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Restructuring Provisions as an Earnings Management Tool

Abstract

This paper seeks to investigate wheter the utilization of restructuring provisions is used as a tool for earnings management. By focusing on the utilization rather than the creation of new provisions, the phenomenon of classification shifting is studied. The methodology is based on two stages that analyze restructuring firms classified as Mid or Large Cap in Sweden between 2005-2014. In the first stage, the size of normal utilization of restructuring provisions is predicted through the use of industry-specific Tobit models. The variables included are based on economic fundamentals that were chosen to capture the effects of changing business environment, poor operating performance, poor stock performance, as well as financial distress. In the second stage, OLS modeling is used to test proxies of earnings management against the abnormal part of the utilized restructuring provisions that were left unexplained by the first stage Tobit models. The results showed indications of that restructurings are used as an earnings management tool in Swedish companies. Furthermore, variables from three areas had a significant explanatory power for the occurrence of abnormal utilization of restructuring provisions. These were variables that captured (i) the incentives for doing earnings management, (ii) the industry possibilities of utilizing restructuring provisions for earnings management purposes, (iii) the managements' willingness of utilizing restructurings for earnings management purposes. Hence, the results indicate that investors may better estimate the risk of earnings management in restructuring provisions by taking into account these contextual factors.

Keywords: Earnings Management, Restructuring, Discretionary Accruals, Classification-shifting

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DEFINITIONS

This section briefly defines some concepts that are used throughout the paper to facilitate the reading.

Big-Bath Accounting: The practice on packing losses into a single year to make future earnings manageable

Earnings Management: "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" (Healy & Wahlen, 1999)

Earnings Quality: "Higher quality earnings provide more information about the features of a firm relevant to a specific decision made by a specific decision-maker." (Dechow et al., 2010)

FASB: The Financial Accounting Standards Board (FASB) is an accounting standard-setting body that has been appointed by SEC as responsible for setting accounting standards (US GAAP) for public companies in the US.

IASB: The International Accounting Standards Board (IASB) is an accounting standard-setting body that is responsible for developing IFRS and promoting the use and application of these standards.

IFRS: International Financial Reporting Standards (IFRS) is an international accounting standard for firms, which since 2005 is compulsory to follow for all European companies with securities traded in regulated markets.

Investors: Since a valuation (rather than e.g. liquidity) perspective is used, this term is primarily attributed to equity investors in the paper.

Large Cap company: Companies with a market value over one billion Euros are classified as Large Cap. This classification is revised every six months, on 1 January and 1 July, based on the weighted average price for May and November (Nasdaqomx, 2012).

Mid Cap company: Companies with a market value between 150 million and 1 billion Euros are classified as Mid Cap. This classification is revised every six months, on 1 January and 1 July, based on the weighted average price for May and November (Nasdaqomx, 2012).

Restructuring charge: Refers to the charge against the income statement that is made when a new restructuring provision is made.

SEC: United States Securities and Exchange Commission (SEC) holds the primary responsibility for regulating and controlling the US securities market.

Small Cap company: Companies with a market value below 150 million Euros are classified as Small Cap. This classification is revised every six months, on 1 January and 1 July, based on the weighted average price for May and November (Nasdaqomx, 2012).

Special Items: Expenses that are not expected to be recurring in future years.

Utilization of restructuring provisions: Refers to the specific line item of utilizing restructuring provisions i.e. excluding other accounting *uses* of the provision e.g. reclassifications or reversals (see section 2.2.1 for more details).

US GAAP: Generally Accepted Accounting Practices in the US (US GAAP), are the accounting standards that public companies in the US have to follow.

1 INTRODUCTION

"Well, today, I'd like to talk to you about another widespread, but too little challenged custom: earnings management. This process has evolved over the years into what can best be characterized as a game among market participants." - Arthur Levitt (1998)

Although earnings management has been highlighted as an accounting problem for a long time, its practices do not seem to have vanished. Many skeptics, such as the former SEC chairman Arthur Levitt, have equated this phenomenon with fraudulent behavior since it may be used by companies to portray a false picture of the economic reality. Concerns have also been expressed that this can undermine the confidence for financial reporting. Nevertheless, for external stakeholders such as investors, financial reports are often a crucial tool for being able to assess or put a value on current as well as future firm performance. Therefore, these users are often directly exposed to the hazards of earnings management. In order to mitigate these risks, an extensive amount of research has been made for providing investors as well as standard setters with improved knowledge about the impact, occurrence and detection of earnings management. However, the complexity of the area has left many questions still unanswered. One of these questions is which specific line items in the financial reports that are exposed to earnings management practices.

1.1 Background of earnings management and its link to restructurings

The area of interest in this paper is thus the phenomenon of earnings management, which is analyzed through the utilization of (operational) restructuring provisions. Although there is no uniform definition of earnings management, we follow the definition of Healy and Wahlen (1999) who describe earnings management as:

"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"

From this definition follows that earnings management is concerned with manipulating financial information in such a way that a stakeholder might make a different decision than if

the data was unaltered. Since decision contexts might vary, this paper is specifically centered on the use of accounting-based information by investors for the valuation of a company. This delimitation is important since previous research has shown that accounting-based and non-accounting-based information is used differently by stakeholders (Barker & Imam, 2008). Furthermore, previous studies have linked earnings management with the ability of accounting report users to make better cash flow predictions (Dichev et al., 2013; Elliot & Hanna, 1996; Bowman et al., 1999).

Accounting studies often make the assumption that special items, such as restructurings, serve as proxies for earnings management (Bens & Johnston, 2009). In other words, by estimating a specific item, assumptions tend to be made about the overall use of earnings management. However, practices of earnings management tend to vary between companies and in the tools that are being used for it (Dechow et al., 2010). This has created confusion among investors on how to interpret the research results to specific companies. For example, in their textbook about valuation, Koller et al. (2010) give the following advice: "Although the research showing that special items are used to manage earnings is persuasive, it remains unclear how to relate the research results to an individual company. Again, judgment is required: pay close attention to companies disclosing special items, and if the special items seem likely to recur, especially in a challenging economy, adjust your forecasts accordingly". Although it is hard to argue against that good valuations need to take into consideration company-specific information, this type of advice runs the risk of not being especially helpful from a practical point of view. Merely, determining the focus of the analysis based on which special item that has the biggest impact on the bottom line disregards the fact that some special items run a higher risk of being misused for earnings management than others (Penman, 2012). Therefore, although questionable in being able to tell the complete picture, research regarding the risk of earnings management for specific items may give investors valuable insights into how to estimate the risk for those items.

The aim of this paper is to contribute to the understanding of such a special item, namely restructuring provisions and whether it is associated with earnings management. This accounting accrual enables companies to record expenses for future restructuring efforts earlier by recording a liability on the balance sheet in the year when a restructuring plan is set. (See example in Appendix A). There are multiple reasons for why specifically restructuring

provisions are of interest. First, restructurings have historically been tightly linked with earnings management practices. Critics claim that restructurings distort a company's earnings, either by packing losses into a single year to make future earnings manageable, often called *Big-Bath accounting*, or by moving on-going charges to a single line item that is disregarded by many analysts in their forecasts, often referred to as *classification shifting* (Levitt, 1998; McVay, 2006; Moehrle, 2002). Certain high-profile cases, such as that of the car manufacturer Sunbeam in 1997, who tried to make themselves look more valuable through fabricated restructuring provisions, have also given empirical evidence that restructurings in fact have been used for earnings management (SEC, 2001). Second, the item is often significant among companies. For example in our sample of 134 listed Swedish Companies, the median size of restructuring provisions relative to net income was approximately 7%. Furthermore the promised benefits with restructurings are often substantial. ABB, a large manufacturing company, announced that they are going to execute a major restructuring plan aimed at cost-cutting and streamlining the business, with the goal of saving up to 25 billion SEK by 2018 (Buxton, 2015). Third, the use of restructurings is quite common among companies. For example 97 of 227 observed Swedish Mid and Large Cap companies have used restructurings at least once during the period 2005-2014. Fourth, despite a reported improvement in accounting frameworks that deal with restructurings, there is still confusion surrounding this item among investors (Lee, 2014). For example, in their research about how sales analysts' adjust their earnings forecast for special items, Barker & Imam (2008) found that there is great ambiguity regarding how to treat restructuring charges. In their in-depth interviews with 35 sales analysts 29% responded that they would include the item in their adjustments, 31% would exclude it and 40% declared that it would depend on the circumstance. All in all, there is still a great amount of uncertainty regarding how to treat restructuring provisions. However, since the concept of restructurings is rather broad and could be attributed to many topics related to corporate change, a further specification of types of restructurings is needed.

1.2 Delimitation to the utilization of operational restructuring provisions

Restructurings could be separated into three main areas, namely equity and debt restructuring which are more focused on the right-hand side of the balance sheet, and operational restructurings, which are centered on restructuring the asset side of the balance sheet (Keener,

2007). Equity restructurings are concerned with altering the governance structure through for example spin-offs and management buyouts (Smart & Waldfogel, 1990). Debt restructuring can take the form of renegotiating loan conditions or exchanging equity for debt. Operational restructurings are primarily concerned with creating value through increasing operating efficiency and centered on restructuring within the firm (Brickley & Van Drunen, 1990). Although these areas fundamentally are about repositioning the business, the underlying topics studied are quite different. To narrow down the scope, this paper is primarily focusing on operational restructurings. Furthermore, the *utilization of operational restructuring provisions* is specifically analyzed rather than *restructuring charges* per se which, due to data availability, many previous studies have focused on (e.g. Bens & Johnston, 2009; Lee, 2014). The difference being that restructuring charges are incurred in the year when a company first sets up a restructuring provision rather than when the company actually utilizes the restructuring provision for restructuring efforts (see example in Appendix A). Additionally, in this paper, the term restructuring provisions is used instead of *operational* restructuring provisions since currently restructuring provisions are only allowed for operational restructurings [see IAS 37].

1.3 Research question and contribution

In spite of the controversy surrounding restructuring provisions, there is little evidence on whether it's association with earnings management still persists and whether it is limited to a few high-profile cases. Therefore, the research question in this paper is:

> *Are there signs of that classification shifting through the utilization of restructuring provisions is used as an earnings management tool for Swedish companies?*

The purpose of the paper is to increase the understanding of restructuring provisions and thereby provide some guidance to investors on whether there are legitimate reasons for worrying about earnings management when estimating the impact of this item in company valuations.

By collecting data about the utilization of restructuring provisions we have moved closer to the actual restructuring event. This opens up possibilities for investigating the phenomenon of classification shifting on a much more reliable basis. Previous research on earnings management in restructurings has instead focused on investigating restructuring charges i.e.

when new restructuring provisions are taken up on the balance sheet. Therefore, little is known about if these provisions in the end are used as tools for manipulating future earnings. It is also our belief that there is a gap in existing literature when it comes to the inclusion of other explanatory factors for the occurrence of restructurings. One area that is often overlooked but that has been proven to have a significant explanatory power for the occurrence of restructurings is if a company is financially distressed or not (Keener, 2007). The lack of inclusion of these factors is problematic since most earnings management models rely on defining a "normal" part of a special item or accrual and then trying to explain the abnormal part with earnings management factors (Dechow et al., 2010). Previous research has also seen that there are differences in the behavior of reporting restructuring charges between countries (Park & Kim, 2008; Kang & Shivdasani, 1997). Since most of the data regarding restructuring provisions had to be manually collected and most of previous research has been done on US firms, this study also provides new empirical evidence for Swedish firms, which is interesting to compare to the results from previous studies.

1.4 Further disposition

The remainder of the paper is organized as follows. Chapter 2 discusses first, how earnings management through the utilization of restructuring provisions is linked with investors' ability to make better company valuations. Second, previous research will be examined regarding different aspects of restructurings and how it has been investigated in earnings management contexts. Chapter 3 lays out the research design and discusses methodological considerations. Chapter 4 provides the empirical results of the study as well as robustness testing of these results. Chapter 5 analyzes the results and discusses them in relation to previous research. Chapter 6 concludes the findings of the study and gives suggestions on areas where future research can contribute.

2 PREVIOUS RESEARCH

In order to understand how earnings management in restructuring provisions affects investors, it is crucial to understand how they are linked with the valuation process. Therefore, in the first section this connection is explored by breaking down the relationship between valuation, financial reports, earnings quality, earnings management and special items in the form of restructuring provisions. An overview of these relationships is illustrated in **figure 1**. Rather than exhaustively explaining each of these areas, previous literature that investigates the connection between the areas is of interest. The second section in this chapter seeks to investigate research specifically about restructurings. First, the regulatory framework dictating the rules for restructuring provisions will be investigated as it sets the scene for how restructurings can be used for earnings management. Second, research analyzing alternative reasons for restructurings will be analyzed, as it is necessary to be able to distinguish other explanatory factors than those that are directly linked with earnings management. Third, some research about the effects of restructurings is mentioned to be able to draw conclusions on whether earnings management can be detected ex-post based on the actual outcome. Fourth, previous research that has investigated restructurings in an earnings management context will be discussed.

2.1 The role of restructuring provisions for company valuation

FIGURE 1 The Link Between Restructuring Provision and Company Valuations



2.1.1 Higher earnings quality in financial reports enables better company valuations

Financial statements are the primary information that companies publish about themselves and investors are the primary users of this information (Penman, 2012). Since investors are interested in the value of a company's equity or debt, financial statements are used for fundamental analysis in order to make predictions about the future performance of the company. This is by no means the only information source for valuation. Investors can also

base their valuation decision on sources such as news in media, external reports or personal opinion (Barker & Imam, 2008). However, non-accounting-based information is outside of the scope of this paper. The research stream that specifically investigates how useful the financial statement information is for predicting future firm performance has focused on the concept of *earnings quality*. Even though no universal definition of this concept exists, it could be described as: "Higher quality earnings provide more information about the features of a firm relevant to a specific decision made by a specific decision-maker" (Dechow et al., 2010). For this paper the specific decision is about the valuation of a company and the specific decision-makers are investors. Although the form of payout that is being analyzed are the reported accounting earnings in particular, the connection between this figure and actual payouts in the form of dividends should be, at least in the long-run, linked through fundamentals (Koller et al., 2010). Thus, the better future accounting earnings can be predicted, the more certain an investor can be about a valuation. Since the role of earnings quality in financial reports is of essence for investors, what underlying factors affect it and how is earnings management linked to that?

2.1.2 Earnings management is one out of several factors affecting earnings quality

The quality of reported earnings in the context of valuation could be described as being dependent on three primary factors:

(i) *If reported earnings are informative about the financial performance of the firm.* The factors that determine the firm's financial performance may vary and reduce the relevance of earnings depending on e.g. industry, growth phase of the company, and specific value drivers. An example could be that when trying to evaluate the financial performance of an IT-startup, the reported net income during the first years could be a very misleading sign of the firm's future performance. On the contrary, the reported net income of a large and established railroad company may be a very good estimator of future financial performance.

