASB aims to publish a draft of a fair value standard based on the discussion paper and responses received to it during year 2008.

Figure 1: Fair valuation hierarchy as presented in SFAS 157.24-30

Level 1:	Quoted prices in **active** markets for **identical** assets or liabilities that the reporting entity has the ability to access at the measurement date.
Level 2:	**a)** Quoted prices for **similar** assets or liabilities in active markets
	b) Quoted prices for identical or similar assets or liabilities **in markets that are not active**
	c) Inputs other than quoted prices that are observable for the asset or liability
	d) Inputs that are derived principally from or corroborated by observable market data by correlation or other means
Level 3:	Unobservable inputs for the asset or liability.

2.2.2 Investment property

The Finnish accounting regulation does not contain specific regulation for property held for investment purposes. Investment property held to earn rentals or for capital appreciation is recorded as a tangible asset alongside with other similar assets not necessarily held for investment purposes. The asset is carried at its depreciated acquisition cost.

In contrast, IFRSs contain a specific standard for investment property (IAS 40 *Investment property,* 31.3.2004). Investment property, which can be land, building, a part of building, or a combination of the mentioned, is initially measured at cost (IAS 40.20). Measurement after recognition may be carried out either according to the fair value or the cost model (IAS 40.30). In using the fair value model, the gains or losses arising from the change in the fair value are taken through the profit and loss account (IAS 40.35). If the cost model is used, the firm shall measure all of its investment property at its cost less any accumulated depreciation and any accumulated impairment losses (IAS 16.30).

If the fair value method is chosen, a gain or a loss arising from a change in the fair value of investment property shall be recognized in profit or loss for the period in which it arises (IAS 40.35). The standard rates the current prices in an active market for similar property in the same location and condition and subject to similar lease and other contracts as the best evidence for evaluating fair value for an item. However, if active market for similar property does not exist, the firm is also allowed to use a variety of other sources to determine the fair value, including e.g. current prices in an active market for properties of different nature, condition or location, or discounted cash flow projections based on reliable estimates of future cash flows (IAS 40.46). It is evident that the flexibility and room left for management's judgment in determining fair values provides grounds for earnings management.

2.2.3 Biological assets

According to the Finnish accounting regulation, biological assets are handled as tangible assets. They are valued at their acquisition cost and depreciated according to their economic life (5:5§). Under IFRSs, also assets defined as biological products (a living animal or plant) shall be measured at their fair value less estimated point-of-sale costs (IAS 41.12). A gain or a loss arising on initial recognition of a biological asset at fair value less estimated point-of-sale costs and from a change in fair value less estimated point-of-sale costs of a biological asset shall be included in profit or loss for the period in which it arises (IAS 41.26).

The change from acquisition method to fair valuation is especially critical in Finland as the forest industry forms a significant part of the country's economy. Herbohn and Herbohn (2006) find evidence suggesting that compliance with IAS 41 will allow the preparers of financial statements a choice of methods to determine the fair value of timber, as the firm must determine the discount rate for estimating the fair value. For example UPM-Kymmene Oyj discloses the following in its notes of Annual Report of year 2007:

> *The pre-tax discount rate used in determining the fair value in 2007 was 7.50% (2006: 7.50%). A 1% decrease (increase) in discount rate would increase (decrease) the fair value of biological assets by approximately € 130 million.*

Herbohn and Herbohn (2006) continue that the recognition of unrealized gains and losses from timber assets from changes in fair value and the harvest of agricultural produce will affect income statements, introducing greater volatility into reported income. Troberg (2007) notices that some paper companies have sold off major parts of their forests prior to the mandatory adoption of IAS 41, and believes it to be partly due to their desire to reduce the potential of volatility of earnings caused by the fair valuation. Compared to the FAS, the application of IFRS creates grounds for earnings management but causes also unintentional and disadvantageous volatility.

2.2.4 Intangible assets

According to the Finnish accounting regulation, intangible assets are measured at cost and amortized according to plan over maximum of 20 years. However, certain intangibles face more specific accounting requirements depending on their categorization drawing them into five subsections as follows: (1) *Development expenditure*, (2) *Intangible rights*, (3) *Goodwill*, (4) *Other capitalized long-term expenditure*, and (5) *Advanced payments* (Accounting Ordinance 30.12.1997/1339 1:2§). The Accounting Act (30.12.1997/1336) allows, but does not require, capitalization of intangible assets other than those falling under the category of intangible rights. Intangible rights are subject to capitalization and amortization according to predetermined plan (5:5a§). Accounting for research and development costs and goodwill is explained in detail in the following chapters.

IAS 38 *Intangible assets* -standard (9.12.2004) contains detailed rules on how to value intangible assets. An intangible asset shall be recognized if it is probable that the expected future economic benefits that are attributable to the asset will flow to the entity and the cost of the asset can be measured reliably (IAS 38.21). Initially, intangible assets are measured at cost (IAS 38.24). However, integrally generated intangible assets, such as brands, customer lists, and publishing titles, shall not be recognized as intangible assets in the balance sheet (IAS 38.48). In other words, the standard only allows the recognition of intangible assets which are acquired. After initial recognition, an entity shall choose either *the cost model* or *the revaluation model* as its accounting policy. If an intangible asset is accounted for using the revaluation model, all the other assets in its class shall also be accounted for using the same model, unless there is no active market for those assets. The asset shall be carried at its fair value at the date of the revaluation less any subsequent accumulated amortization and any subsequent accumulated impairment losses. If the cost model is chosen, the asset shall be carried at its cost less any accumulated amortization and any accumulated impairment losses. (IAS 38.72-75). If an intangible asset's carrying amount is increased as a result of a revaluation, the increase shall be recognized in other comprehensive income and accumulated in equity under the heading of revaluation surplus. However, the increase shall be recognized in profit or loss to the extent that it reverses a revaluation decrease of the same asset previously recognized in profit or loss.

Significantly different from the Finnish practice, an entity shall assess whether the useful life of an intangible asset is *finite* or *indefinite*. An intangible asset shall be regarded by the entity as having an indefinite useful life when, based on an analysis of all of the relevant factors, there is no foreseeable limit to the period over which the asset is expected to generate net cash inflows for the entity. An intangible asset with a finite useful life is amortized and an intangible asset with an indefinite useful life is not amortized but is subject to impairment tests. (IAS 38.88-89, 38.108) An impairment loss shall be recognized immediately in profit or loss (IAS 36.60).

Treatment of intangible assets according to IFRS is very different from the Finnish practice. In general, IFRS gives great importance to intangibles e.g. in cases of business combinations, as the acquisition value is to be allocated to both tangible and intangible assets as much as possible (see chapter 2.3.6). The use of fair valuation of the intangible items is, however, restricted to those having verifiable market value, and thus the accounting for intangible assets between Finnish practice and IFRS is different but does not provide notably differing opportunities for earnings management.

2.2.5 Research and development

The Finnish accounting regulation previously provided a sharp contrast to the IFRS on the issue of research and development (R&D) costs, as it allowed capitalization of both research and development costs. The renewal of FAA 5:8§ (30.12.2004/1304) restricted the capitalization regarding research and development costs, and the act was amended to require expensing of research costs in all circumstances. Capitalization of development costs under specific conditions is still allowed. Where certain distinct criteria are all fulfilled (decree of the Ministry of Trade and Industry 50/1998), the development costs can, but are not required to, be capitalized.

IAS 38 *Intangible Assets* (9.12.2004) principally requires expensing of both research and development costs. However, it makes a restricted exception, and requires capitalization of development costs if, and only if, an entity can demonstrate all of the following:

a) the technical feasibility of completing the intangible asset so that it will be available for use or sale;
b) its intention to complete the intangible asset and use or sell it;
c) its ability to use or sell the intangible asset;
d) how the intangible asset will generate probable future economic benefits. Among other things, the entity can demonstrate the existence of a market for the output of the intangible asset or the intangible asset itself or, if it is to be used internally, the usefulness of the intangible asset;
e) the availability of adequate technical, financial and other resources to complete the development and to use or sell the intangible asset; and
f) its ability to measure reliably the expenditure attributable to the intangible asset during its development. (IAS 38.57)

The requirements necessitating capitalization are extensive, and it must be noticed that, taking into account the development life cycle of an asset, most likely the major part of the development has already been carried out (and the costs of which have thus been expensed) prior to fulfillment of the above mentioned criteria. (Troberg 2007, 158)

Relative to IFRS, FAA allows more room for judgment in accounting for R&D costs. The availability of judgment can also be seen as an intermediary to earnings management, and thus it can be argued that the FAA enhances earnings management through reporting of R&D. Nevertheless, one can argue that the Finnish regulation ensures the presentation of *true and fair view* of the firm's economic position and future better than IFRS. On the other hand, the presence of two alternative reporting methods in the FAA (the freedom to choose between capitalizing and expensing) does not support the important qualitative characteristic of *comparability* of financial reports. The IASB has concentrated especially on elimination of alternative practices when revising old IFRS standards and introducing new ones in order to enhance the comparability of financial reporting between firms.

2.2.6 Business combinations and goodwill

In business economics, goodwill is defined as the proportion of the value of the firm which exceeds the firm's net asset value. As business combinations are an everyday phenomenon in today's global market economy, accounting methods for consolidation have gained importance. From the Finnish viewpoint, one of the most significant changes in accounting for business combinations brought by the international accounting regulation has been the treatment of goodwill. (See i.e. Leppiniemi and Leppiniemi 2005, 36-37, Troberg 2007, 113).

Regulation specifically for the accounting for goodwill cannot be found in FAA. Chapter 6 of the Accounting Act includes regulation on preparation of consolidated accounts, which can be applied to accounting for goodwill. However, it must be notified that chapter 6 does not apply to those firms preparing their accounts according to IFRS.

Finnish accounting regulation allows accounting for business combinations by using either the purchase method or the pooling method (6:8-9§). Pooling method is to be applied only when distinct criteria listed in 6:9§ are met. If the criteria are not met, the acquisition method shall be applied. If the acquisition method is applied, the surplus of the acquisition value exceeding the value of the acquiree's net assets forms the goodwill asset. Resulting goodwill is amortized over a maximum of 20-year-period at the straight-line method.

Compared to the Finnish accounting regulation, IFRS takes a more detailed and thorough grasp on the issue of accounting for business combinations. Accounting for goodwill is regulated by a recently renewed IFRS 3 standard *Business Combinations* (5.3.2008), IAS 38 *Intangible Assets* standard (9.12.2004), and IAS 36 *Impairment of Assets* standard, which contains ruling for the accounting foe goodwill after its initial recognition to the financial statements.

IFRS 3 defines business combination as *the result of a transaction where two separate entities become one reporting entity with a restriction that the assets acquired and liabilities assumed constitute a business* (IFRS 3, Appendix B*)*. In other words, acquisition of assets which do not form a business shall be accounted as asset acquisition and not as business combination. A definition for the term business is also given in detail in the standard to further enable its sufficient application. Goodwill is defined as *an asset representing the future economic benefits arising from other assets acquired in a business combination that are not individually identified and separately recognized (*IFRS 3, Appendix A).

Prior to introduction of IFRS 3 for the first time in 2004, IFRS had allowed two alternative accounting methods for business combinations: *the pooling method* and *the acquisition method* (Troberg 2007, 114-115). As the IFRS 3 came effective, the use of the pooling method was prohibited and thus the only applicable method effective today is the acquisition method (IFRS 3.4). The decision by the IASB to forbid the use of the pooling method was in line with the decision made earlier by the FASB, which removed the possibility to apply the pooling method also from the US GAAP already in 2001. The renewed standards of both US GAAP and IFRS took a very different approach compared to their predecessors, as they abandoned the systematic amortization of goodwill and applied an impairment-only approach. This approach was argued to improve the value relevancy of the information given in the financial statement. (Ojala 2007, 1-3)

For the impairment testing purposes, goodwill acquired in a business combination shall be allocated to each of the acquirer's cash-generating units that are expected to benefit from the combination irrespective of other assets or liabilities of the acquiree having been assigned to those units (IAS 36.80). A cash-generating unit to which goodwill has been assigned shall be annually tested for impairment, and whenever there is an indication that the unit may be impaired, by comparing the amount of the unit with the recoverable amount of that unit. If the recoverable amount of the unit exceeds the carrying amount of the unit, the unit and the goodwill allocated to that unit shall be regarded as not impaired. (IAS 36.90) If the carrying amount of the unit exceeds the recoverable amount of the unit, the entity shall recognize the impairment loss, which is first to be reduced from the carrying amount of any goodwill allocated to the cash-generating unit, and second to the other assets of the unit pro rata on the basis of the carrying amount of each asset in the unit (IAS 36.104). No reversal of the goodwill impairment loss is allowed.

The objective of the business combinations standards of IFRS is to retain the term goodwill as pure as possible, meaning that the goodwill asset comprises preferably only the benefits rising from the synergies of the business combination and the going-concern element of the acquirees' existing business (Troberg 2007, 116-117). In practice, this means that the acquirer shall first measure carefully the identifiable assets acquired and the liabilities assumed at their acquisition-date fair values (IFRS 3.18). As the assets are usually stated at their acquisition cost at the acquiree's accounts, but the acquirer is more likely to pay a price for them that is closer to their fair values, the differences in the values further reflected in the final acquisition price is related to the assets already existing in the acquiree's accounts. The standard requires the acquirer to be specific about what it actually pays for. In addition, the acquirer also pays a significant amount for assets not separately reported in the acquiree's accounts. These are often intangible assets that the acquiree has endogenously created therefore are not allowed to be recognized in the accounts by the acquiree. After the acquirer has directed part of the acquisition value to the suitable assets, the remaining part is directed to goodwill. However, it can also be the case that the acquirer has overvalued the acquiree, and it is thus not able to allocate part of the value to any assets. Overvaluation or any excess price paid should be dissolved meaning that once determined an impairment loss has to be recorded. Figure 2 illustrates the formation of the goodwill asset and the allocation of the acquisition price described in this paragraph (Johnson and Petrone 1998).

For example, Nokia discloses to following about allocation of acquisition price and formation of the goodwill asset in its annual report for year 2007:

> *Identifiable assets, liabilities and contingent liabilities acquired or assumed are measured separately at their fair value as of the acquisition date. The excess of the cost of the acquisition over our interest in the fair value of the identifiable net assets acquired is recorded as goodwill.*
>
> *The determination and allocation of fair values to the identifiable assets acquired and liabilities assumed is based on various assumptions and valuation methodologies requiring management judgment.*

Figure 2: Allocation of the acquisition price after Johnson and Petrone

	Excess of the fair values over the carrying amounts of the acquiree's recognized assets
	Fair values of other net assets not recognized by the acquire (i.e. trademarks, customer lists, licensing, technology)
True goodwill which forms the pure goodwill asset	Fair value of the "going-concern" element of the acquiree's existing business
	Fair value of the synergies from combining the acquirer's and acquiree's businesses and net assets
	Overvaluation of the consideration paid by the acquirer
	Overpayment by the acquirer

Accounting for goodwill between the Finnish accounting regulation and IFRS differs significantly. The Accounting Act still allows systematic amortization of goodwill, whereas the IFRS applies an impairment-only practice. Troberg (2005) argues that both methods can be criticized. The Finnish practice does not necessarily provide a true and fair view of the firm's value, as the period of amortization is often based on the perception of the management and not on its true market value. In addition, the value allocated to the goodwill often contains a considerable amount of value of other intangible assets not required to be specifi under the Finnish accounting regulation. On the other hand, impairment testing required by IFRS is a subject to judgment of the management. As the impairment of goodwill involves estimation of future cash flows of cash-generating units and determination of a pertinent discount rate, it leaves room for judgment and thus allows potential for earnings management.

2.2.7 Leasing

Lease accounting rules in Finland have been rather undeveloped compared to the accounting methods applied in IFRS, which draw lease contracts into two different categories according to the possible transfer of risks and rewards related to the leased asset, and as a result make a distinction between *operating* and *finance* lease. The Accounting Act does not make the categorization, and thus all the leasing costs, despite their nature, are simply expensed. The reason for the undeveloped nature of leasing regulation relies in the tight linkage of official financial statements and taxation, which currently disallows the depreciation-related tax benefits from the lessee, which would occur if the accounting practice of finance leases used in IFRS was also allowed in the Finnish legislation (Troberg 2007, 173). Finance leases were included in the Accounting Act prior to the renewal of the act in 2004. The rule was, however, removed from the act due to its unbinding nature, as it was only allowed to be applied in consolidated financial statements.

As mentioned above, IFRS draws leasing contracts into two categories depending on their nature (IAS 17.8). IAS 17 *Leasing* –standard (18.8.2005) gives detailed instructions on the accounting practice of lease contracts. Operating lease contracts create rent expenses in the lessee's income statement, whereas when the finance lease contract is in question, the lease is to be recorded by the lessee the same way as an asset purchase financed by debt financing. The lessor records the leased asset at its fair value at the inception of the lease or, if lower, at the present value of the lease payments. Subsequent to the initial recording, the lessee depreciates the leased asset in the same way as it would depreciate other similar assets, and the lease liability is reduced by the lease payments. (IAS 17.20-34)

In the IAS 17 –standard, features of a finance lease are given in example form. The features can either individually or in combination lead to a lease being classified as a finance lease. If the contract contains any of the following terms or features, the contract is to be regarded as a financial lease:

a) the lease transfers ownership of the asset to the lessee by the end of the lease term;
b) the lessee has the option to purchase the asset at a price that is expected to be sufficiently lower than the fair value at the date the option becomes exercisable for it to be reasonably certain, at the inception of the lease, that the option will be exercised;
c) the lease term is for the major part of the economic life of the asset even if title is not transferred;
d) at the inception of the lease the present value of the minimum lease payments amounts to at least substantially all of the fair value of the leased asset; and
e) the leased assets are of such a specialized nature that only the lessee can use them without major modifications. (IAS 17.10)

It must be highlighted that, despite the examples given above, the *substance over form* –principle is the most binding and the key consideration when determining the category of the lease is to define which party carries the risks and rewards incidental to ownership. (IAS 17.12)

The handling of lease contracts according to IFRS significantly restricts the off-balance sheet financing. Although some lease contracts do not literally involve purchase of an asset, they are very similar to situations where an asset is purchased by using debt financing. Before the introduction of finance lease, all lease contracts were left out of the balance sheet and thus often provided the lessee a significant amount of debt financing not recorded in the balance sheet. The current rules affect the return on investment ratio (ROI) as well as the debt to equity ratio of the firm compared to the previous situation, and can therefore be considered to restrict the firm's ability to manage earnings. However, the current state of leasing regulation in IFRS is not trouble-free, as the firms for example tend to split the contracts into parts in order to avoid their recognition as finance lease. At a theoretical level, the mandatory application of IFRS has moved the leasing accounting practices of Finnish publicly quoted firms to more acceptable direction.

