UNIVERSITY OF GOTHENBURG
SCHOOL OF BUSINESS, ECONOMICS AND LAW

Earnings Management in Private Swedish Companies

A Study of the Contributing Factors

Bachelor's Thesis in Business Administration
Financial Accounting
Spring 2015
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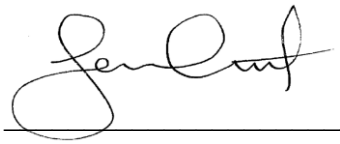
We would like to dedicate this thesis to everyone who has helped us along the way, whether they have provided us with a red bull, a hug or advice on how to make a histogram in SPSS.

We would also like to thank our supervisor, Andreas Hagberg, and our seminar partners who have given us constructive critique which has lead us to this finished thesis.

During the way, we have learned a lot, about the subject and ourselves. We will use this knowledge to provide society with an even better master's thesis. The research has provided us with a great basis on our journey into master studies and working life.

Gothenburg, May 29th of 2015



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Summary

Bachelor's Dissertation in Business Administration. University of Gothenburg, School of Business, Economics and Law. Bachelor´s Thesis, Financial Accounting, Spring 2015.

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Title: Earnings Management in Private Swedish Companies - A Study of the Contributing Factors.

Background and problem: Due to a large number of accounting scandals the academic term earnings management has become more known to the world in recent years, which has lead to an increased demand for further research on this subject. The research questions of this thesis are the following; To what extent do private limited companies in Sweden manage their earnings? How do the following factors affect the existence of earnings management in private limited Swedish companies; industry, debt to equity ratio and choice of audit firm?

Purpose: To inform the reader on the existence of earnings management in private limited companies in Sweden and what can affect its existence by analyzing more than 45 000 observations through a population study. Also, this thesis serves to add to the previous fairly vague research in the private sector area and to create awareness for all stakeholders about these problems.

Limitations: This population study will examine 5 341 private limited Swedish companies with complete financial information for the years 2005-2013. Only financial information from Business Retriever will be analyzed and not individual financial reports.

Method: The method and tests will be based on the earnings distribution method presented by Hayn (1995) and Burgstahler and Dichev (1997), by analyzing the distribution of earnings in the positive area of a weighted net income of zero through the main test. Thereafter a sub test will analyze the association of the previously mentioned chosen factors with the existence of earnings management.

Results and conclusion: The main results show an irregular distribution of earnings among the companies analyzed around zero, implying that these companies manage their earnings to overcome losses due to several reasons. We have found evidence that these companies are associated with specific industries and the usage of a not Big Four audit firm. No relation between these companies and their respective level of debt to equity has been found.

Proposal for future research: We propose future research to be made in the area by evaluating the correlation between industry size and significance, evaluate the correlation between earnings

management and audit firm on an individual level (EY, Deloitte, KPMG, PWC) and on the relation between earnings management and level of debt to equity by using the second as a binary variable.

Keywords: earnings management, private vs public companies, creative accounting, Big Four audit firm, debt to equity ratio, industry, earnings distribution

1. Introduction

The first chapter will provide a background and purpose of the study and thereafter present the research questions, which will be answered in the end of the thesis.

1.1 Background

Accounting forms a central element of every company's success or failure. Therefore it is important to understand the risks with accounting and the factors behind business scandals arising and whether it is possible to anticipate them before they happen (Jones, M, 2011). Stakeholders evaluate how well or bad a company is doing by the information presented in the financial reports. This makes it more tempting for managers to use flexible accounting techniques to produce financial reports which reflects a misleading picture of the company's activities and financial position (Healy and Wahlen, 1999).

The academic word for this phenomenon is earnings management and has become more known to the world in recent years when several accounting scandals have been observed. One of the biggest scandals in recent years occurred as a result of misleading numbers reported by the company Enron, at the time the seventh largest company in the US, which reported a 100 billion revenue the year before its bankruptcy in 2001. Enron was later brought to trial where various individuals were found guilty for fraud. There are also Swedish examples of this, where one of the most recent ones involved the company Prosolvia, which with the use of different accounting techniques manipulated their financial reports through a reconstruction of ownership, invented agreements and premature income recognition (Jones, M, 2011).

Accounting scandals and fraud are repetitive in history and in every country, however are by nature extreme cases but generally involve creative accounting such as earnings management (Jones, M, 2011). Companies have different reasons for managing earnings, which include presenting consistent results between years, maximizing their performance or in an attempt to receive a zero result to avoid profit tax (Bhattacharya, Daouk and Welker, 2003).

Previous studies on the presence of earnings management in both public and private companies have shown that it does occur but that the outcomes vary and they are sometimes contradictory. Factors which have been examined in previous research are contracting motivations, ownership structure, tax incentives, debt to equity ratio, the presence of bonus systems, type of audit firm, industry and profitability (Healy, 1985; Jensen and Meckling, 1976; Phillips et al. 2003; Watts and Zimmerman, 1986; Guidry et al. 1999; Tendeloo and Vanstraelen, 2008; Healy and Whalen, 1999). This thesis will only analyze a sample of these factors and will exclude factors, which are only relevant in the examination of public companies.

1.2 Purpose

This thesis aims to examine the existence of earnings management in Swedish private limited companies and factors, which may affect its existence during the last nine years. This population study present exclusive data of more than 5 000 companies and 48 000 observations.

Public companies have been the main focus in previous studies because of their relevance to the mass and because they are all obliged to publish public financial reports. In Sweden both public and private limited companies publish financial reports and not only are the shareholders concerned about the company (Årsredovisningslagen, SFS 1995:1554). Also, according to the principle of public access to official documents, the documents of the government and government agencies are official and Swedish people have the right to study these public documents (Government Offices of Sweden, 2015).

According to Mitchell et al. (1997) stakeholders such as lenders, employees, customers and suppliers are concerned with the financial situation of the company. This point of view together with research by Burgstahler et al. (2006) which implies that private companies engage more in earnings management compared to public companies have increased the demand for greater quality of the financial reports in private companies. Examining motives and factors for using earnings management in private companies can according to Tendeloo and Vanstraelen (2008) help alleviate agency conflicts between owners, managers and banks. It can also be useful for evaluation of managerial performance or for convincing various stakeholders of the credibility of the financial statements.

The search for the existence of previous research in this area shows that the supply is fairly vague. There are not many studies to be found on research on private limited Swedish companies and whether they manage their earnings. However, in a research called *The Importance of Reporting Incentives: Earnings Management in European Private and Public Firms* by Burgstahler et al. (2006), it is shown that earnings management is more existent in private firms. This is also the conclusion Ball and Shivakumar (2005) make in their research where they compare private and public companies in the UK. However, in a research made by Beatty et al. (2002) on private and public banks, the findings were that the earnings quality was lower in public companies. This implies that the results vary and that further research on the subject is necessary.

A few studies can also be found on an European basis, such as the study *Earnings Management and Audit Quality in Europe: Evidence from the Private Client Segment Market* by Tendeloo and Vanstraelen (2008). This contribution adds to the above research and they mainly test the restrictions of earnings management in the presence of a Big Four audit firm with a sample of six European countries. Due to lack of information on audit firms, Sweden had to be excluded in this study and could not be analyzed. The above research by Burgstahler et al. (2006) also come to the same conclusion regarding audit firm data; that they fail to collect it from Sweden. This factor is relevant due to the audit firm's duty to prevent earnings management in form of representation of

false or misleading information. Therefore it is relevant to add to this research with help of complete Swedish audit firm data.

There have also been some studies in more adjacent countries, which reach the conclusion that earnings management is existent in private companies. One of them is a Norwegian thesis by Reksten and Kristiansen (2011) who from a sample of approx. 1.5 Million private limited Norwegian companies come to the following conclusion; earnings are managed to overcome small losses in companies´ financial reports and that these companies do not use a Big Four audit firm. Furthermore, a Finnish paper by Sundgren (2007), *Earnings Management in Public and Private Companies - Evidence from Finland*, also explores this existence in approx. 200 companies and these findings in relation to debt to equity ratio, where the author finds a correlation between companies with a high debt to equity ratio and the usage of income increasing accounting methods. Equivalent studies on Swedish companies have not been found.

Among the different factors, which might affect the outcome of earnings management, the research on the correlation between earnings management and industry is, according to the authors of this thesis, nearly non-existent. Some studies, however, on earnings management in general also, as a complement, show its existence among different industries. An Australian research made by Sun and Rath (2009) only focuses on this correlation. They found that, out of nine industrial groups, earnings management was present in the following; *Energy, Metal & mining, Industries, Healthcare, Information technology & telecommunications* and *Utilities industries.* The study analyzed companies from 2000-2006 and also came to the conclusion that the companies, which managed their earnings, were less profitable and smaller than the companies, which did not.

With this information on different areas of research and their relevance of comparison, this thesis will analyze the influence of these factors on the existence of earnings management, i.e. type of audit firm, the level of debt to equity and industry. This thesis´ point of view is relevant and aims to inform and spread knowledge to the stakeholders of limited private companies in Sweden, and assist them in decision-making. It will contribute with results in an area, which seems to be quite unexplored.

1.3 Problem formulation and research questions

This thesis will aim to answer the following research questions;

- To what extent do private limited companies in Sweden manage their earnings?
- How do the following factors affect the existence of earnings management in private limited companies in Sweden; industry, debt to equity ratio and type of audit firm?