(ii) I*f the accounting system correctly measures the performance.* The accounting systems that are put in place may incorrectly measure the financial performance (Dechow et al., 2010). Even on a conceptual level, standard-setters stand in front of the challenging task of having to create reporting frameworks that need to take into account the demands of different stakeholders. One

difficulty here is that a single reported earnings number will never be relevant for all different accounting users and standard setters need to make trade-offs between different users when designing reporting frameworks. A second difficulty is that since companies choose between pre-determined measurement principles, the same economic event may in fact result in different end-figures for different companies.

(iii) *If unintentional or intentional errors (i.e. earnings management) are made by companies when applying a certain accounting system.* Since accounting systems often try to measure partially unobservable economic events, there will always be estimations and judgments involved, which leads to subjectivity. This leaves room for unintentional and intentional biases to occur. As discussed by Macintosh (2009), it is naive to think that financial reports always present a transparent and objective picture of a company's performance. Instead accounting is used to manufacture accounting 'truths', which are only one out of many possible realities of a company's economical performance. Thus, the effect of earnings management on earnings quality is not as simple as it first might sound. For example on one hand, some argue that income smoothing may be beneficial to some extent since it reduces variation in earnings figures. This would then allow the financial statement users to more easily understand the actual economic reality based on the earnings figure, which in turn makes it easier to predict future cash flows (Barker & Imam, 2008). On the other hand, critics argue that this type of manipulation is dangerous. This because the capital market constantly puts pressure on companies to report earnings numbers that will justify their stock price, which in turn puts constant pressure on financial accounting executives to engage in "creative accounting" to portray the company in the best rather than most objective way (Macintosh, 2009). Therefore whether some earnings management is beneficial for earnings quality is a bit ambiguous to answer. However, it is hard to argue against that highly managed earnings indeed lead to low earnings quality.

2.1.3 Earnings management is a difficult area involving many other tools than just restructurings

Earnings management is about consciously altering financial information in a way that can affect the type of decisions that a user of financial reports can make. One important insight to draw from this is that effective earnings management thereby is about deceiving the user of

financial information into making a certain type of decision. Thus, had earnings management been easy to detect, users of financial reports would identify it and adjust their analyses accordingly. This would make the earnings management ineffective. Therefore, as discussed by Lo (2008), the more sophisticated the manager, the less likely it is that there will be easy-to-detect earnings management. Linking this with the assumption that people involved in financial reporting generally are intelligent, well educated and experienced, there are some implications to be drawn. On one hand, it makes research about earnings management quite relevant for investors and standard setters since it can provide insights into how they should adjust their forecasts or adapt reporting regulation to account for these effects. On the other hand, it also makes the research quite challenging since earnings management is hard to detect (Lo, 2008).

Nevertheless, the questions that are specifically relevant for investors could be described as:

(i) *What is the magnitude and frequency of earnings management?* As discussed above, there are many factors that affect earnings quality other than just earnings management. From this, one can draw the conclusion that highly managed earnings indeed have low quality but that the lack of earnings management is not enough to guarantee a high quality of earnings. This conclusion is also supported by Dichev et al. (2013), who through surveys and interviews with 169 CFOs of public companies, found that CFOs believed that about 50% of reported earnings is driven by non-discretionary factors and also that in any given period, around 20% of companies manage their earnings in a way that showed a false picture of their economic performance by manipulating about 10% of earnings per share. Thus, although earnings management cannot fully explain earnings quality, there is still a belief that some companies actively use earnings management and that it has a tangible effect on the earnings number.

(ii) *What are the motives for earnings management i.e. when should investors be suspicious that earnings management may occur?* Healy and Wahlen (1999) identify three main incentive areas where previous research has found indications of earnings management: First, there is an incentive from capital market expectations and valuation. As discussed, earnings management is linked with how investors use financial reports for valuation and could therefore influence the stock price performance. Some situations when this is more likely to happen are when companies are below analyst forecasts (Moehrle, 2002), before stock-financed acquisitions

(Erickson & Wang, 1999) and before initial public offerings (Teoh et al., 1998). Second, incentives for earnings management come from the contracts that companies have and that are based on accounting numbers. For example, performance measures are often used as basis for management compensation in order to align their interest with the interest of shareholders. They may also be included in lending agreements to protect the creditors. This creates a motivation for reporting better figures in order to fulfill these contracts. Third, Government regulations for specific industries or anti-trust also provide earnings management incentives. Since many industries, especially in the financial sector, are regulated partially based on accounting figures (such as the minimum amount of equity that a bank needs to have), there is an incentive to report figures that reach these thresholds. Watts and Zimmerman (1978) also demonstrate the point that companies may want to appear less profitable than they actually are in order to avoid anti-trust investigations. Therefore, there are numerous motives for earnings management that might be difficult for investors to identify in practice without a thorough understanding of a company and its industry.

(iii) Which specific accruals or methods tend to be used for earnings management? Although, there evidently exists incentives for earnings management, it is quite hard for investors to know how to relate to them when valuing a specific company. For example given the knowledge that a company that undergoes an initial public offering is more likely to use earnings management, how should an investor account for this additional risk? Using higher discount rates is problematic since it penalizes all companies in a similar fashion and if that would be the solution, how much higher should such a discount rate be? Instead methods for further narrowing down the risk of earnings management are desirable. One such method is to understand what particular accruals or methods that are used for earnings management. This provides a much more tangible way for standard setters and investors to know if a particular accounting framework is effective or not and whether there is risk for opportunistic discretion.

However, there are many ways in which managers can alter the financial information. In their review of earnings management literature, Healy and Wahlen (1999) mention some of the techniques used by managers for this purpose:

- *Through estimates of future economic events.* Many items require estimates about their future value such as deferred taxes, asset impairments, values of long-term assets.
- *By using different accounting methods*. The same economic events can be accounted for in different ways by for example using different depreciation patterns.
- *Through working capital management*. There are different accounting methods for estimating the value of inventory or receivables (e.g. LIFO and FIFO).
- *By deferring expenses differently*. This could for example be the decision on whether research and development should be capitalized or not.
- *By recording ordinary expenses as special*. The aim of analysts is often to forecast core operating earnings and thereby excluding special and non-recurring items. By moving ordinary expenses to a line item for special expenses, core earnings will appear to be better than they actually are (McVay, 2006).
- *By using reversals for restructuring provisions to boost earnings*. This involves taking up expenses in one year to create a reserve that can be used to report better results the following years (Moehrle, 2002).

For previously mentioned reasons (see last paragraph in section 1.1), the specific accrual of interest in this paper is that of restructuring provisions. However, as seen in the list above, there are many other potential methods for altering financial information. Nevertheless, this ingenuity is perhaps not so surprising given that accounting standard setters continuously try to improve their accounting frameworks in ways that delimit the opportunistic exploitation of discretionary accounting (e.g. IASB, 2015). Therefore new methods are invented to be able to exploit loopholes that exist elsewhere in the accounting. Furthermore, the choice of earnings management method also seems to depend on the amount of current regulatory attention towards that specific method, indicating that companies can move back to old earnings management techniques when these are under less scrutiny (Bens & Johnston, 2009). To reliably be able to say if a specific accrual is being used for earnings management or not, studies therefore not only need to take into consideration whether there has been increased regulatory scrutiny over the observed period but also if the accounting rules for that particular item or technique have changed.

As has been explained in this section, the potential earnings management in restructuring provisions goes through the more general area of earnings quality before it through fundamental analysis of financial reports can end up with actually affecting the company valuations that are done by investors. Although this chain of connections illustrates that there are many other aspects that investors need to consider, the importance of earnings management should not be neglected since it can have a substantial effect on the earnings quality. Furthermore, since it is very hard to detect earnings management in practice, research may provide an important contribution when it comes to helping investors and standards setters alike, to identify the risk of specific accruals being used for earnings management. In fact, in their review of the overall state of earnings management literature, Healy and Wahlen (1999) specifically highlighted the need for further research regarding which specific standards that are being exploited to manage earnings in order to have a "more informed debate about the implications of earnings management". This is also the aim of this paper by specifically investigating the accrual of restructuring provisions.

2.2 Understanding the nature of restructuring provisions

2.2.1 Restructurings in the professional accounting literature

From the analysis above about the previous research regarding earnings management, it is evident that the type of reporting framework used, plays a crucial role for the understanding of whether an accrual can be used for earnings management. Therefore, some key points from the accounting frameworks around restructuring provisions will now be presented. To begin with, it is specifically operational restructurings that reporting frameworks refer to in their standards (see section 1.2). Furthermore, according to IFRS, events that classify as restructurings are: [IAS 37.70]

- a sale or termination of a line of business
- closure of business locations
- changes in the management structure
- fundamental reorganizations

Although this provides some guidance, it is by no means a clear-cut definition since these events are of a rather broad nature. This is problematic since it goes against the aim of the accounting frameworks, in particular IFRS and US GAAP, to reduce the phenomenon of mixing ordinary operating costs with restructuring costs [IAS 37.63]. Furthermore, in order to recognize a restructuring provision, formal plans or agreements are usually required. For example, for reorganizations there should be a formal plan that has started to be implemented or communicated to a third party [IAS 37.72]. However, once this plan is set, it is in practice quite difficult to separate out costs that are attributable to the plan and costs that are a part of a company's normal business. Also, the way in which the provisions are measured, by discounting probable future cash outflows and the fact that restructuring provisions should be reviewed at each balance sheet date to reflect best current estimates, carries with it the risk of that provisions can be manipulated. Other improvement areas that have been recognized by IFRS research projects include: more precise requirements for how to estimate uncertain future cash flows, more guidance on which type of costs to include in provisions and using risk-adjustments when measuring provisions (IASB, 2015).

Although many changes have been proposed, no alterations of the standard have been made since its introduction in September 1999. Nevertheless when it was issued, IASB 1999 had a substantial impact on the way that companies reported restructurings as can be seen in the following quote “Before [the introduction of IAS 37] entities could, for example, make provisions for future costs that were not present obligations, and this freedom provided significant scope for earnings manipulation. IAS 37 now restricts provisions to items meeting the definition of a liability. The Standard is widely credited with having substantially improved financial reporting as a result” (IASB, 2015). An important insight from this is that research prior to 1999, which uses a sample of companies applying IFRS, might show significantly different results than studies after 1999. This conclusion is in line with previous research that has shown evidence of that regulatory change is positively and significantly related to companies’ restructuring behaviors (Park & Kim, 2008).

Since much of the research about restructurings is done on US firms, it is also important to look at the development in US GAAP surrounding these items. “In 1994, the Emerging Issues Task Force (EITF), Consensus 94-3, required U.S. companies to recognize a liability for

restructuring costs at the date of an entity's commitment to a restructuring program" (Lin & Yang, 2012). In other words, companies could recognize a provision in a much more liberal way based on a "commitment". This means that companies could record a liability a certain year and then make a reversal of this "commitment" in following periods to boost future earnings. In a study of US companies between 1990-1999, there is clear evidence of this type of practice (Moehrle, 2002). In 2002, this provision recognition was modified by the EITF with SFAS 148 so that liabilities were recognized at fair value during periods when the obligations actually met the definition of a liability, which vastly limited the amount of discretion of these provisions. This also improved the consistency in reporting restructuring charges between firms. (Andersson & Callaway, 2004)

At its current state, US GAAP accounting regarding restructuring costs has some differences compared to IFRS. It differs somewhat in the recognition where US GAAP relies more on the need of formal plans. Also, US GAAP has a higher threshold for what a "probable" obligation is (Lin & Yang, 2012). Furthermore, US GAAP generally has got clearer guidelines, for example regarding what costs to include in the restructurings (IASB, 2015).

2.2.2 What factors determine when restructurings are made?

A substantial research stream has been centered on investigating explanatory factors for the magnitude of, why and when restructurings do occur. Lin et al. (2008) describe factors that drive the decision to restructure as; changing business environment, poor operating performance, poor stock returns, financial distress (which increases during economic recessions), and corporate disciplinary events. The last two factors, the financial distress and corporate disciplinary events, are concerned with special circumstances that might influence the use of restructurings and will be explored in greater detail.

(i) Financial Distress. Lin et al. (2008) focus on the financial state of a company, more specifically on "the survivability or delisting risk of a poorly performing firm undergoing restructuring amid an economic recession". The authors draw on a sample of firms with negative earnings that undertook restructuring during the 2001 economic recession. Logistic regression estimation is used to examine the delisting risk of these firms following the restructuring. Their findings show that "the delisting risk increases when firms undertake

repetitive restructurings, massive workforce reductions, and large-scale asset downsizing. Moreover, firms with high levels of debt and failure to cut costs and/or narrowing its focus on core competencies are also more likely to delist".

Another study shedding light on the effects of the financial state of the company is the study of Keener (2007). By analyzing a sample of 1656 US firms that underwent separately observable operational restructurings between 1993 to 2003 and by classifying them into distressed firms that did not go bankrupt, distressed firms that went bankrupt and firms that were not financially distressed, Keener tests a number of assumptions in this area. The methodology used for the classification is rooted in accounting-based models. For determining if a firm was financially distressed, Altman's Z-score model was used and for predicting whether a company would go bankrupt within 3 years an alteration of Ohlson's model was used (Altman, 1968). The results of the study show that firms that are distressed are significantly different from non-distressed firms in terms of the balance sheet composition, income statement and financial ratios. Interestingly, 38% of the firms that underwent operational restructurings were classified as financially distressed and over 90% of the initially financially distressed firms were able to avoid filing for bankruptcy within the subsequent three years of the restructuring. Therefore, there are indications of that financial distress has a significant explanatory power for the occurrence of restructurings.

(ii) Corporate Disciplinary Events. The topics within this area are centered on corporate governance issues such as executive compensation and CEO or company owner characteristics. As will be observed in the discussion surrounding these topics, corporate disciplinary events are not easily distinguishable from earnings management practices since they deal with stakeholder incentives to act in a certain way.

Dechow et al. (1994) discuss whether restructurings are used to influence executives' short-term incentive plans. The sample consists of 182 restructuring charges taken by 91 Fortune 500 firms between 1982 and 1989. The methodology is based upon a variant of regression testing between adjusted incomes, compensation and restructuring charges. This in order to test the hypothesis that executives avoid undertaking restructuring efforts to maximize their current earnings-based compensation, regardless of the impact on the overall well being of the firm.

This hypothesis is then rejected based on the result of the regression study. The explanation behind this result is that in general, compensation plans are overseen by compensation committees that can make adjustments to prevent executives from getting involved in opportunistic behavior. Thus, the result of the study indicates that the compensation committees adjust the earnings-based compensation of executives for restructuring costs. Based on these results, the explanatory power of executive compensation is insignificant when it comes to explaining restructuring costs.