2.2.8 Share-based payments

In financial statement prepared according to FAS it is not possible to present share-based payments in the balance sheet or in the income statement (Leppiniemi and Leppiniemi, 2005, 258). The Accounting Act does not contain any specific regulation regarding share-based payments. The *Limited Liability Companies Act* (21.7.2006/624) contains legislation regarding options and other rights entitling to shares. However, it does not regulate the accounting practice related to the share-based payments. When options are granted, they have no effect on the firm's net income. As the options become exercised and new shares are issued against option rights, the share capital of the company shall be increased by at least the nominal value of the shares issued (Companies Act 3:5§).

IFRS requires mandatory expensing of the share options. According to IFRS 2 *Share-based payments* (19.2.2004), an entity shall recognize the goods or services received or acquired in a share-based payment transaction when it obtains the goods or as the services are received. The entity shall recognize a corresponding increase in equity if the goods or services were received in an equity-settled share-based payment transaction or a liability if the goods or services were acquired in a cash-settled share-based payment transaction. (IFRS 2.7) Further, when the goods or services received or acquired in a share-based payment transaction do not qualify for recognition as assets, they shall be recognized as expenses (IFRS 2.8). The fair value of the equity instruments granted should be estimated using valuation technique consistent with generally accepted valuation methodologies for principal financial instruments (IFRS 2.17). However, IFRS 2 does not accurately specify which valuation model should be applied. The models used in practice are the Balck-Scholes option-pricing model or Black-Scholes-Merton model, and the binomial model (Troberg 2007, 191-192)

The change of practice to Finnish firms brought by IFRS 2 has been significant, and has especially affected the earnings of those firms having extensive share-based payment plans. The magnitude of the effect of the application of IFRS 2 –standard can be demonstrated by using Nokia as an example, as it result for year 2004 suffered a decrease of 62m€ as a result of the application of IFRS 2 (Nokia 2005). From the perspective of earnings management, the danger of the IFRS 2 standard lies in the fact that the firms can make assumptions of the expected volatility of the option required when pricing the options. The expected volatility has a major effect on the determination of the fair value of the option, and can thus be subject to earnings management efforts. (Troberg 2007, 191-192)

2.2.9 Financial instruments

Regulation regarding accounting for financial instruments including derivatives is very limited in Finland. Pronouncements by the Accounting Practice Board of the Ministry of Trade and Industry (KILA) and by the Finnish Financial Supervision Authority (FIN-FSA) provide some guidance. (Troberg 2007, 187) Valuation based on acquisition cost (FAA 4:5§) does not perfectly suit the purpose of financial instruments, as they often do not have an acquisition cost. This is the case especially with derivatives. Troberg (2003, 147) argues that the biggest problem regarding the accounting treatment of derivatives has been the fact that no money or only an insignificant amount of money is transferred when the contract is entered into and thus there is no acquisition cost in a traditional sense. The Accounting Act 5:2a§ (30.12.2004/1304) permits, but does not obligate, valuation of certain financial instrument at their fair value. Change in the fair value shall be recognized in profit and loss or it can be recognized straight in the fair value reserve of equity.

In comparison, IFRS takes a technical and detailed approach to the issue. Standards IAS 39 *Financial Instruments: Recognition and Measurement* (18.8.2005), IAS 32 *Financial Instruments: Presentation* (18.8.2005) and IFRS 7 *Financial Instruments: Disclosures* (18.8.2005) all include regulation regarding financial instruments, which are defined as *contracts that give rise to a financial asset of one entity and a financial liability or equity instrument of another entity* (IAS 32.11).

Initially, an enterprise recognizes a financial asset or a financial liability on its balance sheet only when the entity becomes a party to the contractual provision of the instrument (IAS 39.14). At initial recognition, the financial asset or liability is measured at its fair value. After initial recognition, the measurement of financial instruments is dependent on their classification defined in IAS 39.9. The four categories of financial instruments are:

1. financial assets or financial liabilities at fair value through profit or loss;
2. held-to-maturity investments;
3. loans and receivables; and
4. available-for-sale financial assets.

After initial recognition, financial assets are measured at their fair value. Loans and receivables, held-to-maturity investments, and investments in equity securities that do not have a quoted market price in an active market are exempted from the fair value measurement. The described equity instruments are measured at cost and the loans and receivables as well as the held-to-maturity investments are measured at amortized cost using the effective interest method. (IAS 39.45-39.49) Financial liabilities are subsequently measured at amortized cost using the effective interest rate method. Liabilities at fair value through profit and loss constitute an exception, as they are measured at fair value. A gain or a loss on a financial asset or a financial liability classified as asset or liability at fair value through profit or loss shall be recognized in profit or a loss, whereas a gain or loss on an available-for-sale financial asset shall be recognized directly in equity (IAS 39.55).

The following note by Nokia in its annual report for year 2007 illustrates the difficulty of application of fair values with certain financial instruments:

> *The fair value of financial instruments that are not traded in an active market (for example, unlisted equities, currency options and embedded derivatives) are determined using various valuation techniques. The Group uses judgment to select an appropriate valuation methodology as well as underlying assumptions based on existing market practice and conditions. Changes in these assumptions may cause the Group to recognize impairments or losses in future periods.*

As various valuation techniques are used to define the fair value for derivatives not having direct market prices, the valuation is subject to management's estimations, and may provide possibilities to manage earnings upwards especially when the firm holds financial assets or liabilities categorized as financial assets or liabilities at fair value through profit or loss.

3. EARNINGS MANAGEMENT

In this chapter, previous literature on earnings management is discussed. First, earnings management as a phenomenon is defined. Second, the concept of accruals and their significance in earnings management research is introduced. Third, the motivations to manage earnings are covered. Fourth, the concept of threshold-based earnings management is discussed. Fifth, the issues regarding research design on detecting earnings management are discussed. Sixth, the effects of accounting standard in restricting or enabling earnings management are covered. Seventh, the role of interim earnings in the course of earnings management is introduced, and last a brief look into earnings management research in Finland is taken.

3.1 DEFINITION

Earnings management is a widely studied topic in the field of accounting. Healy and Wahlen (1999) define earnings management the following way:

> *Earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers.*

Beneish (2001) argues that academics have no consensus on what is earnings management. Several different attempts trying to define earnings management, for example by Davidson, Stickney and Weil (1987), Schipper (1989) and Healy and Wahlen (1999) cited above, exist. A lack of consensus on the definition of earnings management implies differing interpretations of empirical evidence in studies that seek to detect earnings management.

Earnings management can be classified into three categories: 1) *fraudulent accounting*, 2) *accruals management*, and 3) *real earnings management*. Fraudulent accounting involves accounting choices that violate GAAP. Accruals management involves within-GAAP choices that try to "obscure" or "mask" true economic performance (Dechow and Skinner, 2000).

Fraudulent accounting and accruals management are not accomplished by changing the underlying economic activities of the firm but through the choice of accounting methods used to represent those underlying activities. In contrast, real earnings management involves changing the firm's underlying operations in an effort to boost current period earnings. (Gunny, 2005)

Judgment in financial reporting that fits under the earnings management definition includes estimations of different assets and liabilities, which often are dependent on the future and choices between accounting methods. Earnings can be managed through shifting expenditures between periods or realizing an accounting gain by selling an asset that is undervalued on the balance sheet. (Spohr, 2005, 12-13) There are many ways managers can exercise judgment in financial reporting. Estimation of numerous future economic events, such as expected economic lives and salvage values of long-term assets and asset impairments are good examples of judgmental decisions (Healy and Wahlen 1999). Whereas authorities often understand outright fraud as earnings management, academic literature usually focuses on earnings management falling within the accounting principles used. Three typical strategies exist to manage earnings: 1) managers may increase the income of the current period, 2) managers take a big bath by markedly reducing current period income, or 3) managers reduce earnings volatility by income smoothing (Wild et al., 2007). Common examples of income-increasing adjustments are early booking of sales, and delay in recognition of expenses, while typical income-decreasing adjustments are deferral of sales, and transfers to reserves (Das et al., 2007).

Financial reporting and disclosure are important means for management to communicate firm performance and governance to outside investors. Healy and Palepu (2001) argue that demand for financial reporting and disclosure arise from information asymmetry and agency conflicts between managers and outside investors. Information asymmetry between managers and external information users allows managers to use their discretion in preparing and reporting accounting information for their own advantage (Spohr 2005, 3). Opportunism is attempted to be limited both by the accounting standards and by independent auditors, but recent evidence suggests that managers use their discretion over accounting numbers to achieve private gains. Healy and Wahlen (1999) argue that because the financial reporting standards must permit managers to exercise judgment in financial reporting in order to bring out the firms' business economics, and because auditing is always imperfect, the managements' ability to use judgment also creates opportunities to manage earnings, in which managers choose reporting methods and estimates that do not accurately reflect their firms underlying economics.

Different stakeholders see the significance and seriousness of earnings management very differently. Practitioners and regulators often see earnings management as pervasive and problematic, and in need of immediate action. However, academic research has shown little evidence on seriousness of earnings management. Differences in opinions are caused due to several reasons, a major of which being the different scope of the research done by academics compared to the case-type daily viewpoint of practitioners. (Dechow & Skinner, 2000) Similarly McNichols (2000) points out that the main problem between the academic approach and the real-life practices of earnings management detection is that the empirical procedures currently in use and the institutional knowledge on accrual behavior are not at the same level. A potential to reduce the existing comprehension gap lies in the development and use of richer research designs and in the measures of discretionary behavior, which condition on more information than the current research methods.

3.2 THE ROLE OF ACCRUALS

International Financial Reporting Standards (IFRS) require that the financial statements are prepared on the *accrual basis* of accounting. Under this basis, the effects of transactions and other events are recognized when they occur and they are recorded in the accounting records and reported in the financial statements of the periods to which they relate. Financial statements prepared on the accrual basis inform users not only of past transactions involving the payment and receipt of cash but also of obligations to pay cash in the future and of resources that represent cash to be received in the future. Also the Finnish Accounting Act (FAA) primarily requires application of accrual basis, but also allows the preparation of financial statements on the *cash basis*.

Accrual accounting is comprised of two fundamental principles, *revenue recognition* and *expense matching* principles, which guide companies on when to recognize revenues and expenses. The revenue recognition principle states that revenues should be recognized when the firm has delivered a product or has produced a substantial proportion of it, and the cash receipt is reasonably certain. The matching principle requires that the revenues recognized during one period are to be matched with the costs associated with them. Over the lifetime of the firm, cash flows and earnings are the same but when accounting principles are applied over finite time periods, cash flows have to be adjusted to produce the earnings number. These adjustments are made with accruals on the balance sheet. (Spohr 2005, 6)

Accrual accounting provides managers with discretion in the reporting of earnings. This allows financial reports to reflect managerial information about underlying economic conditions more accurately than is possible with a strictly mechanical reporting rule. Even though the discretion by management over the recognition of accruals can be used to signal the managers' private information about the firm, it can be also used to opportunistic earnings manipulation. (Dechow 1994) A recent study by Tucker and Zarowin (2006) presents empirical evidence to support the existence of discretion managers are able to use in financial reporting. Their evidence suggests that managers' use of financial reporting discretion reveals additional information about firms' future earnings and cash flows compared to condition of highly restricted discretion. Thus, even though discretion is the major enabling source of earnings management, it also has many positive consequences.

3.3 MOTIVATIONS

Managers have strong incentives to avoid negative earnings surprises because such surprises generally lead to negative price revisions and overall negative publicity for the firm. Managers have two mechanisms for avoiding negative earnings surprises: they can manage earnings upwards if unmanaged earnings fall short of expectations, or they can guide analysts' expectations downward to avoid optimistic forecasts. (Matsumoto 2002, Brown and Spinello 2007)

Reasons for managers to manage earnings are various. A common approach in the study of earnings management is to about the subject from the perspective of earnings management incentives. Researchers have examined many different incentives for earnings management, the most central of which are *capital market expectations* and *contracts written in terms of accounting numbers*. Healy and Wahlen (1999) also add *regulatory motivations* as one driver of earnings management.

3.3.1 Capital market motivations

The use of accounting information by investors and financial analysts in the course of valuating stocks can create an incentive for managers to manipulate earnings in an attempt to influence short-term stock price performance. Studies on capital market incentives to manage earnings have focused on unexpected accrual behavior during periods when capital market incentives to manage earnings are likely to be high. These include studies of earnings management in periods surrounding capital market transactions and when there is a gap between firm performance and analysts' or investors' expectations. (Healy & Wahlen 1999)

Several aspects of initial public offerings (IPOs) provide incentives to firms to manage earnings opportunistically by reporting high IPO accruals. High reported earnings raise stock prices, and a high stock price is desirable when a firm is selling equity. Teoh et al. (1998c) find evidence on earnings management during the year of going public. They find significantly higher return on sales of IPO firms relative to subsequent years, and relative to non-issuing industry peers. Again, post-issue, IPO firms earn significantly less than non-issuing industry peers and previously similarly-performing matched non-issuers. In conjunction with the preceding, Teoh et al. (1998a) also discover that discretionary current accruals, which are under the control of management, are high around the IPO relative to non-issuers. Both studies provide evidence that issuers with unusually high accruals in the IPO year experience poor stock return performance in the three years thereafter.

Darrough and Rangan (2005) find that in an insider share selling during (IPO), the research and development (R&D) expenses are negatively correlated with the managerial share selling. Reductions in R&D spending increase current earnings at the expense of future earnings, and thus the evidence of Darrough and Rangan suggests that managers believe that investors place greater emphasis on current earnings than on possible future earnings. Louis (2004) found strong evidence suggesting that acquiring firms overstate their earnings in the quarter preceding a stock swap announcement. Louis also evidenced a reversal effect of the stock price in the days leading to the merger announcement. The results of Louis suggest that the extant evidence of post-merger underperformance by acquiring firms is partly attributable to the reversal of the price effects of earnings management. Similar results to Louis' have been found by Erickson and Wang (1999), who found evidence that the acquiring firms manage earnings upwards before the merger, assumingly to increase their stock price and decrease the amount of shares given away in the merger.

Incentives to manage earnings upwards have also been detected in relation to seasoned equity offerings. Teoh et al. (1998b) document that discretionary accruals grow before the offering, peak in the offering year, and decline after the offering year. The post-issue net income decline is especially pronounced for issuers that aggressively manage discretionary current accruals before the issue. Further Teoh et al. document a negative relation between pre-issue discretionary current accruals and post-issue earnings and stock returns. Also Rangan (1998) shows that earnings management during the year around the offering predicts both earnings changes and market adjusted stock returns in the following year. His findings suggest that the stock market fails to take into account the possible existence of earnings management and temporarily overvalues issuing firms ending up disappointed subsequently as declines in earnings caused by earnings management occur.

Results of study by Burgstahler and Dichev (1997) also suggest that firms with higher earnings face lower costs in transactions with stakeholders, and thus firms are motivated to manage earnings in order to receive lower transaction costs. Jiang (2008) also finds evidence that beating earnings benchmarks is associated with a lower cost of debt. He measured the cost of debt by using firm credit ratings and initial bond yield spread and found that firms beating earnings benchmarks have better one-year-ahead credit ratings and smaller initial bond yield spreads that those not meeting or exceeding the earnings benchmarks. His evidence proved strong especially with firms having high default risk.

3.3.2 Contracting motivations

Accounting data are also used to help monitor and regulate the contracts between the firm and its stakeholders. Likely the most common example of contracting motivation is the contract of managerial compensation, which often includes earnings-related bonuses (Wild et al. 2007, 88). Also Spohr (2005) argues that in the case of managers' bonus contracts the incentives and the possibilities to manage earnings are likely to be the most closely connected.

The relationship between earnings management and executive compensation was primarily hypothesized by Healy (1985), who noticed that because short-term bonuses based on accounting earnings comprise a large part of the management compensation, managers are tempted to manipulate discretionary accruals to maximize their short-term bonuses. Different from previous tests on the issue always assuming that managers select only income increasing accounting procedures, Healy found that if earnings are so low that selected earnings targets cannot be met regardless earnings management actions, managers have incentives to further reduce current earnings, a strategy also known as "taking a bath" or "big bath". Income-decreasing procedures are also selected according to Healy when the earnings fall within the upper bounds of the bonus contract to build reserves for the coming year and enhance the likeliness of meeting the target again the next year. Similarly, Guidry et al. (1999) found in their study on business-unit managers' compensation that those in the bonus range with incentives to make income-increasing discretionary accruals appear to manage earnings upward more relative to business-unit managers who are not in the bonus range. However, partially adverse results to those of Healy and Guidry are presented e.g. by Holthausen et al. (1995) and Gaver et al. (1995), the former of which fail to agree with Healy in that managers manipulate earnings downwards when earnings are below the minimum necessary to receive any bonus, and the latter of which who found contrary evidence in that when earnings before discretionary accruals fall below the lower bound, managers select income-increasing discretionary accruals rather than income-decreasing suggested by Healy.

In addition, a number of studies have examined a relationship between bond covenants and earnings management. Beneish (2001) summarizes that the evidence in studies regarding the correlation between earnings management and debt covenants is mixed. DeFond and Jiambalvo

(1994) find that firms violating lending covenants accelerate earnings on one year prior to the covenant violation. The researchers interpret this result as evidence of earnings management. Congruently, a more recent study by Dichev and Skinner (2002) finds evidence that need to meet the demands of earnings covenants drives firms to manage earnings. In their study, Dichev and Skinner found an unusually small number of firm with financial measures just below covenant thresholds, and an unusually large number of firms that just met or beat covenant thresholds. In a contrary, the evidence found by DeAngelo et al. (1994) suggests that managers' accounting choices primary reflect acknowledgement of the firms' financial troubles, rather than attempts to mitigate covenant violations.

3.4 THRESHOLD-BASED EARNINGS MANAGEMENT

Empirical evidence suggests that firms engage in threshold-based earnings management. Degeorge, Patel and Zeckhauser (1999) introduce three types of thresholds for earnings management: 1) reporting positive profits, that is, reporting earnings that are above zero, 2) sustaining recent performance, that is, making at least last year's earnings, and 3) meeting analysts' expectations, particularly the analysts' consensus earnings forecasts. In their research, positive profits threshold proves predominant. Motivation to reporting positive profits arises from the psychologically important distinction between positive numbers and negative numbers. The second and the third benchmark rely on performance relative to widely reported firm-specific values. If the firm does as well or better than the benchmark, it is met. If the firm misses the benchmark, it is failed. The two benchmarks are performance relative to the prior comparable period and relative to analysts' earnings projections. Meeting a norm is critical, and its saliency makes the norm itself a focal point, which reinforces its psychological properties. Performance relative to each benchmark is assessed by examining the sprinkling of quarterly earnings reports in its neighborhood. Avoiding negative surprises reflects both upward earnings management and downward expectations management (Brown and Spinello 2007)

Executives focus on thresholds for earnings because the parties concerned with the firm's performance do. Executives are also tempted to manipulate earnings for their own selfish reasons, i.e. to derive personal satisfaction from making targets. Empirical evidence by i.e. Degeorge et al. (1999) and Burgstahler and Dichev (1997) provide evidence that earnings falling just short of thresholds are managed upward. Earnings far from thresholds, whether below or above, are reined in, making thresholds more attainable in the future. Intuitively, they also found evidence that the future performance of firms just meeting thresholds appear worse than those of control groups that are less susceptible.