The first question constitutes our main concern where an affirmative answer is required in order to answer the second question. If the first question shows an existence of earnings management we

will be able to continue the investigation and examine the factors contributing to earnings management. To be able to answer the questions we will set out hypotheses, which will be examined through a visual and statistical test. The first test will be based upon methods from previous research and studies were the distribution of earnings is the most important evidence for earnings management. The second test is a regression analysis test, which will examine if there is a relationship between earnings management and the chosen factors. From the results we will be able to either reject or not reject the hypotheses.

1.4 Thesis´ continued disposition

The following chapters will discuss previous research, different methods used to detect earnings management and the choice of method for this thesis. Furthermore, the report will with the use of statistical tests in form of a regression analysis examine the existence of earnings management and its contributing factors. Finally we will discuss and analyze the result and a conclusion will be made together with proposals for future research.

2. Theoretical framework

The theoretical framework aims to give the reader a closer look into the subject and previous research. First, an explanation, which includes the definition of a private limited company and different types of creative accounting, will be made. Later in this chapter we will introduce and discuss a few theories on which we have based our thesis, explaining reasons and factors behind manipulating figures in financial reports. Previous research and a conclusion with comparison of the different methods will end this chapter and give the reader enough information to understand the following chapters.

2.1 Private companies in Sweden

In Sweden, a private company must have at least 50 000 SEK in share capital. This amount was previously 100 000 but was reduced in 2010 in order to attract more limited companies to be established (Government Offices of Sweden, 2013). Partly due to this shift, 188 646 private limited companies were registered in Sweden between 2010 and 2015. This can be compared to the smaller number of 91390 private limited companies, which were registered between 2005 and 2010. This is an increase with more than 200 % (Business Retriever, 2015).

Due to this increase in private limited companies, the result has been an increase in the number of mandatory financial reports. According to the Swedish Årsredovisningslagen all limited companies, economic associations, partnerships and companies and parent companies in concerns, which meet more than one of the following requirements;

- the average number of employees has during the last two fiscal years been more than 50

- the company's published balance sheet total has during the last two fiscal years been more than 40 million SEK
- the company's published net sales has during the last two fiscal years been more than 80 million SEK

must create an annual report according to the rules of Årsredovisningslagen (SFS 1995:1554, 6 chap, 1 §).

The increase in the number of financial reports may also increase the existence of incentives to manipulate these reports. Therefore, the different types of creative accounting techniques will be presented next.

2.2 Different types of creative accounting

Griffiths (1986) describe creative accounting as being widely used and recognized; arguing that this way of "fiddling the accounts" is perfectly legitimate. The incentives of using creative accounting come from the growing pressure on companies to report favorable results. This pressure partly originates from the great and powerful institutional investors. Due to these misleading numbers and reports, creditors and suppliers may deal with businesses which otherwise would be evaluated as too risky if the reports had presented truthful information. It is also argued that private companies have the same, if not greater incentives to shape their accounts into looking more attractive. Because of the fact that stakeholders do not possess the exclusive private information of the company, there is an existing information asymmetry between them and their shareholders (Richardson, 2000). Therefore, they must rely only on the reports to make assumptions about the company's financial position (Palepu et al., 2004).

The different levels of creative accounting can be divided into aggressive accounting, earnings management, profit smoothing and fraud, dependent of the degree of creativity. Jones, M (2011) defines aggressive accounting as nearly the same as creative accounting; it's a set of chosen techniques to achieve a specific managerial objective, such as increased earnings, rather than presenting a true and fair view.

The next term, earnings management, is academic and there have been numerous papers written on many aspects of the subject all over the world. The definition by Healy and Whalen (1999) is broadly used and describes the phenomenon like this:

"*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.*"

There is sometimes a thin line between legitimate and proper accounting choices and different forms of earnings management (Dechow & Skinner, 2000). Companies prefer to report steady

year-on-year growth rather than confronting the market with volatile profits, known as profit smoothing. Managers might therefore use creative accounting to smooth profits by cutting down high profits and increase poor profits (Jones, M, 2011). The last, and perhaps the most drastic, level of accounting is fraud and the essential difference between fraud and creative accounting is that fraud is working outside the regulatory framework. It is not easy to distinguish fraud from creative accounting and the boundary has not been clear in practice. The Swedish definition of fraud can sometimes make it difficult to distinguish which form of accounting techniques lie within the regulatory framework and which do not. Swedish law describe fraud like this:

"Whoever by misleading conduct brings someone into action or failure, which imply winning for the perpetrator and loss for the mislead person or someone in its place, will be sentenced to prison for a maximum of two years for fraud. Also, whoever gives wrong or incomplete information, through modification of programs or recording or in any other way unlawfully influence the result of an automatic information treatment process or any other similar automatic process, which implies winning for the perpetrator and harm for someone else." (Brottsbalken, SFS 1962:700).

These definitions and explanations will lie as a basis for the following theories and research.

2.2.1 The thresholds

Degeorge, Patel, Zeckhauser (1999) present behavioral thresholds for earnings management and a model which explains how these thresholds generate different forms of earnings management. Empirical studies have come to the conclusion that earnings management works to top one out of three thresholds; sustain latest performance, meet the expectations of analysts and to show positive results. The last one is the dominating one. Hayn (1995) discusses that companies manage their earnings in order to "cross the red line" and to locate themselves not below, but just over the zero. The limit will in this thesis be a earnings of zero and therefore this theory may help explain why the observed companies lie within a specific interval of earnings or not.

2.2.2 The prospect theory

According to Kahneman and Tversky (1979), this theory can be one explanation to the use of earnings management. It explains that companies gain the greatest utility when they move from a relative or absolute loss to a gain. It means that managers do not obtain merit from losses and gains not in relation to a level of wealth, which is absolute, but from a specific reference point. This suggests that, for example, at a set growth in wealth the value expansion is the largest when by the time that the individual´s wealth rises from a loss to a gain in relation to a reference point. If the objectives of the stakeholders correspond with this theory, then there is an incentive for the manager to want to announce earnings which top the reference point, as in zero earnings or the threshold in order to achieve greater benefits. This reference point will in this thesis be earnings of

zero. Therefore, the companies receive the greatest value when moving from negative to positive earnings, and not just when their earnings increase.

2.3 Previous research

The research on earnings management has developed since the 1960s and in the beginning this research focused on the capital markets. In this early research the Mechanistic Hypothesis was used when evaluating the correlation of earnings management and capital markets. The Mechanistic Hypothesis express that investors may be wrongly informed by the judgment of a company's accounting when only having to rely on companies´ financial reports. However, when Watts and Zimmerman (1986) developed Positive Accounting Theory the research focus moved from capital markets to incentives related to internal contracts. This theory provided the public with a review of the theory and methods, which lie as a basis for accounting literature. The non-capital market focus during the 80s and 90s included incentives to manage earnings as being enhancement of management compensation and reduction of political costs and debt covenant violations (Watts and Zimmerman, 1978).

There are many recognized methods, which can be used when measuring the existence of earnings management. McNichols (2000) reports on three commonly used research designs in earnings management literature and define them as; those based on earnings distribution, those based on aggregated accruals and those based on specific accruals. Due to lack of motives and knowledge in the accruals area and therefore a risk of misleading conclusions, the paper concludes that the distribution-based and specific accruals based methods will provide more reliable information in the future. The distribution-based design shows the existence of earnings management and how much it is used; however it does not tell in what way.

Many different methods have derived from the accruals area and the most commonly used accruals-based models analyze, according to Chen (2010), the discretionary parts of companies´ reported income. These include the Healy model (1985), the DeAngelo model (1986), the Jones model (1991) and the modified Jones model (modified by Dechow 1995). The Healy model undertakes the assumption that the value of the expected non-discretionary accruals is zero and that if then the value of the total accruals is non-zero, earnings management is occurring. The DeAngelo model takes another approach and assumes that the non-discretionary accruals instead do a random walk and describes it as the difference between the non-discretionary accruals in period t and t-1, which also equals the discretionary accruals associated with earnings management. The Jones model uses the variance of fixed assets and revenue as variables, independent from each other, to forecast the discretionary accruals. This is because it is believed that revenue variations lead to operating capital variations, which cause accruals changes, and the fixed assets depreciations then decrease the accruals (Al-Saeed and Riesheh, 2014). The modified Jones model, however, is currently the most recognized according to Chen (2010).

Dechow, Sloan and Sweeney (1995) analyze the accrual-based models and come to the conclusion that the accrual-based methods are more useful and detailed when used on randomly selected years. This is a setback to our research based on the fact that we will examine exactly the last nine years (2005-2013). The authors finish by crediting the modified Jones-model (1991) as most powerful when detecting earnings management. This is also the opinion of Islam (2011) who considers this model to have the most power, however his research specifically focuses on the usage of this model in developed countries.

