UNIVERSITY OF GOTHENBURG
SCHOOL OF BUSINESS, ECONOMICS AND LAW

Disclosure Requirements in IAS 36 Paragraph 134.

A Study of Company Characteristics Explaining Swedish Companies' Compliance with Disclosure Requirements on Goodwill Impairment Testing

---

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

Spring term 2013

Tutor:
Andreas Hagberg
Authors:
Lyubov Fallström
Oksana Henriksson

Abstract

Type of thesis: Degree Project in Business Administration for Master of Science in Business and Economics, 30.0 credits

University: University of Gothenburg, School of economics, business and law

Semester: Spring 2013

Authors: Lyubov Fallström and Oksana Henriksson

Tutor: Andreas Hagberg

Title: Disclosure requirements in IAS 36 paragraph 134 – A study of company characteristics explaining Swedish companies' degree of compliance with disclosure requirements on goodwill impairment testing

Background and Discussion: The adoption of the IFRS by Swedish companies was an arduous task which required a lot of resources and time. The regulations that the IFRS contain are more complex and require more extensive disclosures than Swedish companies are used to. It can be a difficult task for companies to comply with IAS 36 disclosure requirements and at the same time not to disclose too much of a company's specific information. The importance of disclosure should not be underestimated, as more disclosures lead to lower cost of capital. Recent studies show that disclosures about goodwill impairment testing provided by companies are too general and not sufficient to enable users of financial statements to assess the reliability of goodwill impairment testing.

Research Question: The research question of this thesis is to what extent company characteristics may explain the degree of compliance with disclosure requirements in paragraph 134 of IAS 36. In order to measure the degree of compliance, the examination of goodwill impairment accounting practices has been conducted.

Methodology: The research question has been addressed using an empirical approach with an emphasis on note-form disclosures in the 2011 and 2011/2012 consolidated financial statements of Swedish firms listed on NASDAQ OMX Stockholm. This study has examined relationships between company-specific, institutional and goodwill-related company characteristics and degree of compliance with disclosure requirements in paragraph 134 of IAS 36 with the help of multiple regression analysis. The degree of compliance in this study is measured by a self-constructed index.

Results and conclusions: The study has shown that a combination of examined company characteristics explain only about 9 % of the degree of compliance with disclosure requirements in paragraph 134 of IAS 36. Regarding company-specific characteristics, this study has indicated that company size has a significant impact of the degree of compliance with disclosure requirements as larger companies seem to have a higher degree of compliance. No significant relationships between company performance and degree of compliance as well as between financial needs and degree of compliance have been found in this study. The study has further indicated that degree of compliance with disclosure requirements regarding goodwill impairment tests varies across industries and auditor firms. Finally, the results of this study show that goodwill-related characteristics do not seem to have a significant impact on the degree of compliance with disclosure requirements, as no significant relationships between the degree of compliance and the amount of goodwill on the balance sheet of the company and the degree of compliance and the goodwill impairment rate were found.

Keywords: Goodwill, Goodwill impairment, IAS 36, Disclosure, Mandatory disclosures.

Abbreviations

AASB – Australian Accounting Standards Board

BC – Basis for Conclusions

Canadian GAAP – Generally Accepted Accounting Principles (Canada)

CGU – Cash Generating Unit

ESMA – European Securities and Markets Authority

IAS – International Accounting Standards

IASB – International Accounting Standards Board

ICB – Industry Classification benchmark

IFRS – International Financial Reporting Standards

ROA – Return on Assets

SEK – Swedish Crowns

SPSS – Statistical Package for the Social Sciences

U.S. GAAP – Generally Accepted Accounting Principles (United States)

Table of Contents

1. Introduction

1.1 Background

One of the important objectives of financial reporting is to inform investors about a company's economic situation. Investors use this information to make decisions about holding, selling, or buying a company's shares. Therefore, financial accounts and their regulations are influenced by the objectives that financial accounts have to achieve and by who the possible users of the financial information are. During a long period of time, accounting and its regulations were developed separately on the county level, which resulted in differences in accounting regulations and practices between the countries. The development of the stock market and a more globalized world have led to the increasing demand for more globally harmonized accounting regulations, so that it may be possible for users of financial accounts to compare information for companies from different countries (Marton, Lumsden, Lundqvist, Pettersson & Rimmel, 2010).

In 2002 a new regulation was adopted by the European Parliament in order to achieve a better comparability and transparency of financial information presented by companies. In accordance with this regulation, all listed European companies must use the International Financial Reporting Standards (IFRS)[1] in their consolidated financial statements since 2005 (Regulation (EC) No 1606/2002).