Barth et al. (1999) study patterns of earnings and documented that firms with patterns of increasing earnings have higher price-earnings multiples than other firms. They provide evidence that when a firm that previously exhibited a pattern of increasing earnings experiences an earnings decrease, its earnings multiples also decrease. Their study concludes that earnings of firms with continual growth are valued more highly than those of firms with the same level of, but more irregular, growth, and thus support the earlier evidence presented on threshold-based earnings management. The findings of Barth et al. are in line with those of Burgstahler and Dichev (1997).

Also Bartov et al. (2002) find that investors reward firms whose earnings meet or beat analysts' estimates. Their results suggest that, regardless of the firm's absolute performance, a reward to meeting or beating analysts' earnings expectations and a penalty for failing to do so exist. According to the authors, this has lead to a larger success in meeting or beating the earnings targets by firms. The success is partially achieved by managing expectations rather than managing earnings themselves. Myers et al. (2006) sample firms with long "strings" of consecutive increases in quarterly earnings per share. Their study provides evidence that managers of firms with the consecutive increases of EPS have incentives to maintain their firms' earnings strings. The firms are found to enjoy economically significant abnormal returns while the strings are ongoing, and suffer significant stock price declines when the strings are broken.

A recent study by Rees and Sivaramakrishnan (2007) extend the approach from meeting or beating only earnings targets to also meeting or exceeding revenue forecasts of analysts. They document a significant increase in the market premium to meeting earnings forecasts when the revenue forecast is also met. In addition, the market penalty to missing earnings forecasts was found to be significantly attenuated when the revenue forecast is met.

In their research, Graham et al. (2006) find that corporate executives are willing to routinely sacrifice shareholder value to meet earnings expectations. In their study based on a survey sent to 401 senior financial executives of U.S. companies, 86.3 percent of the survey participants agreed that meeting earnings benchmarks builds credibility with capital markets, and more than 80 percent agreed that meeting benchmarks helps to maintain or increase the company's stock price. Again, failure to meet earnings benchmarks was, according to the CFOs, seen to create uncertainty about the future prospects of the company, and created suspicion about possible problems hidden from the investors. Quite shockingly, Graham et al. conclude that companies are willing to sacrifice long-run economic value to deliver short-run earnings.

3.5 ISSUES ON RESEARCH DESIGN

Despite the popular wisdom that earnings management exists, it has been difficult for researchers to credibly document it. To detect the existence of earnings management, different research designs and models applying them have been introduced by the academics. Research designs can be drawn into three categories based on their and approach. Each category includes several earnings management models created by different researcher. The Jones model from 1991 representing the category of accrual-based earnings management detection is still the most frequently used model in the earnings management literature, despite the critics it has faced. More recent models have been introduced, and several modifications of the original Jones model have been formed. Regardless of recent developments and introduction of new models, a gap between the institutional knowledge and empirical procedures still exists, and the currently existing models have not proved faultless.

The objective of research on earnings management often focuses on understanding whether earnings are being managed in a given context, how they are managed, and what are the incentives that form the environment for discretionary behavior. McNichols (2000) discusses three common research designs including those based on 1) aggregate accruals, 2) specific accruals, and 3) the distribution of earnings management.

A large part of current literature attempts to identify discretionary accruals based on the relation between total accruals and hypothesized explanatory factors. Representatives of this literature are e.g. Healy (1985), DeAngelo (1986), Jones (1991) and Dechow, Sloan and Sweeney (1995). The second approach modeling specific accruals has been brought into discussion by e.g. McNichols and Wilson (1988) and Beaver and Engel (1996). The third approach examining the statistical properties of earnings to identify behavior that influences earning has been initially developed by Burgstahler and Dichev (1997) and has been taken further by Degeorge, Patel and Zeckhauser (1999) and Myers and Skinner (1999). Between 1993 and 1999, over 50% of studies on earnings management published in top field journals used the aggregate accruals approach based on the Jones model. (McNichols, 2000)

Dechow, Sloan and Sweeney (1995) evaluate alternative accrual-based models for detecting earnings management. The assessment of the different models is done by evaluating the relative performances of the competing models by comparing the specification and power of commonly used test statistics. The competing models tested in the research are the following: **Healy model** (1985), **DeAngelo model** (1986), **Jones model** (1991), **Modified Jones model**, and **Industry model** (1991).

The Healy model tests for earnings management by comparing mean total accruals across the earnings management partition variable. Healy's study differs from most other earnings management studies in that he predicts systematic earnings management to occur in every period. The DeAngelo model tests for earnings management by computing first differences in total accruals, and by assuming that the first differences have an expected value of zero under the null hypothesis of no earnings management. The model uses last period's total accruals as the measure of nondiscretionary accruals. The DeAngelo model can be seen as a special case of its predecessor the Healy model, in which the estimation period for nondiscretionary accruals is restricted to the previous year's observation. Common to both Healy and DeAngelo model is that they both use total accruals from the estimation period to proxy for expected nondiscretionary accruals. (Dechow et al. 1995)

Currently the most commonly used earnings management detection model, the Jones model, relaxes the assumption of Healy and DeAngelo that nondiscretionary accruals are constant. Her model attempts to control for the effect of changes in a firm's economic circumstances on nondiscretionary accruals. The Modified Jones model is adjusted relative to the original in the way that the revenues are adjusted for the change in receivables in the event period. The modified version assumes that all changes in credit sales in the event period result from earnings management. Dechow et al. (1995) argue that the best model out of the ones they tested was the Modified Jones model. The Industry model is similar to Jones in the way that it doesn't assume nondiscretionary accruals to be constant over time. Different from the Jones model, the Industry model assumes that variation in the determinants of nondiscretionary accruals to be common across firms in the same industry.

Bartov et al. (2001) find that a further modification of Jones model, the cross-sectional Jones model, performs better than its time-series counterparts in detecting earnings management. One of the advantages of the cross-sectional version is that the data requirement of the cross-sectional Jones model is less demanding than that of the time-series Jones model (Pae, 2004). Also in this thesis, the cross-sectional Jones model is used together with cross-sectional modified Jones model and the lagged modification of the latter. Both the cross-sectional Jones model and the cross-sectional modified Jones model are similar to the Jones and modified Jones models respectively, except that the parameters of the models are estimated by using cross-sectional, not time-series data. The parameters of the regression equation are industry and year specific and not firm specific as in the original versions of the models. The parameters are obtained by using data from all firms matched year and two-digit SIC industry groupings. The models are explained in more detail when discussing the research design of this thesis in chapter 4.

McNichols (2000) strongly suggests that, even though the Jones model has had substantial impact on the earnings management literature and research at the time of its publication, further development in the field requires departure from reliance on aggregate accruals approaches. According to McNichols, earnings management measures based on the Jones and modified Jones model approach are not sufficiently powerful or reliable to assess earnings management behavior in many contexts likely to be of interest to accounting researchers, standard setters and analysts.

The commonly used research design based on specific accruals has its pros and cons. The approach allows its application in industries whose business practices cause a specific accrual to be a material and a likely object of judgment and discretion. The design also enables estimation of the relation between a single accrual and its direct explanatory factors. However, if it is not clear which accrual management might use to manipulate earnings, the power of a specific accrual test for earnings management is reduced. Also, the measurement of the magnitude of the manipulation on earnings requires a model for each specific accrual likely to be manipulated. The design also requires more institutional knowledge and data than the aggregate accruals approaches. (McNichols, 2000)

The research design based on the distributional tests for earnings management is relatively new compared to the previous two accrual-based models, and was introduced in the late 90s. The focus is on the density of the distribution of earnings after management. Studies on the topic suggest that if firms have greater incentives to achieve earnings above a certain benchmark, then the distribution of earnings after management will have fewer observations than expected for earnings amounts just below the threshold, and more observations than expected for earnings just above the threshold. However, further research is required on the issues of how the incentives driving to manage earnings vary across firms, and what targets are appropriate in different contexts. A better understanding of why managers do manipulate earnings allows assessment of power of alternative earnings management tests, and would ultimately strengthen understanding of the implications of earnings management for various stakeholders. (McNichols, 2000)

Das, Shroff and Zhang develop a new model to detect earnings management, and they prove and introduced it in their working paper published in April 2007. By using an American sample ranging from year 1988 to 2004 they evaluate if certain patterns in quarterly earnings revealed the use of earnings management. Their evidence leads to suspicion that, on average, earning reversals occurring on the fourth interim quarter reflect earnings management behavior. The study has a three-fold objective. First, it determines to show how prevalent the fourth-quarter reversal phenomenon is in general. Second, it tests whether other indicators corroborate that the reversal phenomenon reflects earnings management behavior. Last, it examines whether or not the investors perceive fourth-quarter reversals as sign of earnings management and undo the effect of the reversal when valuing a firm. The ultimate objective of the study is to examine whether or not the model created by the researchers can serve as an indicator of earnings management. (Das et al., 2007)

The general hypothesis behind the study of Das et al. is that a firm performing poorly in interim quarters may attempt to increase earnings of the fourth quarter to meet or beat the targets, while a firm performing well in interim quarters may attempt to decrease earnings of the fourth quarter to build reserves for the future. Further, to test their earnings management detection model, the researchers hypothesize that firms exhibiting reversals of the fourth-quarter earnings are more likely than others to manage their earnings. To test the hypothesis and conduct the research, Das et al. use available quarterly data of Compustat firms from year 1988 to 2004 to form a time series analysis. Firms are divided into two main samples, which are formed by using earnings per share (EPS) before extraordinary items and a possible reversal pattern noticeable with the EPS. Change in earnings in both samples is measured relative to earnings of the same quarter of the previous year. (Das et al., 2007)

The results indicate that the fourth-quarter reversal effect is a common phenomenon. Roughly 22% of the population studied exhibits fourth-quarter earnings reversal in either direction. The frequency of reversals is significantly greater than would have been expected by chance. It appears that the reversal firms are adjusting fourth-quarter earnings mostly via accruals, as they are negatively correlated with accruals of subsequent years, and that correlation is more pronounced compared to that for firms in the control samples. Also, a high percentage of reversal firms relative to firms with no reversals report small profits or just meet or beat the target earning levels. Also, the capital market seems to attach lower credibility to the reported earnings of the reversal firms. The authors suggest that the fourth-quarter reversal method is to be used as an alternative tool of detecting earnings management. As the research is conducted with a large sample and can only provide on average evidence, it is recommended that the approach is used as an additional tool with other indicators of earnings management. (Das et al., 2007) The empirical part of this thesis is conducted according to the research design of Das, Schroff and Zhang.

In line with the approach of Das et al. (2007), Jeter and Shivakumar (1999) find evidence that supports the use of interim data in examining earning management issues when possible. They discover that managers exhibit the greatest evidence of earnings management in the last quarter of the fiscal year. The last quarter is the one in which managers have the greatest incentives to achieve specific target levels of earnings. The difference observed may also be argued to be consistent with a settling up of interim errors or misestimates.

3.6 THE EFFECT OF ACCOUNTING STANDARDS

Healy and Wahlen (1999) argue that the central question for standard setters and regulators is to decide how much judgment to allow management to exercise in financial reporting. The complete elimination of management judgment is not optimal for investors' perspective, nor is the unlimited judgment given that the confidence of auditing is always limited. Ewert and Wagenhofer (2005) argue that an accounting standard setter can tighten standards to restrict the discretion for accounting earnings management, but can do little to restrict real earnings management. Their results confirm that tighter accounting standards increase earnings quality, as measured by the variability of reported earnings and the association between reported earnings and the market price reaction. Because of that, the marginal benefit of earnings management increases and managers increase real earnings management, which is more costly and directly reduces firm value. Consequently, standard setters should consider the potentially unintended consequences in the development of standards. Even though tighter standards make accounting earnings management less effective, they do not always reduce earnings management in equilibrium.

Yu (2005) finds evidence that accounting standard policy is an important institutional factor that affects a country's financial reporting quality. By separating the quality of accounting standards from the quality of reported financial information the author finds that a country with a high-quality accounting standards does not necessarily have high-quality reported information. Also, in a country with low-quality accounting standards the quality of reported information is never high. However, the accounting standards alone do not give evidence on the quality of the reported information. Financial reporting is also determined by the combination of political and economic factors, making focusing on accounting standards alone a faulty approach.

Accounting standards, auditing and enforcement together with disclosure requirements in financial markets are the most notable mechanisms used by governments and other regulators to reduce earnings management. In recent years, debate about the comparative qualities of the accounting standards, mainly the IFRS and US GAAP, has taken place. In Europe, the discussion has also included the merits between the national rules and the IFRS chosen as the European

Union's common accounting standard to be used since 2005. A number of studies have been conducted to research the mentioned topics.

Goncharov and Zimmermann (2006) study the level of earnings management between three accounting standard. They conduct their study using German institutional setting, where accounting frameworks including German GAAP, IFRS and US GAAP were allowed during the period of the study (from year 1996 to 2002). They find that firms reporting according to US GAAP engage less in earnings smoothing practices than those reporting according to IFRS or German GAAP. Between IFRS and the national legislation, the level of earnings management was roughly the same. Their finding suggests that US GAAP mitigates earnings management more effectively than IFRS. Van Tendeloo and Vanstraelen (2005) conduct a similar type of study as Goncharov and Zimmermann, but their focus is on voluntary adoption of IFRS prior to the mandatory adoption year of IFRS in 2005 within German firms. In line with the results of Goncharov and Zimmermann, they also find that the adopters of IFRS do not present different earnings management behavior compared to companies reporting under German GAAP. It also appears that companies reporting according to IFRS engage more in earnings smoothing, but this smoothing effect is significantly reduced if the company has a Big 4 auditor.

Pietiläinen (2007) studies the effects of adoption of IFRS standards to earnings management in Finnish institutional setting in her Master's thesis. The results of her study are contradictory, as different earnings management detection methods provide reversed results. When measured in total accruals, less earnings management is present when IFRS is used compared to FAA. But when measured in terms of current accruals, the result is the opposite, and financial statements prepared according to IFRS present more earnings management than those prepared according to FAS. However, the results are not statistically significant and cannot be generalized due to a sample size of the study of only 112 firms.

3.7 INTERIM EARNINGS

Quarterly reports have drawn considerable attention and the subject of smoothing of annual income numbers has occupied a good deal of the accounting literature. Concern has been voiced with respect to the reliability of the numbers communicated in the quarterly reports and the potentially adverse effects of unreliable reports on investment decisions. The concern is generally focused on the resulting income numbers as communicated in the quarterly reports and their relationship with the annual income numbers. Givoly and Ronen's (1981) paper tests the hypothesis that the observed first three quarters' results trigger actions by management during the fourth quarter that appear as smoothing behavior. Specifically, they indicate that the manifestations of end-of-year actions by managers are consistent with the possible attempt on their part to alter fourth quarter reported results so as to offset extreme deviations of the first three quarters reported numbers from a given, predefined, 'normal' trend presumably deemed by managers to be desirable to report.

Basu, Hwang, and Jan (2005) underline that an important distinction between interim and fourth quarter earnings derives from the fact that the former need not to be audited, whereas the latter is audited as part of annual earnings before the annual report is released. The authors find higher frequencies and greater magnitudes of losses and negative special items in the fourth quarter than any other quarter. They argue that the auditor's presence in the fourth quarter increases the accounting conservatism in the fourth quarter earnings relative to unaudited interim quarters

Mendenhall and Nichols (1988) state that generally accepted accounting principles governing interim reporting that allow extensive use of managers' fiscal-year expectations when formulating interim cost estimates provide managers with relatively greater control over non-fourth-quarter earnings reports. The authors find that bad news earnings announced in the interim quarters have a larger per-unit effect on risk-adjusted security returns than bad news earnings announced in the fourth quarter. Their finding suggests that managers are more likely to delay the bad news to the end of the fiscal year rather than announce them earlier during the year. Alternative explanations of the results related to greater year-end adjustments can be associated with large discretionary write-offs, which Elliot and Shaw (1988) find principally to take place during the fourth quarter.

According to prior evidence, it appears that the pattern of quarterly earnings may explain the possible earnings management behavior designed to achieve annual targets. Intuitively derived, poor performance in interim quarters followed by a surge in earnings of the fourth quarter may indicate managers' attempts to obtain a desired level of reported annual earnings (Das et al. 2007).

3.8 EARNINGS MANAGEMENT RESEARCH IN FINLAND

Earnings management has been studied also in the Finnish institutional setting, which can be characterized as having debt-intensive capital markets, concentrated ownership, and taxation tied to reported earnings. In Finland, the government influence on accounting reporting has been extensive through taxation. As a result, the objective of financial reporting in Finland, as well as in Japan and countries of Continental Europe, has been to minimize taxes rather than to give a true and fair view of the financial position and the operations of the company. (Troberg 2007, 24) This feature has also affected the earnings management behavior in Finland, as the tax cost creates an incentive to manage earnings downwards in general, and in particular when the unmanaged earnings are higher than what has to be reported to pay the target dividend (Kasanen et al. 1996). Kallunki and Martikainen (1999) also point out that the Finnish accounting legislation provides extensive opportunities for firms to manage their reported earnings figures.

Kasanen et al. (1996) find a relationship between dividends and earnings management in Finland between years 1970 and 1989. The equity market being thin and the ownership structure being dominated by institutional investors during the time of the study, the authors find evidence that, in the given context, Finnish firms actively manage earnings upwards to retain dividend-per-share at a constant level preferred by the institutional investors.

Kallunki and Martikainen (2003) investigate the relation between earnings management and future profitability of Finnish firms. In their study they argue that firms use discretionary accruals to manage the earnings of a current year upward (downward) if they believe that the next year's earnings will be high (low).Their empirical evidence shows that earnings management measures lagged by one year are negatively related to the future profitability of firms. Kallunki and Martikainen (1999) also study earnings management behavior of financially troubled Finnish firms. In line with international studies on the topic (see e.g. Sweeney 1994, DeAngelo et al. 1994), they find evidence that firms use their accounting discretion to manage reported earnings upwards before failure.

Spohr (2005, 60-61) and Ora (2000, 84) both find evidence of the presence of earnings management in initial public offerings of Finnish firms prior to the IPO. Spohr observes a systematic pattern of earnings management in entrepreneur owned Finnish IPO firms. Ora discovers that operating performance increases in pre-IPO years, peaks significantly at the time of the IPO, and declines thereafter for post-issue years. The results of both are in line with international evidence (see e.g. Teoh et al. 1998a).

Kinnunen et al. (2000) argue that firms issuing new shares with higher discounts and hence with larger expected dividend increases are likely to use earnings management opportunities in such a way that, prior to a share issue, they report larger excess earnings than firms that issue shares with lower discounts or that do not issue shares at all. By using Finnish evidence, they find that by the year of a share issue, excess earnings are significantly larger in issuing than in non-issuing firms. They also observe a positive correlation between the abnormal excess earnings and the expected dividend increase of the issue announcement, and a positive correlation between stock return around the issue announcement and the abnormal excess earnings and with the expected dividend increase.

