



UNIVERSITY OF GOTHENBURG  
SCHOOL OF BUSINESS, ECONOMICS AND LAW

# Firms' Behavior Regarding Impairment of Goodwill

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Earnings Management & Big Bath Accounting

**University of Gothenburg**  
**School of Business, Economics and Law**

FEA50E Degree Project in Business  
Administration for Master of Science in  
Business and Economics, 30.0 Credits

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## Preface

This Master Thesis was written during the spring term of 2013 within the Master Programme of Business Administration, focusing on Financial Accounting at the University of Gothenburg School of Business, Economics and Law.

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## Abstract

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**Background and Discussion:** In 2005 IASB issued new standards, IFRS, which became mandatory for all listed companies in the EU. From then on no amortizations of goodwill were allowed but yearly impairment tests had to be made. Since goodwill is an asset that allows judgment, its credibility has been discussed because of the uncertainty in the assessment process. There is a risk that managers use this judgment to manipulate their earnings.

**Methodology:** Both a quantitative and a qualitative study has been performed to support this thesis. All annual reports on NASDAQ OMX Nordic through the years of 2008 to 2011 have been analyzed through statistical tests. Three interviews with accountants have also been conducted to gain a deeper knowledge.

**Analysis and Conclusion:** The results of this thesis show signs that earnings management through the use of goodwill impairments does exist on NASDAQ OMX Nordic. The firms that made impairments have lower results in general than the non-impairment group. Among the firms that have made impairments there are indications that the observations with significant impairments have even more depressed earnings, and therefore have greater incentives to reduce the earnings even more according to the theory about big bath accounting. There seems to be a correlation between firm size and the propensity to manage earnings. Small firms are more likely to manage earnings according to our study and it is harder to conclude that earnings management exists on Mid and Large Cap due to a low number of significant observations. Even though the conducted research suggests that earnings management exists due to large impairments in times of trouble, it is really hard to determine what the true reasons behind the impairment are. According to the interviewees it is more an act of overconfidence rather than purposely managing the earnings.

**Keywords:** Goodwill, Earnings Management, Big Bath Accounting, NASDAQ OMX Nordic, Impairment of Goodwill.

## Abbreviations

CAPM – Capital Asset Pricing Model

CEO – Chief Executive Officer

CGU – Cash Generating Unit

EBIT – Earnings before Interest and Taxes

Fortune 100 Companies – An annual list of the 100 largest public and privately-held companies in the United States

I of G – Impairment of Goodwill

IAS – International Accounting Standards

IASB – International Accounting Standards Board

IASC – International Accounting Standards Committee

IFRS – International Financial Reporting Standards

NASDAQ OMX Nordic – Listed firms from Sweden, Finland, Iceland and Denmark

No I of G – No Impairment of Goodwill

ROA – Return on Assets

ROS – Return on Sales

Sig I of G – Significant Impairment of Goodwill

WACC – Weighted Average Cost of Capital

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# 1. Introduction

## 1.1 Background

After some scandals e.g., regarding Enron and Worldcom, who used both fraud and earnings management to manipulate their earnings, people started to question the reliability of financial statements. The imperfections of the current accounting standards caused reason for concern even in Europe. Therefore the European governments decided to harmonize the standards and prevent the opportunities of manipulation with new standards in 2005 (Marton et al. 2010).

The European Union had, for a couple of decades before the new standards were issued, been trying to become one large open market instead of several separate to increase the mobility of capital for the nations within the EU. Accountancy bodies in several countries had been trying to harmonize the accounting standards and in 1973 they founded the International Accounting Standards Committee (IASC), today the International Accounting Standards Board (IASB), to start the work of integrating the market of capital through a higher degree of comparability of the financial statements. To make it easier to compare the annual reports and financial statements for the stakeholder, the EU decided in 2005 to make the International Financial Reporting Standards (IFRS) mandatory for all companies listed on European stock exchanges. From now on the companies' consolidated financial statements have to be reported according to IFRS (Marton et al. 2010).

One of the new standards was IFRS 3 Business Combinations, which describes how goodwill arises from acquisitions and how it should be reported in the statements. Goodwill is the residual between the assessed value of the company and the amount paid for it, referred to as future gains the company expects to realize (Marton et al. 2010). The assessment of goodwill was one of the bigger changes with the new standards and IAS 36 Impairment of Assets describes how it should be impaired if necessary. The standard describes the need for companies to make impairments if the value of an asset has decreased. One topic that has been heavily discussed regarding IAS 36 is the reluctance of impairing goodwill (Gauffin & Thörnsten 2010). Since this is an intangible asset, it is hard to prove its true and fair value because its value is constituted by future gains and the companies can therefore, to a certain degree, decide if they want to make an impairment or not. This could lead to financial statements with a high degree of uncertainty, and hence mislead the investors to invest in the company (Marton et al. 2010).

## 1.2 Discussion

'Earnings management' is a common expression for manipulating the earnings but there are also other expressions commonly used, such as 'aggressive accounting', 'income smoothing' and 'creative accounting' (Mulford & Comiskey 2002). Earnings management occurs when companies and the management team decide to present their financial reports in a way that does not correspond to the real performances. To reach the result they want to present to the public, they can do so through deliberately aggressive or conservative accounting treatment within the IFRS (Fong 2010). Incentives for this behavior can be caused by several different

reasons. Some could be to maintain a steady result level rather than having a volatile result, to satisfy the expectations of analysts, not to break debt covenants or to realize bonuses. Even though earnings management is deteriorating the annual reports and the stakeholders are aware of the phenomenon, it is still possible for the firms to manage the earnings because most techniques for detecting earnings management are ineffective due to the judgment allowed. It allows the companies to mask their actions since as long as the management team can state a good reason for the actions it is hard disprove them (Mulford & Comiskey 2002).

When IFRS was implemented, companies were no longer allowed to make yearly amortizations regarding goodwill but had to conduct yearly impairment tests. This has led to several companies' annual reports being, according to Gauffin and Thörnsten (2010), overly optimistic because the companies do not make impairments large enough (Gauffin & Thörnsten 2010). Based on their conclusions, the companies should have made larger impairments because of the recession and the depressed earnings. Since goodwill is based on expected future gains, they think that the companies should revise their models and impair the value because these gains have most likely decreased. Since goodwill often accounts for a significant value in the financial reports, there are possibilities for companies to manage their earnings through goodwill and an impairment could have a large effect on the earnings, causing them to be even more depressed (Gauffin & Thörnsten 2010). A sign that the information provided to the stakeholders is not sufficiently comprehensive in annual reports is that in 2011, goodwill was regarded as the biggest problem due to the lack of transparency according to NASDAQ OMX. Since it is not uncommon that firms have a high value of goodwill compared to the remaining assets, the firms should therefore provide the market with more extensive information. Firms have become better at reporting information but there are still some unacceptable flaws in the annual reports (Lennartsson 2011).

Since this thesis takes Large, Mid and Small Cap into account, the listed firms will consist of different sizes. According to the theories about smaller and larger firms, there are opposing views about which firms manage the earnings the most. If there is a difference, stakeholders could question the reliability of the annual reports depending on the exchange list and make it harder for them to determine if they can trust the numbers. Considering the contradictory views that exist, we want to explore this and get a view on how NASDAQ OMX Nordic firms behave regarding goodwill, e.g. if it is being used to manage earnings and if there is a difference between firms listed on Large, Mid and Small Cap.

The fact that judgment is, to some extent, allowed in the reporting when assessing the goodwill value implies that there is a risk that similar performing firms impair differently. The firms can affect the outcome of the impairment tests by, among other strategies, changing the discount rate and the expected future cash flows. The mentioned judgment affects the comparability between the firms and makes it difficult for the investors to assess the firms' true performances since the reported earnings might not be totally true and fair (Fong 2010). Since the firms can affect the outcome of the impairment test in two directions, 'impairment needed' or 'no impairment needed', it has been discussed that firms are reluctant to make impairments, especially in prosperous times since impairments cannot be reversed. For example, in 2008, 26 percent of the total equity in Swedish group companies was constituted



by goodwill. The impairments made the same year equaled 10.2 billion SEK, or 1.5 percent of their total goodwill. The impairments are too small according to the study, and this is possible due to the judgment allowed in the estimations (Gauffin & Thörnsten 2010). The problem for stakeholders is if the company is reluctant to impair the value even though the expected future gains of the acquisitions do not exist anymore. This will cause the financial statements to yield a greater value than their true and fair value and give an overly optimistic view of the company (Gauffin & Thörnsten 2010). It has also been discussed that firms are making larger impairments than usual in times of trouble to gain from the impairment in the future, also known as 'big bath accounting'. According to the different theories, there is a relationship between the earnings and the size of the impairment (Wells 2002). The thesis will continue the theories about big bath accounting and goodwill to test if a relationship exists regarding the earnings and the impairments, and the general behavior regarding impairments of goodwill.

### **1.3 Research Questions**

Based on the discussion above the following questions will be studied in order to investigate and clarify the actual behavior on NASDAQ OMX Nordic regarding impairment of goodwill:

- 1. How do firms behave regarding impairment of goodwill on NASDAQ OMX Nordic and what could the possible causes behind the behavior be?*
- 2. What differences are there between firms on Large, Mid and Small Cap regarding impairment of goodwill?*

### **1.4 Research Design and Limitations**

To be able to answer the research questions mentioned above, annual reports will be analyzed and interviews with accountants will be conducted. Through analyzing the annual reports, it will be possible to detect discrepancies in the firms' behavior since their performances will be compared to each other and the differences between the Caps discerned. The possible causes to the firms' behavior will be answered through the interviews since the reasons cannot be explained by solely analyzing the numbers in the annual reports. The study of the annual reports will focus on firms reporting goodwill and will be divided into different groups based on whether or not they conducted any impairments, and also whether the impairments were significant in relation to the firms earnings and total assets. To test if the firms have managed their earnings, goodwill, sales, total assets, impairment of goodwill, earnings and Earnings Before Interest and Taxes (EBIT) will be analyzed according to the three step model developed by Jordan and Clark (2011). Three interviews will also be conducted with representatives from some of the largest audit firms in the world, located in Gothenburg, and the interviews will be compared to the theories in the frame of reference. The two approaches together will, as mentioned, contribute to answering the research questions.

This thesis is limited to firms that report their financial statements according to IFRS since the main standard used in the study is IAS 36. As IFRS is mandatory within the EU in the firms' consolidated financial statements, the study will be limited to NASDAQ OMX Nordic. To be able to answer the research questions, the study will not be limited to only one of the Caps

since the target of the study is to test if there is a difference between the firms listed on the different Caps. Because the focus of the study is on goodwill, all firms that did not report goodwill between the years 2008 to 2011 will be excluded. Since it is more common that listed firms have a greater value of goodwill, no smaller companies than those listed on Small Cap will be taken into account in this research.

## 1.5 Previous Studies

Several studies have been conducted over the years discussing goodwill and what problems that can occur due to the judgment allowed. In this section a few of them will be explained briefly in order to give an overview of the situation and additional studies will be handled in the frame of reference. The most important study for this thesis is the study by Jordan and Clark (2011) since the model they devised is the main model in this thesis used to analyze the annual reports. Jordan and Clark tested whether or not companies on the Fortune 100 list practiced big bath accounting through goodwill. They compared 2001, when no impairment existed, to 2002, when impairments were allowed, and their conclusion was that companies that made impairments in 2002 had significantly lower earnings than the non-impairment group and both groups had demonstrated similar earnings the year before. According to them, this was a compelling sign of earnings management since the firms' impaired goodwill more while experiencing depressed earnings. A more detailed explanation of the aforementioned model will be explained in the methodology.

Gauffin and Nilsson (2012) conducted a research on NASDAQ OMX Stockholm about goodwill and how the size of this asset has changed over the years. They discovered that the registered goodwill value increased on the NASDAQ OMX Stockholm on average by 60-70 billion SEK while the impairments were only 10 billion SEK and at the end of 2011 the total goodwill estimated 690 billion SEK. They concluded that goodwill comprised a large part of the balance sheet and they asked themselves how long the goodwill post can continue to increase the way it does today.

In 2011 Emmy Hardebjer and Madeleine Nilsson wrote a thesis about the valuation of goodwill and big bath accounting on NASDAQ OMX Nordic Large Cap between 2006 and 2009. They examined if there was a correlation between impairments and low earnings using Jordan and Clark's model described in section 3.3. The study concluded that there was a correlation between impairments and low earnings but the study could not prove that any big baths had occurred because the impairments were in general not significant enough. A few companies did, however, make significant impairments while having low or negative earnings, which could be an indicator that big baths at least existed. Their conclusion was that if the companies had strong enough incentives, or low or negative earnings, they are more likely to make impairments.

The difference between our study and the previous studies is that we do not only analyze the companies listed on large Cap but the ones on Mid and Small Cap as well. By analyzing all firms, it will be possible to compare the different Caps and see if the practice of big bath accounting is more common depending on what cap the firm is listed on. Including all Caps will hopefully give the reader a better view of how widespread the use of big bath accounting

is on NASDAQ OMX Nordic. To further improve the study, three interviews are conducted to see what the accountants think of the situation.

