Master's thesis

Evidence of classification shifting in the European Union

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Abstract

This thesis examines classification shifting and possible motivations of management to engage in this form of earnings management, focusing on European firms reporting in accordance with the International Financial Reporting Standards. Classification shifting can be defined as the misclassification of items within the income statement, without affecting the bottom-line earnings[CITATION McV06 \l 1043]. Even though the bottom-line earnings are not affected by this form of earnings management, it does harm the true and fair view of the income statement for financial statement users. The research study first investigates whether firms actually engage in classification shifting, second whether meeting or beating earnings benchmarks is a possible reason for doing so, and lastly, the research focuses on classification shifting if new debt is going to be issued in the following period. A sample containing 6,650 observations in the financial years 2010 to 2018 is used in this research. I find evidence that firms engage in classification shifting to increase or decrease their core earnings. Also evidence is found of firms engaging in classification shifting to meet or beat earnings benchmarks. However, no supporting evidence is found for firms engaging in classification shifting if new long-term debt will be issued in the following period.

Keywords: Earnings management, classification shifting, motivations for earnings management, core earnings and non-recurring items

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Chapter I: Introduction

Earnings management is the misrepresentation or masking of true economic performance [CITATION McV06 \l 1043]. The literature distinguishes three types of earnings management: Accrual-based earnings management, the manipulation of real economic activities and the misclassification of items within the income statement (classification shifting). The earnings management literature has mostly focused on the first two forms; research on classification shifting has increased since the research by Mc Vay (2006), which has described this phenomenon. Classification shifting is a form of earnings management that shifts recurring and non-recurring items within the income statement to increase or decrease the firm's core earnings, without affecting the overall net income of an entity. Since the net income of an organization is not affected, one might argue that classification shifting is irrelevant for the users of the financial statements. However, this creates an information asymmetry between managers and stakeholders, as (core) earnings and other alternative profit measures provide information to equity shareholders and other stakeholders on current and future profits[CITATION Nic04 \l 1043]. When predicting the future profits of an organization, the distinction between recurring and non-recurring items is relevant. As a result, investors have increased their focus in core earnings relative to their focus on generally accepted accounting principles (GAAP) earnings, as they believe that the excluded non-recurring items in core earnings have no implications for future earnings[CITATION Bra02 \l 1043].

The aim of this thesis is to provide insight into the concept and presence of classification shifting in firms reporting their financial statements in accordance with the International Financial Reporting Standards (IFRS) in Europe, more specifically the incentives that influence classification shifting behavior. Prior research on US firms has concluded that there is a positive correlation between unexpected core earnings and special items. This association is found to be stronger when firms only just meet analysts' forecast [CITATION McV06 \l 1043]. This implies that managers shift earnings to meet or beat core earnings' forecasts. Another possible reason for managers to engage in classification shifting could be to signal the (future) creditors of the organization. Earnings are an important factor in evaluating credit risk and bankruptcy, therefore classification shifting could influence a companies' (future)

interest rate[CITATION Zal17 \l 1043]. This is because current earnings constitute a predictor for the future earnings of the company[CITATION Dou10 \l 1043].

First, this thesis will examine the association between unexpected core earnings and non-recurring items. Entities can classify expenses (revenues) as non-recurring, which increases (decreases) the core earnings of the firm. Second, the association between classification shifting and earnings benchmarks will be reviewed. Firms have an incentive to meet earnings benchmarks, as they fear being penalized for not meeting the analysts' expectations. Lastly, the association between classification shifting and firms which are going to issue new debt (e.g. bonds, obligations) will be examined. Firms want to increase their core earnings to signal future creditors; this would result in a lower risk premium. These aims lead to the following research question:

> *Do debt markets influence a firm's management, reporting in accordance with the IFRS, to engage in classification shifting?*

The existing information asymmetry between management and their stakeholders may give management the opportunity to influence the core earnings of the firm. However, managers claim they use their discretion to provide information useful for improving investors' understanding of their profitability[CITATION Zal17 \l 1043]. Nevertheless, earnings can be managed for capital market reasons; to beat a firm's earnings forecasts; or to meet internal forecasts. This is because managers are evaluated and often rewarded based on the firm's performance, which, among other things, is summarized in the (core) earnings[CITATION Hea99 \t \l 1043]. Furthermore, as earnings provide information on the future results of the organization, not meeting the expectations of analysts may influence the firm's credit risk. An increase in credit risk could result in a higher cost of capital. Therefore management may have an incentive not to report declining or negative core earnings [CITATION Zal17 \l 1043].

This master's thesis is relevant based on the following considerations. Core earnings are presumed relevant in predicting an enterprise's value and the future earnings of a firm. When predicting future earnings, it is vital to know whether certain revenues or expenses are recurring or incidental. If no distinction is made between these, stakeholders cannot properly valuate firms, which could lead to negative economic

consequences. Prior research on classification shifting for IFRS-reporting firms is limited, as most of the research is based on local general accepted accounting principles, more specifically US GAAP[CITATION Beh13 \l 1043]. However, as the IFRS represent more principle-based standards, this gives management more flexibility in making accounting and presentation choices. The IFRS provide little guidance on the presentation of alternative profit measures and subtotals in the income statement, which gives management opportunities to apply their discretion[CITATION Kab17 \l 1043]. Furthermore, previous papers have mostly focused on equity markets (i.e. investors, stock markets and financial analysts), neglecting another major stakeholder, namely debt holders. This paper makes an effort to take their views into account, as a decrease in core earnings might mean that the default risk is increasing. Lastly, this study contributes to the convergence project by the International Accounting Standards Board (IASB) and the Financial Accounting Standards Board (FASB). The convergence project is a joint project by the IASB and the FASB to eliminate differences between the IFRS and the US GAAP. However, the bodies decided not to include pro forma earnings disclosures in their discussion on the presentation of financial statements. The results of this study can provide insight into whether this decision was correct.

The thesis will have the following structure. The second chapter contains the theoretical background and the hypotheses. The theoretical background is divided in concepts, institutions and relevant theories. The relevant concepts will explain and define important terms such as “core earnings” and “non-recurring items.” The different institutions will give insight into the restrictions on management, as management has to comply with rules and regulations and does depend on certain stakeholders. The various relevant theories provide insight into management’s incentives to manage the earnings of the firm. Chapter III presents a review of the literature on classification shifting, managements incentives for classification shifting and other related subjects. The literature review will provide a basis to formulate the hypotheses and the expected outcomes based on prior literature. The fourth chapter introduces the research design of this paper and describes the process of collecting data. The Libby boxes will explain how the concepts in this thesis are operationalized, followed by an explanation of the research model and the different variables used to test the hypotheses. Then the process of collecting data

and the determination of the sample frame will be described. Chapter V presents the results of the empirical research, which will provide an answer to the different hypotheses. The results of the empirical research can be interpreted and (in)significant results are compared to prior research. The sixth chapter comprises the conclusion of the thesis, a short summary of the results and an answer to the research question. Finally, possible shortcomings, limitations and implications for further research will be discussed.

Chapter II: Theoretical framework

2.1. Relevant concepts

This chapter introduces the theory on earnings management and the various forms of earnings management which can be used. The current literature distinguishes three ways to manage earnings: Accrual-based earnings management (AEM), the manipulation of real economic activities (REM) and deliberate misclassification of items in the income statement (classification shifting) (Behn, Gotti, Hermann, & Kang, 2013; Mc Vay, 2006). The prior literature concludes that earnings management tools are substitutes and, depending on the situation, a specific earnings management tool is preferred. Managers are assumed to make a benefit-cost analysis when choosing an earnings management tool[CITATION Amy12 \l 1043]. In addition, the concepts of “core earnings” and “non-recurring items” will be introduced. These concepts play a major role in classification shifting.

2.1.2. Earnings management

Healy and Wahlen (1999, p. 368) have provided a literature review on earnings management from a standard-setting perspective. They have defined earnings management as follows:

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

Management has the ability to exercise their judgement in terms of various estimations. An example of an estimation could be salvage values of fixed assets or the magnitude of the provision for bad debts. Judgement is also required when making accounting choices between acceptable accounting methods. An example could be choosing a depreciation method, such as straight line depreciation or an accelerated depreciation method. These choices influence the net result of a firm, which could be used to manage earnings[CITATION Hea99 \t \l 1043].

The first form of earnings management is AEM: managers can use accruals to transfer earnings to future periods or borrow earnings from future periods[CITATION Beh13 \l 1043]. Accruals arise when the timing of the cash flow and the timing of the accounting recognition of the transaction differ. However, not all accruals can be used by management to shift earnings. Accruals can be split into three groups: discretionary accruals, non-discretionary accruals and reversals. Non-discretionary accruals are based on transactions in the current year which are normal for the company, given its performance level, business strategy, industry conventions and other economic factors[CITATION Ron08 \l 1033]. Discretionary accruals are accruals that occur from transactions concluded or due to accounting treatments chosen to manage the earnings of the company. Reversals are accruals originating from transactions concluded in previous years[CITATION Ron08 \l 1033]. In the earnings management literature, researchers often focus on discretionary accruals, as they occur from abnormal transactions or accounting choices, which could indicate non-beneficial earnings management[CITATION Ron08 \l 1033].[1] The benefit of AEM is that it increases (decreases) the bottom-line earnings of a company and does not affect the cash flow of the firm[CITATION Coh10 \l 1043]. However, it also decreases (increases) future earnings, as future earnings are borrowed (deferred). As a result, this earnings management form is very costly.

The second form of earnings management is REM, which is also known as real activities manipulation. This is accomplished by “changing the timing or structuring of an investment, operation or financing transaction, which has suboptimal business consequences”, as defined by Zang (2012, p. 676). Examples of REM are giving a discount at the end of the year to accelerate sales from future periods to the current period or delaying marketing and research and development expenses to increase current-year earnings. These actions can be defined as REM if management is deviating from the optimal decision. This deviation could negatively affect the firm value in the long term; however, benchmarks in the short term could be met[CITATION Roy06 \l 1043]. The benefit of REM is that it is often harder to detect for outside analysts. However, it is also more damaging to the firm itself, as the firm deviates from the optimal decision, which could decrease the long-term firm value and affect cash flows[CITATION Coh10 \l 1043].

[1] Earnings management is presumed to be beneficial when it is neutral and it improves the quality of the financial statements for the users.

The last known form of earnings management is classification shifting. Classification shifting can be defined as *"the deliberate misclassification of items in the income statement*'' (Mc Vay, 2006, p. 501). More specifically, managers deliberately shift core expenses (e.g. selling, general and administrative expenses) to special items or non-recurring items. This vertical movement in the income statement does not change the net earnings (bottom-line earnings), but overstates the core earnings. The costs of classification shifting are low, as there are no accruals involved or revenues lost from future periods. In addition, auditors are limited in detecting classification shifting, as verifying the correct classification is subjective and since the bottom-line earnings are not influenced, they might put in less effort to identify this form of earnings management[CITATION McV06 \l 1043]. However, it harms the true and fair view of the income statement for the financial statement users, as they value individual line items (or subtotals) within the income statement differently[CITATION Bra02 \l 1043]. Classification shifting in this thesis is limited to the income statement; however, this phenomenon is also present in the cash-flow statement. Evidence has been found that managers misclassifying cash flows to increase cash flow from operations[CITATION Lee12 \l 1043].[2]

2.1.3. Performance measurements

Core earnings is an alternative performance measure which is defined as the company's profit from its core business activities before interest and taxes. This definition is close to the concept of operating income or earnings before interest, taxes, depreciation and amortization (EBITDA), which are reciprocal definitions. There is no clear method to calculate core earnings, as judgement can be exercised as to which revenues and expenses are presumed to be part of the core business of the firm. Which revenues and expenses are included also depends on the industry in which the firm operates. Net income or bottom–line earnings also include other non-operating expenses, special items, non-recurring items, initial gains and losses, and taxes and interest. Managers can use their discretion to classify core expenses as, for instance, special items, which has a positive effect on core earnings, while bottom-line earnings remain the same. However, non-core expenses can also be shifted upwards to decrease core earnings. Figure 1 contains a simple example of an

[2] As stated earlier, in this thesis the phenomenon of classification shifting focuses on the misclassification of items in the statement of income.

income statement. Besides core earnings, as mentioned earlier, there are alternative performance measures, such as earnings before interest and taxes (EBIT), operating profit and earnings before non-recurring items. These measures could be relevant for users of the financial statements; however, they are currently not uniformly applied[CITATION Kab17 \l 1043].