Sundgren (2007) studies if a difference between earnings management of public and private firms existed in Finland prior to compulsory adoption of IFRS. Contrary to evidence from the UK and the US, Sundgren finds no significant difference in earnings management between public and private firms, but also finds evidence that leveraged firms tend to be more likely to use income increasing accounting methods than firms with a low leverage.

4. HYPOTHESIS DEVELOPMENT, DATA AND RESEARCH DESIGN

This chapter begins the empirical part of this thesis by discussing the hypothesis development, research design and data used in the study. First, the two hypotheses tested by various tests in this thesis are developed and discussed. Second, a description of data and its retrieval process is given. Finally, the research design is explained. The hypothesis development and the research design closely follow those used by Das et al. (2007).

4.1 HYPOTHESIS DEVELOPMENT

The empirical part of this study aims to test two hypotheses: first analyses the applicability of the chosen earnings management detection model in Finnish institutional setting and with small sample size, and second tests the possible difference in the level of earnings management between financial reports prepared according to IFRS and FAS. The hypotheses are developed and discussed in detail in the following.

4.1.1 Reversal in earnings changes and earnings management

The literature of threshold-based earnings management (section 3.4) and interim earnings (section 3.7) discussed in previous sections provide plenty of evidence that managers engage in manipulation of earnings in order to meet a threshold or to smooth the annual earnings. Having smooth earnings or meeting the targets either by exceeding the earnings level of the previous year or meeting the analysts' forecasts may save the firm from large stock price declines and help to retain and attract investors among other benefits (see e.g. DeAngelo et al., 1996 and Burgstahler and Dicheve, 1997). From prior evidence, it appears that the pattern of quarterly earnings may represent possible earnings management behavior designed to achieve annual earnings targets. Intuitively one can assume that if poor performance in interim quarters is followed by a surge in earnings of the fourth quarter, it may indicate that managers are attempting to obtain a desired level of reported annual earnings. Also, vice versa, if exceptionally good performance in interim quarters is followed by a decline in earnings of the fourth quarter, it may indicate that the management is trying to save part of the good earnings to build up a bad day reserve, and also, especially in Finnish institutional setting, to minimize taxes (Troberg, 2007). As a result, the following hypothesis is constructed and tested:

> **H1**: *Firms that exhibit a reversal in the sign of fourth-quarter earnings changes relative to interim quarters are more likely than others to have managed their earnings.*

The hypothesis includes assumption that managers have greater incentive to manage annual than quarterly earnings. If the assumption is faulty, the focus of this study may not be reasonable. In support of the underlying assumption, most accounting-based performance measures used in bonus and compensation schemes are based on audited annual results rather than unaudited quarterly results. The remuneration schemes provide incentives for managers to manipulate earnings of the fiscal year to maximize their compensation. Although managers may have greater opportunities to manipulate interim earnings due to the absence of an audit, their incentives to manage earnings in interim quarters may be weaker than with those of the fourth-quarter. (see e.g. Jeter and Shivakumar 1999, Degeorge et al. 1999)

As the similar study has been conducted by Das et al. (2007) in the U.S., and this study closely follows their research design and methods with few exceptions, one objective of this study is to test whether or not the research design applied by Das et al. can be successfully applied also in the Finnish institutional setting. This objective is reached by testing the hypothesis discussed above.

4.1.2 Earnings management under FAS and IFRS

The second objective of this study is to evaluate the level of earnings management in publicly quoted companies of the Helsinki Stock Exchange before and after the mandatory implementation of IFRS, and thus evaluate FAS and IFRS in terms of their ability to restrict earnings management. As the Finnish accounting legislation is rather vague compared to the IFRSs, one may argue that the IFRSs are standards of higher quality and thus should restrict the possibility of earnings management and reduce the level of earnings management compared to the firms reporting according to the national regulation (see e.g. Kallunki and Martikainen, 2003). Goncharov and Zimmermann (2006) and Van Tendeloo and Vanstraelen (2005) have both conducted studies testing the earnings management restriction abilities of IFRS and German GAAP. Neither study found significant difference in the level of earnings management between the two reporting standards. However, Goncharov and Zimmermann found US GAAP to be relatively better than IFRS and German GAAP in restricting earnings management. Regarding this and other evidence presented in section 3.6, enough evidence to hypothesize that the IFRSs are better than FAS in terms of restricting earnings management cannot be made. As can also be drawn from the discussion in section 2.3, neither IFRS nor FAS can directly be argued to be a better set of standards. Thus the second hypothesis of this thesis is as follows:

> **H2:** *Significant difference in the level of earnings management exists between the FAS and IFRS.*

The Finnish earnings management study currently lacks research regarding the changes in level of earnings management within publicly quoted firms in Finland after the application of IFRS. The lack of previous evidence on the issue in the Finnish institutional setting further motivates the construction of the second hypothesis tested in this thesis.

4.2 DATA

This section describes the data used in the empirical part of this thesis. It introduces the methods and sources of data, and the construction of different samples used in this study.

The empirical study is built on data retrieved from two main sources. Annual and interim financial data for the firms is obtained from Thomson Financial Worldscope database, and consensus EPS forecasts are from the I/B/E/S database. The final sample consists of 555 firm-year observations of firms publicly quoted in the Helsinki Stock Exchange for years 2002 to 2007. Firms representing banks, financial institutions and insurance companies (two-digit SIC codes 60-67) are excluded from the sample. A firm is required to have data for all quarters of at least one test year as well as the year immediately preceding that in order to be included in the final sample. Therefore, one firm can be represented in the final sample a maximum of six times and a minimum of one time. The availability of data restricts the number of firms which are taken to the sample. For the fiscal year 2007, the study includes those firms for which data has been available on the databases on March 31st, 2008.

The basis of the empirical analysis is on dividing the total firm-year observations into three samples according to the presence and nature of a possible earnings reversal pattern found on the changes of the quarterly earnings per share (EPS). Each year covered in this study forms its own reference point, and therefore a firm can belong to a different sample during different years. A firm belongs to the negative-positive (*NP*) sample if it presents negative earnings change in at least two interim quarters as well as the combined interim quarters, and positive earnings change in the fourth quarter. Conversely, a firm belongs to the positive-negative (*PN*) sample if it presents positive earnings change in at least two interim quarters as well as the combined interim quarters, and negative earnings change in the fourth quarter. Firms not presenting the reversal effect of either type belong to sample referred as *Other*. Change in quarterly EPS is measured as follows:

$$\Delta EPS(nQ) = EPSnQ_t - EPSnQ_{t-1} \tag{1}$$

To illustrate the formation of NP, PN, and Other samples, Rautaruukki Oyj is used as an example, as it presents all the three reversal patterns during the studied time series. In year 2007, Rautaruukki Oyj belongs to the PN-sample. The evaluation is carried as follows:

	Q1	*Q2*	*Q3*	*Q4*
Quarterly EPSs of year 2007 (t)	0.95	0.94	0.85	0.57
Quarterly EPSs of year 2006 (t-1)	0.57	0.78	0.76	1.55
Changes in quarterly EPSs	0.38	0.16	0.09	-0.98
Direction of change (+/-)	+	+	+	-

The change pattern (+, +, +, -) and magnitudes of changes fit the requirements of the PN-sample (positive earnings change in at least two interim quarters as well as the combined interim quarters, and negative earnings change in the fourth quarter), and thus for year 2007, Rautaruukki Oyj is categorized to belong to the PN sample.

In year 2006, Rautaruukki Oyj belongs to the NP sample, as it presents the following pattern:

	Q1	*Q2*	*Q3*	*Q4*
Quarterly EPSs of year 2006 (t)	0.57	0.78	0.76	1.55
Quarterly EPSs of year 2005 (t-1)	1.07	0.98	0.62	0.68
Changes in quarterly EPSs	-0.5	-0.2	0.14	0.87
Direction of change (+/-)	-	-	+	+

The change pattern (-, -, +, +) and magnitudes of changes categorize Rautaruukki Oyj to the NP sample for fiscal year 2006.

In year 2004, Rautaruukki Oyj belongs to the Other sample, as the changes in EPS do not form the required reversal pattern.

	Q1	*Q2*	*Q3*	*Q4*
Quarterly EPSs of year 2004 (t)	0.31	0.67	0.59	0.74
Quarterly EPSs of year 2003 (t-1)	0.04	0.18	0.19	-0.02
Changes in quarterly EPSs	0.27	0.49	0.4	0.76
Direction of change (+/-)	+	+	+	+

When measuring the change in EPS or other items used in the tests later described in the research design section, the figures of the comparable years are always to be prepared according to the same reporting standards. For example, as most of the firms began to apply the IFRS from the beginning of year 2005, the comparable figures used from year 2004 are those that are restated in order to make them comparable with the figures of year 2005.

The initial requirement for a firm to be included in the sample is the availability of the quarterly EPS data. Each firm-year observation is evaluated by using the method explained above. If a firm does not have quarterly EPS data available for a certain year(s), it will be excluded from the sample for that particular year(s). In further analyses, which require more financial data and several items, the sample may be restricted further if the required data is not available.

As the second objective of this study is to research the possible differences between the earnings management exercised in financial statements prepared according to IFRSs and FAS, the firms in the final sample are also categorized according to the used accounting standards when tests regarding the differences in earnings management level between the different accounting standards are run. Thomson Financial Worldscope database is used to determine the reporting standards used for each firm each year.

4.3 RESEARCH DESIGN

To test the first hypothesis that firms exhibiting fourth-quarter earnings reversals are more likely than others to have managed their earnings, a battery of tests is conducted to examine earnings management behavior on several dimensions. To test the second hypothesis, the same tests with certain restrictions are run separately for firms preparing their accounts according to FAS and IFRS to bring out the possible differences in the level of earnings management.

Before further explanation of the models used in this thesis, the calculation method of accruals, which are an integral component of the earnings management detection models used in this study, must be explained. Accruals are the basis of many earnings management detection models commonly used in today's research, and therefore they are chosen to be used in this study (see e.g. Das et al. 2007). In this study, total accruals (Acc) for firm *i* in year *t* are measured similar to e.g. Das et al. (2007) and Brown and Pinello (2005) as follows:

$$Acc_{i,t} = NI_{i,t} - CFO_{i,t} \qquad \text{, where} \qquad (2)$$

$NI_{i,t}$ = income before extraordinary items and preferred dividends in year *t*; and

$CFO_{i,t}$ = cash flow from operations of in year *t*.

4.3.1 Accruals and CFO

Traditionally in accounting, it is assumed that accruals are more commonly manipulated than cash flows, as accruals are often based on estimates of the management. Thus it is assumed that if firms in the NP (PN) sample have manipulated fourth-quarter earnings upward (downward), a significant positive (negative) change in the accruals relative to the same quarter of the previous year is expected to be found. As the total accruals may increase or decrease in the course of changes in the level of operation, the magnitude of discretionary accruals is estimated using three alternative models: the cross-sectional Jones model, the cross-sectional modified Jones model, and the modified Jones model with lagged accruals as an additional variable.

Similar to other earnings management research methods, also *the Jones model* (1991) divides total accruals into two parts, discretionary and nondiscretionary accruals, of which the first is the proxy for earnings management. Spohr (2005, 17) notes that, as discretionary accruals are not directly observable from financial statements, they have to be estimated using an estimation model. The Jones model forms an expectation on the nondiscretionary accruals level and the amount the actual observed accruals deviate from this level is assumed to be the discretionary accruals. In the cross-sectional approach applied in this study, a firm's normal level of accruals in a period is given by a comparable firm's accruals in the same period.

In the Jones model, the nondiscretionary accruals are estimated with an OLS regression with change in sales and the level of property, plant and equipment as explanatory variables. First, the coefficients are obtained from the equation constructed for total accruals. The model is as follows:

$$\frac{Acc_{i,t}}{A_{i,t-1}} = \beta_{0,i}\frac{1}{A_{i,t-1}} + \beta_{1,i}\frac{\Delta REV_{i,t}}{A_{i,t-1}} + \beta_{2,i}\frac{PPE_{i,t}}{A_{i,t-1}} + \varepsilon_{i,t} \quad \text{, where} \qquad (3)$$

$Acc_{i,t}$ = Total accruals in year *t;*

$A_{i,t-1}$ = Total assets in year *t-1;*

$\Delta REV_{i,t}$ = Revenues for year *t* less revenues for year *t-1;* and

$PPE_{i,t}$ = Net property, plant, and equipment in year *t.*

As the cross-sectional modification of the Jones model is used in this thesis, the coefficients are obtained by running the regression on firms matched by industry determined by two-digit SIC codes. To further calculate the discretionary accruals (DAcc), the non-discretionary accruals estimated with equation (3) are used deducted from the total accruals:

$$DAcc_{i,t} = \frac{TA_{i,t}}{A_{i,t-1}} - \left[\beta_{0,i}\frac{1}{A_{i,t-1}} + \beta_{1,i}\frac{\Delta REV_{i,t}}{A_{i,t-1}} + \beta_{1,i}\frac{PPE_{i,t}}{A_{i,t-1}} + \varepsilon_{i,t}\right] \quad \text{, where} \qquad (4)$$

$DAcc_{i,t}$ = Discretionary accruals in year *t*; and
other variables are as in equation (3).

In this thesis, the net value of PPE is used in place of gross PPE, contrary to the previous research by Das et al. (2007), as the gross values are absent in the database used, and the gross values cannot be reliably determined by manual calculation as the database does not contain a single item determining depreciation but instead combines the depreciation, depletion, and amortization into one single item. The lack of gross value for PPE may cause some limited distortion to the results.

The modified Jones model differs from the basic Jones model in that it corrects the revenue by deducting net receivables from the revenue figure. In the modified model similar to that used by e.g. Dechow et al. (1995), nondiscretionary accruals are estimated during the event year as:

$$NDAcc_{i,t} = \beta_{0,i}\frac{1}{A_{i,t-1}} + \beta_{1,i}\frac{(\Delta REV_{i,t} - \Delta REC_{i,t})}{A_{i,t-1}} + \beta_{2,i}\frac{PPE_{i,t}}{A_{i,t-1}} + \varepsilon_{i,t} \quad \text{, where} \qquad (5)$$

$NDAcc_{i,t}$ = nondiscretionary accruals in year *t*
$\Delta REC_{i,t}$ = net receivables in year *t* less net receivables in year *t-1;* and
the other variables are as in equation (3).

It must be noticed that the coefficients β_0, β_1, and β_2 are those obtained from the original Jones model, not separately run for the modified model. The only adjustment relative to the original model when using the modified Jones model is that the change in revenues is adjusted for the change in receivables in the event year. Discretionary accruals are then calculated as the difference of total accruals and nondiscretionary accruals. (Dechow et al. 1995)

Dechow et al. (2003) find that the modified Jones model including lagged total accruals as an additional independent variable has high explanatory power in detecting earnings management.

T*he modified Jones model with lagged accruals* is therefore used as the third alternative method to detect earnings management. For the lagged modified Jones model, the coefficients are recalculated, as the lagged total accruals require an additional coefficient not available in the modified Jones model. The modified Jones model with lagged accruals is as follows:

$$\frac{Acc_{i,t}}{A_{i,t-1}} = \beta_{0,i}\frac{1}{A_{i,t-1}} + \beta_{1,i}\frac{\Delta REV_{i,t}}{A_{i,t-1}} + \beta_{2,i}\frac{PPE_{i,t}}{A_{i,t-1}} + \beta_{2,i}\frac{Acc_{i,t-1}}{A_{i,t-1}} + \varepsilon_{i,t} \qquad (6)$$

Evidence also suggests (see e.g. Gunny, 2005) that managers may also manipulate real activities, meaning those having cash flow consequences, to avoid reporting losses. Because real operating activities are more difficult and costly to manipulate, and therefore it can be expected that accruals are more likely to be used as the means of earnings management, an assumption is made that the higher (lower) fourth-quarter earnings of the NP (PN) sample are a result of higher accruals rather than CFOs. While the assumption does not rule out the possibility of management of real activities, a lower expectation of the fourth-quarter CFO of the NP (PN) sample being significantly higher (lower) than the previous year's is posed.

If earnings reversal pattern is due to manipulation of fourth-quarter accruals and not interim quarters' accruals, as it is intuitively assumed based on the evidence discussed in section on the previous literature on earnings management, the change in accruals or discretionary accruals of interim quarters should not be observed to be systematically negative (positive) for the NP (PN) samples. Further, the negative or positive change in earnings of interim quarters is not expected to be a result from a change in accruals, but is more likely to be a result of change in CFO. The evidence consistent with the expected pattern in fourth-quarter accruals but not in interim accruals suggests that manipulation of accruals in the fourth quarter gives rise to the reversal pattern observed in the study.

4.3.2 Subsequent reversal of change in fourth-quarter accruals

To be exact, earnings management is manipulation of the timing of revenue and expense recognition. Therefore, fourth-quarter accrual changes of the reversal samples are expected to be negatively correlated with accrual changes of the immediately following quarters. The mentioned should occur, as the artificially inflated or deflated accruals in one period must be offset in subsequent periods by making counteracting entries. For example Dechow (1994) presents evidence that change in accruals of year *t* is negatively correlated with change in accruals of year *t-1*. If the negative serial correlation also holds for quarterly accrual changes and not just on annual level, the reversal samples can be expected to exhibit this pattern due to the accrual reversal property. Thus, the negative correlation between changes in fourth-quarter accruals and changes in accruals of subsequent quarters is tested in this study when examining the relevance and reliability of the research design created by Das et al. (2007). It can be argued that if the fourth-quarter earnings reversal occurs because accruals begin to revert to the mean in the fourth quarter, the trend could be expected to continue until the accruals converge to a steady state.

4.3.3 Threshold-based earnings management

As presented in section 3.4, firms can manage earnings to meet or beat a threshold, for example, to avoid losses, to avoid earnings decreases, or to meet analysts' expectations. Relying on the evidence discussed in the mentioned section, firms meeting or beating targets are regarded as potential earnings managers. In this study, the percentage of firms reporting small positive annual earnings and/or small annual earnings increases (between 0 and 5 cents), and also presenting the reversal pattern of earnings changes from the interim to the fourth quarters are examined. Also, meeting or beating analysts' forecasts is studied. For all the mentioned thresholds relating to earnings, a higher percentage of firms in the reversal samples to meet or just beat targets relative to firms with no reversals are expected to be found. Evidence of significant overlap between the reversal firms and those that meet or just beat earnings targets will be consistent with the hypothesis that reversal firms are more likely than others to have engaged in earnings management.

5. EMPIRICAL RESULTS

In this chapter, the results of the empirical study are discussed. The first part of this chapter discusses the results of the tests run to study the first hypothesis regarding the suitability of the chosen study method in Finnish institutional setting with relatively restricted sample size. The latter part discusses the results of the tests run to study the difference on the level of earnings management between financial reports prepared according to FAS and IFRS.

