



Earnings management to meet or beat analyst estimates

Evidence from firms listed on Nasdaq Helsinki

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Abstract for Master's thesis

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<p>The purpose of financial reporting should be to equip external parties (mainly investors) with information that is useful for deciding whether to provide resources to the entity issuing the report. Useful information is ideally both reliable and relevant but in most cases an increase in one of these characteristics entails a decrease in the other. Accrual accounting is generally viewed as generating information that is more relevant compared to the underlying cash flows. This comes at the cost of reliability since managers inevitably will have to exercise judgement over accruals deployed by the reporting entity. Managerial discretion coupled with information asymmetry and conflicting interests between firm managers and external parties give rise to situations where managers might be incentivized to mislead external parties about firm performance for the purpose of achieving some short-term gain.</p> <p>Market expectations are a rather nebulous concept and analyst estimates are often used as a representative measure. The literature appears to coalesce around the idea that meeting analyst expectations in terms of earnings is important for maintaining favorable share prices. This implies an incentive for managers to, by way of their accruals choices, boost earnings in the short term to meet or beat analyst estimates. Existing research generally supports the idea that this takes place.</p> <p>The evidence obtained through applying a variant of the Modified Jones Model on a sample of 543 firm-year observations from firms listed on Nasdaq Helsinki (years 2012 through 2017) appears consistent with prior findings. Income-increasing discretionary accruals were present in entities where consensus analyst estimates were met or beaten.</p> <p>Discretionary accruals were income-decreasing in cases where estimates were undercut, which might be due to firms 'taking a bath' or some other earnings threshold being viewed as more important. On the other hand, it might be indicative of earnings smoothing or an effort on part of managers to communicate with analysts and the market for the purpose of helping them form more realistic expectations. This raises some interesting questions regarding earnings management as a concept and whether it is fair to associate management of accruals with purposeful deception, which it traditionally has been.</p>	
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1 Introduction

1.1 Background

According to the first chapter of the IFRS Conceptual Framework for Financial Reporting (2010), present and potential investors, lenders and other creditors are to be viewed as the primary users of financial reports. Investors use the information provided to make decisions whether to buy, sell or retain holdings in a certain company, while lenders and other creditors use the information as a basis for deciding whether to grant the company credit. The first chapter of the framework is entitled 'The Objective of General Purpose Financial Accounting', which would indicate that, according to the IFRS Conceptual Framework, the main purpose of financial accounting is to provide external actors with useful information.

This notion is in line with the FASB Concept Statements (2010), the American counterpart of the IFRS Conceptual Framework, according to which financial accounting should serve the primary purpose of providing external actors with information that is useful in deciding whether to provide resources to the reporting entity. The FASB concept statements further establish that both investors' and creditors' decisions largely are dependent on their estimations of future cash flows. Accordingly, the information included in financial reports should be of such a character that it helps external actors in assessing the properties of an entity's future cash flows.

Having established the consensus regarding the purpose of financial reporting, the next thing to contend with would be the conflict between relevance and reliability. These are properties that are essential for the usefulness of financial reports, and intuitively one would like to maximize them both. However, they are related in such a way that going for an increase in relevance inevitably will result in decreased reliability. In other words, all financial information is characterized by a trade-off between relevance and reliability.

The use of accrual accounting can be viewed as a measure that has been taken to better the relevance and thus also the usefulness of financial reports. Dechow and Skinner (2000) state that the purpose of accrual accounting is to assist investors in better evaluating a company's financial performance during a given period, which is in line with the purpose of financial reporting according to IFRS and FASB.

Accrual accounting entails the usage of such basic accounting principles as revenue recognition and matching, and it's been proven by Dechow (1994) among others that earnings as derived using accrual accounting in fact are more indicative of actual economic performance than the underlying, often more volatile, cash flows. This notion is consistent with the IFRS conceptual framework in that it's stated in its first chapter that financial performance during a given period is to be reflected by accrual accounting.

Introducing accrual accounting will inevitably lead to an increase in managers' influence over the financial reports. They will have to exercise their own judgement, e.g., when deciding on how to recognize revenues and costs. It's easy to see how some portion of the information content of the financial reports being at the managers' discretion might pose a problem, especially since their interests not necessarily always are perfectly aligned with those of the shareholders and other external parties. On one hand, managers might use their discretion as a way of communicating with the shareholders. Managers are the ones that know the company the best, i.e., the ones that have the inside information, and they may choose to share this information with the shareholders through their influence on the reports, so that the shareholders will be able to make decisions that are more well-founded. On the other hand, managers might choose to purposefully mislead external parties regarding some aspect of the company, on account of conflicting interests.

This perfectly illustrates the trade-off between relevance and reliability; reports that have been subject to managers' influence are more useful (relevant) for decision making, but they are also less reliable since managers might be motivated to operate in a devious manner. Dechow and Skinner (2000) pose two key questions in relation to this discussion. Firstly, when do managers' efforts to, by means of their accrual choices, assist investors in forming a rational perception of the company and its performance turn into earnings management?

Secondly, at what point should the exercise of managerial discretion be considered earnings management, given that accruals choices often smooth earnings as compared to the underlying cash flows? These issues will be addressed in chapter 2.

Questions regarding the overall credibility of financial reports and the purposeful manipulation that might be inherent in the process of financial reporting were highly topical in the beginning of the 2000s. The cause of the increased attention towards these issues were the highly scandalous, highly public cases of Enron, WorldCom, Tyco and a few others. The managers of these companies were all guilty of committing corporate fraud to such magnitudes that when their schemes finally came to light, tens of thousands of people ended up losing their jobs while investors lost hundreds of billions of dollars. In the aftermath of these events, decreased public trust in financial reports, stock investments and the capital market overall was prevalent.

Even though the managers involved in these events engaged in extreme forms of manipulation of the reports, which is vastly different from the much 'lighter' earnings management that is subject to research in this thesis, it is safe to say that the controversies brought about an increase in awareness and attention towards manipulation of financial reports. This would be true for the public, academics, journalists, and regulators alike.

1.2 Problem area

One could argue that the failings of Enron and their peers are attributable to the managers' greed and recklessness. While this most likely is true, at least to a certain extent, the core issues underlying the scandals are the same as those that are associated with the occurrence of conventional earnings management, namely asymmetric information and agency problems. Managers might be motivated to skew financial reports for several different reasons, such as maximizing bonuses, attaining a higher offering price in the event of an initial public offering, or in an attempt to achieve or exceed some earnings threshold. Healy and Wahlen (1999) divide the different earnings management incentives into three groups, namely capital market, contracting, and regulatory motivations. These will be dealt with in greater detail in chapter 2.

Over the years, a lot of research has been carried out to determine what the consequences are of a company failing to meet, meeting, or exceeding market expectations in terms of reported earnings. Market players (investors) form their expectations by considering several factors, analyst estimates being one of them. It's been shown by Skinner and Sloan (2002) and Kinney, Burgstahler and Martin (2002) among others that even small negative earnings surprises, i.e., realized earnings that marginally undercut forecasted earnings, are likely to spark negative market reactions in the form of declining share prices. By the same token, as shown by Barth, Elliot, and Finn (1999) and Bartov, Givoly and Hayn (2001), achieving or exceeding the market's expectations is associated with positive market responses.

Bearing in mind the extensive evidence suggesting that achieving or exceeding market earnings expectations really does matter when it comes to share price development, it is easy to see why managers might be motivated to manage earnings in an effort to live up to expectations. This is the problem that this thesis is centered around; How will managers respond when earnings are likely to fall short of market expectations? Pinpointing exactly what the market's expectations are is difficult since expectations are formed based on a multitude of factors. For this reason, consistent with previous research, analyst estimates will be used as a proxy for market expectations in this study. This course of action is deemed sufficient since investors will look to analyst, whose profession entails forecasting future firm performance, when forming their own expectations.

There is some evidence of Finnish firm engaging in earnings management for capital market purposes. Spohr (2004) obtained evidence consistent with upward earnings management leading up to IPO:s, suggesting that Finnish firms indeed do manage earnings in some circumstances. Pellikka (2011), however, found no relationship between earnings management and meeting or beating analyst estimates among Finnish firms. This runs counter to the body of evidence on the subject from other countries and indicates a need for further research centered around Finnish firms specifically. Evidence obtained by this study should be of interest to the general public but investors especially, since it potentially can assist them in better evaluating firm performance as described through accounting figures. Analysts are another group of people whom this study should interest, as the interplay between analysts and firm managers are one of the core relationships examined.

1.3 Purpose of thesis

Most of the existing research on the topic of earnings management comes from the United States, where it has many times been proven that analyst earnings forecasts in fact do serve as drivers for earnings management. Against this background, the purpose of this study is to answer the question as to whether earnings management is used by Finnish companies as a means of meeting or beating analyst earnings forecasts, in the same manner that evidence would suggest that US companies do. This will involve delving deeper into the concept of earnings management, reviewing some of the previous literature on the subject and, most importantly, quantitative analysis of the phenomenon. Due to the perhaps sensitive nature of the subject, it is deemed that a quantitative approach is most appropriate.

The desired end result is that the analysis will have yielded some evidence that can help answer the question as to whether firms listed on Nasdaq Helsinki engage in earnings management to meet or beat analyst estimates. For the sake of clarity, the research hypothesis is stated as follows:

Firms listed on Nasdaq Helsinki will engage in upward earnings management by way of their accruals choices to meet or beat consensus analyst estimates.

2 Theoretical framework

2.1 What is earnings management?

Schipper wrote a commentary on earnings management in 1989, the purpose of which was to provide guidelines on how to deal with earnings management research design choices and their implications. In this study, Schipper (1989, p. 92) defined earnings management as *'a purposeful intervention in the external financial reporting process, with the intent of obtaining some private gain'*. She further stated that her definition built on the notion that accounting numbers equal information, and that it thus was not tied to any specific concept of earnings. While Schipper's definition has been cited many times (by Dechow and Skinner 2000 among others) it might not be the most comprehensive, since it does not take into account the purposeful misleading that generally is associated with earnings management.

In their 1999 commentary on earnings management, Healy and Wahlen came up with a definition of the phenomenon that is more extensive. According to them, *'Earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers'* (p. 368). Not only does this definition encompass Schipper's notion that earnings management is carried out by managers in order to obtain some private gain, but it also allows for viewing any intervention in the financial reporting process with the intent of misleading external parties as earnings management.

As stated in the introduction, the use of accrual accounting demands that managers exercise their own judgement in the financial reporting process. This is necessary in many situations, e.g., when estimating economic lifespans of various fixed assets and deciding on how to depreciate these assets. Another good example would be the assessment of receivables; managers will have to determine whether cash inflows from receivables are likely or if credit losses have occurred.

The fact that managerial discretion in the financial reporting process occurs is thus not out of the ordinary. It is when discretion is applied in a way that can be characterized as purposefully misleading that earnings management happens, as per the definition by Healy and Wahlen (1999).

Based on these definitions of earnings management, it's possible to answer the questions posed by Dechow and Skinner (2000), as mentioned in the introduction. Managers' efforts to by way of their accrual choices help investors form rational expectations regarding firm performance and cash flows turn into earnings management when the underlying motivations go from helping investors to misleading them. The same reasoning can be applied to the second question as well; smoothing earnings through accruals choices is to be considered earnings management when the purpose is to mislead external stakeholders in pursuit of some outcome that is dependent on the accounting numbers. In other words, whether earnings management in fact is taking place largely depends on managers' intentions.

Tactics deployed to manage earnings can be divided into two different subgroups. Firstly, managers can use their discretion in 'structuring transactions' to deceive outsiders. This would be called 'real earnings management'. Bartov and Cohen (2009, p. 506) state that real earnings management comes in the form of '*real economic action ... that does affect cash flows*'. Examples of real earnings management mentioned by Bartov and Cohen (2009) include suppressing expenses where possible, overproducing to minimize cost of goods sold, and discounting prices to boost sales and thus also earnings in the short term. Another good example of real earnings management, given by Gunny (2010), is cutting investments in research and development even though such investments would be justified, if not necessary from a business perspective.

The second subgroup contains methods of manipulation that have to do with accruals. It is often referred to as 'accrual-based earnings management' or simply 'discretionary accruals'. This is the type of earnings management that is going to be subject to analysis in this thesis. Therefore, accrual-based earnings management will be examined in greater detail in the following chapter.

2.2 Discretionary accruals

Bartov and Cohen (2009, p.506) define accrual-based earnings management as ‘*an accounting action ... in which certain accruals are manipulated with no direct cash flow effect*’. They list such examples as prematurely recognizing revenue, refraining from expensing debt that is not likely to be recovered, and postponing necessary asset write-downs. These examples illustrate what is meant by discretionary accruals, that is, accruals that because of management intervention can be regarded as ‘out of the ordinary’.

As for the specific accruals usually are subject to earnings management, Teoh, Wong, and Rao (1998) found that, in addition to allowing for bad debt, IPO-firms tend to utilize depreciation policies that are income-increasing during the IPO year and the subsequent years. As for banks, research has shown that loan loss reserves often are manipulated to manage earnings (Liu and Ryan 1995, Beaver and Engel 1996). These reserves are linked to some of a bank’s most crucial assets and liabilities, and they tend to be very large in relation to net income and book values of equity (Healy and Wahlen 1999, p. 372).

In earnings management literature, the term ‘discretionary accruals’ is often used synonymously with accrual-based earnings management. Accordingly, accruals that can be regarded as abnormal, i.e., deviating from that which is to be expected, are often used as a proxy for earnings management. However, distinguishing these discretionary accruals from the ‘legitimate’ ones can prove to be quite challenging.