Nevertheless, the executive compensation is not enough to disregard all explanatory factors that are based on executive characteristics since, as mentioned, there might be other motives that drive earnings management (see section 2.1.3). More specifically, an aspect that has proven to be significant in other earnings management studies is that between the age of the CEO and the financial reporting quality of firms. Huang et al. (2012) have investigated this association through logistic regression of a sample of 3413 firms in the period of 2005 to 2008. Their results show a significant negative association between the age of CEOs and the likelihood of firms meeting or beating analyst earnings forecasts or making financial restatements. The rationale behind this, they hypothesize, is that "older individuals are more ethical and conservative than younger individuals". The CEO age might therefore have an explanatory value for the occurrence of restructurings.

Another CEO related factor is surrounding management turnover. An often-heard argument is that new managers have increased incentives to make restructurings. As commented by Penman (2012) "When new management arrives at a firm, they are tempted to take restructuring charges to show they are innovating. The market often greets the restructuring as good news. If the new managers overestimate the restructuring charge, they get an added benefit: They can bleed it back to future income and report earnings improvement on their watch. This is a scheme to grow earnings." In other words, since investors expect new managers to make changes, this makes them more willing to accept new restructuring charges, which opens up a window for earnings management. Godfrey et al. (2003) name this phenomenon as "impressions management" and investigated it empirically by examining accrual effects following CEO changes in listed public companies in Australia. They found evidence of upward earnings management and some evidence of favorable impression

management in the year after a CEO change. Furthermore, these results were strongest for firms where the CEO change was forced rather than a result of retirement.

Although the research about management characteristics has provided some interesting results, these findings are contingent on that the managers actually have an influence on how restructuring provisions are used. However, according to Dechow et al. (2010), how managers choose between competing objectives is a relatively under-researched area, at least within the context of earnings quality, and they recommended future studies to investigate this issue. This because it does not have to be the case that managers always prioritize to maximize earnings quality since sometimes it is simply too far out of their control. Nevertheless, the findings of Finkelstein et al. (2009) about managerial discretion can provide some insights regarding these issues. More specifically, Finkelstein et al. (2009) found that the amount of leeway available to senior executives varies a lot between industries. Depending on the amount of executive discretion, the fate of the company may even be completely outside of the control of top management. The authors argue for that one of the primary drivers of managerial discretion is "the degree to which the environment allows variety and change". Generally, environment or industries that allow for this are characterized with having an absence of clear means-ends linkages as well as an absence of direct constraints. Furthermore, Hambrick and Abrahamson (1995) have, through a methodology involving regression analysis of expert ratings about managerial discretion across different industries, been able to estimate specific discretion scores. These weighted scores are available for 70 industries based on standard industrial codes. The scores ranging from 2.01 for "Natural gas transmission to 6.89 for "Computer and software wholesaling" (with higher score indicating more discretion) further emphasize the point that the amount of management discretion varies a lot between industries.

Lastly, a study that has looked at more international corporate governance issues regarding restructurings is that of Kang and Shivdasani (1997). They compared 92 publicly traded Japanese manufacturing firms with 114 publicly traded US manufacturing firms that suffered a substantial decline in their operating performance in a given year between 1985 and 1990. Their focus was on comparing the types of responses and the likelihood of different actions. This cross-national study is interesting since in the US, banks are restricted from owning equity of other firms while Japanese banks are permitted to own up to 5% of the outstanding shares of

client firms. Thus, one could expect that restructurings would be less common for Japanese firms since they have a tighter relationship with banks and consequently easier to get bank loans. However the results of the study on the contrary show that the frequency of asset downsizing and layoffs in Japanese firms increased with the ownership by the banks and other block holders. Furthermore, both Japanese and US firms responded with similar types of actions, but the frequency and likelihood of the actions varied. For example, Japanese firms were less likely to downsize and layoffs affected a smaller fraction of their workforce. Thus, studies investigating restructuring costs may vary somewhat depending on the origin of the sample firms studied.

2.2.3 Is the behaviour of investors justifiable by the actual outcome of restructurings?

Since deceiving users of financial information could be described as a key component of earnings management, it is relevant to see how investors tend to react to restructuring announcements and whether this is justifiable by the actual outcomes.

(i) How do investors react? Research has identified certain patterns for how stock markets and specific investors tend to react to the announcement of restructurings, which seems to be dependent on the financial state of the firm and the type of restructuring that is done. Keener (2007), showed evidence that stock markets tend to reward the announcements of restructurings for firms that are financially distressed while the stock price is unaffected or reacts negatively to restructuring provisions of financially healthy firms. This could be linked with Andersson & Callaway (2004), who found evidence that for financially distressed firms, investors perceive supplemental disclosure as having a positive signal of the firm's future operating performance, and view negatively a disclosure that lacks detail and/or clarity. However, different investors tend to have different behaviors when it comes to restructurings. Chaney et al. (1999) examined financial analysts' earnings forecast revisions for various horizons surrounding the announcement of a restructuring charge to determine whether analysts view restructuring charges as good news, bad news, or uninformative. They studied revisions in one-, two-, and three-year ahead forecasts and in forecasts of five-year growth in earnings. Their results provide evidence that analysts expect declining performance for restructuring firms in the short run but possible improvement over the longer term. Furthermore, in their study of forecast

errors in the year following the charges, they found evidence that the analysts' accuracy has declined and, despite the downward revision, analysts are still optimistically biased.

(ii) Is this investor behavior justifiable by actual outcomes of restructurings? This is a problematic question to answer since studies that investigate the outcome of restructurings have shown a great amount of mixed results depending on what operating metric and research method that is used in the analysis. For example, Atiase et al. (2004) examined a sample of US firms reporting restructuring charges between 1991-1993 and compared it against a sample of companies that did not do restructurings but that had similar pre-event performance. In total 267 matched pairs. Their data compared the earnings, operating income and cash flow from operations of the firms 4 years preceding a charge and 3 years after the charge. Their results showed that on one hand, restructuring firms improved their earnings and operating income compared to the companies that did not do restructurings, but on the other hand, evidence of the improvements in cash from operations were mixed.

In contrast, Holder-Webb et al. (2005) provided new evidence on that the long-term performance effects of operational restructurings at best had no effect on firm operating performance. This by using metrics that provided control for firm and industry performance in the absence of restructurings, and examining a time horizon extending five years subsequent to a restructuring. Their results showed that first, the median return on equity and operating margin relative to the industry were significantly negative for all of the five post-restructuring years examined. Second, the size-adjusted and performance-adjusted operating margins as well as return on equity were significantly negative or insignificantly different from zero for the five post-restructure years reported. Third, and most importantly, empirical tests using the restructuring metric suggested by Smart and Waldfogel (1994), which controls for firm and industry performances in the absence of a restructurings, indicate that operating margins for restructuring firms generally were negative and significant in years three through five. Return on equity over the same period was generally insignificantly different from zero. Therefore, their results suggest that if restructurings are, in fact, beneficial to the restructuring firm, the benefits do not manifest themselves in improved post-restructure accounting earnings metrics.

All in all, although there seems to be some systematic behavior in how the stock markets and investors view restructurings, research regarding the actual outcomes of restructurings has provided mixed results depending on the metrics used, which on the basis of this, makes it impossible to answer whether their behavior is justifiable or not. Therefore ex-post investigations of earnings management, based on the actual outcomes of the restructurings, are unlikely to provide viable results. This ambiguity of results have forced researchers to use other, less clear, methods for determining earnings management in restructurings, as will be discussed next.

2.2.4 Restructurings in an earnings management context

Having contextualized restructuring provisions in a valuation perspective, having understood how they are regulated, what other factors that explain their occurrence and the fact that it is hard to monitor their ex-post effect on operating performance, their role as a tool for earnings management can now reliably be assessed. First of all, it is important to realize that much of the previous research about restructurings as an earnings management tool came as a direct response to a speech in 1998 by the former chairman of the Securities and Exchange Commision (SEC), Arthur Levitt. In the speech he described restructurings as a high-risk area for earnings management and that it was being exploited by managers for that purpose. The following quote is quite illustrative about the speech: “When a company decides to restructure, management and employees, investors and creditors, customers and suppliers all want to understand the expected effects. We need, of course, to ensure that financial reporting provides this information. But this should not lead to flushing all the associated costs -- and maybe a little extra -- through the financial statements” (Levitt, 1998). Consequently, much of the research has been on US firms that follow US GAAP regulations.

Since post-restructuring operating figures are of little help, researchers have been required to be quite creative in their attempts to detect earnings management. A good example is the study by Moehrle (2002) where it was investigated whether reversals of restructuring charges are associated with incentives to meet or exceed analysts’ forecasts, avoiding earnings declines relative to prior-year levels, and with avoiding losses. The empirical findings indicate that many firms that take restructuring charges reverse a portion of those restructuring charge accruals in a later quarter. These reversals increase net income, often substantially. The author

collected a sample of 121 reversals recorded between 1990 and 1999 using the Lexis/Nexis database. Moehrle (2002) finds evidence consistent with managers using restructuring charge reversals to manage earnings. Managers are more likely to record reversals when pre-reversal earnings are below analysts' forecasts or when the firm experiences a pre-reversal loss, and they are marginally more likely to record reversals in quarters when pre-reversal earnings are below prior-year levels. The amount of reversals increases with the amount by which earnings fall short of analysts' forecasts and the amount of pre-reversal net losses, although these shortfalls explain only a modest portion of the cross-sectional variation in the magnitude of restructuring charge reversals. These findings suggest that firms, in some instances, use restructuring charge reversals to manage earnings to meet or beat earnings benchmarks. The evidence that managers are more likely to record reversals when pre-reversal earnings miss benchmarks, suggest that initial restructuring charges may include some hidden reserves.

Although reversals offer a less noisy proxy for measuring activities that could be described as abnormal, Bens & Johnston (2009) make the point that “manipulated restructuring charges are a very low proportion of the restatement population”. Furthermore, it omits the case that instead of directly boosting the income statement with reversals, managers can utilize the provisions by attributing ordinary expenses to them (see Appendix A). This second method is much harder to detect for users of financial statements and thus more likely to be used as an earnings management tool. A study that has examined this type of classification shifting is that of McVay (2006). Used alone, classification shifting does not change bottom-line earnings and therefore has not been scrutinized by auditors and regulator in the same ways as for example accrual methods. However, individual line items have different information value for future earnings and are used differently by investors who want to separate out items attributable to the operations with those of an extraordinary nature. Therefore, McVay (2006) examined classification shifting between core expenses (cost of goods sold and selling, general, and administrative expenses) and special items. The author found this shifting to be more pervasive when it allows the managers to meet the analyst forecasts. The amount shifted increases to as much as 16.2 per cent of special items in those instances. Moreover, the result confirms the position that managers of high-growth firms use classification shifting more than the average firm manager in order to meet the analyst forecast. Finally, McVay (2006) found that classification shifting is associated with negative returns in the subsequent year, suggesting that

investors are surprised when expenses that were previously excluded from core earnings recur. Therefore, classification shifting is a very attractive earnings management tool. In the context of special items, classification shifting can increase pro forma earnings substantially, to be specific, nearly three cents per share for firms with income-decreasing special items of at least 5 per cent of sales, providing managers with a relatively low-cost tool to meet analyst forecasts. Based on these findings one can draw the conclusion that classification shifting in combination with restructuring provisions provides an attractive alternative, compared to reversals, for artificially boosting the earnings.

Since only looking at reversals disregards the use of classification shifting, the findings of Moehrle (2002) are not enough to draw conclusions about the whole sample of firms that use restructuring provisions. To overcome this, researchers have tried an alternative method that is based on estimating abnormal accruals and linking these with variables that are used as proxies for earnings management. The general interpretation is that if the "normal" component of restructurings can be modeled properly, then the abnormal components represent distortions of lower quality. A study that uses this approach is that of Bens & Johnston (2009), who specifically examine whether earnings management appears to be a contributing factor to the magnitude of restructuring accruals and if this relation has changed with new FASB regulation. In particular, they focus on investigating the phenomenon of that companies overstate the size of restructuring charges upon recognition, in order to create a big-bath[1] reserve for the future. By comparing reported restructuring charges from US firms in a period prior and after the restructuring regulation of EITF No. 94-3 (the regulation was introduced in 1994 and the periods analyzed are 1989-92, 1995-1996 and 2001), they reach three main conclusions. One is that previous restructurings were overstated as they dropped significantly after the regulation (on average a drop of 2,8 percent of assets). Another is that the level of overstatement was greater for firms that had earnings incentives (such as being below analyst forecasts). The third is that overstatements started to reoccur in periods after the regulation when SEC (the governing accounting institute in the US) no longer expressed concerns about restructurings. Intrigued by this last finding i.e. that overstatements showed tendencies to return when there was less public scrutiny, Lee (2014) made a study that sought to investigate these issues further

[1] See *Definitions* for an explanation of *big-bath accounting*

in an attempt to complement the findings of Bens & Johnston (2009). With a similar logic it was investigated whether yet another new regulation change, that of SFAS 146 in 2002, showed similar results. Therefore the periods of 2001-2002 and 2004-2006 were investigated. The main conclusions from this study were that. First, restructuring charges post SFAS 146 had a weaker association with income smoothing behavior. Second, smaller and more frequent restructuring charges were being reported post SFAS 146. Third, the market gave higher valuation multiples to restructuring charges post SFAS 146. As a result, both studies provide evidence that changes in regulatory frameworks tend to reduce the practices of earnings management, but whether these effects are long-term or not is harder to say. An interesting question therefore is whether it is the new regulations or the amount of public scrutiny that actually affects the use of restructurings? Also, a problem with these studies is that they do not seem to incorporate all of the explanatory factors for why companies do restructurings. For example, as noted in section 2.2.2 the financial state of a company seems to play a fundamental role for determining the occurrence of restructurings. However neither Bens and Johnston (2009) nor Lee (2014) have incorporated this into their models for determining the "normal" part of restructurings. Furthermore, the fact that restructuring charges rather than the utilization of restructuring provisions are measured makes the measures a bit problematic from a measurement point of view (see *section 1.2* for the difference between restructuring charge and utilization of restructuring provisions). Nevertheless since abnormal accruals take into account the mentioned classification shifting of expenses, the studies of Bens and Johnston (2009) and Lee (2014) still serve as an important building block for this paper.

2.3 Summary of previous research

To sum up, research about the use of restructurings as an earnings management tool has shown indications of that restructurings, at least in the past, have been used for earnings management. This is especially clear for situations where reversals of restructuring provisions have been made. However, the population of firms that use reversals is relatively small compared to the total sample, which makes the results quite hard to generalize. Therefore studies that use methodologies that incorporate the possibility of classification shifting are of importance. Studies that try to separate out the normal (based on economic fundamentals) from the abnormal part of restructurings take this classification shifting into account. However, previous

research using this type of methodology does not seem to have incorporated all of the other explanatory factors that have been identified as being relevant for explaining the occurrence of restructurings, especially when it comes to whether a company is financially distressed or not. Furthermore, this research has focused on measuring when new restructuring provisions are made rather than when they are utilized which creates measurement difficulties when using earnings management proxies. Lastly, although research about the occurrence of restructurings has indicated that there are differences between countries, previous studies in this area have, to the best of our knowledge, primarily been done on US companies. Thus, our paper seeks to contribute to the understanding about restructurings in an earnings management context by specifically targeting these issues.