5.1 EARNINGS REVERSALS AS AN INDICATOR OF EARNINGS MANAGEMENT

This section discusses the results obtained by running test regarding the applicability of the chosen research design to the Finnish institutional setting and small sample size. First, the frequency of fourth-quarter earnings reversals in the sample is discussed. Second, the results of tests studying the ability of the reversal pattern to embody earnings management are exhibited. Last, the overlap of earnings reversal firms and different earnings thresholds is discussed.

5.1.1 Frequency of fourth-quarter earnings reversals

Table 1, Panel A: Year-wise distribution of reversals

Panel A presents the year-wise distribution of observations for the sample period, 2002-2007, for: 1) NP- sample having negative earnings change in two out of three interim quarters plus the combined interim quarters and positive earnings change in the fourth quarter, and 2) PN-sample having positive earnings change in two out of three interim quarters plus the combined interim quarters and negative earnings change in the fourth quarter. Earnings change is measured by change in earnings per share (EPS) relative to the same quarter of the previous year.

Year	No. of observations	% relative to yearly total NP	PN
2002	86	18.60%	17.44%
2003	100	13.00%	17.00%
2004	92	7.61%	18.48%
2005	93	15.05%	12.90%
2006	101	15.84%	13.86%
2007	83	10.84%	14.46%
Total	**555**	**13.51%**	**15.68%**

Table 1, Panel A provides the year-wise distribution of fourth-quarter reversals in earnings changes. Overall, 29.19 % of the sample ranging from year 2002 to 2007 exhibits fourth-quarter earnings reversal, out of which 13.51% of the sample report negative earnings changes in interim quarters and positive in the fourth quarter (NP), and 15.68% of the sample report positive earnings changes in interim quarters and negative in the fourth quarter (PN). The result shows that earnings reversal in fourth quarter is a common phenomenon among publicly quoted firms in Finland. The result also enables continuation of this study by using the chosen method, as the proportion of firms presenting the fourth-quarter reversal is significant compared to the total sample. The frequency of reversals is slightly higher than that found by Das et al. (2007) in their study done with the American sample of 71,963 firm-year observations.

The sample distribution appears to be fairly consistent across years, despite year 2004 in which the NP sample represent a significantly smaller proportion and, correspondingly, the PN sample a much larger proportion of the annual sample compared to the other annual results. One explanation for the significant difference of year 2004 compared to other years could be the upcoming mandatory adoption of IFRS in 2005. The remarkably large proportion of the PN sample compared to the NP sample in year 2005 could signal firms' uncertainty about the upcoming effects of the application of IFRS, and that uncertainty causes the firms to build up reserves as a protection for the unknown by holding back their earnings. The result is rather surprising, since it could have been more expectable to find abnormal results for year 2005, as it has been the very first year for many firms to apply the IFRS and the initial adaption could have caused several problems and misinterpretations of a number of standards. However, the possible noise and misinterpretations of standards carried in the financial figures of year 2005 may be eliminated in these results. The parallel figures used in the test are those of year 2004 restated by the firms to make them comparable with the IFRS figures of year 2005. It might be the case that the assumptions and principles used by firms adopting the IFRS in 2005 are the same they have used when restating the figures of year 2004, as the restating process of year 2004 figures has taken place during year 2005 along with preparation of interim and annual financial reports. The elimination of the abnormal results from year 2004 changes the percentage of NP sample to 14.69% and the PN sample to 15.12% of the total sample, and thus brings them closer to each other. The larger percentage of PN sample seems rather evident in the Finnish institutional setting, and may be due to the tight linkage of taxation and financial reporting encouraging firms to minimize taxation and thus holding back abnormally good earnings.

Descriptive statistics relating to the number of times an individual firm exhibited a fourth-quarter earnings reversal during the sample period is disclosed as Table 1, Panel B in Appendix I. For

75.00% of firms in the NP subsample the reversals from negative to positive change in earnings occur only once during the six-year study period. Similarly, for 79.10% of firms in the PN sample the reversal from positive to negative change in earnings occur just once. In addition, the disclosed table shows the percentage of individual firms in the NP and PN samples with reversal patterns occurring in consecutive years. The high frequency of one-time reversals and the low frequency of reversals in consecutive years (5.00% for NP sample and 5.97% for PN sample) within the samples tell about the difficulty of sustaining accrual manipulation over an extended period of time.

Also, an industry specific distribution of the NP and PN samples is presented in Table 1, Panel C disclosed in Appendix I. However, as the numbers of observations in different industry groups are very small, the results cannot be seen to reliably indicate the industry's tendency exercise fourth-quarter reversals and further to manage earnings, and therefore the table is only disclosed as additional information.

If the fourth-quarter earnings reversals signal managers' attempts to manage annual earnings, the frequency of the reversals should be significantly higher than expected. In order to find out if the frequencies of reversals found in Table 1, Panel A are higher than could be expected by chance, three different benchmarks are constructed.

First, the fourth-quarter earnings reversal is compared to fourth-quarter reversal of cash flow from operations, which is less susceptible to manipulation relative to accrual accounting earnings. The percentage of firms of the total population presenting fourth-quarter CFO reversals is retrieved similarly to EPS reversals explained in detail in section 4.2. The results inf Table 2 show that the frequency of fourth-quarter earnings reversal is significantly higher than the frequency of CFO reversal (13.51% vs. 9.34% in the NP subsample and 15.68% vs. 10.61% in the PN sample). The result indicates that the reversal phenomenon does not occur with the same frequency in just any variable. The obtained result is in line with that of Das et al. (2007), who also experienced significantly smaller frequency of CFO reversal compared to EPS reversal in NP and PN subsamples.

Table 2: Frequency of fourth-quarter earnings reversals relative to alternative benchmarks
Table 2 presents alternative benchmarks for the frequency of fourth-quarter earnings reversal when observed on the complete sample. CFO reversal relates to reversal of changes in cash flow from operations in the fourth quarter relative to interim quarters. NP (PN) sample includes firms with negative (positive) change in cash from operations in two out of three interim quarters plus the combined interim quarters and positive (negative) change in cash flow from operations in the fourth quarter, where the change in cash flow from operations is measured relative to the same quarter of the previous year. Random series relates to the rearranged order of the four quarters of year t so that the original fourth quarter is not the last quarter in the series. The alternate sequences relate to the sequences of the four quarters starting with quarters 2, 3, and 4 of year t. The P-values in parentheses relate to the z-test of difference in proportions between the NP and PN samples of alternative benchmarks and the NP and PN samples of fourth-quarter EPS reversals (EPS reversal original > reversal benchmark).

Benchmarks	**NP**	**PN**
Earnings reversal	13.51%	15.68%
CFO Reversal	9.34%	10.61%
	(0.0246)	*(0.0122)*
Random series:		
$Q2_t$, $Q3_t$, $Q4_t$, $Q1_t$	12.07%	14.59%
	(0.2361)	*(0.3077)*
$Q3_t$, $Q4_t$, $Q1_t$, $Q2_t$	9.73%	13.87%
	(0.0246)	*(0.1988)*
$Q4_t$, $Q1_t$, $Q2_t$, $Q3_t$	13.33%	11.17%
	(0.4649)	*(0.0139)*
Alternate sequences:		
$Q2_t$, $Q3_t$, $Q4_t$, $Q1_{t+1}$	16.09%	13.30%
	(0.8770)	*(0.1426)*
$Q3_t$, $Q4_t$, $Q1_{t+1}$, $Q2_{t+1}$	14.32%	15.84%
	(0.6438)	*(0.5277)*
$Q4_t$, $Q1_{t+1}$, $Q2_{t+1}$, $Q3_{t+1}$	13.97%	15.28%
	(0.5839)	*(0.4319)*

Second, the four quarters of a fiscal year *t* are rearranged so that the original fourth quarter is no longer the last quarter in the series, but becomes one of the interim quarters. By rearranging the quarters the intentionality of the reversal of the natural fourth quarter can be estimated. The following series are constructed: (i) quarters 2_t, 3_t, 4_t, 1_t; (ii) 3_t, 4_t, 1_t, 2_t; and (iii) 4_t, 1_t, 2_t, 3_t. The percentage of reversals is calculated with respect to the first three and fourth quarter of the sequences and these percentages are compared with the percentage of actual reversals. Although the original fourth-quarter earnings reversal is not significantly higher compared to every rearranged series, it can be seen that the original fourth-quarter earnings reversal always occurs more frequently than the reversals in the benchmark samples of random series. This result suggests that it is rather unlikely that the fourth-quarter earnings reversal phenomenon occurs only by chance and it shows that the fourth-quarter earnings change can be intentionally produced.

Third, the frequencies of reversals in consecutive four quarters other than the original are used to further measure the expected frequency of earnings reversal. The following sequences of four naturally subsequent quarters are constructed: (iv) quarters 2_t, 3_t, 4_t, 1_{t+1}; (v) 3_t, 4_t, 1_{t+1}, 2_{t+1}; and (vi) 4_t, 1_{t+1}, 2_{t+1}, 3_{t+1}. Similar to the rearranged random series of the fiscal year quarters explained above, the percentage of reversals is again calculated with respect to the first three and fourth quarter of the sequences. Here, however, the results do not prove to be significant. In four out of six situations, the frequency of the alternative benchmark is even higher than that of the fiscal year reversal. Thus, it can be questioned if the earnings reversal effect of the fourth quarter reflects earnings management behavior in reality. Results of similar test obtained by Das et al. (2007) are significant and higher in favor of the original earnings reversal compared to the alternative sequences benchmarks. The strong outcomes of the tests run by them have been obtained by using large sample size and long sample period of 17 years.

The results of Table 2 support to some extent the prediction that the observed frequency of earnings reversals is higher than the expected frequency based on various benchmarks. However, the results are not watertight, as the differences observed were not significant (at less than 10% level) with most of the tested benchmarks. The mixed results may indicate that the reversal phenomenon is not in fact a signal of earnings management when studied in the Finnish institutional setting. Yet, it must be remembered throughout the discussion of the results of this empirical study that the total sample size of 555 firm-year observations and the time series ranging from year 2002 to year 2007 restrict the strength of the obtained results, and thus they must be interpreted with caution. Nevertheless, CFO reversal and the rearranged random series of the quarters of one fiscal year provided rather sound results suggesting that the fourth-quarter earnings reversal effect may not be merely incidental.

5.1.2 Earnings reversals and other indicators of earnings management

Table 3, Panel A: Median change in accruals, discretionary accruals, and cash flow from operations of the fourth-quarter

Table 3, Panel A presents median changes in accruals, discretionary accruals, and cash flow from operations (CFO) of the *fourth quarter* for the NP and PN samples. The Other sample is constructed of those firms not falling into neither NP nor PN sample. Accruals are measured as income before extraordinary items and preferred dividends minus cash flow from operations, divided by total assets in the beginning of the fourth quarter. Change in accruals ($\Delta AccQ4_t$) is relative to the same quarter of the previous year ($AccQ4_t$ - $AccQ4_{t-1}$). $DAcc4Q_t$ – Jones ($DAcc4Q_t$ – modified Jones) is the fourth-quarter discretionary accruals estimated using cross-sectional Jones (modified Jones) model for each 2-digit SIC code. $DAcc4Q_t$ – Lagged is the fourth-quarter discretionary accruals estimated using modified Jones model with lagged accruals as an additional independent variable. $\Delta CFO4Q_t$ is the change in cash flow from operations deflated by total assets of the fourth quarter of year *t*, relative to the CFO of the fourth quarter, year *t-1*. P-values in parenthesis relate to the Wilcoxon rank-sum test of the difference in distributions of the NP and PN samples compared to the Other sample.

Variables	**NP**	**PN**	**Other**
$\Delta Acc4Q_t$	0.0538	-0.0259	0.0054
	(0.0000)	*(0.0000)*	
$DAcc4Q_t$ - Jones	0.0002	-0.0001	-0.0001
	(0.0039)	*(0.0808)*	
$DAcc4Q_t$ - Mod. Jones	0.0001	-0.0001	-0.0001
	(0.0082)	*(0.0692)*	
$DAcc4Q_t$ - Lagged	0.0011	0.0000	0.0010
	(0.3659)	*(0.0007)*	
$\Delta CFO4Q_t$	-0.0316	0.0115	-0.0024
	(0.0004)	*(0.0146)*	

Table 3, Panel A reports the changes in fourth-quarter accruals scaled by total assets for different samples (NP, PN and Other). The results show that the median change in fourth-quarter accruals is positive for the NP subsample (0.0538) and negative for the PN subsample (-0.0259). The Wilcoxon rank-sum test run proves that the changes in accruals of both reversal samples are significantly different from Other subsample not representing reversal behavior of either type. The results support intuitive predictions, as the reversal was presumed to be achieved by manipulating accruals, and, in further detail, by the discretionary component of the total accruals. As discussed in section 4.3.1, the positive change in total accruals of the NP sample was expected to be found, as the positive reversal was assumed to be a result of upward accrual manipulation rather. Vice versa, the negative change of earnings in the PN sample was expected to be a result of downward manipulation of accruals.

In addition, discretionary accruals for the fourth quarter are estimated using the cross-sectional Jones model, modified Jones models, and modified Jones model with lagged accruals as additional variable, estimated at the industry level which are defined by two-digit SIC codes. As the results show, the median changes of discretionary accruals for the NP sample are positive (Jones: 0.0002; modified Jones: 0.0001) and for the PN sample they are negative (Jones: -0.0001, modified Jones: -0.0001). The result suggests that the fourth-quarter changes are obtained by discretionary accruals. In a contrary, the median changes in fourth-quarter CFOs can be seen to be of different direction compared to the changes in accruals and discretionary accruals. This result further suggests that the increase in net income of the fourth quarter is achieved via accruals, and the change in accruals of opposite direction offsets the change in the CFO. The changes in CFO are also significant compared to those of the Other sample. Altogether, the results of Table 3, Panel A representing the direction and magnitude of the change in fourth-quarter accruals, discretionary accruals, and the change in CFO are consistent with the prediction that reversal firms achieve their fourth-quarter earnings mostly through accruals rather than CFO. The results are supported by those of Das et al. (2007), as their results are notably similar to those obtained in this study.

Panel B of Table 3 shows that the discretionary accruals of interim quarters using the Jones, modified Jones, and modified Jones with lagged accruals as an additional variable are all negative and insignificant for NP and PN samples compared to Other sample. Further for the NP sample, the change in CFO is both negative and significant, which indicates that the negative changes of the earnings in the interim quarters of the firms in the NP subsample are mostly driven by the negative change in CFO rather than by change in interim accruals. Similarly for the PN sample, the median change in CFO is positive and significant compared to Other sample. This indicates, alike with the results of the NP sample, that the positive changes in earnings of interim quarters are due to positive changes in the CFO. The obtained results support the findings of Table 3, Panel A, which indicated that the fourth-quarter positive or negative changes in earnings were a result of changes in accruals rather than CFO. Overall, the results of Table 3, Panels A and B together support the prediction that the fourth quarter changes are intentional and obtained by manipulation of accruals, which does not systematically occur in any other quarter except for the fourth.

Table 3, Panel B: Median change in accruals, discretionary accruals, and cash flow from operations of interim quarters

Table 3, Panel B represents median changes in accruals, discretionary accruals, and cash flow from operations (CFO) of the combined *interim quarters* for the NP and PN samples. The Other sample is constructed of those firms not falling into neither NP nor PN sample. Accruals are measured as income before extraordinary items and preferred dividends minus cash flow from operations, divided by total assets in the beginning of the fiscal year. Change in accruals (ΔAccQ1-3_t) is relative to the same quarter of the previous year (AccQ1-3_t – AccQ1-3_{t-1}). DAcc1-$3Q_t$ – Jones (DAcc1-$3Q_t$ – modified Jones) is the interim-quarters discretionary accruals estimated using cross-sectional Jones (modified Jones) model for each 2-digit SIC code. DAcc1-$3Q_t$ – Lagged is the interim-quaters discretionary accruals estimated using modified Jones model with lagged accruals as an additional independent variable. ΔCFO1-$3Q_t$ is the change in combined cash flow from operations deflated by total assets at the beginning of year *t*, relative to the CFO of the combined interim quarters, year *t-1*. P-values in parenthesis relate to the Wilcoxon rank-sum test of the difference in distributions of the NP and PN samples compared to the Other sample.

Variables	NP	PN	Other
ΔAcc1-$3Q_t$	0.0324	-0.0221	0.0006
	(0.0215)	*(0.1611)*	
DAcc1-$3Q_t$ - Jones	-0.0002	-0.0001	0.0000
	(0.6706)	*(0.2094)*	
DAcc1-$3Q_t$ - Mod. Jones	-0.0002	-0.0002	-0.0001
	(0.6715)	*(0.1658)*	
DAcc1-$3Q_t$ - Lagged	-0.0870	-0.0463	-0.0706
	(0.9721)	*(0.1183)*	
ΔCFO1-$3Q_t$	-0.0814	0.0459	0.0018
	(0.0000)	*(0.0043)*	

As earnings management is manipulation of the timing of revenue and expense recognition, fourth-quarter accrual changes of the reversal samples are expected to be negatively correlated with accrual changes of the immediately following quarters. The mentioned should occur as the artificially inflated or deflated accruals in one period must be offset in subsequent periods by making counteracting entries. To examine the explained, a regression of change in accruals of each of three subsequent quarters on change in accruals of the fourth quarter with different coefficients for the sample of both types of reversals is estimated.

Table 3, Panel C: Pattern of serial correlations in accruals
Table 3, Panel C presents results of regression of change in accruals of subsequent quarters ($\Delta Acc1Q_{t+1}$, $\Delta Acc2Q_{t+1}$, $\Delta Acc3Q_{t+1}$) on change in accruals of the fourth quarter of the current year ($\Delta Acc4Q_t$). Change in accruals is measured as relative to the same quarter of the previous year. Reversal is a dummy variable that equals one if the firm belongs to the NP or the PN samples and otherwise takes a value of zero. The regression is estimated using the total sample of the firms.

Dependent Variable:	$\Delta Acc1Q_{t+1}$	$\Delta Acc2Q_{t+1}$	$\Delta Acc3Q_{t+1}$
Intercept	0.0016	-0.8553	-1.1049
	(0.610)	*(0.237)*	*(0.238)*
Reversal	0.0005	0.8497	1.0987
	(0.933)	*(0.523)*	*(0.524)*
$\Delta Acc4Q_t$	0.0048	0.0074	0.0099
	(0.0000)	*(0.9600)*	*(0.9580)*
$\Delta Acc4Q_t$*Reversal	-0.1118	-0.2415	-0.2725
	(0.018)	*(0.980)*	*(0.984)*
Adj. R^2	0.1505	-0.0084	-0.0085
R^2	0.1586	0.0013	0.0013
F-statistics	19.49*	0.14	0.14
No. of obs.	314	312	309

Table 3, Panel C shows negative differential coefficients on the change in fourth-quarter accruals for the sample of reversals for the first, second, and third quarters ($\Delta Acc4Q_t$*Reversal). The result being significant for the first quarter indicates that the reversal occurring in the fourth quarter is offset by a counteracting entry of opposite direction. For the second and third periods, the results are highly insignificant, and the R^2 explaining the goodness-of-fit of the used regression model is very low, which reduces the trustworthiness of the obtained results. However, the result for the first quarter proves strong even when compared to the study of Das et al. (2007), who received relatively weaker results for the first quarter of year *t+1*. Again, the insignificance of the results for the second and third quarters could be due to several issues, the major of which being the small sample size of only 555 firm-year observations, which is even further restricted in the Table 3, Panel C due to lack of information required to calculate accruals. However, the obtained result reveals well the true nature of earnings management as an issue of timing of recognition of revenues and expenses.