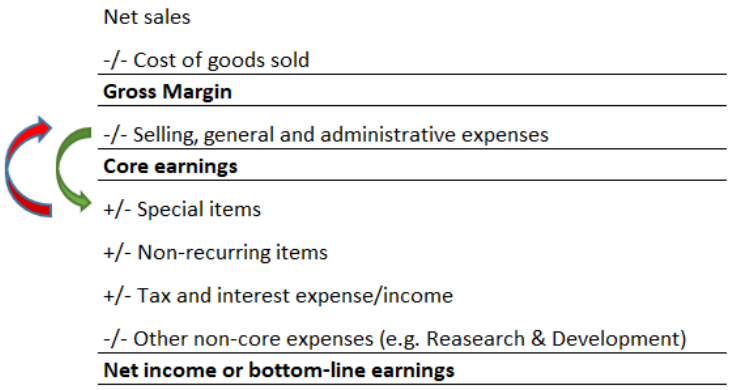

Illustration 1: An example of an income statement presentation

2.1.4. Non-recurring items and special items

Financial accounting standards allow management to apply their discretion in determining the classification of items or where they are presented in financial statements. If management has an incentive to increase their core earnings, they can classify or disclose certain expenses as special, unusual, extraordinary or abnormal. The precise definitions of these concepts may differ slightly, based on the financial accounting standards applied. However, these concepts share similar elements: infrequent, outside the normal operations of the business, material in size and non-recurring by nature[CITATION Cam12 \l 1043]. These items are expected not to recur in the next period, though management can use its discretion in defining what is recurring and what is not. In addition, defining the core operations of a firm, and thus their core earnings, is different for each firm. As a result, the definition of core earnings for the company itself and for the outside world may differ[CITATION Kab17 \l 1043]. Despite the prohibition by the IFRS of extraordinary items as a separate line item in financial statements, companies need to resolve the nature of the income statement proponent. This gives firms the opportunity to exercise their discretion in the classification of items in the income statement. For

instance, firms can use subtotals as income before non-recurring items, as investors and financial analysts may perceive this information as valuable[CITATION Kab17 \l 1043].

2.2 Relevant institutions and regulations

This section describes the relevant institutions and parties that are able to influence the financial reporting standards, the capital market and the information flow to companies' stakeholders. Financial reporting standards are implemented by an accounting standards board; in the European Union, this is the International Accounting Standards Board. Credit rating agencies provide a valuation role by spreading information on firms to market participants. Another role of credit rating agencies is to ease contracting, as credit ratings are seen as an efficient credit quality benchmark[CITATION Car07 \l 1043]. Financial analysts uncover, provide and spread information to the market on different companies; this allows markets to become efficient[CITATION Eas98 \l 1043].

2.2.1. Financial reporting

This thesis concerns only companies that report in accordance with the IFRS, as adapted by the European Union (EU), in its financial reporting. The IFRS is a mandatory reporting standard for the consolidated financial statements of listed companies in the EU. The IASB is an independent private organization, which looks after the development and improvement of the IFRS. The goal of the IFRS is to create a worldwide approved standard for financial reporting, which improves the comparability of financial statements. The IASB provides a framework which has the function of improving the comparability and understanding of firms' financial statements. The core characteristics of this framework are relevance and faithful representation. Relevance can be defined as useful information for decision-making for the users of the financial statements. Faithful representation is comprised of three aspects: the information should be accurate, complete and independent. However, these characteristics are restricted by efficient reporting[3][CITATION Kru17 \l 1043]. In comparison to the US GAAP, the IFRS is more principle-based, so that

[3] Efficient reporting is based on a cost/benefit analysis. If the benefits of extra information for the users of the financial statements are greater than the costs for the company to produce the information, it would be beneficial to present the additional information.

managers have more room for their own interpretation and greater discretion in the process of drafting financial statements.

2.2.2. International Accounting Standard 1 (IAS 1) – Presentation of financial statements

International Accounting Standard 1 enumerates the general requirements for financial statements; it requires that a complete set of financial statements include: A statement of financial position, a statement of profit and loss and other comprehensive income, a statement of changes in equity and a statement of cash flows[CITATION Del17 \l 1043]. For this thesis, we focus on the presentation of the statement of profit and loss and other comprehensive income, since the earnings of the entity in a certain year are specified here. The comprehensive income is calculated as follows:

$$Comprehensive\ income = Statement\ of\ profit \vee loss + other\ comprehensive\ income$$

The total comprehensive income is stated as follows: "*The change in equity during a period resulting from transactions and other events, other than those changes resulting from transactions with owners in their capacity as owners.*" (Deloitte, 2017, Concepts of profit or loss and comprehensive income) All items which lead to a certain income or a certain expense must be included in the statement of profit and loss. Unless the rules and regulations require otherwise, then it must be included in the other comprehensive income[CITATION Del17 \l 1043].

The statement of profit and loss should include the following lines in the presentation:

- Revenue
- Gains and losses from de-recognition of financial assets measured at amortized cost
- Finance costs
- Share of the profit or loss of associates and joint ventures, accounted for using the equity method
- Gains and losses associated with the reclassification of financial assets
- Tax expense

- A single amount for the total of discontinued items

Expenses recognized in the statement of profit and loss should be divided by nature (i.e. staffing costs, raw materials) or by function (i.e. selling, administrative and general expenses). If the entity uses a classification by function, it should include additional disclosures on the nature of the expenses. At a minimum should be disclosed: depreciation expenses, amortization expenses and employee benefit expenses[CITATION Del17 \l 1043]. The IFRS prohibit including EBIT or EBITDA in the statement of income, as these definitions are contrary to the presentation by nature or by function; however, it is allowed to disclose these separately in the statement of income[CITATION Kru17 \l 1043]. International Accounting Standard 1.85 states that companies may use additional headings, line items and subtotals to increase understanding of the financial performance of the entity[CITATION Del17 \l 1043]. International Accounting Standard 1.85 was reformed in a disclosure initiative. The presented subtotals in the financial statement can only include lines of items recognized and measured in accordance with the IFRS; subtotals must be presented and labelled in a distinct and understandable way; subtotals must be consistent from period to period; subtotals must not be presented with more prominence than the required subtotals and totals; and subtotals must reconcile with the subtotals and totals required by the IFRS[CITATION Del17 \l 1043]. This amendment constrains management's ability to present alternative subtotals; however, non-GAAP earnings and earnings benchmarks can still be included in financial statements if assumed valuable for the stakeholders. International Accounting Standard 1.87 states that revenues and expenses cannot be classified as "extraordinary items" in financial statements. Even though line items in the income statement cannot be presented as "extraordinary", management still has the opportunity to include additional headings and subtotals in the income statement or disclose the alternative earnings measure separately. Therefore the prohibition of IAS 1.87 is ineffective to mitigate the risk of classification shifting.

An often used example is the financial statements of E.ON in 2014.[4] The financial statements start with the financial highlights of the group, however adjusted for discontinued operations[CITATION EON15 \l 1043]. This adjustment could be relevant for the stakeholders, if they assume that the highlights provide a more fair

[4] E.ON is a utility firm listed in Germany.

view for the future results and earnings of the organization. In the report of the chief executive officer (CEO) to the shareholders, it is stated that their EBIT and EBITDA were in line with management's expectations. However, in the notes to the financial statements is mentioned that in the calculation of the EBIT and EBITDA adjustments were made for extraordinary effects. These were further defined in the notes as other income and expenses of a non-recurring nature or rare nature[CITATION EON15 \l 1043]. Even though IAS 1.87 states that income of expenses cannot be classified as "extraordinary," managers can still exclude extraordinary items in the calculation of their non-GAAP earnings. Classification shifting can therefore still be effective, as it has an effect on the earnings numbers presented or disclosed in the financial statements of IFRS firms.

2.2.3. Credit rating agencies and financial analysts

Credit rating agencies and financial analysts are assumed to have more expertise and be able to acquire more information (i.e. private information) than individual investors. Credit rating agencies have a monitoring role in financial markets by using their credit watch procedures. An agency will contact a firm's management if potential changes in its characteristics or market situation threaten to affect its credit rating. The company can promise to take specific actions, thereby mitigating the possible declining of their credit rating[CITATION Boo06 \l 1043]. Credit rating agencies are assumed to provide high-quality assessments, as their reputation is crucial for attracting revenues[CITATION Hun09 \l 1043]. This implies that credit rating agencies have an incentive and the ability to detect bond issuers' earnings management activities. In this case, credit rating agencies can downgrade the credit ratings of a firm that engages in earnings management. However, there might be a conflict of interest, as credit rating agencies are dependent on rating fees paid by debt issuers, investment banks and commercial banks[CITATION Hun09 \l 1043].

Financial analysts are assumed to generate valuable new information by publishing their earnings forecasts and stock recommendations. However, as financial analysts could be biased, there is a potential conflict of interest[CITATION Hea01 \t \l 1043]. In addition, firms that are not meeting their earnings benchmarks are willing to commit earnings management, even if it decreases the firm's value in the short term[CITATION Gra05 \l 1043]. This implies that increased analyst following and

analysts' earnings expectations can pressure management to manage their earnings.

2.3. Relevant theories

2.3.1. The financial reporting function

A demand for financial reporting and disclosure follows from information asymmetry and agency conflicts between management and the stakeholders of the company[CITATION Hea01 \t \l 1043]. A leadership role in generating and reporting earnings is allocated to senior management and ultimately top management is also responsible for objective financial reporting[CITATION Ron08 \l 1043]. This creates a need for credible financial reporting by management. The credibility of management is increased by regulators, standard setters, external auditors and other capital market intermediaries[CITATION Ron08 \l 1043]. The credibility and integrity of management is even more important when they exercise judgement in financial reporting to reflect the true performance of the company. However, as management can apply their judgement and control by external parties is potentially imperfect, this creates an opportunity for earnings management.

2.3.1.1. The contracting approach

This approach states that firms are based on different types of contracts. Companies draft contracts with, for instance, their employees, shareholders and debtors. Also paying taxes to the government can be seen as a contract, as it is a moral obligation. Contracts are concluded since there is often a conflict of interest between the two parties and it is an effective way to decrease agency costs. It gives the principal the possibility to monitor the agent. Monitoring is often based on accounting numbers, as it is an observable result by an external party. However, contracts can never be complete, as they cannot take all future events into account. An example could be management compensation based on net earnings: if the IASB changes accounting standards which have an effect on net profit, this could lead to an increase or decrease of the bonus of the management. This would lead to a revision of the compensation contract to reflect the changing circumstances[CITATION Ron08 \l 1033]. When firms are in a competitive market, it is important to minimize contracting costs, as it makes them more likely to survive.

In the optimal situation, information would be free of cost, and transaction costs would also be zero. This would also imply that the publication of accounting numbers will not affect the firm's value. However, these assumptions do not explain why managers change their accounting choices. These changes are not always made for better measurement purposes, but also for the individual objectives of management. Thus, transaction and information costs have to be included[CITATION Wat90 \t \l 1033].

2.3.2. Accounting choices

Due to imperfect and incomplete markets, as information and transaction costs exist and accounting numbers are used in contracts, there is a demand for credible accounting and accounting regulation. Agency costs and information asymmetry can be addressed by accounting disclosures and accounting-based contracts. Here an accounting choice is defined as: "*Any decision whose primary purpose is to influence (either in form or substance) the output of the accounting system in a particular way, including not only financial statements published in accordance with GAAP, but also tax returns and regulatory filings*" (Fields, Lys, & Vincent, 2001, p. 256).

Accounting principles and standards frequently require judgement to be exercised by management when preparing the financial statements. An example is the capitalization of research and development costs. Management can use their discretion to capitalize additional costs to increase net profits. Most important in the definition is the managerial intent. If the incentives of managers are consistent with those of the firm's owners, the accounting choice may increase the relevance of the financial statements for the users. However, if managers' incentives differ from the incentives of owners, it may decrease the relevance of the financial statements. An example could be management making accounting choices to increase earnings and get a higher compensation[CITATION Fie01 \l 1033].

2.3.2.1. Positive accounting theory

Positive accounting theory describes the factors influencing management's attitude to accounting standards and tries to predict accounting practice[CITATION Wat90 \t \l 1043]. Positive accounting theory increases the understanding of the pressures

driving the accounting process, the effects of accounting standards on groups of people, and why people are willing to allocate resources to affect the standard-setting process[CITATION Wat78 \t \l 1033]. As accounting choices have an impact on the information in financial statements, they could lead to economic consequences. Economic consequences are defined as: "*The impact of accounting reports on the decision-making behavior of business, government and creditors*" (Zeff, 1978, p. 56). Hence, accounting numbers influence the decisions made by managers and other stakeholders of the company. Three possible motives of managers which explain why accounting choices are made will be discussed in greater detail in the following sections.