3 METHOD

The method chosen to analyze the utilization of restructuring provisions for earnings management, is based on firstly distinguishing the "abnormal" part from the "normal" part of the utilization and secondly to test the abnormal part against proxies for earnings management. The underlying logic is that the normal part should be a reflection of fundamental economic performance, while the abnormal part represents distortions that could be attributable to earnings management. Therefore, if proxies of earnings management turn out to have significant explanatory power for the abnormal part, it would give clear indications that restructuring provisions in fact are used as an earnings management tool. To give a general overview of the methodology, first a sample of firms utilizing restructuring provisions was collected. Second, in line with Bens & Johnston (2009) and Lee (2014), Tobit models were used to estimate the normal part of the utilization of restructuring provisions. The variables used in these Tobit models were proxies of fundamental economic performance and both restructuring companies and control sample firms were included. Furthermore, to increase the accuracy of the modeling, separate Tobit models were used for different industries. The estimated normal part from these models was then excluded from the recorded actual utilization of restructuring provisions where the remaining unexplained part was seen as abnormal. Third, an ordinary least-squares (OLS) regression was applied, where the estimated abnormal part of the utilized provisions was used as a dependent variable and proxies for earnings management were used as independent variables. The considerations behind this choice of approach, a brief explanation of the characteristics of the Tobit model and a more thorough examination of each step in the methodology will be discussed in the remainder of this chapter.

3.1 Considerations behind the choice of methodology

A first consideration is about the overall choice of using residuals from accrual models. As explained in section 2.2.4 this approach is beneficial since it takes into account classification shifting of ordinary costs into restructuring costs. However, for this approach it needs to be taken into account that "correlated omitted variables associated with fundamentals, especially performance, are of concern given the dependence of normal accruals on fundamentals and the endogeneity of the hypothesized determinants/consequences with the fundamentals" (Dechow et al., 2010). In other words, it is important to realize that this type of two-stage approach

introduces a lot of uncertainty since it is based on being able to predict when restructuring provisions are actually utilized. Although, as noted in the previous chapter, there has been some research that seeks to explain the occurrence of restructurings, there is still a great amount of variation that is left unexplained in how companies utilize their restructurings. Furthermore, since earnings management is about deceiving users of financial information and thus about using methods that are hard to detect, unequivocal answers are unlikely. Therefore, rather than fully explaining the variation in distortions, the goal with this methodology is to see if the proxies for earnings management have got explanatory power for the abnormal part of the utilization of restructuring provisions.

A second consideration is that since a particular accrual item is being analyzed rather than companies as a whole, other more common models for estimating normal levels of accruals were not applicable, such as the Modified Jones model (Dechow et al., 1995) or the Discretionary estimation errors model (Francis et al., 2005). As compared to these models, there are some methodological benefits and drawbacks with our approach. To begin with, the criticism by (Dechow et al., 2010) about omitted variables means that there is a risk of both Type 1 errors, which classify accruals as abnormal when they are a representation of fundamental performance, and Type 2 errors, which classify accruals as normal when they are not. Through our approach of focusing on the specific accrual of restructuring provisions, we reduce the amount of these errors. This is because an increased focus enables a better understanding of the nature of the charge and thereby makes it easier to identify what factors that drive the predicted normal part of the model. Of course, as Dechow et al. (2010) mentions "the benefits of modeling specific accruals, come at the expense of generalizability". In other words we will not be able to say if a firm uses earnings management or not, but rather give some indications of it.

A third consideration is why simpler models such as the Ordinary least-squares (OLS) regression could not be used instead of the approach with Tobit modeling for determining the normal utilization of restructuring provisions. The short answer is that OLS regression will not give consistent parameter estimates because of the censored nature of the data (Cameron & Trivedi, 2010). On a more detailed level, the coexistence of discrete and continuous aspects of our dependent variable, utilization of restructuring provisions, has posed special challenges

when choosing statistical models for evaluating the data. The variable is discrete in the sense that a company either utilizes a restructuring provision or not and continuous since the utilization of the provision will vary in size between companies. Therefore this type of data could best be described as corner solution outcomes (Boes & Winkelmann, 2006). Furthermore there are two special characteristics of the data that needed to be accounted for:

- The data cannot be negative
- There is a cluster of observations at "zero"

These characteristics make a simple linear regression model problematic for determining the size of the normal provision utilization. First of all, model predictions could be outside of the defined range (enabling negative provisions). Secondly, constant marginal effects would be unrealistic given that we have a model that is bounded from below through zero-values. Furthermore, Boes and Winkelmann (2006) found that Ordinary Least Squares models used for corner solution outcomes lead to biases towards zero, meaning that the predicted utilization of restructuring provisions would be lower. This result is consistent regardless of whether a sample is used that encompasses all companies (both those that utilize and do not utilize restructurings) or just the ones that utilize restructurings (a censored sample). However these characteristics are taken into account by Tobit modeling.

3.2 The characteristics of the Tobit model

Tobit is short for Tobin's Probit (Tobin, 1958). The model was developed to be able to take into account corner solution data when making predictions about expected outcomes. An example of corner solution data would be to try to predict the willingness to pay for a new car. Such a model would be based on observed expenditures on cars. However, if a person has not bought a car, the observed expenditure would be recorded as zero, which means that the willingness to pay for a car would be biased towards zero. In a similar manner, in our paper, there is a large sample of companies that do not utilize restructuring provisions, although they based on economical fundamentals, should do so. Hence, the utilization of restructuring periods is zero for a non-trivial part of the population, and positive and continuous for the rest. While standard linear regression models make predictions based on $E(y_i|x_i)$ (conditional on x but unconditional on y being positive), the nature of the data therefore requires an econometric

model that takes into account two aspects when making predictions about what is "normal" (Boes & Winkelmann, 2006):

- $P(y_i = 0|x_i) = 1 - P(y_i > 0|x_i)$, the probability of not utilizing restructuring provisions
- $E(y_i|y_i > 0, x_i)$, the expected utilization of restructuring provisions conditional on that the utilization is larger than zero.

Instead of separately modeling the binary part with a Probit model and the positive part as a Log-linear model, the Tobit model fulfills both of these aspects by introducing a so called *latent* (unobservable) variable, y_i^*. This latent variable is a purely artificial device and has no interesting implications on its own. Instead, it is used in the function $y_i = \max(0, y_i^*)$ or similarly:

Eq.1 $$y_i = \begin{cases} y_i^* \; if \;\; y_i^* > 0 \\ 0 \;\; if \;\; y_i^* \leq 0 \end{cases}$$

Eq.2 $$y_i^* = x_i'\beta + u_i$$

As observed in equation 1, y_i^* in a simple linear fashion depends on the vector x_i and the parameter β, meaning that $E(y_i^*|x_i) = x_i'\beta$. From equation 2 it can be seen that if the latent variable is above zero the observable y_i is equal to the unobservable y_i^*.

Based on this, the value of the coefficient in the Tobit model cannot be explained in a similar fashion as an OLS model but instead the coefficients are estimated through the use of a Maximum Likelihood Estimation (MLE), which was also introduced by Tobin (1958). To avoid going into too much details about this MLE, it can be said that it encompasses a Probit-part for the censored observations and a linear part for the uncensored observations and thereby satisfies the criteria for corner-solution data. The underlying idea is to find a set of coefficients that, if true for the whole population, have the highest probability of showing the actual observed values. In other words, in a MLE, a range of values is tried on the population parameters until a set of parameters is found that maximizes the likelihood of the observed outcomes. Because of this approach there are two underlying assumptions in the Tobit model that are quite sensitive as compared to OLS models (Cameron & Trivedi, 2010):

- The error terms are assumed to be normally distributed i.e. $u_i \sim N(0, \sigma^2)$
- The error terms are assumed to be homoscedastic

These assumptions are discussed and to a certain degree evaluated in section 4.3.

Furthermore, the goodness-of-fit measures for Tobit models are a bit different than in other regression models. In fact, there is a wide variety of pseudo-R-square statistics used as a proxy for goodness-of-fit in a Tobit regression. However, as Tobit models are nonlinear regressions, the R-square cannot be interpreted in the same way as in OLS regressions i.e. that they show the proportion of variance of the dependent variable that is explained by the independent variables. Therefore, in order to understand the goodness-of-fit of the first-stage Tobit regression, we had to compare our results against previous research that had applied a Tobit model in a similar fashion. Since (Bens & Johnston, 2009) and (Lee, 2014) are both using Dhrymes R-square in their estimations of the goodness of it, this measure became an important proxy for us in order to be able to compare the results among the studies. However, since this proxy is not available in standard STATA outputs it had to be calculated manually and will therefore be briefly explained. In short, the Dhrymes R-square adjusts the predicted value of the Tobit model and thereafter estimates the squared correlation between this adjusted model value and actual values of the dependent variable, excluding zero-value observations. To be more specific, the formula is described as follows (Veall & Zimmermann, 1996):

$$R_D^2 = \left[\underset{>0}{\text{corr}}(\hat{Y}_i^{\,A}, Y_i)\right]^2$$

Where $\hat{Y}_i^{\,A} = Y_i^* + \hat{\sigma}\phi(\frac{x_i\hat{\beta}}{\hat{\sigma}})/\Phi\left(-\frac{x_i\hat{\beta}}{\hat{\sigma}}\right)$ and $\hat{Y}_i = x_i\hat{\beta}$ with Φ being the cumulative standard normal distribution function and ϕ the standard normal density function. The symbol ">0" means that the correlation is only taken over the positive observations; $\hat{Y}_i^{\,A}$ is the expectation of Y_i conditioned on (i) x_i and (ii) $Y_i > 0$, evaluated at the Tobit maximum likelihood estimates $\hat{\beta}$ and $\hat{\sigma}$.

3.3 Sample selection

The sample selection process will now be examined in greater detail. This will be done by first mentioning overall considerations such as: how the time frame was set, how a pilot study was

conducted to estimate the feasibility of gathering data about restructurings, and how the process for hand-collecting data about restructuring looked like. Secondly, the sample selection process for restructuring firms will be discussed.

3.3.1 Time frame

To begin with, the periods examined in this study are between 2005-2014. Since previous research has shown that regulatory changes have a major impact on the use of restructurings as an earnings management tool (Bens & Johnston, 2009; Lee, 2014), the time frame was chosen so that the same regulatory framework, IAS 37, was used by all sample companies during the period. Because IFRS-reporting reporting is compulsory for all "European companies whose securities trade in a regulated securities market starting in 2005" and no changes have been made during that period in regards to how restructuring provisions are reported, this period was seen as appropriate (IFRS, 2013). Furthermore, because of the regulation requirement, only companies that were listed on NASDAQ OMX Stockholm during that period were included.

3.3.2 Pilot study

A major complication for this study was that no data about the utilization of restructuring provisions was available on database services. Because of this, a pilot study was first conducted in order to assess the feasibility of gathering this data manually from annual reports. The result of this pilot study showed that companies reported restructuring provisions in a way that, in most cases, followed the disclosure requirements that are specified in IAS 37. The variations that existed were due to the netting of certain lines or mixing restructuring provisions with other types of provisions. Furthermore, in line with previous studies (e.g. Atiase et al., 2004) it was observed that a lower size-limit seemed to exist for if restructurings were made. Therefore the pilot study showed that data could reliably be collected. Also a decision was made to only include companies that were classified by OMX NASDAQ Stockholm as Mid and Large Cap while Small Cap companies were excluded from the sample in order to reduce the noted size-bias[2].

[2] See *Definitions* for more information about how these classifications are made.

3.3.3 Process for collecting data

The manual process for collecting the data about the utilization of restructuring provisions could be described as follows: First, it was determined which companies that were listed as Large Cap and Mid Cap throughout each year in the time frame. This was done by first looking at companies listed at the end of 2014 and then in a backwards-fashion creating lists of Mid and Large Cap companies for each year by going through yearly reports from the Nasdaq database of listing, delisting or classification changes of companies on the stock exchange. The inclusion of companies that had later moved away from the Mid and Large Cap classification was important to avoid a survivorship bias in the data. Second, annual reports were collected for all companies each year when they were listed as Mid or Large Cap. The reports were collected primarily from the company web sites or, when these were unavailable, from Retriver, which contains a database of less user-friendly annual reports that have been sent to the Swedish Companies Registration Office "Bolagsverket". Third, each of the 1528 annual reports were used for gathering data about the restructuring provisions and the yearly movements within these items. A summary of the collected data can be found in Appendix B. In order to collect the data in a systematic manner the following procedure was used:

i. Items affecting comparability and the administrative report were inspected for a quick indication about restructurings, since most of the times if companies had restructurings they tended to want to report this as a special item.
ii. The balance sheet was examined to see if any type of provisions were recorded and if so in what note.
iii. If notes about provisions were found, these notes were inspected to see if these referred to specifically restructuring costs and not other type of provisions.
iv. If provisions with absolute certainty could be classified as adhering to restructurings, data about the movement within these provisions was collected into our own database.

To compare this process with previous research, the studies of Bens and Johnston (2009) as well as Lee (2014) instead used a database approach for collecting the information about restructuring charges. This was possible since data for restructuring charges is available for US firms, as opposed to European firms, on Compustat. However, if one compares the database-approach with our manual approach some benefits and disadvantages can be identified. One

advantage is that although companies are required to follow the disclosure requirements of IAS 37, the manual collection allowed the exclusion of cases where restructuring provisions were mixed with other types of provisions. In the data-collection a conservative approach was used, meaning that restructuring provisions were only recorded when no doubts existed that the provisions were pertaining to precisely restructurings. Another advantage is that it allowed us to collect data about the movements within the provisions, giving us access to data about the actual utilization of restructuring provisions. This data is not available through databases. The major disadvantage with this approach is the risk of human error when having to type in all of the data manually. However, safety checks in the form of that closing balances and opening balances of provisions had to match between annual reports, significantly reduced this risk.

The process of collecting independent variables was done mainly through Thomson Reuter's Worldscope. This with the exception of analyst forecast data, which was collected from I/B/E/S, and CEO data, which was hand-collected from annual reports. Since a few firms reported in other currencies than SEK, these numbers were converted to SEK with the closing exchange rate for the given year.