Gerakos (2012) argues against the existing methods due to their belief that discretionary accruals show on either poor quality earnings or earnings management, assuming that the residual from a linear regression equals earnings management. The author also reports that these methods struggle with measurement errors, leading to type 1 and 2 errors as in the rejection of a correct null hypothesis of no existence of earnings management and in the failure of rejecting an incorrect false null hypothesis of no existence of earnings management. The author instead promotes a novel method by Dechow, Hutton, Kim and Sloan (DHKS) (2012), which serves to identify earnings management based on accruals. The model depends on the idea that earnings management based on accruals in one period must be reversed in another period. Instead of assuming that the non-discretionary accruals are a linear function of different company characteristics and test the level of discretionary accruals against a null hypothesis, this method does not take into account the matter of what the statistical properties of unmanaged accruals are but instead divide accruals into discretionary and non-discretionary sections. This model addresses many problems of the existing methods by capturing the dynamics of accruals reversals and therefore reduces the measurement errors. Their approach demands the user to know the period in which the earnings management occurs, rises and reverses, meaning that their method is only applicable when the existence of earnings management is known. However, if the information of existence of earnings management and time of its reversal is available the method can become more powerful and specific, even up to 40 % more powerful if considering these reversals. Due to the requirement of this method to be aware of the existence of earnings management and that this thesis aims to explore a potential existence, this method may not deliver a reliable result of our observations.

The earnings distribution approach is analyzed by Burgstahler and Dichev (1997) and Degeorge et.al. (1999). Earnings are seen as a measure of the company's performance by the users with the help of financial statements (Dechow, 1994). Stakeholders do not possess all the private information of the company and its income streams (Richardson, 2000). Therefore, there is an existing information asymmetry between them and the companies and the shareholders must rely only on the reports to make assumptions about the company's financial position (Palepu et al., 2004). The approach is based on the assumption that companies manage losses and decreases in earnings by using earnings management. This method proposes that companies´ use earnings management to beat benchmarks, as in zero earnings and zero changes in earnings. The reports show an abnormally and unexpected small amount of earnings decreases and losses and an abnormally high amount of earnings increases and a positive income which is rather small in size

among the companies analyzed. This is analyzed from a perspective of cross-sectional distribution of earnings management. When earnings were increased, two factors were in this study used to manage earnings; changes in working capital and the cash flow from operations. There are two explanations why these earnings were managed, one is that managers do not want to report on these losses and decreases in earnings due the to high costs related to the transactions with their stakeholders. The other one refers to the assumption that managers are reluctant to relative or absolute losses. For example, the approach of pooled cross-sectional distribution identifies earnings management in comparison to forecasts. If the deviations of these distributions are smooth, then there is no matter of earnings management. If, however, there is a diversion in the distribution around zero, meaning that there will be fewer negative, yet small, deviations of earnings in relation to forecasts and a higher number of positive, yet small, deviations, the earnings have been managed. The result of this method will vary dependent on how the "goal", for example the variables "prevention of losses and decreases in earnings", is defined, and will after this definition have varying precision. The method bypasses the problems related to accruals-based methods and can instead help us make a strong prognosis about the existence of managed earnings, however not how they are performed or the incentives to beat benchmarks. One great benefit that the distribution of earnings method possesses is the ability to avoid many of the econometric problems, which may appear in the calculation of discretionary accruals (Burgstahler and Dichev, 1997).

One of many previous researches in the earnings distribution area is presented by Ball and Shivakumar (2005) and compares private and public companies in the UK. They find evidence consistent with the assumption that the earnings quality displayed by private companies is lower than the quality of public companies. On the contrary, in a research by Beatty et al. (2002) on private and public banks, the findings were that the earnings quality was lower in public companies, reporting that public banks reported fewer small earnings declines and also tended to use the loan loss provision to eliminate these decreases. The same authors also explicate that these differences are limited to a particular country or industry. The difference between earnings management in private and public companies is also analyzed in a research called *The Importance of Reporting Incentives: Earnings Management in European Private and Public Firms* by Burgstahler et al. (2006), which show that earnings management is more existent in private firms.

The study *Earnings Management and Audit Quality in Europe: Evidence from the Private Client Segment Market* by Tendeloo and Vanstraelen (2008) shows its existence in Europe. This one tests the correlation of earnings management and audit firm in a sample of six European countries. In more adjacent studies by Reksten and Kristiansen (2011) and Sundgren (2007), it is found that earnings are managed to overcome small losses, that these companies do not use a Big Four audit firm (Reksten and Kristiansen, 2011) and that there is a positive correlation between earnings management and debt to equity ratio (Sundgren, 2007).

Hayn (1995) came to the following conclusion after having analyzed companies using the earnings distribution method for a sample of 64 466 observations from US companies; there was a diversion around zero and especially a concentration directly above zero among the companies analyzed. At the same time, there was less than the expected frequency of small losses, i. e. just below zero. The observations just below and just above zero differ from the normal distribution at the 1 % significance level when using the binomial test. This propose that companies with earnings which risk falling below the point of zero earnings have more incentives to manage their earnings. It was later concluded in the study that 30-40 percent of the companies, which reported negative results between two periods, one before manipulation, adjusted their numbers to cross the "red line".

However, Dechow and Skinner (2000) report that academic research has not demonstrated that earnings management has a large effect on average on reported earnings.

Therefore, the hypothesis for the first research question on the existence of earnings management is;

- **H1**: Private companies manage earnings to avoid reporting a negative net income

The next section will introduce the chosen factors, which may have an affect on this existence of earnings management and will be introduced in no particular order.

2.4 Theory of factors affecting earnings management

The following factors have been identified in previous research to influence the existence of earnings management and will therefore be examined further in this thesis.

2.4.1 Industry

Previous research have discussed that specific industries have a higher frequency of earnings management than others. A study made by Healy and Whalen (1999) revealed that earnings management has a positive correlation with companies within industry-specific regulatory constraints connected to accounting. This study is based on other studies like Collins et al. (1995) who studied a sample of banks, which are highly regulated in comparison to other industries. More than half of the sample showed some sort of earnings management, which may imply that when there is a higher level of constraint regulations within an industry, companies are more willing to manage their earnings.

Another study focusing on industries was made by Sun and Rath (2009). The study examines the observations of 4 844 companies during a period of six years in Australia by using the Jones Model (accrual based) and the logistic regression analysis. They found evidence that the periphery sector which includes small and medium sized firms facing a high level of competition and earn

relatively low profits manage their earnings through an income increasing behavior to a higher extent than core sector firms. The periphery sector firms also have a more restricted opportunity structure and are exposed to a higher degree of business uncertainty, which may be the reason for the higher frequency of earnings management in these industries. The study has also come up with the specific results that there is a greater representation of earnings management within the following industries; *Energy, Metal & mining, Industries, Healthcare, Information technology & telecommunications* and *Utilities industries*.

From previous research we can conclude that specific industries perform earnings management more than others. Even though the studies come to different conclusions they are not contradictory to each other. Therefore, the thesis in this area is the following;

- **H2**: There is an association between companies within specific industries and the existence of earnings management within these companies

2.4.2 Debt to equity ratio

Watts et al. (1986) report on the debt to equity hypothesis, which implies that companies with a higher debt to equity ratio are more willing to report higher revenues. Managers manipulate earnings when in higher debt in order to reduce their risk aversion seen from an investor's or a lender's perspective. By keeping their credit rating they can avoid higher cost of capital, which implies a positive relationship between debt-to-equity ratio and the usage of earnings management. Deegan (2009) also discusses this hypothesis, meaning that managers tend to present more favorable financial statements to show a positive liquidity position in order to pay the company's debt principal and its interest. It also states that as this ratio increases, managerial motivations increase to present more favorable numbers by using various misleading accounting methods.

Even though most studies indicate that high debt to equity ratio is correlated with earnings management, opposing researches exist. These researches imply that companies with a high debt to equity ratio might be more prone to manage their earnings to meet the requirements from lenders but they are also under more surveillance because of this (Defond och Jambalvo, 1994). Also, according to Holthausen and Leftwich (1983) companies with higher debt to equity ratio tend to use income increasing accounting methods to a greater extent.

With this information, the following hypothesis will be examined;

- **H3**: Level of debt to equity influence the existence of earnings management within companies

2.4.3 Audit firm

Auditors are frequently mentioned in earnings management theories because of their mission to prevent and limit the presence of this phenomenon in financial reports. The auditor has to be independent and becomes the link between the customer and the customer´s stakeholders such as potential investors, suppliers or banks. (FAR, 2013). Because of their importance when it comes to earnings management there has been several studies on the subject. Most previous studies have in common that they focus on whether a company use one of the Big Four audit firms or not. However, the results of these studies vary. A study by Vander Bauwhede et al. (2003), imply that there is no positive correlation between not having a Big Four audit firm and earnings management. Other studies show that Big Four or Big Six audit firms limit earnings management more in comparison to other audit firms in both private and public companies (Tendeloo and Vanstraelen, 2008; DeAngelo, 1981; Becker et al. 1998). This relationship between private companies and Big Four audit firms arises partly due to the tax authorities since they take on the same role and examine the accounting in the same way as market stakeholder do for public companies, according to the authors. This increases the likelihood of detection of figures being manipulated even for private companies and Big Four auditors care more about their reputation and will therefore be more careful when controlling both private and public companies (Tendeloo and Vanstraelen, 2008).