## 1.6 Contribution

According to e.g. Healy & Wahlen (1999), earnings management does exist but we have decided to narrow the research to just look into whether companies manage their earnings through goodwill or what the general behavior could be. Since goodwill comprises a large part of companies' total equity, it gives them an opportunity to use it to manage their earnings (Gauffin and Nilsson 2012). It is important to the investors that the numbers in the financial statements are correct and give a fair view of the company. Since the focus of this study is NASDAQ OMX Nordic, it will be possible to discern if there are any differences between the different Caps. Looking into the different Caps will provide an understanding of how firms act depending on the Cap they are listed on. This could facilitate the analysis of the firms' financial statements since it will be easier to determine if the numbers are correct depending on the size of the firms.

The problem with an overstated goodwill value is that investors might be deceived into believing that the company will still gain on the originally expected surplus value that arose at the acquisition. If this gain is not to be realized, the investor's earnings will be less than expected. Goodwill as an asset has been discussed due to the judgment allowed in the estimation process and in 2011 goodwill was regarded the biggest problem due to the lack of transparency (Lennartsson 2011). There is a need for more information and this thesis will make it easier to discern the firms' behavior and what the probable causes behind the actions could be. The conducted study in 2011 by NASDAQ OMX ([www.nasdaqomx.com](http://www.nasdaqomx.com)), which concluded that goodwill was the biggest problem, did not say anything about the situation on the different Caps. This thesis will look into the behavior of the companies depending on their size, and decide whether or not they act differently.

## 1.7 Outline

Introduction	• A short background to the subject is presented followed by a discussion of the existing problems and our contribution to the subject
Frame of Reference	• Relevant theories are described in this chapter
Methodology	• The different models used in this thesis are described in this chapter
Empirical Findings and Analysis	• In this chapter the empirical results are presented, followed by an analysis
Conclusions and Further Research	• In this chapter we present the conclusions , followed by a discussion and suggested further research

## **2. Frame of Reference**

### **2.1 Introduction to Frame of Reference**

Goodwill has been a subject for discussion since the implementation of IFRS, due to the judgment allowed in the estimation process, and this made it an interesting subject to study. The analyzed studies in the frame of reference will be used to gain a deeper understanding about why goodwill has been brought up for discussion and criticized lately. To make it easier to understand the situation, the first part of the frame of reference will consist of a broader perspective explaining IFRS and the benefits of a higher degree of transparency. After the introduction of IFRS, IAS 36 will be discussed briefly to understand why firms have to make impairments of goodwill. This section will be followed by an explanation of what earnings management in general is and why firms may or may not be tempted to mislead the stakeholders. By explaining earnings management, it can be easier to understand the reasons behind the firm's chosen behavior.

The remaining part of the frame of reference will take a narrower perspective and focus more on some parts regarding earnings management through the use of goodwill and its theories. This is to give the reader a better understanding of what is important in the thesis and pinpoint the most essential parts of the frame of reference.

### **2.2 International Financial Reporting Standards**

#### **2.2.1 The Adoption of New Accounting Standards**

Before IFRS became mandatory within the EU, a majority of the European firms used domestic accounting standards. The different standards affected the comparability and the transparency between firms, making it harder for the investors to compare them. It was also more expensive for the firms since they had to issue different financial reports depending on the market and the country. To increase the comparability between firms, the IASB issued IFRS that became mandatory in 2005 to all listed firms in their consolidated financial statements, which is considered to be one of the biggest changes in history regarding financial reporting (Armstrong et al. 2010). By increasing the transparency and the quality of the financial reports, IASB and EU hoped to achieve a lower cost of capital for the firms since the investors would require a reduced rate of return for their provided funds (Daske 2006). To make IFRS possible to be adaptable in most countries, the standards had to be principle-based instead of rule-based, as they are in the US. Since a principle-based system makes it possible for a company to use judgment in their reporting, they might be tempted to adjust it in a way that does not correspond to a total true and fair value. Manipulating numbers like this is usually referred to as 'earnings management' (Carmona & Trombetta 2008).

The change that has received the most attention after the adoption of IFRS is the valuation of goodwill. Before the adoption goodwill had to be amortized but when the new standards were issued, yearly impairment tests had to be performed allowing a higher degree of judgment in the estimation and hence increasing the risk of earnings management (Gauffin & Nilsson 2006).

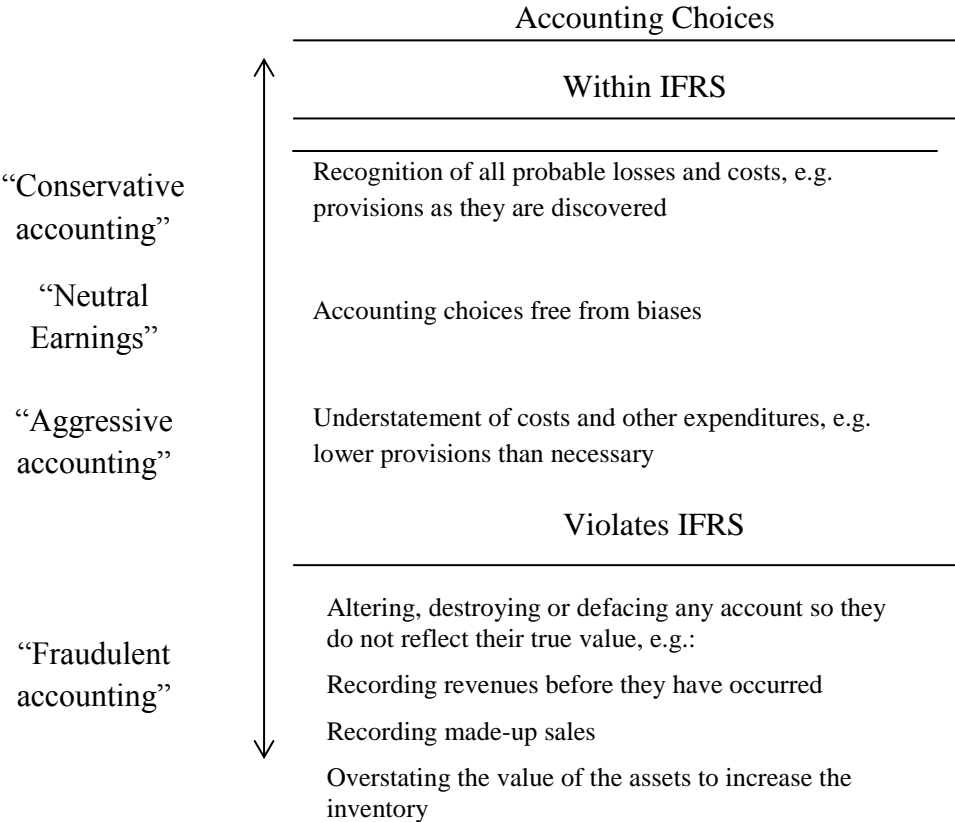
**2.2.2 IAS 36 Impairment of Assets**

IAS 36 deals with Impairments of Assets with a few exceptions, some of the most important of which include inventories, financial assets and deferred taxes (IAS 36, p.2). Firms, according to IAS 36, are supposed to make impairments on many of their tangible and intangible assets when the expected future cash flows are lower than they were at the acquisition. This is because the investors should get a fair view of the firm and not an overly optimistic one. The firms are required to do an impairment test whenever there are any indications that an asset might have decreased in value, except for goodwill among other factors. Since goodwill is an intangible asset with indefinite useful life, it has to be tested on a yearly basis to ensure the asset is not overstated. If the test results in an impairment, it has to go over the income statement, hence affecting the earnings (Marton et al. 2010). An important concept in IAS 36 is Cash Generating Units (CGU), which is the smallest identifiable group of assets that generate cash flows and that can be measured. They are important because they are needed to assess the need for impairments. Impairments can, if they are done correctly, increase the relevance and accuracy of the reports.

**2.3 Earnings Management**

There can be a thin line between managing earnings in a legal way and fraud in some cases. Figure I shows the distinction between what is considered legal and what is not regarding earnings management and fraud (Fong 2010).

**Figure I** Differences Between Earnings Management and Fraud



Earnings management is caused by the judgment allowed in the principle-based accounting standards since it allows interpretations to a certain extent. Due to the possibility of interpreting the numbers in a way that favors the company, it is not certain that the financial statements represent a true and fair view of the situation. But even if the standards were to be rule-based it would be extremely difficult to predict all possible outcomes and eliminate the problems due to earnings management. The phenomenon of manipulating the results could be mitigated, since there would be fewer alternatives or options to the managers deciding how to act, but not completely eliminated (Fields, Lys & Vincent 2001).

Healy and Wahlen p.368 (1999) define earnings management as follows:

“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.”

According to this definition, some aspects have to be brought up to discussion, e.g. when they use judgment in the financial reporting. There is no escaping from this in some situations because some of the estimations have to include judgment. No matter how a firm acts, they still have to e.g. decide the lifetime of a long-term asset. They also have to choose between different accounting methods like weighted-average cost, and first in first out, straight line or accelerated depreciations and so on. Regarding goodwill, the managers will have to decide through different models what the future benefits are expected to be and then decide the value of the goodwill. As noted, only judgment itself does not make it earnings management since it is non-optional in some cases; what makes it earnings management is when the intention is to mislead the readers or stakeholders (Healy & Wahlen 1999).

### **2.3.1 Big Bath Accounting**

The big bath accounting theory is one of many possibilities of managing earnings and is one of the most common regarding managing earnings through the impairment of goodwill. The theory suggests that if a firm is experiencing a tough year with great losses and low earnings, they might take discretionary impairments to lower the result even more. This depends on that the stakeholders are already expecting a bad year and do not care as much if the loss is a bit bigger than it would have been without the impairment. Instead of focusing on the increased loss, they put most of their attention on prospects. Even if the sum of money spent over time is the same, the companies have more incentives not to stretch out the expenses but to take all costs at one time (Byrnes, Melcher & Sparks 1998). “Clearing the decks” like this gives the company greater opportunities to favor these impairments later on in the future. Since they already made the necessary impairments, they can lower their costs and hence have greater earnings.

When the Fortune 100 companies were scrutinized in 2002, there was proof for this kind of earnings management. Companies that made impairment of goodwill had significantly lower earnings than the companies that did not make the impairments. Those who impaired the value noticed an opportunity to eliminate future costs (Jordan & Clark 2011). The model they used to assess if companies did use impairments as big baths was a three step model where the



observations were divided into different groups. They also used key figures such as ROA and ROS to determine if there was a correlation between the earnings and the impairments.

### **2.3.2 Reasons For and Against Impairments of Goodwill**

Companies can manage earnings by increasing the expenditures one year by taking as many costs as possible, i.e. employ big bath accounting as mentioned above, and therefore decide to make an impairment of goodwill. Hence the urgent need of an impairment in the future is less pressing. The company can also try to keep the earnings at a steady level and not have ups and downs every other year, and if the earnings are extremely high one year, they might want lower them to make it easier to achieve the same result next year (Burgstahler & Dichev 1997).

Reasons for not making impairments could be the signaling effect; they do not want to lower the result of the year and send signals to the public that they do not expect the previous gains from the acquisition to be realized. The impairment will send signals to the investors that the management teams no longer expect the asset to generate the same returns as previously expected. Since the asset has lost some of its value, so should the company's stock-market value (Holtzman & Sinnott 2009). Another reason for not making impairments could be that they do not want to jeopardize breaking debt covenants: sometimes the company's balance sheet has to have a minimal value and if the goodwill has to be written down they might have a value that is too low (Duh, Lee & Lin 2009).

## **2.4 The Valuation of Goodwill**

### **2.4.1 Goodwill**

IFRS 3 defines goodwill as:

“Future economic benefits arising from assets that are not capable of being individually identified and separately recognized”.

Goodwill can be both internally generated and a result from an acquisition, but since the internally generated goodwill is hard or almost impossible to assess, it has to be excluded from the balance sheet. The only goodwill allowed into the accounting system is the goodwill arising from acquisitions. That is because it is easier to assess the value because the goodwill equals the excess value of what the company pays and the value of the assets that they purchased (Glauter & Underdown 2001).

Before IFRS was implemented, goodwill had to be amortized according to the precautionary principle in order to make sure not to overstate the value (Watts 2003). The precautionary principle has been criticized for not giving a fair view of the balance sheet, because even if the value has not decreased, the value has still to be amortized (Barlev & Haddad 2003). When IFRS was issued, the precautionary principle was of less relevance and the new standards are therefore trying to report a more relevant value. From 2005 goodwill, instead of the amortizations as earlier, is subject to be tested for impairment every year regardless of whether the company thinks it has decreased in value or not, to give a more relevant value. Since goodwill does not create a cash flow on its own, it has to be allocated between other

units, so called CGUs, for impairment testing (Melville 2008). A CGU is a combination of the smallest identifiable group of assets bundled up together, generating a cash flow. This group of assets has to be identified at the lowest level possible, because if there are too many assets in the CGU, there is a great risk of illegal offsets when they are being tested for impairment (Marton et al.2010). Since goodwill constitutes a high value in several companies' balance sheets, it is important that the goodwill is allocated a correct value (Gauffin and Thörnsten 2010).

Goodwill arises at the acquisition process and has to be reported according to IFRS 3 and its standards. In 2012 the firms listed on NASDAQ OMX Stockholm were examined regarding their goodwill and how the purchase price was allocated at the acquisition process. On average 24 percent was allocated to tangible assets, 20 percent to intangible assets while the remaining value, 56 percent, was allocated to goodwill. This could be a sign that it is an easy exit to allocate as much value as possible to goodwill instead of allocating it to other assets (Gauffin & Nilsson 2012). In 2009 goodwill accounted for 607 billion SEK and set in relation to the total equity constituted 26 percent. Since it takes such a high value, the firms could use this asset to affect the result through manipulating the value (Gauffin & Thörnsten 2010).