Management compensation contracts (bonus plan hypothesis)

The literature assumes that in an ambitious and aggressive behavior setting, management is likely to maximize their own compensation. Management wealth can depend on different factors, but in general two factors are applicable: performance-related cash bonuses and employment risk. The last one arises from the possibility of company default, a take-over or a change in share value[CITATION Bea94 \l 1033]. If management has an incentive to beat a certain earnings benchmark to get a bonus, managers may inflate the accounting earnings to realize their bonus. The opposite can also occur: if managers conclude benchmarks will not be met by inflating earnings, they have an incentive to postpone earnings of the current year to the following period[CITATION Ron08 \l 1033]. For instance, switching to accelerated depreciation instead of a straight-line depreciation is a method to postpone earnings to following periods. Accelerated depreciation will increase the current-year total depreciation and will decrease future depreciation expenses. From a contracting setting perspective, management compensation contracts are an effective way to decrease agency costs. If contracts are prepared to align the goals of shareholders with the goals of management, it will result in efficient contracting, a decrease in information asymmetry and the maximization of firm value[CITATION Ron08 \l 1033].

Debt-equity hypothesis

Debt covenants often include conditions based on accounting numbers. A covenant might require a firm to meet a certain level of solvency, or restrict a firm to pay out

dividends to its shareholders under a certain amount of net profit. The debt-equity hypothesis predicts that if the leverage ratio is higher, managers are more likely to be motivated to meet these restrictions, which could result in firms managing their earnings[CITATION Hea99 \t \l 1043]. The more leveraged a firm is, the more constrained a firm will be by debt covenants, as debtors would like to decrease their liquidity risk. The more constrained a firm is, the greater the odds are of a violation of the covenant, which will lead to contract default costs. Managers can use their discretion in accounting choices to increase a firm's (net) earnings. This way they can decrease the odds of violating debt contracts, avoid additional costs due to violation, and avoid costs or renegotiating the contract[CITATION Wat90 \t \l 1033].

Political cost hypothesis

The literature suggests that large firms are more likely to be motivated to engage in earnings-decreasing accounting choices. Research has found that firm size and political attention are positively associated. This hypothesis assumes that the costs for individuals are high to get the required information on whether accounting earnings actually represent monopoly earnings and to influence people in the political process to approve new laws and regulations that increase management's wealth. As a result of this assumption, we can state that rational individuals are not fully informed. As a consequence, due to the cost of information and monitoring for individuals, management has an incentive and the opportunity to use their discretion over the financial statements and reported earnings[CITATION Wat90 \t \l 1043].

2.3.2.2. Earnings management incentives

Despite having the knowledge that earnings are managed, it is tough for research studies to document this clearly. The main problem for researchers is that, before testing whether earnings have been managed, they have to estimate the earnings without the earnings management effects. A general methodology in current research is first to identify the conditions under which management has strong incentives to influence the presented earnings and examine whether the unexpected accruals or choices in accounting policies are in accordance with management's incentives. Crucial issues in the research design are to identify the managers' incentives correctly and to measure the effects of managers' application

of accounting discretion[CITATION Hea99 \t \l 1033]. This approach is closely linked to positive accounting theory, as it predict management's incentives to increase or decrease earnings and the effects of accounting discretion by management. The estimation of the accounting effect (i.e. unexpected core earnings) is susceptible to certain bias and a degree of error (possibly inevitable). Current research is trying to optimize the research model to mitigate taking these issues into account. Regarding earnings management incentives, the review of Healy and Wahlen (1999) has described three types of management incentives, which will be discussed in greater detail in the following sections: Capital market motivations, contracting motivations and regulatory motivations.

Capital market motivations

Accounting information is used by (potential) investors and financial analysts in the valuations of firms. This could create an incentive for management to guide earnings to influence the stock price performance. Management has an incentive to overstate earnings, using unexpected accruals, in the period before equity offers, initial public offers and stock-financed acquisitions, as (future) earnings play an important role in the valuation. Another reason for management to manage earnings upward is to meet or beat analyst expectations, as they want to avoid reporting negative earnings surprises (Healy & Wahlen, 1999; Mc Vay, 2006). The evidence on the distribution of earnings surprises concludes that there is an unusually low amount of small negative earnings surprises in comparison with firms just meeting or beating earnings benchmarks[CITATION Bur06 \l 1033].

Contracting motivations

To align the goals of the firm and those of the stakeholders, often accounting numbers are used in contracts. This way the stakeholders have the possibility to monitor the firm's management and thus agency costs are decreased. An example is a management compensation contract based on net earnings to influence the management's incentives in line with the shareholders' view. In this example, management has an incentive to increase earnings, as it increases their salaries and shareholders' wealth increases as a result of higher earnings. Furthermore, debt contracts are often based on accounting numbers; an example is a dividend constraint. This prohibits companies from paying out dividends if their earnings are

below a certain benchmark. If a company is close to this benchmark, management may have an incentive to manage their earnings upwards, so that they can pay out dividends and avoid violating the contract (Watts & Zimmerman, 1990; Healy & Wahlen, 1999).

Regulatory motivations

The literature specifies three forms of regulation: industry-specific regulation, anti-trust regulation and regulation for tax-planning purposes.[5] Specific industries are known for being more regulated in comparison to others. For instance, the banking, insurance and utility industries are more constrained by regulatory monitoring. Monitoring and laws and regulations are based on accounting numbers[CITATION Hea99 \t \l 1043]. Bank regulations, for instance, require banks to have a certain amount of minimum capital. These capital requirements are calculated in terms of accounting data. If banks are close to this requirement, they have an incentive to engage in earnings management to meet the minimal requirement. Anti-trust investigations and other regulations can provide companies with an incentive to appear less profitable[CITATION Wat78 \t \l 1043]. This behavior is, for instance, applicable to firms which would like to receive financial aid, maintain a certain subsidy, or have government protection[CITATION Hea99 \t \l 1043].

[5] I will not discuss tax-planning evidence, as this is the domain of the tax authority. In addition, the tax reporting standards differ significantly from the accounting standards.

Chapter III: Literature review

3.1. Prior empirical literature

The goal of the literature review is to summarize and discuss the relevant empirical literature on classification shifting, non-recurring items, financial reporting and the capital market. Based on the literature review, the hypotheses will be developed.

3.1.1. Accounting numbers and financial markets

The theory on economic consequences states that financial reporting and accounting numbers influence the decision-making process of the users of financial statements. The role of financial reporting is to provide reliable information for equity shareholders and other stakeholders on the current and future results and the financial position. Prior research has concluded that when earnings numbers communicate new information to the capital markets, it has consequences for the future earnings forecasts, future dividends and thus the current market value[CITATION Nic04 \l 1033]. Research has revealed that the market quickly reacts to the information, as stock prices appear to incorporate the new information on the first day after the announcement[CITATION Nic04 \l 1033]. However, the market does not only react to earnings announcements, but also anticipates other earnings information. This is why investors have an incentive to use all publicly available information to predict earnings information and to benefit from future positive returns. As a result, abnormal returns on a stock move significantly with the sign and the magnitude of the expected earnings[CITATION Nic04 \l 1033]. However, after the earnings announcement, there is a “post-announcement drift.” A large portion of the new information is quickly reflected in the market price, but a substantial part of the information is not reflected immediately. Abnormal returns continue to drift significantly with the sign and the magnitude of the previously unexpected earnings[CITATION Nic04 \l 1033]. This finding implies that the securities market is not fully efficient. Nevertheless, there is a strong association between earnings and stock returns, which places importance on accounting numbers and financial reporting[CITATION Nic04 \l 1033].

As stated earlier, financial information has to be useful to have an effect on stock prices. However, according to empirical research, the value relevance of financial statement information has decreased over time. Prior literature states that this is caused by the increasing rate and impact of business change and the inadequate accounting treatment of chance, which leads to less relevant financial data[CITATION Lev99 \l 1033].

3.1.2. Pro forma earnings

Pro forma earnings provide an alternative definition of accounting earnings for firms[CITATION Bra02 \l 1043]. These often differ from GAAP earnings, as they exclude “non-recurrent” or “non-cash” items (i.e. restructuring costs and amortization of goodwill)[CITATION Ron08 \l 1043]. On the one hand, managers argue that pro forma earnings provide stakeholders with a clearer view of the core earnings of a company, in contrast to the audited GAAP earnings. They claim that pro forma earnings reduce the noise in the GAAP earnings and provide a clearer view of the future periods. On the other hand, regulators, policymakers and the financial press claim that pro forma earnings are often inaccurate, incomplete and misleading to investors. They are generally not comparable between firms or for the same firm over time, which could mislead investors. Opponents also claim pro forma earnings are presented as “everything before the bad stuff’’[CITATION Bha03 \l 1043].

A study by Bhattacharya et al. (2003) has concluded that investors find pro forma earnings significantly more informative than GAAP operating earnings. This can be seen as support for the claim that pro forma earnings are closer to the core earnings of a company. However, the study also concluded that 66% of the pro forma announcements in the study reported a profit, although only 52% of the GAAP operating earnings numbers resulted in a profit. In addition, about 80% of firms announcing pro forma earnings meet or beat the analysts’ forecasts, while only 39% of these firms meet or beat analysts’ forecasts based on GAAP operating earnings. These results indicate that pro forma earnings differ significantly from GAAP earnings and might be misleading.

Another finding of the study is that investors do not discount pro forma earnings that report a profit, while the corresponding GAAP earnings are losses. However,

investors attach less value to announcements that meet analysts' expectations, while the corresponding GAAP earnings fall short. Financial analysts appear to be skeptical about profitable pro forma earnings that report negative GAAP earnings. Over time in the sample an increase was found in firms classifying their expenses as non-recurring; this could indicate that firms present the "bad stuff" as non-recurring to increase the recurring (core) earnings[CITATION Bha03 \l 1043].

3.1.3. Classification shifting

As a result of investors finding pro forma earnings more informative, management and financial analysts disclose these figures and thus exclude non-recurring items from their GAAP earnings. This creates an opportunity for management to engage in the classification shifting of recurring losses or expenses.[6] This will result in an increase of core earnings to meet or beat the expectations of analysts[CITATION Ath09 \l 1043]. As stated earlier, classification shifting can be defined as the misclassification of items in the income statement, without affecting the bottom-line earnings[CITATION McV06 \l 1043]. Mc Vay (2006) has examined the association of special items and unexpected core earnings for US firms. She has found that special items (expenses) are positively associated with unexpected core earnings, which suggests that management uses classification shifting to increase the core earnings of the firm in the current period. The unexpected increase in core earnings seems to reverse in the following year; however, this reversal does not occur when management is able to engage in classification shifting again. These results hold only for special items which are amenable to classification shifting and are found to be stronger for firms that have just met the analysts' forecast, and even stronger for growth firms that have just met the analysts' forecast[CITATION McV06 \l 1043].

Athanasakou, Strong and Walker (2009) have examined the association of non-recurring items and unexpected core earnings in the UK. The results suggest a positive association between classification shifting of small non-recurring items and an increase in core earnings to meet the analysts' forecast. In a subset of large firms that would have just missed the earnings target, other non-recurring items are associated with an increase of unexpected core earnings in the current year, a

[6] Classification shifting of recurring sales as non-recurring sales (or non-recurring sales as recurring sales) is also a possibility; however, the main focus of this thesis is on the shifting of expenses.

decrease in unexpected core earnings in the following period and a decrease of operating cash flows in the following three years.[7]

Fan, Barua, Lin and Sbaraglia (2010) have examined the possibility of US firms applying classification shifting by recognizing operating income or expenses as a result of discontinued operations. As discontinued operations are presented separately in the income statement items, this will result in increases in the core earnings of the firm. The study reports that a positive association is found between unexpected core earnings and losses from discontinued operations. The study finds no evidence of firms' classification shifting revenues to discontinued operations, thus decreasing core earnings. The study finds that the motivation for management to engage in earnings management using discontinued operations is to meet or beat the analysts' expectations[CITATION Bar10 \l 1043].

Fan, Barua, Cready and Thomas (2010) have researched quarterly earnings data to analyze several incentives to manage the fourth-quarter earnings in comparison to the other interim quarters. They have concluded that classification shifting is more frequent in the last quarter of the financial year, in comparison to the other quarterly figures. In particular, they found that classification shifting is used more often when management appears to be limited in their ability to manipulate current-period accruals.

Zalata and Roberts (2017) have investigated classification shifting in the UK after the introduction of the IFRS. The study finds significant evidence of companies shifting recurring expenses as non-recurring expenses to report a core earnings increase. However, no significant evidence was found for companies engaging in classification shifting to avoid presenting negative core earnings losses. The results also suggest that firms are motivated to engage in classification shifting when seeking new debt financing. If credit rating agencies reward firms for engaging in classification shifting to meet earnings benchmarks, this could provide an explanation for this behavior. The research study observes that credit ratings agencies reward firms for reporting positive or increasing core earnings and punish firms with a lower rating that avoid reporting core earnings losses as a result of

[7] The authors of the paper claim that these results should be treated with caution, as they pertain to a narrow sample of firms, and that the results found are weaker in robustness tests.

classification shifting. By contrast, no evidence was found for credit rating agencies penalizing firms for engaging in classification shifting to avoid reporting a core earnings decrease in comparison to the prior period[CITATION Zal17 \l 1043].