We will be examining this area of research with the following hypothesis;

- **H4**: Type of audit firm influence the existence of earnings management within companies

2.5 Conclusion and comparison of theories

Private limited companies in Sweden all make financial reports for their shareholders to analyze and use as basis for decision-making. The pressure on companies to report favorable results motivates creative accounting such as aggressive accounting, earnings management, profit smoothing and even fraud if there is a higher degree of creativity. Theories which explain incentives of companies to manage their earnings and the theory, which this thesis is build upon, argue that different types of creative accounting occur in favor to sustain latest performance, meet expectations of analysts and/or to show a positive result.

The methods used to detect earnings management have been divided into three groups, were aggregated accruals have been the most frequently used one. This test model has some problems, which may affect the outcome because it is based on assumptions regarding accruals and incentives to manipulate results that differ from institutional beliefs. This problem can be solved when using specific categories of accruals since the conditions of using accounting regulations to understand accruals are easier with this method. Furthermore, accrual-based methods can give measurement errors, leading to rejection of a correct null hypothesis. The third method, earnings distribution after management was introduced by Burgstahler and Dichev (1997), which only

indicate the existence of earnings management and to what extent. This dominant method is also presented by Hayn (1995) who says that earnings management occur in order for companies to "cross the red line", which refers to ending up just above zero in earnings. The method, however, does not describe how earnings are managed, like the accrual-based methods. This last method is based on the assumption that earnings management exist if the distribution of earnings has a skewness around zero, meaning that there will be fewer negative earnings and a higher frequency of earnings just above zero.

Previous research from these three methods above have all showed that earnings management exists in the analysed observations. However, factors, which may explain the existence of earnings management, have provided mixed results. Since this thesis only examine private companies only three out of several factors, which have being examined in previous research, will be analyzed in this thesis. The choice of factors affecting the existence of earnings management is based on studies made on private companies, which have shown a significant correlation with earnings management; type of industry, level of debt to equity ratio and audit firm.

3. Method

The method chapter aims to explain the method that will be used to answer our research questions. The background and content of the method will be discussed and definitions of the test variables will be presented. The goal is for the reader to understand how the results will be received by examining the different steps of the method, which in the end are the basis of the following main and sub test.

This thesis is a secondary quantitative analysis and the selection is chosen systematically, which will be less timely and monetary costly. It will also have a deductive approach, which will proceed from theories and lead us to a result, proceeding from previous research (Bryman and Bell, 2014). It aims to examine the existence of earnings management and factors, which may affect its existence. To answer the research questions the chosen method will be divided into two tests. The first test aims to answer the question of whether private limited companies in Sweden manage their earnings through a test whereby the distribution of weighted net income of the companies will be studied. In order to determine whether earnings management occur we will analyze the result through an observation of the distribution of earnings around zero.

The second test in this thesis is build upon the result received in the first test and serves to explain factors which may be correlated with the observations which are defined to be managing their earnings. This relation will be examined through a statistical test called logistic regression analysis, which evaluates if there is a correlation between earnings management and the chosen factors in this thesis. The observations in these two tests all meet specific criteria in order for us to receive a comparable and fair result as possible. The chosen companies represent the entire

population of private limited companies, which have more than 50 employees, are obliged for auditing and have provided complete financial information over the last nine years. A further discussion of chosen method and explanation of the two tests and the different variables in more detail will be made later in this chapter.

3.1 Selection

To be able to analyze the companies over the last nine years they must meet specific criteria. The next table presents the selection process of the companies included in the analysis.

Table 1. Selection of companies and criteria.

SELECTION OF COMPANIES

Company criteria	Count
Has a private ownership	489080
Has audit obligation	218827
Has more than 50 empolyees	8207
Possesses complete financial information (exkl. turnover)	8097
Possesses complete turnover information	5341
Total	**5341**

This thesis will analyze 5 341 private limited companies originating from Sweden. The financial information from these companies will be collected from the last nine years, i.e. from 2005-2013 in order to make sure that the analyze includes a whole business cycle which may have an affect on the results. The year of 2014 will not be included in this research due to risk of failure to collect complete financial information of all relevant private limited Swedish companies for this year. This gives us a total of 48 069 observations which will be representing the whole population of companies meeting this criteria. The financial information originates from the database Business Retriever and the categorization of industries equals the industry classification by SNI (Svensk Näringsgrensindelning). Some previous studies have excluded the industry of *Bank, finance* and *insurance* because of its different regulation and capital structure compared to other industries. However, in this study, these sectors will be included because of the fact that studies have shown that a more consistent regulation within the industry has a positive correlation with earnings management (Healy and Whalen, 1999). Again, to receive the most reliable and fair result, the whole population, which meets specific criteria, and not only a sample, will be analyzed.

3.2 Main test

The first part of the method aims to examine if earnings management exists, however not in what way. Therefore, it will be based on the earnings management distribution approach in order to identify the companies, which manage their earnings. The method was introduced by Burgstahler

and Dichev (1997) with the assumption that earnings were managed to achieve positive results. The companies will hereafter be divided into the mentioned 48 069 observations (5 341 companies * nine years). To be able to identify these observations which are defined to be managing their earnings, criteria must be set up to separate the observations which do not manage their earnings from the ones that do. This is made through a subjective judgment, which will be based on the same judgment as in said research and explained further in 3.3.1.

The hypothesis for the main test is the following:

- **H1**: Private companies manage earnings to avoid reporting a negative net income

3.3 Sub test

If the hypothesis of the main test is supported we will continue with the next test and answer the second research question by examining three factors, which may have a potential association with the identified earnings management. The result from the main test is divided into two groups and are therefore binary, observations perceived as being managed and observations perceived as not being managed. There are different types of regression analysis methods when using binary data were the most common ones are binary regression analysis and probit regression. Since this population data is large the binary logistic regression analysis is preferable (IDRE, 2015). This will test whether there is a relationship between the response variable (Y), which can only be categorized into two possible values, and one or more explanatory variables (X). The test is made in the statistics program SPSS, were *Significance (Sig)* and *Odds Ratio (Exp B)* will be analyzed when examining the association between the contributing factors and earnings management. The *Significance Coefficient* determines if the explanatory variables (X) have an effect on the response variable (Y). If the coefficient is significant, which is defined as below 0,05 when using a confidence interval of 95 %, we can say with certainty that there is no association between the variables being tested. Furthermore, we will analyze the results from the *Odds Ratio*. The *Odds* are defined as the ratio in terms of the probability that earnings management occur in the explanatory variable (X) over the probability that earnings management do not occur in that explanatory variable (X) (IDRE, 2015). According to Sundén (2015) the *Odds Ratio* shall be interpreted as *the odds of finding earnings management in one category in relation to finding earnings management in another category.* If an *Odds Ratio* of ≥ 1 is received, these are the odds that earnings management is existent within this category compared to all others. If, however, an *Odds Ratio* of < 1 is received, the odds of not finding earnings management within this category is the ratio of 1 and the *Odds Ratio* (1/*Odds Ratio)* compared to all other categories.

Other coefficients, which are common in regression analysis, will not be a part of this thesis because of their irrelevance when investigating a big sample (Field, 2013).

3.3.1 The response variable

The test variable will be based on net income, however, because of size differences of the companies in this research we will, as Burgstahler and Dichev (1997), weigh net income to make the companies comparable regardless of the size. Instead of weighting the net income with the market value, which is done in their research, we will use turnover, a ratio excluding size and only focusing on the company's performance. A specific level in turnover may be interpreted differently in companies of different size. This ratio will henceforth in the text be referred to as *weighted net income,* calculated as

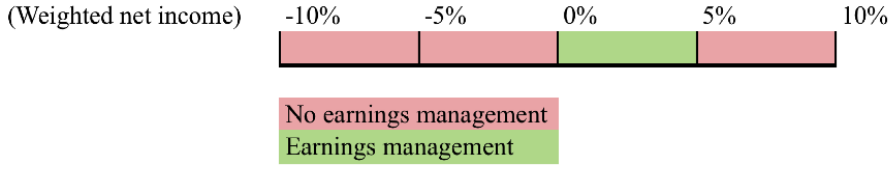
$$\frac{net\ profit}{turnover} = weighted\ net\ income$$

Furthermore, the following part of this thesis will define observations with a weighted net income of zero to five percent (0-5%) as managing their earnings. We use this interval due to a great representation within these percentages and the choice is also based on the interval analyzed by Burgstahler and Dichev (1997). They took the main test into further investigation and confirmed that most of the companies just above zero in net income did manage their earnings. If the charts presented in the result show an abnormal distribution with a higher frequency just above zero, we can use this interval for further investigation and test whether our chosen factors may be associated with earnings management.

Therefore, in the following tests this binary response variable will be divided into the following categories

- companies with a weighted net income of zero to five percent (0-5 %) will be perceived as managing their earnings (green area in Table 2)
- companies with a weighted net income outside the interval of zero to five percent (<0 % and >5 %) will be perceived as not managing their earnings (red area in Table 2)

Table 2. Description of chosen earnings management interval.



3.3.2 The explanatory variables

The dependent variable is set in relation with the following independent variables in a sub test:

Industry

All observations will be categorized into respective industry and the association between earnings management and the 28 different industries identified will be examined. Previous research by Sun and Rath (2009) found evidence that earnings management was more existent within specific industries discussed in the theoretical framework of this thesis. Also, Collins et al. (1995) reports on an association between earnings management and industries, which are highly regulated. The industries of the companies analyzed in this research have various frequencies, however are all essential to include when representing the whole population, which will be analyzed in the result.