The value of the goodwill is calculated through discounting all the future cash flows that the asset is expected to generate (IAS 36). This makes goodwill a risky asset to the investors because it is hard for them to discern whether or not the allocated value constitutes a fair value when they do not possess the same information as the managers. Since impairment has to go over the consolidated income statement, and hence affect the result, managers might manipulate the value to avoid impairments. IAS 36 therefore creates a risk for earnings management due to the judgment allowed in the assessment of goodwill (Marton et al.2010).

#### **2.4.2 Discount rate**

Since the value of the goodwill has to be determined through discounting all future cash flows, the chosen interest rate can have major effects on the need to impair or not. Trying to mitigate the possibilities of selecting an interest rate based on too much judgment, there are three starting points, according to IFRS, for a firm to decide the discount rate: first they can use their Weighted Average Cost of Capital (WACC); second they can use their incremental borrowing rate; or third they can use other market borrowing rates (IAS 36, A17).

According to a study by Husmann & Schmidt (2008), the only suitable starting point for deciding the discount rate is the firm's WACC. The reason for this is that the other starting points are not sufficiently clear. Because of this they generate extensive measurement errors and make earnings management a possibility. Using a firm's WACC, which can be estimated by e.g. a Capital Asset Pricing Model (CAPM), is consistent with the current financial theory. The second option of using the incremental borrowing rate is too imprecise because the incremental borrowing rate can lead to different interpretations and therefore different results, e.g. you must decide whether or not to include loans with extra risk. Depending on the firm's debt-to-equity ratio, the incremental borrowing rate and the WACC will be completely different. In the study they argue that for the incremental borrowing rate to be an option, there is a need for IASB to specify what incremental borrowing rate should be used. The third



possibility of using other market borrowing rates is all too vague to be an option because there are an infinite number of alternatives to choose from, which would make comparisons between firms more difficult.

The study further states that all three are just starting points for deciding the discount rate but they also state that firms should only use the WACC to decide the discount rate. The reason not to use the incremental borrowing rate is that it must be adjusted based on the same information as the WACC and therefore it would be easier just to determine the WACC from the beginning. The options of using the incremental borrowing rate or other market borrowing rates are thus redundant. The study concluded that the two options should be deleted and only the WACC should be used for the firm.

Even though firms know that they have some models to use for assessing the value of the goodwill they can still affect the outcome if they choose to. Since firms can, to a certain extent, influence the discount rate, it can have major implications upon the decision on whether or not there is an underlying need for impairment. This influence of the discount rate can cause reason for concern. If firms are able to bias the outcome of the impairment test, the quality of the reported earnings and if the annual reports really are valid and reflect a true and fair view can be questioned (Carlin & Finch 2009). According to a study by Carlin and Finch (2011), there is clear evidence that firms within the same sectors have a great discrepancy regarding their discount rates. The difference in discount rates affects the comparability between firms, which makes it harder for investors to evaluate the firms. The study concludes that there is evidence of systematic non-compliance with IFRS regarding the use of discount rates (Carlin & Finch 2011).

## **2.5 The Principal-Agent Problem**

The principal-agent problem is correlated to earnings management because the agent or the managers may act differently compared to what the principals or the investors are expecting of them. This phenomenon can occur due to information asymmetry, the agents possess more information than the principals and hence they can act in ways that favor themselves, which may cause damage to the unaware principals. This is what is usually called “moral hazard”. The managers may take a short-term perspective to achieve the goals set for the near future to realize bonuses instead of taking a long-term perspective that the principals expected of them and which would be the best for the firm in the long run. Both the agent and the principal strive to gain an advantage and might hide information from one another (Braun & Guston 2003). The principal-agent problem and the information asymmetry are signs that the market is not functioning well because the agent cannot trust the principal to do his job properly as he possess less information, resulting in a need for accounting regulation. If the market were functioning, there would be no need for accountants and similar monitoring associations or organs that scrutinize the work done by the firms and their managers. As it is today, managers sometimes tend to use the allowed judgment in the accounting choices to favor themselves by achieving short term goals, hence realizing bonuses that otherwise would not have been realized. This behavior is mitigated by creating standards and mandatory monitoring by accountants to detect if managers are purposely deluding the agents. (Fields, Lys and Vincent, 2001)

Asymmetric information arises when one party possess information that the other does not. The reason that asymmetric information exists is that the agents often have more information than the principals about how the firm is doing (Jones 2004). If the principals knew everything about the agents' activities and all the investment opportunities for the firm, they could construct a comprehensive contract to steer the agents' actions and make them work in a way that would be most profitable for the firm. The actions a manager could take and all the firm's investment opportunities are not completely observable by the shareholders, and the shareholders do not know what actions the manager could take to increase shareholder wealth the most. In this case the theory predicts that a specially constructed compensation policy could give the manager incentives to act in a way that is most profitable for the shareholders (Jensen & Murphy, 1990).

## **2.6 Differences in Firm Size and Earnings Management**

Burgstahler and Dichev (1997) looked at the unusual pattern of frequency distributions around the zero mean of standardized earnings and based on their findings, they estimated that eight to twelve percent of the firms with small decreases in earnings compared to the year before manage to instead get a small increase in earnings. Additionally, they estimated that 30 to 44 percent of the firms with small losses manage their earnings in order to instead get a small profit, and they found that these tendencies are greater with medium- and large-sized firms. Other arguments in favor of large firms managing earnings more is that they face more pressure than smaller firms to show good results year after year so they might be more inclined to manage their earnings to get smoother results. Large firms also have more bargaining power with their audit firms and can therefore get away with managing earnings more than other firms (Rhee, S.G. year unknown). Large firms also take their reputation into account when contemplating earnings management. They may have established a good reputation in the business community which they do not wish to affect negatively (Kim, Liu & Rhee 2003).

There is also an opposing view that small firms manage earnings more than large firms do. They argue that larger firms have better internal control to prevent earnings management and also risk more monitoring from third parties and auditors, therefore making it more difficult for them to get away with managing earnings. Furthermore, they say that strong corporate governance, which is more common at larger firms, helps prevent earnings management and finally larger firms also have their reputation to consider and they do not want to risk getting into any scandals because of their inclination to manage earnings (Rhee, S.G. year unknown)

## **2.7 Summary**

The introduction about IFRS and IAS 36 is expected to increase the understanding about the standard and why the judgment allowed is affecting the quality of the earnings. The model Jordan and Clark (2011) used is going to be applied to this study to examine the companies' financial statements and assess if they are using goodwill as a tool for managing earnings. Depending on the results we will see if it corresponds with the theories and reasons for earnings management mentioned above in the previous sections .The theory about big bath accounting will be used in assessing the behavior on NASDAQ by comparing the results in the first part of the empirical findings where the annual reports will be presented. By

comparing the outcome of the Jordan and Clark model to the theories about big bath accounting, we hope to find a pattern in the firms' behavior and, for example, if a correlation between the earnings and the propensity of impairing goodwill exists. If the theories are correct, we expect the firms with depressed earnings to be more prone to make impairments.

The discount rate will be discussed with the accountants to see if they think it can be as big of a problem as Carlin & Finch (2009) suggest. Since they think it leaves room for judgment and a risk of a biased discount rate, it will be interesting to see if this view is shared by the interviewees. If firms use different discount rates, it would affect the outcome of the financial result and the comparability would decrease, and we expect to find out by interviewing the accountants whether or not the discount rate is similar among firms on NASDAQ OMX Nordic. The principal-agent theory will be compared to the interpretation of the situation according to the interviewed accountants to see what their perception is about the quality and amount of information provided to the stakeholders in the annual report. The principal-agent theory will also be used to assess the accountants' possibility to oppose the numbers given to them by the firms, e.g. regarding the discount rate. Regarding the theories about small and large firms managing earnings differently, there have been different suggestions about which ones manage the earnings most. By comparing the different Caps to one another we expect to be able to find some sort of relation between the size of the firm and the size of the impairments.

## **3. Methodology**

### **3.1 Introduction to Methodology**

This chapter begins with a presentation of how the thesis will answer the research questions. In order to gather all necessary data two different research approaches will be used, covering a wider span of the situation than solely using one of the approaches. After this section a detailed description of the Jordan and Clark model (2011), used to interpret the quantitative data from the financial statements, will be described. Since this model is essential to the section of the empirical findings, it is important for the reader to understand all steps and hence it will be explained in detail in this section. The Jordan and Clark model will be followed by a description of how all necessary data were collected. The first section will handle the selection of the annual reports and what programs are to be used in order to assess the data. The second section will discuss how the interviews will be conducted and describe how the respondents were chosen. Both methods will be used in order to answer the first research question while the focus on the second research question is on the first method. The Mann Whitney U-Test is described since this test was used in SPSS to assess all values given in the annual report. The chapter ends with a discussion about the credibility of the methods applied to this research.

### **3.2 Research Design**

To answer the research questions mentioned in section 1.3, the data collection is divided into two different approaches, a quantitative and a qualitative approach. Since part of the first question is of a different nature two approaches are needed. All firms on NASDAQ OMX Nordic reporting goodwill will be scrutinized. The gathered information about earnings, goodwill etc. from the annual reports will be assessed and compared to the theories introduced in the frame of reference in order to answer the research questions. Three interviews will be conducted with representatives from three of the largest audit firms in the world in order to be able to answer the second part of the first research question. The findings from the two studies will be divided into two different sections to increase the understandability of the result.

Analyzing the annual reports will contribute to a broader perspective of the thesis since all relevant firms on NASDAQ OMX Nordic will be studied. Every firm's annual report will be examined and each year equals one observation; to answer the research questions the observations will be tested in the Jordan and Clark model. Since firms experiencing depressed earnings tend to impair more according to the theory, this approach will be used to test this relation. To facilitate it to the reader, the first step will be presented for all three Caps followed by the second step for all Caps and last the third step is presented for all Caps. This increases the comparability between the Caps since they can be compared to one another step by step rather than presenting all steps for one Cap followed by the next Cap. After every step an analysis will be presented and after all steps have been explained a comprehensive analysis will be presented to explain the differences between the three Caps based on three steps.

The second approach used to answer the last part of the first research question will be based on interviews with accountants from Deloitte, Ernst & Young and KPMG. Since the numbers

from the annual report cannot state why things appear as they do, a deeper understanding is needed to explain the behavior of the firms. The accountants will contribute with their view of the situation and how they perceive the problem and the answers will be explained and compiled in a separate section and compared to the theories in the frame of reference in the analysis that constitutes the last part of the chapter.

### 3.3 Jordan and Clark Model

The method applied to analyze the annual reports in this thesis is the previously mentioned three step model that Jordan and Clark used in their above mentioned research. The reason behind the choice of this method is because it has been used earlier more than once; e.g. Hardebjer and Nilsson (2011) used it. Compared to using an unknown model, it will increase the credibility of the findings. Since it has already been applied to previous studies it will be possible to compare this thesis' findings to theirs as well.

The first step in the model is to determine the significance of the impairment losses. In order to determine if the impairment is significant, Jordan and Clark stated that two criteria have to be met. The first criterion is that the impairment has to exceed one percent of the total assets. Impairments can be comprised of a large absolute value but still be relatively small and hence it is important to take the assets into consideration. The second criterion was that the impairment has to create an income effect, meaning that the impairment must exceed 10 percent of the EBIT. If the impairment is significant and meets both mentioned criteria, and the firm has significantly lower earnings than the other group without impairments, it is possible that the impairment was used as a form of earnings management. That is because big baths are hypothetically taken in a year with already low earnings. In addition to analyzing the whole group of listed firms that reported goodwill as a unit, they also examined the observations that had made significant impairments separately. This sample of observations was examined in more detail in the latter steps of the model, since the significance can be proof of managing earnings. The criteria for the significance are the following:

$$\text{Significant}_1 = \frac{\text{Impairment of Goodwill}}{\text{Total Assets}} \geq 1\%$$

&

$$\text{Significant}_2 = \frac{\text{Impairment of Goodwill}}{\text{EBIT} + \text{Impairment of Goodwill}} \geq 10\%$$

In the second step of the model earnings levels for the three groups, (the group with all observations reporting impairments, the group that did not impair and the third group constituting of the observations with significant impairments), were then assessed using two different measures, ROA and ROS. The measures are defined as follows:

$$ROA = \frac{\text{Earnings} + \text{Impairment of Goodwill}}{\text{Total Assets}}$$

&

$$ROS = \frac{\text{EBIT} + \text{Impairment of Goodwill}}{\text{Sales}}$$

The reason behind the reversal of goodwill in the equation is to examine the size of the impairment in relation to the result excluding the impairment effect. If the impairment was included in the result, the impairment would appear a lot bigger than it actually is in relation to the result.

In this part of the model ROA and ROS, are compared to each other depending on the group. ROA is, according to Jordan and Clark, one of the most common measures of earnings used for comparison among firms. Since firms may have different levels of assets, using solely this measure could be inappropriate because it would give a skewed picture of the reality. To eliminate the bias or the skewness that could occur, they decided to use ROS as well. The reason behind the choice of medians as summary measures instead of means is because the medians are not affected by extreme observations the same way as the means are. An extreme value can bias the mean so it does not give a fair view of the situation. Using a statistical test enables the possibility to compare the companies that had impairments to those that did not impair. By conducting this test, it is possible to conclude if there are any differences between the groups. The companies reporting significant impairments in the first test, the third group, were also tested separately against the companies that did not report any impairment to see if that would give a different result. Since the impairments are significant in this group, they have had an income effect. If the ROA and ROS were to be lower in this group it would suggest that the firms had been managing their earnings according to Jordan and Clark.