Building on research carried out by Healy (1985) and DeAngelo (1986), Jones (1991) developed a model for measuring discretionary accruals, varieties of which have been used frequently in earnings management research ever since its inception. The model aims at detecting the discretionary portion of total accruals to capture manipulation carried out by managers. In accordance with DeAngelo’s method, Jones uses total accruals from a previous period as a measure of ‘normal’ total accruals. The ‘abnormal’ total accruals are defined as the difference between present total accruals and normal total accruals. These abnormal accruals are then to be divided into nondiscretionary and discretionary accruals:

$$\Delta TA_t = (TA_t - TA_{t-k}) = (DA_t - DA_{t-k}) - (NA_t - NA_{t-k}). \quad (1)$$

Testing for earnings management using this model calls for the assumption that the change in nondiscretionary accruals ($NA_t - NA_{t-k}$) is virtually non-existent. Consequently, changes in total accruals ($TA_t - TA_{t-k}$) are explained exclusively by changes in discretionary accruals ($DA_t - DA_{t-k}$), which is the proxy for earnings management. Obviously, since many accruals are affected by the contemporary economic circumstances of the company, this is too rough an assumption to make. As pointed out by Jones, a decline in total accruals may be attributable to nondiscretionary accruals alone, given that nondiscretionary accruals reflect revenues. To control for varying economic circumstances, and thus mitigate the assumption, Jones developed a more advanced expectations model for total accruals:

$$TA_{it}/A_{it-1} = \alpha_i[1/A_{it-1}] + \beta_{1i}[\Delta REV_{it}/A_{it-1}] + \beta_{2i}[PPE_{it}/A_{it-1}] + \epsilon_{it} \quad (2)$$

where:

- TA_{it} = total accruals in year t for firm i ;
- ΔREV_{it} = revenues in year t less revenues in year $t - 1$ for firm i ;
- PPE_{it} = gross property, plant, and equipment in year t for firm i ;
- A_{it-1} = total assets in year $t - 1$ for firm i ;
- ϵ_{it} = error term in year t for firm i ;
- $i = 1, \dots, N$ firm index ($N = 23$);
- $t = 1, \dots, T_i$, year index for the years included in the estimation period for firm i (T_i ranges between 14 and 32 years).

Variables that represent changes in revenue and gross property, plant and equipment have been included to control for changing economic circumstances, and thus also nondiscretionary accruals. The constants α_i , β_{1i} and β_{2i} are estimates of how the independent variables are associated with the dependent ones. The error term ϵ_{it} is the measure of discretionary accruals as these are not explained by the model. Jones states (with a caveat) that revenues are an unbiased measure of firm activity, and that they thus can be used to control for economic circumstances. The specific purpose of the variable that represents gross property, plant and equipment is to control for nondiscretionary depreciation expenses. The reason as to why gross property, plant and equipment is included in the model instead of changes in that very account is that total depreciation expenses already are included in total accruals. Furthermore, to reduce heteroscedasticity, each variable in the model is scaled by total assets from the prior year.

Adopting the cross-sectional approach to the Jones-model, which entails analyzing multiple firms for one time-period simultaneously, the analysis happens in two stages. Estimates of α_i , β_{1i} and β_{2i} for the cross-section of firms must first be acquired, and this is done using an ordinary least squares regression (Jones 1991, p. 212). Once the cross-sectional coefficients are estimated, they are to be applied into the model along with firm-specific data. This analysis will yield an estimate of the firm's normal (nondiscretionary) accruals. From this, total discretionary accruals are derived as total accruals less estimated nondiscretionary accruals. Since discretionary accruals function as the proxy for earnings management, assertions regarding the occurrence of earnings management in the form of accruals manipulation can be made based on the analysis results.

2.3 Information asymmetry

Since the practice of earnings management per Healy and Wahlen's (1999) definition is aimed at misleading some external parties, it would be correct to state that incentives for managers to manage earnings only can arise in a context of asymmetric information. It is therefore useful to have some knowledge of information asymmetry when dealing with earnings management and the incentives that give rise to the practice. For this purpose, this chapter is aimed at giving an account of the concept that is information asymmetry.

Scott (2015, p. 137) uses the notion of public information as a way of illustrating the problem. Information is said to be asymmetric when one party to a business transaction has more relevant knowledge than the other party. In other words, information asymmetry deals with information advantages and the problems associated with them. One can imagine countless situations where information advantages matter. Sellers of virtually any type of goods tend to have more information about what they are selling than buyers have about what they are buying. Managers have the most information about the firm that they manage, whereas investors usually must rely on information that is publicly available when making investment decisions. In situations such as these, the party with the information advantage may seek to exploit that advantage at the other party's expense. There are two types of information asymmetry, namely 'adverse selection' and 'moral hazard' (Scott 2015). These will be dealt with sequentially in the following subchapters.

2.3.1 Adverse selection

While information asymmetry can prevent certain markets from coming into existence at all (Scott 2015, p. 138), it might be more useful to consider instances where information asymmetry, while not cancelling out markets altogether, causes markets to function in a manner that is less than ideal. Akerlof (1970), who came to be awarded the Nobel Memorial Prize in Economics for his research into markets where information is asymmetric, referenced the market for used cars when examining information asymmetry, since it is a market that is likely to be characterized by a certain degree of information asymmetry.

Within the scope of Akerlof's example, four kinds of cars are assumed to exist. These are good and bad new cars, and good and bad used cars. Used cars are perhaps most important for the purpose of the example, bad ones being referred to as 'lemons' by Akerlof. A seller in the used car market will most likely have more information than a potential buyer about the true condition of the car and the benefits that it is likely to generate in the future. This is a situation in which information is asymmetric.

The problem of adverse selection comes into being when an owner of a car decides to act opportunistically by bringing a 'lemon' to the market with hopes of getting more than its worth from a buyer who does not know better. However, buyers will be aware of such an incentive on part of sellers. This will cause buyer skepticism towards any used car, resulting in a process referred to as 'pooling' (Scott 2015, p. 138), where the average quality of used cars determines the market price for any used car. Faced with a situation where the market value of their car will be less than the real value, owners of good used cars are likely to refrain from bringing their car to the market at all. What is left is an incomplete market. Most cars on the market will be subpar in terms of quality. The selection of used cars thus becomes adverse.

2.3.2 Moral hazard

The second type of information asymmetry, moral hazard, is perhaps the more relevant of the two for the purpose of this thesis. Moral hazard can be defined as *'a type of information asymmetry whereby one or more parties to a contract can observe their actions in fulfilment of the contract but other parties cannot'* (Scott 2015, p. 23). Such situations are numerous. A good way of illustrating the problem is to consider the relationship between medical doctors and their patients. Medical professionals have a far better understanding of what it actually is that they are doing on behalf of their patients than the patients themselves. This results in a situation where it is difficult for the patient to establish whether the medical professional of their hiring is fulfilling their obligations adequately. There is, in other words, an inequality in the parties' capacities to monitor the counterparty's efforts, implying an opportunity for medical professionals to shirk their responsibilities. This illustrates the difference between adverse selection and moral hazard; the former covers the problem with inside information, whereas the latter connects to effort in the face of information advantages.

What is relevant within the scope of financial accounting is how moral hazard might affect the behavior of firm managers. In this context, moral hazard emerges because of the separation of ownership and control. Most large firms are structured this way, with managers running the firm in accordance with the owners' (shareholders) interests. Moral hazard comes into play when managers are tempted to avoid putting in the effort necessary to adequately further the owner' interests. This temptation stems from difficulties for external parties to discern whether managers in fact have shirked their responsibilities. These difficulties are indeed problematic, but the deeper problem is one of conflicting interests. This can be understood by considering a fictitious situation where managers' and shareholders' interests always are perfectly aligned. In such a setting it would not be necessary for shareholders to worry about not being able to observe managers' efforts. Managers would per definition always act in accordance with shareholders' interests, assuming that managers act in a self-serving manner. This is not how things function in the real world, and it is therefore reasonable that some effort be put towards mitigating problems stemming from conflicting interests. This line of questioning relates to agency theory, which will be the focus of the following chapter.

2.4 Agency theory

Scott (2015, p. 358) defines agency theory as '*a branch of game theory that studies the design of contracts to motivate a rational agent to act on behalf of a principal when the agent's interests would otherwise conflict with those of the principle*'. This relates to information asymmetry in the form of moral hazard as discussed in the previous section, where a couple of principal-agent relationships also were mentioned. Whereas moral hazard primarily is concerned with conflicting interests in terms of the effort (or lack thereof) put towards fulfilment of a contract by an agent, agency theory encompasses all forms of conflicts of interests (some of which are not related to effort per se) that might cause agents to act in a way that is not consistent with the interests of the principal.

There are several principal-agent relationships to be considered within the scope of financial accounting. A good example is lender-manager relationships, where the manager (agent) might choose to act in a way that benefits the firm at expense of a lender (principal). The principal-agent relationship between firm owners and managers is the most relevant for the purpose of this thesis and will therefore be explored in greater detail.

Scott (2015, p. 359-362) makes use of an example centered on managerial effort to illustrate agency problems inherent to the principal-agent relationship between firm owners (shareholders) and managers. In the example, the owner (the principal) hires the manager (the agent) for a single period (a year). The year's payoff, i.e., the cash flows that follow from activities undertaken by the manager, will be either favorable or less favorable. Some amount of these cash flows will materialize before the year's end (e.g., cash flows following from cost reduction or successful advertising), while others will take longer (R&D). The crucial point, given that the primary interest of the owner is the payoff, is that it will be impossible to determine the size of the payoff before the expiring of the current contract. Managers will in any case be paid a fixed salary at the end of the year before the full payoff is established. The following thing to consider is that the manager, once hired, has two courses of action available to them, namely working hard or shirking. If the manager chooses to work hard, the probability of a favorable payoff increases. The opposite is true should the manager choose to shirk. It is obvious that the owner will want the manager work hard since the owner's expected utility then is higher than if the manager shirks. The important question is therefore what the manager will choose to do.

Scott points out that in game theory, the simple fact that one party (the principal) wants the other party (the agent) to act in a certain way is not sufficient to make the other party (the agent) act as desired. To answer the question, one must consider the manager's utility. For the manager to choose to work hard, his expected utility for doing so must be at least as great as the utility associated with avoiding effort. Given that managers are assumed to be effort averse (i.e., they dislike effort and prefer to take it easy), the manager's utility decreases in proportion to the effort he puts in. Since the manager was offered a fixed salary, he is not likely to be willing to work hard. In a situation such as this, managers can shirk without any apparent downside. This is an example of how moral hazard manifests in practice.

Given, as demonstrated by the above example, that managers cannot be expected to put in the optimal amount of effort all other things being equal, owners are left with the question as to how moral hazard should be controlled for. As mentioned by Scott (2015), putting up with managers shirking their responsibilities or choosing not to hire any manager at all are both suboptimal alternatives. The latter is often not practically possible due to the separation of ownership and control that characterizes large firms. Luckily, there are more appropriate courses of action available.

The term 'direct monitoring' (Scott 2015, p, 363) is used to describe measures adopted by owners whereby they seek to observe how managers act. Agency problems as described in the example could be disposed of entirely, should the owner be able to perfectly observe the manager's actions in a costless manner. This would entail the possibility of designing the contract so that the manager's utility decreases if he chooses not to work hard. Such a contract is referred to as a 'first-best contract' (Scott 2015, p. 363), whereby the owner receives the highest possible utility, and the manager receives his reservation utility (i.e., the minimum utility that a manager must receive for them to accept the contract). It is however virtually impossible for remote owners to adequately discern whether managers in fact work hard, rendering the first-best contract unattainable in many situations. Information asymmetry is likely to persist however rigorous the monitoring, hence the moral hazard.

The owner might choose ‘indirect monitoring’ (Scott 2015, p. 363) instead, which entails ascribing certain outcomes to either managerial effort or a lack thereof. For this to be possible, a low payoff despite managerial effort would have to be distinguishable from a low payoff due to a lack of managerial effort. Such a situation is a case of moving support, as opposed to fixed support, where the low payoff is at the same level regardless of effort. The low payoff would be assumed to be even lower if effort is lacking. The contract could then be structured such, that the manager’s salary decreases significantly if the low payoff associated with shirking materializes. If this holds true, a first-best contract is attained. It is however important to note that indirect monitoring of this sort does not work in cases of fixed support, which is unfortunate because many contracting situations are characterized by fixed support. This method is thus rendered inadequate as well.

Since monitoring of one or another kind seems to be less than ideal for the purpose of mitigating agency problems, it might be useful to consider different approaches. In the absence of possibilities to attain first-best contracts, allowing the manager to benefit from firm performance seems to be a decent alternative. In practice, this is often accomplished by basing the manager’s compensation on some performance measure. Such a solution is necessary given that managers must be paid before the full payoff is determined. A commonly used performance measure is net income, since it is likely to contain some information relating to manager performance and effort.

Understanding exactly how to tie compensation to net income is of little importance for the purpose of this thesis. The crucial point is that managers are deeply concerned with achieving a good net income when their compensation depends on it. While this might seem to negate moral hazard, other problems will arise. Earnings management comes into play when there are incentives for managers to reach certain earnings thresholds. Such incentives would seem to align managers’ and shareholders’ interests, were it not for opportunities to manage earnings. One of the circumstances that give rise to such incentives is that a manager’s time horizon differs from that of the average shareholder. If they imagine leaving the firm in a few years, the manager might choose to boost earnings in the short run at the expense of earnings in the future. This will be disadvantageous to shareholders interested in long-term performance, but managers that have earned large bonuses and then ‘jumped ship’ before the adverse effects of their earnings management start to set in will not have a reason to be concerned.

The purpose of this chapter, as well as the previous one, was to explore the conditions under which incentives to engage in earnings management can come into existence. The discussion regarding these conditions can be boiled down to two major factors, namely information asymmetry and conflicts of interest. Earnings management incentives cannot per definition arise in the absence of any one of these. The following chapter will be devoted to practical examination of different types of earnings management incentives.

2.5 Earnings management incentives

Judging by the existing research and literature, reliably identifying and measuring earnings management is no easy task. One of the main reasons as to why it is so difficult is that to determine whether earnings management in fact has taken place, one first must derive an estimate of ‘unmanaged’ earnings (Healy and Wahlen 1999), which basically is what Jones (1991) developed her model for. A large portion of the earnings management research carried out in the past few decades revolves around estimating earnings management in relation to some separate circumstance, be it earnings expectations, management compensation contracts or some specific piece of legislation. It is easier to detect earnings management if one views it as tied to a certain context. It also makes for a far more interesting analysis than simply examining earnings management on its own, as the practice does not exist in a vacuum.