In Conceptual Framework for Financial Reporting, which contains guidelines for developing new standards and resolving questions that are not answered directly in any of IFRS, it is stated that the primary users of financial information are present and potential investors. In order to make financial reports as useful for present and potential investors as possible, the IFRS contain several general qualitative characteristics that should be considered in financial accounts. These are faithful representation, relevance, verifiability, timeliness, understandability and comparability (IFRS, 2011).

The IFRS are essentially principle-based and often do not contain detailed guidance, which means that issuers of financial accounts have to use the IFRS as a basis and at the same time make their own decisions about how a special transaction should be shown in the accounts so that a faithful representation should be achieved.

The adoption of the IFRS by Swedish companies was an arduous task which required a lot of resources and time. The regulations, that the IFRS contain, are more complex and require more extensive disclosures than Swedish companies are used to (Lindén, 2009, 3). Since 2005, different studies have been conducted about implementation of the IFRS by Swedish companies. One of these studies shows that the quality of financial statements produced by Swedish companies is generally high (Lindén, 2009, 3). However, there are several standards, the implementation of which has been criticized during the last years. Two of these standards

[1] The International Financial Reporting Standards are developed by the International Accounting Standards Board (IASB)

are IFRS 3 Business combinations and IAS 36 Impairment of Assets (see, for example, Rehnberg, 2012).

According to IFRS 3 Business Combinations, all the acquired assets and assumed liabilities that can be identified should be recognized at their acquisition-date fair value. The difference between the price that the acquiring firm paid and the fair value of all the acquired assets and liabilities is recognized as goodwill. With the adoption of the IFRS the annual amortization of goodwill and other intangible assets with indefinite useful lives was replaced by annual impairment test which must be done in accordance with IAS 36 Impairment of Assets. Paragraph 134 of IAS 36 requires extensive disclosures about estimates used for impairment test of goodwill and intangible assets with indefinite lives. The purpose of these disclosures is to provide all the information needed for investors and other users of financial statements to evaluate the reliability of the assumptions used for impairment tests (ESMA, 2013).

1.2 Discussion

Goodwill impairment is a topic that has been under discussion in recent years. New regulation (the IFRS), as well as the financial and economic crisis, made analysts draw their attention to goodwill on the companies' balance sheet. As Steven Maijoor, chair of the European Securities and Markets Authority (ESMA) says: "Goodwill, and its impairment, are key components in making realistic evaluation of firms" (Langton, 2013, 21 January).

Though the purpose of introducing of IFRS 3 and IAS 36 was to achieve a higher relevance and more faithfully represented financial information, the study, conducted by Rehnberg (2012) shows that this goal was not achieved in Sweden during the years 2005-2007. Rehnberg argues that a lack of detailed rules in IFRS 3 may cause difficulties because the IFRS have been adopted and interpreted in a various way by different types of companies.

Even other studies, conducted in Sweden, show that principle-based regulation may cause difficulties in providing reliable financial information. Since 2005 a study of goodwill on the balance sheet of all listed Swedish companies has been conducted every year. This study shows that goodwill on the balance sheet of Swedish companies has been growing larger every year with an average of 60-70 billion SEK (Gauffin & Nilsson, 2012, 12). At the same time, Swedish companies recognized impairment losses of goodwill of about 10 billion SEK, even though analysts expected more extensive goodwill impairment losses as a result of the financial and economic crisis. Gauffin & Nilsson (2012, 12) point out that Swedish companies are going to have a problem with goodwill on their balance sheet because goodwill constitutes a large part of companies' assets without reflecting companies' real financial situation in many cases. Gauffin and Thörnsten's study (2010, 8-9) shows the same problem: a small number of Swedish companies recognize impairment losses of goodwill during 2008, 2009. In addition to this, companies do not include explanations as to why they do or do not recognize impairment losses on goodwill, which makes it difficult for users of financial statements to compare financial information from different companies.

There are several empirical examinations of how companies implement impairment tests of goodwill, which indicate inconsistencies in the implementation of IAS 36 (see, for example,

Petersen & Plenborg, 2010). The focus of these studies is the technical aspects of carrying out impairment tests on goodwill, which is understandable, bearing in mind that IAS 36 is a complicated standard that requires knowledge of special valuation techniques. At the same time, IAS 36 is a standard that involves substantial judgment. Therefore, IAS 36 requires a lot of disclosures about assumptions and estimates used in companies' impairment tests. The extent of compliance with IAS 36 disclosure requirements has not been studied as extensively as technical aspects of impairment tests of goodwill. Therefore, it was decided to examine the compliance with disclosure requirements in IAS 36 in this thesis.