Jordan and Clark had a theory that firms with negative or depressed earnings may be more likely to take big baths and therefore they wanted to test this correlation. The third step and the last part of the test was a comparison between firms with negative earnings in the three groups as an additional test on the group's financial results. The earnings that were examined were before any impairment losses. The reason behind this was because they wanted to test if a larger proportion of the impairment group had a negative result without the impairment loss affecting the result. The statistical tests were used to examine if the companies that made impairments had a significant larger share of negative results than the companies that did not. Finally, a comparison was made between the firms with significant impairments, as found in the first test, and the firms that had no impairments to see if the firms with significant impairments have more depressed earnings and therefore greater incentive to impair than the other firms (Jordan & Clark 2011).

### **3.4 Data Collection**

The reason behind the choice of examining the entire NASDAQ OMX Nordic is to give the research as high credibility as possible. Through looking at all companies, it will be easier to discern and detect if companies do use goodwill to manage earnings. It will also make it possible to compare the companies based on their size and to see if any patterns exist regarding the impairments' correlation to the earnings. If we were solely analyzing one of the Caps we would not be able to decide what the common behavior is for all Caps.

#### **3.4.1 Annual reports**

In order to assess the behavior of the companies regarding goodwill, e.g. if they manage their earnings, and discern what kind of relationship exists, their annual reports from the years 2008-2011 will be scrutinized. The reason behind the four years chosen is to examine annual reports as recently issued as possible and since the financial crises started in 2008, it would be interesting to examine the companies during this period. We think it will be sufficient with four years in order to answer the research questions and including a fifth or a sixth year would hence be superfluous. Since this thesis has its focus on goodwill in IAS 36 Impairment of Assets, the data collection will be limited to firms using IFRS. Companies with no reported goodwill were also excluded since the purpose is to examine the behavior regarding impairments of goodwill between firms on NASDAQ OMX.

To find the necessary data to conduct the research, Datastream, provided at the Economic Library at the University of Gothenburg, was used to analyze the annual reports. This is a well-known and commonly used program regarding data collection. The variables used in the program were Goodwill Gross, Total Assets, Net Profits, EBIT, Impairment of Goodwill and Net Sales. The numbers from the annual reports were used to calculate e.g. ROA and ROS, described in section 3.3. The local currency was used to avoid exchange rate fluctuations between the selected years. Since the absolute values are of less importance to the research, it does not matter if they are reported in SEK, € or DKK as long as all the numbers in the annual report are reported in the same currency, enabling the extraction of the relative numbers.

Firms that did not report any goodwill for the years 2008-2011, of which there were 150, were excluded in this study. Of the 150 firms, 102 were listed on Small Cap, 33 on Mid Cap and 15 on Large Cap. See "Appendix 2" for more detailed information. The firms that reported goodwill some of the years but not for all selected years were included but only for the years in which they reported goodwill.

#### **3.4.2 Interviews**

As a complement to the output from Datastream, three interviews were held in order to gain a deeper understanding of the interpretation of the situation. The reason why only three interviews were conducted is that the accountants all answered similarly and therefore conducting more interviews would have been redundant. Since accountants have a better insight than most people into the firms' financial statements, it would be interesting to examine what their perception is regarding the behavior of impairment of goodwill and how they interpret the situation. The reason behind not interviewing firms listed on NASDAQ OMX Nordic is because it would probably have been difficult to receive any new information



since it would have been inappropriate to question them about whether or not they are manipulating the earnings or similar questions. Another reason behind the choice of the audit firms is that since they have several of the listed firms as clients, they have a better perception of how the firms are acting in general on the different Caps.

In order to receive as much information as possible from the interviews, questions were prepared and sent to the interviewees in advance. The interviews were semi-structured with open questions to allow the interviewees to talk freely about the subject but still limited them to the framework in the questionnaire (Bryman & Bell 2011). Since the interviewees had a framework of questions, the interviews will result in more reliable and comparable data. If the interviewees were to talk freely about the subject, they might not cover the same areas and therefore making it hard to compare the data (Cohen & Crabtree 2006). The questions used during the interviews are related to the theories described in the frame of reference, e.g. the big bath theory, differences in firm size and earnings management etcetera, and the problems discussed in the introduction. They were primarily developed to answer the latter part of the first research question but they also cover to some extent other parts of the research questions. In order to receive as much information as possible from the relatively few questions, they were developed to be neutral and open; hence yes-or-no questions were excluded from the questionnaire.

The semi-structured approach will be followed because this will make it possible to receive a more detailed answer instead of only asking yes-or-no questions. By asking the interviewees closed questions it would have limited the opportunities for the interviewee to speak freely about the subject. The interviews will contribute as a good complement to the theories from the literature and previously conducted studies. The questions used during the interviews can be found in “Appendix 1”. These questions were sent to the interviewees a couple of days in advance and each interview took approximately 30 to 40 minutes.

<b>Respondent</b>	<b>Title</b>	<b>Firm</b>	<b>Duration of Interview</b>
Ekdahl Johan	Authorized Public Accountant	E & Y	35 Minutes
Larsson Charlotta	Authorized Public Accountant	Deloitte	30 Minutes
Lysér Conny	Authorized Public Accountant	KPMG	40 Minutes

To find the most suitable interviewee and receive as detailed answers as possible, the questions were sent to the audit firms to make it possible for them to select a qualified respondent. The interviewed person at Ernst & Young was Johan Ekdahl, an authorized public accountant who has been working in this field for 15 years. He is in charge of larger companies and has a wide group of different companies within different sectors. The respondent from KPMG was Conny Lysér, an authorized public accountant that has been working as an accountant since 1989. He works mostly with companies with a high degree of tangible fixed assets, such as real estate companies. The final interviewee was Charlotta



Larsson from Deloitte, a senior manager and authorized public accountant working with both larger and smaller firms in different sectors.

### **3.5 Selection of Respondents**

Three interviews were conducted with authorized public accountants at Deloitte, Ernst & Young and KPMG, with all companies located in Gothenburg, since these companies have a great number of larger clients and therefore have a good insight into the market and what the problems might be. PWC is not included in this research, even though it is one of the largest audit firms in the world, since the interviewees answered similarly on most questions and conducting a fourth interview would therefore have been superfluous. The reason behind not only choosing one company and interviewing accountants at that specific company is because we wanted to see if the answers received were a common perception of the market in general and not just one company's perception. The agencies might have different ways of looking at the problem and we think that we will receive a more correct view through interviewing accountants at different companies. They also have a high variety of clients based on size, profits, sectors and so on and will therefore possess valuable information about how the behavior regarding goodwill might differ depending on what kind of company it is. It is not likely the same sort of information would be received from the smaller audit firms because they do not have the same variation of clients regarding firm size etcetera, and focus on smaller non-listed firms as clients.

### **3.6 Mann Whitney U-Test and Chi-Square Test**

To interpret the numbers from the annual report and test if there is a significant difference in the second step of the model, the Mann Whitney U-test was used via the computer program SPSS. This test can be used for testing hypotheses for both qualitative and quantitative variables, and is a non-parametric test for testing the samples' median against each other. To make the test possible, there are some requirements that must be met. First of all there has to be an independence of observations between and within the groups: if this requirement fails another method has to be used. The second criterion is that the data has to be measured on an ordinal scale and not nominal; this is because the data has to be ranked in a specific order. The third criterion is that the independent variable has to include two categorical, independent groups, in our case 'impairments made' and 'no impairments made' ([www.statistics.laerd.com](http://www.statistics.laerd.com)).

The Mann Whitney U-test calculates a z-value used to interpret the numbers and hence decide whether or not the null hypothesis can be rejected. The significance level chosen for this thesis is an  $\alpha$ - or p-value of 0.05 and the null hypothesis can be rejected if the p-value is less than 0.05. It implies that if the p-value is less than 0.05, the ROA or the ROS for the impairment group will be significantly lower than for the non-impairment group ([www.statistics.laerd.com](http://www.statistics.laerd.com)).

To further prove the findings, the earnings of the firms in the group of 'No Impairment of Goodwill' (No I of G) were compared to the firms in the 'Impairments of Goodwill' (I of G) group using a chi-square test. This was done individually for Large, Mid and Small Cap, and this test is to examine if there is a difference in the distributions between the two groups and

to see if one group has more negative earnings than the other. The chi-square test is a non-parametric test which means that it does not rely on data belonging to any particular distribution and is used to determine if there is a significant difference between the expected distributions and the observed distributions. The chi-square test needs the data to be quantitative and independent from each other and a sample size of at least ten (Newbold, Carlson & Thorne 2010).

### 3.7 Discussion

Since all firms reporting goodwill listed on NASDAQ OMX Nordic are included in the research, the empirical findings will have a high degree of validity and reliability. The Nordic firms are of a similar size and culture, which increases the comparability between the firms. Other exchange lists could have been analyzed to compare the similarities and dissimilarities between the different markets and the impairments made. If e.g. American firms were to be included in the study, the comparability would be damaged. The American firms are generally larger than the Nordic firms and this can have an impact on the reasons behind the impairments. Since the Nordic list covers a large amount of firms, the credibility is still high and including more firms to the study was not deemed necessary.

The benefits with collecting data from annual reports using Datastream is that it is easy and free to get access to, and enables an opportunity to compare a great number of companies. One benefit with using secondary data is that since we are not the ones originally collecting the numbers, others can do the same research using the exact same numbers. This will give the conducted research a higher degree of credibility and reliability than using primary data. Even though Datastream is a well-known source for gathering data the program still has some flaws. There were no problems finding the numbers needed for the Large and Mid Cap companies, but some data was missing regarding the Small Cap companies. Datastream lacked information regarding the goodwill value: approximately half of the companies seemed to have no goodwill, which made us suspicious. We decided to manually analyze all companies with no goodwill value according to Datastream and found out that the program was in this case wrong. All missing numbers were filled out to make sure all goodwill was reported with its correct values. There is also another risk that the numbers are not the same as in the annual reports and to see if this was a problem we did a random sample of the scrutinized annual reports. We analyzed every 25<sup>th</sup> annual report manually and came up with the conclusion that the numbers given by Datastream were in fact correct or that the discrepancies were not large enough to be significant and affect the result. Even though there are some minor flaws, Datastream still is a well-respected program and we trust the given numbers enough to use them in the research.

A potential flaw regarding the Jordan and Clark model used in this thesis is that since relative numbers are used to assess the firms' behavior, the results may differ because of the firm size. It might be more difficult for larger firms to achieve the criteria for significant impairments since both their results and their assets are much larger, and hence the impairment may not have the same impact on the earnings. This could affect the comparability between the different Caps.

Regarding SPSS and the Mann Whitney U-test, some benefits from using this method compared to other more traditional methods are that it does not matter if the sample size is small or if the response variable is not normal since the Mann Whitney U-test does not have any assumptions of normality. Some traditional methods can be strongly affected by outliers that affect the mean and standard deviation, but this is of no concern for the Mann Whitney U-test since the test only looks at the ranks of the response variable rather than the values themselves ([www.stat.ufl.edu](http://www.stat.ufl.edu)).

The selected respondents represent three of the largest audit firms in the world with clients listed on NASDAQ OMX Nordic. All accountants have been working in the field for at least a decade, and are experienced and deeply knowledgeable in the subject. The fact that they are working for a large audit firm and the amount of years in the field increases the credibility of the answers. A disadvantage with conducting interviews is that it could affect the credibility negatively since the answers could be biased by the interviewee's personal opinions. Since the answers are based on opinions, they do not always consist of proven facts and hence the conclusions should be dealt with caution. However, the fact that all accountants answered similarly enhances the reliability of the study. If the answers would have differed, the credibility would have been negatively affected, due to a greater risk of personal opinions reflecting the answers. Since there was a strong resemblance in their answers there was no further need to conduct any more interviews but if they would have answered differently more interviews would have been deemed necessary.

An alternative approach to the thesis instead of interviewing accountants would have been to interview the listed firms on NASDAQ OMX Nordic. The reason why this approach was not considered to be appropriate for this study is because it would have been difficult to receive any new information. The firms are often reluctant to disclose more information than is required, and this information can usually be found in the notes. The disclosed information in the notes is often considered insufficient (Lennartsson 2011). Since there are more than 300 firms listed on NASDAQ OMX Nordic with reported goodwill, a large amount of interviews would have been required to be able to generalize for the full population to be considered reliable. Due to the limited amount of time, it would not have been possible to conduct that amount of interviews.

## 4. Empirical Findings and Analysis

### 4.1 Introduction to the Empirical Findings

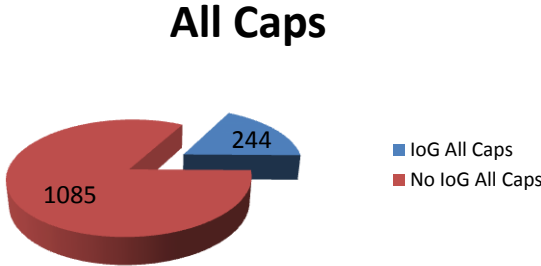
The empirical findings are divided into two different approaches, as described in section 3.2 “Research Design”. The first part of the chapter describes the requirements to be listed on the NASDAQ OMX Nordic and a short summary of the Jordan and Clark model. This is followed by the data from the annual reports that have been analyzed according to the Jordan and Clark model described in 3.3 “Jordan and Clark Model”. Through analyzing the data accordingly, the results have been used to test if any relationship between the earnings and the impairments exists. The general behavior regarding impairment of goodwill and what differences there are between the different firms depending on the Cap will also be explained through the model.