Table 3, Panel D: Pattern or serial correlation in accruals in the previous year

Table 3, Panel D presents results of regression of change in accruals of current-year quarters ($\Delta Acc1Q_t$, $\Delta Acc2Q_t$, $\Delta Acc3Q_t$) on change in accruals of the fourth quarter of the previous year ($\Delta Acc4Q_{t-1}$). Change in accruals is measured as relative to the same quarter of the previous year. Reversal is an indicator variable that equals one if the firm belongs to the NP or the PN samples and takes a value of zero otherwise. The regression is estimated using the total sample of the firms.

Dependent Variable:	$\Delta Acc1Q_t$	$\Delta Acc2Q_t$	$\Delta Acc3Q_t$
Intercept	0.0000	-0.0027	0.0009
	(0.9910)	*(0.5740)*	*(0.8580)*
Reversal	0.0046	0.0007	-0.0032
	(0.4510)	*(0.9420)*	*(0.7340)*
$\Delta Acc4Q_{t-1}$	-0.0499	-0.0047	0.1165
	(0.0030)	*(0.8600)*	*(0.0000)*
$\Delta Acc4Q_{t-1}$*Reversal	0.0472	-0.0139	-0.1420
	(0.0210)	*(0.6730)*	*(0.0000)*
Adj. R^2	0.0222	-0.0069	0.0546
R^2	0.0320	0.0033	0.0642
F-statistics	3.25*	0.32	6.70
No. of obs.	299	298	297

Panel D of Table 3 reports the accrual reversal pattern of the previous year for the reversal samples NP and PN versus Other sample. Compared to the previously explained table, (Table 3, Panel C) the similar counteracting move in first-quarter accrual change cannot be found in Table 3, Panel D when looking at the change in accruals of the previous year for the sample of reversals ($\Delta Acc4Q_{t-1}$*Reversal). The positive and significant result of the first quarter suggests that, when examining the effect of accruals for fourth quarter of the preceding year, the accruals of the fourth quarter of the previous year have an impact of same direction on the accruals of the immediate subsequent first quarter. Results of the previous table suggested that if a firm exhibited earnings reversal in a current year, the subsequent first quarter revealed change in accruals of opposite direction. The results of Table 3, Panels C and D support the prediction that the reversal of earnings may act as an indicator of earnings management.

Besides as a result of earnings management, the reversal pattern could also potentially result from a change in fourth-quarter settling up behavior. The validity of this alternative explanation to reversal effect is tested alike with the tests run by Das et al. (2007) by comparing the standard deviations occurring in the accruals of the subsamples. If the fourth-quarter accruals included noise from "dumping" of errors and omissions in accruals of interim quarters in the fourth quarter, it should result in higher variance of fourth-quarter accruals. If the reversals occur due to the fourth-quarter settling-up activity changing during the year, then a change in the variance of fourth-quarter accruals should be observed.

Table 4: Standard deviations of accruals

Table 4 presents the standard deviations of accruals for different samples in year *t* and *t-1*. P-values in parentheses on the bottom row represent the significance of the difference of the observed values within the same subsample (NP, PN or Other). P-values in columns between the total accrual values represent the significance of difference between the values of the NP and PN subsamples compared to Other subsample.

	NP		PN		Other
Acc4Qt	0.0980	*(0.0011)*	0.4101	*(0.0000)*	0.1379
Acc4Qt-1	0.081	*(0.0000)*	0.0910	*(0.0000)*	5.076
	(0.1437)		*(0.0000)*		*(0.0000)*

As presented in Table 4, for both NP and PN samples the standard deviation of fourth-quarter accruals increases, whereas it decreases with Other subsample. Thus the reversal effect may not be a result of earnings management but is likely to occur due to correction of errors of interim quarters during the fourth quarter. However, the standard deviation in the NP sample is still smaller than that of the Other sample. Also, all the results of both samples are significantly different from those of Other sample.

The results place criticism on the used research design and challenge the validity of the reversal patterns as indicators of earnings management. The results suggest that the accrual and CFO patterns observed for the reversal samples in the previous tables may occur because of the firms experienced a change in fourth-quarter settling up in the current year, and not because they engaged to earnings management. These results are in contradiction with the results of Das et al. (2007), who experienced opposite results showing that the reversals were unlikely caused by change in fourth-quarter settling up. The difference in results between this study and that of Das et al. is likely to be a result of different sample sizes. However, the method used by Das et al. in their study and also in this study can be criticized for not being comprehensive as only one meter and a vague assumption are used to build the test.

5.1.3 Earnings reversals and threshold-based earnings management

Meeting or beating different thresholds can be used as heuristic of earnings management. As discussed in section 3.4 *Threshold-based earnings management,* different kinds of thresholds mainly concerning annual earnings exist. If firms that exhibit earnings reversal in the fourth quarter are more likely to engage in earnings management to achieve a threshold level of annual earnings than firms not presenting reversal patterns, a high percentage of the reversal firms succeeding in meeting or beating the threshold is expected to be discovered.

Table 5, Panel A: % of firms with ΔEPS in respective range falling in each sample
Table 5, Panel A presents the firms with a change in EPS in respective range falling in each sample (NP, PN or Other). The change in EPS is measured on annual level relative to the previous year. The Other sample includes the final sample excluding firms in the NP and the PN samples. P-values in parentheses relate to the one-tailed z-test of difference in proportions of firms in the respective range (e.g. 0-5 cents) versus firms in the <0 or 15> range in each sample. The last row reports the percentage of firms in the NP, PN and Other subsamples with ΔEPS within the interval of 0-15 cents.

ΔEPS	**NP**	**PN**	**Other**
0-5 cent	18.18%	30.91%	50.91%
	(0.4005)	*(0.0005)*	
5-10 cents	9.52%	11.90%	78.57%
	(0.4250)	*(0.8427)*	
10-15 cents	7.14%	26.19%	66.67%
	(0.2165)	*(0.0194)*	
<0 or 15> cents	13.94%	12.98%	73.08%
% or sample within 0-15 cents	3.06%	5.95%	16.04%

Table 5, Panel A reports results in relation to threshold of zero change in earnings. Four different intervals (0-5, 5-10, 10-15, and <0 or 15> cents) of EPS changes are constructed, and the frequencies of NP and PN samples are compared with those of Other sample. Panel A of Table 5 shows that, of the firms reporting a small annual increase in EPS (0-5 cents), approximately 50% belong to the reversal subsamples. On the other hand, firms reporting changes in EPS of smaller than zero or greater than 15 cents, only 25% belong to the reversal subsamples. The finding is in line with the presumption that if the fourth-quarter reversal is an output of earnings management exercised in order to meet or just beat a certain threshold, the frequency of reversal firms in the lowest interval should be relatively higher than in the other intervals. Even though the proportion of reversal firms within each interval does not constantly increase towards the intervals with higher margin from the threshold, the significance of the proportion of observations belonging to the PN reversal sample within the limit closest to the threshold provides evidence that the reversal pattern may in fact be an indicator of earnings management behavior. Further support is provided by the significantly higher proportion of PN firms in range of 0-5 cents.

Table 5, Panel B: % of firms with EPS in respective range falling in each sample
Table 5, Panel B represents the firms with EPS in respective range falling in each sample (NP, PN or Other). EPS is measured on annual level relative to the previous year. The Other sample includes the final sample excluding firms in the NP and the PN samples. P-values in parentheses relate to the one-tailed z-test of difference in proportions of firms in the respective range (e.g. 0-5 cents) versus firms in the <0 or 15> range in each subsample. The last row reports the percentage of firms in the NP, PN and Other samples with EPS within the interval of 0-15 cents.

EPS	NP	PN	Other
0-5 cent	6.90% *(0.2863)*	24.14% *(0.2510)*	68.97%
5-10 cents	13.51% *(0.9532)*	13.51% *(0.6908)*	72.97%
10-15 cents	15.00% *(0.8852)*	0.00% *(0.0519)*	85.00%
<0 or 15> cents	13.86%	15.99%	70.15%
% or sample within: 0-15 cents	1.80%	2.16%	11.53%

The results of Table 5, Panel B provide support to results of Panel A. Approximately 31% of firms reporting small positive annual EPS (between 0-5 cents) belong to the reversal samples, whereas, for example, firms reporting annual EPS between 10-15 cents, only 15% of firms are those belonging to the reversal samples. However, the results of Panel B are not as strong as those exhibited in Panel A. Together the first two panels of Table 5 provide evidence that the overlap of the samples of small annual EPS change and small annual EPS increases with the reversal samples. The finding is consistent with the assumption that fourth-quarter reversals serve as indicator of earnings management. The findings are similar to those of Das et al. (2007), whose tests, however, reveal more significant evidence on the issue.

Table 5, Panel C: Median accruals of NP and PN firms with small EPS or small EPS increases and firms meeting or beating analysts' forecasts versus other NP and PN firms

Table 5, Panel C reports accrual variables for NP firms that report change in EPS and EPS between 0 and 5 cents, and EPS meeting or beating analysts' forecasts versus other NP firms, and PN firms that report change in EPS or EPS between 0 to 5 cents, and EPS meeting or beating analysts' forecasts versus other PN firms. P-values in parentheses relate to the Wilcoxon rank-sum test of differences in distributions of NP-MeetBeat (PN-MeetBeat) firms and other NP (PN) firms. Change in accruals ($\Delta AccQ4_t$) is relative to the same quarter of the previous year ($AccQ4_t$ - $AccQ4_{t-1}$). $DAcc4Q_t$ – Jones ($DAcc4Q_t$ – modified Jones) is the fourth-quarter discretionary accruals estimated using cross-sectional Jones (modified Jones) model for each 2-digit SIC code. $DAcc4Q_t$ – Lagged is the fourth-quarter discretionary accruals estimated using modified Jones model with lagged accruals as an additional independent variable. $\Delta CFO4Q_t$ is the change in cash flow from operations deflated by total assets of the fourth quarter of year *t*, relative to the CFO of the fourth quarter, year *t-1*.Mean of the analysts' forecasts is used as the threshold.

Variables	NP-MeetBeat	Other-NP	PN-MeetBeat	Other-PN
0-5 cents ΔEPS:				
$\Delta Acc4Q_t$	0.0892	0.0454	-0.0659	-0.0217
	(0.2058)		*(0.1155)*	
$DAcc4Q_t$ - Jones	0.0008	0.0002	-0.0022	-0.0001
	(0.1360)		*(0.0052)*	
$DAcc4Q_t$ - Mod. Jones	0.0006	0.0001	-0.0019	-0.0001
	(0.4041)		*(0.0105)*	
$DAcc4Q_t$ - Lagged	0.0030	0.0010	-0.0007	0.0000
	(0.2591)		*(0.0489)*	
0-5 cents EPS:				
$\Delta Acc4Q_t$	-0.0424	0.0568	-0.0443	-0.0259
	(0.0479)		*(0.9792)*	
$DAcc4Q_t$ - Jones	-0.0012	0.0002	-0.0024	-0.0001
	(0.0874)		*(0.0016)*	
$DAcc4Q_t$ - Mod. Jones	-0.0006	0.0001	-0.0023	-0.0001
	(0.1149)		*(0.0027)*	
$DAcc4Q_t$ - Lagged	0.0014	0.0011	0.0001	0.0000
	(0.9195)		*(0.6204)*	
MeetBeat analysts' forecasts:				
$\Delta Acc4Q_t$	0.5384	0.0266	-0.0167	-0.0426
	(0.2962)		*(0.1751)*	
$DAcc4Q_t$ - Jones	0.0002	0.0004	-0.0001	-0.0002
	(0.3098)		*(0.5595)*	
$DAcc4Q_t$ - Mod. Jones	0.0001	0.0002	-0.0006	-0.0003
	(0.6503)		*(0.3007)*	
$DAcc4Q_t$ - Lagged	0.0012	0.0009	0.0002	-0.0007
	(0.8333)		*(0.0286)*	

Panel C, Table 5 shows that firms in NP (PN) samples with small annual EPS increases (0-5 cents) have higher and lower discretionary accruals than other NP (PN) firms. The results of the uppermost third of Panel C indicate that the firms barely meeting or beating the threshold of positive change in earnings compared to the earnings of the previous year have more likely adjusted their result by manipulating accruals than those firms in the reversal samples which change in EPS is larger than 5 cents or negative. However, the results are significant in only two PN specifications.

Research designs presuming that all firms just meeting or beating earnings targets are seeking to avoid reporting losses or earnings decreases and thus managing earnings upward must adjust for the fact that a substantial number of firms are also smoothing annual earnings downward. In this study the downward smoothing of earnings is taken into account. As it can be seen from the results of the uppermost third of Panel C, the results of the PN sample are even stronger than those of the NP sample. The results strongly indicate that the firms making unexpectedly good earnings are smoothing them downward by using discretionary accruals. The results suggest that beating the threshold by a large margin does not bring notable additional benefits to the firm compared to just beating or meeting the threshold, and thus managers prefer meeting or beating the thresholds by only a small margin and are keen to smooth good earnings downwards.

However, the results of the middle third of Panel C are only partially in line with those of the uppermost third. The results of the PN sample are robust with the results of the uppermost third, as they further prove that firms only meeting or just beating the threshold of zero earnings (0-5 cents) have larger total and discretionary accruals compared to other firms in the same sample but having positive earnings larger than 5 cents or negative earnings.

The results of the NP sample for the middle third of Panel C are mixed and in conflict with the previous results and those received for the PN sample. The results suggest that firms in the NP sample just meeting or beating the threshold of zero earnings (0-5 cents) have significantly different and negative discretionary accruals compared to other firms in the NP sample. According to the previous results presented in Panel C, strong positive total and discretionary accruals would have been expected to be found for the NP sample. The results give evidence that the positive change in EPS compared to the previous year is a better threshold than the threshold of zero or positive earnings. The results may indicate that managers are considering the increase in EPS compared to the previous year as a more important threshold to be met than reporting positive earnings. However, one must bear in mind that again the sample size in the test run in Panel C was less than 80 firm-year observations for each subsample as it only included firms expressing reversal patterns. The small sample size may bias the results significantly. However, the results obtained are mainly in line with those of Das et al. (2007).

The third threshold studied is the meeting or beating of analysts' forecasts, the results of which are presented in the lowest third of Panel C. Intuitively it would be assumed that firms meeting or beating analysts' forecasts would have larger (NP) or smaller (PN) total and discretionary accruals compared to those in the same reversal sample but not meeting or beating the threshold. Das et al. (2007) did not use analysts' forecasts as a threshold in their study, as they argued that firms would be equally concerned with meeting or beating analysts' forecasts in interim quarters as in the fourth quarter. They find that reversal firms are relatively more concerned with reporting small annual profits or EPS increases rather than meeting or beating analysts' expectations. However, this alternative threshold widely discussed in literature is also tested in this study to receive more evidence and possible support for the used research design. If the median for the analysts' forecasts was used in place of the mean, approximately only 5% of the firms would belong to a different sample (MeetBeat vs. Other).

Unlike intuitively expected, the results of the third studied threshold on the bottom third of Panel C are mainly insignificant and opposite to the previous results. For the NP sample, the total and discretionary accruals would have been expected to be larger for those meeting or beating the threshold relative to the other NP firms. However, this seems to hold only with change in total accruals for the NP sample (0.5384 vs. 0.0266). With discretionary accruals, the median for other NP firms not meeting the analysts' forecasts is constantly higher than for those meeting or beating the analysts' forecasts. Also for the PN sample, only the median of the discretionary accruals calculated by using the modified Jones model are more negative for the PN firms meeting or beating the analysts' forecasts than for those firms in the PN sample who do not (-0.0006 vs. -0.0003). The results support the argument of Das et al. (2007) that the firms may indeed be more driven to meet or beat the other thresholds at the expense of reaching analysts' forecasts. As proved earlier, the best threshold according to this study is the increase in annual EPS compared to the previous year, as it provides relatively strong and results in line with the predictions.

5.2 FAS VS. IFRS

The first half of the empirical part of this study tried to answer the question whether or not fourth-quarter earnings reversal can be used as a heuristic to earnings management. The latter part of this study is devoted to determining whether or not the level of earnings management differs between firms reporting according to FAS and IFRS. As the sample period of this study ranges from year 2002 to year 2007, and contains only firms publicly quoted in the Helsinki Stock Exchange, the mandatory application of IFRS for publicly quoted firms' consolidated accounts effective since 2005 roughly divides the sample period into two three-year long periods, that before mandatory application of IFRS (2002-2004) and that after it (2005-2007). However, as the firms have been able to apply IFRS to their consolidated accounts voluntarily prior to year 2005, and thus the year 2005 does not act as a watertight milestone for application of IFRSs, the firm-year observations are divided into FAS and IFRS samples according to the actual used accounting standard. Nevertheless, approximately half of the sample consists of observations under FAS and half under IFRS.

5.2.1 Frequency of fourth-quarter earnings reversals

Table 6 presents the frequency of fourth-quarter earnings reversals between the two accounting standards studied in this thesis. Firms reporting according to IFRS seem to engage with fourth-quarter earnings reversal slightly less (3.24 percentage points) than firms reporting according to FAS. The difference is mostly due to dissimilarity in the positive-negative (PN) reversals, which are less frequent with firms reporting according to IFRS. However, the difference between FAS and IFRS samples in the frequency of PN reversals does not prove significant. The frequency of negative-positive (NP) reversals is almost even.

Table 6: Accounting standard-wise distribution of reversals

Table 6 presents the distribution of observations for the accounting standard followed for: 1) NP- sample having negative earnings change in two out of three interim quarters plus the combined interim quarters and positive earnings change in the fourth quarter, and 2) PN-sample having positive earnings change in two out of three interim quarters plus the combined interim quarters and negative earnings change in the fourth quarter. Earnings change is measured by change in earnings per share (EPS) relative to the same quarter of the previous year. The p-values in parentheses below the frequencies show the significance of the difference between the figures of FAS and IFRS.

	No. of observations	**% relative to no. of obs.**					
		NP		**PN**		**Total**	
FAS	269	13.38%	*(36)*	17.47%	*(47)*	30.86%	*(83)*
IFRS	286	13.64%	*(39)*	13.99%	*(40)*	27.62%	*(79)*
		(0.9304)		*(0.2589)*			
Total	**555**	**13.51%**		**15.68%**			

By judging only according to the results of Table 6, an intuitive prediction can be made that no significant difference between FAS and IFRS on the level of earnings management exists. If the fourth-quarter earnings reversal pattern indicated that a firm was more likely to engage in earnings management than a non-reversal firm, the result would be in favor of IFRSs and suggest that IFRSs as a set of accounting standards better restrict possibilities to manage earnings. However, as section 5.1 did not find the fourth-quarter earnings reversal model fully competent and reliable way to measure presence of earnings management when applied to small sample size and in Finnish institutional setting, further tests are run to find more evidence on the second hypothesis.