The importance of disclosures should not be underestimated. During the last 20 years a lot of studies about the importance and usefulness of disclosures have been conducted (see, for example, Lang & Lundholm, 1993, Leuz & Verrecchia, 2000, Leuz & Schrand, 2009). The important conclusion of these studies is that more disclosures, voluntary as well as mandatory, lead to lower cost of capital (Marton, 2011, 8-9). Disclosure studies show also that the level of disclosure may be influenced by various factors: company size, company performance, financing needs etc.

In January 2013 the European Securities and Markets Authority (ESMA) published a report which provides an overview of accounting practices related to goodwill impairment testing. The study is based on information taken from the 2011 financial statements of 235 European companies from 23 countries. The report shows that, although European companies have been operating in a difficult economic environment in 2011, a small number of companies reported significant impairment losses of goodwill in their financial statements. Furthermore, the disclosures about goodwill impairment testing were "of a boilerplate nature" and " non entity-specific" (ESMA, 2013, p. 3). At the same time, the report provides no examination of factors that may explain non-compliance with IAS 36 disclosure requirements.

1.3 Research Question

In light of the above, it is relevant to examine whether Swedish companies comply with disclosure requirements in paragraph 134 of IAS 36 and whether company characteristics may explain the degree of compliance with disclosure requirements.

Thus, the research question of this thesis is to what extent company characteristics may explain the degree of compliance with disclosure requirements in paragraph 134 of IAS 36. In order to measure the degree of compliance with disclosure requirements in paragraph 134 of IAS 36, the examination of goodwill impairment accounting practices will also be conducted.

1.4 Research Design

In our research we decided to use a quantitative method. The main reason for this decision is that in order to answer the research question we need data from a large number of companies, preferably from different types of industries. Since the data of interest is presented in a large number of the official annual reports and the research question of our study requires statistical analysis, the quantitative method should be appropriate. While possible, gathering this type of data by qualitative means would require an unjustifiable amount of time and effort.

The research question of our thesis is addressed by examining relationships between three groups of company characteristics: company-specific, institutional and goodwill-related characteristics and degree of compliance with disclosure requirements in paragraph 134 of IAS 36 with the help of multiple regression analysis. The degree of compliance in this study is measured by a self-constructed index.

The study is based on information retrieved from note-form disclosures of the 2011 and 2011/2012[2] consolidated financial statements of Swedish companies listed on NASDAQ OMX Stockholm. It was decided to use the 2011 and 2011/2012 financial statements as the 2012 financial statements of all the listed companies that are included in this study are not available when the data is collected. Therefore, the 2011 and 2011/2012 financial statements provide the most recent accounting practices.

As the focus of this study is paragraph 134 of IAS 36, only consolidated financial statements of listed Swedish companies which are prepared in accordance with the IFRS will be studied. Besides, only companies that reported goodwill or other intangible assets with indefinite useful lives as one of their assets in their 2011 consolidated financial reports are covered in this study.

This study is limited to examination of compliance with disclosure requirements in paragraph 134 of IAS 36. Therefore, no evaluation of compliance with technical requirements in IAS 36 is provided in this study.

1.5 Contribution and Relevance

This empirical study is based on previous studies of disclosure as well as studies of accounting practices related to impairment testing of goodwill. It provides contribution to disclosure studies and has a practical relevance.

Corporate disclosure has been the focus of many studies (see, for example, Lang & Lundholm, 1993, Leuz & Verrecchia, 2000, Leuz & Schrand, 2009). These studies show the importance of disclosure for functioning of effective capital markets. However, a majority of empirical disclosure studies are focused on voluntary disclosure. This study provides an empirical examination of mandatory disclosure accounting practices related to goodwill impairment testing, which means that it combines two different areas of studies: disclosure studies and studies of goodwill impairment practices. Furthermore, a self-constructed index, based on the IFRS requirements and earlier disclosure studies, has been developed in this study to achieve a more direct way of measuring the degree of compliance with requirements in paragraph 134 of IAS 36.

When it comes to practical relevance, the results of this study should be of interest to a number of parties such as users of financial statements, financial advisors, companies, auditors and standard setters. As this study examines company characteristics that may explain the degree of compliance with disclosure requirements in paragraph 134 of IAS 36, the results of this study may assist companies to improve their disclosure and help auditors to

[2] The 2011/2012 consolidated financial statements were used for companies that have a fiscal year that is not identical to the calendar year

choose areas that need more attention. Furthermore, the results of this study may be of interest for standard setters to consider which requirements need improvement.