3.3.4 Sample selection process for restructuring firms

TABLE 1 Sample selection process and sample descriptive statistics

	Observations	Firms
Panel A: Sample selection		
Firms listed on OMX NASDAQ Stockholm Mid or Large Cap during 2005-2014	1528	227
Observations from Financial or Real Estate industries or industries with too few observations	(422)	(57)
Observations with missing data about economic fundamental variables	(228)	(36)
Total sample for first stage Tobit model	878	134
Observations not utilizing restructuring provisions	(512)	(67)
Total sample of firms utilizing restructuring provisions	366	67
Observations with missing data about earnings management proxies	(249)	(44)
Total sample used in second stage OLS model	117	23

Industry	Observations		Firms	
	n	%	n	%
Panel B: Industry composition of the restructuring sample				
Mining and Construction	11	3.0	2	3.0
Manufacturing	289	79.0	47	70.1
Wholesale Trade and Retail Trade	29	7.9	6	9.0
Transportation and Communication	26	7.1	5	7.5
Professional, Scientific, and Technical Services	11	3.0	7	10.4
Total	366	100.0	67	100.0

Frequency of reported utilization of restructuring provision by firm	Firms	
	n	%
Panel C: Frequency of reported utilization of restructuring provisions by firm		
1	14	20.9
2	9	13.4
3	3	4.5
4	5	7.5
5	3	4.5
6	6	9.0
7	4	6.0
8	1	1.5
9	2	3.0
10	20	29.9
Total	67	100.0

As can be observed in Panel A of Table 1, the initial sample contains 1528 observations from 227 firms that were listed on OMX NASDAQ Stockholm in the period 2005-2014. These companies were then classified into industries following first digits in the NAICS Industry classification system (NAICS, 2015). Two industry-related restrictions were imposed. First, financial and real estate firms were excluded (NAICS codes 52 and 53) because some of the measures of fundamental economic performance (especially relating to sales and asset measures) were quite misleading due to the nature of their industries. Second, each industry was required to have at least ten observations about the utilization of restructuring provisions to give meaningful output in the first stage Tobit models. The number of observations and firms within each industry that utilize restructuring provisions is seen in Panel B of Table 1. Observations with missing accounting data for economical fundamental variables were in the next step excluded from the sample. These requirements resulted in a total first stage Tobit model sample of 878 observations and 134 firms. Out of these, the restructuring sample i.e. firms utilizing restructuring provisions, consisted of 366 observations and 67 firms. In the second stage OLS model this restructuring sample was further reduced with 44 firms and 249 observations due to missing data about earnings management proxies. Thus, the final sample for the second stage OLS model consisted of 117 observations and 23 firms. It should be noted that the reason for why the restructuring observations excluded in the second stage OLS were included in the first stage Tobit model, is because they increased the reliability of estimating the size of normal utilization of restructuring provisions by providing additional data points.

One fact to notice is, as illustrated in Panel B of Table 1, only 20,9% of the companies utilized restructuring provisions just once, indicating that companies that do utilize restructurings tend to do it in a recurring manner. In line with Lee (2014), we do not exclude companies that report multiple restructurings since it is unclear how this impacts the results. On one hand, firms with multiple restructurings might be less likely to use an abnormally poor year to recognize future expenses early. On the other hand, firms that use multiple restructurings might have got more fundamental economic problems and thereby have a higher incentive to engage in earnings management.

3.4 Estimating the expected utilization of restructuring provisions

As explained by Bens and Johnston (2009) there are two primary decisions involved when deciding upon restructurings. First, should a restructuring be made? Second, how large should the restructuring be? The assumption made by Bens & Johnston (2009) is that the first question is determined by economic fundamentals while it is in the second question that discretion is being used in terms of inflating the accrual for earnings management purposes. This because "it is unlikely that managers will simply record an unnecessary restructuring charge without some fundamentals necessitating it" (Bens & Johnston, 2009). Furthermore, this implies that in order to estimate whether the accrual is inflated or not and if this is due to earnings management proxies, it is first necessary to determine what the economic fundamentals indicate that the size of the restructuring should be. As motivated in section 3.1, this is best done through the use of a Tobit model. Also, in order to in an unbiased way predict which economic fundamentals that cause firms to do restructurings, the sample of restructuring companies needs to be matched with a sample of control firms without recorded restructurings. Control firms were included, similar to the restructuring companies, based on if they were listed as Mid or Large Cap companies on OMX Nasdaq Stockholm during 2005-2014, and also based on industry classification.

The methodology used in this paper is also based on the assumption that earnings management adheres to the second question i.e. "how large should the restructuring be?". However, what is actually meant with "economic fundamentals" is scrutinized more than in previous research. As mentioned in section 2.2.2, the factors that drive the decision to restructure (disregarding earnings management) primarily fall in the categories of: changing business environment, poor operating performance, poor stock returns, financial distress and corporate disciplinary events. However it was also seen that corporate disciplinary events were hard to separate from earnings management proxies. Therefore, to reliably measure economic fundamentals, variables should be included in the Tobit model that capture:

i. changing business environment
ii. poor operating performance and stock returns
iii. financial distress

Variables capturing the first two points have been included in the studies by Bens and Johnston (2009) as well as Lee (2014). However, an aspect that neither of the prior studies have included is financial distress. This is surprising given that previous studies by for example Keener (2007) found that this factor has a significant effect. Therefore, an additional variable for including financial distress was used. For deciding upon which, variables in (i) and (ii) that were most appropriate to include in the final Tobit model, specific tests were carried out. The initial variables for these tests can be seen in Appendix C. It should be noted that since we studied the utilization of restructurings provisions, which may give an effect on the variables in the year that they are utilized, the variables were based on data for the year preceding the utilization. The tests for which variables to include could be described as follows: First, the correlation of initial variables was tested to get an indication of their explanatory value for the utilization of restructuring provisions. Second, variables that had a correlation below 0.03 were excluded and then tested on a separate basis with the other factors that had shown a higher correlation. Also, a criterion for the final model was that each of the independent variables included had to be significant in at least one of the industry-specific Tobit models. As mentioned, industry-specific models were necessary to increase the accuracy of the Tobit models since the importance of specific economic variables e.g. inventory turnover varies between industries. Thus, the final Tobit model used for each of the five industries is as follows:

$$REST_t = \alpha_0 + \alpha_1 AR_{TO_{t-1}} + \alpha_2 INV_{TO_{t-1}} + \alpha_3 PPE_{TO_{t-1}} + \alpha_4 SALES_{EMP_{t-1}} + \alpha_5 RET_{t-1} + \alpha_6 LOSS_{t-1} + \alpha_7 DISTRESS_{t-1} + \varepsilon_t$$

The variables are defined as follows (all item number refer to Worldscope definitions):

$REST_t$	The amount of utilized restructuring provisions (Hand collected) deflated by assets (WC0299), where utilized amounts are reflected as positive numbers
AR_TO_{t-1}	The ratio of sales (WC01001) to trade receivables (WC02051)
INV_TO_{t-1}	The ratio of cost of goods sold (WC01051) to inventory (WC02101)
PPE_TO_{t-1}	The ratio of sales (WC01001) to PPE (WC02501)

$SALES_EMP_{t-1}$	The ratio of sales (WC01001) to employees (WC07011)
RET_{t-1}	The stock return (WC08372) for the year prior to the utilization of a restructuring provision
$LOSS_{t-1}$	An indicator variable coded 1 if the firm incurred a net loss (WC01551) in any of the three years prior to the utilization of restructuring provisions, and 0 otherwise
$DISTRESS_{t-1}$	The calculated Altman (1968) score subtracted with 1.81, which is the cutoff-point for distress firms. Hence, a score *below* 0 indicates that the company is financially distressed.

The dependent variable in the Tobit model was $REST_t$, which was deflated by assets in order to adjust for company size effects. The independent variables included in the model are rather self-explanatory other than perhaps the Altman Z-score which was used to determine whether companies were financially distressed or not. The Altman Z-score is calculated through the following formula (Altman, 1968):

$$Z = 1.2\,X_1 + 1.4\,X_2 + 3.3\,X_3 + 0.6\,X_4 + 0.999\,X_5$$

Where:

$$Z = Overall\ Score$$

$$X_1 = \frac{Working\ Capital}{Total\ Assets} \qquad X_2 = \frac{Retained\ Earnings}{Total\ Assets} \qquad X_3 = \frac{EBIT}{Total\ Assets}$$

$$X_4 = \frac{Market\ Value\ of\ Equity}{Total\ Liabilities} \qquad X_5 = \frac{Sales}{Total\ Liabilities}$$

Altman (1968) identified that firms with a score below 1.81 were highly likely to go bankrupt. Although there have been some recent debates about whether this score should be lowered since companies during recent years pile up on additional debt, the more conservative cutoff point of 1.81 is used in this study (usatoday, 2014). Therefore, the Z-scores that companies obtained in our sample were subtracted with 1.81 in order to give a meaningful interpretation to the distressed variable used in the Tobit model. Although the Altman model was designed to primarily be a bankruptcy prediction model, Grice and Dugan (2001) show that bankruptcy prediction models have a significantly higher success rate in identifying if firms are financially

distressed as compared to actually predicting bankruptcy. Furthermore, since the Altman model was originally based on listed companies, the model was seen as appropriate for our sample.

Each of the independent variables used in the model, except for $LOSS_{t-1}$ and $DISTRESS_{t-1}$ should be positively associated with the economic performance and therefore negatively associated with $REST_t$.

3.5 Analyzing the abnormal utilization of restructuring provisions for earnings management

Having controlled for the fundamental economic variables in the first stage, the abnormal part of the utilization of restructuring provisions was tested against proxies for earnings management to see if a correlation between the two existed. This was done through the use of an ordinary least squares (OLS) regression model. However, it should be noted that the calculated abnormal utilization of restructuring provisions could be associated with both unintentional measurement errors as well as earnings management. Therefore, given that both could coexist and the fact that unintentional errors are hard to reliably measure, it is not reasonable to expect an OLS model that could explain all variations. Instead what is of primary interest is the significance of the variables used while the variation explained by the model plays a role in comparing our models with the models used by Bens and Johnston (2009) and Lee (2014). Furthermore, it should be noted that the sample used in the second stage OLS model consists *only* of the sample of firms that utilized restructuring provisions. The sample of control firms that was used in the first stage Tobit model only had its application when analyzing the effect of economic fundamentals in regards to the decisions of utilizing restructuring provisions. The final OLS regression model is as follows:

$$ABREST_t = b_0 + b_1 C_SHIFT_t + b_2 SMOOTH_t + b_3 ASSETDISP_t + b_4 LOGASSET_{t-1} + b_5 CEO_{AGE_t} + b_6 \Delta CEO_{t-1} + b_7 DIS_{SCORE} + b_8 UNDER_FORECAST_t + \varepsilon_t$$

Note: The definition of variables can be found in the text below

If not otherwise stated, the variables used as earnings management proxies were based on the study of Bens and Johnston (2009). However, each measure had to be put in the context of utilizing provisions rather than making new provisions. Since the variables thereby investigate

a different part of restructurings, the predictions and reasoning surrounding what is being measured had to be scrutinized and in some instances changed. All of the variables used in the OLS regression will now be examined starting with the dependent variable. It should be noted that since the dependent variable is based on the industry-specific Tobit models, which was already size-adjusted based on asset size, the $ABREST_t$ was used in a single OLS model for all of the outputs.

$ABREST_t$	=	Abnormal utilization amount for year t, estimated as the residual from the industry-specific Tobit models. Thus $ABREST_t$ is equal to the actual observed utilization of restructuring provisions minus $REST_t$.

The first two independent variables are earnings management proxies that are designed to reflect managers' incentives to manage earnings when these are unexpectedly high or low. This is estimated by measuring the earnings preceding the utilization of restructuring provisions. The intuition is that classification shifting of ordinary costs into restructuring costs will be done in order to manage these earnings. Based on this reasoning, on one hand b_1 should be positively correlated to the dependent variable since it is in those cases that firms have an incentive to utilize the restructuring provision in order to inflate the results. On the other hand b_2 should be negatively correlated, since firms have incentives to refrain from utilizing restructuring provisions, in order to keep a reserve for worse years.

C_SHIFT_t	=	An indicator variable coded 1 if a firm's change in net income before extraordinary items (WC01551) from t-1 to t, divided by beginning-of-year sales (WC01001), is *below* the first quartile of negative values of this variable among all firms in the same industry and year, and 0 otherwise.
$SMOOTH_t$	=	An indicator variable coded 1 if the firm's change in net income before extraordinary items (WC01551) from t-1 to t, divided by beginning-of-year sales (WC01001), is *above* the third quartile of positive values of this variable among all firms in the same industry and year, and 0 otherwise.

Next, a measure is used to compare the asset disposals of companies after the utilization of restructurings with the asset disposals of other companies without restructurings in the same industry. The intuition is that if firms sell assets at a slower rate than other firms in the same industry, then they are doing little to actually execute the restructuring plan, thereby indicating that other costs than those relating to restructurings have been included in the post "utilization of restructuring provisions". As such b_3 is predicted to be negatively associated with the dependent variable if there are signs of earnings management. Furthermore, since $ASSETDISP_t$ measures actions rather than operating improvements, the measure should overcome many of the measurement problems described in section 2.2.3

$ASSETDISP_t$	=	The proceeds from asset disposals (WC04351) over periods t, t+1, and t+2, deflated by the book value of total assets (WC0299) at the end of year t-1, minus the median of the variable among all firms in the same year and industry.

Another variable is based on theories about how the size of the company affects the restructuring behavior. This variable is a reflection of the political cost hypothesis presented by Watts & Zimmerman (1978). The hypothesis assumes that firms have an interest in avoiding political attention, which could result in new regulations such as taxes. Furthermore, since larger companies tend to have got increased political exposure, there is an increased incentive to engage in earnings management. Given that this hypothesis is true, this should result in that b_4 is positively correlated with abnormal utilization of restructurings. However, this proxy should be interpreted with caution since conflicting hypotheses also exist e.g. that larger firms are more scrutinized and thereby cannot engage in earnings management in the same way.

$LOGASSET_{t-1}$	=	The log of the book value of total assets (WC0299) at the end of year t-1.

Three earnings management proxies are based upon the previous research summarized in section 2.2.2 about how corporate disciplinary events affect the occurrence of restructurings. The first proxy here stems from the findings of Huang et al. (2012), who indicated that there was a positive association between the age of the CEO and the financial reporting quality of firms. Therefore as earnings management is a key component in earnings quality, b_5 is predicted to be negatively correlated with abnormal utilization of restructurings. The second

proxy, deals with management turnover. The study of Godfrey et al. (2003), found empirical evidence of upward earnings management in the year after a CEO change. Meaning that a big-bath is made the first year in order to create a reserve for showing better results in the future. Given this, b_6 is predicted to be positively correlated since abnormal restructurings therefore should be expected in the second year after the introduction of a new CEO. The third proxy, is based upon the discussion of Finkelstein et al. (2009) about how the type of industry affects the amount of managerial discretion. To empirically account for this, the discretionary scores estimated by Hambrick and Abrahamson (1995) were used. It is hypothesized that b_7 is positively correlated with the dependent variable since a higher score indicates that managers have got more discretion and thereby have got more possibilities to engage in earnings management.