Similar to Table 2, Table 7 tests for alternative benchmarks to determine whether the observed frequencies of earnings reversals are significantly higher than could be expected by chance. Three alternative benchmarks (CFO reversal, random series, and alternative sequences) are constructed in order to evaluate the earnings reversal frequency. If the earnings reversal is intentional, the frequencies found on different benchmarks are expected to be smaller than the frequency of original earnings reversal.

Table 7: Frequency of fourth-quarter earnings reversals relative to alternative benchmarks
Table 7 presents alternative benchmarks for the frequency of fourth-quarter earnings reversal when observed separately for FAS and IFRS samples. CFO reversal relates to reversal of changes in cash flow from operations in the fourth quarter relative to interim quarters. NP (PN) includes firms with negative (positive) change in cash from operations in two out of three interim quarters plus the combined interim quarters and positive (negative) change in cash flow from operations in the fourth quarter, where the change in cash flow from operations is measured relative to the same quarter of the previous year. Random series relates to the rearranged order of the four quarters of fiscal year t so that the original fourth quarter is not the last quarter in the series. The set of three alternate sequences relates to the sequences of the four quarters starting with quarters 2, 3, and 4 of year *t*. The P-values in parentheses relate to the z-test of difference in proportions between the NP and PN samples of alternative benchmarks and the NP and PN samples of fourth-quarter EPS reversals (EPS reversal original > reversal benchmark).

	FAS		IFRS	
Benchmarks	**NP**	**PN**	**NP**	**PN**
Earnings reversal	13.38%	17.47%	13.64%	13.99%
CFO Reversal	10.71%	10.71%	8.80%	10.56%
	(0.2373)	*(0.0483)*	*(0.0338)*	*(0.1066)*
Random series:				
$Q2_t, Q3_t, Q4_t, Q1_t$	10.04%	15.24%	13.99%	13.99%
	(0.1138)	*(0.2422)*	*(0.5482)*	*(0.5000)*
$Q3_t, Q4_t, Q1_t, Q2_t$	9.67%	12.27%	9.79%	15.38%
	(0.0885)	*(0.0449)*	*(0.0763)*	*(0.6817)*
$Q4_t, Q1_t, Q2_t, Q3_t$	14.87%	13.01%	11.89%	9.44%
	(0.6897)	*(0.0750)*	*(0.2655)*	*(0.0455)*
Alternate sequences:				
$Q2_t, Q3_t, Q4_t, Q1_{t+1}$	12.93%	13.69%	20.20%	12.81%
	(0.4383)	*(0.1146)*	*(0.9734)*	*(0.3536)*
$Q3_t, Q4_t, Q1_{t+1}, Q2_{t+1}$	16.15%	15.00%	11.94%	16.92%
	(0.8156)	*(0.2205)*	*(0.2915)*	*(0.8124)*
$Q4_t, Q1_{t+1}, Q2_{t+1}, Q3_{t+1}$	14.23%	15.77%	13.64%	14.65%
	(0.6113)	*(0.2995)*	*(0.5000)*	*(0.5810)*

For both FAS and IFRS samples, the CFO reversals are smaller compared to earnings reversals, for some even significantly smaller. Similar to the result obtained when tested on the total sample (Table 2), the smaller frequency of CFO reversal with both FAS and IFRS indicates that the reversal phenomenon does not occur with the same frequency in just any variable. So far, the results suggest that for both FAS and IFRS samples the earnings reversal may well indicate earnings management behavior.

When moving on to the benchmarks of rearranged random series and alternate sequences, the results for FAS sample prove more smaller than the original earnings reversal frequency relative to the results of the IFRS sample, although the differences between FAS and IFRS samples appear to be small. The result may indicate that with firms reporting according to FAS, the fourth-quarter earnings reversal is more intentional and may serve as a signal for earnings management, whereas with firms reporting according to IFRS, the fourth-quarter earnings reversal seems more likely to occur by chance, and thus the reversal should not be seen as a reliable heuristic for earnings management activity.

5.2.2 Earnings reversals and other indicators of earnings management

Table 8, Panel A: Median changes in accruals, discretionary accruals, and cash flow from operations of the fourth quarter

Table 8, Panel A presents median changes in accruals, discretionary accruals, and cash flow from operations (CFO) of the fourth quarter for the NP and PN samples grouped by accounting standard. The Other samples are constructed of those firms not falling into neither of NP or PN sample within the accounting standards. Accruals are measured as income before extraordinary items and preferred dividends minus cash flow from operations, divided by total assets in the beginning of the fourth quarter. Change in accruals (ΔAccQ4t) is relative to the same quarter of the previous year (AccQ4t - AccQ4t-1).DAcc4Qt – Jones (DAcc4Qt – modified Jones) is the fourth-quarter discretionary accruals estimated using cross-sectional Jones (modified Jones) model for each 2-digit SIC code. DAcc4Qt – Lagged is the fourth-quarter discretionary accruals estimated using modified Jones model with lagged accruals as an additional independent variable. ΔCFO4Qt is the change in cash flow from operations deflated by total assets of the fourth quarter of year t, relative to the CFO of the fourth quarter, year t-1. P-values in parenthesis relate to the Wilcoxon test of the difference in distributions of the NP and PN samples compared to the Other sample of the same accounting standard.

	FAS			IFRS		
Variables	**NP**	**PN**	**Other**	**NP**	**PN**	**Other**
ΔAcc4Q$_t$	0.0250	-0.0343	-0.0013	0.0735	-0.0234	0.0069
	(0.0770)	*(0.0036)*		*(0.0000)*	*(0.0016)*	
DAcc4Q$_t$ - Jones	0.0002	-0.0002	-0.0001	0.0002	-0.0001	0.0000
	(0.0250)	*(0.6843)*		*(0.0648)*	*(0.0447)*	
DAcc4Q$_t$ - Mod. Jones	0.0001	-0.0002	-0.0001	0.0002	-0.0001	-0.0003
	(0.0191)	*(0.5781)*		*(0.1349)*	*(0.0507)*	
DAcc4Q$_t$ - Lagged	0.0012	0.0000	0.0003	0.0010	0.0000	0.0012
	(0.1716)	*(0.5406)*		*(0.9111)*	*(0.0001)*	
ΔCFO4Q$_t$	-0.0199	0.0216	0.0025	-0.0563	0.0074	-0.0073
	(0.2042)	*(0.0651)*		*(0.0004)*	*(0.1330)*	

Table 8, Panel A reports the changes in fourth-quarter total and discretionary accruals for the NP, PN and Other samples, grouped by the applied accounting regimes. The table follows Table 3, Panel A presenting results for the total sample.

Quite expectedly, for both FAS and IFRS the change in total accruals for the fourth quarter is positive for the NP sample and negative for the PN sample. As the change in cash flow from operations for the fourth quarter is negative for the NP sample and positive for the PN sample, an inference can be made that the reversal firms use accruals rather than cash flow from operations as means to increase or suppress their earnings (see Table 3, Panel A for more explanation). As the differences compared to the Other samples within the same reporting standard are mainly significant, this result can be taken as an indicator of firms' fourth-quarter earnings management behavior.

Also the discretionary accruals for both FAS and IFRS are positive in the NP samples and negative in the PN samples apart from the discretionary accruals measured by using the modified Jones model with lagged accruals as an additional variable. The results suggest that firms reporting according to FAS and IFRS both obtain the fourth-quarter changes by using discretionary accruals. The results of Table 8, Panel A do not present any significant differences in earnings management level between firms reporting according to FAS or IFRS.

To further compare the two accounting regimes and their possible differences in limiting earnings management, similar tests run in Table 8, Panel A are repeated by using the three interim quarters as an objective. In Table 3, Panel B it is found that, relative to accruals and discretionary accruals of the fourth quarters, the interim quarters present opposite results and do not show signs of accrual management during the interim periods. Thus results of opposite direction relative to Panel A of Table 8 are expected to be found, if the fourth-quarter earnings reversal is achieved by manipulating accruals and not real activities.

Table 8, Panel B: Median change in accruals, discretionary accruals, and cash flow from operations of interim quarters

Table 8, Panel B presents median changes in accruals, discretionary accruals, and cash flow from operations (CFO) of the combined *interim quarters* for the NP and PN samples grouped according the the accounting standard. The Other sample is constructed of those firms not falling into neither of NP or PN sample within the accounting standard. Accruals are measured as income before extraordinary items and preferred dividends minus cash flow from operations, divided by total assets in the beginning of the fiscal year. Change in accruals ($\Delta AccQ1\text{-}3_t$) is relative to the same quarter of the previous year ($AccQ1\text{-}3_t - AccQ1\text{-}3_{t-1}$).$DAcc1\text{-}3Q_t$ – Jones ($DAcc1\text{-}3Q_t$ – modified Jones) is the interim-quarters discretionary accruals estimated using cross-sectional Jones (modified Jones) model fro each 2-digit SIC code. $DAcc1\text{-}3Q_t$ – Lagged is the interim-quaters discretionary accruals estimated using modified Jones model with lagged accruals as an additional independent variable. $\Delta CFO1\text{-}3Q_t$ is the change in combined interim cash flows from operations deflated by total assets at the beginning of year *t*, relative to the CFO of the combined interim quarters, year *t-1*. P-values in parenthesis relate to the Wilcoxon test of the difference in distributions of the NP and PN samples compared to the Other sample.

Variables	**FAS**			**IFRS**		
	NP	**PN**	**Other**	**NP**	**PN**	**Other**
$\Delta Acc1\text{-}3Q_t$	0.0456	0.0040	-0.0091	0.0281	-0.0255	0.0030
	(0.1183)	*(0.9773)*		*(0.0903)*	*(0.1149)*	
$DAcc1\text{-}3Q_t$ - Jones	0.0001	-0.0005	-0.0001	-0.0002	0.0000	0.0001
	(0.6367)	*(0.4996)*		*(0.3910)*	*(0.2997)*	
$DAcc1\text{-}3Q_t$ - Mod. Jones	0.0001	-0.0020	-0.0002	-0.0003	-0.0001	-0.0001
	(0.5307)	*(0.1571)*		*(0.4487)*	*(0.4112)*	
$DAcc1\text{-}3Q_t$ - Lagged	0.0003	-0.0007	0.0000	0.0001	0.0000	0.0000
	(0.1589)	*(0.3731)*		*(0.5519)*	*(0.1714)*	
$\Delta CFO1\text{-}3Q_t$	-0.0591	0.0649	0.0160	-0.0816	0.0426	-0.0045
	(0.0011)	*(0.2206)*		*(0.0002)*	*(0.0109)*	

The results of the interim quarters prove weak in terms of significance relative to the Other samples. A rather clear pattern of opposite behavior of interim accruals relative to the fourth-quarter accruals presented in Table 3, Panel B cannot be found when the total sample is split into two according to the reporting standard in Table 8, Panel B. With the NP samples of both FAS and IFRS, the median change in total accruals is positive and change in cash flow from operations is significantly negative, indicating that the changes in earnings during interim quarters are result of changes in cash flow rather than accruals (opposite to the situation in the fourth quarter). This result is in line with that received when tested on the total sample, and supports the assumption that fourth-quarter earnings reversal is intentional and achieved by using accruals. Also the PN sample of IFRS follows the expected pattern of negative change in total accruals and positive change in change of CFO, but the PN sample of FAS shows positive change in change of total accruals, opposite to the expected. Also, the discretionary accruals of both FAS and IFRS samples are insignificant and do not follow the similar pattern found in Table 3, Panel B on the total sample. The results are to some extent in conflict with those of Table 8, Panel A as they do not provide strong support to the findings of Panel A, and question the intentional use of total and discretionary accruals as means of earnings management during the fourth quarter. Especially the weak results associated with discretionary accruals question the assumption that the fourth-quarter reversal effect is achieved by using accrual manipulation, and that the manipulation would occur systematically during the fourth quarter if earnings management took place.

5.2.3 Earnings reversals and threshold-based earnings management

Table 9, Panel A: % of firms with ΔEPS in respective range falling in each sample grouped by accounting standard

Table 9, Panel A presents the firms with a change in EPS in respective range falling in each sample (NP, PN or Other) grouped by accounting standard. The change in EPS is measured on annual level relative to the previous year. Other sample includes the final sample of the accounting standard excluding firms in the NP and the PN samples. P-values in parentheses relate to the one-tailed z-test of difference in proportions of firms in the respective range (e.g. 0-5 cents) versus firms in the <0 or 15> range in each subsample grouped by the accounting standard. The last row reports the percentage of firms in the NP, PN and Other samples with ΔEPS within the interval of 0-15 cents.

	FAS			IFRS		
ΔEPS	**NP**	**PN**	**Other**	**NP**	**PN**	**Other**
0-5 cent	15.38%	42.31%	42.31%	20.69%	20.69%	58.62%
	(0.9960)	*(0.0003)*		*(0.2337)*	*(0.2018)*	
5-10 cents	5.00%	10.00%	85.00%	13.64%	13.64%	72.73%
	(0.2089)	*(0.6299)*		*(0.8913)*	*(0.8397)*	
10-15 cents	0.00%	28.57%	71.43%	14.29%	23.81%	61.90%
	(0.0530)	*(0.0743)*		*(0.8269)*	*(0.1319)*	
<0 or 15> cents	15.35%	13.86%	70.79%	12.62%	12.15%	75.23%
% or sample within 0-15 cents	13.89%	40.43%	23.12%	30.77%	35.00%	22.22%

Table 9, Panel A presents the results of tests run to examine if the firms reporting according to FAS engage relatively more or less to threshold-based earnings management than firms reporting according to IFRS. Same thresholds used in Table 5, Panels A and B are used in Table 9, Panels

A and B respectively. The threshold of meeting or beating analysts' forecasts is left untested as it did not prove to be as good as the thresholds of positive earnings change relative to previous year and zero or positive earnings.

In the FAS sample, 57.69% of the firms reporting changes in EPS between 0 and 5 cents are firms also belonging to either reversal subsample. Within the IFRS sample the frequency is 41.38%. The difference in combined frequencies of reversal samples within the lowest range is remarkable and signals that firms reporting according to FAS are more capable than firms reporting according to IFRS to manipulate their earnings to meet or just beat the threshold. Especially interesting is the frequency of the PN reversal sample of FAS in the range of 0 to 5 cents, as is proves significantly larger compared to the proportion of PN reversal FAS firms falling into the range of <0 or 15> cents (42.31% vs. 13.86% of the firms within the range). The finding further reinforces the results found earlier in this study stating that firms reporting according to FAS are keen to manage their earnings downward to avoid paying extra tax for their unexpectedly good earnings.

Table 9, Panel B: % of firms with EPS in respective range falling in each sample grouped by accounting standard

Table 9, Panel B represents the firms with EPS in respective range falling in each sample (NP, PN or Other). EPS is measured on annual level relative to the previous year. Other sample includes the final sample excluding firms in the NP and the PN samples. P-value in parentheses relate to the one-tailed z-test of difference in proportions of firms in the respective range (e.g. 0-5 cents) versus firms in the <0 or 15> range in each subsample. The last row reports the percentage of firms in the NP, PN and Other subsamples with ΔEPS within the interval of 0-15 cents.

	FAS			**IFRS**		
EPS	**NP**	**PN**	**Other**	**NP**	**PN**	**Other**
0-5 cent	10.00%	30.00%	60.00%	0.00%	11.11%	88.89%
	(0.6370)	*(0.1473)*		*(0.2285)*	*(0.7395)*	
5-10 cents	10.00%	20.00%	70.00%	17.65%	5.88%	76.47%
	(0.6370)	*(0.7315)*		*(0.6719)*	*(0.2949)*	
10-15 cents	18.18%	0.00%	81.82%	11.11%	0.00%	88.89%
	(0.6799)	*(0.1356)*		*(0.8089)*	*(0.2065)*	
<0 or 15> cents	13.76%	16.97%	69.27%	13.94%	15.14%	70.92%
% or sample within 0-15 cents	16.67%	21.28%	18.82%	10.26%	5.00%	14.01%

Table 9, Panel B presents results of the threshold of reporting zero or positive earnings. Here the results follow those of Panel A, and further suggest that the firms reporting according to FAS are more likely to engage in threshold-based earnings management. In the FAS sample, 40.00% of the firms reporting changes in EPS between 0 and 5 cents are firms also belonging to either reversal sample, relative to the IFRS sample, where only 11.11% of the firms in the reported EPS range of 0 to 5 cents belong to the reversal samples.

Together Table 9, Panels A and B provide strong evidence that firms belonging to the reversal samples and reporting according to FAS succeed relatively more often in meeting or just beating the earnings-related thresholds relative to firms reporting according to IFRS. As the proportion of firms belonging to the reversal samples within each range of five cents declines the larger the margin from the threshold grows, the result suggest that this cannot happen only by chance, but is likely to be a result of designated action of the management. The results signal that the earnings smoothing in order to meet or just beat the target is more difficult when preparing accounts according to IFRS.

6. CONCLUSIONS

This chapter discusses the main findings of this study and ties together the empirical results and the theoretical background. First, the summary of the main findings is given and the obtained results are discussed. Finally, directions for future research are given and the points of improvement regarding this study are stated.

6.1 SUMMARY OF THE FINDINGS

The empirical part of this thesis is dedicated to testing two different hypotheses. The first hypothesis regards the applicability of an earnings management research design invented by Das et al. (2007) to a sample of publicly quoted firms in Finland. The second hypothesis questions whether or not the level of earnings management differs significantly between firms reporting according to FAS relative to those reporting according to IFRS in Finland. The research design used is similar to Das, Schroff and Zhang (2007), who document strong evidence in favor of the quarterly earnings reversal model with a sample of U.S. firms. This study adds to the previous study by Das et al. in two ways. First, it tests if the predictions of quarterly earnings reversal model apply to a sample of firms listed in Helsinki Stock Exchange. Second, it expands the analysis to comparison of two different accounting standards. The sample in the period from 2002 to 2007 consists of 555 firm-year observations, of which 269 are observations reported according to FAS and 286 are observations reported according to IFRS.

6.1.1 Quarterly earnings pattern as an indicator of earnings management

As proved by Das et al. (2007) in their paper, the quarterly earnings reversal pattern can be used as an alternative tool to detect earnings management. Their empirical study conducted in the U.S. consisting of 71,963 firm-year observations between 1988 and 2004 provides persuasive evidence that the reversal firms are likely to have managed earnings. In this thesis, similar tests to Das et al. repeated with the Finnish sample do provide results of similar direction, but the results do not have as high explanatory power as those of Das et al. Quite interestingly, the proportion of reversal firms in the sample turns out to be roughly 30% (see Table 1, Panel A), which is 8 percentage points higher than that found by Das et al. The result indicates that the fourth quarter earnings reversal is a common phenomenon among firms publicly quoted in Finland. Alternative benchmarks constructed to evaluate the expected level of the reversal frequency (Table 2) prove to some extent that the fourth-quarter earnings reversal frequency observed in Table 1, Panel A is higher than would be expected by chance. Therefore the fourth-quarter earnings surge or decline compared to the interim quarters must be a cause of intentional action, and reason for it should be found. So far, the results show that the research design may well be applicable also with a rather small sample size and in Finnish institutional setting.