Starting out by identifying conditions under which incentives to engage in earnings management can be expected to be strong is one way in which researchers have tried to overcome the difficulties associated with documenting earnings management. Having decided what conditions and what particular incentives to focus on, researchers will test whether some proxy for earnings management (e.g., discretionary accruals) is associated with these incentives. In other words, identifying managers’ incentives to manage earnings is of great importance when researching earnings management. Healy and Wahlen (1999) divide earnings management incentives into three subgroups, namely contracting, regulatory, and capital market motivations. Each of these groups of incentives will be explored in greater detail in the next few subchapters.

2.5.1 Incentives associated with contracting

Contracting motivations arise from the fact that contracts between the firm and its stakeholders often are overseen and governed using accounting numbers. The ever-present agency problem is perhaps most obvious in the case of management compensation contracts, which often are tied to some measure of earnings. In accordance with the purpose of corporate governance, the goal is that management compensation contracts be laid out in a way that managers' interests are as closely aligned to those of external stakeholders (shareholders in particular) as possible. Agency problems can be mitigated this way but given that asymmetric information allows for opportunism on part of the managers, they cannot be disposed of entirely. The practice of tying compensation contracts to earnings rests on the notion that managers should be rewarded to the extent that shareholders are rewarded, but research seems to suggest that the premise is flawed.

Among the researchers who have taken an interest in this particular earnings management incentive are Holthausen, Larcker and Sloan, whose 1995 study was aimed at determining whether managers utilize earnings management to maximize the present value of payments according to their bonus plans. The evidence that they acquired supports the idea that downward management of earnings is likely to occur when bonuses are at their maximum. Given the zero-sum relation between discretionary accruals in the present and in the future, this is what one would expect to see happen. Managers gain no additional bonus-related benefit from increasing earnings once bonuses are maxed out. This implies an incentive for managers to manage earnings downward and thus "save up" accruals so as to prepare for future earnings that, absent income-increasing discretionary accruals, aren't sufficient for maxing out bonuses.

An incentive of similar sort can be seen to arise when earnings are likely to fall short of the minimum required for any bonus at all to be received. In this scenario, it is expected that managers might choose to engage in a 'big bath' and manage earnings even further downward. Managers' purpose for doing so would be to set themselves up with more leeway once earnings are more favorable in terms of maximizing bonuses. Unlike Healy (1985), who presented evidence suggesting that this holds true, Holthausen, Larcker and Sloan (1995) found no evidence of downward manipulation in cases where earnings fall short of minimum requirements of bonuses.

In contrast to Healy (1985) and Holthausen et al. (1995), whose samples consisted of substantial amounts of firm-year observations (239 in case of the former and 443 in case of the latter) from a variety of firms, Guidry, Leone, and Rock (1999) adopted the approach of examining the business units of a single conglomerate. In their view, this would help to mitigate the problems that arise as a result of using aggregated financial data, in which case discretionary accruals attributable to lower-level managers might distort the results. They also highlight the fact that business-unit managers' bonuses purely rely on the earnings of the business unit as a strength of this approach. The evidence acquired by Guidry et al. (1999) is consistent with the findings of Healy (1985) and Holthausen et al. (1995) in that it suggests that business-unit managers engage in earnings management to maximize their bonuses.

While there seems to be a relatively clear consensus in the literature on whether managers strive to maximize their bonuses by way of earnings management, it might be worth noting that there are other types of executive compensation contracts, and that these also might incentivize managing earnings. A good example would be stock option compensation programs, where the incentive would be for managers to manage earnings downward prior to the awarding of options in an effort to suppress share prices temporarily. This will in turn lower the exercise price of the options that managers receive in accordance with their compensation contracts, allowing them to buy shares at a price that is more favorable than if earnings had not been suppressed.

Baker, Collins, and Reitenga (2003) took an interest in this framing of the problem and sought to determine whether incentives of this sort in fact give rise to the use of earnings management. Their findings were consistent with prior research in that the evidence they acquired supports the idea that income-decreasing discretionary accruals are prevalent in periods prior to the awarding of options. Additionally, their findings suggest a stronger association when an opportunity to publicly announce earnings in advance of the option award date exists, which is what one would expect given that suppressing share prices is the goal. Baker et al. (2003) state that their overall findings are in line with prior research in that stock option compensation programs incentivizes managers to act opportunistically regarding the timing of both bad and good news. One would expect that managers are more willing to announce good news once they have been awarded options at a relatively low exercise price, so as to increase the profits of selling shares.

The literature on earnings management in relation to management compensation contracts is extensive, but they aren't however the only form of contracts that might entail incentives to manage earnings. Such incentives may also arise in the case of lending contracts. Such contracts tend to be designed with the purpose of protecting creditors, and they usually include certain agreements about the type of business activities that can or cannot be carried out by the debtor. Agreements of this sort are often referred to as (debt) covenants, and it is common that the amount of additional debt that the debtor can take on after signing the lending contract is restricted. This is a good example of how creditors protect their interests; the purpose is to minimize the risk of the debtor failing to meet their obligations toward the creditor (i.e., defaulting on the debt).

One can see how the incentive to manage earnings emerges when considering the fact that lending contracts tend to place requirements on debtors' debt-to-equity ratios. In anticipation of a covenant violation, managers might choose to manage earnings upward in an effort to maintain a debt-to-equity ratio that is satisfactory in terms of the lending agreement.

A study done by DeFond and Jiambalvo in 1994 relates to this problem. They sought to examine whether firms that violate debt covenants engage in earnings management. The expectation was that earnings management as measured by discretionary accruals would take place within these firms during the year prior to the violation and the year during which the violation took place. They found that this indeed was the case; evidence of earnings management was found both in the year prior to- and the year of the violation. These results can be interpreted as evidence of earnings management in anticipation of covenant violations.

It is worth noting that covenants do not exclusively come in the form of debt-to-equity ratio requirements. Creditors may also place restrictions on the debtor regarding what business they can diversify into, mergers and acquisitions, and dividend ratios to name a few. In their 1994 study, DeAngelo L, DeAngelo H and Skinner examined whether accounting practices or accruals tend to change in the face of approaching dividend constraints. That did not seem to be the case; reducing dividends seemed to be the preferred alternative in the face of financial difficulty.

2.5.2 Incentives associated with regulation

As for the regulatory motives, Healy and Wahlen (1999) state that research primarily has been focused on two forms of regulation, namely industry-specific, and anti-trust regulation, the latter of which was subject to research in the above-discussed 1991 study done by Jones. The purpose of Jones' study was to determine whether managers attempt to suppress earnings during import relief investigations. Such investigations are aimed at determining whether there is a need for protecting domestic manufacturers from foreign competition using tools such as tariff increases, tax relief, loans with favorable interest rates, or other types of subsidies. Given that factors such as industry profitability are considered when determining the need for import relief, it can be expected that managers will want to manage earnings downward to obtain the benefits associated with import relief. Using the model that she developed, Jones found that, in accordance with the hypothesis, income-decreasing discretionary accruals are more prevalent during import relief investigations. This would suggest that managers in fact do take regulatory factors of this sort into account when it comes to accrual choices.

Similar research was carried out by Godsell, Welker, and Zhang in 2017, who took an interest in so-called antidumping investigations in Europe. These investigations are comparable to the import relief investigations relevant to Jones' (1991) study in that the purpose of them is to determine whether a non-EU company is dumping (i.e., exporting to the EU at a price '*less than a comparable price for a like product, in the ordinary course of trade, as established for the exporting country*') their product in the EU market (Regulation [EU] 2016/1036, article 1). The rationale behind resorting to earnings management in the case of antidumping investigations is the same as with import relief investigations; managers will want to manage earnings downward if doing so is likely to lead to better outcomes in terms of tariffs imposed on the producer or country in question. In line with what is to be expected given the circumstances, Godsell et al. (2017) find evidence of increasing earnings management when the magnitude of tariffs directly relates to accounting data. They also find that earnings management seems to decrease when the number of firms that issue complaints increase, implying a free-rider problem. Overall, the evidence acquired by Godsell et al. (2017) is consistent with Jones (1991) in that both studies support the idea that considerations relating to anti-trust regulation bear some significance for the occurrence of earnings management.

As for incentives that arise within the context of industry-specific regulation, Healy and Wahlen (1999) point out banking and insurance as examples of industries in which accounting data is used for purposes of external monitoring. Banks are often subject to requirements concerning capital adequacy, and incentives to manage earnings are likely to arise in situations when there is uncertainty as to whether the requirements will be met. In this context, rather than facing the inconvenience and costs associated with violating capital requirements, managers may choose to temporarily boost the numbers.

A substantial amount of research has been carried out on this topic. Much of the evidence suggests that banks do manipulate the reported numbers when approaching minimum capital requirements. Overstating loan loss provisions and understating loan write-offs are some of the tactics used by banks to avoid violating requirements.

Among the researchers who have taken an interest in how bank managers may act opportunistically are Beatty, Chamberlain, and Magliolo, whose 1995 study was centered on determining how managers might use their accounting discretion to achieve goals in relation to capital, taxes, and earnings. Using a sample of 638 bank-year observations from 148 banks over a period of 5 years, Beatty et al. (1995) find evidence consistent with managers using loan charge-offs, loan loss provisions, and security issues as means of managing capital ratios, which is in line with the earlier findings of Moyer (1990) among others. Overall, their findings can be said to support the idea that bank managers are likely to exercise their accrual discretion to avoid violating capital requirements.

Cheng, Warfield & Ye (2011) carried out research with the explicit purpose of examining how equity incentives originating in management compensation contracts relate to earnings management in the context of banking. While their study is primarily focused on contracting incentives as discussed previously, Cheng et al. (2011) present evidence that, at least in part, is relevant in terms of regulatory incentives as well. Their findings suggest that bank managers are likely to manage earnings in the presence of contracting incentives, provided that capital ratios are approaching the minimum requirements. It might be appropriate to question the relevance of contracting incentives in the context of banking, insofar as they only are acted upon in the presence of regulatory incentives. Even so, it can be useful to see how incentives sometimes are ambiguous, and that they may arise in relation to one another.

2.5.3 Incentives associated with capital markets

It is a quite well documented fact that investors and analysts largely base their stock valuations on accounting information. The idea that accounting earnings numbers actually are useful can justifiably be attributed to Ball and Brown, whose 1968 study came to be viewed as one of the most influential studies in accounting research to date. The study was aimed at examining accounting earnings as stated in annual reports in terms of content and timeliness. They found that reported earnings capture half or more of the information relevant to the year in question, which suggests that the information content is substantial. As for timeliness, the acquired evidence suggested that most (around 90%) of the information content of reported earnings already is captured by share prices by the time of the earnings announcement.

This can be viewed as earnings announcements happening ‘too late’; investors seem to have utilized other sources of information in their valuation ahead of the earnings announcement. Such sources might include quarterly reports, analyst earnings forecasts, market notices etc. This would seem to support the idea that analyst estimates really do matter for the development of share prices. If investors form their expectation partly using earnings forecasts, it would be safe to assume that realized earnings that deviate from forecasted earnings might entail market reactions of some kind.

Given the relation between accounting information and share prices, there is reason to suspect that incentives for managers to manage earnings in an effort to sway share prices in the short term might arise. Instances where capital market incentives are likely to be strong, as pointed out by Healy and Wahlen (1999), include periods leading up to capital market transactions. A good example of such a capital market transaction is an initial public offering. Since high earnings result in higher stock prices, managers will want earnings to be high in advance of the IPO. This way, the firm will acquire more cash for its equity, as compared to a situation where earnings are relatively low.

Due to the significant difference in information availability between private and public firms, information asymmetry is likely to be even more widespread than usual in the case of firms that are going public for the first time. This might further fuel managers’ incentives to manage earnings in the period leading up to an IPO.

Teoh, Wong, and Rao have carried out research on this topic and their 1998 study was aimed at determining whether the incentives associated with IPOs actually give rise to opportunistic behavior on part of managers. Focusing on earnings and accruals in the year of the IPO as well as subsequent years, they hypothesized that accruals would be unusually high in the year of the IPO, and that earnings would be low in the years after. This is what is to be expected in a circumstance where managers act opportunistically, according to Teoh et al. (1998). The evidence that they acquired supports their hypothesis of opportunism, as measured by income-increasing abnormal accruals. The situation can be viewed as managers ‘borrowing’ income from the future in pursuit of a higher offering price; earnings and abnormal accruals tend to be high in the year of the IPO, while the post-IPO years are characterized by decreasing earnings and income-decreasing abnormal accruals. As mentioned in an earlier chapter, Teoh et al. (1998) find that income-increasing depreciation policies and allowing for uncollectible receivables are some of the tactics used by managers in this setting.

Another example of a capital market transaction that is likely to incentivize earnings management is a management buyout. The term signifies a situation in which management is pursuing ownership of the firm, i.e., seeking to buy some substantial portion of the shares. It is likely that managers will want to manage earnings downward in advance of announcing a management buyout to be able to acquire shares at a more favorable price. Perry and Williams (1994) conducted research with this problem in mind. Examining a total of 175 management buyouts during the years 1981-1988, they found evidence of income-decreasing discretionary accruals prior to public announcement of the management buyout, suggesting that earnings management incentives are acted upon in the case of transactions of this sort.

Capital market transactions aside, incentives to manage earnings may also arise due to considerations relating to investors’ and analysts’ expectations, as briefly touched upon in the beginning of this subchapter. Since managers are concerned with maintaining a good share price, they will want to report earnings that investors are satisfied with, i.e., earnings that align with investors’ expectations. Incentives to manage earnings are likely to arise in situations where earnings are expected to fall short of what investors and analysts expect. These incentives are essential for the purpose of this thesis, and studies related to the expectations-aspect of capital market incentives are numerous.

Research focused on the significance of accounting earnings with regard to the capital market has often been aimed at determining what the market reactions might be to earnings of some specific characteristic. Relevant earnings characteristics are whether earnings are positive or negative, higher or lower than the last period etc. Another recurring question is what the consequences are of reporting earnings that differ from analyst estimates, which is an important line of questioning in the context of this thesis.

Barth, Elliot, and Finn (1999) conducted a study with the purpose of determining whether the market rewards firms that continuously increase their earnings. This was proven to be the case; the P/E-ratios of firms that demonstrate patterns of increasing earnings were consistently higher than those of firms that don't, suggesting that the market values firms that consistently increase earnings at a premium. In contrast, the same study also yielded evidence consistent with significantly negative market reactions when the pattern is broken. These results would suggest that investors compare earnings between periods and factor these comparisons into their decisions, which implicates incentives for managers to manage earnings upward when unmanaged earnings are likely to undercut those of the prior period.