1.6 Outline

The rest of the thesis is divided into five chapters. In the next chapter the description of the IASB's regulation related to goodwill impairment is provided and the review of the previous studies of both goodwill impairment accounting practices and corporate disclosure is done.

Chapter 3 outlines the research design, where the implied model and the studied variables are described in detail. It also contains the description of the sample, data collection and data analysis procedures as well as the discussion on the validity and reliability of the study and possible limitations.

In Chapter 4 the descriptive statistics on the studied variables and the general information about goodwill impairment accounting practices are presented. Then, the simple relationships between the studied variables are discussed and the results and interpretation of the multiple regression analysis are presented.

Chapter 5 summarizes the results of the thesis and gives the answer to the research question as well as contains discussion, contribution of this study and suggestions for further research.

2. Frame of Reference

This chapter consists of three parts: regulation, previous research on goodwill accounting practices and previous studies of corporate disclosure. First, the IFRS regulation concerning goodwill accounting is presented. Both IFRS 3 Business Combinations and IAS 36 Intangible Assets contain regulation of goodwill accounting which is important to understand before the examination of impairment disclosure is conducted. The second part of this chapter is devoted to studies of goodwill impairment practices. We start by providing a review of international studies. As the IFRS has been adopted even in some non-EU countries, this part contains studies of goodwill accounting practices both in the EU countries and outside of the European Union. The examination of these studies is essential for understanding what goodwill impairment accounting practices companies have and what problems issuers of financial reports face when disclosing information on goodwill impairment testing. The review of these studies will be used in this thesis for the development of Index that is used to measure the degree of compliance and for the interpretation and analysis of the results. Finally, previous research on corporate disclosure is discussed. We discuss different approaches for measuring the level of disclosure in order to find the approach fitting our study. The results of previous disclosure studies are also used when considering which company characteristics may explain a higher or lower degree of compliance with disclosure requirements and what impact they may have on the degree of compliance. Furthermore, previous corporate disclosure research is used when the results of this study are analyzed and discussed.

2.1 Regulation

2.1.1 IFRS 3 Business Combinations

Issuing of IFRS 3 Business Combinations in 2004 implied great changes for merger and acquisition accounting in comparison with IAS 22 Business Combinations[3] and accounting rules used in Sweden. One of the great changes, introduced in IFRS 3, was that the goodwill acquired in the business combination should not be amortized over its estimated useful life as it was the case in IAS 22. Instead, acquired goodwill, as well as other intangible assets with indefinite useful lives, have to be tested for impairment at least once a year in accordance with IAS 36 Impairment of Assets.

The IASB considered impairment to be a better alternative for goodwill accounting as amortization of goodwill does not provide useful information for users of financial statements since useful life of acquired goodwill, as well as the pattern in which it diminishes, are difficult to predict. Consequently, "rigorous and operational impairment tests", thoroughly devised and carried out, would provide more useful information for users of financial statements (IAS 36, BC131G). However, a non-amortization approach has its own drawbacks. One of them is that acquired goodwill may be consumed and replaced with internally generated goodwill, which contradicts IAS 38 Intangible Assets, where the recognition of internally generated goodwill is prohibited.

[3] IAS 22 was replaced by IFRS 3

As the acquired goodwill should not be amortized, IFRS 3 contains strict requirements for acquirer to identify and measure all the identifiable assets and liabilities, even those that were not recognized on the balance sheet of the selling company. Goodwill is defined as "an asset representing the future economic benefits arising from other assets acquired in a business combination that are not individually identified and separately recognized". Consequently, the amount of goodwill on the balance sheet of companies when applying IFRS 3 should be less than when companies used other rules for business combination accounting.

2.1.2 IAS 36 Impairment of Assets

IAS 36 contains a description of the procedures that should be used by companies to ensure that all the assets that company's entities contain are not carried at more than their recoverable amount, which is the higher of fair value less costs to sell and value in use. Entities are required to carry out impairment tests when there is any indication of impairment of an asset, with the exception of goodwill and other intangible assets with indefinite useful lives, which have to be tested for impairment at least once a year. An impairment loss is recognized when the recoverable amount of an asset is less than its carrying amount.

It is easy to define an asset's fair value less costs to sell if there is an active market for this type of assets. According to IAS 36, the best estimation of fair value less costs is a price that can be charged in a binding sale agreement in an arm's length transaction. When it is impossible to measure an asset's fair value less costs to sell, value in use is used when estimating an asset's recoverable amount. Value in use is the discounted future cash flows that an asset or a cash-generating unit (CGU) is expected to obtain (IAS 36, p.20, 6).