Next, congruence of the results received in Tables 1 and 2 with other commonly know earnings management detection models is tested to further prove the applicability of the research method. Different variables - namely change in total accruals, discretionary accruals, and change in CFO - are tested by comparing the reversal sample fourth-quarter medians of the variables to those of Other sample (Table 3, Panel A). The univariate tests show that the median change in total accruals and the median of discretionary accruals of the NP sample are positive and significantly different from the Other sample. Similarly, the median change in total accruals and the median of discretionary accruals of the PN sample are negative and significantly different from the Other sample. In a contrary, the median changes in CFO of reversal samples are observed to be of different direction compared to the changes in accruals and discretionary accruals. Together with the results presented in Table 3, Panel B repeating the testes on the same variables in combined interim quarters, the tests indicate that the fourth-quarter positive (negative) changes in earnings are a result of surge (decline) in accruals rather than CFO. As the surges and declines are significantly different from the accruals presented by firms belonging to Other sample, the results further signal that manipulation of the accruals is likely to take place.

Further tests regarding other indicators of earnings management provide somewhat mixed results, and often lack high explanatory power. However, some of the results clearly point out the nature of earnings as an issue of timing of recognition of revenues and expenses. An expected counteracting change in accruals to opposite direction is found to occur in the quarter immediately following the fourth quarter experiencing earnings reversal. The finding suggests that the artificial inflation or deflation of earnings is reversed right after its occurrence to undo the move and to return the balance of the accounts back to their natural state. As the similar counteracting move is not found to be in association with a fourth quarter not displaying earnings reversal effect and the interim quarters immediately following it, further conclusions can be drawn that the earnings reversal pattern indeed may be a signal for earnings management. However, some of the results presented in Table 3, Panels C and D have very low explanatory power, and thus the interpretation of the results must be made with caution.

The final means to test the functionality of the earnings reversal model is to observe the overlap of earnings reversals and different earnings thresholds. Three common earnings thresholds are used in the evaluation. Strong evidence is found when observing the results associated with thresholds of zero or positive change in earnings and zero or positive earnings. Within the range of reporting an earnings increase of zero or maximum of five cents compared to the previous year, the proportion of reversal firms is much larger than within other ranges exceeding the threshold by a larger margin or falling below the threshold. A similar finding is made when taking a look at the results of threshold of reporting zero or positive earnings. Again, a relatively larger proportion of firms barely meeting or just beating the threshold belong to the reversal samples.

Altogether, a conclusion can be drawn that the fourth-quarter earnings reversal pattern may be applied also in the Finnish institutional setting when detecting for earnings management. However, as the results with Finnish data do not provide support of similar strength for the model as has been documented in the U.S. by Das et al. (2007), and the data set used in this thesis is rather limited in number of firm-year observations, a proposition that fourth quarter earnings reversals should be used as an alternative tool to detect earnings management in conjunction with other indicators is given.

6.1.2 Differences in the level earnings management between FAS and IFRS

When drawing the total sample into two according to the accounting standards, the firms reporting according to FAS prove to engage in fourth-quarter earnings reversals relatively more frequently than firms reporting according to IFRS. Quite interestingly, the difference is mainly due to difference in the percentages of interim-quarters-positive-fourth-quarter-negative earnings change (PN). The alternative benchmarks constructed to determine whether or not the observed frequencies of earnings reversals are significantly higher than could be expected by chance further indicate that the frequencies of fourth-quarter reversals observed within the FAS sample are stronger and thus more likely to occur as a result of intentional action. The frequencies of alternative benchmarks for the IFRS sample are often larger than those of the original fourth-quarter earnings reversal. It may signal that within the IFRS sample the fourth-quarter earnings reversal is not as likely to be a result of earnings management as it is within the FAS sample.

The tests examining the other indicators of earnings management provide weak and mixed results. This is most likely cause by the small size used in the tests, as the variables required in estimating discretionary accruals are not available evenly across the whole sample. A fairly insignificant finding is drawn that both firms reporting according to FAS and IFRS achieve the surge or decline in fourth-quarter earnings by using accruals rather than CFO.

The comparison between firms reporting according to the different accounting standards is the most revealing when observing the results of threshold-based earnings management. Firms belonging to the reversal samples and reporting according to FAS succeed relatively more often in meeting or just beating the earnings-related thresholds relative to firms reporting according to IFRS. The result strongly reflects that firms reporting according to FAS are more capable to meet the thresholds than firms reporting according to IFRS.

As widely discussed in chapter 2, many differences between the national Finnish accounting legislation and the IFRSs exist. However, it is very difficult to measure, which accounting standard is better in limiting earnings management. Differences in the standards may be experienced differently by firms in different industries, with different composition of assets and liabilities, or with different strategies concerning e.g. research and development or holding of investment property. If applying the fourth-quarter earnings reversal pattern as an infallible evidence of earnings management, the Finnish Accounting Act could be seen to provide more room for earnings management, as the reversals are more frequent with the FAS sample than with the IFRS sample. The results associated with the tests of threshold-based earnings management support the assumption. However, as some of the results obtained by testing for other indicators of earnings management do not strongly support the assumption, the result must be interpreted with great caution.

6.2 DIRECTIONS FOR FUTURE RESEARCH

This study provides evidence on the earnings management exercised by firms publicly quoted in Finland. The weakness of this study lies in the small size of the total sample, which restricts the reliability of the obtained results. However, a more comprehensive research by using the similar research design and restricting the sample to firms listed in Finland is difficult to conduct. As the culture of reporting interim figures is rather young in Finland, and thus the estimation of interim accruals and discretionary accruals by using the Jones model is complicated, the study conducted in this thesis provides relatively comprehensive results. In ten years time, the study could be well repeated, as more interim data would then be available, and the sample size would be significantly larger.

Another interesting extension to the conducted study would be adding indicators of earnings management other than those based on discretionary accruals to the variety of benchmarks. Even though the models using discretionary accruals as proxy for earnings management are currently the most common in use, they have faced criticism from academics. Use of other recent earnings management detection models, such as those based on distribution of earnings management or specific accruals, would bring additional depth and versatility to the analysis.

An interesting subject for future research would also be to apply the used research design to large sample of European firms. As all the firms publicly quoted within the EU region must prepare their interim and annual reports according to IFRSs, grounds for an extensive study exist. Along the study, the difference in frequency of fourth-quarter earnings reversal in different countries could be observed.

REFERENCES

Barth, M., Elliott, J., Finn, M., 1999. Market rewards associated with patterns of increasing earnings. Journal of Accounting Research 37, 387-413.

Bartov, E., Givoly, D., Hayn, C., 2002. The rewards of meeting or beating earnings expectations. Journal of Accounting and Economics 33, 173-204.

Bartov, E., Gul, F., Tsui, J., 2001. Discretionary-accruals models and audit qualifications. Journal of Accounting and Economics 30, 421-452.

Basu, S., Hwang, L., Jan, C-L., 2005. Auditor conservatism and analysts' fourth quarter earnings forecasts. Journal of Accounting and Financial Research 13, 211-235.

Beneish, M., 2001. Earnings management: a perspective. Managerial Finance 27, 3-17.

Brown, L., Spinello, A., 2007. To what extent does the financial reporting process curb earnings surprise games? Journal of Accounting Research 45, 947-981.

Burgstahler, D., Dichev, I., 1997. Earnings management to avoid earnings decreases and losses. Journal of Accounting and Economics 24, 99-126.

Darrough, M., Rangan, S., 2005. Do insiders manipulate earnings when they sell their shares in an initial public offering? Journal of Accounting Research 43, 1-33.

Das, S., Schroff, P., Zhang, H., 2007. Quarterly earnings patterns and earnings management. Social Science Research Network. Working paper.

DeAngelo, H., DeAngelo, L., Skinner, D., 1994. Accounting choices in troubled companies. Journal of Accounting and Economics 17, 113-143.

DeAngelo, L., 1986. Accounting numbers as market valuation substitutes: a study of management buyouts of public stockholders. The Accounting Review 61, 400-402.

Dechow, P., 1994. Accounting earnings and cash flow as measures of firm performance: the role of accounting accruals. Journal of Accounting and Economics 18, 3-42.

Dechow, P., Richardson, S., Tuna, I., 2003. Why are earnings kinky? An examination of the earnings management explanation. Review of Accounting Studies 8, 355-384.

Dechow, P., Skinner, D., 2000. Earnings management: reconciling the views of accounting academics, practitioners, and regulators. Accounting Horizons 14, 235-250.

Dechow, P., Sloan, R., Sweeney, A., 1995. Detecting earnings management. The Accounting Review 70, 193-225.

DeFond, M., Jiambalvo, J., 1994. Debt covenant violation and manipulation of accruals. Journal of Accounting and Economics 17, 145-176.

Degeorge, F., Patel, J., Zeckhauser, R., 1999. Earnings management to exceed thresholds. Journal of Business 72, 1-33.

Dichev I., Skinner, D., 2002. Large-sample evidence on the debt-covenant hypothesis. Journal of Accounting Research 40, 1091-1123.

Erickson, M., Wang, S., 1999. Earnings management by acquiring firms in stock for stock mergers. Journal of Accounting and Economics 71, 149-176.

Ewert, R., Wagenhofer, A., 2005. Economic effects of tightening accounting standards to restrict earnings management. The Accounting Review 80, 1101-1124.

Financial Accounting Standards Board (FASB), 2008. Statement of Financial Accounting Standards No. 157: fair value measurements. http://www.fasb.org/pdf/aop_FAS157.pdf (27.4.2008)

Gaver, J., Gaver, K., Austin, J., 1995. Additional evidence on bonus plans and income management. Journal of Accounting and Economics 19, 3-28.

Givolyn D., Ronen, J., 1981. 'Smoothing' Manifestations in Fourth Quarter Results of Operations: Some Empirical Evidence. ABACUS 17, 174-193.

Goncharow, I., Zimmermann, J., 2006. Do accounting standards influence the level of earnings management? Evidence from Germany. Social Science Research Network. Working paper.

Graham, J., Campbell, H., Rajgopal, S., 2006. Value destruction and financial reporting decisions. Financial Analysts Journal 62, 27-39.

Guidry, F., Leone, A., Rock, S., 1999. Earnings-based bonus plans and earnings management by business-unit manager. Journal of Accounting and Economics 26, 113-142.

Gunny, K., 2005. What are the consequences of real earnings management? Social Science Research Network. Working paper.

Hayn, C., 1994. The information content of losses. Journal of Accounting and Economics 20, 125-153.

Healy, P., 1985. The effect of bonus schemes on accounting decisions. Journal of Accounting and Economics 7, 85-107.

Healy, P., Palepu, K., 2001. Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature. Journal of Accounting and Economics 31,405-440.

Healy, P., Wahlen, J., 1999. A review of earnings management literature and its implications for standard setting. Accounting Horizons 13, 365-383.

Herbohn, K., Herbohn, J., 2006. International Accounting Standard (IAS) 41: What Are the Implications for Reporting Forest Assets? Small-scale Forest Economics, Management and Policy 5, 175-189.

Holthausen, R., Larcker, D., Sloan, R., 1995. Annual bonus schemes and the manipulation of earnings. Journal of Accounting and Economics 19, 29-74.

International Accounting Standards Board, 2006. Discussion paper: Fair value measurement. Part 1: Invitation to Comment and relevant IFRS guidance. http://www.iasb.org/NR/rdonlyres/6C8AF291-EB14-4034-84F1-54305F72024D/0/DDFairValue.pdf (27.4.2008)

Jeter, D., Shivakumar, L., 1999. Cross-sectional estimation of abnormal accruals using quarterly and annual data: effectiveness in detecting event-specific earnings management. Accounting and Business Research 29, 299-319.

Jiang, J., 2008. Beating Earnings Benchmarks and the Cost of Debt. Accounting Review 38, 377-416.

Johnson, L., Petrone, K., 1998. Is goodwill an asset? Accounting Horizons 12, 293-303.

Jones, J., 1991. Earnings management during import relief investigation. Journal of Accounting Research 29, 193-228.

Kallunki, J-P., Martikainen, M., 2003. Earnings management as a predictor of future profitability of Finnish firms. European Accounting Review 12, 311-325.

Kallunki J-P., Martikainen, M., 1999. Financial failure and managers' accounting responses: Finnish evidence. Journal of Multinational Financial Management 9, 15-26.

Kasanen, E., Kinnunen J., Niskanen, J., 1996. Dividend-based earnings management: Empirical evidence from Finland. Journal of Accounting and Economics 22, 283-321.

KHT-yhdistys, 2004. Introduction to financial statements in Finland. KHT-media, Helsinki.
Kinnunen, J., Keloharju, M., Kasanen, E., Niskanen, J., 2000. Earnings management and expected dividend increases around seasoned share issues: evidence from Finland. Scandinavian Journal of Management 16, 209-228.

Leppiniemi, J., Leppiniemi, R.,2005. Hyvä tilinpäätöskäytäntö. WSOY, Juva.

Louis, H., 2004. Earnings management and the market performance of acquiring firms. Journal of Financial Economics 74, 1947-1961.

Matsumoto, D., 2002. Management's incentives to avoid negative earnings surprises. The Accounting Review 77, 483-514.

McNichols, M., 2000. Research design issues in earnings management studies. Journal of Accounting and Public Policy 19, 313-345.

Mendenhall, R., William, N., 1989. Bad news and differential market reactions to announcements of earlier-quarters versus fourth-quarter earnings. Journal of Accounting Research 26, 63-86.

Nokia, 2005. Uudet IFRS-standardit ja niiden vaikutus Nokian vuoden 2004 ja tuleviin tilinpäätöksiin. http://www.nokia.fi/A4351118?newsid=990188, 10.5.2008.

Ojala, H., 2007. Essays on the value relevance of goodwill accounting. Helsinki School of Economics. Helsinki.

Ora, M., 2000. Earnings management and the operating and the long-run stock price performance of Finnish non-financial IPO-firms. Master of Science Thesis, Helsinki School of Economics, Department of Accounting and Finance.

Pae, J., 2004. Expected Accrual Models: The Impact of Operating Cash Flows and Reversals of Accruals. Social Science Research Network. Working paper.

Pietiläinen, Jenni. 2007. IFRS-standardeihin siirtymisen vaikutus suomalaisten pörssiyhtiöiden tuloksen ohjailuun. Master of Science Thesis, Helsinki School of Economics, Department of Accounting and Finance.

Rahoitustarkastus, 2006. Selvitys listayhtiöiden vuoden 2005 IFRS-tilinpäätöksistä. http://www.rata.bof.fi/NR/rdonlyres/2E82AE57-6E12-475C-83E7-541524BECAB9/0/Selvitys_listayhtioiden_vuoden_2005_IFRStilinpaatoksista.pdf, 13.5.2008.

Rangan, S., 1998. Earnings management and the performance of seasoned equity offerings. Journal of Financial Economics 50, 101-122.

Rees, L., Sivaramakrishnan, K., 2007. The effect of meeting or beating revenue forecasts on the association between quarterly returns and earnings forecast errors. Contemporary Accounting Research 24, 259-290.

Räty, P., Haaramo, V., 2008. IFRS-raportointi. (http://www.wsoypro.fi/wsoypro.aspx?navi=Onlinepalvelut.Yritysonline&prevpos=KT&pos=KT&page=selain&ts=yo&openhaku=&gethere=) 27.4.2008

Schipper, K, 1989. Commentary on earnings management. Accounting Horizons 15, 91-102.

Spohr, J., 2005. Essays on earnings management. Swedish School of Economics and Business Administration, Helsinki.

Sundgren, S., 2007. Earnings management in public and private companies – evidence from Finland. The Finnish Journal of Business Economics 56, 35-63.

Teoh, S., Welch, I., Wong, T., 1998a. Earnings management and the long-run performance of initial public offering. Journal of Finance 53, 1935-1974.

Teoh, S., Welch, I., Wong, T., 1998b. Earnings management and the underperformance of seasoned equity offerings. Journal of Financial Economics 50, 63-99.

Teoh, S., Wong, T., Rao, G., 1998c. Are Accruals during Initial Public Offerings Opportunistic? Review of Accounting Studies 3, 175-208.

Troberg, P., 2003. IAS ja kansainvälinen tilinpäätös. Talentum, Helsinki.

Troberg, P., 2005. IFRS-standardien merkityksellisyys ja epämääräistyys – aineettomat hyödykkeet, arvonalennukset. Tilintarkastus 4/2005, 32-36.

Troberg, P., 2007. IFRS and US GAAP: A Finnish perspective. Talentum, Helsinki.

Tucker, J., Zarowin, P., 2006. Does income smoothing improve earnings informativeness? The Accounting Review 81, 251-270.

Van Tendeloo, B., Vanstraelen, A., 2005. Earnings management under German GAAP versus IFRS. European Accounting Review 14, 155-180. Financial statement analysis. 9th edition, McGraw-Hill Education, New York.

Yu, M., 2005. International earnings management and accounting standards. Social Science Research Network. Working paper.

APPENDIX

Table 1, Panel B: Number of times individual firms exhibit earnings reversals
Table 1, Panel B presents the number of times individual firms in NP and PN subsamples repeat the reversal during the six-year period 2002-2007. During the sample period, 60 individual firms belong to the NP subsample and 67 belong to the PN subsample.

Number of times	% of firms with fourth-quarter reversal	
	NP	PN
1	75.00%	79.10%
2	25.00%	13.43%
3	0.00%	5.97%
4	0.00%	1.49%
2 or more consecutive years	5.00%	5.97%

Table 1, Panel C: Industry distribution of sample
Table 1, Panel C reports the total number of sample firms in industry groups and the percentage of industry firms that belong to the NP and PN samples (defined in Table 1, Panel A).

Industry description (2-digit SIC codes)	Total No. of Obs	% relative to industry total	
		NP	PN
Agriculture, mining & construction (1-17)	13	7,69 %	23,08 %
Food, paper & finished goods (20-27)	117	16,24 %	16,24 %
Chemicals & pharmaceuticals (28-29)	16	12,50 %	25,00 %
Rubber, leather and metalworks (30-34)	46	4,35 %	19,57 %
Machinery & electronics (35-36)	116	13,79 %	10,34 %
Other equipment & machinery (37-39)	22	22,73 %	18,18 %
Transportation (40-47)	21	9,52 %	23,81 %
Utilities (48-49)	25	12,00 %	8,00 %
Wholesalers (50-51)	32	21,88 %	18,75 %
Retailers (52-59)	15	6,67 %	33,33 %
Business services (73)	111	13,51 %	15,32 %
Others (76-87)	21	9,52 %	4,76 %
Total	**555**	**13,51 %**	**15,68 %**

Firms representing SIC codes between 60-67 are excluded from the study.