Skinner and Sloan (2002) took an interest in determining how growth stocks are affected by earnings that negatively differ from analysts' consensus forecasts, i.e., negative earnings surprises. What they found was that prices of growth stocks, i.e., shares in a company whose earnings are expected to increase at a higher rate than the market average, are extremely sensitive to negative earnings surprises. In practice, this means that the prices of growth stocks fall drastically once earnings that negatively differ from market expectations are reported. This is consistent with the notion that achieving expectations matters for share price development, which also implies earnings management incentives. Similarly to Skinner and Sloan (2002), Bartov, Givoly and Hayn (2002) did a study specifically for the purpose of determining whether firms that achieve analyst earnings forecasts are rewarded by the market. Examining 'a sample of nearly 130,000 quarterly earnings forecasts made between the years 1983 and 1997 and covering approximately 65,000 firm quarters' (Bartov et al. 2002, p. 175), they found, firstly, that meeting or beating analyst estimates has become more commonplace over the years.

Secondly, their findings suggest that firms that meet or beat quarterly earnings estimates are rewarded with more favorable rates of return as compared to firms whose quarterly earnings fall short of estimates, which is what they expected to find. Interestingly, the association between achieving expectations and positive market reactions persists even when there is a high likelihood that upward earnings management or downward expectations management has taken place, although the market rewards are a bit smaller in these cases.

Assuming, as suggested by this piece of evidence, that investors accept some amount of earnings management supports the claim that incentives to manage earnings to meet or beat expectations are likely to be strong. As for the practice of expectations management, which means communicating information that causes analysts to revise their estimates downward, it would seem that investors react differently to negative earnings surprises and bad news ahead of the earnings announcement. These facts are of interest with regard to rationality on part of investors, since it is not what one would expect under the assumption that investors act rationally. Bartov et al. (2002) do however find evidence suggesting that whether firms undercut, meet, or beat estimates actually does say something about future performance, even in cases where earnings or expectations have been managed. Judging from this, it might be appropriate to say that rewarding firms that meet or beat estimates and punishing firms that fail to do so is justified regardless of how the firms in the first category went about meeting the market's expectations.

Having raised the topic of investor rationality, which is directly connected to the assumption of efficient capital markets, it is appropriate that the efficient markets hypothesis be discussed at least at some length. As should become clear over the course of the following chapter, considerations regarding efficient capital markets are highly relevant for the prevalence of earnings management.

2.6 Efficient markets

The Efficient Market Hypothesis (EMH) is a theory developed by Fama in 1970. Under the assumption of efficient capital markets, share prices reflect all available information relevant to the issuer. There are some potential conflicts between the assertion that capital markets are efficient and the occurrence of earnings management for reasons relating to capital markets. The situation observed by Bartov et al. (2002), where the market seems to reward firms that meet or beat analyst estimates regardless of how it was achieved, illustrates one such problem. Why should firms that manipulate earnings or dampen expectations be rewarded by rational investors? To elaborate on the problem at hand, this chapter will serve as a review of the efficient market hypothesis.

Fama's 1970 study, entitled 'Efficient Capital Markets: A Review of Theory and Empirical Work', was aimed at evaluating the claim that capital markets function in an efficient manner. He went about doing this by examining theory as well as empirical research relevant to the topic. As for the empirical work, research was divided into three categories depending on whether the purpose was to test for weak, semi-strong, or strong form efficiency.

The purpose of research relating to weak form efficiency is to determine whether the random walk theory holds true, which would mean that future share prices are random and thus not dependent on past events. Asserting that the market is efficient in the weak form is justified in light of evidence pointing to such a situation. Technical analysis is not useful under weak form efficiency. Fundamental analysis, on the other hand, could potentially serve the purpose of identifying stocks that are not adequately valued. This is a controversial claim however, and some would suggest that the market cannot be outperformed, even under weak form efficiency.

If markets were to be characterized by a semi-strong form efficiency, all publicly available information would be captured by share prices at any given time. This implies that, under semi-strong form efficiency, it would be impossible to achieve abnormal gains without the use of insider information. The last of the different forms of market efficiency, i.e., strong form efficiency, negates the usefulness of insider information as well.

Under strong form efficiency, share prices reflect all relevant information at any given time, insider information included. In this setting, no amount of additional information can provide an edge in achieving superior gains. This means that even fundamental analysis would be rendered completely useless, given strong form efficiency. Worth noting is that earnings management also is useless in such a setting.

Summarizing the relevant research, Fama noted that weak form tests are the most common out of the three. He found that there seems to be some relationship between present and past events (i.e., day-to-day price changes), implying that one could design trading rules to achieve abnormal returns. Such a filter rule would entail buying shares once prices increase by a certain amount and selling once prices decrease by a certain amount. The notion that such a strategy would generate profits runs counter to the idea that markets are efficient in the weak form, but Fama is of the opinion that evidence is not sufficient for the hypothesis to be rejected altogether. Even if adopting some filter rule as a trading strategy might seem to generate more favorable rates of return than simply buying and holding shares, transactions would have to take place so frequently that any profits would be negated by transaction costs.

As for tests relating to semi-strong form efficiency, Fama states that they generally support the idea that markets function efficiently. He points to the findings of Ball and Brown (1968) among others when reviewing evidence in the support of semi-strong form efficient markets. As discussed in the previous chapter, Ball and Brown found that most of the information content of reported earnings already is captured by share prices prior to the earnings announcements, which is what is to be expected under semi-strong form efficiency.

Regarding strong form market efficiency, Fama is of the opinion that the model perhaps best is used a framework against which to evaluate instances where deviations from market efficiency seem to occur. It might be less than reasonable to assume that prices reflect all relevant information at any given time, especially when considering situations that certain types of specialists and insiders might find themselves in. Given the fact, as pointed out by Fama, that specialists and insiders have been proven to be able to generate abnormal returns, one can conclude that strong form market efficiency does not hold true. If markets were strongly efficient insider trading would not be an issue.

In his concluding remarks, Fama (1970, p. 416) states that *'the evidence in support of the efficient markets model is extensive, and ... contradictory evidence is sparse'*. Judging from this statement, it would be reasonable to say that investors are best served by a view of the market as efficient. Some sort of semi strong form efficiency is probably closest to the reality of how capital markets function. This interpretation allows for the possibility that prices do not always reflect all existing relevant information.

The problem of earnings management enters the picture when considering market efficiency in its strong form. In a circumstance where prices always reflect all relevant information, there would be no incentives to manage earnings. Such incentives can only arise in situations where information is asymmetric between managers and investors, and where there is some potential benefit to be gained by misleading investors. Such situations can per definition not arise under strong form efficiency, where everybody always knows everything that is to be known and acts accordingly. This illustrates Fama's point about strong form efficiency serving better as a frame of reference than as a model of how the world is. The occurrence of earnings management can arguably be viewed as a deviation from market efficiency.

Another set of problems arises when assuming that investors are aware of earnings management taking place, which is likely to be the case given the extensive literature on the topic. What does it mean for investors to reward firms that meet or beat analyst estimates in cases where, as documented by Skinner and Sloan (2002) among others, earnings are likely to have been managed for that particular purpose? The aforementioned study did yield some evidence in support of the idea that rewarding such firms is justified, based on their future performance. However, this circumstance does raise some questions regarding how investors view earnings management. It could be the case that they view a small negative earnings surprise as an indicator that the firm in question is in such bad shape that it cannot even muster the accruals manipulation necessary to meet or beat the estimates. These are some of the reasons why it is interesting to consider earnings management through a lens of market efficiency.

2.7 Earnings forecasting

Due to the stated purpose of this thesis being to examine whether earnings management is used to meet or beat earnings forecasts, some explanation of the practice of forecasting earnings is warranted. This chapter will serve as an examination of earnings forecasting and matters related to it. An important question that will be brought up towards the end of the chapter is why earnings forecasts are consequential for the forming of market expectations.

The practice of forecasting earnings takes place within a context of corporate valuation, where analysts work at determining what firms actually are worth (fair value). Valuing a firm entails a large amount of work beyond assessing revenue generating potentials for the firm in question, which is to say that focusing on revenues to the exclusion of all else is not sufficient when attempting to form realistic expectations about future firm performance. Incompetent managers or unsustainable capital structures can stifle firms despite great profit potentials, which should be viewed as further support for the statement that earnings are not independent from the firm as a whole.

In a narrow sense, firm value is the present value of all future returns that the firm will generate. Based on this, it is justified to regard earnings forecasting as synonymous to corporate valuation. Two major approaches to corporate valuation are often cited. These are technical analysis and fundamental analysis (e.g., Nilsson, Isaksson and Martikainen 2002, p. 20). To provide for better understanding of how firms are valued, these two approaches will be reviewed in the following subchapters.

2.7.1 Technical analysis

The idea upon which technical analysis is founded is that past price changes of a particular share are indicative of what is likely to occur in the future. Using technical analysis entails examining patterns of price movements and constructing various trading strategies based on historical data (Nilsson et al. 2002, p 20). The filter rule mentioned in the previous chapter is an example of a trading strategy that would classify as technical analysis. Essentially, technical analysis can be boiled down to identifying and exploiting market trends.

In terms of market efficiency, proponents of technical analysis claim that share prices inherently reflect all available information. Efforts aimed at detecting over- or undervalued stocks are by definition pointless under this assumption. According to technical analysts, this does not negate the possibility that there might be some potential utility in keeping tabs on public sentiments and signs that can be interpreted as indicative of certain trends developing. While it challenges the idea that investors act rationally, one can see how there might be a grain of truth to the argument that emotional responses matter for share price movements. One does not have to glance that far back into the history of capital markets to find instances where investor rationality is rather difficult to defend, the dot-com bubble being a prime example of such an instance. Ultimately, it all comes down to how people choose to act in a given situation. It is therefore not inconceivable that the human factor could be exploited for the purpose of generating abnormal gains.

Stating that trading strategies such as filter rules are useful contradicts the previously mentioned random walk theory, according to which there is no relation between past and future events when it comes to share prices. There is however plenty of evidence in support of weak form efficiency, which undermines the usefulness of technical analysis. Because of this, technical analysis is generally viewed as a less than ideal tool for the purpose of stock valuation, although there is some controversy regarding the usefulness of the approach.

2.7.2 Fundamental analysis

The purpose of the second approach to corporate valuation, referred to as fundamental analysis, is to estimate the intrinsic value of a company (Nilsson et al. 2002, p. 20). In this context, intrinsic value (or fundamental value) signifies an estimate of firm value that is ‘truer’ than the market value of the firm. Note that this implies potential inconsistencies between how firms are valued by markets and actual values of firms, which runs counter to semi-strong and strong form market efficiency. In a setting where fundamental analysis is useful for discovering under- or overvalued stocks, the market does not always reflect all available information in a timely manner.

Performing fundamental analysis of a firm requires a multitude of factors, such as macroeconomic circumstances, the competitive landscape, financial risk etc. to be taken into account (Nilsson et al. 2002, p. 75). Practitioners often carry out their strategic analysis of the firm ‘from the top down’, which is to say that they begin by evaluating the overall economy. Interest rates, exchange rates and inflation are factors relevant to this stage of the analysis. The rationale behind considering macroeconomic factors is that no firm is independent of these, especially in the global economy of today.

The following stage in the analysis involves examining the industry in which the firm operates (Nilsson et al. 2002, p. 77). Industry-wide trends and changes are likely to impact individual firms. This is evident in heavily regulated industries such as pharmaceuticals and banking, where a single piece of legislation can cause future earnings prospects to drastically change. Public opinion is another important factor to consider when it comes to industry characteristics, since it essentially can make or break an industry. Industries towards which there is widespread public dislike (fur farming might serve as a domestic example) tend to decline over time.

The last stage of the analysis entails evaluating firm-specific characteristics such as financial ratios, capital structure, dividend policy and competitive advantages among a host of other factors. The goal is to evaluate the firm’s profit potential and ability to compete given the global and industry-wide circumstances that it faces. What the analysis should result in are forecasted financial statements (pro-forma financial statements) for however many periods the analyst chooses that serve the purpose of illustrating how the financial situation of the firm is expected to evolve over time (Nilsson et al. 2002, p. 23). The analyst might for example consider a period of five years for which the analysis is done in great detail, after which growth rates are assumed to be constant.

Intrinsic firm value is determined by calculating the present value of expected future gains (often some measure of cash flows, in some cases simply dividends or net income), e.g., using the Dividend Discount Model (Gordon and Shapiro 1956). Having done all this, one should be able to identify stocks that are likely to be incorrectly valued by the market and benefit from that by, for example, taking a short position on a stock that appears to be overvalued. Conversely, undervalued stocks should be bought in anticipation of an increase in value.

2.7.3 Consensus estimates

While it is next to impossible to reliably determine exactly what the market's earnings expectations are, one can acquire a rough estimate by identifying factors that are likely to be significant for the forming of those expectations. These include earnings from previous periods and analyst earnings estimates (Scott 2015, p. 455), as well as market notices and other forms of communication between the firm and its stakeholders. Worth noting is that these factors affect one another. The relationship between market notices and analyst forecasts is a prime example of interplay between factors relevant to market expectations, as analysts will revise their forecasts in light of new information (e.g., profit warnings).

Analysts' opinions are by no means guaranteed to be consistent. It is likely that stark disagreements will occur among analysts, resulting in some amount of forecast dispersion. Because of this, investors will use consensus forecasts when making investment decisions. The term consensus forecast (synonymous to consensus earnings, consensus estimates) is here used to describe the average of all individual forecasts made regarding a certain stock. Thomson Reuters, S&P Global Market Intelligence, and FactSet are some of the companies that aggregate analyst estimates and publish consensus estimates often expressed in terms of earnings per share (EPS). A firm whose reported EPS exceed forecasted EPS can be said to have 'made their earnings' or 'beaten the street'.