Paragraph 134 of IAS 36 requires extensive disclosure on impairment testing procedure (the text of paragraph 134 of IAS 36 is available in Appendix 1). When examining disclosure that issuers provide in their financial statements it is important to understand how impairment tests on goodwill are carried out. Therefore, we are going to provide description of the main elements of goodwill impairment testing procedure.

2.1.2.1 Allocating Goodwill to Cash-Generating Units

When it is not possible to estimate the recoverable amount of the individual asset, the recoverable amount of the CGU to which the asset belongs shall be determined. For example, the recoverable amount of an individual asset cannot be determined if the asset does not generate cash flows independently from other assets. That is the case with goodwill, which, in order to be tested for impairment, shall be allocated to a CGU or groups of CGUs. According to IAS 36, a cash-generating unit is "the smallest identifiable group of assets that generates cash inflows that are largely independent of the cash inflows from other assets or groups of assets" (IAS 36, p.6). When identifying CGUs, different factors shall be taken into account, for example, how the entity's operations are monitored, namely whether operations are monitored by businesses, product lines, individual locations, districts or regional areas (IAS 36, p.66,67,80,69). Another requirement that IAS 36 sets is that each of CGUs shall not be larger than an operating segment before aggregation and represent the lowest level within the entity at which the goodwill is monitored for internal management purposes (IAS 36, p.80).

2.1.2.2 Impairment Loss for a Cash-Generating Unit

If the recoverable amount of the CGU is less than its carrying amount an impairment loss shall be recognized. First, the carrying amount of goodwill allocated to this CGU shall be reduced. Then, the carrying amount of other assets shall be reduced in proportion to the carrying amount of each asset in the unit. (IAS 36, p. 104) If the estimates used to determine the asset's recoverable amount have been changed, an impairment loss recognized in prior periods shall be reversed. However, it is prohibited to reverse an impairment loss recognized for goodwill as it is difficult to decide whether an increase in the recoverable amount of goodwill depends on an increase in acquired goodwill or internally generated goodwill (IAS 36, p.110,111,114,125). According to IAS 38 Intangible Assets, it is not allowed to recognize internally generated goodwill.

2.1.2.3 Future Cash Flows

When measuring value in use of an asset, future cash flows that are expected to be derived from an asset have to be estimated. The estimates of future cash flows have to be based on reasonable and supportable assumptions, reflecting management's best estimations of economic conditions. Cash flow projections shall be based on the most recent financial budgets or/and forecast approved by management and shall cover a maximum period of five years unless there are justified reasons to use a longer period. Cash flow projections beyond this period shall be estimated by extrapolating the projections based on the budgets/forecasts using a steady or declining growth rate, unless a higher rate is justified. (IAS 36, p.30,35,34) Future cash flows shall be discounted at the pre-tax discount rate that shall reflect current market assessments of the time value of money and the risks specific to the asset for which the future cash flows estimates have not been adjusted (IAS 36, p.55).

As goodwill impairment tests depend to a great extent on management's projections, it is important for users of financial statements to get enough information in order to assess the reliability of the impairment tests carried out by companies. Therefore, IAS 36 requires extensive disclosure on goodwill impairment tests. At the same time extensive disclosure requirements imply extra difficulties for companies as they have to decide how much information they can disclose without revealing too much sensitive information for their competitors (IAS 36, BC 205-209).

2.2 Previous Research on Goodwill Accounting Practices

2.2.1 International Studies

Goodwill accounting practices, related to disclosure requirements on goodwill impairment in IAS 36, have been the focus of several studies in European countries. Several of these studies show that disclosures on goodwill impairment provided by issuers of financial statements are not in compliance with the requirements of IAS 36. One of these studies is conducted in 2008 by the Financial Reporting Council, the UK's independent regulator, responsible for enforcing and monitoring of accounting and auditing standards in the UK (Financial Reporting Council, 2013). In this study the Financial Reporting Council assessed goodwill impairment disclosures in the financial statements of 32 UK entities within 350 UK listed companies that reported significant amounts of goodwill on their balance sheet. The quality of goodwill

impairment disclosures was assessed in this study using the following three categories: boilerplate – rather uninformative, some company specific – useful, company specific – very useful. The results of this study show that approximately 50 % of companies' goodwill impairment disclosures were "boilerplate – rather uninformative", about 28 % of companies' disclosures were assessed as "some company specific - useful", while only about 19 % of the companies in the sample achieved the necessary quality in their disclosures to be classified as "company specific – very useful". Unfortunately, the report does not provide information about the parameters that were used for the quality assessment. At the same time, the report contains detailed information about compliance with disclosure requirements by area, including different subparagraphs in paragraph 134 of IAS 36. The review team found that the companies tended to disclose the information required by paragraph 134 of IAS 36 at an aggregate rather than CGU level which is in conflict with IAS 36 requirements. When studying subparagraph 134 (d), the study shows that many companies tend to use standardized and almost identical text in their disclosures, for example, when describing key assumptions (134 (d) (i)) and explaining how the discount rate is set (134 (d) (v)). To sum up, this study shows that the majority of the UK companies do not comply with disclosure requirements in IAS 36. In particular, requirements in paragraph 134 (d) of IAS 36 are found to be most challenging for the UK companies.