The second part of the thesis consists of a compilation of the interviews. The presentation will follow the order of the frame of reference and will be used to answer the latter part of the first research question, i.e. what the causes behind the specific behavior could be. Finally a comprehensive analysis will be presented in the last section of the chapter, where the empirical data will be compared to the theories described in the frame of reference.

### 4.2 Presentation of the Annual Reports

To meet the requirements to be listed on the NASDAQ OMX Nordic, the firms have to, among other things, have a total market value of one million euros, have a minimum of 500 shareholders and have been operating for at least three years ([www.nasdaqomx.com](http://www.nasdaqomx.com)). To be listed on Small Cap, the market capitalization has to be below 150 million euros, while the requirement set for the market capitalization on Mid Cap is between 150 million and 1 billion euros. The firms on Large Cap have a market capitalization exceeding 1 billion euros ([www.nasdaqomxnordic.com](http://www.nasdaqomxnordic.com)).

There are 361 companies listed on NASDAQ OMX Nordic that reported goodwill at least once between the years 2008 and 2011. 181 of the companies were listed on Small Cap, 91 companies were listed on Mid Cap and 89 companies were listed at Large Cap. See “Appendix 3” for more detailed information. Since every company’s annual reports containing goodwill have been analyzed during the period, the entire sample total 1329 observations. Out of these observations, 244 reported an impairment of goodwill.



The remaining part of the “Presentation of the Annual Reports” is presented according to the Jordan and Clark model where each step is analyzed separately Cap by Cap in order to increase the understandability. The first step will be tested for Small, Mid and Large Cap

followed by the second step for all Caps and finally the third step will be tested for all Caps. An analysis for each of the steps will be included in the presentations of each individual step.

**4.2.1 Significance of the Impairment Loss**

The significance of the impairments is tested in this step by comparing the impairment loss to EBIT and total assets, as mentioned in section 3.3, "Jordan and Clark Model". The impairment is significant if it exceeds one percent of total assets and ten percent of EBIT including the reversed impairment.

**4.2.1.1 Small Cap**

**Significance of the Small Cap Impairment Loss**

Ratio	25th percentile	50th percentile	75th percentile
Impairment loss to EBIT	9,785%	37,325%	167,598%
Impairment loss to Total Assets	0,587%	2,754%	8,860%
Impairment loss to Sales	0,608%	2,923%	9,380%

The table above shows whether or not the impairments on Small Cap have been significant between 2008 and 2011. The observations have been divided into percentiles where the lowest 25 percent have been reported in the 25<sup>th</sup> percentile, the highest 25 percent have been reported in the 75<sup>th</sup> percentile and the remaining observations in the 50<sup>th</sup> percentile. Based on the median, it is possible discern that more than 50 percent of the observations on Small Cap have been significant since the impairment loss to EBIT is 37.325 percent while the impairment loss to total assets was 2.754 percent. Both values exceed the ten and one percent mentioned in the equation for the requirements set for the impairments to be significant. Since both values exceed the minimum values, it means that the impairment was large enough to be significant in comparison to the result and to the assets. The significant impairments have strongly affected and lowered the annual result and therefore they will be analyzed separately in the two following steps, where they will be put in relation to the earnings. The exact number of significant observations was 71 out of 107. According to the first step in the model, there is a possibility that earnings management could exist on Small Cap since more than 50 percent of the observations were significant. The firms still have to report depressed earnings to be considered to have managed their earnings: the significance alone does not make it earnings management.

**4.2.1.2 Mid Cap**

**Significance of the Mid Cap Impairment Loss**

Ratio	25th percentile	50th percentile	75th percentile
Impairment loss to EBIT	1,080%	7,002%	32,855%
Impairment loss to Total Assets	0,066%	0,408%	1,055%
Impairment loss to Sales	0,189%	0,581%	4,859%

The impairments on Mid Cap are not significant, according to the median. Neither the impairment loss to EBIT, 7.002 percent, nor the impairment loss to total assets, 0.408 percent,

meets the requirements set for an impairment to be significant, i.e. the ten and one percent mentioned earlier. The 75<sup>th</sup> percentile shows that at least 25 percent of the observations have made significant impairments. Even though the 75<sup>th</sup> percentile shows that some impairments have been significant (13 out of 55 observations), step one still does not give any significant signs of earnings management since the amount of significant impairments in relation to the insignificants are too few. Even though the ROS exceeds ten percent in some cases the ROA is still too low. The reason behind this is that they had a low result during the year and hence gave ROS a higher value but the impairment was still small in comparison to the total assets and is therefore not significant.

**4.2.1.3 Large Cap**

**Significance of the Large Cap Impairment Loss**

Ratio	25th percentile	50th percentile	75th percentile
Impairment loss to EBIT	0,461%	1,666%	11,250%
Impairment loss to Total Assets	0,039%	0,101%	0,429%
Impairment loss to Sales	0,053%	0,190%	1,857%

According to the table, the median in the 50<sup>th</sup> percentile is far below the numbers set as the criteria for significance. The impairment loss to the EBIT is only 1.666 percent while the impairment loss to total assets is only 0.101 percent. Not even the 75<sup>th</sup> percentile gives any hint of earnings management since the values are 11.250 percent, which exceeds the requirements for the impairment loss to EBIT, but the impairment loss to total assets is only 0.429 percent. Only 18 out of 82 observations were significant. According to the first step of the model, no significant earnings management has been made on Large Cap because the impairments have not been large enough to affect the result.

**4.2.1.4 Analysis of the First Step**

According to the first step there are some differences between the Caps. There tend to be more significant impairments on Small Cap compared to the two other two larger Caps. This could occur due to the lower earnings in absolute numbers and fewer assets compared to the larger firms. Therefore, the impairments have a greater impact on the earnings since the impairments are larger in relative numbers. Further evidence supporting the assumption is that the firms on Mid Cap have more significant impairments compared to Large Cap where the firms with the highest market capitalization are listed. Another reason could be that since most of the firms on Small and Mid Cap have a shorter history compared to the firms listed on Large Cap, it is more difficult to argue for not making an impairment while experiencing depressed earnings. Due to limited experience it is difficult to know the accuracy in the forecasts and hence they can be forced to impair the value out of cautionary reasons. Since small firms are usually less diversified than the large firms they are more affected by changes in the economy. During recent years, the market has been experiencing a recession and it could be that the larger Caps are less affected as a result of the diversification compared to the small firms.

## 4.2.2 Profitability of the Different Groups

The second step in the model will be analyzed in the following section. The reason behind this step of the model is to test if there is a significant difference between the non-impairment group's and the impairment group's ROA and ROS. This is to test if there is a difference in the profitability between the firms that made impairments and those who did not. If the p-value is less than 0.05 there is a difference and could mean that the impairment group has stronger incentives for making impairments and managing earnings since they already have low earnings. To further test the possibility that firms with depressed earnings are using the impairments as a tool for big bath accounting, the 'Significant Impairment of Goodwill' (Sig I of G) group will be tested against the No I of G group.

### 4.2.2.1 Small Cap

#### Profitability of the I of G and No I of G

Small Cap			
Median	I of G	No I of G	P-Value
ROA	-1,71%	2,35%	0.000
ROS	-0,17%	4,10%	0.000

The table above compares the median for the I of G group and the No I of G group. The ROA- and ROS-values for the I of G group are -1.71 and -0.17 percent, while the corresponding numbers for the No I of G group are 2.35 and 4.09 percent. Based on these numbers the median is lower for the I of G group regarding both the ROA- and ROS-values compared to the No I of G group. The p-value also confirms this relationship because it is 0.000 for both ROA and ROS, and since this value is lower than 0.05, there is a significant difference between the groups. The financial result is lower both in relation to total assets and in comparison to sales for the I of G group, indicating that firms impairing goodwill also have lower earnings than the firms without impairment of goodwill.

According to the second step in the model, earnings management has occurred over the years on Small Cap since the ROA and ROS are significantly lower for the I of G group. Since this relationship exists they could have had some incentives for making these impairments and lower the result even more, in accordance with the theories mentioned in the frame of reference regarding big bath accounting.

#### Profitability of the Sig I of G and No I of G

Small Cap			
Median	Sig I of G	No I of G	P-value
ROA	-3,13%	2,35%	0,000
ROS	-1,46%	4,10%	0,000

To test if there is any difference between the group that has made Sig I of G and the group that has not made any impairments at all, their ROA and ROS were compared and the



differences are shown in the table above. The reason behind this test is to see whether the firms that have made significant impairments also had greater incentives to make these impairments when they already had depressed earnings. The differences between the Sig I of G and the No I of G are even greater than in the previous section when all the companies that had made impairments were compared with the No I o G group. This implies that they have managed their earnings because they have lower earnings than the whole I of G group in general has.

**4.2.2.2 Mid Cap**

**Profitability of the I of G and No I of G**

Mid Cap

Median	I of G	No I of G	P-Value
ROA	1.28%	5.02%	0.002
ROS	5.39%	7.12%	0.124

According to the table above, the median values for ROA and ROS are 1.28 and 5.39 percent for the I of G group while the corresponding numbers for the No I of G group are 5.39 and 7.12 percent. The median is lower for the I of G group regarding both ROA and ROS. The earnings in comparison to total assets and EBIT in comparison to sales are hence lower for the I of G group. The significance level, 0.05, exceeds the p-value for ROA, 0.002, and this indicates that there is a significant difference between these values. The ROS-value, on the other hand, has a p-value of 0.124, which exceeds the significance level, and hence there is no significant difference regarding the EBIT in relation to sales between the I of G group and the No I of G group.

According to the second step, the signs of earnings management are less evident, even though there is a significant difference between the two groups' ROA. Since the difference is not significant regarding the ROS-value, it cannot be concluded that the firms, according to the second step, have managed their earnings. As noted in the first step of the model, most of the impairments are not significant and hence confirms the fact that they are likely not managing their earnings on Mid Cap, at least not regarding the I of G group.

**Profitability of the Sig I of G and No I of G**

Mid Cap

Median	Sig I of G	No I of G	P-value
ROA	-0,55%	5,02%	0,000
ROS	-3,79%	7,10%	0,000

Looking at the entire population on Mid Cap, no earnings management could be established in the second step, but to test if the firms with significant impairments also have lower results they have to be tested separately. Between the groups Sig I of G and No I of G, there is a significant difference since the p-values do not exceed the set 0.05 determining whether or not there is a significant difference. Even though no earnings management exists on Mid Cap in



general, this test indicates that the firms that had made significant impairments also had significantly lower earnings giving them reason to lower the result even more.

Note that the amount of significant impairments is low (13), and therefore there is a risk that it is not statistically valid but since it is the entire population, the decision was to include it in the research.

**4.2.2.3 Large Cap**

**Profitability of the I of G and No I of G**

Large Cap

Median	I of G	No I of G	P-Value
ROA	3,83%	5,58%	0.000
ROS	10,75%	13,28%	0,037

According to the table, the median values for ROA and ROS are 3.83 and 10.75 percent for the I of G group, while the corresponding numbers for the No I of G group are 5.58 and 13.28 percent. The median is lower for the I of G group regarding both ROS and ROA. The earnings in comparison to total assets and EBIT in comparison to sales are hence lower for the I of G group. Since the significance level (0.05) exceeds both p-values, there is a significant difference between the two groups. The difference is not as large regarding the ROS-value as it is to the ROA-value, but the difference is still large enough to be significant.

The companies that made impairments had in general lower earnings than the non-impairment group and based on the second step of the model, the companies on Large Cap have managed their earnings because there is a significant difference between the two groups. But since the majority of the impairments were not significant it cannot be determined that they have used the impairments to manage their earnings.

**Profitability of the Sig I of G and No I of G**

Large Cap

Median	Sig I of G	No I of G	P-value
ROA	1,91%	5,58%	0,004
ROS	6,89%	13,28%	0,002

There is a greater difference regarding the group of Sig I of G and the non-impairment group than between the group of I of G and the non-impairment group. This implies that they have managed their earnings since they had lower earnings than the entire I of G group. This is in accordance with the theory about big bath accounting and that they have stronger incentives to manage the result if they already have depressed earnings. Note that the sample size is only 18 and therefore small, but we decided to include it in the research since it is the entire population.

#### 4.2.2.4 Analysis of the Second Step

The second step of the model supports the theories in the frame of reference regarding big bath accounting since the firms with impairments have a lower ROA and ROS for every Cap, even though it cannot be statistically proven for the ROS on Mid Cap. The fact that the firms with impairments have lower earnings is, according to amongst others Jordan and Clark (2011) an indication that the purpose of the impairment is to “clear the decks”. Further proof of the big bath accounting theory is that there is an even greater difference between the firms with significant impairments to those without impairments: the more significant the impairment, the more depressed earnings the firms have. There seems to be a correlation regarding the Cap and ROA and ROS. The larger the Cap, the greater the profitability appears to be the case, which can explain why more firms on Small Cap made impairments compared to firms on Mid and Large Cap. As mentioned, the sample sizes for the significant impairments on Mid and Large Cap are low and that can affect the reliability of the conclusions.