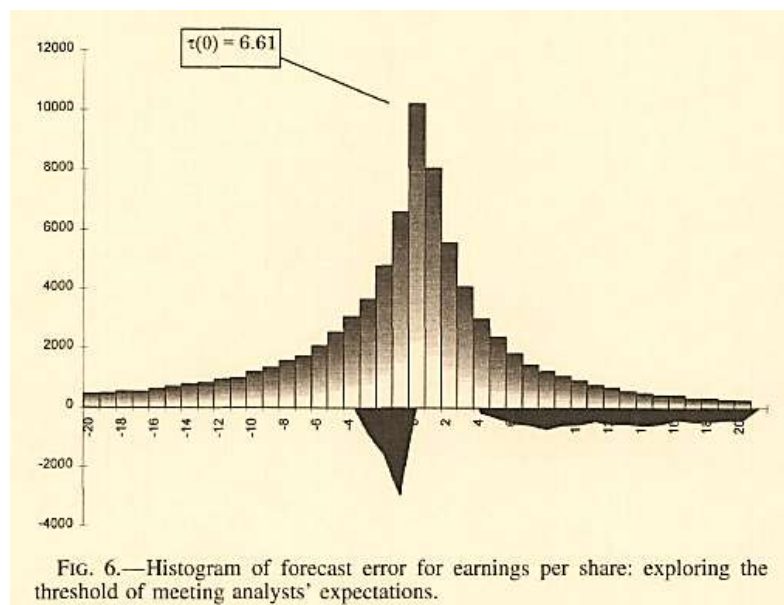
To determine whether firms manage earnings for the purpose of meeting market expectations, one must decide on a suitable estimate of those expectations. This would be a simple task, should one be able to derive an estimate that truly and fully encapsulates all market expectations. Unfortunately, no such estimate is available, leaving one with a number of suboptimal alternatives. Taking consensus earnings estimates into consideration might be one of the better ways of gauging market expectations. Since the public seems to take expert opinions into account, consensus estimates can justifiably be viewed as indicative of market expectations. For the remainder of this thesis, these will be used interchangeably.

2.8 Researching earnings management

Since the question as to whether earnings management is used to meet or beat market expectations has engaged researchers over the last few decades, there are several studies from which one can draw inspiration when faced with the problem of research design. These include DeGeorge, Patel, and Zeckhauser (1999), Payne and Robb (2000), and Burgstahler and Eames (2006). To provide a better understanding of the research design of this thesis and to motivate method choices, some of the methods used for similar purposes in the past will be described in this chapter. Consequently, chapter 2.8.1 will serve as a review of the analyses carried out by the above-mentioned researchers while chapter 2.8.2 will be used to briefly describe the approach chosen for this study.

2.8.1 Methods used in prior research

DeGeorge et al. (1999) chose a rather straightforward approach for their research into earnings management in relation to three earnings thresholds, one of which was consensus analyst estimates. Their research involved outlining the frequency of earnings surprises (instances where reported EPS differ from forecasted EPS) with the assumption that small positive surprises in significant excess of small negative surprises indicate that earnings management has occurred. Using a large sample of firm-quarter observations ranging from 1974 to 1996, DeGeorge et al. plotted the following distribution:



DeGeorge, Patel & Zeckhauser (1999), p. 20

As is evident upon visual examination of the histogram, observations where reported earnings align with the consensus forecast were most frequent. Furthermore, small positive earnings surprises were more numerous than small negative earnings surprises, as shown by the larger mass to the right of zero relative to that of the left. This is consistent with managers viewing meeting or beating the consensus forecast as an important goal, and the authors interpreted these findings as evidence of earnings management for the purpose of meeting or beating analysts' forecasts. Worth noting is that DeGeorge et al. (1999) did not include a proxy for earnings management (such as discretionary accruals) in their analysis. Because of this, one might justifiably state that their evidence leaves something to be desired in terms of how compelling it is.

Payne and Robb (2000) went a few steps further in their study and made examining a proxy explicitly designed for detecting earnings management part of it. In researching whether 'ex ante earnings expectations' bear any significance for the occurrence of earnings management, the authors hypothesized that upward earnings management will take place when premanaged earnings (earnings less discretionary accruals) fall short of analyst forecasts. Having excluded financial institutions and extreme observations, as well as making a few other improvements to the data, the authors were left with a final sample of 13 532 firm-year observations. A cross-sectional variation of the Jones (1991) model was used to estimate discretionary accruals. As explained in chapter 2, the Jones model yields an estimate of normal accruals. Subtracting normal accruals from total (actual) accruals leaves the discretionary portion of accruals, i.e., the amount by which earnings have been managed.

Observations where premanaged earnings were below analysts' forecasts (BELOW-firms) were more numerous (7 704) than observations where the opposite (ABOVE-firms) was the case (5 828). As for the analysis of discretionary accruals based on how premanaged earnings compare to analysts' forecasts (univariate analysis, results shown in the table below), discretionary accruals were shown to be significantly positive in the BELOW-group and significantly negative in the ABOVE-group. This consistent with upward earnings management when earnings are likely to fall short of analysts' forecasts, which is what Payne and Robb (2000) hypothesized.

TABLE 2

**Analysis of Discretionary Accruals
Based on the Level of Premanaged
Earnings Compared to
Analysts' Forecasts**

	Mean Discretionary Accrual ¹	
	n = 13,532	
BELOW ²	0.033*	
ABOVE	-0.047*	
Quartiles³		
BELOW		
Q1	0.039*	
Q2	0.035*	
Q3	0.035*	
Q4	0.023*	
ABOVE		
Q1	-0.040*	
Q2	-0.043*	
Q3	-0.044*	
Q4	-0.060*	
ALL		
Q1	0.004*	
Q2	0.001	
Q3	0	
Q4	-0.011*	

* Significantly different from zero at 0.01.
¹ Represents the amount of discretionary accruals utilized by management [see eq. (2)].
² BELOW (ABOVE) indicates premanaged earnings are below (above) analysts' forecasts. ALL represented the entire sample of ABOVE and BELOW firms.
³ Q1 (Q4) represents the least (greatest) amount of analysts' forecast dispersion.

 Cell values are not statistically different using a family-wise confidence coefficient of 95% applying the Tukey procedure.

Payne & Robb (2000), p. 379

As for the apparent downward management of earnings that exceed analysts' forecasts, there are two implications. In a broad sense, it can be interpreted as further evidence of managerial effort to align earnings with expected earnings. More specifically, it supports the idea that managers 'save up' accruals when possible. Due to there being a zero-sum relationship between discretionary accruals in the present and in the future, negative discretionary accruals in the present implies possibilities to deploy positive discretionary accruals of equal absolute value in the future.

To test the robustness of the results yielded by their univariate analysis, Payne and Robb (2000) performed a multivariate analysis aimed at controlling for other earnings management incentives. Variables signifying leverage, cash flow from operations, and auditor classification were some of the control variables included in the analysis. What this means in practice is that discretionary accruals as estimated using the cross-sectional Jones model are expressed as a function of several other variables.

TABLE 3

Earnings Management Activity: OLS Regressions of Discretionary Accruals on Levels of Premanaged Accrual Earnings, Analysts' Forecast Dispersion, and Control Variables

Predicted		
Variable	Sign	Coefficient
Intercept	?	-0.012***
DISP _{it}	?	-0.017***
PMBAF _{it}	+	0.059***
PMBAF _{it} * DISP _{it}	-	0.002
CASH_WGT _{it}	-	-0.135***
LEVERAGE _{it}	-	-0.035***
LOGTA _{it}	+	0.003***
BIGSIX _{it}	-	-0.007**
PY_DA _{it}	-	0.003
NI_UP _{it}	-	-0.013***
<i>n</i>		13,532
<i>F</i> value		925.41
Pr ₂ > <i>F</i>		0.0001
<i>R</i>		0.381

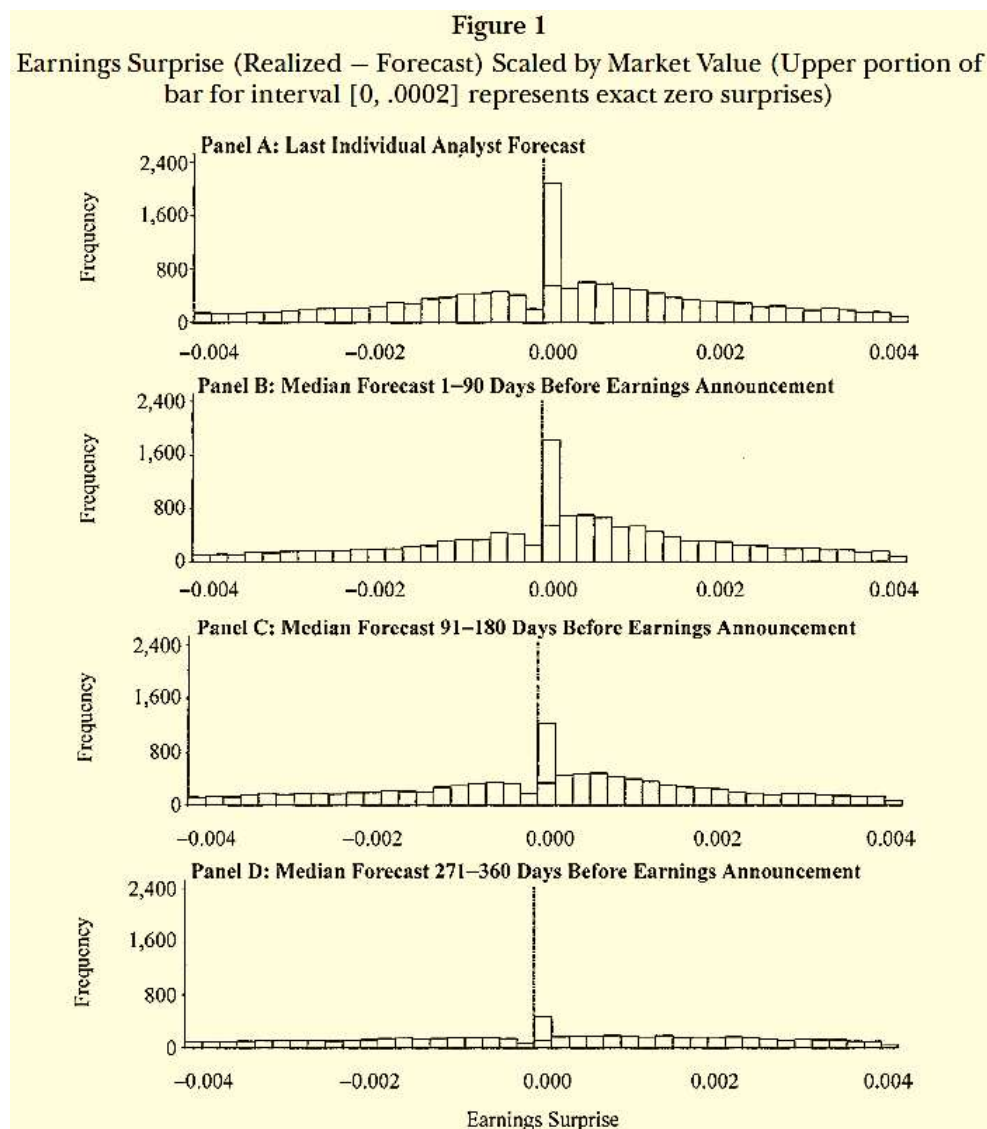
Note: Significant at 0.01(***), 0.05(**), and 0.10(*) using White's *t* (1980).

Payne and Robb (2000), p. 383

The results yielded by their multivariate analysis provided further evidence in support of the authors' hypothesis; managers deploy income increasing discretionary accruals when premanaged earning undercut analysts' forecasts, as indicated by the positive coefficient on PMBAF (a dummy variable that takes the value 1 when premanaged earnings are less than earnings as forecasted by analysts). Furthermore, the multivariate results indicate that factors such as leverage and operating cash flows (CASH_WGT) also are relevant for discretionary accruals.

Burgstahler and Eames' (2006) research is quite extensive. In addition to estimating discretionary accruals as a proxy for accrual-based earnings management, they also examined real earnings management (as described in chapter 2) and forecast management (defined as activities whereby firm managers attempt to guide analysts' forecasts downward ahead of the earnings announcement so as to avoid negative earnings surprises). In accordance with the purpose of this thesis, Burgstahler and Eames' (2006) research will here be reviewed to the extent that they examine accrual-based earnings management.

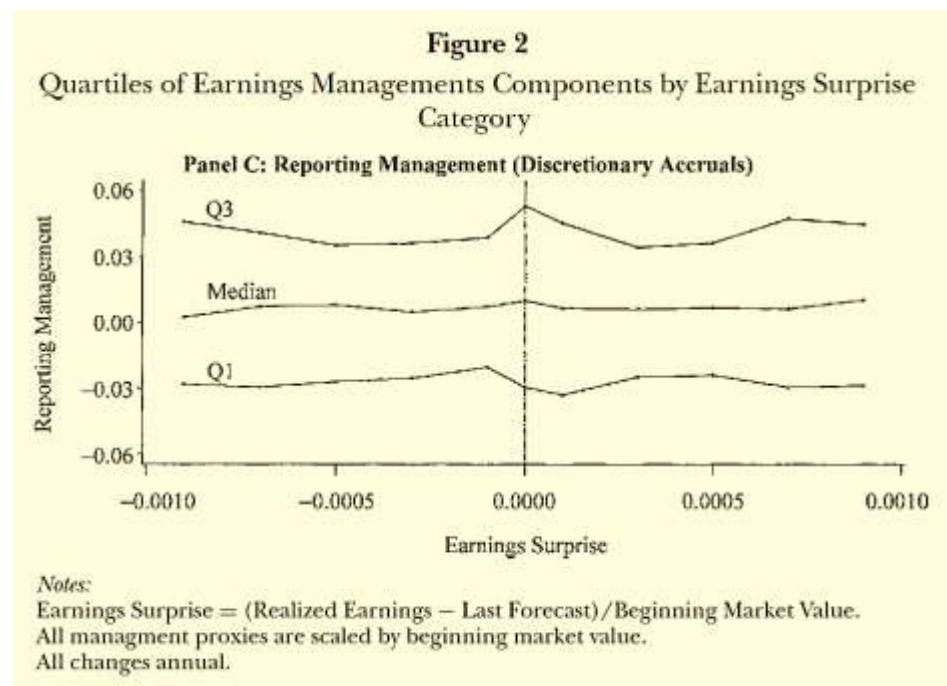
The authors used forecasted and realized operating EPS values from 1986 through 2000, excluding financial institutes and utility firms. Their first analysis involved plotting the distribution of earnings surprises, like DeGeorge et al. (1999). Worth noting is that Burgstahler and Eames (2006) decided to scale their variables by beginning market value of common equity to accommodate for the wide range of firm sizes included in the data. This explains the somewhat counterintuitive ranges (-0.004 to 0.004) and interval sizes (0.0002) plotted. Also, forecasts were classified into four ‘forecast horizons’ representing each quarter of the year, which allows for observing how earnings progressively align with analysts’ forecasts over time as the earnings announcement nears. The following four histograms show distributions of earnings surprises for each of the four forecast horizons:



Burgstahler and Eames (2006), p. 639

Upon inspecting the distribution of earnings surprises, the relative lack of small negative earnings surprises is easily discernible. Instances where reported earnings align perfectly with analysts' forecasts have the highest frequency in every panel, and small positive earnings surprises seem to consistently outnumber small negative surprises. This seems telling in and of itself (at least through DeGeorge et al.'s (1999) lens, who viewed the clustering of earnings surprises at zero and slightly above as indicative of earnings management having taken place), but the authors acknowledge that the high frequencies of zero earnings surprises just as well can be attributed to skillful analysts absent any further investigation.