The most current study of accounting practices related to impairment testing of goodwill was conducted by ESMA (2013). The study, published in January 2013, is based on the 2011 financial statements of 255 European companies with significant amount of goodwill. The study shows that 36 % of the companies under study recognized impairment losses on goodwill, even though most of the impairment losses were insignificant. The extent of impairment loss of goodwill varied greatly among industries, for example, significant impairment was reported by the financial service industries, while food & beverage and health care showed a very little extent of goodwill impairment. The main findings of the ESMA report (2013), regarding compliance with disclosure requirements in IAS 36 are in line with the study discussed above. In many cases the studied companies provided not entity-specific disclosure with standardized text, which made it impossible for users of financial statements to assess the reliability of impairment tests on their own. There were several subparagraphs in paragraph 134 of IAS 36, where the studied companies achieved a high degree of compliance. For example, 92 % of the companies disclosed the method used to determine the recoverable amount in their financial statements (134 (c)) and 88 % of issuers provided information about the period used for cash flow projections (134 (d) (iii)). The study further shows that companies in the sample experienced difficulties in providing compliant disclosures on key assumptions (134 (d) (i), (ii)) and sensitivity analysis (134 (f)). For example, although about 60 % of the companies disclosed key assumptions, used in calculations of recoverable amount (134 (d) (i)) and 134 (e) (i)), only about 50 % of those who provided disclosures on key assumptions gave compliant explanations in the level of detail required by IAS 36 (Illustrative Example 9, IAS 36). Regarding disclosure on sensitivity analysis, only 25 % of issuers provided all the required information regarding sensitivities, such as the amount by which the unit's recoverable amount exceeds its carrying amount (134 (f) (i)), value of key assumptions (134 (f) (ii)) and the amount by which the value of key assumptions must change in order to

the difference between the unit's recoverable amount and its carrying amount disappear (134 (f) (iii). According to ESMA (2013), disclosures on goodwill impairment testing should be improved by companies, as this information plays an important role in users' evaluation of the reliability of companies' impairment tests.

The degree of compliance with the disclosure requirements related to goodwill impairment testing has also been studied outside Europe as the IFRS have been adopted outside the European Union. Carlin and Finch (2011) studied the practice of goodwill impairment in Australia with focus on the extent of compliance with disclosure requirements in AASB136[4]. In answering their research question, Carlin et al. (2011) employed the multi-category disclosure quality taxonomies for assessing discount rate, growth rate and length of the forecast periods-based disclosures (IAS 36 134 (d) (iii), (iv) and (v)). Thus, four dimensions were used for evaluation of discount rate-based and growth rate-based disclosures: "multiple explicit discount rates/growth rates" (companies disclosed specific discount rate/growth rate for each CGU and these discount rates/growth rates varied as CGU risk levels were different), "single explicit discount rates/growth rates" (companies disclosed specific discount rate/growth rate for each CGU but no variation in discount rates was observed even though CGUs had different risk levels), "range of discount rates/growth rates" (companies disclosed a range of discount rates/growth rates used for CGUs instead of specifying specific discount rates for each CGU) and "no effective disclosure" (companies provided very limited or no information at all). These taxonomies will be partly applied in this study. As for the results of this study, Carlin et al. (2011) came to the conclusion that Australian companies experienced difficulties in complying with disclosure requirements.

Another area of research where goodwill impairment practices are in focus is the study of technical aspects of goodwill impairment tests. One of the most recent studies in this area was conducted by Petersen and Plenborg (2010). Petersen et al. (2010) examined how Danish companies implement goodwill impairment tests according to IAS 36 and which factors may explain why some companies achieve better compliance with IAS 36 requirements than others. Even though Petersen et al. (2010) addressed a different type of inconsistencies in their study, their findings are of interest for our research. For example, Petersen et al.'s study shows a great variety in the number of CGUs defined and the way CGUs are determined. When examining the factors that might explain better compliance with IAS 36, Petersen et al. (2010) found that the degree of compliance measured as inconsistencies was negatively correlated with firm size, magnitude of goodwill, common model (the same valuation model was used across CGUs), other experience with valuation, manual (preparation of a manual for impairment testing by the firm). However, only two firm characteristics (other experience with valuation and manual) had a statistically significant impact on the degree of compliance.