#### 4.2.3 Comparison of the Earnings

The following section will discuss the third step of the model, a comparison between the earnings of the different Caps. The observations will be divided between the firms with negative earnings and the firms with positive earnings. This step is conducted to test if firms with negative earnings are more inclined to make impairments as stated in the theories about big bath accounting. If the p-value exceeds 0.05 there is no significant difference and in that case, no earnings management can be determined. To further test the possibility of big bath accounting and to determine whether this is common behavior among the firms reporting impairment of goodwill, the Sig I of G group will be compared to the No I of G group.

##### 4.2.3.1 Small Cap

Small Cap	I of G	No I of G
Observations With Negative Earnings	61,68% (66)	33,09% (183)
Observations With Positive Earnings	38,32% (41)	66,91% (370)
All Observations	100% (107)	100% (553)
P-value		0,000

The table shows the proportion of negative and positive earnings for the Small Cap firms; note that the earnings are before any impairment losses. Of all companies that had any impairment losses, 61,68 percent had a negative result. The corresponding number for the firms that did not have any impairment losses is 33,09 percent. The p-value from the chi-square equation equals 0.000 and this means that there is a significant difference between the two groups. The results provide additional proof that earnings management has occurred on Small Cap during the chosen period because the majority of the firms that had made impairments also had negative earnings, and compared to the No I of G group a significant

difference exists. All in accordance with the theory about big bath accounting, some firms with depressed earnings tend to choose to take more losses that year.

**Negative Vs Positive Earnings for the Sig I of G and No I of G**

Small Cap

	Sig I of G	No I of G
Observations With Negative Earnings	66,20% (47)	33,09% (183)
Observations With Positive Earnings	33,80% (24)	66,91% (370)
All Observations	100% (71)	100% (553)
P-value	0,000	

To further test the correlation between impairments and negative results, the group of Sig I of G will be compared to the group of No I of G. There is a small difference between the Sig I of G and the I of G group. It appears to be the case that slightly more firms have negative earnings in the group with significant impairments, 66,20 percent, compared to 61,68 percent in the I of G group. Even though there is no great difference between the Sig I of G group and I of G group, the difference further strengthens the theory that firms with negative earnings have greater incentives to perform impairments.

**4.2.3.2 Mid Cap**

**Negative Vs Positive Earnings for the I of G and No I of G**

Mid Cap

	I of G	No I of G
Observations With Negative Earnings	30,91% (17)	14,71% (40)
Observations With Positive Earnings	69,09% (38)	85,29% (232)
All Observations	100% (55)	100% (272)
P-value	0,005	

Compared to Small Cap, where around 60 percent of the observations with impairment of goodwill were experiencing negative earnings, there is a majority of firms with positive earnings on Mid Cap among the I of G group. Even though a majority of the observations consist of positive earnings, there still appears to be a significant difference between the firms. The difference is not as large as between the firms on Small Cap but it is still a significant difference since the p-value is less than 0.05.

### Negative Vs Positive Earnings for the Sig I of G and No I of G

#### Mid Cap

	Sig I of G	No I of G
Observations With Negative Earnings	53,85% (7)	14,71% (40)
Observations With Positive Earnings	46,15% (6)	85,29% (232)
All Observations	100% (13)	100% (272)
P-value	0,002	

Regarding the group of Sig I of G and the group I of G there is a larger difference, 53,85 percent to 30,91 percent compared to the I of G group. Based on these numbers the firms that have made significant impairments had lower earnings than the group of I of G. This is a sign of earnings management; they were experiencing negative earnings they had a stronger incentive to take on more losses the same year in order to reduce the result. Note that the sample size of the group Sig I of G is small but since it is the full population we decided to include it in the research.

#### 4.2.3.3 Large Cap

### Negative Vs Positive Earnings for the I of G and No I of G

#### Large Cap

	I of G	No I of G
<b>Observations With Negative Earnings</b>	14,63% (12)	<b>6,13% (16)</b>
<b>Observations With Positive Earnings</b>	85,37% (70)	<b>93,87% (245)</b>
<b>All Observations</b>	<b>100% (82)</b>	<b>100% (261)</b>
<b>P-value</b>	<b>0,017</b>	

There is a significant difference between the groups on Large Cap since the p-value is less than 0.05, although the difference is not as large as on Small Cap or Mid Cap. Relatively few firms reported negative earnings on Large Cap resulting in a small sample size and since firms are performing better, the need for impairments are deemed less necessary compared to if they were experiencing negative earnings.

### Negative Vs Positive Earnings for the Sig I of G and No I of G

Large Cap	Sig I of G	No I of G
Observations With Negative Earnings	33,33% (6)	6,13% (16)
Observations With Positive Earnings	66,67% (12)	93,87% (245)
All Observations	100% (18)	100% (261)
P-value	0,001	

Of the firms that made significant impairments there is a larger proportion with negative earnings compared to the I of G group. There is a significant difference between the groups supported by the p-value, which is almost zero. The sample size of the Sig I of G group is small and could affect the reliability of the findings but since the entire population is included in the test, the decision is to include it in the research.

#### 4.2.3.4 Analysis of the Third Step

Companies with negative earnings are more likely to have larger impairments on all Caps, which is a sign that they have had greater incentives to make these impairments than the other firms, according to the theories about big bath accounting and the model developed by Jordan and Clark. Since the significant observations, regardless of the Cap, have lower earnings, this is a sign that they used it as a tool to “clear the decks”. As mentioned earlier, the significant observations consists of a small sample size on Mid and Large Cap, and therefore cannot be statistically proven. There is a relatively large share of the firms on Small Cap in the I of G group with negative earnings in comparison to Mid and Large Cap. This indicates that the firms on Small Cap are not performing as well as the firms on the larger Caps, which could affect the forecasts and could be one of the reasons to the impairments. There are relatively few firms impairing goodwill regardless of the Cap, which supports the study by Gauffin and Thörnsten (2010). Further, it appears as though the firms’ impairments are not sufficient, as mentioned by Gauffin and Thörnsten, since the amount of significant impairments are about 20 percent on Mid and Large Cap, while they appear to be more satisfying on Small Cap since nearly 70 percent of the impairments are regarded as significant. The reason why the difference between the Sig I of G group and the No I of G group is quite small on Small Cap (only five percentage points), compared to Mid and Large Cap (24 and 19 percentage points respectively), is because there are fewer firms excluded from this group compared to the larger Caps. Hence, the difference will not be as significant as if there were fewer firms with significant impairments.

#### 4.2.4 Comprehensive Analysis of the Annual Reports

According to the research, there are signs that firms use impairment of goodwill to manage the earnings. The study confirms the theories about big bath accounting being used in times when earnings are depressed. According to the numbers from the analyzed annual reports, it tends to be a common strategy among the firms to make impairments while experiencing lower earnings, but there appears to be a reluctance to impair a significant amount of the goodwill, especially on Mid and Large Cap. The findings from the annual report correspond to the study made by Gauffin and Thörnsten (2010) who claimed that the firms’ impairments were not sufficient. The fact that the IFRS and its standards are principle based could be one

of the explanations to the relatively few and small impairments that are being made, since the firms can affect the outcome of the impairment test. If the standards were rule-based it would limit the firms' opportunities to manage the valuation of goodwill.

There have been opposing arguments about whether or not larger or smaller firms are managing their earnings the most. The study suggests that there is evidence that smaller firms have more significant impairments than the larger firms: the larger the firms, the less significant the impairments are. The smaller firms also tend to have lower profitability, based on ROA and ROS, when making impairments, which, according to the different theories about earnings management, indicates that big bath accounting, has to some extent occurred. There is also a larger share of firms that have negative results and have made impairments of goodwill on Small Cap compared to Mid and Large Cap, which, according to the theory, indicates that the smaller firms are more inclined to manage earnings. There could also be other explanations than those mentioned previously: the firms on Mid and Large Cap in general have longer histories and therefore it is easier for them to predict the future, and the audit firms can trust their forecasts to be more accurate if they have a history of good forecasting compared to the firms with a shorter history. Large firms are also more resilient to the downfalls in the business cycle and because their earnings are not affected as much, they are not as obliged to alter their forecasts and therefore do not have the same need to make impairments. It could also be partly because the smaller the Cap, the less attention it receives from the public and hence it is not as monitored as the firms on the larger Caps. Another reason could be the lack of knowledge and capital amongst the smaller firms. The smaller firms do not have the same resources as the larger firms and therefore there is a risk that they do not prioritize this problem. The truth is most likely a combination of the mentioned reasons. Since there are fewer people interested in the smaller firms, they receive less attention and can therefore manipulate the results easier. But since they do not have the same capital structure, they cannot access the same knowledge as the larger firms that can invest in departments solely working with e.g. questions about intangible assets.

Based on the theories about big bath accounting and the Jordan and Clark model, amongst others, it can be concluded that earnings management exists on Small Cap. All the steps of the model indicate that the firms use a form of earnings management when they have poor or negative results. However, even if parts of the results point to the conclusion that earnings management exists on Mid and Large Cap, it cannot be statistically concluded due to the small number of firms that actually made significant impairments according to the limits set in the Jordan and Clark model. Regarding the significant impairments, the discovered pattern regardless of the Cap is that the firms that have made significant impairments also had lower results and more negative earnings than the rest of the I of G group. This indicates that the larger the loss, the greater the impairment is. Even if it is hard to prove the existence of earnings management in general on primarily Mid and Large Cap, some firms do manage their earnings, according to the Jordan and Clark model.

Compared to the previous study made by Emmy Hardebjær and Madeleine Nilsson (2011) the results of this study on Large Cap do not deviate much from theirs. Both studies discovered a correlation between the earnings and the propensity of making impairments but since the

majority of the impairments were not significant it cannot be statistically concluded that they managed their earnings.

### **4.3 Presentation of the Interviews**

Presented in this section are the interviews with, Johan Ekdahl at Ernst & Young, Conny Lysér at KPMG, and Charlotta Larsson at Deloitte, followed by an analysis of the interviews.

#### **4.3.1 The Allocation and Valuation Problem**

According to the previous studies, earnings management does exist and the interviewees agree with that and think this could be a problem if the reported numbers do not reflect reality. Since several investors have invested capital in the firms, it is important that they receive as correct information as possible so they can accurately assess the companies' performance. There are some problems today according to the accountants. Regarding the valuation of the goodwill value, the first problem occurs already in the acquisition process according to Ekdahl. He thinks the problems lie within the estimation process because firms can have a tendency to allocate too much of the purchase price as goodwill. He argues that the firms should allocate some of this value to other assets instead. If they followed the acquisition process better, time would be saved in the assessment process for the accountants because it would be easier to find the true and fair goodwill value. As it is today, part of the value that actually belongs to other assets ends up as goodwill at the acquisition because firms do not have to amortize this value, and therefore they would rather allocate as much as possible into this post. Another problem mentioned by both Ekdahl and Larsson is that the firms might allocate the value to a larger group of assets rather than the smallest CGU. If they do that, some part of the goodwill might decline in value but if another part of the unit has increased in value, these ups and downs might be set off against each other, hence not resulting in an impairment. If the goodwill was allocated in smaller CGUs, they would have to impair the part of the goodwill that has declined in value. Lysér mentioned the same reasons as Ekdahl and Larsson but he thought the reasons why they do not allocate the value properly could be due to lack of knowledge. Some firms do not have the resources or the knowledge, and hence see it as an easy solution to allocate the value in larger units since they do not know how to do it otherwise.

Even though IFRS and IAS 36 have been criticized due to the allowed judgment and the uncertainty in the valuation process, all accountants agree that this method is preferable to the previous method of amortizations. It would be easier for the accountants to assess the value of the goodwill using the amortization method, but since goodwill is an intangible asset with indefinite useful life they argue that an amortization would not always be necessary and hence the asset will not reflect its true value if amortized. They are aware of the problems correlated to the present standard but suggest that it is difficult to develop a better system to replace the current regulation with.

#### **4.3.2 The Reluctance of Impairments and Information Sharing**

All three accountants share the same opinion and do not think that companies manage their earnings on purpose in most cases, but that they are instead overconfident in themselves and think the current decline in their earnings is only temporary. Larsson's perception of the



situation is that firms want to do right but they have high expectations and hopes for the future, and those expectations are more likely the reason for the lack of impairments. Firms find it hard to accept the fact that the decline is not temporary and therefore they do not adjust their goodwill accordingly. Since goodwill requires judgment and is based on the future cash flows, which are affected by the expected profit margin, discount rate etcetera, it is difficult for the accountants to prove them wrong. According to the interviewees, it is quite uncommon that the accountants actually change the discount rate but instead they let the clients argue for their reasoning. The accountants look more at the plausibility of the numbers and equations that the firm uses rather than trying to find the exact numbers. The aforementioned overconfidence can result in costs being deferred and hence lead to a delayed impairment. Another reason that firms are reluctant to make goodwill impairments is the negative signaling effect that it might show to investors because an impairment of goodwill means that the expected future value of cash flows is now less than before. Most people perceive an impairment as something negative and Larsson mentions that the impairments could therefore e.g. affect the share prices.

The discount rate used to assess the goodwill, is according to Ekdahl, one out of two ways to manipulate the goodwill post; the other way is the assumption regarding future cash flows. Even though a change in the discount rate can have implications on the value, the interviewees do not think this is of any greater concern. The reasoning behind this is because there are some commonly used models, like the WACC, that make it easier to detect if there is something suspicious or strange about the discount rate. To further minimize the risk of accepting a faulty rate, the accountants let their corporate finance department analyze the discount rate.