CEO_AGE_t	=	The age of the CEO this year.
ΔCEO_{t-1}	=	An indicator variable coded 1 if the firm has changed the CEO (Hand collected) during 12-24 months preceding a utilization of restructuring provisions, and 0 otherwise.
DIS_SCORE	=	The discretionary score based on Finkelstein et al. (2009) using 4-digit SIC-code.

Lastly, there was an attempt to include a proxy that would specifically capture how companies react towards capital market expectations. The variable used for this, $UNDER_FORECAST_t$, has its origins in the study of Moehrle (2002), who captured capital market expectations through the use of analyst forecasts. Therefore, b_8 is predicted as being positively correlated with the dependent variable.

$UNDER_FORECAST_t$	=	An indicator variable coded 1 if the firm's pre-utilization, net income after preferred dividend (Basic EPS) (WC01706) minus the utilized amount, is below the analyst forecast consensus (Collected from I/B/E/S), and 0 otherwise

4 RESULTS

4.1 Estimation of the normal utilization of restructurings

TABLE 2 Correlation matrix of variables used in the first stage Tobit models

This table shows the correlation between each variable, both between independent variables and to the dependent variable. Accounts receivable turnover, PPE turnover, sales per employee, loss during the previous three years and distress are all significantly correlated with the dependent variable, utilization of restructuring provisions, at the 10% significance level.

Variables	$REST_t$	AR_TO_{t-1}	INV_TO_{t-1}	PPE_TO_{t-1}	$SALES_EMP_{t-1}$	RET_{t-1}	$LOSS_{t-1}$	$DISTRESS_{t-1}$
$REST_t$	1.00							
AR_TO_{t-1}	**-0.06**	1.00						
INV_TO_{t-1}	-0.04	-0.01	1.00					
PPE_TO_{t-1}	**-0.06**	0.01	0.04	1.00				
$SALES_EMP_{t-1}$	**-0.14**	0.03	**0.08**	**0.15**	1.00			
RET_{t-1}	-0.05	-0.01	-0.05	0.02	0.02	1.00		
$LOSS_{t-1}$	**0.11**	-0.00	**0.08**	-0.03	**-0.07**	0.05	1.00	
$DISTRESS_{t-1}$	**-0.06**	0.03	0.03	0.02	0.04	**0.09**	**-0.08**	1.00

Note: See Section 3.4 for definitions of the variables. Bolded figures are statistically significant at the 10 percent level or better

An overview of how the different variables in the first stage Tobit model correlated to each other can be seen in Table 2. All of the proxies of fundamental economic performance are correlated with the utilization of restructuring provisions in the same direction as predicted. INV_TO_{t-1} and RET_{t-1} are not statistically significant when all of the restructuring observations are included. As mentioned in section 3.4, when estimating the expected utilization of restructuring provisions, multiple variables were first included and tested before a final set of variables to include in the Tobit model were chosen. The starting variables and their correlations with the utilization of restructuring provisions can be seen in Appendix C.

TABLE 3 Descriptive Statistics of inputs in the first stage Tobit models

This table shows the, mean, median, standard deviation, and the first and third quartile for all variables in the restructuring and control sample. The values indicate that the restructuring sample has got worse performance than the control sample in terms of, accounts receivable turnover, PPE turnover, sales per employee, and distress score. Also companies doing restructurings have higher sales and more assets.

Variables	Restructuring sample (n = 366)					Control Sample (n = 512)				
	Mean	Median	s.d.	*Q1*	*Q3*	Mean	Median	s.d.	*Q1*	*Q3*
$REST_t$	0.007	0.004	0.007	*0.002*	*0.009*	n/a	n/a	n/a	*n/a*	*n/a*
AR_TO_{t-1}	**6.343**	**5.142**	9.159	*4.004*	*6.291*	**11.930**	**6.047**	21.219	*4.706*	*9.371*
INV_TO_{t-1}	14.245	5.014	61.178	*3.217*	*6.639*	20.445	4.356	81.164	*2.901*	*7.058*
PPE_TO_{t-1}	**8.933**	**5.625**	11.254	*3.634*	*8.799*	**17.471**	**8.269**	31.593	*4.120*	*19.256*
$SALES_EMP_{t-1}$	**1.938**	**1.732**	1.346	*1.175*	*2.288*	**2.455**	**2.096**	1.582	*1.499*	*3.060*
RET_{t-1}	0.219	0.169	0.513	*-0.061*	*0.440*	0.244	0.189	0.539	*-0.080*	*0.478*
$LOSS_{t-1}$	0.235	0	0.425	*0*	*0*	0.229	0	0.420	*0*	*0*
$DISTRESS_{t-1}$	**1.534**	**0.899**	3.790	*0.212*	*1.679*	**3.784**	**1.935**	5.596	*0.930*	*3.852*
$SALES_t$ *(MSEK)*	**37 692**	**14 590**	54 623	*5 757*	*47 524*	**15 649**	**4 002**	32 309	*1 183*	*12 640*
$ASSETS_t$ *(MSEK)*	**45 872**	**19 790**	70 543	*5 009*	*53 030*	**12 972**	**3 173**	27 424	*1 084*	*10 407*

See Section 3.4 for definitions of the variables. Bolded figures are statistically significant at the 1 per cent level or better. The Wilcoxon Signed Rank Test was used for medians and the T-test was applied for means.

Table 3 shows the descriptive statistics of the variables that were used as proxies of fundamental economic performance in the first stage Tobit model. These statistics are shown for both the sample of observations when companies utilized restructuring provisions and for the control sample of observations when restructurings were not utilized. Comparing the two samples provides support for the assumption that economic fundamentals are a major driver for the decision of utilizing provisions. This because

almost all economic proxies are weaker for the restructuring sample. From $SALES_t$ and $ASSETS_t$ it is also evident that the average size of companies in the restructuring sample is larger, which supports the observation in the pilot study that larger companies tend to do more restructurings. Furthermore, the rather large standard deviation in almost all variables is not surprising given that the companies operate in different industries, which supports the choice made of using separate Tobit models for different industries.

TABLE 4 Summary of first stage Tobit models

This table shows the result from the Tobit regressions used to estimate the normal utilization of restructuring provisions. Distress score had a high explanatory value, other variables were more inconsistent between industries

Variables	Predict sign	Number of coefficients with predicted sign (Times significant)	Pooled model Coefficient in percentage point (T-statistics)
AR_TO_{t-1}	-	3 (2)	-0.0010 (-0.62)
INV_TO_{t-1}	-	4 (1)	-0.0008 (-2.17)*
PPE_TO_{t-1}	-	4 (2)	-0.0127 (-3.85)**
$SALES_EMP_{t-1}$	-	4 (3)	-0.0934 (-4.76)**
RET_{t-1}	-	3 (1)	0.0050 (0.07)
$LOSS_{t-1}$	+	3 (2)	0.2505 (2.57)**
$DISTRESS_{t-1}$	-	5 (3)	-0.0440 (-4.52)**
$Intercept$	?		0.1787 (2.32)
Average Dhrymes R^2		0.347	
n		878	
Number of industries		5	

**;* Significance at <0.01; <0.05 levels, respectively, for two-tailed test.

Note: Dhrymes R-square adjusts the predicted value of the Tobit model and thereafter estimates the squared correlation between this adjusted model value and actual values of the dependent variable, excluding zero-value observations. See method section 3.2 for more details.

This table present the results from the following industry-specific Tobit regressions:

$$REST_t = \alpha_0 + \alpha_1 AR_{TO_{t-1}} + \alpha_2 INV_{TO_{t-1}} + \alpha_3 PPE_{TO_{t-1}} + \alpha_4 SALES_{EMP_{t-1}} + \alpha_5 RET_{t-1} + \alpha_6 LOSS_{t-1} + \alpha_7 DISTRESS_{t-1} + \varepsilon_t$$

Table 4 presents a summary of the results obtained from the five separate industry-specific Tobit regressions. The third column in the table shows the amount of times that each variable was in

the predicted direction, while the number in the parenthesis indicates how often the variable was significant in the predicted direction. The fact that the variables differ in significance is not especially surprising given that economic variables have a varying importance depending on industry. One of the variables that showed a relatively small amount of consistency was the stock return in the year prior to the utilization. This as opposed to Bens and Johnston (2009) where it was the most consistent factor. The problem with this measure in our case is that recovery effects already are incorporated in the stock price. Thus, it is likely that the market anticipates the effect of the restructuring directly when a new provision is made rather than when it is actually utilized. One of the most consistent variables throughout all of the five Tobit models was $DISTRESS_{t-1}$. This provides evidence for the point observed in the previous research about that financial distress is a major explanatory factor for the occurrence of restructurings. When it comes to the coefficients presented in the last column it has to be kept in mind that they come from the pooled model, which is a summary of the five different industry Tobit models. Nevertheless, they provide a sense of the magnitude of each variable. For example, increasing the accounts receivable turnover from the year preceding the utilization of the restructuring, AR_TO_{t-1} with one unit would on an average lead to a 0,001 percentage point decrease of the predicted dependent variable. It should be noted that, for illustrative purposes, the coefficients are given as percentage points. Since the dependent variable is deflated by assets the size of the variables would be very small otherwise.

4.2 Analysis of abnormal restructuring utilization

TABLE 5 Descriptive statistics for second stage OLS model variables

This table shows the, mean, median, standard deviation, first quartile and third quartile for all variables used in the OLS regression. For this sample, 69.2 % of the observations were under analyst forecast consensus

Variables	OLS model sample (n=117)				
	Mean	Median	s.d.	Q1	Q3
$ABREST_t$	0.006	0.005	0.007	0.001	0.008
C_SHIFT_t	0.026	0	0.159	0	0
$SMOOTH_t$	0.359	0	0.482	0	1
$ASSETDISP_t$	-0.006	-0.013	0.062	-0.029	-0.002
$LOGASSET_{t-1}$	7.115	7.184	0.582	6.696	7.519
CEO_AGE_t	52.607	52.000	6.455	48	58
ΔCEO_t	0.145	0	0.354	0	0
DIS_SCORE	4.622	4.460	0.856	3.92	5.42
$UNDER_FORECAST_{t-1}$	0.692	1	0.464	0	1

Table 5 shows the univariate statistics for the variables used in the second stage OLS model. As can be observed, the abnormal utilized restructuring provisions have been identified in a substantial part of the sample. Furthermore, from the more easily interpreted variables, it can be seen that 14.5 % of the firms had changed a CEO within the 12-24 months preceding the utilization of the restructuring provision and that the average CEO age was around 52,5 years. Also, the average discretionary score of 4.6 shows that the type of industries in the sample allowed for a rather high amount of managerial discretion since the industry having the highest discretionary score in the table made by Hambrick and Abrahamson (1995) was 6.89. Furthermore, as much as 69,2% of the observations came during years where the firms were below analyst forecasts.

TABLE 6 Correlation matrix of variables used in the second stage OLS model

This table shows the correlation between each variable, both between independent variables and to the dependent variable. Under performance, discretionary score and under analyst forecast are significant correlated with the dependent variable, abnormal utilization of restructuring provisions.

Variables	$ABREST_t$	C_SHIFT_t	$SMOOTH_t$	$ASSETDISP_t$	$LOGASSET_{t-1}$	CEO_AGE_t	ΔCEO_t	DIS_SCORE	$UNDER_FORECAST_{t-1}$
$ABREST_t$	1.00								
C_SHIFT_t	**0.16**	1.00							
$SMOOTH_t$	-0.04	**-0.26**	1.00						
$ASSETDISP_t$	-0.06	**0.07**	0.00	1.00					
$LOGASSET_{t-1}$	-0.06	**-0.18**	-0.05	**-0.10**	1.00				
CEO_AGE_t	-0.03	-0.01	0.07	0.06	-0.03	1.00			
ΔCEO_t	-0.05	-0.04	-0.03	-0.07	-0.01	-0.01	1.00		
DIS_SCORE	**0.29**	0.09	0.06	-0.00	**-0.29**	**0.25**	-0.02	1.00	
$UNDER_FORECAST_t$	**0.18**	0.02	**-0.11**	-0.05	0.07	0.00	-0.02	**0.13**	1.00

Note: See Section 3.5 for definitions of variables. Bolded figures are statistically significant at the 5 percent level or better

Table 6 provides a correlation matrix for the variables in the second stage OLS model. The variables that are significantly correlated with the abnormal utilization of restructuring provisions are C_SHIFT_t, DIS_SCORE and $UNDER_FORECAST_t$. These variables are also related to the dependent variable in the predicted direction. Although some of the other independent variables are not correlated in the direction predicted, this is negligible since these variables are statistically insignificant.

TABLE 7 Second stage OLS model

This table shows the output of the second stage OLS model, which investigates how proxies of earnings management relate to the abnormal utilization of restructuring provisions. The result indicates that classification shifting, CEO age and under analyst forecast are explaining the abnormal utilization of restructuring provision, at the 10% significance level.

Variables	Predict sign	Non-clustered Coefficient (t-stat.)	Firm-clustered Coefficient (t-stat.)
C_SHIFT_t	+	0.0209 (5.60)***	0.0174 (3.30)***
$SMOOTH_t$	-	0.0006 (0.50)	0.0002 (0.22)
$ASSETDISP_t$	-	0.0113 (1.17)	0.0115 (0.81)
$LOGASSET_{t-1}$	+	0.0025 (2.43)**	0.0009 (0.14)
CEO_AGE_t	-	-0.0002 (-1.77)*	-0.0003 (-1.97)*
ΔCEO_{t-1}	+	-0.0013 (-0.75)	-0.0019(-0.84)
DIS_SCORE	+	0.0027 (3.76)***	$(omitted)^+$
$UNDER_FORECAST_t$	+	0.0026 (2.03)**	0.0031 (2.26)**
Intercept	?	-0.0173 (-2.12)**	0.0148 (0.31)
Adjusted R^2		0.322	0.198
n		117	117

***;**;* Significance at <0.01; <0.05;<0.10 levels, respectively, for two-tailed tests

[+] The discretionary score was omitted in the firm-clustered regression since no firm have changed industry during the period

Note: This table present the results from the following industry-specific Tobit regressions

$$ABREST_t = b_0 + b_1 C_SHIFT_t + b_2 SMOOTH_t + b_3 ASSETDISP_t + b_4 LOGASSET_{t-1} + b_5 CEO_{AGE_t} + b_6 \Delta CEO_{t-1} + b_7 DIS_SCORE + b_8 UNDER_FORECAST_{t-1} + \varepsilon_t$$

The final output of the OLS model is seen in Table 7. The dependent variable, $ABREST_t$, was the abnormal residuals left unexplained by the first stage Tobit models. The independent variables acted as proxies for earnings management. As can be observed in the table, all of the independent variables that were statistically significant were correlated with $ABREST_t$ in the predicted direction, regardless of if fixed effects were included or not. In the third column, non-clustered (OLS regression) coefficients are shown. Since these are non-clustered observations, they are seen as independent from each other in regards to firm and time. In the fourth column, the

observations are clustered for firm-fixed effects. With the inclusion of fixed effects we control for the average of differences within firms in order to reduce the possibility of having omitted variables that could bias the results. However, this approach requires that observations change over time, meaning that the variable DIS_SCORE becomes omitted as it is constant. This is unfortunate since it is statistically significant and explains a noteworthy part of the variance in the non-clustered regression. Thus, the factors that are significant in both the non-clustered and firm-clustered regressions are C_SHIFT_t, CEO_AGE_t and $UNDER_FORECAST_t$. The magnitude of C_SHIFT_t showed that the worst performing firms, in regards to earnings before special items had 0.0209 (non-clustered) or 0.0174 (clustered) higher abnormal utilization of restructuring provisions deflated by assets. Putting this into the context that the average $ABREST_t$ was 0.006, this means that firms classified as C_SHIFT_t had about 3 times as high abnormal restructurings as an average restructuring firm. As mentioned before, some part of this difference could be explained by imperfections in the Tobit model of capturing what the "normal" utilization of restructuring provisions is, but still this result gives a very clear indication of the magnitude of the variable. In a similar manner other coefficients can be interpreted in regards to abnormal utilizations in the table. To give another example, the magnitude of the coefficient for CEO_AGE_t revealed that on average a CEO that is one year older has 0.0002 (non-clustered) or 0.0003 (clustered) less abnormal utilization. However, it has to be kept in mind that the average CEO age was around 52.5 years with a standard deviation no larger than 6.4 years. Furthermore, note that the variable $LOGASSET_{t-1}$ lost a lot of significance in the clustered regression raising some concerns to whether omitted variables influence its significance in the non-clustered case.