Behn, Gotti, Hermann and Kang (2013) found in an international study that investor protection is not associated with classification shifting. In both countries with strong and weak investor protection, evidence was found of firms engaging in classification shifting. By comparison, financial analyst following can prevent management from applying classification shifting in countries with weak investor protection. In countries with stronger investor protection, a positive (but insignificant) association was found between analyst following and classification shifting[CITATION Beh13 \l 1043].

3.1.4. Incentives for earnings management

A survey among financial executives revealed that earnings are presumed to be the most important financial metric. It was also found that in private firms, cash flow from operations is presumed to be more valuable than in public firms[CITATION Gra05 \l 1043]. This finding is an indication that the focus on earnings is caused by capital market motivations. Another incentive for managers is to meet their earnings benchmarks. An underperforming company will lead to a negative reaction on the stock price. The financial executives claimed that the four quarters' lagged earnings and the analyst consensus estimates are the most important benchmarks for a firm[CITATION Gra05 \l 1043]. Firms would like to meet or beat these benchmarks to build credibility with the capital market, to maintain or increase the stock price and to signal future growth possibilities.

A second incentive for management to commit earnings management concerns their reputation to the outside world. The financial executives in the survey claimed that the inability of meeting benchmarks was seen as managerial failure, which could limit their future job opportunities[CITATION Gra05 \l 1043].

A third incentive for management to meet their earnings benchmarks is to maximize their bonus compensation. A study by Matsunaga and Park (2001) found that not meeting quarterly earnings benchmarks was associated with a decrease in CEO compensation. This effect is found when the firm is unable to meet the analyst

forecast or prior year quarterly earnings. This association seems to be stronger when a firms is not able to meet these benchmarks for at least two quarters. However, this association does not hold for firms reporting quarterly losses[CITATION Mat01 \l 1043].

By contrast, Graham et al. (2005) have claimed that CEO compensation is not a major incentive for management to engage in earnings management. They have claimed that management compensation is often based on internal targets, which exceed their external earnings benchmark. Therefore meeting external benchmarks will not automatically lead to increased compensation for the executive. The internal earnings benchmark is a “stretch goal”, which drives managers to perform to their maximum; as a result the lower external benchmark will be reached more easily. Furthermore, financial executives have claimed that their bonus payout is relatively less important than their salary and stock compensation[CITATION Gra05 \l 1043]. These findings imply that executive compensation provides minimal incentives for management to meet earnings benchmarks, in contrast to the findings of Matsunaga and Park (2001).

A third incentive for financial executives to engage in earnings management is to avoid a violation of debt covenants, and thus to avoid an increase in the cost of debt[CITATION Wat90 \t \l 1043]. Graham et al. (2005) have found mixed evidence on incentives as result of debt covenants. The research provides little support for bond covenants as an incentive to meet earnings benchmarks. The executives who confirmed that bond covenants motivated them to meet earnings benchmarks could possibly be closer to violating the covenants. In addition, the survey concluded that private firms found covenants more important than public firms, which could imply that private firms are more restricted by debt covenants. Management could also be motivated to avoid losses, as this reduces the cost of debt[CITATION Bur97 \l 1043]. Empirical evidence suggests that firms are more likely to use classification shifting before seeking new debt financing. Credit rating agencies reward firms for reporting positive earnings and penalize firms that use classification shifting to avoid reporting negative core earnings. Thus, negative core earnings can decrease the credit rating of a firm, which influences the cost of debt for the firm[CITATION Zal17 \l 1043].

3.2. Hypotheses

The examination of the literature above gives a hint that the presentation and placement of revenues and expenses in the income statement has an impact on the perceived information for users of the financial statements. The IFRS do not allow presenting extraordinary items in financial statements; however, non-recurring items can still be identified by the management and excluded from alternative performance measures, which are disclosed in financial statements. There has been an increase in the exclusion of significant expenses by financial analysts and a corresponding increase in companies classifying expenses as non-recurring. This has led to an increasing discrepancy between GAAP earnings and street earnings[CITATION Bra02 \l 1043].[8] Moreover, non-recurring expenses and special items become more persistent over time[CITATION Rie10 \l 1043].

In addition to these findings, a decline has been found in the usefulness of financial information for investors. This is caused, amongst other things, by the inadequate accounting treatment of change[CITATION Lev99 \l 1043]. Managers can use their discretion to provide information that is useful for improving investors' understanding of firms' profitability[CITATION Zal17 \l 1043]. An example of this is to present alternative profit measures in the financial statements or to classify certain expenses as non-recurring. However, the (deliberate) misclassification of expenses and thus overstated alternative performance measures can be an effective earnings management tool for management[CITATION McV06 \l 1043]. Zalata and Roberts (2017) have investigated UK firms that reported in compliance with the IFRS and found a positive association between unexpected core earnings and non-recurring items. Mc Vay (2006) found, in a study on US firms, that special items are positively related to unexpected core earnings. The following year there seems to be a reversal, which decreases unexpected core earnings. These results are consistent with management classifying core expenses as special items to increase their core earnings[CITATION McV06 \l 1043].

Barua et al. (2010) found a negative association between unexpected core earnings and special items for firms in the US. This is contrary to the findings of Mc Vay

[8] Street earnings are the numbers announced in press releases and tracked by analysts. Street earnings are similar to pro-forma earnings, as they exclude non-recurring items.

(2006), who found a positive relation between both variables. A possible explanation for this result, which is also pointed out by Burua et al. (2010), is the inability of the research model to mitigate performance effects. Athanasakou et al. (2009) found a positive association between unexpected core earnings and other small non-recurring items for (a subset of) larger firms that just met the analyst forecast. However, this is only when non-recurring items are split into other non-recurring items and non-operating exceptional items. No significant relation was found between unexpected core earnings and total non-recurring items[CITATION Ath09 \l 1043].

A similar relation has been found in Australia by Cameron and Gallery (2012), where unexpected core earnings were positively associated with the presence of abnormal items. [9] The results imply that the decision by the Australian Accounting Standards Board to remove the classification of abnormal items was justified, as this provides the possibility to engage in classification shifting[CITATION Cam12 \l 1043].

Based on the prior literature, the expected association of unexpected core earnings and non-recurring items is presumed to be positive. This positive association is an indicator of firms engaging in classification shifting. However, the empirical results provide mixed results on this issue. This leads to the first hypothesis:

> *H1: Firms increase their core earnings through misclassifying non-recurring items.*

Classification shifting is a form of earnings management where expenses (revenues) are misclassified as non-recurring to increase (decrease) the firm's core earnings without affecting the bottom-line income[CITATION McV06 \l 1043]. Financial executives claim that earnings are assumed to be the most important financial metric and that capital market motivations are the most important reason to manage a firm's earnings. Not meeting benchmarks can be seen as managerial failure and will lead to a negative reaction to the firm's stock price (Graham et al., 2005). The literature reports an unusually high frequency of zero and small earnings surprises and relatively low frequency of small negative surprises. Moreover, evidence is also found of management trying to manage the forecast downwards

[9] In the study, the term "earnings before abnormal items" is used. This performance measure is comparable to core earnings or recurring earnings.

and taking actions to increase current year earnings at the expense of future earnings[CITATION Bur06 \l 1043]. Financial executives claim that core earnings of the previous year, prior-year quarterly core earnings and analyst consensus estimates are the most important benchmarks for firms (Graham et al., 2005). Classification shifting has been found to be more pervasive when firms are close to meeting or beating their benchmarks, as it allows the management to meet the earnings forecast by financial analysts. This is done, as non-core expenses tend to be excluded from benchmarks (Haw, Ho, & Li, 2011; Mc Vay, 2006). Not meeting earnings benchmarks can have different economic consequences: a fall in the stock price, a decrease in the perceived firm value or a lower credit rating. Athanasakou , Walker and Strong (2011) have found that equity investors reward firms for meeting their earnings benchmarks through classification shifting and earnings forecast guidance. Hence, the second hypothesis is as follows:

> *H2: Firms engage in classification shifting to meet or beat earnings benchmarks.*

Positive accounting theory describes that contracting motivations provide management with incentives to manage their earnings. Debt contracts often contain restrictions based on accounting numbers[CITATION Hea99 \t \l 1043]. An example is a dividend constraint, where, if earnings are below a certain benchmark, a company is prohibited from paying out dividends to its shareholders. Earnings are an important factor in evaluating a company's credit risk and default risk[CITATION Zal17 \l 1043]. If firms are willing to issue a new long-term debt, they have an incentive to meet or beat their earnings benchmarks to signal future creditors. Lui, Ning and Davidson (2010) have found that firms manage their earnings upwards through accrual management in the two years prior to issuing new bonds. The inflation of earnings leads to a lower cost of debt for the firm. This suggests that bondholders are not able to identify whether a firm is engaging in earnings management [CITATION Liu10 \l 1043]. Caton, Chiyachantana, Chua and Goh (2011) have also found evidence that firms tend to manage their accruals before sessional bond offering. However, the study found that credit rating agencies and bond investors adjust for earnings management, which leads to lower initial bond ratings and a higher cost of debt for the firm[CITATION Cat11 \l 1043]. It has been found that earnings management tools can be substituted for one another. This

implies that also classification shifting can be an effective earnings management tool when a company is planning to issue new debts[CITATION Amy12 \l 1043]. In line with our expectations, Zalata and Roberts (2017) have found evidence of classification shifting in UK firms before they issue a new debt[CITATION Zal17 \l 1043]. This leads to the third hypothesis:

> *H3: Firms engage in classification shifting if a new long-term debt is going to be issued in the following period.*

Chapter IV: Data and Methodology

This chapter operationalizes the expected link between classification shifting and meeting earnings benchmarks or issuing new debt in the following year, as described in Chapters II and III, in the research design. The research design justifies why certain variables are included in the model and how these are calculated. The second part of this chapter describes the process of data collection.

4.1. Methodology

4.1.1 Libby boxes

To investigate classification shifting and possible reasons for this form of earnings management, an empirical analysis methodology will be used. The method to detect this form of earnings management will be based on the research model of Mc Vay (2006), as improved by further research. Classification shifting is assumed if there is an association between unexpected core earnings and non-recurring items. Next, also the presence of earnings benchmarks and incentives from debtors will be investigated. The presence of these two could influence management to report equal or increasing core earnings in comparison to the previous period. Libby boxes (figure 2) are used to illustrate how the theoretical relations will be operationalized and tested.

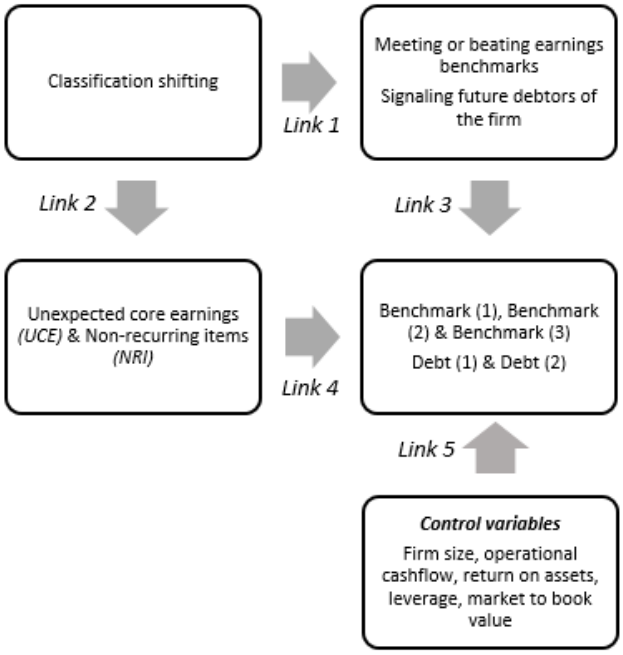

Figure 2: The predictive validity framework

The first link in figure 2 is grounded in the theory of classification shifting and incentives to commit earnings management, as described in Chapters II and III. This thesis examines whether earnings benchmarks or planning to issue new debt in the following period motivates management to engage in classification shifting. The second link demonstrates the operationalization of classification shifting: it is expected that the presence of unexpected core earnings can be explained by the presence of non-recurring items. Managers might have an incentive to classify certain income or expenses as non-recurring items to increase (or decrease) core earnings to signal or mislead stakeholders. The third link describes how management's incentives are operationalized. A dummy variable is designed to indicate whether the examined incentive could be present. Companies report a variety of financial indicators to their stakeholders, but not all financial indicators are relevant or comparable for every firm. However, in general every firm is interested in (core) earnings.

As hand collecting data for every firm and firm year on their outlook is labor-intensive, three general earnings benchmarks will be created. The first benchmark is

that core earnings are positive, the second benchmark is that core earnings are increasing in comparison to the previous year, and the third benchmark is that core earnings surpass analysts' expectations. The first benchmark implies that the business is still profitable; if firms are generating negative (core) earnings this could indicate poor firm performance or decreasing firm value. The second earnings benchmark implies that business performance is increasing, which could increase firm value. The third earnings benchmark is outperforming current expectations, which also indicates an increase in firm value.