Table 3. Industry labeling, frequency and percentage of total.

INDUSTRIES

Labels	Count	%
Advertising, PR and marketing	69	1,3%
Agriculture, forestry, fishing and hunting	32	0,6%
Banking, finance and insurance	164	3,1%
Business services	124	2,3%
Computer, IT and telecommunications	269	5,0%
Construction, design and furnishings business	446	8,3%
Culture, recreation and leisure	62	1,2%
Education, sience and development	127	2,4%
Food production	104	1,9%
Hair and beauty	2	0,0%
Health and healthcare	184	3,4%
Hotels and restaurants	154	2,9%
Industry-, employee- and profession org.	16	0,3%
Legal, accounting and consulting	131	2,5%
Manufacturing and industry	1186	22,2%
Media	77	1,4%
Motor trade	120	2,2%
Other consumer services	13	0,2%
Public administration and community	10	0,2%
Real estate	339	6,3%
Renting and Leasing	42	0,8%
Repair and installation	73	1,4%
Retail	266	5,0%
Sewage, waste, electricity and water	149	2,8%
Staffing and employment	90	1,7%
Technical consultancy	114	2,1%
Transportation and warehousing	378	7,1%
Travelling and tourism	23	0,4%
Wholesale	577	10,8%
Total	**5341**	

With this information, the previously mentioned hypothesis will be researched;

- **H2**: There is an association between companies within specific industries and the existence of earnings management within these companies

Debt to equity ratio

This variable tests the level of debt to equity ratio in relation to earnings management, which in previous research by Watts el. al. (1986), Holthausen and Leftwich (1983) and Deegan (2009) has been a factor which has been associated with earnings management. However, the ratio has been associated with earnings management in different ways, by having a negative or positive correlation.

Therefore, this hypothesis will be researched;

- **H3**: Level of debt to equity influence the existence of earnings management

Audit firm

The third factor is tested to observe if the choice of audit firm might have an impact on earnings management. Previous research by Tendeloo and Vanstraelen (2008), DeAngelo (1981) and Becker et al. (1998) indicate that companies, which do not use one of the Big Four audit firms, manipulate their figures more than those, which do have one of the Big Four firms. However, this is not the opinion of Vander Bauwhede et al. (2003), who propose the opposite. The test will examine if a conclusion can be made in the case of limited private companies in Sweden as well.

The observations are categorized into the their respective audit firm and Table 4 demonstrates this categorization, both on an individual and merged level. The second merged categorization will be used in the sub test.

Table 4. Audit firm labeling and count.

AUDIT FIRM

Labels	Count	%
EY	738	14
Deloitte	404	8
PWC	1071	20
KPMG	542	10
Others	2586	48
Total	5341	100
Big Four	**2755**	**52**
Not Big Four	**2586**	**48**
Total	**5341**	**100**

Therefore, the hypothesis is the following;

- **H4**: Type of audit firm influence the existence of earnings management within companies

The following table serves to give a clearer explanation of the different variables and how they are classified.

Table 5. Explanation of the variables.

VARIABLE EXPLANATION

Variable	Formula	Classification	Type of variable
Profit margin	*Net income/Turnover*	0=No Earnings management, 1=Earnings managemer	Binary response variable (Y)
Earnings management	*Interval that indicates earnings management*	Profit margin of 0<0.05 (1) from above	Binary response variable (Y)
Debt to equity ratio	*(Total provisions + Total current liabilities + Total long-term liabilities + (Total untaxed reserves * 0:28)) / (Total equity + (Total untaxed reserves * 0.72))*		Continuous explanatory variable (X)
Audit firm	*Big four audit firms: EY, Deloitte, KPMG &PWC*	0=Not Big Four, 1= Big Four	Binary explanatory variable (X)
Industry	*28 different industries with no grouping*		Continuous explanatory variable (X)

3.4 Limitations

Due to the great number of companies analyzed in this study, we will not be able to collect information from individual financial reports, and therefore other factors affecting the existence of earnings management will not be analyzed, other than from the information retrievable from Business Retriever. This is nonetheless the only data necessary in order to use the chosen method with the chosen variables. Due to only observing 5 341 out of a total of 489 080 private Swedish companies, the results received in this thesis may not reflect the whole population of private companies. However, in order to practice the sub test with companies with audit obligation in this population study it is essential to only include companies meeting these criteria.

Due to a greater representation, i.e. larger frequency, of companies within some industries, for example *Manufacturing*, *Wholesale* and *Construction, design and furnishing business* the result of earnings management within different industries might reflect a misleading picture of this correlation. This is taken into account, however, and will not be further analyzed but instead left as a proposal for future research. Furthermore, this thesis do not classify audit firms separately but instead only separate Big Four from not Big Four audit firms. This investigation is also left for future research.

By using weighted net income as the core value when categorizing the interval of earnings management, and not for example only net income there is a risk of not receiving a true and fair result due to its dependence on turnover. Since the tests of the explanatory variables are dependent on the result of the main test a careful interpretation is necessary. However, weighted net income takes company size into account and is therefore the fairest measurement. Furthermore, using a

continuous variable, as debt to equity ratio, when the outcome can take many different values and when the set of data is large complications may appear when estimating the logit model. (IDRE, 2015)

4. Results and analysis

This chapter aims to interpret, analyze and conclude the results from the main and sub test and analyze them against existing theories and previous research. The results from these tests will either reject or not reject the hypotheses of the existence of earnings management and if the chosen factors can explain its existence.

The 48 069 observations which meet the criteria defined in the previous chapter have now been examined in the statistics program of SPSS. The two tests described in the method, the main test and the sub test, aim to answer our questions were the sub test is dependent on the result received in the main test. The observations significant for further research in the sub test will vary dependent on their weighted net income, and will not depend on company origin, i.e. a company's weighted net income may be included one year but excluded another year.

4.1 Main test

The results from the main test, which examine the existence of earnings management, will be analyzed in the following two charts, which show the distribution of weighted net income from the observations. From the histogram and table we will discuss the results from a statistical point of view and from the bar chart we will link previous research to our results and discuss similarities and differences. The main focus for discussion will be the distribution just above zero, since our method implies that companies managing their earnings place earnings just above zero.

Chart 1. Histogram of the distribution of weighted net income.

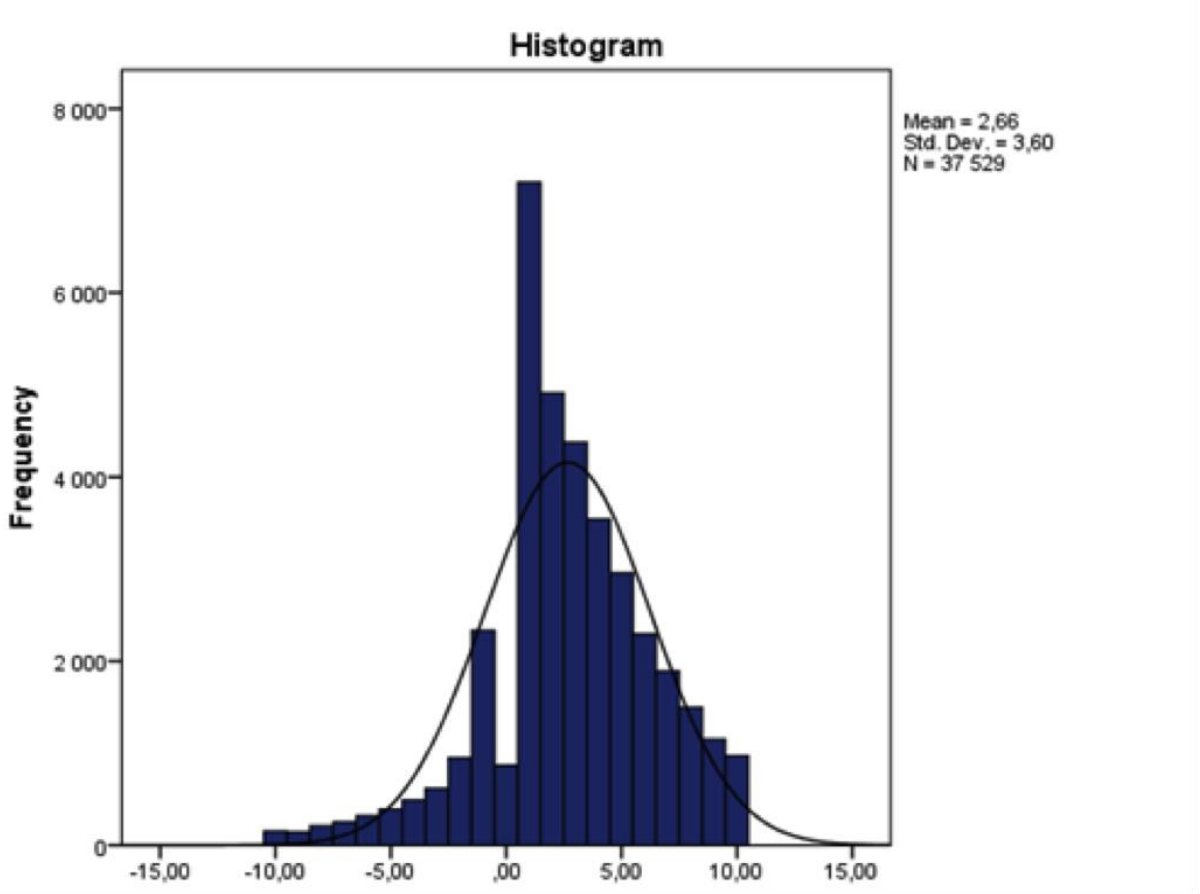


Table 6. Chart 1 in numbers.