4.3 Robustness tests

Tests for multicollinearity were performed on the variables for the first stage Tobit regression as well as for the second stage OLS regression. The first indications of potential multicollinearity were assessed through a correlation matrix between independent variables (see table 2 and 6). However, a variance inflation factor (vif) was also calculated to quantify the severity of multicollinearity and the vif score for the variables ranged between 1 and 2. Hence, no indications of perfect multicollinearity were found. Further some tests were also performed on unusual or influential data that might have had large impact on the output. By clustering the observations in industries for the Tobit model, it reduced the standard deviations significantly and increased the predictability. Moreover, sensitivity tests were done by excluding the top 10 observations and bottom 10 observations in each independent variable and thereafter running the regressions again. The result showed that our original regressions were not notably affected by unusual or influential data.

Furthermore, the Tobit regression is built on the assumptions that the regression error is homoscedastic and normally distributed (Cameron & Trivedi, 2010). However, previous research has varying degrees of pessimism regarding how inconsistent the maximum likelihood estimator will be when heteroscedasticity occurs (Greene, 2012). Furthermore no strong tests for normality and heteroscedasticity are available for the Tobit case. Nevertheless, a test for the normality of the regression errors was still carried out. The result, a skewness of 0.9 and kurtosis of 2.9, gives some support for the assumption of normally distributed regression errors. As was concluded in the method section, Dhrymes R-square was used to estimate the goodness-of-fit for the Tobit model and to make the results comparable with previous research. Dhrymes R-square gave a slightly higher number (in our case around two percentage points higher) than the squared correlation between just the predicted value and the actual value for nonzero values of $REST_t$. Compared with the previous research of Bens and Johnston (2009) and Lee (2014), our average Dhyrmes R-square value was 0,347 while their values were 0,122 and 0,271 correspondingly. The main reason for this improvement is because we added the variable $DISTRESS_{t-1}$. However even without this variable we still have slightly higher R-square value than previous research.

For the OLS regression, there are four principal assumptions, *linearity and additivity of the relationship between dependent and independent variables*, *statistical independence of the*

errors, *homoscedasticity*, and *normality of the error distribution,* which justify the use of the model for purposes of inference or prediction. Tests for these assumptions were done by a variety of regressions as well as visually by plots and the outcome indicates acceptable fulfillment of these requirements. Furthermore, as can be seen in table 1, a significant sample drop occurred in the second stage OLS regression since many observations lacked data about the variable DIS_SCORE. The decision of keeping DIS_SCORE was based on the fact that other variables showed relatively similar results regardless of whether they were based on the smaller sample with DIS_SCORE or the larger sample without DIS_SCORE. Furthermore, regression tests with the large sample without DIS_SCORE, showed that the most significant variables C_SHIFT_t and CEO_AGE_t were indifferent or even slightly more significant than for the smaller sample. Therefore, the reason for why the smaller sample was used was because it included the statistically significant variable of DIS_SCORE and the choice did not have any major impact on the other independent variables.

5 ANALYSIS

The results from the second-stage regression showed that some of the proxies of earnings management indeed were significant. The most significant variable was classification shifting**,** which indicates that firms with the worst operating performance in their industry, measured in earnings, tend to utilize restructuring provisions in an abnormal way. Furthermore, it has to be kept in mind that, since we controlled for economic fundamentals in the first stage Tobit model, this result should not be driven by economic factors such as financial distress. It should also be noted that the earnings measure in the variable is before the effect of special items. Therefore, this result gives indications of that firms with bad earnings try to alter their earnings through the utilization of restructuring provisions, which in practice can be done through classification shifting (McVay, 2006). Moreover, It is interesting to compare this finding with the Bens and Johnston (2009) study, since they instead found that firms made abnormal new provisions in years when there was bad performance, which is in line with the big-bath hypothesis. Although it might seem that these results point in opposite directions, this does not have to be the case. Linking this to big-bath accounting, firms make excessive new restructuring provisions during bad years. Thereby they make a reserve for earnings management that can be used to inflate the results in the future. When is this reserve then likely to be used? Intuitively, this should also be during bad years in the future to make those years appear better than they are. Therefore, since bad years might occur multiple times, the findings do not have to be conflicting.

A variable that specifically targeted the incentive for earnings management in the form of capital market pressures was if firms were under the analyst forecast consensus. The result showed that firms under the forecast consensus had more abnormal utilization of restructuring provisions. This builds on to the findings of Moehrle (2002) that, firms are more likely to record reversals when pre-reversal earnings are below analysts' forecasts. Our results therefore show that it is not only reversals that are being used more when firm’s are below analyst forecast, but also the utilization of restructuring provisions. This further gives indication of that classification shifting may be a tool used to inflate the earnings.

The other variables that showed significance were linked with the corporate disciplinary events that had been identified in section 2.2.2. The CEO age was significant at the 10 per cent level in

both cases. This clearly indicates that the age of the CEO seems to matter for how much abnormal utilization of restructuring provisions that are being made. This result can be linked with the findings of Huang et al. (2012), who found a significant negative association between the age of the CEO and the likelihood of firms meeting or beating analyst forecasts and to make financial restatements. Since their findings showed indications of that younger CEOs were more likely to manipulate financial statements, the significant abnormal utilization further gives signs of that younger CEO's in general are more likely to be involved in practices of classification shifting. Thus, the hypothesis of Huang et al. (2012) that "older individuals are more ethical and conservative than younger individuals", cannot be rejected based on our results. However, if it is ethics that drive the result or other factors e.g. that younger CEOs have higher pressures to convince shareholders about their strategies, is something that cannot be concluded based on our results. Furthermore, it has to be kept in mind that even if the hypothesis is correct, both studies had a sample that was based on larger publicly listed companies and thus the results cannot be generalized for CEOs in other contexts.

Another corporate disciplinary factor was the discretionary score, which showed clear signs of that the managerial discretion in each industry mattered for how abnormal utilizations of restructurings were made. However, since only earnings management in restructuring provisions were analyzed rather than a larger set of earnings management tools, this result cannot be generalized to say that industries that allow for more managerial discretion are subject to more earnings management. It can only be said that this is the case for restructuring provisions. These findings provide support for the intuition of Dechow et al. (2010), that managers face multiple goals, which they have to prioritize. Since the industries with less managerial discretion were classified by Finkelstein et al. (2009) as being more stable in terms of demand, with less product differentiability etc. the intuition is that these firms can be more transparently assessed by external parties such as investors. Therefore managers in these industries will have it much harder to actually deceive the users of financial reports and may therefore prioritize other things than earnings management.

A variable that was more dubious to interpret was that of the size of the companies. As mentioned it was a bit unclear whether this factor would be affected by the Watts and Zimmerman (1978) influenced hypothesis of that larger companies have got an increased

incentive to engage in earnings management. Although the variable was significant in the non-clustered OLS version, firm-clustering radically diminished the importance of this variable. Therefore, there is a lack of evidence of that the size of the firm explains abnormal utilization of restructurings.

Looking at the factors that were insignificant, we can see that there is a lack of evidence for that high-performing firms, in terms of earnings, utilize less restructuring provisions in order to save these provisions for worse years where they instead could be used to inflate the earnings. Little insights can also be drawn from comparing the asset disposition of restructuring firms as compared to industry comparables. This result is perhaps not so surprising given that no specific separation of restructuring actions were made in the sampling process. In other words, it is unclear how many of the companies that restructured, were using asset disposals. As discussed in section 2.2.1, restructuring actions could be restricted to for example only employee layoffs, which therefore could have introduced a lot of noise to the measure. The CEO turnover variable, specifically targeted the common belief that new managers take on big-baths during the first year in order to create a reserve for the future where they can inflate the earnings. This reserve is created by taking on abnormal new restructuring provisions that are used in the subsequent years. However, the results were statistically insignificant when it comes to showing that new CEOs utilize more restructuring provisions in the second year after their arrival. This complements the results of Bens and Johnston (2009) and Lee (2014) who both got insignificant results for that new CEOs, that entered their position no later than 12 months before a new restructuring provisions was made, recognize larger restructuring provisions. However, there is a bit of noise in this proxy since it is contingent on that new CEOs make new provisions in the first period when they arrive, which does not have to be the case.

Having discussed each of the earnings management proxies individually, what picture do they present jointly? The variables that proved to be significant could be said to have looked upon first, the incentives for doing earnings management, which was specifically targeted by C_SHIFT_t and $UNDER_FORECAST_{t-1}$. Second, the possibility of utilizing restructuring provisions for earnings management purposes which was captured by DIS_SCORE. Third, the willingness of utilizing restructurings for earnings management purposes, where CEO_AGE_t seemed to play a part. One common characteristic of these variables is that they are concerned

with inputs before restructurings rather than by looking at the outputs of the restructurings. This is in line, with the discussion in section 2.2.3, that it is hard to detect earnings management based on the actual outcomes of restructurings. Therefore, this further solidifies the observation that, although regulation has been imposed to make restructurings more transparent, it is hard to estimate what a reasonable post-restructuring behavior is. The best hope for getting a sense of earnings management in a firm for investors, instead seems to be to look upon if a firm has got strong incentives for doing earnings management, if they are able to do it and also a bit about the characteristics of the management, such as their age.

When it comes to looking at these results from a more international point of view we cannot see any major differences in terms of earnings management behavior for Swedish Mid and Large Cap companies. Comparing the descriptive statistics for economic fundamentals in table 3 with the most closely related US studies of Bens and Johnston (2009), Lee (2014) and Moehrle (2002), we can see that their sample is quite similar in terms of average turnover ratios, sales and assets. It was also concluded in section 2.2.1 that the reporting framework for restructurings in US GAAP, during their studies, was quite similar to the IFRS framework applied by the companies in Sweden. Furthermore, no differences in the shareholder structures were identified between the US and Swedish firms that would be close to the magnitude of the ones identified in the Kang and Shivdasani (1997) study, where Japanese banks were allowed to own up to 5% of the outstanding shares of client firms. Therefore, it seems that if there would be difference in how US and Swedish firms utilize restructurings for earnings management purposes, this would likely be justified by cultural aspects. However, since the restructuring utilization behavior was similar, this might be a sign of that culture plays a smaller role in this context. Nevertheless, this indicates that our findings do not necessarily have to be bounded geographically and could be used together with the US studies.

6 CONCLUSIONS

In this study, the utilization of restructuring provisions has been studied in the light of earnings management. Previous studies have shown indications of that although, new regulations have been introduced to increase the transparency in restructurings, there were still signs of that abnormal restructuring charges i.e. the creation of new restructuring provisions were linked with different earnings management proxies. However, since most research had focused exclusively on restructuring charges, this study has seen possibilities to investigate these results further. Therefore, by instead analyzing the utilization of restructuring provisions, this study has sought to target the phenomenon of classification shifting of core on-going expenses into restructuring provisions. The research question set out in the beginning was therefore *"Are there signs of that classification shifting through the utilization of restructuring provisions is used as an earnings management tool for Swedish companies?"*.

The methodology for investigating these questions was based on two stages. First, by predicting the normal size of utilizations of restructuring provisions through the use of fundamental economical variables. Secondly, by linking the unexplained part of the actual utilization with proxies for earnings management. The results showed that there indeed were signs of earnings management through the use of classification shifting. More precisely three types of factors gave significant results. The first was the incentives for doing earnings management, which in this study were to meet analyst forecasts as well as having exceptionally bad earnings figures. The second factor was the possibility of utilizing restructuring provisions for earnings management purposes. It was seen that industries that allowed for managerial discretion were more likely to be subject to earnings management through the utilization of restructuring provisions. The last factor was the willingness of utilizing restructurings for earnings management purposes. A factor that showed significance in this area was the age of the CEO where older individuals were less likely to engage in earnings management through the utilization of restructurings.

There are a number of limitations with our study that have to be put in contrast to these results. First of all it is important to realize that the variables used in the second-stage OLS model are proxies for earnings management, meaning that they are indicators rather than direct evidence of earnings management. Since earnings management per definition is hard to detect, a model

predicting the normal part of the utilization restructurings had to be used. Although, research about restructurings was investigated to provide the most reliable measures, it is unlikely that all aspects of restructuring and its determinants were captured. Therefore, it is unlikely that a perfect model for predicting the normal part of restructuring utilization was used, which in turn introduces noise when applying earnings management proxies to the abnormal part of the utilization. Therefore, the second stage OLS model should never be applied as a predictive model for determining abnormal restructuring utilization in a stand-alone firm case. Furthermore, the final sample size of 117 observations might seem a bit small. Since, manual data collection was necessary for gathering information about the utilization of restructuring provisions, gathering a larger sample by for example extending the results to all Nordic Mid and Large Cap companies was problematic. Additional statistical strength through a larger sample had to be traded off against being able to analyze the less available data of companies' utilization of restructuring provisions.

Despite these limitations, this study contributes to previous research in the following ways: First, the approach of looking at the utilization of restructuring provisions rather than restructuring charges has, to the best of our knowledge, not been analyzed in this manner before. This approach was insightful since it allowed us to investigate classification shifting more closely. Second, an analysis of previous research regarding restructurings and how they are linked with the valuation process ensured the inclusion of many variables that had been omitted in previous studies such as financial distress, the age of the CEO, and managerial discretion. These variables also proved to have significant explanatory power in the models used. Also, comparisons with previous studies that used this type of two-stage methodology showed that our models had very strong goodness-of-fit measures in both the first stage Tobit model as well as in the second stage OLS model. Furthermore, no indications were found that the results of this study should be geographically constrained to Sweden.