2.2.2 Swedish Studies

Accounting practices, related to goodwill impairment testing, were the focus of several studies during the first years of the IFRS implementation in Sweden. Several of these studies examined disclosure requirements in IAS 36. For example, Persson and Hultén (2006, 6-7)

[4]AASB 136 Impairment of Assets incorporates IAS 36 Impairment of Assets as issued and amended by the IASB

studied how well companies listed on Stockholm Stock Exchange complied with disclosure requirements in paragraph 134 of IAS 36. The 2005 annual financial statements of forty companies from A- and O-lists were covered in this study. Persson and Hultén (2006, 6-7) studied the degree of compliance with disclosure requirements by categorizing disclosures using a bi-modal "compliance" or "non-compliance" taxonomy. This study shows that several companies complied with the majority of disclosure requirements in paragraph 134 of IAS 36. Some of the disclosure requirements which were met by the majority of the covered companies are the basis on which the unit's recoverable amount has been determined (134 (c)) and the carrying amount of goodwill allocated to the unit (134 (a)). However, there were relatively many companies that did not provide compliant disclosures on goodwill impairment tests. Persson and Hultén (2006, 6-7) identified several disclosure requirements which were difficult to comply with for the majority of the studied companies. These are: a description of how management determine the value assigned to each key assumption (134 (d) (ii)), the period over which cash flows has been projected (134 (d) (iii)) and the growth rate which has been used to extrapolate cash flow projections (134 (d) (iv)).

Even another study based on the 2005-year financial statements of 60 Swedish listed companied shows that some of the important disclosure requirements in IAS 36 were not met by the majority of the studied companies (Edlund & Arnell, 2007). Edlund and Arnell (2007) found that the majority of the companies under study did not comply with the disclosure requirements in paragraph 134 (d), namely almost 50 % of the companied did not disclose the assumptions which management has been used for cash flow projections (134 (d) (i)) and almost 70 % of the companies did not leave enough or any information about management's approach to determining the value of each key assumption (134 (d) (ii)). Furthermore, disclosures of the period over which cash flow projections have been made (134 (d) (iii)) and the growth rate used to extrapolate cash flow projections (134 (d) (iv)) were not provided in 20 % of impairment tests based on value in use.

To sum up, both these studies show that even during the first year of implementation of the IFRS in Sweden, several companies succeeded in providing compliant disclosure on impairment testing. On the other hand, these studies show that there were several subparagraphs in IAS 36 that required more compliant disclosure, namely subparagraph 134 (d), which requires disclosure on key assumptions, including the period for cash flow projections and the terminal growth rate.

In 2007 a comparative study of disclosure in paragraph 134 of IAS 36 was conducted by Junger and Kull (2007). Junger and Kull compared 2005 and 2006 financial statements of 51 Swedish Large Cap companies listed on Stockholm Stock Exchange in order to answer the question whether the compliance with disclosure requirements in IAS 36 paragraph 134 was better in the 2006 financial statements in comparison with the 2005 financial statements. Furthermore, Junger and Kull (2007) studied different factors that might explain the degree of compliance with disclosure requirements. The factors studied in Junger and Kull's thesis (2007) are the amount of goodwill on the company's balance sheet, the amount of goodwill impairment loss, recognized by the company, and the audit firm that the company uses. Even in this study a bi-modal "compliance" or "non-compliance" taxonomy was used. Since

paragraph 134 of IAS 36 involves substantial judgment, Junger and Kull (2007) developed an interpretation model which allowed them to analyze the companies' disclosures in a consistent way. The results of Junger and Kull's thesis (2007) show that the degree of compliance with requirements in all subparagraphs of paragraph 134 IAS 36 was better in 2006 financial statement in comparison with 2005 financial statements. Otherwise, the study shows similar results as Persson and Hultén's (2006, 6-7) and Edlund and Arnell's (2007) studies. The subparagraph that companies experienced difficulties to comply with was 134 (d), including all the requirements in this subparagraph. The degree of compliance with different requirements in subparagraph 134 (d) was between 36 % (134 (d) (iv)) and 74 % (134 (d) (i)) in the 2006 financial statements. As for the different factors that might explain degree of compliance with disclosure requirements, the study shows that there was no statistically significant connection between any of these factors and degree of compliance with the requirements.