Number of observations	Min. value	Max. value	Range
37529	-10%	10%	20%

Skewness	Standard deviation	Mean	S.E of mean
-0,426	3,6	2,6629	0,01859

The histogram in chart 1 and table 6 present the distribution of observed frequencies of the weighted net income compared to "the bell curve" for all nine years and all companies, i.e. 48 069 observations. The observations are divided into bars with a weighted net income of 1 % with an interval of -10 % to +10 %. Observations outside of this interval of +/-10 % are excluded since the importance of the histogram lies in the distribution of companies, which has an abnormal frequency around zero. Therefore, the total observations included in the chart above are 37 529. We have noticed a large frequency of observations below zero at the weighted net income of -1 %, but this lies outside of our method and will therefore be excluded in further analysis in this thesis.

The histogram shows an abnormally high frequency of observations just above zero and are therefore of interest for our hypothesis. The observations in the histogram have a mean of 2,66, which indicate that the majority of the companies end up on the positive side of zero, i.e have a positive weighted net income. The skewness shows the direction and degree of asymmetry and is in this test negative (-0,426), showing a larger frequency on the right side of zero. The standard error of the mean represents how reliable the mean is and in this case the small number of 0,01859 may indicate that the sample mean is a reliable reflection of the mean of the population. The standard deviation of 3,6 shows the spread of the observations with an increasing number as the spread of the observation increases. This fairly large number of approx. 3,6 means that these values on average are further away from the mean than a lower standard deviation would imply. It shows a large variance among the observations, which is logical due to the various levels of weighted net income a company can have.

We will now continue by taking a closer look into the distribution irregularity precisely around zero in a bar chart, which will also be presented in frequency and percentage in Table 7. The highlighted bars and area in the table represent a weighted net income of exactly zero and the interval next to zero up to +/- 1 %. The results will later in this chapter be compared to our chosen theories and previous research.

Chart 2. Bar chart showing the frequency distribution around zero (% weighted net income)

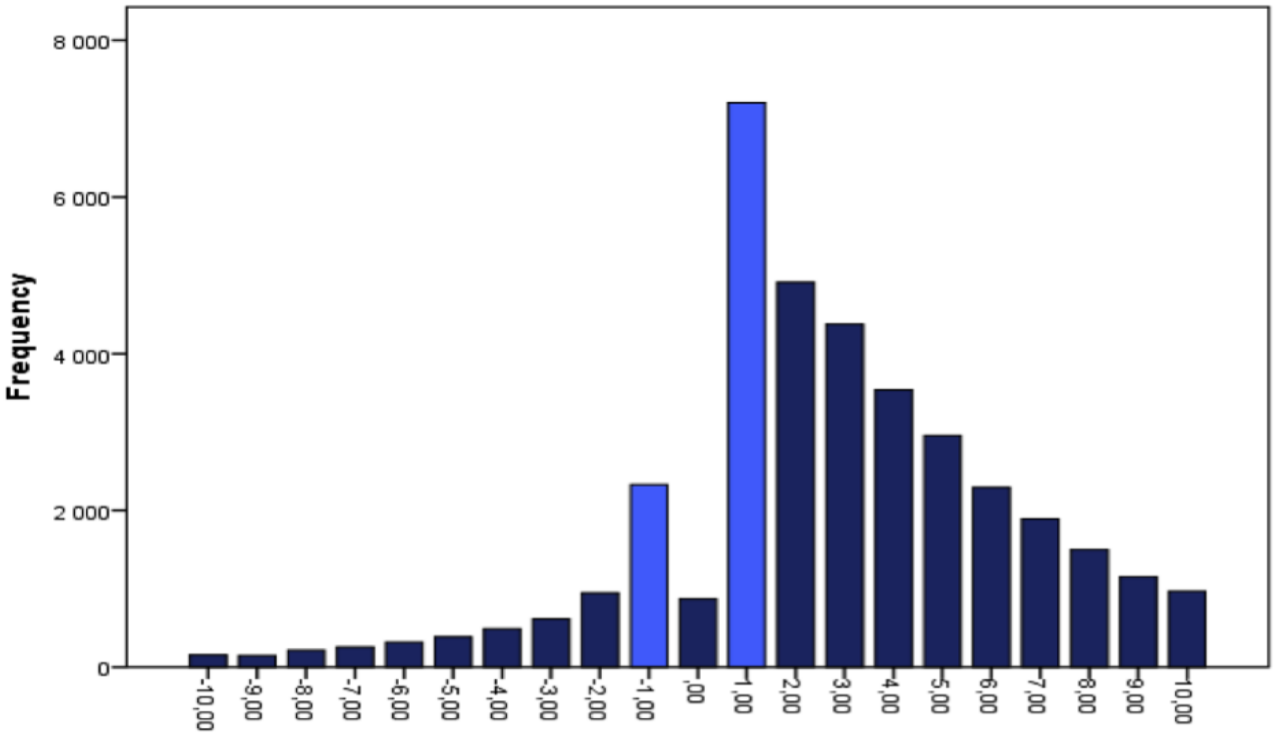


Table 7. The distribution of observations into intervals of 1 % (weighted net income) in frequency, percentage and cumulative percentage.

Weighted net income (%)	Frequency	Percent	Cumulative percent
-10	155	0,4	0,4
-9	146	0,4	0,8
-8	214	0,6	1,4
-7	254	0,7	2
-6	319	0,9	2,9
-5	389	1	3,9
-4	490	1,3	5,2
-3	615	1,6	6,9
-2	948	2,5	9,4
-1	2332	6,2	15,6
0	879	2,3	17,9
1	7201	19,2	37,1
2	4913	13,1	50,2
3	4378	11,7	61,9
4	3539	9,4	71,3
5	2957	7,9	79,2
6	2295	6,1	85,3
7	1893	5	90,4
8	1499	4	94,3
9	1152	3,1	97,4
10	970	2,6	100

Chart 2 and Table 7 aim to represent how the observations of weighted net income distribute themselves around zero. The bar in the middle represents a weighted net income of exactly zero. Furthermore the highlighted bars represent the frequencies to the left and right of zero which have an interval of just above zero respectively just below zero up to +/- 1 %. The frequency of companies on the positive side decreases by the time the weighted net income increases. Like the previous chart, this bar chart shows an abnormal distribution of weighted net income above zero compared to the bar below zero. The irregularity in the distribution around zero are also presented in frequencies and percentage to clarify our results. The interval just above zero is three times as large with a frequency of 7 201 in comparison to the interval just below zero, which have a frequency of 2 332. This result, however, does not necessarily indicate that the all the companies with a weighted net income of 1% manage their earnings, but in the case of faithful reporting the distribution of frequencies around zero would not have been this high. The irregularity in the distribution of earnings supports our hypothesis that private limited companies manage their earnings in order to avoid reporting a negative net income.

The hypothesis which is based on previous research and theories is therefore of interest when analyzing the main result. The presented results from using earnings distribution method strengthen the valid studies made by Hayn (1995) and Burgstahler and Dichev (1997). Both studies show an abnormally high amount of companies with a positive weighted net income and a diversion in the distribution around zero, with a concentration of companies just above zero and fewer just below zero, which they also define as companies managing their earnings. The proposal that companies which have earnings on the edge of zero, as in risking falling below the point of zero earnings have more incentives to manage their earnings than other companies is what also can be observed in this study. The result in the previous research that 30-40 % of the companies adapt their numbers between two periods to cross the “red line” can help us explain the frequencies just above zero in this thesis. The specific evidence of this thesis is shown in the distribution irregularity around zero, which definitely corresponds with the conclusions made in this theory.

The main results can only give an indication that some earnings have been managed, but to what extent is unclear. However, whatever definition of the result used, this thesis show a positive correlation with the Mechanistic Hypothesis, that investors may be wrongly informed by the judgment of a company's accounting methods. Furthermore we can also strengthen the theories that already exist and have been described. The threshold theory is explicitly clear in our test results with the explanation that companies manage their earnings to report a positive net income. It becomes even clearer when referring to the theory of “crossing the red line” which is in this case means placing earnings just above zero. The overrepresentation of companies just above zero can also be explained by the prospect theory which implies that companies will receive the greatest utility when crossing a reference point of a net income at zero and less utility through a gain without a reference point, for example a move from one positive net income to another. Also, the observed diversion around zero in the results differs from the smoothness which would be existent if earnings management had not occurred, according to the approach of pooled cross-sectional

distribution. This is also consistent with the Scandinavian studies by Reksten and Kristiansen (2011) and Sundgren (2007), which interpret that earnings management occur to overcome small losses. Furthermore, the very low frequency of a weighted net income of zero do not correspond with previous research by Bhattacharya, Daouk and Welker (2003) on companies wanting to show a zero result in order to avoid profit tax but instead as we mentioned, the majority of the observations have "crossed the red line", which corresponds with the threshold theory.