Similar to Payne and Robb (2000), Burgstahler and Eames also proxy accrual-based earnings management by discretionary accruals estimated using a cross-sectional variation of the Jones (1991) model. Having applied the Jones model to their sample, they find that there is an upward shift for zero and small positive earnings surprises in quartile 3 of discretionary accruals. For the median, the upward shift persists (although it is less apparent) for zero surprises but not for small positive surprises. As for quartile 1, there is no discernible upward shift in discretionary accruals for zero and small positive earnings surprises. The authors interpreted their findings as consistent with the notion that analysts' forecast drive accrual-based earnings management.



Burgstahler and Eames (2006), p. 643

2.8.2 Research design

Empirical research in this thesis will be based on the studies reviewed previously. The research design will thus have the character of a mixture of the different methods employed by DeGeorge et al. (1999), Payne and Robb (2000) and Burgstahler and Eames (2006). The first stage will involve plotting the distribution of small negative, zero, and small positive earnings surprises based on forecasted and realized annual EPS values, as per DeGeorge et al. and Burgstahler and Eames. Different forecast horizons (Burgstahler and Eames) will not be considered. Instead, one single forecast (the consensus forecast) per EPS-observation will be considered. Estimated EPS will be defined as the average of consensus estimates in the 4 months preceding the annual earnings announcement. A distribution showing a clustering of observations at zero and slightly above will (in accordance with DeGeorge et al.) be viewed as indicative of earnings management having occurred for the purpose of meeting or beating analysts' forecasts.

Starting with outlining earnings surprises seems more intuitive than charting premanaged earnings in relation to analysts' forecasts as Payne and Robb did. The latter would require estimating discretionary accruals quite early in the process and having acquired some conception of how earnings surprises are distributed before estimating discretionary accruals seems intuitive and might also be useful. Depending on what the characteristics of the distribution of earnings surprises turn out to be, some (albeit weak) evidence might be acquired quite early in the process. Earnings surprises will not be scaled (similar to Burgstahler and Eames) but simply plotted in €0.1 intervals, similar to the 1-penny bins plotted by DeGeorge et al.

The next step involves estimating the degree to which earnings management takes place within the sample firms. Having decided to limit the research to earnings management that is accrual-based, other potential means by which managers might try to align forecasted and reported earnings will not be considered. As such, this thesis allows for the possibility of real earnings management and forecast management taking place independent of what conclusions are drawn regarding accrual-based earnings management.

3 Empirical analysis

This thesis' research hypothesis, as stated in chapter 1, is that firms listed on Nasdaq Helsinki will engage in upward earnings management by way of their accruals choices to meet or beat consensus analyst estimates. This chapter will be dedicated to describing the process of gathering data, selecting a sample appropriate for testing the hypothesis, and going over more specifically how empirical analysis was carried out. Results from the analyses performed will be reported in the latter part of this chapter.

3.1 Data and sample selection

Estimated and realized EPS were acquired from the S&P Capital IQ¹ database (Capital IQ items 'Primary EPS Estimate' and 'Basic EPS Excl. Extra Items'). Estimates data kept by S&P are consensus estimates, meaning that the figure returned when performing a query is a mean value of all analyst estimates available for a certain firm at a specified point in time. The database allows for specifying an 'as of -date' when retrieving figures, meaning that one can choose to extract the consensus estimate for year t as of a specified date. Firms within the scope of this analysis are companies listed on Nasdaq Helsinki, whose earnings announcement date is around halfway through February. Because of this, the mean value of consensus estimates as of the earnings announcement date minus 4 months is used as the metric against which to compare realized earnings (i.e., if the earnings announcement took place on 15.2.2015, EPS estimates for FY 2014 were retrieved as of 15.1.2015, 15.12.2014, 15.11.2014 and 15.10.2014).

This 'pooled mean' is judged to be an adequate way of capturing analyst expectations ahead of the earnings announcement. It is assumed that expectations are less scattered as the fiscal year comes to a close and more information is available (as compared to early in the fiscal year, when there is more uncertainty regarding the year-end outcome), meaning that managers will have a clearer sense of how earnings are to be managed in order to meet or beat expectations. Implicit is the assumption that accruals management will take place closer to the end of the fiscal year as opposed to the beginning of the year, which stands to reason as year-end accruals arguably are the ones of highest significance.

¹ S&P Capital IQ is the research section of S&P Global whose activities include aggregating and providing company (financial) information (<https://www.spglobal.com/marketintelligence/en/>).

Availability of data necessary to fulfil the purpose of this thesis proved to be a particular challenge, mainly due to Nasdaq Helsinki being relatively small even in comparison to some of its Nordic counterparts. Analyst following is essential and it simply is the case that consensus estimates are not available for every year in the sample period for listed Finnish firms.

Another constraint is the availability of financial data necessary for estimating the Modified Jones Model and subsequent analyses (the process of gathering financial data described in greater detail below). Using fiscal years 2011 through 2017 as the sample period, ensuring that data is available for each firm-year in the population, discarding instances where earnings surprises are greater than €10 in each direction (considered outliers, focus is on small negative versus zero or small positive surprises) as well as firms in heavily regulated industries subject to stringent reporting demands (mainly financial institutions and utilities; these are usually excluded from research of this type) a sample of 657 firm-year observations is arrived at.

The second component of data needed for the analysis is financial data, i.e., figures from the sample firms' financial statements. Relevant balance sheet and P/L items were retrieved from the Bureau van Dijk Orbis² database. Parameters used in the query were firms listed on Nasdaq Helsinki (both currently and previously listed) and items retrieved are as follows: 1) Current assets 2) Stock 3) Debtors 4) Cash & cash equivalents 5) Total assets 6) Long term debt 7) Current liabilities 8) Operating revenue (Turnover) 9) Net income 10) Depreciation & Amortization 11) Net Property, Plant and Equipment 12) Current portion of long-term debt 13) Net cash flow 14) ROA using P/L before tax.

The same challenges faced gathering estimates data were present when it comes to financial data as well. Essential balance sheet or P/L items were not always available, meaning that the sample size had to be cut accordingly. Using only firm-year observations that satisfy all criteria regarding availability of data the final sample arrived at is, as stated above, 657 firm-year observations from 2011 through 2017.

² Bureau van Dijk is a provider of company data whose chief database (Orbis) allows for extracting account-level financial information (<https://www.bvdinfo.com>)

3.2 Statistical modelling

The methods used will, to an extent, mirror those used in prior research of similar nature (mainly the ones described towards the end of chapter 2). The first procedure to be performed is examining the distribution of earnings surprises in the data set. Given prior findings, the expectation is an unusually large number of zero or small positive earnings surprises as compared to small negative surprises. It is in other words expected that the distribution of earnings surprises will deviate from a typical normal distribution. A distribution that skews this way would be consistent with earnings management being deployed to meet or beat analyst estimates.

Since this anticipated trend, which just as easily could be attributed to skillful analysts or any number of other variables, is not alone sufficient to conclude that earnings management has taken place, a proxy for earnings management must be examined. The earnings management proxy used in this research is a variant of the Modified Jones Model (cross sectional) which has been heavily used in research into earnings management. The model estimated is structured as follows:

$$DACC_t = TACC_t - NDACC_t \text{ (eq. 1)}$$

Where $DACC_t$ are discretionary accruals in year t , $TACC_t$ are total accruals in year t and $NDACC_t$ are nondiscretionary accruals in year t . In other words, the model states that the nondiscretionary portion of accruals needs to be determined in order to capture discretionary accruals, which is our earnings management proxy. This is achieved by using the following equation:

$$TACC_t = E_t - CFO_t \text{ (eq. 2)}$$

Where $TACC_t$ are total accruals in year t , E_t are earnings (net income) in year t and CFO_t are net cash flows in year t . The rationale behind this is that absent accrual accounting earnings would be equal to cash flows. Total accruals can thus be calculated as earnings less cash flows.

Another more detailed formula was originally intended for the purpose of estimating total accruals but could not be implemented due to a lack of available data. Input needed for this more sophisticated formula is 1) change in current assets 2) change in cash and equivalents 3) change in current liabilities 4) change in debt in current liabilities and 5) depreciation. Debt in current liabilities was not readily available for enough sample firms and due to the already small sample size, another solution was opted for so as to not further restrict the number of observations in the population.

Having estimated total accruals using equation 2 the following step is to differentiate between discretionary and nondiscretionary accruals as per equation 1. This is achieved by estimating the following equation:

$$\frac{TACC_t}{A_{t-1}} = \alpha_1 \frac{1}{A_{t-1}} + \alpha_2 \frac{(\Delta REV - \Delta REC)}{A_{t-1}} + \alpha_3 \frac{PPE_t}{A_{t-1}} + \varepsilon_t \text{ (eq. 3)}$$

Where $TACC_t$ are total accruals in year t , ΔREV and ΔREC are the changes in revenue and receivables respectively from year $t - 1$ to t , PPE_t is property, plant, and equipment in year t and A_{t-1} are the total assets in year $t - 1$. Coefficients to be estimated are α_1 , α_2 and α_3 (alphas) and ε_t are the residuals (error term) in year t .

The model states that a firm's total accruals are a function of the three terms described above plus the error term. The first three terms are what is assumed to be explanatory of nondiscretionary accruals and thus the error term represents the discretionary portion of accruals. An ordinary least squares regression is used to estimate the coefficients. The intended outcome is that estimates of nondiscretionary as well as discretionary accruals will have been obtained.

Once discretionary accruals are known various univariate analyses, such as comparing means by way of an independent samples t-test, can be performed. Since the extent to which discretionary accruals are present within an entity is influenced by a multitude of factors, univariate analysis alone is not sufficient to establish a causal link between discretionary accruals and meeting or beating analyst estimates. Hence the need for a multivariate analysis where the objective is to isolate the relationship between discretionary accruals and meeting or beating estimates.

For this purpose, the following equation will be estimated:

$$DACC_t = \alpha + \beta_1 MBE_t + \beta_2 CFO + \beta_3 DEBT_t + \beta_4 ROA_t + \beta_5 GROWTH_t \text{ (eq. 4)}$$

Where *DACC* is the absolute value of total accruals in year *t*, *MBE* is a dummy variable coded 1 in cases where the earnings surprise is zero or positive and 0 in cases where the earnings surprise is negative, *CFO* is net cash flow scaled by total assets, *DEBT* is long term debt scaled by total assets, *ROA* is return on assets using earnings before taxes and *GROWTH* is the annual change in operating revenue scaled by lagged total assets.

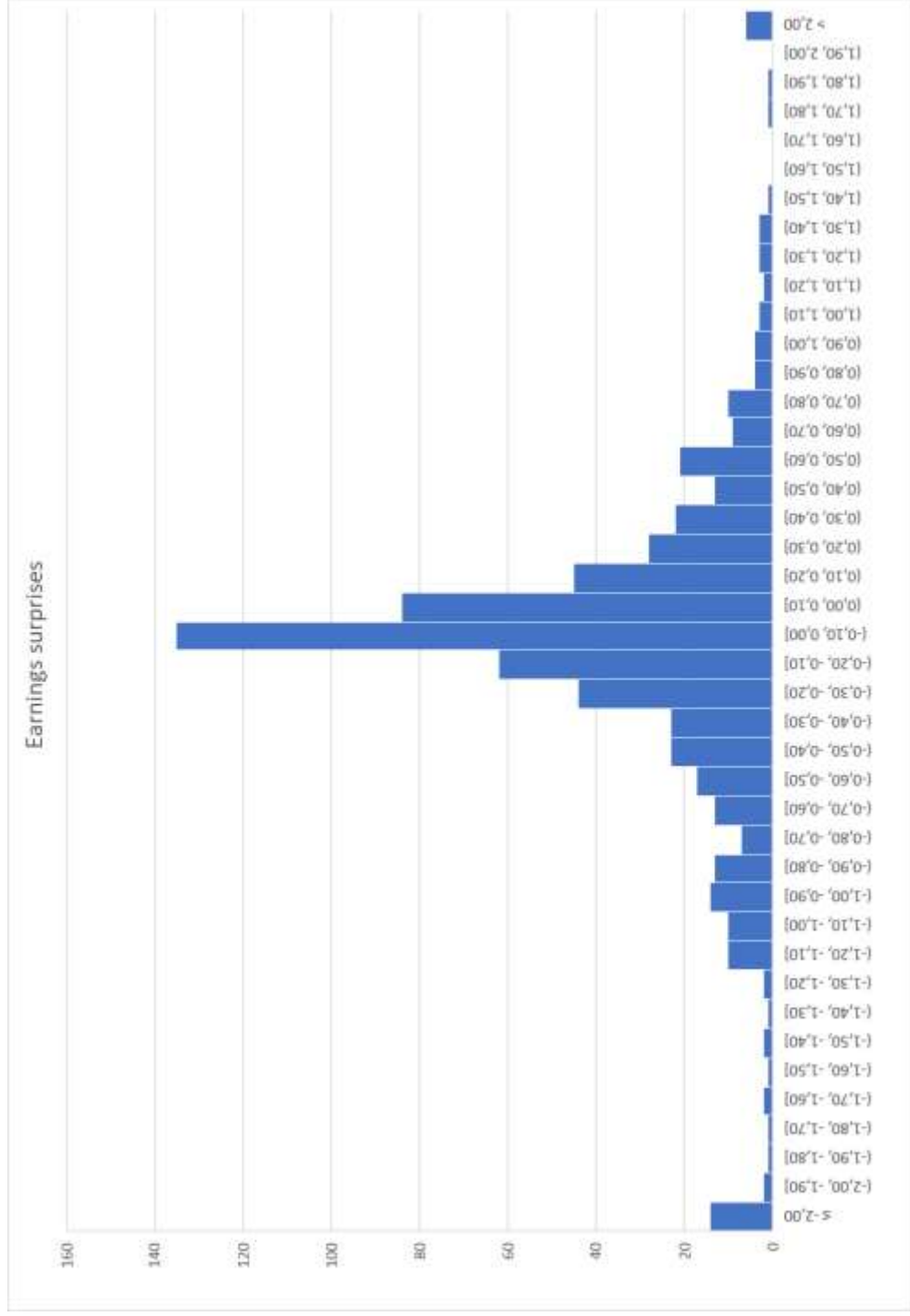
Control variables have been chosen in accordance with variables used in prior research. The desired outcome of the multivariate analysis is that a statistically significant model will have been rendered, which will allow for determining whether there is a causal link specifically between meeting or beating estimates and discretionary accruals.