The purpose of this paper was to provide guidance to investors regarding if they should worry about earnings management in restructuring provisions when doing company valuations. On one hand, it was shown that it is unclear how much earnings management is done through restructurings and also that the role of earnings management for determining earnings quality might vary, which should diminish the importance of restructurings. On the other hand, it was

discussed that restructurings can be a rather large post on the balance sheet, which cannot be neglected with this type of reasoning. Furthermore, since our results showed that some proxies of earnings management were significant, we do not find support for rejecting that earnings management is present in restructurings. Therefore, the implications that investors can take from this paper, is that if in doubt, look at the incentives and industry possibilities for earnings management as well as keep an eye on who is in charge in the company before making a decision on whether additional actions or valuation adjustments should be made.

Finally, while conducting this research, some interesting questions that could be the subject of future studies were identified. First of all, we noticed rather large differences in how restructuring charges were reported in the non-regulated post of *items affecting comparability* as compared to the regulated post of new restructuring provisions. Are there any systematic mechanisms that dictate how large these discrepancies are? Second, our methodology of looking at the utilization of restructurings brought us closer to the economic reality of the events and provided rather robust results as compared to previous studies that instead have focused on restructuring charges. Therefore, it would be interesting to see if this change in methodology could provide clearer results when applied in studies that try to evaluate the effect of restructurings on operating figures. Third, although the proxies used in the second-stage OLS model tried to capture earnings management through different angles, this is by no means a definitive list of all potential proxies that could be used. For example, insights can be drawn by looking at the variables from the three main motivations of earnings management described in section 2.1.3. The main motivation investigated in this thesis was meeting capital market expectations, however variables that would target the other two could provide additional insights. As a reminder, the other two motives were fulfilling internal and external contract agreements based on accounting numbers and complying with government regulations for anti-trust or industries. Lastly, to improve the generalizability of our findings, studies could be made that include more cultural factors in the models. Although we did not find any evidence of specific differences between earnings management in restructurings for Sweden and the US, this does not have to be the case for all countries.

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APPENDIX A

TABLE A A case illustrating the classification shifting using restructuring provisions

	Not using restructuring provision		Using restructuring provision		
	Y0	Y1	Y0	Y1 (A)	Y1 (B)
INCOME STATEMENT					
Sales	100	100	100	100	100
COGS	-35	-35	-35	-35	-35
SAE	-20	-20	-20	-20	-20
Items affecting comparability					
New restructuring provision			-20		
Utilized restructuring provision				+20	
Reversal of unutilized restructuring provision					+20
EBIT	+45	+45	+25	+65	+65
BALANCE SHEET					
[Note - Other provision]					
Opening Balance			0	20	20
Utilized provision			-	-20	-
New provision			+20	-	-
Reversal of unutilized provision			-	-	-20
Reclassification			.	-	-
Translation differences			.	-	-
Closing Balance			20	0	0

Comments: The table above illustrates three different scenarios for Y1 where the company performance is assumed to be identical in both Y0 and Y1. In the first scenario, the company is not using a restructuring provision. In the second scenario, the company is using a restructuring provision and (A) utilizes the restructuring provision in the following year. In the third scenario, the company is using a restructuring provision and (B) reverses the restructuring provision in the following year. Note that in (A) and (B), the sum of EBIT in the two years is identical.

Posts included in *Items affecting comparability* are usually embedded in other line items such as *COGS* and *Sales and administration expenses,* which means that they are not always as clear as in this example. Given that a fabricated restructuring is made, the example (A) illustrates the possibility of classification shifting. Assuming that all of the restructuring costs are included in COGS this would increase the COGS measure by 20 in Y0 while decreasing the COGS measure with 20 in Y1. In example (B) the same effect is achieved by reversing the restructuring provision. Hence, earnings management could be achieved through both reversing unutilized provisions or by utilizing restructuring provisions with on-going charges.

APPENDIX B 1(3)

TABLE B Utilization of restructuring provisions by firm and year

Firm	Currency	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
AAK AB	MSEK			-9	-12	-36	-44	-31	-21	-3	-6
AB ELECTROLUX	MSEK	-491	-1268	-993	-303	-939	-588	-684	-478	-626	-1162
AB VOLVO	MSEK				-207	-262	-419	-152	-305	-393	-1099
ADDTECH AB	MSEK	-8.2	-9.5	-3.5	-2.6	-2	-0.7	-4.8	-8.4	-2	-4.6
AKTIEBOLAG LINDEX	MSEK	-66.7	-15.1	-29.4							
ALFA LAVAL AB	MSEK	-241.3	-57	-15	-57	-185	-200	-77	-106	-57	-100
ASSA ABLOY AB	MSEK	-298	-342	-424	-485	-676	-465	-403	-498	-647	-493
ASTRAZENECA PLC	MUSD	-1	-37	-25	-405	-341	-335	-377	-853	-532	-472
ATLAS COPCO AB	MSEK	-56	-31	-14	-32	-154	-93	-32	-89	-100	-86
AUTOLIV, INC.	MUSD	-15.7	-15.2	-14.4	-48.2	-120.5	-66.1	-22.2	-33.3	-20	-44.2
BILIA AB	MSEK					-8	-6		-9	-21	
BILLERUDKORSNAS AB	MSEK	-71	-219	-78	-5	-3	-1				
BROTHERS & SISTERS AB	MSEK	-4.7	-1.0								
CAPIO GROUP SERVICES AB	MSEK	-17									
CARDO AB	MSEK	-88	-146	-65	-29	-76	-79				
CAVOTEC SA	MEUR									-0.7	-0.1
CGI IT-KONSULTER AB	MSEK	-147.3	-173.2								
CLOETTA AB	MSEK							-28	-23	-35	-26
CONCENTRIC AB	MSEK								-8		-3
DECLAM AB	MSEK	-71	-21								
DUNI AB	MSEK			-2	-1	-30	-3	-5	-15	-15	-19
ELEKTA AB	MSEK									-7	-101
ENIRO AB	MSEK	-60	-8	-1	-8	-32	-87	-66	-45	-65	-69
FAZER KONFEKTYR SERVICE AB	MSEK	-5.1	-4.8	-17.5	-3.5						
GAMBRO AKTIEBOLAG	MSEK	-0.1									
GANT COMPANY AB	MSEK		-2.8								

APPENDIX B cont. 2(3)

TABLE B cont. Utilization of restructuring provisions by firm and year

Firm	Currency	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
GETINGE AB	MSEK	-24	-1	-195	-224	-202	-163	-183	-155	-363	-751
GUNNEBO AB	MSEK	-214.7	-149.7	-115.7	-19.3	-4.3	-37	-25.8	-35.9	-10.9	-20.3
GUNNEBO INDUSTRIER AB	MSEK	-0.5									
HALDEX AB	MSEK	-17	-27	-28	-80	-99	-75	-22	-39	-44	-19
HEXAGON AB	MEUR	-24	-192	-17	-28	-196	-11.7	-9.9	-5.6	-4.2	-4.3
HEXPOL AB	MSEK					-37	-13	-45	-5		
HOGANAS AKTIEBOLAG	MSEK					-19					
HOLMEN AB	MSEK	-18									
HUSQVARNA AB	MSEK	-10	-35	-2		-270	-140	-123	-79	-134	-121
IFS AB	MSEK	-61	-28	-6	-16	-21	-9	-3	-16	-62	-29
KAPPAHL AB	MSEK		-41.7	-1.8		-7.7					
LUNDIN PETROLEUM AB	MUSD			-0.1	-0.7		-1.6		-3.2	-0.4	
MEDA AB	MSEK	-6.5	-99.5	-73	-65	-123	-89	-60	-43	-20	-8
MODERN TIMES GROUP AB	MSEK	-0.6									
MUNKSJO OYJ	MSEK					-75	-56	-1.2		-0.4	-4.7
NEDERMAN HOLDING AB	MSEK	-0.7	-0.2	-0.8	-2.3	-1.6	-17.8	-49.8	-20.7	-38.5	-30.0
NEFAB AKTIEBOLAG	MSEK	-9.2	-2.6								
NIBE INDUSTRIER AB	MSEK	-11.7	-32.1	-28.1							
NISCAYAH GROUP AB	MSEK					-163.4	-2.174	-5.159			
NOBIA AB	MSEK					-118	-45	-154	-195	-87	-67
NOLATO AB	MSEK	-13	-6	-4	-1	-8	-7				
ORIFLAME COSMETICS SA	MEUR		-0.2	-14.5	-18.6	-1.8	-1.0	0.0	-0.9	-0.8	-3.6
PEAB AB	MSEK		-1			-19		-2	-11	-20	-25
REZIDOR HOTEL GROUP AB	MEUR									-1.1	
SAAB AB	MSEK	-149	-100	-153	-58	-30	-254	-316	-114	-96	-170
SANDVIK AB	MSEK	-22	-45	-79	-104	-116	-326	-235	-421	-698	-1127

APPENDIX B cont. 3(3)

TABLE B cont. Utilization of restructuring provisions by firm and year

Firm	Currency	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
SANITEC OYJ	MEUR								-6.1	-2.3	-3.6
SAS AB	MSEK	-324	-383	-143	-228	-907	-1268	-630	-315	-513	-694
SCANIA AKTIEBOLAG	MSEK	-45	-18	-15	-23	-127	-8	-2			
SECURITAS AB	MSEK								-152.4	-205	-65.1
SKF AB	MSEK	-183	-197	-174	-142	-534	-656	-243	-103	-297	-312
SSAB AB	MSEK					-400	-22		-38	-47	-9
STORA ENSO OYJ	MEUR	-25.1	-64.4	-152.9	-160.8	-140	-54.5	-66.1	-45.4	-67	-83
STRALFORS AKTIEBOLAG	MSEK	-12.7									
SVENSKA CELLULOSA AB SCA	MSEK	-908	-1310	-675	-835	-891	-718	-1015	-449	-811	-555
SWEDISH MATCH AB	MSEK	-28	-72	-51	-40	-17	-50	-2			
SWEDISH ORPHAN BIOVITRUM	MSEK	-25.2	-76.4	-10.8							
TELEFONAKTIEBOLAGET LM ERICSSON	MSEK	-1983	-2308	-1680	-1756	-4248	-3261	-3223	-1170	-2089	-1202
TELIASONERA AB	MSEK		-1301	-381	-398	-1109	-789	-694	-586	-948	-892
THULE GROUP AB	MSEK									-29	-38
TRELLEBORG AB	MSEK	-126	-331	-332	-332	-324	-114	-114	-52	-69	-80

APPENDIX C

TABLE C Initial regression variables for the first stage Tobit model

$$REST_t = \alpha_0 + \alpha_1 \Delta GDP_t + \alpha_2 \Delta SALES_t + \alpha_3 \Delta E_t + \alpha_4 PM_{t-1} + \alpha_5 LOSS_{t-1} + \alpha_6 AR_{TO\,t-1} + \alpha_7 INV_{TO\,t-1} + \alpha_8 PPE_{TO\,t-1} + \alpha_9 SALES_{EMP\,t-1} + \alpha_{10} RET_t + \alpha_{11} RET_{t-1} + \alpha_{12} DISTRESS_{t-1} + \varepsilon_t$$

Notes:
The variables are defined as follows (all item number refer to Worldscope definitions)

$REST_t$	=	The amount utilized of the restructuring provision (Hand collected) deflated by assets (WC0299), where utilized amounts are reflected as positive numbers
ΔGDP_t	=	The year-over-year change in GDP
$\Delta SALES_t$	=	The year-over-year change in Sales (WC01001)
ΔE_t	=	The year-over-year change in ratio of net income before extraordinary items (WC01551) to sales (WC01001)
PM_{t-1}	=	The ratio of net income before extraordinary items (WC01551) to sales (WC01001)
§$LOSS_{t-1}$	=	An indicator variable coded 1 if the firm incurred a net loss (WC01551) in any of the three years prior to the utilizing of restructuring provision, and 0 otherwise
AR_TO_{t-1}	=	The ratio of sales (WC01001) to trade receivables (WC02051)
INV_TO_{t-1}	=	The ratio of cost of goods sold (WC01051) to inventory (WC02101)
PPE_TO_{t-1}	=	The ratio of sales (WC01001) to PPE (WC02501)
$SALES_EMP_{t-1}$	=	The ratio of sales (WC01001) to employees (WC07011)
RET_t	=	The stock return (WC08372) for this year
RET_{t-1}	=	The stock return (WC08372) for the year prior to the utilization of a restructuring provision
$DISTRESS_{t-1}$	=	The calculated Altman (1968) score subtracted with 1.81, which is a cutoff-point for distress firms. Hence, a score below 0 indicates that the company is financially distressed

APPENDIX C cont.

TABLE D Correlation matrix of initial regression variables for the first stage Tobit model

Variables	$REST_t$	ΔGDP_t	$\Delta SALES_t$	ΔE_t	PM_{t-1}	$LOSS_{t-1}$	AR_TO_{t-1}	INV_TO_{t-1}	PPE_TO_{t-1}	$SALES_EMP_{t-1}$	RET_t	RET_{t-1}	$DISTRESS_{t-1}$
$REST_t$	1.00												
ΔGDP_t	0.01	1.00											
$\Delta SALES_t$	-0.03	0.05	1.00										
ΔE_t	0.00	**0.07**	**0.56**	1.00									
PM_{t-1}	-0.00	0.03	**-0.18**	**-0.06**	1.00								
$LOSS_{t-1}$	**0.11**	0.06	**0.10**	0.01	**-0.11**	1.00							
AR_TO_{t-1}	-0.06	0.01	-0.02	-0.00	0.02	-0.00	1.00						
INV_TO_{t-1}	-0.04	-0.02	**0.07**	0.01	**-0.15**	**0.08**	-0.01	1.00					
PPE_TO_{t-1}	**-0.06**	0.00	-0.01	-0.00	0.02	-0.03	0.01	0.04	1.00				
$SALES_EMP_{t-1}$	**-0.14**	-0.01	-0,04	-0.01	0.06	**-0.07**	0.03	**0.08**	**0.15**	1.00			
RET_t	**0.04**	**-0.13**	**0.08**	0.03	0.04	0.03	-0.00	-0.03	0.03	0.01	1.00		
RET_{t-1}	**-0.05**	**0.43**	0.03	0.02	0.04	0.05	-0.01	-0.05	0.02	0.02	0.01	1.00	
$DISTRESS_{t-1}$	-0.06	-0.01	**0.08**	**0.15**	0.06	**-0.08**	0.03	0.03	0.02	0.04	**0.06**	**0.09**	1.00

Note: See table 10 for definitions of variables. Bolded figures are statistically significant at the 5 percent level or better