All the accountants agreed that the amount of information given in the annual reports is sufficient if the accounting standards are followed correctly. This is something that was debated in section 1.2 “Discussion”, and according to the research by NASDAQ OMX (2010), the accounting standards are not followed properly. The accountants think it might be because the firms want to provide as little information as possible due to the risk of exposing themselves to competitors. They do not want to publish more information than the other firms and therefore few provide a satisfying amount of information.

#### **4.3.3 Differences Depending on Firm Size**

Ekdahl thinks managing earnings are more commonly used among smaller firms because they are not as scrutinized as the larger firms that receive a lot more public attention. Larger firms have more stakeholders and more is at risk if something would turn out to be erroneous. It is still important to ensure that the smaller firms’ financial statements are correct but since there are fewer stakeholders, they can adjust the numbers easier than the larger firms. He also mentioned that he thinks it is more common to make impairments in times of trouble regardless of firm size, also known as big bath accounting, since the impairment cannot be reversed. Since the firms are experiencing negative earnings, the signaling effect of the impairment will not be considered as negative compared to an impairment made in prosperous times. Lysér agrees to some extent with Ekdahl but he thinks that the major reason why earnings management could be more common among the smaller firms is because of their



limited resources. Since the larger firms are more developed regarding departments, capital structure and so on, they sometimes have a department working solely with questions like how to allocate the overvalue from an acquisition. Therefore, it is more difficult for the smaller firms that do not possess the same knowledge or capital to assess the value of goodwill and therefore there is a greater risk that the value will be wrong. Larger firms also have a longer history and therefore it is easier for them to make more accurate forecasts than it is for smaller firms with a shorter history. Larsson does not think that smaller firms manage their earnings more in general because in her experience smaller firms are also heavily monitored and thinks the discrepancy between the larger and smaller firms is due to other reasons than the recently mentioned reasons.

#### **4.3.4 Analysis of the Interviews**

The signaling effect was mentioned in the frame of reference as one of the reasons for not making impairments in prosperous times and hence the impairments are more likely to occur while experiencing depressed earnings, which seem to be in accordance with the view of the interviewees. They also thought that the firms do not want to send signals to the public that they no longer believe in their own business and that an acquisition loss has occurred. But they also thought that most firms do not manage their earnings purposefully as is often suggested in theories. These differing views occur because they suggests that the reluctance of impairing goodwill is because they think that the business will be more profitable in the future and that they did not make a bad acquisition. It is this overconfidence rather than the intention of purposely manipulating the results that drives the firms to not make impairments. The lack of information is another possible reason behind the small impairments. Since the firms possess the original data about their own performance, they are the ones providing the audit firms with information. This could lead to the data not being sufficient enough for the accountants; hence they are not able to disprove the firms' arguments about the need for impairment and the accountants do not have much choice than to approve the impairment test.

The accountants think that the allocation process is not followed correctly but argue that the firms do not divide the purchase price properly at the time of the acquisition. This is one of the reasons why the goodwill has such a high value in some firms' balance sheets. They suggest that too much of the purchase price is allocated to goodwill instead of other intangible and tangible assets. The view of the accountants corresponds to the research made by Gauffin and Nilsson (2012), which state that more than 50 percent of the purchase price was allocated to goodwill instead of allocating part of this value to other assets where it should belong.

The accountants' perception seems to correspond to the study by Gauffin and Thörnsten (2010), which claimed that firms do not make large enough impairments. They argued that since firms were performing poorly during the recession, they should not maintain the same level of goodwill as earlier. The reason behind this could be, according to the some of the interviewees, that firms do not allocate goodwill on the lowest level possible. According to IFRS, goodwill has to be divided into CGUs, and this group of assets has to be identified at the lowest possible level. The reason behind the incorrect allocation is because if they would have allocated it properly, they would have had to make more impairments than they have to today. It is easier to argue in favor of not making impairments when they are allocated to a

higher level since the companies can often prove that the value for the whole unit has not decreased due to illegal set-offs. If they allocated the value correctly in the first place, they think more impairments would have been made because it would be harder to prove that no impairments are needed.

The discount rate appears to not be as big of a problem in practice, as mentioned by Carlin and Finch (2011) amongst others. Carlin and Finch discovered a systematic non-compliance with IFRS regarding the use of the discount rate. However, none of the interviewed accountants thinks it is causing any greater problems even though the discount rate may differ between firms. Because of the guidelines that IFRS provide for how to reach the discount rate, they get an understanding of what is plausible and what is not. According to the accountants most firms use approximately the same formulas and therefore the discount rate does not differ as much as it would have otherwise.

The accountants mention that it can be difficult to determine what the future cash flows will be and if the budgets they receive are correct. Since the numbers they receive are information given from the firms, they are dependent upon these numbers being correct. The fact they will not know the final result until sometime in the future also makes it difficult to argue against the firms reasoning. This problem correlates to the principal-agent theory: the principal, or the firm, has more information than the agent or the accountant in this case, which makes the accountants dependent on the firm's information. All the accountants say that it is quite rare that the original discount rate brought to them is changed because the firms can often defend the rate and this could be a result of the accountants' lack of information and that the firms, to some extent, control the information provided to the firms.

## **5. Conclusions and Further Research**

### **5.1 Conclusions**

The research questions will be answered in this section, where the first question about the behavior regarding impairment of goodwill and the probable causes to this behavior will be presented first. The last part of the section answers the second research question, “what differences are there regarding the impairment of goodwill between the firms depending on the listing?”

#### **5.1.1 Firms Behavior Regarding Goodwill**

Based on the findings in the annual reports, it is possible to determine that there is a relationship between the earnings and the impairments. The more depressed the earnings are, the larger and more significant the impairments appear to be, regardless of the Cap. According to the study, this could be caused by the signaling effect, i.e. that the firms do not want to impair in prosperous times due to the negative signaling effect the impairments are causing. Therefore, the impairments are more likely to occur while experiencing depressed earnings since the impairment will not be recognized by the stakeholders. Another behavior observed is that it appears to be reluctance towards impairments among the firms, especially on Mid and Large Cap, since there are few impairments of goodwill and even fewer significant impairments. The reluctance to conduct impairments on NASDAQ OMX Nordic is not only due to earnings management but also, according to the study, more an effect of overconfidence.

#### **5.1.2 Differences Depending on Firm Size**

The conclusion drawn from the thesis regarding the second research question is that the firms' impairments of goodwill appear to be more significant on Small Cap compared to Mid and Large Cap, which are more similar to each other. The relative amount of impairments though does not appear to deviate as much between the different Caps as the differences in the significant impairments. According to the model used in the study, firms on Small Cap are making impairments as a use of big bath accounting since all steps indicate that they are managing their earnings. It is more difficult to draw any certain conclusions on Mid and Large Cap that the behavior of earnings management does exist. Even though most steps indicate that the behavior exists, the impairments are not large enough to be significant and hence they do not create a sufficient impact on the earnings to be considered a tool for earnings management.

### **5.2 Discussion and Contribution**

Based on the findings from the annual reports, the behavior among the firms differs depending on the earnings. If the firms are experiencing depressed earnings, there is evidence that the firms have been using the goodwill post to conduct a big bath and if the earnings are greater less impairment are being made. The fact that this correlation exists suggests that there is too much judgment allowed in IFRS according to the Jordan and Clark model since the managers can affect the outcome of the impairment test and hence affect the credibility negatively. This is possible because the IFRS is principle-based but no better suggestions to the present impairment test have been mentioned during this thesis. Since the firms provide

the accountants with data there will always be a possibility, even though limited, for them to adjust the numbers for their own benefit, the accountants will find it difficult to assess their true performance regardless the regulation.

However, even though most steps in the Jordan and Clark model suggest that earnings management does exist, especially on Small Cap, it cannot be concluded that they have manipulated their earnings. To be able to discern what the true reasons behind the impairments are, e.g. the notes from the annual reports have to be considered and the firms would have had to explain their reasoning and this is not handled in this thesis. Hence, it is hard to determine whether or not firms manipulate their earnings but it can be concluded that there is a correlation behind a negative result and a larger impairment, but the true reasons behind the impairment or in other cases the lack of impairments could, as mentioned, be something other than the intention of manipulating the result.

The fact that there are differences between the firms in their habits of impairing is troubling. Since similar performing firms impair differently it makes it more difficult for the investors to assess their true performance, and this decreases the comparability between firms. Also there are more significant impairments on Small Cap and this could be a sign that the regulation is not working properly on the smaller firms since they might use the impairments to manipulate the earnings. It could also be the opposite, the firms impairing could be the ones following the regulation since a large part of them are experiencing negative earnings and hence adjust their forecasts accordingly. The current situation on the Caps where the smaller firms appear to make relatively larger impairments can make it difficult for the investors to analyze and compare the firms to one another if they act differently regarding impairment of goodwill. The ideal situation would be if there were no significant differences at all between the Caps but as it is today, it is not possible due to differences in capital structure, history, monitoring etcetera as mentioned in the analysis. There could be several other different explanations why the impairments are more significant on Small Cap. One of the explanations could be due to the Jordan and Clark model since the determination of the significance is based on relative numbers: the larger the firm, the more difficult it is to meet the requirements set for the impairments to be significant. The same reasoning could be applied to why Small Cap has such high values regarding the impairment losses to EBIT and to total assets. The reasons behind the firms' behavior and the differences between the firms depending on their size can be due to more than one explanation and hence it is difficult to draw any certain conclusions. The fact that a larger part of the firms on Small Cap are experiencing negative earnings could affect their forecasts and hence the impairments could be more of a result of that rather than purposely managing the earnings. The general lack of impairments is according to the findings in this thesis more likely due to the overconfidence as mentioned in the interviews rather than intentionally refusing to impair.

This thesis contributes to a better understanding of the problems regarding goodwill on NASDAQ OMX Nordic. Based on the findings goodwill has to be dealt with a good deal of caution since the value seems to be overstated in many firms' annual reports. This thesis will increase the investors' awareness regarding the problem with assessing the correct value. Since goodwill in general is overstated (Gauffin & Thörnsten, 2010) due to the improper

allocation of the goodwill value and the reluctance to make impairments the investors need to be aware that not all of the expected future earnings may be realized as the annual reports suggest. Investors dealing with firms on Small Cap need to be more observant that these firms are more likely to manage their earnings according to the findings based on the Jordan and Clark model.

### **5.3 Further Research**

According to the conducted study the firms on NASDAQ OMX Nordic are inclined to impair goodwill when their earnings are depressed. Since the focus of the thesis has solely been on NASDAQ OMX Nordic, no other markets were analyzed. We would suggest further studies to investigate whether there are any differences among the companies on NASDAQ OMX Nordic and companies of similar size in, e.g. the US. It would have been interesting to see if any differences exist depending on the market place or if firms act largely the same all over the world. It could be that different accounting standards have different impacts on the firms' behavior, for example if the rule-based standards in the US have another effect on firms compared to the principle-based standards in Europe.

Another subject we would suggest conducting research about is how impairments of goodwill affect the Post Earnings Announcement Drift. This correlates to the signaling effect mentioned in this study and would consider how the market reacts immediately after an impairment of goodwill, e.g. if the share price fluctuates more than usual or if the market does not react at all. If there were no effect on the market, maybe it would be less important to focus on the exact value of the impairments since obviously the market can see through the firms' attempts to delude the stakeholders. If it were the opposite, the impairments should be given more attention to make sure the stakeholders do not act on faulty information.

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## Appendix 1 Questionnaire

1. What types of companies do you audit and how many years have you been working?
2. What kind of problems do you think can occur when examining the need for impairments regarding goodwill?
3. What factors or reasons do you think affect impairments the most e.g. business cycles, earnings and so on?
4. What do you do if your assessment of impairments is different than the firms?
5. What do you think about the transparency in the annual reports?
6. How well do you scrutinize the business models made up by the companies regarding impairment of goodwill?
7. How widespread do you think the problem of managing earnings through the use of goodwill is?
8. Do you have any ideas of how to mitigate the behavior of managing earnings?
9. Have you noticed that companies refuses or don't make impairments large enough regarding goodwill? What could the possible causes be?
10. How do companies come up with their discount rate, do you think it gives a fair value?
11. Do you think it would be better to have amortization as it used to be before the implementation of IFRS instead of the yearly impairment tests regarding goodwill and why?
12. Do you think there is a difference between larger and smaller firms regarding the tendency of managing earnings? If yes, what could the causes be?
13. What kind of relationship do you think exist between the earnings and the made impairments?