The fourth link is the operationalization of the first link. If evidence is found of an association between unexpected core earnings and non-recurring income, in combination with meeting earnings benchmarks or an increase in long-term debt in the following year, this indicates that management is shifting revenue or expenses to signal or mislead (future) stakeholders in the firm.

4.1.2. Research model

$$CE_{i,t} = \beta_0 + \beta_1 CE_{i,t-1} + \beta_2 ATO_{i,t} + \beta_3 ACCRUALS_{i,t-1} + \beta_4 \Delta SALES_{i,t} + \beta_5 \neg \Delta SALES_{i,t} \quad (1)$$

When investigating classification shifting, the first step is to calculate the expected core earnings. A model has been designed by Mc Vay (2006) to associate actual core earnings with various performance measures which capture actual core earnings. In the model, core earnings are predicted based on: prior year core earnings, asset turnover ratio, current year accruals, prior year accruals, the relative change in sales compared to the prior year and a dummy variable to indicate a decrease in sales. The model was improved by Fan et al. (2010), as Mc Vay doubted the validity of the model. By estimating core earnings using current year accruals (which include non-recurring item accruals), possibly a mechanical positive relationship can arise between unexpected core earnings and non-recurring items. Taking this finding into account, to improve the validity of the model, I follow the recommendation of Fan et al. (2010) to exclude the current year accruals. This leads to the first equation (1). Running this regression will result in the coefficients β_0, β_1, β_2, β_3, β_4 and β_5. These will be used to calculate the expected core earnings for a specific firm each year. In Table 1 the calculation of the variables will be explained.

Similar to Athanasakou et al. (2009), core earnings are calculated as I/B/E/S actual earnings per share, multiplied by the average number of shares outstanding (both unadjusted for stock splits) and scaled by sales. Total scales is used as a scaler instead of total assets, as total assets are systematically misstated due to non-recurring items [CITATION McV06 \l 1043]. I use I/B/E/S to calculate the core earnings, instead of Mc Vay's (2006) calculation of core earnings, as core earnings calculated using I/B/E/S are closer to financial analysts' definition of core earnings.[10] As core earnings tend to be persistent and highly correlated with prior year core earnings, lagged core earnings ($CE_{i,t-1}$¿ are included. Asset turnover ($ATO_{i,t}$¿ is included to control for the inverse relationship between asset turnover and profit margin[CITATION Nis01 \l 1043]. Lagged accruals ($ACCRUALS_{i,t-1}$) are included, as future performance is related to past accruals. Prior research has found that holding earnings constant, accrual levels are an explanatory variable for future performance, particularly for the accrual earnings component of the earnings, since this component is less persistent[CITATION Slo96 \l 1043]. The dependent variable (core earnings) is scaled by sales. However, if sales increase, core earnings may not increase equally. This can be explained, as a part of the firm's expenses are fixed. Thus, the variable $\Delta SALES_{i,t}$ is added[CITATION McV06 \l 1043]. Finally, a dummy variable ($\neg\Delta SALES_{i,t}$) is included, which allows the slope to differ if sales are decreasing. A firm's expenses tend to decrease less when the activity declines in comparison with when the activity is increasing[CITATION And03 \l 1043].

Next, unexpected core earnings will be computed by subtracting actual core earnings from the expected core earnings, as in the calculation in equation (2). If the actual core earnings are greater (smaller) than the expected core earnings, this leads to a positive (negative) earnings surprise. Hence, $UCE_{i,t}$ will be positive (negative).

$$UCE_{i,t} = CE_{i,t} - E(CE)_{i,t} \qquad (2)$$

Classification shifting will be examined by investigating whether firms classify expenses (revenues) as non-recurring. In the regression equation (3), the

[10] Mc Vay (2006) calculates core earnings as sales minus cost of goods sold and selling, general and administrative expenses. However, this definition is more similar to the gross margin.

association will be estimated between unexpected core earnings ($UCE_{i,t}$) and non-recurring items ($NRI_{i,t}$). A positive association may indicate that firms are engaging in classification shifting to increase their core earnings. Following Athanasakou et al. (2009) and Zalata and Roberts (2017), non-recurring items ($NRI_{i,t}$¿ are defined as core earnings subtracted by net income scaled by sales. Other control variables are included, following Zalata and Roberts (2017), as these firm characteristics have an effect on the amount and availability of earnings management possibilities. These are firm size ($SIZE_{i,t}$), leverage(¿$V_{i,t}$), cash flow from operations ($OCF_{i,t}$), firm performance ($ROA_{i,t}$) and firm growth ($MtB_{i,t}$).

$$UCE_{i,t}=\beta_0+\beta_1 NRI_{i,t}+\beta_2 SIZE_{i,t}+\beta_3 \leq V_{i,t}+\beta_4 OCF_{i,t}+\beta_5 ROA_{i,t}+B_6 MtB_{i,t} \quad (3)$$

Next it is tested whether the misclassification of items is used to meet or beat earnings benchmarks using equation (4). This will be done by introducing an interaction term ($\beta_3 NRI_{i,t} * Benchmark_{i,t}$), to measure whether firms misclassify core earnings and also meet or beat their earnings benchmarks. A positive coefficient is predicted, as this indicates that firms use classification shifting for capital market motivations.

$$UCE_t=\beta_0+\beta_1 NRI_{i,t}+\beta_2 Benchmark_{i,t}+\beta_3 NRI_{i,t} * Benchmark_{i,t}+\beta_4 SIZE_{i,t}+\beta_5 \leq V_{i,t}+\beta_6 (\quad (4)$$

In equation (5) an extra variable ($D_{i,t+1}$) and interaction term ($NRI_{i,t} * D_{i,t+1}$) are added. The variable $D_{i,t+1}$ is a dummy variable, which equals one if there is an increase in long-term debt in the following year. This indicates that new bonds or loans have been issued. Before issuing new debt, a firm may have an incentive to increase their core earnings to signal that their credit risk is low.

$$UCE_t=\beta_0+\beta_1 NRI_{i,t}+\beta_2 D_{i,t+1}+\beta_3 NRI_{i,t} * D_{i,t+1}+\beta_4 SIZE_{i,t}+\beta_5 \leq V_{i,t}+\beta_6 OCF_{i,t}+\beta_7 ROA \quad (5)$$

Table 1 – Variable description

Variable	Description
$ACCRUALS_{i,t}$	Operating accruals are calculated as the net income before extraordinary items subtracted by the cash flow from operations, scaled by net sales.
$ATO_{i,t}$	Asset turnover is calculated as net sales divided by average total assets.
$Benchmark(1)_{i,t}$	Dummy variable which equals 1 if core earnings are greater than zero, otherwise 0.
$Benchmark(2)_{i,t}$	Dummy variable which equals 1 if core earnings are greater than last period, otherwise 0.
$Benchmark(3)_{i,t}$	Dummy variable which equals 1 if actual EPS is greater than expected EPS, otherwise 0.
$CE_{i,t}$	Core earnings are calculated as actual EPS (from I/B/E/S) multiplied by the average number of shares outstanding, both unadjusted for stock splits and scaled by net sales.
$Debt(1)_{t+1}$	Dummy variable which equals 1 if Δ long-term debt divided by average total assets is greater than 3%, otherwise 0.
$Debt(2)_{t+1}$	Dummy variable which equals 1 if Δ long-term debt divided by average total assets is greater than 5%, otherwise 0.
$E(CE)_{i,t}$	Expected core earnings are calculated as the expected values from equation 1, after the calculation of the regression coefficients.
$EPS_{i,t}$	The reported actual earnings per share from I/B/E/S database.
$\Delta EPS_{i,t}$	Change in EPS is calculated as $EPS_t - EPS_{t-1}$.
¿$V_{i,t}$	Leverage is calculated as (Total assets – Total liabilities) / Total assets.
$MtB_{i,t}$	Market-to-book ratio is derived from the Orbis database. Orbis calculates the ratio as market capitalization divided by shareholder funds.
$OCF_{i,t}$	Operating cash flow (from the cash-flow statement), scaled by net sales.
$NRI_{i,t}$	Non-recurring items are calculated as core earnings subtracted by net income, scaled by net sales.
$ROA_{i,t}$	Return on assets is calculated as net income divided by average total assets.
$\Delta SALES_{i,t}$	Change in net sales is calculated as $(SALES_t - SALES_{t-1})$ / $SALES_{t-1}$.
$\neg\Delta SALES_{i,t}$	Dummy variable which equals 1 if ΔSALES is negative, otherwise 0.
$SIZE_{i,t}$	Firm size is operationalized as the natural logarithm of total assets.
$UCE_{i,t}$	Unexpected core earnings are calculated as the actual core earnings ¿) minus the expected core earnings $E(CE)$.

The definition and calculation of the variables are equal or similar to the description in the articles of Mc Vay (2006), Barua et al. (2010) and Zalata and Roberts (2017).

4.2. Data

	Number of observations	
Data from selected firms - Compustat Global	36,081	
Data from selected firms - I/B/E/S unadjusted file	21,898	
Data from selected firms from Orbis	58,416	
		13,900
Adjustments		
Change in financial year	- 52	
Missing values to test equation (3)	- 6,595	
Financial and utility companies	- 381	
Observations of sales less than €10 million	- 168	
Limited observations in fiscal years	- 26	
Countries with less than 15 observations	- 28	
Final sample		6,650

The sample frame was determined by Compustat Global, which contains information on the consolidated financial statements. The sample comprises only European firms that report in accordance with the IFRS. All listed firms in the European Union are obliged to comply with the IFRS since 2005 regarding their consolidated financial statements. To avoid issues regarding currency and translation of currencies, only companies reporting in euro were selected. Data on expected and actual earnings per share were extracted from the I/B/E/S Unadjusted File. For comparability reasons, the unadjusted file was used. Data on the market-to-book ratio was extracted from Orbis. Data from all the databases were extracted for the fiscal years 2005 to 2019; however, due to the requirement of lagged and future data, the final sample will be smaller. The sample development is described in Table 2.

Table 2 – Sample development

Observations with a change in financial year where dropped, as these are not comparable. If observations were missing to test the first hypothesis, these were

dropped. Financial and utility companies were excluded, as these industries are regulated and have a different financial reporting setting [CITATION Ath09 \l 1043]. As total sales were used as a deflator for many variables, observations with less than €10 million in sales were dropped, as this could create possible outliers. This adjustment is in line with other research; however, other studies only dropped firms with sales lower than €1 million[CITATION McV06 \l 1043][11]. Due to limited observations in the years 2007, 2008 and 2009 and the use of a time fixed effect, observations in these years were dropped. As a result, the final data sample only contains observations for the financial years 2010 to 2018. The regression model also includes a fixed effect for country effects to control for any macro-economic effects. Countries with limited observations (< 15 observations) were excluded, to ensure a sufficient number of observations to effectively test the country effects. The Appendix (Table 4.1.) provides the number of observations for each country. In contrast to Mc Vay (2006), possible industry effects are not account for due to limited observations. This could be a limitation in this thesis, as the industry in which a company operates has an effect on the asset turnover and profit margin [CITATION Sol04 \l 1043].

4.3. Calculation of expected core earnings

In the first stage of the regression, the expected core earnings were calculated. Using the first equation, the coefficients were estimated. The estimated coefficients were used to calculate the expected core earnings. In the Appendix (Table 4.2.) the descriptive statistics for the variables used in equation (1) are tabulated. Due to a significant number of extreme values in the sample, variables were winsorized to control for this, as the ordinary least squares (OLS) regression is sensitive to extreme values and could have an influence on the results of the regression. All variables were winsorized to ensure all observations were within three times the interquartile range of the first and third quartiles.[12] [13] The regression equation also

[11]A scatterplot with core earnings (scaled by sales) on the y-axis and total sales on the x-axis indicate that most extreme values of core earnings are found for observations with sales less than €10 million. To avoid winsorizing these observations or changing the research, observations with sales less than €10 million were dropped.

[12] In the Appendix, the used winsor for each variable is described in Table 4.3.

[13] To check for the effects of outliers, the regression was calculated a second time (however the variables were not winsorized) to check for the possible effects of outliers. This would increase the R^2 by 2%, also the coefficient of $ACCRUALS_{i,t-1}$ would be positive and significant. However, this last finding would be contrary to the prior literature and the

contains a fixed effect for fiscal year and country, as macro-economic factors might influence observations in the dataset. These fixed effects controlled for these macro-economic effects. The residuals of the regression were visually checked for independence of observations and equal variance. A part of the residuals follow a linear trend, so a Breusch-Pagan test was performed to check for equal variance of the residuals; the null hypothesis of equal variance was rejected. A regression of the residuals on the lagged residuals found a significant negative relation, which indicates auto-correlation. The regression equations (1) were estimated again with robust standard errors to control for these findings.