With this information, the first hypothesis cannot be rejected, indicating that

- **H1: Private companies manage earnings to avoid reporting a negative net income**

4.2 Sub test

The main test has provided enough proof of the existence of earnings management and therefore it is essential to continue this analysis by affiliating the companies that manage their earnings with the chosen factors, which may affect this existence. Explained in the method, the following part of this thesis will define observations with a weighted net income of 0-5 % as managing their earnings. We use this interval due to a great representation within these percentages and also based on the interval analyzed by Burgstahler and Dichev (1997). The result in their research proceeds from a significance level of 1 % and our results are based on a confidence interval of 95 %, i.e. having a significance level of 5 %. The level of significance of each sub category within the variables is dependent on the confidence interval and will exclude observations, which do not fit into this interval for further analysis. The observations, which are significant, will be examined for their association with earnings management by using the *Odds Ratio* (*Exp B*). Furthermore, the different factors are tested together in the logistic regression analysis but the results will be discussed separately since they do not depend on each other. Observations from the same company may be defined to be managing their earnings one year but will be excluded another year, all dependent on their yearly weighted net income and not company origin.

4.2.1 Industry

All companies over the last nine years have been categorized into industries according to Swedish industry categorization (SNI) and are presented below in alphabetical order with significance (green) or no significance (white) and their respective *Odds Ratio* in relation to earnings management and count.

Table 8. Industry categorization and their significance, odds ratio, beta coefficient and count (Binary Logistic Regression Analysis).

INDUSTRIES

Labels	Significance	Odds ratio	B	Count
Advertising, PR and marketing	,000	1,467	,383	69
Agriculture, forestry, fishing and hunting	,000	,241	-1,422	32
Banking, finance and insurance	,130	1,117	,110	164
Business services	,433	1,137	,128	124
Computer, IT and telecommunications	,000	1,970	,678	269
Construction, design and furnishings business	,000	,604	-,504	446
Culture, recreation and leisure	,000	1,716	,540	62
Education, sience and development	,064	,922	-,081	127
Food production	,000	,651	-,430	104
Hair and beauty	,492	1,041	,040	2
Health and healthcare	,065	2,558	,939	184
Hotels and restaurants	,000	1,766	,569	154
Industry-, employee- and profession org.	,002	1,428	,357	16
Legal, accounting and consulting	,000	,289	-1,243	131
Manufacturing and industry	,882	,987	-,013	1186
Media	,000	1,818	,598	77
Motor trade	,000	,600	-,511	120
Other consumer services	,000	3,318	1,199	13
Public administration and community	,000	,183	-1,696	10
Real estate	,000	1,305	,266	339
Renting and Leasing	,000	,406	-,902	42
Repair and installation	,000	1,710	,536	73
Retail	,000	1,801	,588	266
Sewage, waste, electricity and water	,000	,733	-,310	149
Staffing and employment	,117	,951	-,050	90
Technical consultancy	,000	2,266	,818	114
Transportation and warehousing	,000	1,766	,568	378
Travelling and tourism	,000	,356	-1,034	23
Wholesale	,768	1,000	,000	577
Total	**,000**			**5341**

Out of 28 industries being tested, seven of them had a higher significance level than 0,05 which implies that there is no significant association between the following seven industries and earnings management; *Banking, finance and insurance*, *Business services*, *Education, science and*

development, *Hair and beauty, Health and healthcare, Manufacturing and industry, Staffing and employment* and *Wholesale*. They will therefore be excluded in further analysis. The green highlighted industries all have a significance level between 0,000-0,050 and are therefore significant for the sub test and will be analyzed further in Table 9 together with their *Odds Ratio* in order of size. The relation between earnings management and industries as a whole is also significant, shown in the last row with a significance of 0,000.

The next table presents the significant industries and their association with earnings management in order of size of *Odds Ratio* and an analysis of the results. A possible relation between *Odds Ratio* and count will also be interpreted.

Table 9. Significant industries, categorized in positive and negative correlation with earnings management (Binary Logistic Regression Analysis).

SIGNIFICANT INDUSTRIES

Labels	Significance	Odds ratio	B	Count
Other consumer services	,000	3,318	1,199	13
Technical consultancy	,000	2,266	,818	114
Computer, IT and telecommunications	,000	1,970	,678	269
Media	,000	1,818	,598	77
Retail	,000	1,801	,588	266
Hotels and restaurants	,000	1,766	,569	154
Transportation and warehousing	,000	1,766	,568	378
Culture, recreation and leisure	,000	1,716	,540	62
Repair and installation	,000	1,710	,536	73
Advertising, PR and marketing	,000	1,467	,383	69
Industry-, employee- and profession org.	,002	1,428	,357	16
Real estate	,000	1,305	,266	339
Sewage, waste, electricity and water	,000	,733	-,310	149
Food production	,000	,651	-,430	104
Construction, design and furnishings busines	,000	,604	-,504	446
Motor trade	,000	,600	-,511	120
Agriculture, forestry, fishing and hunting	,000	,241	-1,422	32
Renting and Leasing	,000	,406	-,902	42
Travelling and tourism	,000	,356	-1,034	24
Legal, accounting and consulting	,000	,289	-1,243	131
Public administration and community	,000	,183	-1,696	10

positive association with earnings management

positive association with no earnings management

The table shows how the significant industries are associated with earnings management. Out of 21 significant industries, twelve had a positive association with earnings management and nine had a positive association with no earnings management. The *Odds Ratio* is interpreted as *the odds of finding earnings management in one category in relation to finding earnings management in the industry of reference (*in this case *all other industries).* This means that each industry has been compared to the overall effect, i.e. all other industries, to find the existence of earnings management in one specific industry. The ratio of industries with a positive association with earnings management equals the odds of finding earnings management within this industry compared to all others. The ratio of industries with a positive association with no earnings management shall be interpreted as 1/*Odds Ratio,* which equals the odds of not finding earnings management within this industry compared to all others.

The industry with a higher ratio than the rest, was *Other consumer services* with a small frequency of thirteen out of the total population of 5 431 companies. Its *Odds Ratio* of 3,318 means that the odds are 3,318 times larger of finding earnings management within this industry compared to all other industries. In *Other consumer services* the following industries are included; *Washing activities, Undertaking business* and *Body care*. This industry only represents 0.2 % of all companies, which makes it problematic to interpret a reliable relation between the companies within this industry and companies managing their earnings. However, the study by Sun and Rath (2009) also finds an association between the industry of *Healthcare* and earnings management, also implying that these companies are often small and less profitable, which also may be an explanation of the results of a high *Odds Ratio* in this industry.

The industries of *Technical consultancy*, *Computer, IT and telecommunication* and *Media* are second, third and fourth from the top with an *Odds Ratio* of 2,266, 1,970 and 1,818 and a frequency of 114 and 269, respectively. This also strengthens the conclusion the Australian study by Sun and Rath (2009) made which implied that industries within the periphery sector such as *Telecommunication and IT* had a greater representation of earnings management than others.

On the contrary, the results show that the industries of *Public administration and community* and *Legal, accounting and consulting* have the smallest odds out of all industries to manage their earnings. These *Odds Ratios* of 0,183 of 0,289 mean that the odds are 5,464 (1/0,183) and 3,460 (1/0,289) higher that earnings management does not exist within these industries compared to all others. The explanation for the odds of these industries may be due to the principle of public access to official documents in Sweden, since the asymmetric relationship between stakeholders and this industry may probably be less visible. Compared to the research by Healy and Whalen (1999), which imply that highly regulated industries such as *Bank, finance and insurance* would manage their earnings more than others, these results show the opposite. Another reason for this result may be that previous studies have examined companies in other countries where the culture, regulation systems and accounting standards are different from Sweden.

However, no relation between count and insignificant industries has been observed. The various frequencies of the insignificant industries are 164, 124, 127, 2, 184, 1186, 90 and 577 and show no relation to one another but instead represent an equal distribution of different frequencies. Furthermore, no relation between count and level of *Odds Ratio* can be found in the significant industries. This is instead left to be researched further in the future.

Based on this information we can indicate that there is a larger probability that companies within some industries manage their earnings than others and therefore support the hypothesis of

- **H2: There is an association between companies within specific industries and the existence of earnings management within these companies**

4.2.2 Debt to equity ratio

The second variable, debt to equity ratio, is analyzed according to the same method as industry; through a binary logistic regression analysis to find an eventual association between level of debt to equity ratio and earnings management. The companies, which are defined to be managing their earnings, are affiliated with their respective ratio and a possible association is to be found. The following table shows the association between companies managing their earnings and their respective debt to equity ratio in order to find a possible significance.

Table 10. Debt to equity ratio, significance and odds ratio (Binary Logistic Regression Analysis).

DEBT TO EQUITY RATIO

Label	Significance	Odds ratio	B
Earnings management	0,553	1,917	0,016

The association between companies managing their earnings and their level of debt to equity ratio showed no existing significance. Its significance of 0,553 does not fit into the interval of 0,000 and 0,050 in which it would have been defined as significant. The variable of debt to equity is continuous and this large interval of possible ratios may be the explanation of this non-existent significance mentioned in method limitations when using this logit model (IDRE, 2015). Previous research in this area is contradictory and a pattern has not been observed on the actual relation between earnings management and debt to equity ratio. The result received can therefore not strengthen the theoretical framework already existent in this area. Our research fails to show any proof of the relationship between debt to equity ratio and our categorization of companies managing their earnings.