## Appendix 2 Firms Without Reported Goodwill Small Cap

1. Aarhus Elite
2. Almanij Brand
3. Andersen & Martini
4. Arcam
5. Arctic Paper
6. Arise Windpower
7. Artimplant
8. Atlantic Airways
9. Berlin III
10. Bioinvent
11. Bioporto
12. Blue vision
13. Brøndby IF
14. Catena
15. Cbrain
16. Cellavision
17. Chemometec
18. Concordia Maritime
19. Danionics
20. Danske Andelskass
21. Dantax Radio
22. Diamyd Medical
23. Djurslands Bank
24. DKTI
25. Efore
26. Elecster
27. Endomines
28. Epicept
29. Euroinvestor
30. Ework Scandinavia
31. Fingerprint cards
32. Fjarskipti
33. Gronlandsbanken
34. Hvidberg Bank
35. Invstssl. Luxor
36. Jensen & Mol Invest
37. Kabe husvagnar
38. Karo Bio
39. Kesla
40. Kreditbanken
41. Lollands Bank
42. Marimekko
43. Martela
44. Micro Systemation
45. Migatronic
46. Moberg Derma
47. Mols-Linien
48. Mons Bank
49. Neo Industrial
50. Nordfyns Bank
51. Nordic Mines
52. Nordicom
53. Norresundby Bank
54. Novestra
55. Nunaminerals
56. Nurminen Logistics
57. Oasmia P
58. Odd Molly
59. Okmetic
60. Ostjydsk Bank
61. Pa Resources
62. Prime Office
63. Raute
64. Raysearch Labs
65. Reginn HF
66. Rella Holding
67. Revenio Group
68. Roblon
69. Rottneros
70. Rovsing
71. Saga Furs
72. Salling Bank
73. Scandinavian Private Equ
74. Scanfil
75. Sensys Traffic
76. Silkeborg IF
77. Sintercast
78. Skako
79. Skjern Bank
80. Smartguy Group
81. Sotkamo Silver
82. Sparekassen Faaborg
83. Sparekassen Himmerland
84. SSBV-Rovsing
85. SSH Communication
86. SSK S. Sääst
87. Stonesoft
88. Svendborg Sparekasse
89. Svolder
90. TopoTarget
91. Totalbanken
92. Traction
93. Trigon
94. Uniflex
95. VeloxisPharmaceutical
96. Vestfyns Bank
97. Viborg Håndboll klubb
98. Victor International
99. Victoria Properties
100. Vordingborg Bank
101. Yleiselektroniikka
102. Östjydsk Bank

## Mid Cap

- |                    |                     |                      |
|--------------------|---------------------|----------------------|
| 1. Active Biotech  | 12. East Capital Ex | 23. Ringkjöping      |
| 2. Aerocrine       | 13. Eniro           | 24. Sagax            |
| 3. Aktia           | 14. EnQuest PLC     | 25. Sectra           |
| 4. Alm. Brand      | 15. Fast Partner    | 26. Talvivaaran.     |
| 5. Bavarian        | 16. Fast Balder     | 27. Technopolis      |
| 6. Black Pearl     | 17. Formuepleje     | 28. United Int Entpr |
| 7. CityCon         | 18. HEBA            | 29. United Plant     |
| 8. Clas Ohlson     | 19. Jeudan          | 30. Wihlborgs        |
| 9. Cloetta         | 20. JM              | 31. Vostok           |
| 10. Corem Property | 21. Klövern         | 32. Zealand Pharma   |
| 11. D/S Norden     | 22. Net Entertainm. | 33. Ø.K              |

## Large Cap

- |                 |                            |                |
|-----------------|----------------------------|----------------|
| 1. Autoliv SDB  | 7. Industrivärden          | 12. Pfizer     |
| 2. Axis         | 8. Kone                    | 13. Semafo     |
| 3. Castellum    | 9. Köbenhavns<br>Lufthavne | 14. Sydbank    |
| 4. Fabege       | 10. Lundin Mining          | 15. Wallenstam |
| 5. Holmen       | 11. Melker Schörling       |                |
| 6. Hufvudstaden |                            |                |

## Appendix 3 Firms With Reported Goodwill

### Small Cap

1. Acando
2. Acap Invest
3. Addnode
4. Affecto (€)
5. Allenex
6. AllTele
7. Anoto Group
8. Arkil Holding (DKK)
9. Asgaard Group (DKK)
10. Aspiro
11. Aspocomp Group (€)
12. Atlantic Petroleum (DKK)
13. Avega Group
14. BankNordik (DKK)
15. BE Group
16. Beijer Electronics
17. Bergs Timber
18. Biohit (€)
19. Biotage
20. Björn Borg
21. Boconcept Holding (DKK)
22. Bong
23. Boule diagnostics
24. BRD Klee
25. Brodrene AO (DKK)
26. Brodrene Hartmann (DKK)
27. BTS Group
28. Capman (€)
29. Cavotec
30. Cencorp (€)
31. Cision
32. Coastal Contacts (CAD)
33. Columbus (DKK)
34. Comendo (DKK)
35. Componenta (€)
36. Comptel (€)
37. Connecta
38. Consilium
39. CTT Systems
40. Cybercom group
41. Dalhoff (DKK)
42. Dantherm (DKK)
43. Dedicare
44. DGC One
45. Diba Bank (DKK)
46. Digia(€)
47. Doro
48. Dovre Group (€)
49. Duroc
50. Egetaepper (DKK)
51. Elanders
52. Electra Gruppen
53. Elektrobit (€)
54. Elos
55. Enea
56. EQ (€)
57. Erria (DKK)
58. Etrion
59. Etteplan (€)
60. Exel Composites (€)
61. Exiqon (DKK)
62. Expedit (DKK)
63. Fe Bording (DKK)
64. Feelgood
65. Finnvedenbulten
66. Firstfarms
67. Flugger (DKK)
68. Formpipe Software
69. Gabriel Holding (DKK)
70. Geosentric (€)
71. German High Street Properties (DKK)
72. Geveko
73. Glaston
74. Global Health Partners
75. Glunz & Jensen (DKK)
76. Gyldendal (DKK)
77. H&H International (DKK)
78. Harboes Bryggeri (DKK)
79. Hemtex
80. HMS Network
81. Hojgaard Holding (DKK)
82. Honkarakkene (€)
83. I A R Sytems Group
84. Image Systems
85. Incap (€)
86. Innofactor (€)
87. Intellecta
88. Intermail (DKK)
89. Itab Shop Concept
90. Ixonos (€)
91. Karolinska Development
92. Know It
93. Lagercrantz Group
94. Lammhults Design
95. Lan & Spar Bank (DKK)
96. Land & Leisure (DKK)
97. Lannen Tehtaat (€)
98. Lastas (DKK)
99. Malmbergs Elektriska
100. Micronic Mydata
101. Midsona
102. Midway Holdings
103. Monberg & Thorsen (DKK)
104. MQ Holding
105. MSC Konsult
106. Multiq International
107. Nederman Holding
108. Net Insight
109. Netop Solutions (DKK)
110. NeuroSearch (DKK)
111. Newcap Holding (DKK)
112. Nordic Service Partn
113. Nordic Shipholding (DKK)
114. Nordjyske Bank (DKK)
115. North Media (DKK)

- |                                 |   |                              |
|---------------------------------|---|------------------------------|
| 116.Note                        | 139.Readsoft                            | 161.Takoma (€)               |
| 117.Novotek                     | 140.Rederi AB TNSAT                     | 162.Talentum (€)             |
| 118.NTR Holding (DKK)           | 141.Rejlerkoncernen                     | 163.Tecnotree (€)            |
| 119.Nyherji (ISK)               | 142.Rias (DKK)                          | 164.Tiimari (€)              |
| 120.OEM International           | 143.RNB Retail and<br>Brands            | 165.TK Development<br>(DKK)  |
| 121.Opcon                       | 144.Rorvik Timber                       | 166.Topsil Semi. M.<br>(DKK) |
| 122.Oral Hammaslaakarit<br>(€)  | 145.RTX (DKK)                           | 167.TORM (DKK)               |
| 123.Orexo                       | 146.Sanistal (DKK)                      | 168.TradeDoubler             |
| 124.Ortivus                     | 147.Scandinavian Brake<br>Systems (DKK) | 169.Trainers'House (€)       |
| 125.Panostaja (€)               | 148.Seamless Distribution               | 170.Transcom (€)             |
| 126.Parken Sport & Ent<br>(DKK) | 149.Semcon                              | 171.Trifork (DKK)            |
| 127.PartnerTech                 | 150.Shelton Petroleum                   | 172.Tulikivi (€)             |
| 128.Per Aarsleff (DKK)          | 151.Sievi Capital (€)                   | 173.Turvatiimi (€)           |
| 129.Phonera                     | 152.Sigma                               | 174.Vaaho Group (€)          |
| 130.Pohjois-Karjalan (€)        | 153.Sjaelso Gruppen<br>(DKK)            | 175.VBG Group                |
| 131.Poolia                      | 154.Softronic                           | 176.Venue Retail Group       |
| 132.Precise Biometrics          | 155.Solteq (€)                          | 177.Vestjysk Bank (DKK)      |
| 133.Prevas                      | 156.SP Group (DKK)                      | 178.Vitec Software           |
| 134.Pricer                      | 157.StjärnaFyrkant                      | 179.Vitrolife                |
| 135.Proact IT                   | 158.Studsvik                            | 180.Wulff (€)                |
| 136.Probi                       | 159.Suominen (€)                        | 181.XANO Industri            |
| 137.Profilgruppen               | 160.Svedbergs                           |                              |
| 138.QPR Software (€)            |   |                              |

## Mid Cap

1. AarhusKarlshamn
2. Addtech
3. Ahlstrom (€)
4. ALK-Abello (DKK)
5. Alma Media (€)
6. Ambu (DKK)
7. Aspo (€)
8. Atria (€)
9. Auriga Industries (DKK)
10. Avanza Bank
11. B&B Tools
12. Bang & Olufsen (DKK)
13. Basware (€)
14. Beijer Alma
15. Betsson
16. Bilia
17. Biotie (€)
18. Black Earth (UR)
19. Bure Equity
20. Byggmax
21. CDON Group
22. Concentric
23. Cramo (€)
24. DFDS (DKK)
25. Duni
26. Eimskipa (IK)
27. Fagerhult
28. Fenix Outdoor
29. Finnair (€)
30. Finnlines (€)
31. F-Secure (€)
32. Genmab (DKK)
33. Greentech (€)
34. Gunnebo
35. Haldex
36. Hexpol B
37. HiQ International
38. HKScan (€)
39. Höganäs
40. KappAhl
41. Keskinuomal (€)
42. Kungsleden
43. Lassila (€)
44. Lemminkäinen (€)
45. Lindab Inte.
46. Loomis B
47. Marel (IK)
48. Medivir B
49. Mekonomen
50. Metsä Board (€)
51. New Wave
52. NKT Holding (DKK)
53. Nobia
54. Nolato
55. Nordnet
56. Olvi (€)
57. Oriola-KD (€)
58. PKC Group (€)
59. Ponsse (€)
60. Proffice
61. Pöyry (€)
62. Raisio (€)
63. Ramirent (€)
64. Rapala (€)
65. Rautaruukki (€)
66. Rezidor Hotel Gr
67. Royal UNIBREW (DKK)
68. Ruukki (€)
69. SAS
70. Schouw & CO
71. Simcorp (€)
72. Skistar
73. Solar (€)
74. Spar Nord Bank (DKK)
75. Sponda (€)
76. SRV Yhtiöt (€)
77. Sweco
78. Swedish Orphan
79. Swedol
80. Systemair
81. Tikkurila (€)
82. Transmode Hold
83. Unibet Group
84. Uponor (€)
85. Vacon (€)
86. Vaisala (€)
87. Viking Line
88. ÅF
89. Ålandsbanken (€)
90. Öresund
91. Össur (ICE)



## Large Cap

1. A.P Möller (DKK)
2. ABB Ltd
3. Alfa Laval
4. Alliance
5. Altrium Ljunberg
6. Amer Sports (€)
7. Assa Abloy
8. AstraZeneca (USD)
9. Atlas Copco
10. Axfood
11. BillerudKorsnäs
12. Boliden
13. Cargotec (€)
14. Carlsberg (DKK)
15. Chr. Hansen Hold (DKK)
16. Coloplast
17. Danske Bank (DKK)
18. DSV (DKK)
19. Electrolux
20. Elekta
21. Elisa (€)
22. Ericsson
23. Fiskars (€)
24. FLSmidth & Co (DKK)
25. Fortum (€)
26. G4S plc (£)
27. Getinge
28. GN Store Nord (DKK)
29. H&M
30. Hakon Invest
31. Hexagon
32. Huhtamäki (€)
33. Husqvarna
34. Investor
35. Jyske Bank (DKK)
36. Kemira (€)
37. Kesko (€)
38. Kinnevik
39. Konecranes (€)
40. Latour
41. Lundbeck (DKK)
42. Lundbergföretagn
43. Lundin Petroleum
44. Meda
45. Metso (€)
46. Millicom Int Cellular (USD)
47. Modern Times Group
48. NCC
49. Neste Oil (€)
50. NIBE Industrier
51. Nokia (€)
52. Nokian Renkaat (€)
53. Nordea Bank
54. Novo Nordisk (DKK)
55. Novozymes (DKK)
56. Old Mutual (£)
57. Oriflame (€)
58. Orion (€)
59. Outokumpu (€)
60. Outotec (€)
61. Pandora (DKK)
62. PEAB
63. Pohjola Pankki (€)
64. Ratos
65. Rockwool Int (DKK)
66. SAAB
67. Sampo (€)
68. Sandvik
69. Sanoma (€)
70. SCA
71. Scania
72. SEB
73. Securitas
74. Skanska
75. SKF
76. SSAB
77. Stockmann (€)
78. Stora Enso (€)
79. SV. Handelsbanken
80. Swedbank
81. Swedish Match
82. TDC (DKK)
83. Tele2
84. TeliaSonera
85. Tieto (€)
86. Topdanmark (DKK)
87. Trelleborg
88. Tryg (DKK)
89. UPM-Kymmene (€)