Table 3 presents the predicted signs and calculated beta-coefficients. The estimated coefficients are in line with the predicted direction, which is derived from the literature review and prior research. The F-statistic of the regression is 239,17 which has a corresponding p-value of 0,000. Therefore we can conclude that the null hypothesis (of all beta-coefficients being equal to zero) can be rejected. The R^2 of the model is equal to 62,23%. Except for $ATO_{i,t}$, all coefficients are significant at all three significance levels.

Table 3 – Regression results on the calculation of expected core earnings – Dependent variable: $CE_{i,t}$

Independent variable	Predicted sign	Coefficient	Standard error	t-statistic	p-value
$Intercept$		0,013	0,004	3,40	0,001***
$CE_{i,t-1}$	+	0,780	0,013	58,14	0,000***
$ATO_{i,t}$	-	- 0,002	0,001	- 1,86	0,064*
$ACCRUALS_{i,t-1}$	-	- 0,075	0,011	- 6,63	0,000***
$\Delta SALES_{i,t}$	+	0,066	0,008	8,24	0,000***
$\neg\Delta SALES_{i,t}$	-	- 0,009	0,002	- 5,42	

expected effect of the coefficient. I estimate this effect is due to extreme outliers, which have an effect on the validity of the regression, and therefore I will use the model including the winsorized variables.

		0,000***
Time fixed effect		Yes
Country fixed effect		Yes

The estimated parameters are based on the following model:

$$CE_{i,t} = \beta_0 + \beta_1 CE_{i,t-1} + \beta_2 ATO_{i,t} + \beta_3 ACCRUALS_{i,t-1} + \beta_4 \Delta SALES_{i,t} + \beta_5 \neg \Delta SALES_{i,t}$$

There are 6,650 observations in the regression. The p-values shown are based on two tailed tests for each of the independent variables. The calculation of the variables is referred to in Table 1.

* = significant at 10%

** = significant at 5%

*** = significant at 1%

Table 3 demonstrates that lagged core earnings are (significantly) positively associated with current year core earnings. This finding is in line with the findings of Sloan (1996), who has claimed that core earnings tend to be persistent over time. Asset turnover is (significantly) negatively associated with core earnings; however, the coefficient is rather small. This finding is in line with the conclusion of Nissim and Penman (2001), who have stated that asset turnover is inversely related to profit margin. Lagged operating accruals are (significantly) negatively associated with core earnings, which indicates that accruals tend to reverse in the following year. The change in sales is added, as sales is a scaler for most of the variables; however, an increase (decrease) in sales would also lead to an increase (decrease) of core earnings, as a part of the firm's costs are fixed [CITATION And03 \l 1043]. The regression results support these findings, as the estimated coefficient is positive; in addition, the dummy variable for a decrease of sales is significant. This dummy indicates that the slope differs for firms with a decrease in sales, due to a certain amount of fixed costs.

Chapter V: Results and empirical findings

This chapter provides answers to the hypotheses from the third chapter. After the first stage of the regression (calculation of unexpected core earnings), now the focus is on the presence of non-recurring items and their assumed effect on core earnings surprises. First, the descriptive statistics and the correlation matrix will be discussed. Second, the test results from the regression will be discussed and how these results relate to the stated hypotheses.

5.1 Descriptive statistics

Table 4 presents the descriptive statistics for the variables regarding equation (3). The variable of interest is $NRI_{posi,t}$, as a positive association is expected with $UCE_{i,t}$. Regarding the results of $UCE_{i,t}$, the mean and the median are equal to 0.000; these results are equal to the results of Mc Vay (2006) and Athanasakou (2009). These results also makes sense as $UCE_{i,t}$ is the residual of equation (1) and an assumption of regression is that the mean of the residuals is equal to zero. Regarding the results of $NRI_{posi,t}$, the mean (median) is equal to 0,005 (0,000). Comparing this to the results of Athanasakou (2009) of 0,021 (0,000) and Zalata and Roberts (2017) of 0,06 (0,00), we can conclude on the basis of the mean that there are fewer non-recurring items present in this sample population. A possible reason for this deviation could be the timeframe of the research, as Athanasakou (2009) focused on the period 1994 to 2002 and the research of Zalata and Roberts (2017) on the period 2008 to 2010.

Table 4 – Descriptive statistics

Variable	Mean	Standard deviation	Median	1st Quartile	3rd Quartile
$UCE_{i,t}$	0,000	0,043	0,001	- 0,014	0,016
$NRI_{posi,t}$	0,005	0,009	0,000	0,000	0,006
$NRI_{totali,t}$	0,698	0,005	0,696	0,696	0,699
¿¿i,t¿	6,869	1,957	6,790	5,427	8,190
$LEV_{i,t}$	0,429	0,170	0,422	0,310	0,536

$OCF_{i,t}$	0,097	0,099	0,082	0,040	0,140
$ROA_{i,t}$	0,039	0,060	0,038	0,012	0,068
$MtB_{i,t}$	2,127	1,660	1,655	1,009	2,714

The sample size is equal to a maximum of 6,650 observations in the period of 2010 to 2018. All data are derived from Compustat Global and I/B/E/S and the variables are defined as in Table 1. Due to the presence of outliers, the variables above were winsorized until all observations are within three times the interquartile range of the first and third quartiles.

The results in Table 4 were winsorized to eliminate outliers which are greater (smaller) than three times the interquartile range of the third (first) quartile. This transformation of the data was used as OLS regression is sensitive to outliers and thus could have an impact on the estimated coefficients and p-values. The variable of interest, non-recurring items, was calculated in two ways: $NRI_{posi,t}$ and $NRI_{totali,t}$. The first ($NRI_{posi,t}$) only contains income-increasing non-recurring items and is set to zero if non-recurring items are absent or income decreasing. The second ($NRI_{totali,t}$¿ one also includes income-decreasing non-recurring items to evaluate to whole sample and not only with income-increasing non-recurring items. Two observations were dropped, as their values of non-recurring items represented an extreme outlier (in relation to the mean and the median).[14] As the distribution of $NRI_{totali,t}$ is skewed due to presence of outliers, a logarithmic transformation was used to smooth the distribution. Since $NRI_{totali,t}$ also contains negative values, before the calculation of the logarithm I made a correction to ensure all observations are at least equal to 1.[15] After the transformation, the distribution of $NRI_{totali,t}$ was still skewed due to extreme observations. To solve this, I winsorized to eliminate outliers greater (smaller) than three times the interquartile range of the third (first) quartile.

[14] As a check, I calculated the regression again with the two dropped observations. I found no significant differences in the calculated coefficients and p-values.

[15] The logarithm of 1 is equal to zero; this makes the smallest observation of $NRI_{totali,t}$ zero.

5.2. Correlation matrix

Table 5 presents the results of the correlation matrix. The correlation coefficient gives an indication of the expected association between two variables. Focusing of the variables of interest, $NRI_{posi,t}$ and $NRI_{totali,t}$, there is a (small) positive correlation, which indicates a positive association between non-recurring items and unexpected core earnings. Both variables are very highly correlated (0,926); to avoid multicollinearity, the regression was estimated twice, once with $NRI_{posi,t}$ and once with $NRI_{totali,t}$. The correlation matrix provides no further evidence of severe correlation between the independent variables in the regression. If severe correlation between the independent variables is present, this could indicate possible multicollinearity. This decreases the statistical power of the regression model, which decreases the validity of our results.

Table 5 – Correlation matrix

	$UCE_{i,t}$	$NRI_{posi,t}$	$NRI_{totali,t}$	¿¿i,t¿	$Solvency_{i,t}$	$OCF_{i,t}$	$ROA_{i,t}$	$MtB_{i,t}$
$UCE_{i,t}$	1,000							
$NRI_{posi,t}$	0,105	1,000						
$NRI_{totali,t}$	0,143	0,926	1,000					
¿¿i,t¿	0,036	0,195	0,158	1,000				
$LEV_{i,t}$	0,127	- 0,095	- 0,092	- 0,324	1,000			
$OCF_{i,t}$	0,244	0,092	0,089	0,230	0,101	1,000		
$ROA_{i,t}$	0,473	- 0,220	- 0,176	0,004	0,362	0,405	1,000	
$MtB_{i,t}$	0,105	0,014	0,016	- 0,063	0,056	0,190	0,408	1,000

The sample size is equal to a maximum of 6,650 observations in the period 2010 to 2018.

All data were derived from Compustat Global and I/B/E/S and the variables are defined as in Table 1.

5.3. Results on classification shifting

The first hypothesis states that firms tend to misclassify income statement items which are part of the calculation of core earnings to non-recurring items, increasing their core earnings. Equation (3) was developed to test whether the assumed association between non-recurring items and unexpected core earnings is visible, which would indicate classification shifting. In Table 6, the regression results of equation (3) are presented. The variable of interest, (NRI), is split into two: NRI_{pos} and NRI_{total}. NRI_{pos} only contains income-increasing non-recurring items, while NRI_{total} includes both income-increasing and -decreasing items. The results of both of the models measuring classification shifting indicate a statistically significant association between non-recurring items and unexpected core earnings. This is an indication that firms report non-recurring items to increase their core earnings. When comparing the regression coefficient of 1,249 to the study of Zalata and Roberts (2017) of 0,081, we can conclude that there is a stronger assumed effect of classification shifting in this dataset.

Table 6 – Regression results on classification shifting – Dependent variable: $UCE_{i,t}$

	Model with only positive non-recurring items		**Model with all observations of non-recurring items**	
Independent variable	**Coefficient**	**p-value**	**Coefficient**	**p-value**
$Intercept$	0,001	0,824	- 1,499	0,000***
$NRI_{posi,t}$	1,249	0,000***		
$NRI_{totali,t}$			2,151	0,000***
¿¿i,t¿	- 0,001	0,000***	- 0,001	0,000***
$LEV_{i,t}$	- 0,021	0,000***	- 0,019	0,213**
$OCF_{i,t}$	0,009	0,304	0,011	0,000***

$ROA_{i,t}$	0,449	0,000***	0,436	0,000***
$MtB_{i,t}$	- 0,004	0,000***	- 0,004	0,000***
Time fixed effect	Yes		Yes	
Country fixed effect	Yes		Yes	

The estimated parameters are based on the following model:

$$UCE_{i,t} = \beta_0 + \beta_1 NRI_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 \leq V_{i,t} + \beta_4 OCF_{i,t} + \beta_5 ROA_{i,t} + B_6 MtB_{i,t}$$

The variables are defined as in Table 1. There are 6,650 observations in the period 2010 to 2018 in the regression. The presented p-value represents the two-sided p-values. The first model is calculated with only income-increasing non-recurring items. The second model is calculated with both income-decreasing and income-increasing items.

* = significant at 10%

** = significant at 5%

*** = significant at 1%

The R^2 of the first (second) model is equal to 29,68% (30,17%), which is much higher in comparison to the 5% (3%) reported by Zalata and Roberts (2017). The p-value for both models is equal to 0,000, which indicates that at all levels of significance we can conclude that the estimated coefficients are not equal to zero. The coefficients and the standard deviation of both models are estimated with robust standard errors, as the outcome of the Breusch-Pagan test indicates the presence of heteroscedasticity.[16] Also when regressing the residuals on the lagged residuals, there is a significant negative effect present, which is an indication that auto-correlation of the residuals could be present. Through visual inspection of the scatterplot, I concluded that the main variable (non-recurring items) and the dependent variable (unexpected core earnings) have a linear relationship. As a result of the significant and positive coefficient of $NRI_{posi,t}$ and $NRI_{totali,t}$, I find supporting evidence regarding hypothesis 1. This significant positive association implies that firms engage in classification shifting to increase or decrease their core earnings.

[16] A limitation of the Breusch-Pagan test is that it is an F-test. An F-test is quite sensitive when the population is relatively large. A relatively small amount of heteroscedasticity of the residuals could therefor lead to rejecting the null-hypothesis.

5.4. Results on the influence of benchmarking

The second hypothesis assumes that the motivation of management to engage in classification shifting is to meet or beat earnings benchmarks. This could be to signal investors on the future positive performance of the firm or to mislead investors on the operating results of the firm. Earnings benchmarks can differ for each independent firm, as strategies across firms differ. A solution for this issue is to modulate three generalized earnings benchmarks: positive core earnings (model 1), an increase in core earnings (model 2) and beating earnings expectations of analysts (model 3). Equation (4) was developed to test whether the assumed association between meeting benchmarks, non-recurring items and unexpected core earnings is visible, which would indicate classification shifting to meet or beat earnings benchmarks. In Table 7 the regression results are presented, focusing on NRI_{pos} and the three assumed benchmarks. The coefficient of interest is β_3, as a significant positive result indicates the assumed effect of classification shifting to meet or beat earnings benchmarks. All three models predict the coefficient will be positive and the effect is also statistically significant. This finding implies that companies apply classification shifting, which results in higher core earnings, to meet or beat their earnings benchmarks. This finding is consistent with the results of Zalata and Roberts (2017), who found a positive significant result for firms with non-recurring items and an increase in core earnings. However, they did not find a significant positive effect for firms with non-recurring items reporting positive core earnings, which these results do find (Model (1)). An interesting finding is that β_2 also indicates a positive significant result; this implies that firms that meet or beat their earnings benchmarks tend have more positive earnings surprises. All other control variables indicate comparable results in relation to Table 6 regarding the coefficient and the statistical significance. For all three models, the p-value is equal to 0,000, which indicates that at all levels of significance we can conclude that the estimated coefficients are not equal to zero. The last interesting finding is that the R^2 of the second model is significantly higher, at 38,50%, in comparison to the first model, at 31,73%, and the third model, at 32,52%. This could be an indicator that the second benchmark is the closest to reality.