3.3 Univariate results

The very first procedure performed was plotting earnings surprises based on data extracted from the Capital IQ database. The table below (table 1) illustrates earnings surprises calculated as the average consensus estimate less the Capital IQ item 'Basic EPS Excl. Extra Items'. Observations are grouped in bins with a size of €0.1. To easier illustrate the trend, instances where the earnings surprise is greater in magnitude than €2 (in either direction) are not plotted individually.

The first thing to note is that there is an accumulation around zero. This is expected given prior findings and speaks to the idea that analysts generally are accurate in forecasting earnings. What is less expected is the fact that the largest frequency can be observed in the -0.1, 0.0 -bin. Assuming firms will exercise discretion to avoid even small negative earnings surprises, the expectation would be that frequencies are noticeably larger at and just above zero as compared to just below. The reverse seems to be true for this data set as negative earnings surprises in fact are more numerous than zero or positive earnings surprises (268 zero or positive earnings surprises as compared to 389 negative earnings surprises).

Table 1: Distribution of earnings surprises



Since an estimate of discretionary accruals is needed for further analysis, the following step is to estimate the equations 1, 2 and 3 as described in the previous section. Due to a lack of data availability, total accruals are computed as earnings less net cash flows. These items were readily available in the Orbis database and no data modification was deemed necessary.

Having acquired an estimate of total accruals, discretionary accruals are estimated using equation 3. This step required more data modification as the equation to a large extent deals with lagged values. SPSS output from the OLS-regression of equation 3 are detailed below (table 2).

In the model summary an R^2 of 0.348 can be observed, which means that roughly 35 % of the variance in $TACC_div_lagTA$ (total accruals scaled by total assets in year $t - 1$) is explained by equation 3. The test statistics and p-values are 95.937 and < 0.001 respectively, meaning that the independent variables in fact do reliably predict the dependent variable. It can thus be concluded that the model is statistically significant and that the three terms in equation 3 are adequate as predictors of total accruals. The same can be understood looking at the estimated coefficients as illustrated in the coefficients-table; all three terms are statistically significant (p-values below 0.001). Standardized coefficients (Betas) are -0.234, -0.233, and -0.385 for α_1 , α_2 and α_3 respectively.

Unstandardized residuals were saved when running the regression. These are actual values of the dependent variable minus the value predicted by the model, i.e., the discretionary portion of total accruals. The purpose of the model is to predict total accruals and as detailed in equation 3, residuals (ε_t) are to be used as an estimate of the discretionary portion. While it is not alone a sufficient basis to draw conclusions from, it is worth noting that the mean of residuals is -0.00331 which can be interpreted as inconsistent with upward management of earnings to meet or beat estimates.

To get a better view of how discretionary accruals manifest in entities where estimates were met or beaten compared to entities where estimates were not met, an independent samples T-test is deployed (means comparison where observations are grouped using the dummy variable MBE). SPSS output from the independent samples T-test is detailed below (table 3).

Table 2: SPSS output, OLS-regression of equation 3

Model Summary^{c,d}

Model	R	R Square ^b	Adjusted R Square	Std. Error of the Estimate
1	,590 ^a	,348	,344	,10719

- a. Predictors: term3, term1, term2
- b. For regression through the origin (the no-intercept model), R Square measures the proportion of the variability in the dependent variable about the origin explained by regression. This CANNOT be compared to R Square for models which include an intercept.
- c. Dependent Variable: TACC_div_lagTA
- d. Linear Regression through the Origin

ANOVA^{a,b}

Model	Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	3,307	3	1,102	95,937	<,001 ^e
	Residual	6,204	540	,011		
	Total	9,510 ^d	543			

- a. Dependent Variable: TACC_div_lagTA
- b. Linear Regression through the Origin
- c. Predictors: term3, term1, term2
- d. This total sum of squares is not corrected for the constant because the constant is zero for regression through the origin.

Coefficients^{a,b}

Model	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.	
	B	Std. Error				
1	term1	-754123,105	115110,573	-,234	-6,551	<,001
	term2	-,105	,016	-,233	-6,456	<,001
	term3	-,170	,016	-,385	-10,405	<,001

- a. Dependent Variable: TACC_div_lagTA
- b. Linear Regression through the Origin

Residuals Statistics^{a,b}

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	-,8599	,1518	-,0500	,06000	543
Residual	-,68036	,92666	-,00331	,10694	543
Std. Predicted Value	-13,499	3,362	,000	1,000	543
Std. Residual	-6,348	8,645	-,031	,998	543

- a. Dependent Variable: TACC_div_lagTA
- b. Linear Regression through the Origin

Table 3: SPSS output, independent samples T-test

Group Statistics

	MBE	N	Mean	Std. Deviation	Std. Error Mean
Unstandardized Residual	,00	321	-,0227134	,11521499	,00643067
	1,00	222	,0247531	,08652174	,00580696

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Significance Two-Sided p	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Lower	Upper
Unstandardized Residual	Equal variances assumed	,450	,503	-5,206	541	<,001	-,04746648	,00911761	-,06537673	-,02955622
	Equal variances not assumed			-5,478	537,323	<,001	-,04746648	,00866454	-,06448701	-,03044594

Independent Samples Effect Sizes

	Standardize ^a	Point Estimate	95% Confidence Interval Lower	Upper
Unstandardized Residual	Cohen's d	-,454	-,627	-,281
	Hedges' correction	-,454	-,627	-,281
	Glass's delta	-,549	-,727	-,369

a. The denominator used in estimating the effect sizes. Cohen's d uses the pooled standard deviation. Hedges' correction uses the pooled standard deviation, plus a correction factor. Glass's delta uses the sample standard deviation of the control group.

From the group statistics table it is apparent that the total number of observations included in the analysis is 543, which is a smaller amount than the initial sample size of 657 firm-year observations. The reason as to why the sample size has decreased at this stage is because prior year financial data is needed to calculate discretionary accruals for the current year. The Orbis database keeps financial data from the last 10 years, meaning that the oldest available financial data can only be used for estimating discretionary accruals in the following year. This coupled with challenges in obtaining estimates data begets a situation where the only feasible option is to accept a decrease in sample size at this stage of the analysis.

The mean values of discretionary accruals are 0.025 and -0.023 respectively for the two groups. Consistent with the initial plotting of earnings surprises it is evident that negative earnings surprises are more prevalent in the data set than positive ones, which can be viewed as inconsistent with the type of earnings management examined here.

Regarding the mean values presented, results can be interpreted as consistent with the hypothesis (as stated in chapter 1). One would expect the mean of discretionary accruals to be positive for instances where estimates were met or beaten, which is the case here. The fact that the mean of discretionary accruals is negative in cases where estimates were undercut comes with a certain amount of ambiguity and can point to a number of things.

A possible explanation is that firms whose pre management earnings are expected to fall short of estimates tend to choose managing earnings downward instead of upward and engage in a type of big bath accounting as explained in chapter 2. Another explanation is that some managers simply do not view estimates as a factor when deciding what type of discretionary accruals to deploy and might be primarily influenced by some other incentive, such as minimizing taxes or simply smoothing earnings over the years. It is conceivable that managers view smoothing earnings as a way of communicating with analysts with the goal of making estimate errors less prevalent in the future. It does not seem to be the case, however, that firms fail to meet or beat estimates despite their best efforts in terms of discretionary accrual usage. If this were true one would expect to see a positive mean value of discretionary accruals among firms that undercut estimates.

In the following table the first thing to note is that Levene’s Test yields a test statistic of 0.45 with an accompanying p-value of 0.503. Since the p-value is greater than 0.05 the null hypothesis that variances across groups are equal cannot be rejected. The independent samples T-test assumes homogeneity of variance and since homogeneity cannot be rejected, test results can be interpreted with the assumption unrejected.

As for the independent sample T-test itself, the analysis yielded a test statistic of -5.206 with an accompanying p-value of <0.001. It can thus be concluded that there is a statistically significant difference in mean values of discretionary accruals among firms that meet or beat estimates and firms that do not. Specifically, the mean value of discretionary accruals for firms that meet or beat estimates is 0.025 ± 0.087 while the corresponding figure for firms that undercut estimates is -0.023 ± 0.12 . This is consistent with the hypothesis that earnings management is used to meet or beat analyst estimates.

To gain a better view of the relationship between discretionary accruals and meeting or beating estimates, the Pearson correlation coefficient is calculated as a supplemental analysis. SPSS output using the variables *MBE* and *DACC* is detailed below (table 4).

Table 4: SPSS output, Pearson correlation

		MBE	Unstandardized Residual
MBE	Pearson Correlation	1	,218**
	Sig. (2-tailed)		<,001
	N	657	543
Unstandardized Residual	Pearson Correlation	,218**	1
	Sig. (2-tailed)	<,001	
	N	543	543

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

As expected, a statistically significant correlation between discretionary accruals and meeting or beating estimates can be ascertained. The correlation coefficient measures the direction and strength of the relationship between the variables used, which in this case means that there is a positive linear relationship between *MBE* and *DACC*. The positive relationship observed is small to moderate at 0.218 but nonetheless consistent with the hypothesis

3.4 Multivariate results

Having performed univariate analyses it can be concluded that there in fact are some indications of upward earnings management to meet or beat analyst estimates. However, univariate results alone are not enough to claim that evidence has been obtained. This is mainly due to the possibility of confounding variables whose effect on discretionary accruals can be erroneously attributed to managers' desire to meet or beat estimates. Hence further procedures are needed. To control for a number of variables traditionally associated with discretionary accruals, equation 4 is estimated. SPSS output from the OLS-regression of equation 4 is presented below (table 5).

The model summary states that the R-value is 0.848, which means that there is a positive correlation of 0.848 between the dependent and independent variables. R-square, which measures the extent to which the variance of the dependent variable can be explained by the independent variables, is 0.719, meaning that roughly 72 % of the variability in discretionary accruals can be explained by the model. Adjusted R squared is only slightly lower than R squared, indicating that the model does not suffer from overfitting. In other words, the model used has a high explanatory power and is thus a good fit for its purpose. The following table (ANOVA) illustrates whether the model is significant enough to reject the null hypothesis, which in the case of OLS-regressions would be that there is no relationship between the dependent and independent variables.

The p-value yielded is < 0.001 , meaning that the model is significant at the 5 % level. This entails there being a possibility of rejecting the null hypothesis, hence the model can be used for the purpose of this study. The independent variables entered can be used to reliably predict the dependent variable.

Exploring the rightmost column of the coefficients-table, it is apparent that all 5 of the entered independent variables are significant at the 5 % level, meaning that all independent variables have some statistically significant influence on the dependent variable. The leftmost column shows results of estimating β_1 , β_2 , β_3 , β_4 and β_5 as per equation 4. All coefficients are positive apart from β_2 for *CFO*, meaning that as *MBE*, *DEBT*, *ROA*, and *GROWTH* increase, *DACC* also increases. The inverse seems to be true for *CFO*, implying a negative correlation between cash flows and discretionary accruals.

Table 5: SPSS output, OLS-regression of equation 4

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	GROWTH, DEBT, MBE, CFO, ROA ^b	.	Enter

a. Dependent Variable: Unstandardized Residual

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,848 ^a	,719	,716	,05695661

a. Predictors: (Constant), GROWTH, DEBT, MBE, CFO, ROA

ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	4,456	5	,891	274,710	<,001 ^b
	Residual	1,742	537	,003		
	Total	6,198	542			

a. Dependent Variable: Unstandardized Residual

b. Predictors: (Constant), GROWTH, DEBT, MBE, CFO, ROA

Coefficients^a

Model	Unstandardized Coefficients			Standardized Coefficients	
	B	Std. Error	Beta	t	Sig.
1	(Constant)	,013	,004	2,786	,006
	MBE	,011	,005	2,145	,032
	CFO	-,956	,031	-30,968	<,001
	DEBT	,083	,016	5,108	<,001
	ROA	,009	,000	34,806	<,001
	GROWTH	,055	,008	6,798	<,001

a. Dependent Variable: Unstandardized Residual

The most interesting variable to examine is obviously *MBE*, since determining the relationship between meeting or beating estimates and discretionary accruals is the purpose of this thesis. *MBE* has a p-value of 0.032 which suggest that while still significant at the 5 % level, it is not significant to the same degree as the other independent variables entered (whose p-value are all < 0.001). This is in and of itself not material for the study since a significance level of 5% is assumed.

The coefficient β_1 is estimated to be 0.011. What the estimated betas represent is the increase in the dependent variable attributable to a one unit increase in that specific independent variable. What this means in terms of the model used here is that there is an increase in *DACC* of 0.011 when *MBE* goes from 0 to 1 (dummy variable, one unit increase). In more practical language the observed circumstance is as follows: There is an increase in earnings management (as measured by discretionary accruals scaled by lagged total assets) of 0.011 when firms meet or beat analyst estimates compared to when they do not. This is consistent with the univariate results, prior research, and the overall hypothesis of this study.