Therefore, we can neither reject nor not reject this hypothesis, and this thesis does not find evidence enough to support the following hypothesis;

- **H3: Level of debt to equity influence the existence of earnings management**

4.2.3 Audit firm

The last variable to examine is the association between audit firm and companies managing their earnings by using binary variables. This will firstly be demonstrated in Table 10, showing the *Significance* and *Odds Ratio* of the relation between companies managing their earnings and their type of audit firm. The observations, which manage their earnings, have been categorized into having a Big Four audit firm or not.

Table 11. Significant Audit Firm Categorization (Binary Logistic Regression Analysis).

AUDIT FIRM

Label	Significance	Odds ratio	B
Earnings management	,000	0,753	-0,284

Odds ratio	positive association with a not Big Four audit firm

The association is significant and therefore it is essential to analyze the *Odds Ratio*, which in this case is 0.753, a fairly low number compared to the larger numbers in the industry variable test. This *Odds Ratio* implies that the odds are 0,753 times larger that earnings management is existent in companies not using a Big Four audit firm compared to the companies, which use a Big Four audit firm. Next, the result will be demonstrated in a crosstab showing the association between companies managing their earnings and their audit firm.

Table 12. Crosstab of earnings management and audit firm.

AUDIT FIRM

	Big Four	Not Big Four	TOTAL
Earnings Management			
within earnings management	48%	**52%**	100%
within audit firm	46%	**54%**	50%
No Earnings Management			
within earnings management	**55%**	45%	100%
within audit firm	**54%**	46%	50%
TOTAL			
within earnings management	48%	**52%**	100%
within audit firm	100%	100%	100%

This crosstab shows that there are more companies managing their earnings with a not Big Four audit firm than a Big Four audit firm. All numbers associated with this result are highlighted and all have a higher percentage of association than their counterparts, i.e. the relation of earnings management and Big Four audit firm.

According to some previous research, companies, which do not have one of the Big Four audit firms, associate themselves with earnings management in a larger extent (Tendeloo and Vanstraelen, 2008; DeAngelo, 1981; Becker et al., 1998), which was also the result in this test. However, there is also research which imply the opposite, that this correlation does not exist (Vander Bauwhede et al., 2003) Compared to the research by Tendeloo and Vanstraelen (2008) and Burgstahler et al. (2006), with audit firm information retrieved we have been able to come to a conclusion in this area. The Big Four audit firms have the resources and specialists competences and of course, their reputation at stake as incentives to be more careful when controlling the financial reports (Tendeloo and Vanstraelen, 2008). This conclusion is consistent with Reksten and Kristiansen (2011), that companies managing their earnings do not use a Big Four audit firm.

From the results received, we find proof to support the hypothesis of

- **H4: Type of audit firm influence the existence of earnings management within companies**

5. Discussion

This chapter aims to combine the purpose, method and results and interpret the possible reasons of the results.

The purpose of this study was to investigate whether earnings management exists in Swedish private limited companies and factors, which have an effect on its existence. The theoretical framework consists of theories and studies all indicating that earnings management exists in companies for different and several reasons. With this in mind the method of earnings distribution was chosen for the main test, which provide information regarding the existence of earnings management. From the distribution of earnings a significant conclusion can be made, there is an overrepresentation of earnings just above zero and these observations have some sort of association with type of industry. Also, these observations are associated with a not Big Four audit firm but no relation between earnings management and level of debt to equity could be found. These conclusions have also been made in previous research, however the results vary. The probable explanations to these tendencies are that companies avoid reporting negative results, partly due to the want to survive and partly due to pressure from stakeholders. The results received are essential to highlight due to their controversy in business society and they add to the less researched area of earnings management in private companies.

The chosen method introduced by Hayn (1995) and developed by Burgstahler and Dichev (1997) has provided results based solely on income. If instead using the Jones model, other ways to manage earnings would have been reported, however, the same results would in the end be received no matter which method used. This earnings distribution model has however provided results consistent with previous studies. The threshold theory and the prospect theory together with previous research have been the theoretical basis, which we have used to support the results received. In order to come to a valid and fair conclusion, all industries and a whole business cycle have been included, however, the subjective judgment of defining companies with a weighted net income of 0-5 % as managing their earnings has lead us to a result, which under other assumptions, limitations and criteria would have been different, even if using the same method. The results received are especially consistent with research made in other Scandinavian countries by Reksten and Kristiansen (2011) and Sundgren (2007), saying that earnings are managed to overcome small losses and that companies which manage their earnings do not use a Big Four audit firm (Reksten and Kristiansen, 2011). If there is an existing trend among adjacent countries is unclear and a generalization of these results may not suitable due to the limited supply of previous research in this area, even though there is a similar environment in these countries. Furthermore, the results of this thesis cannot be applied to other countries with different environments and regulation systems. There are also results received, which cannot fully be explained by the theories presented, for example the theory of receiving a zero result to avoid

profit tax, since the results did not show on a significant frequency of observations with a weighted net income of zero.

The main test has provided coherent and satisfying results consistent with previous research, especially with research by Hayn (1995) and Burgstahler and Dichev (1997), which analyzed a similar amount of observations and found a similar pattern of earnings distribution. However, the sub test has not shown an as clear association between companies managing their earnings and the chosen factors. The observations of the factors of industry, debt to equity ratio and audit firm have opened up for further analysis. The assumption that companies within some industries manage their earnings in a larger extent than others is a conclusion exclusive to this thesis. The argument that some industries were perceived to be managing their earnings was supported by previous research, and some were not. This conclusion appears to be dependent on the respective frequency of observations within the industries, however no relation in this area was found. The Australian study made by Sun and Rath (2009) did come to the same conclusion as we did that companies included in the periphery sector manage their earnings by increasing their earnings to overcome a zero net income. Even though the Australian study used an accrual based method for the main test we did come to the same conclusion. The same authors also support our results that earnings management is more existent in small and medium sized companies with low profits. Moving on to the debt to equity area, the choice of not converting the different levels of debt to equity ratio into a binary variable in the test may have contributed to its non-existing significance even though previous research is contradictory. It is possible that a significant association could have been received if the values had been categorized into two levels; a high and low debt to equity ratio. Also, this non-association may be explained by the various industries and the different conditions of capital structure within these industries, and another result may have been received if using industry as a control variable in this part of the test. Regarding the association between audit firm and earnings management, the equal distribution of companies within the two groups, the *Odds Ratio* of 0,753 and the small percentage difference between the two audit firm types presented in the crosstab, all together demonstrate a very small disparity between the two in auditors´ mission to prevent management of earnings.

This thesis has contributed with a critical investigation to society in order to provide a basis for future research and to make generalizable conclusions in the area of earnings management and its contributing factors. This research will help stakeholders being more observant and be able to make better decisions based on more information, concerning how companies think in their way of presenting their financial reports. The most distinctive results show a need for business society to critically question the validity of financial reports and for companies to observe that there sometimes is a thin line between flexible accounting methods and fraud. Auditors and managers may further analyze the results from different perspectives in order to ensure that presented financial statements are reliable, both before and after publication. However, they must take into account other factors and incentives which may motivate companies to manage earnings and present untruthful financial statements.

6. Conclusion

This section will conclude the main results of this thesis together with proposals for future research.

Through this thesis, we have been able to prove the existence of earnings management among 5 341 private limited Swedish companies through an earnings distribution method. This exclusive population study with more than 48 000 observations over the last nine years has provided significant results as a complement to existing research. It has also evaluated the correlation between earnings management and characteristics of these companies, as in industry, debt to equity ratio and choice of audit firm. We find an existence of earnings management among the companies analyzed in form of an unexpected and irregular distribution of weighted net income around zero. We also find a positive association between earnings management and industry as a whole and within specific industries, no significance in the debt to equity ratio area and a positive correlation between earnings management and audit firm, showing that companies using a Big Four audit firm manage their earnings in less extent.

With the results received, we want to make some proposals for future research in this area. To be able to make an even more generalizable conclusion, it is essential to evaluate the impact other intervals of the definition of earnings management would have on the result by developing a sensitivity test. By using a weighted net income interval of for example 0-10 % or (-5)-(5) % other results would probably be received. Also, research may be made in the area of the change in earnings management over a period of time, analyzing if the same companies manage their earnings each year or if these is an even spread of earnings management among the companies every year. Regarding the explanatory variables, the association between significance and frequency among the industries can be further investigated and evaluated in order to not reject significant industries wrongly. To contribute even more to existing research it is important to look into individual audit firms and their prevention of earnings management by evaluating them separately (EY, KPMG, PWC and Deloitte). There is also more research possible with this data in the capital structure area and its effect on earnings management, as in converting the debt to equity ratios into a binary variable, for example into high and low debt to equity ratio to observe an even more distinct connection.

The main findings of this thesis are proof found on an existence of earnings management by companies in order to overcome a zero result and thus receive more utility when moving from a loss to a gain in relation to a reference point, in this case a weighted net income of zero.

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