Table 7 – Regression results on classification shifting to meet or beat earnings

benchmarks (only income-increasing non-recurring items) – Dependent variable: $UC\,E_{i,t}$

	Model (1)		Model (2)		Model (3)	
Independent variable	**Coefficient**	**p-value**	**Coefficient**	**p-value**	**Coefficient**	**p-value**
$Intercept$	- 0,015	0,003***	- 0,020	0,000***	- 0,008	0,068*
$NRI_{posi,t}$	0,710	0,000***	1,012	0,000***	0,969	0,000***
$Benchmark_{i,t}$	0,021	0,000***	0,027	0,000***	0,014	0,000***
$NRI_{posi,t} * Benchmark_{i,t}$	0,527	0,007***	0,252	0,033**	0,326	0,009***
¿¿i,t¿	- 0,002	0,000***	- 0,001	0,000***	- 0,001	0,000***
$LEV_{i,t}$	- 0,017	0,000***	- 0,015	0,001***	- 0,019	0,000***
$OCF_{i,t}$	0,006	0,462	0,011	0,170	0,010	0,239
$ROA_{i,t}$	0,354	0,000***	0,379	0,000***	0,406	0,000***
$MtB_{i,t}$	- 0,003	0,000***	- 0,004	0,000***	- 0.004	0,000***
Time fixed effect	*YES*		*YES*		*YES*	
Country fixed effect	*YES*		*YES*		*YES*	

The estimated parameters are based on the following model:

$UC\,E_t = \beta_0 + \beta_1 NRI_{posi,t} + \beta_2 Benchmark_{i,t} + \beta_3 NRI_{posi,t} * Benchmark_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 \leq V_{i,t} + \beta_6 OC$

. The variables are defined as in Table 1. There are 6,650 observations for the period 2010 to 2018 in the regression. The presented p-value represents the two-sided p-values. The first model assumes that firms would like to report positive core earnings (assumed benchmark). The second model assumes that firms would like to report increasing core earnings in relation to previous year (assumed benchmark). The third model assumes that firms would like to report core earnings that are higher than expected by financial analysts (assumed benchmark).

* = significant at 10%

** = significant at 5%

*** = significant at 1%

Table 8 presents the regression results when focusing on NRI_{total} and the three assumed benchmarks. The coefficient of interest is β_3, as a significant positive result indicates the assumed effect of classification shifting to meet or beat earnings benchmarks. As NRI_{total} also includes observations of firms with income-decreasing

items, this analysis is different from the previous regression.[17] The coefficient of interest is not significant in all three models; this finding is contrary to the findings of Table 7. Also β_2, which was a significant coefficient in Table 7, is now insignificant and the predicted coefficient differs in direction (positive or negative). When comparing the results of Table 8 to those of Table 6, it is found that the coefficient of NRI_{total} slightly decreases, with the p-value being equal. The coefficients of the other control variables are similar in both tables; however, the inclusion of the benchmark decreases the significance level of the variable $LEV_{i,t}$.

For all three regression models, the p-value is equal to 0,000, which indicates that at all levels of significance we can conclude that the estimated coefficients are not equal to zero. Again, it is found that the R^2 of the second model is significantly higher, at 38,88%, in comparison to the first model, at 31,70%, and the third model, at 32,97%. The results of the coefficient β_3 are positive and significant in the first model, when focusing on income-increasing non-recurring items, which provides evidence that supports the second hypothesis that firms engage in classification shifting to meet or beat earnings benchmarks. However, the results where insignificant and miscellaneous when taking all non-recurring items into account and no further evidence is found to support the hypothesis.

Table 8 – Regression results on classification shifting to meet or beat earnings benchmarks (all observations of non-recurring items) – Dependent variable: $UCFE_{i,t}$

[17] In the regression equation of Table 7, observations of income-decreasing items were set to zero.

	Model (1)		Model (2)		Model (3)	
Independent variable	**Coefficient**	**p-value**	**Coefficient**	**p-value**	**Coefficient**	**p-value**
$Intercept_{\square}$	- 1,213	0,000***	- 1,435	0,000***	- 1,296	0,000***
$NRI_{totali,t}$	1,719	0,000***	2,033	0,000***	1,849	0,000***
$Benchmark_{i,t}$	- 0,166	0,475	0,063	0,668	- 0,145	0,342
$NRI_{totali,t}$ * $Benchmark_{i,t}$	0,269	0,418	- 0,051	0,810	0,230	0,293
¿¿i,t¿	- 0,002	0,000***	- 0,001	0,000***	- 0,001	0,000***
$LEV_{i,t}$	- 0,015	0,001***	- 0,013	0,002***	- 0,018	0,000***
$OCF_{i,t}$	0,009	0,276	0,013	0,115	0,011	0,178
$ROA_{i,t}$	0,350	0,000***	0,368	0,000***	0,394	0,000***
$MtB_{i,t}$	- 0,003	0,000***	- 0,004	0,000***	- 0,004	0,000***
Time fixed effect	*YES*		*YES*		*YES*	
Country fixed effect	*YES*		*YES*		*YES*	

The estimated parameters are based on the following model:

$$UCE_t = \beta_0 + \beta_1 NRI_{totali,t} + \beta_2 Benchmark_{i,t} + \beta_3 NRI_{totali,t} * Benchmark_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 \leq V_{i,t} + \beta_6 OCF_{i,}$$

The variables are defined as in Table 1. There are 6,650 observations for the period 2010 to 2018 in the regression. The presented p-value represents the two-sided p-values. The first model assumes firms would like to report positive core earnings (assumed benchmark). The second model assumes firms would like to report increasing core earnings in relation to the previous year (assumed benchmark). The third model assumes firms would like to report core earnings that are higher than expected by financial analysts (assumed benchmark).

* = significant at 10%

** = significant at 5%

*** = significant at 1%

5.5. Results on the influence of potential new investors

The third hypothesis assumes that the motivation of management to engage in classification shifting is to signal potential new investors. A firm credit rating is based on published accounting information such as profit, interest coverage and leverage[CITATION Pit04 \l 1043]. Therefore, assuming credit rating agencies also capture information on core earnings, we expect that firms tend to use classification shifting to increase their core earnings and signal (new) investors. A dummy variable was created which indicates whether firms issue new debts in the following financial year. Including this dummy variable, results in a decrease in the number of observations due to a lack of data.[18] Two different benchmarks were applied: $Debt(1)_{t+1}$ is equal to 1 if the change in long-term debt in relation to average total assets is equal to 3% or more. The variable $Debt(2)_{t+1}$ is equal to 1 if the change in long-term debt in relation to average total assets is equal to 5% or more. As a robustness test, also the relative change in long-term debt in relation to average total assets was used; however, the regression results were similar in comparison to the described benchmarks.

In Table 9 the regression results are presented with only income-increasing non-recurring items (NRI_{pos}). The coefficient of interest, β_3, is predicted to be positive and significant, as this indicates that firms engage in classification shifting to signal potential new investors, which could be beneficial for their interest costs. However, the results of both models indicate a negative (insignificant) effect, which is contrary to our prediction. A possible reason for the finding is that a firm's management is less likely to engage in classification shifting as they could be under more scrutiny by auditors or other potential stakeholders due to (plans to) attracting new capital in the following year. The results on the coefficients β_1, β_4 , $\beta_5, \beta_6, \beta_7$ and β_8 are equal to Table 6. The R^2 of the first (second) model is equal to 28,67% (28,67%). The F-statistic of the first (second) model is equal to 36,65 (36,47), which indicates that at all levels of significance we can conclude that the estimated coefficients are not equal to zero. In Table 10 the regression results are presented with both income-

[18] For instance, as data on the financial year of 2019 is not already available, all observations in the financial year of 2018 are dropped. In total 1.157 observations were dropped due to a lack of data on change in long term debt.

increasing and income-decreasing non-recurring items (NRI_{total}). Again, coefficient β_3 in both models is found to be negative and insignificant, where the opposite direction was predicted. Even though the coefficient is not significant, the effect seems to be stronger in the regression with all non-recurring items. Another remarkable result is the change in the coefficient β_2 in Table 10 in comparison to Table 9. In the regression of Table 10, the coefficient is positive (0,220), whereas in Table 9 it was negative (-0,000), nevertheless both results were insignificant. The results on the coefficients β_1, β_4 , $\beta_5, \beta_6, \beta_7$ and β_8 are equal to Table 6. The R^2 of the first (second) model is equal to 29,26% (29,26%). The F-statistic of the first (second) model is equal to 37,65 (36,47), which indicates that at all levels of significance we can conclude that the estimated coefficients are not equal to zero.

Summarizing the results of Tables 9 and 10, it is found that, if firms are taking out a new loan in the following financial year, it is less likely that they will engage in classification shifting. This thesis finds no evidence which supports the third hypothesis. On the contrary, it finds a negative, however insignificant, association between classification shifting and attracting new debt in the following year. I conclude I find no supporting evidence that there is significant association between classification shifting and an increase in long-term debt in the following period. These results are contrary to, for instance, prior research by Zalata and Roberts (2017), where the interaction between non-recurring items and a future increase in long-term debt was both positive and significant. This study was also focused on IFRS companies, however only in the UK and over a smaller time period. A possible explanation for this effect could be that a firm's management is under more scrutiny by their auditors, the financial market or other stakeholders when they are planning to take out new or another loan or will be issuing new bonds, and therefore they do not engage in classification shifting.

Table 9 – Results on classification shifting to signal future debtors (only income-increasing non-recurring items) – Dependent variable: $UCE_{i,t}$

	Benchmark of indicator variable ($Debt(1)_{i,t}$¿ is equal to an increase of 3%		**Benchmark of indicator variable ($Debt(2)_{i,t}$¿ is equal to an increase of 5%**	
Independent variable	**Coefficient**	**p-value**	**Coefficient**	**p-value**
$Intercept_{i.t}$	- 0,001	0,751	- 0,002	0,732
$NRI_{posi,t}$	1,292	0,000***	1,296	0,000***
$Debt(1)_{i,t}$	- 0,001	0,611		
$NRI_{posi,t} * Debt(1)_{i,}$	- 0,131	0,372		
$Debt(2)_{i,t}$			- 0,000	0,987
$NRI_{posi,t} * Debt(2)_{i,}$			- 0,196	0,233
¿¿i,t¿	- 0,001	0,000***	- 0,001	0,000***
$LEV_{i,t}$	- 0,021	0,000***	- 0,021	0,000***
$OCF_{i,t}$	0,004	0,692	0,004	0,691
$ROA_{i,t}$	0,461	0,000***	0,461	0,000***
$MtB_{i,t}$	- 0,004	0,000***	- 0,004	0,000***
Time fixed effect	Yes		Yes	
Country fixed effect	Yes		Yes	

The estimated parameters are based on the following model:

$$UCE_{i,t} = \beta_0 + \beta_1 NRI_{posi,t} + \beta_2 Debt_{i,t} + \beta_3 NRI_{posi,t} * Debt_{i,t} + \beta_4 ¿¿i,t + \beta_5 Solvency_{i,t} + \beta_6 OCF_{i,t} + \beta_7 R$$

The variables are defined as in Table 1. There are 5,492 observations in the regression. The presented p-values represent the two-sided p-values. The first model is calculated with the dummy variable for a future increase of long-term debt of 3% (in comparison to average total assets). The second model is calculated with the dummy variable for a future increase of long-term debt of 5% (in comparison to average total assets).