Looking at the standardized betas in the third column, it is apparent that *MBE* is associated with the smallest standardizes beta out of all independent variables. Standardized coefficients can be used to compare magnitudes of coefficients and thus obtain an understanding of which ones that are more material to the model. β_1 is the least material comparatively speaking, suggesting that *MBE* is quite low in explanatory power compared to for example *ROA*. This does not however negate the fact that a statistically significant relationship between discretionary accruals and meeting or beating estimates has been demonstrated.

4. Discussion

This chapter will be dedicated to discussion and interpretation of the obtained evidence as presented in the previous chapter. For the sake of coherence, this chapter will be split into general discussion and interpretation in light of theory presented in chapter 2.

4.1 General discussion

Overall, the evidence obtained in this study seems consistent with the notion that firms consider analyst estimates and seek to line up earnings with them, which was expected given previous findings. Most of the prior research brought up in this study is somewhat dated and mainly centered around US firms. This study shows that the idea that earnings are managed to line up with analyst expectations appears to hold true for firms listed on Nasdaq Helsinki in the 2010s, similarly to US firms around the turn of the century.

The very first procedure performed in this study was plotting earnings surprises based on data obtained from the Capital IQ database. As mentioned, the distribution of earnings surprises was not quite as anticipated since negative surprises were more frequent than positive ones. This stands in contrast to corresponding distributions observed by DeGeorge et al. (1999) and Burgstahler & Eames (2006), where zero surprises were overwhelmingly the most frequent followed by a large mass to the right of zero. It is possible that this is a symptom of the way in which zero or positive surprises were differentiated from negative surprises, as this type of study calls for a few assumptions to be made regarding analyst estimates. As described in the previous chapter, the average of consensus estimates in the 4 months preceding the earnings announcement was used as the metric against which to compare realized earnings. To be able to quantify analyst expectations it is assumed that (1) estimates are equal in terms of the weight that firms assign to them (implicit assumption since consensus estimates, which are averages of all available estimates, were used), (2) the average consensus estimate in the 4 months preceding the earnings announcement is approximately what firms aim for, should they engage in earnings management, (3) firms are able to deploy discretionary accruals in the last few months of the fiscal year (implicit assumption that follows from the previous point), and (4) firms listed on Nasdaq Helsinki announce earnings halfway through February.

As for the first assumption made, it is possible that some analyst estimates weigh heavier on the minds of firm managers and the public than others, since institutions that publish analyst estimates might enjoy differing degrees of perceived prestige. This hypothetical is not considered in terms of the research method and is outside the scope of this study. Consensus estimates might not be ideal, but they are necessary to be able to quantify analyst expectations and are often used for similar purposes.

Using consensus estimates for the 4 months preceding an earnings announcement carries with it the assumption that discretionary accruals can be deployed with a short notice. The rationale behind using this particular time frame is that the degree of uncertainty decreases, both on part of analysts and managers, as the fiscal year ends and the earnings announcement nears. It stands to reason that analysts will be more in agreement further into the fiscal year (when more information is available), meaning that managers then will have a clearer picture of what earnings to aim for. It is however uncertain what type of discretionary accruals can be deployed at this later stage as large abnormal accruals towards the end of the year can be expected to be noticed by auditors. Worth stressing is that earnings management is not necessarily at odds with laws and regulations, meaning that the degree to which it is possible to engage in earnings management will to some extent be determined by the auditor. It might be the case that managers are faced with a dilemma of not knowing how much to manage earnings at the point in time that they are able to do so, and conversely not being able to when they know how much is needed.

As for the last assumption, obtaining earnings announcement dates for each sample firm for each year sampled and extracting estimates data from that date 4 months backward proved unreasonably time consuming. Looking at the Taloussanommat Tuloskalenteri³, where earnings announcement dates for listed Finnish firms are tracked, it is apparent that most firms announced their earnings halfway through February. There are exceptions to this, meaning that the use of estimates in the four months preceding the earnings announcement date is not completely consistent throughout. It is conceivable that this approach might have skewed results in one way or another but the extent of this is not easily discerned retroactively.

³ Taloussanommat is an online daily business newspaper in Helsinki, Tuloskalenteri is found through the following link: <https://www.is.fi/taloussanommat/osinkokalenteri/tulosjulkistukset/>

One thing that can be concluded based on these few previous paragraphs is that accurately measuring analyst expectations in a way that is most material for the purpose of this study is difficult.

It is possible that the somewhat counter-intuitive distribution of earnings surprises observed would have looked different had estimated earnings been defined some other way (such as using an average of consensus estimates during the latter half of the fiscal year, for example). There is also the question of whether a negative earnings surprise of a few cents per share should even be considered a negative surprise given the uncertainty inherent in quantifying analyst expectations. Only considering instances where realized EPS differ negatively from forecasted EPS to a certain percentage threshold as negative surprises or scaling earnings surprises by market capitalization similar to Burgstahler & Eames (2006) could potentially have painted a somewhat different picture and maybe even yielded better results. However, since subsequent analyses generated statistically significant results, these points of interest will be left for future research to contend with. Perhaps the most important procedure performed in this study was estimating the proxy for earnings management, i.e., discretionary accruals. This was done using a variant of the Modified Jones Model (modified further due to a lack of available data, as described in chapter 3). The Modified Jones Model states that normal (or nondiscretionary) accruals are a function of revenues, receivables, and property, plant, and equipment. To the extent that total accruals (calculated as earnings less cash flows in this case) are not explained by these factors, earnings management is assumed (discretionary accruals are equal to the unstandardized residuals [error term] from estimating the model).

Given this, one can wonder whether discretionary accruals as per the model actually represent deliberate earnings management carried out by management. Dechow, Skinner and Sloan (1995), who initially were the ones to modify the model developed by Jones in 1991, observed null hypothesis (no earnings management) rejection rates in excess of what could reasonably be expected given the nature of their tests. Kothari, Leone and Wasley (2005) reported similar results, stating that '*... the Jones and modified-Jones models reject the null hypothesis excessively in non-random samples and ... adjusting the discretionary accruals of these models by the industry mean or median accrual does not improve their performance*' (p. 31).

Yoon, Kim and Woodruff (2020) conducted a study for the specific purpose of identifying and examining issues with various Jones-models and concluded that they suffer problems following from being inadvertent RTO models (regression through the origin, intercepts forced to equal zero).

In their estimation, this leads to inflated R square -readings and overstating the significance of *PPE*, which could result in faulty conclusions being drawn. Having estimated the equations with intercepts they found that the explanatory power decreases significantly, leading them to state that ‘...*the RTO Jones models are theoretically flawed while their non-RTO variations are empirically flawed*’ (p. 16). The researchers leave the door open for more research into better accrual models, as they do not propose a replacement for the Jones-models.

Quantitative research such as this is only as good as the statistical models used and while the Jones-model and its many variations have been used extensively over the years it is certainly not free of criticism. Evidence in support of earnings management to meet or beat analyst estimates yielded by this study is presented with the caveat that it represents reality only insofar as the model used represents reality. Similar problems are encountered in all social science disciplines. One might not intuitively regard accounting as a social science but at the end of the day it comes down to people and interactions between people, and where people are involved there will always be an amount of uncertainty.

4.2 Theoretical implications

Earnings management was defined by Healy & Wahlen (1991) as occurring ‘...*when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers*’ (p. 368). The premise of this study rests on the well documented notion that meeting or beating analyst estimates entails a favorable share price development while failing to do so will have the inverse effect. Considering the evidence obtained, which seems consistent with upward earnings management to make the estimates but also suggests downward earnings management in cases where estimates were not met, it might be reasonable to question what earnings management really means.

According to the definition as per Healy & Wahlen, the intention on part of managers to mislead stakeholders is crucial when discerning whether earnings management in fact has taken place. The presence of income increasing discretionary accruals in cases where estimates were met or beaten can reasonably be interpreted as evidence of manipulation with the intention to mislead; managers will, by way of their accruals choices, try to give the appearance of having legitimately met the estimates in an effort to reap the rewards associated with doing so. The interpretation of income decreasing discretionary accruals in cases where estimates were undercut is perhaps not as straightforward.

A few possible explanations to this phenomenon were briefly touched upon in chapter 4 but it might be most interesting to think of apparent downward earnings management as smoothing earnings. What are managers trying to achieve when managing earnings downward and undercutting estimates? One potential answer is that it is form of communication whereby managers signal to analysts that they would do well to temper their expectations if they want to make more accurate estimations in the future. Smoothing earnings from one period to another coupled with communication of this kind paints a picture not of managers trying to deceive external parties but helping analysts and by extension the public in forming realistic expectations. This strikes a discordant note with the definition of earnings management, according to which the purpose is to mislead. It might be inappropriate, despite the presence of discretionary accruals traditionally associated with manipulation, to even call the practice earnings management, should the described scenario hold true. This hearkens back to the key questions posed by Dechow and Skinner (2000) as detailed in the introduction. It seems difficult still to conclude whether deception and thus earnings management, as per the definition, in fact has occurred.

Interpreting the obtained evidence in a context of market efficiency there are a few different points of view to consider. Firstly, upward earnings management to meet or beat estimates can seem consistent with semi-strong form market efficiency. In this situation, share prices reflect all publicly available information and since earnings are managed upward without the knowledge of shareholders, managers can achieve favorable share price developments by acting opportunistically. This assumes that shareholders only take into account the announced earnings and do not consider the possibility of estimates having been met through managing earnings.

At this point in time, considering the extensive literature on the subject, it might be naïve to assume that investors are unaware of managers' incentives to manage earnings upward and the possibility that the announced earnings have been subject to some manipulation. Investors rewarding firms that meet or beat estimates even when it is likely that it has been achieved through earnings management can be interpreted as indicative of market efficiency beyond the semi-strong form, if one views discretionary accruals as a way of communicating inside information to external parties. It might be the case that by meeting or beating estimates, managers communicate that their firm is in such good shape that they can 'afford' the accruals necessary to do so. Conversely, firms that undercut estimates might be communicating the opposite. Discerning to what extent downward earnings management is attributable to communicating (negative) inside information or simply smoothing earnings and helping external parties in forming realistic expectations is outside the scope of this study. Nonetheless, there are ways in which the obtained evidence can be viewed as consistent with more market efficiency. Claiming strong form efficiency is perhaps too bold of a statement to make but if one assumes that inside information is communicated outward through accruals choices, it appears reasonable to view the market as having some strong form characteristics.

The results are not unambiguous in regard to moral hazard and agency theory either. The straightforward interpretation of upward earnings management to meet or beat estimates is that there are problems stemming from asymmetric information which give rise to agency costs when managers decide to mislead shareholders about firm performance using income increasing discretionary accruals. This, again, assumes a certain naivety on part of shareholders which might not be justified in this day and age and also does not address the apparent downward management of earnings in cases where estimates were not met. Were one to accept the reasoning that earnings management is used as a tool to help analysts and the public in forming expectations and even communicating inside information, it can be argued that moral hazard and agency problems are somewhat mitigated through the practice. To find out whether this holds true it might be appropriate to research future firm performance or perhaps stock returns in relation to earnings management for the purpose of meeting or beating estimates. This is however outside the scope of this study.

5. Conclusion

The stated purpose of this thesis was to answer the question as to whether firms listed on Nasdaq Helsinki engage in earnings management to meet or beat analyst estimates. Initial procedures performed seem to counter this notion as small negative earnings surprises are more prevalent than zero or small positive earnings surprises for the sample firms. The inverse is expected in a situation where earnings are managed to meet or beat analyst estimates.

Subsequent univariate analyses performed using discretionary accruals derived through a variation of the popular Modified Jones Model did however yield evidence in line with the hypothesis. The mean value of discretionary accruals was positive for firms that managed to meet or beat analyst estimates, consistent with upward earnings management. Furthermore, there is a statistically significant difference between the mean value of discretionary accruals for firms that succeed to meet or beat analyst estimates (positive) and those that do not (negative). There is some ambiguity coupled with the evidence of downward earnings management in instances where earnings slightly undercut consensus estimates but the results suggest that firms that meet or beat consensus estimates in fact do manage earnings upward. Correlation analysis points in the same direction; there is a statistically significant positive linear relationship between discretionary accruals and meeting or beating consensus estimates.

The multivariate analysis yielded further evidence to support the hypothesis. The model used included several control variables often used for similar purposes and had a high explanatory power (R-square of 0.719) with all entered variables being statistically significant. While still significant at the 5% level, *MBE* (dummy variable used to describe whether estimates were met or not) was slightly less significant than the controls used with a p-value of 0.032. These results are consistent with the hypothesis. The coefficient β_1 (associated with *MBE*) was estimated to be 0.011, meaning that there is an increase of 0.011 in *DACC* (discretionary accruals scaled by lagged total assets) when estimates are met compared to when they are not. Hence, an explicit positive relationship between earnings management and meeting or beating analyst estimates has been established.

Based on the empirical results yielded by this study it can be concluded that firms listed on Nasdaq Helsinki do engage in upward earnings management to meet or beat analyst estimates. An appropriate caveat to this statement is that it seems to be the case for some of the sample firms, as there also are indications of downward management of earnings in cases where estimates were undercut. Furthermore, the evidence is presented with a certain degree of caution stemming from critique aimed at the chosen statistical model. Although the Jones model and its variations have served researchers well over the years it might be reasonable to call for an update, especially considering the amount of time passed since the model was first designed.

Limitations of this study arise from the fact that Nasdaq Helsinki is comparatively small in terms of market capitalization and number of firms listed, leading to issues with data availability. Although the results presented were statistically significant, larger sample sizes are always preferable. In this case there simply was no more data to draw a sample from. These issues, coupled with the fact that analyst expectations (and by extension market expectations) are difficult to quantify, should be kept in mind when considering the evidence for earnings management obtained by this study.

This study gives rise to some interesting questions regarding the nature of earnings management and discretionary accruals, as the findings can plausibly be viewed as indicative of managers using accruals choices as a tool of communication. Since earnings management is generally understood to be about misleading external parties, is it fair to call the practice earnings management if managers use their accruals choices as a form of signaling to analysts and investors? There is a need for further research in this regard. Examining future firm performance in relation to meeting, beating or undercutting analyst estimates through managing earnings could potentially yield some interesting findings.

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