* = significant at 10%

** = significant at 5%

*** = significant at 1%

Table 10 – Results on classification shifting to signal future debtors (all observations of non-recurring items) – Dependent variable: $UCE_{i,t}$

	Benchmark of indicator variable ($Debt(1)_{i,t}$ ¿ **is equal to an increase of 3%**		**Benchmark of indicator variable (** $Debt(2)_{i,t}$ ¿ **is equal to an increase of 5%**	
Independent variable	**Coefficient**	**p-value**	**Coefficient**	**p-value**
$Intercept_{i,t}$	- 1,568	0,645	- 1,570	0,000***
$NRI_{totali,t}$	2,250	0,000***	2,254	0,000***
$Debt(1)_{i,t}$	0,220	0,208		
$NRI_{totali,t} * Debt(1)_{i,t}$	- 0,317	0,206		
$Debt(2)_{i,t}$			0,305	0,117
$NRI_{totali,t} * Debt(2)_{i,t}$			- 0,439	0,116
¿¿ i,t ¿	- 0,001	0,002***	- 0,001	0,002***
$LEV_{i,t}$	- 0,019	0,000***	- 0,019	0,000***
$OCF_{i,t}$	0,006	0,517	0,006	0,513
$ROA_{i,t}$	0,448	0,000***	0,448	0,000***
$MtB_{i,t}$	- 0,004	0,000***	- 0,004	0,000***
Time fixed effect	Yes		Yes	
Country fixed effect	Yes		Yes	

The estimated parameters are based on the following model:

$$UCE_{i,t} = \beta_0 + \beta_1 NRI_{totali,t} + \beta_2 Debt_{i,t} + \beta_3 NRI_{totali,t} * Debt_{i,t} + \beta_4 ¿¿ i,t + \beta_5 Solvency_{i,t} + \beta_6 OCF_{i,t} + \beta_7 RO$$

The variables are defined as in Table 1. There are 5,492 observations in the regression. The presented p-values represent the two-sided p-values. The first model is calculated with the dummy variable for a future increase of long-term debt of 3% (in comparison to average total assets). The second model is calculated with the dummy variable for a future increase of long-term debt of 5% (in comparison to average total assets).

* = significant at 10%

** = significant at 5%

*** = significant at 1%

Chapter VI: Conclusion

6.1 Conclusions

This thesis examined classification shifting and possible motivations of management to engage in classification shifting, focusing on European firms reporting in accordance with the IFRS. Classification shifting can be defined as the misclassification of items in the income statement, without affecting the bottom-line earnings[CITATION McV06 \l 1043]. Even though the bottom-line earnings are not affected by this form of earnings management, it does harm the true and fair view of the income statement for the financial statement users. Individual line items and subtotals in the income statement are valued differently and contain information on the future profitability for the users of the financial statements[CITATION Bra02 \l 1043]. As the IFRS are financial reporting standards that can be categorized as "principle-based," this creates an opportunity for management to use their discretion, for instance, in the presentation of the income statement by including different subtotals such as "recurring income" or "core earnings" and through misclassifying certain revenue or expenses as non-recurring. This influences the true and fair view of financial statements and could potentially mislead financial statement users.

The motivations of management to engage in classification shifting can vary across firms. However, this thesis focused on two assumed motivations for earnings management. The first possible incentive for management to engage in classification shifting is capital market motivations. Management would like to meet earnings benchmarks, beat analysts' expectations or avoid negative earnings surprises. If management fails in doing so, this could create uncertainty on a firm's future performance or signal deeper problems in the firm (Burgstahler & Eames, 2006; Graham, Harvey, & Rajgopal, 2005). The second incentive for management to engage in classification shifting could be present when the firm is planning to raise new capital. If firms are issuing new debt or raising capital in a following period, they might have the incentive to increase their (core) earnings to meet earnings benchmarks. Meeting benchmarks is assumed to reduce the risk premium for firms, which can result in lower interest costs [CITATION Gra05 \l 1043] [CITATION Wen14 \l 1043]. This master's thesis investigated, first, whether firms engage in

classification shifting. Second, it examined whether firms engage in classification shifting to meet or beat earnings benchmarks. Lastly, the research focused on classification shifting if new debt is going to be issued in the following period. An empirical study was executed to investigate the stated propositions. We can now answer the research question:

> *Do debt markets influence a firm's management, reporting in accordance with the IFRS, to engage in classification shifting?*

The final sample contains 6,650 observations of listed European companies which report their financial statements in euros and report in correspondence with the IFRS. The final data comprises observations regarding the financial years 2010 to 2018. A positive and significant association is found between unexpected core earnings and non-recurring items. This positive association implies that firms classify costs (earnings) as non-recurring items to increase (decrease) core earnings. Subsequently it was examined whether there is a relation to meeting or beating earnings benchmarks. Three earnings benchmarks were assumed: reporting positive core earnings, reporting a core earnings increase and beating analysts' expectations on core earnings. The results provide significant evidence that firms with positive non-recurring items engage in classification shifting to meet or beat their earnings benchmarks. This supports the second hypothesis and provides evidence that management is influenced by capital market motivations. This could be explained as meeting or beating earnings benchmarks is assumed to be costly for a firm, due to possible uncertainty in the financial market, and thus earnings are managed[CITATION Gra05 \l 1043].

A second motivation for management to engage in classification shifting could be if they are planning to issue new long-term debt in the following period. This would provide a signal to new creditors, which could influence the risk premium. However, no evidence was found of firms engaging in classification shifting as they are issuing new debt in the following year. In fact, a negative (but insignificant) association was found, which could indicate that firms are under more scrutiny by auditors, financial analysts and other stakeholders and thus are not willing to engage in classification shifting.

Summarizing both results, it was found that debt markets do influence a firm's management to engage in classification shifting to meet or beat earnings benchmarks, as missing benchmarks is presumed to be costly. However, no supporting evidence was found of firms engaging in classification shifting if they are issuing new debt in the following period.

These results contribute to the existing literature on classification shifting for European firms in an IFRS setting. To date research on this subject has been limited, as it was mostly focused on local GAAPs and especially US GAAPs. In addition, the results also provide insights into the motivations for classification shifting, where the focus is debt markets and (future) creditors of the firm. Furthermore, these results have implications for accounting standard setters and investors. With regard to the IASB, it was found that firms engage in classification shifting as this behavior possibly results in presenting alternative profit measures in the income statement. These alternative profit measures can be relevant for the users of financial statements, as they provide additional information for investors. However, they are not uniformly applied and create an opportunity for management to apply their discretion[CITATION Kab17 \l 1043].

Regarding the convergence project, these results on IFRS firms are in general comparable to studies on US GAAP firms (e.g. Mc Vay 2006; Fan et al. 2010). This implies that their decision not to include pro forma earnings disclosures in the discussion on the presentation of financial statements was correct. With regard to investors, we found evidence of firms engaging in classification shifting to meet or beat earnings benchmarks. Investors perceive this as evidence of good management and being able to fulfill future and predicted earnings[CITATION Gra05 \l 1043]. Investors should be aware of the fact that only just meeting earnings benchmarks can be the outcome of classification shifting, as management uses their discretion.

6.2 Discussion

The results on the model of expected core earnings provide similar results regarding all variables in the equation besides the variable asset turnover. The one-sided p-value of $ATO_{i,t}$ in the thesis is equal to 0,032, which is significantly smaller than the

0,101 which Mc Vay (2006) reported.[19] This could be explained as Mc Vay (2006) also controlled for different industries, as the association between profit margin and asset turnover is mainly driven by industry association[CITATION Sol04 \l 1043]. The results on the models of classification shifting provide supporting evidence which are in accordance with the prior literature, except for the variable cash flow from operations. The prior literature (i.e. Barua, Lin, & Sbaraglia, 2010) expects that cash flow from operations is a significant control variable in the classification shifting model; however, in this thesis the coefficient is insignificant. A possible explanation is that cash flow from operations is a financial indicator for firm performance and is presumed to be objective and not open to manipulation. In addition, Lee (2012) has found that certain firms engage in classification shifting due to the incentive to inflate cash flow for operations. These insights cast doubt on the possibility that cash flow from operations can be used as a control variable. When taking both income-increasing and income-decreasing non-recurring items into account, this thesis finds no supporting significant evidence of firms reporting unexpected core earnings to meet or beat earnings benchmarks. This finding could be explained as firms with income-decreasing non-recurring items will have a different motivation to engage in classification shifting, for instance regulatory motivations. However, to check this assumption a different research model should be used. When examining motivations for firms to engage in classification shifting, the population should possibly be split into two groups: firms with only positive non-recurring items and firms with only negative non-recurring items.

6.3 Limitations and implications

A possible limitation of this thesis is the presence of auto-correlation in the dataset, which could have an effect on the reliability of the results. Future research studies on this subject could, for instance, regress the change in variables (for instance the change of $CE_{i,t}$to $CE_{i,t+1}$), which could possibly solve the issues on auto-correlation. Another possible limitation of this thesis is the absence of industry fixed effects, which could have an impact on the variable asset turnover, which is inversely related to the profit margin of a firm[CITATION Nis01 \l 1043]. A result of not including this fixed effect, due to limited numbers of observations, is that the

[19] In the section 4.3. the two-sided p-value is presented in table 3. The one-sided p-value is equal to half the two-sided p-value.

variable asset turnover in the first equation could have been influenced. A last possible limitation could be the presence of outliers in the dataset for certain variables. The descriptive statistics of equation (1), which are provided in the Appendix, give an insight into the mean, the median and the standard deviation of the variables. When comparing the mean and the standard deviation, it can be concluded that the distribution observations are not presumed to be normal. However, when comparing the mean, the standard deviation and the median of these variables to the descriptive statistics of Mc Vay (2006), the results are comparable.

Future researchers could focus more on the different motivations of management to engage in earnings management and change the research model to the specific occasion. For instance, management could also engage in earnings management to increase their wealth (bonus plan hypothesis) or to increase or decrease the profits of different segments or because of regulatory motivations. Future researchers should consider splitting $NRI_{i,t}$ into two populations: firms with negative and firms with positive non-recurring items. In this way, the possible motivations of firms could be better assessed. These groups might have different motivations to engage in classification shifting and should therefore be separated. Lastly, the literature review provided evidence that classification shifting is not only present in the income statement, but also in the cash-flow statement. Possibly cash-flow-based metrics for firms are creating an incentive for management to shift their attention to the cash-flow statement. This could be a subject for further research.

Appendix

Table 4.1 – Observations in the research sample per country

Country ISO code	Country name	Amount of observations	Relative percentage of the population
AUT	Austria	211	3,17%
BEL	Belgium	323	4,86%
DEU	Germany	1,694	25,47%
DNK	Denmark	36	0,54%
ESP	Spain	460	6,92%
EST	Estonia	36	0,54%
FIN	Finland	569	8,56%
FRA	France	1,726	25,94%
GBR	Great-Britain	46	0,69%
GRC	Greece	146	2,20%
IRL	Ireland	104	1,56%
ITA	Italy	704	10,59%
LUX	Luxembourg	41	0,69%
NLD	The Netherlands	362	5,44%
PRT	Portugal	144	2,17%
SVN	Slovenia	48	0,72%
Total		6,650	100.00%

Table 4.2 – Descriptive statistics – equation (1)

Variable	Mean	Standard dev.	Median	25th percentile	75th percentile
$CE_{i,t}$	0,049	0,071	0,044	0,017	0,081

$CE_{i,t-1}$	0,047	0,069	0,041	0,015	0,079
$ATO_{i,t}$	1,028	0,549	0,930	0,647	1,285
$ACCRUALS_{i,t-1}$	-0,059	0,083	-0,044	-0,088	-0,013
$\Delta SALES_{i,t}$	0,061	0,137	0,049	-0,012	0,120
$\neg\Delta SALES_{i,t}$	0,31	0,455	0	0	1

There are 6,650 observations for the period 2010 to 2018 in the regression. Due to the presence of outliers, the variables above were winsorized until all observations were within three times the interquartile range of the first and third quartiles.

Table 4.3 – Description of the used winsors for each variable

Variable	Lower winsor	Upper winsor
$ACCRUALS_{i,t}$	4%	99%
$ATO_{i,t}$	0%	99%
$Benchmark(1)_{i,t}$	0%	100%
$Benchmark(2)_{i,t}$	0%	100%
$Benchmark(3)_{i,t}$	0%	100%
$CE_{i,t}$	3%	98%
$Debt(1)_{t+1}$	0%	100%
$Debt(2)_{t+1}$	0%	100%
¿$V_{i,t}$	1%	100%
$MtB_{i,t}$	1%	97%
$OCF_{i,t}$	2%	98%
$NRI_{posi,t}$	0%	89%
$NRI_{totali,t}$	6%	89%
$ROA_{i,t}$	3%	98%
$\Delta SALES_{i,t}$	1%	97%
$\neg\Delta SALES_{i,t}$	0%	100%
$SIZE_{i,t}$	0%	100%
$UCE_{i,t}$	0%	100%

The sample size is equal to a maximum of 6,650 observations for the period 2010 to 2018. All data were derived from Compustat Global and I/B/E/S and the variables are defined as in Table 1. Due to the presence of outliers, the variables above were winsorized until all observations were within three times the interquartile range of the first and third quartiles. A lower winsor of 1% means that 1% on the left side of the distribution has been winsorized to decrease the possible effects of outliers. An upper winsor of 99% means that 1% on the right side of the distribution has been winsorized to decrease the possible effects of outliers.

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