Several studies of goodwill accounting practices regarding goodwill impairment loss have been conducted in Sweden. For example, Gauffin and Thörnsten (2010, 8-9) studied the 2008 and 2009 financial statements in order to answer the question of how listed companies apply IAS 36 in practice during the time of financial instability. Even though the focus of this study was not disclosure requirements in IAS 36, its results are of interest and can be used in our thesis. The study shows that just 37 of 259 companies recognized goodwill impairment loss in 2008 compared to 40 of 254 companies in 2009. The amount of goodwill impairment loss was insignificant in both 2008 and 2009 (10,2 billion SEK which is about 1,5 % of the total balance sheet goodwill in 2008 and 11,9 billion SEK which is about 1,9 % of the total goodwill balance sheet in 2009). Gauffin and Thörnsten (2010, 8-9) argue that one of the possible explanations why Swedish companies are reluctant to recognize goodwill impairment loss is that capital market and companies consider goodwill impairment to be a signal of disaster. Gauffin and Thörnsten (2010, 8-9) criticize companies' disclosures on goodwill impairment tests. According to their study it is very difficult for users of financial statements to compare information about goodwill impairment tests provided by different companies even in the same type of industry. Furthermore, in order to make it possible for users to evaluate the reliability of the assumptions, used for impairment tests, more information about key assumptions that management used when determining value in use (134 (d)(ii)) or fair value less costs to sell (134 (e) (i)) is required. Gauffin and Thörnsten (2010, 8-9) further criticize the companies' sensitivity analysis (134 (f)). As many of the studied companies did not show any sensitivity analysis even though they recognized impairment loss on goodwill, Gauffin and Thörnsten (2010, 8-9) argue that companies should include sensitivity analysis in their financial statements since this information is essential for understanding the goodwill impairment testing procedures. Gauffin and Thörnsten (2010, 8-9) come to a conclusion that users of financial statements require information that should be given in such a way that it would be possible to compare financial information from different companies. Besides, in order to make information about impairment tests useful for users of financial statements, companies must provide more information on key assumptions used in the impairment tests and sensitivity analysis.

A study of goodwill accounting practices in conjunction with mergers and acquisitions was conducted by Rehnberg (2012). Rehnberg (2012) examined whether various incentives that companies may have influence the way companies identify intangible assets separately from goodwill in accordance with IFRS 3. One of the findings of this study is that companies seem to be influenced by contact and political costs when applying the principle-based IFRS regulations. Thus, the study shows that larger companies and more indebted companies tend to report more intangible assets separated from goodwill which means that they are better at applying the IFRS in practice. Rehnberg (2012) argues that it may imply a problem for users of financial information as consolidated financial statements of various companies will not be comparable.

2.3 Previous Research on Corporate Disclosure

The presence of asymmetrical information between issuers and users of financial information is one of the main reasons for financial reporting. Companies provide different types of disclosures in their financial statements to reduce information asymmetry (Marton, 2011, 8-9). Both mandatory and voluntary disclosures have been examined in empirical studies, even though studies of voluntary disclosures are more common. Most of these studies attempt to test the impact of disclosures on the capital market.

Various proxies for disclosure quality are used when studying the impact of disclosing information on the capital market. One of them is a construction of indices which makes it possible to assess the level of disclosure in a more direct way. In order to construct a disclosure index, researchers use a scoring model. Two different approaches may be used to develop a scoring model for evaluation of disclosure level. The approach introduced by Copeland and Fredericks (1968) is based on the evaluation of information presented by companies. By citing the number of words used to give information about an item disclosed, Copeland et al. (1968) placed the company on a scale of disclosure with values between zero and one. The alternative approach, used in several studies of both mandatory and voluntary disclosure, is to use a dichotomous procedure when a company earns one point when an item that should be disclosed is disclosed and zero when this item is not disclosed. This approach was used, for example, by Botosan (1997) in his study of the effect of disclosure level on the cost of equity capital. Botosan (1997) was one of the first to develop a self-constructed index which was used as a departing point in many other studies of voluntary disclosures. Another example of usage of dichotomous procedure when studying disclosure level is Cooke's (1989a) study of the extent of disclosure in financial statements of Swedish companies. A scoring scheme used by Cooke (1989a) contains 224 disclosure items, both of mandatory and voluntary type. At first, all the disclosure items are scored, taking into account whether a disclosure item is relevant or not relevant to a specific company. Thus, the company is not penalized for not providing disclosure that is considered to be irrelevant. Then an index is created to make it possible to measure the relative level of disclosure by a company. Cooke's index is a ratio of the actual scores earned by a company to the scores that company is expected to gain.

Identifying determinants of voluntary disclosures has been the focus of many empirical studies. Below, we describe several variables that can be of interest for our study.

Company size is considered to be one of the determinants of voluntary disclosure as positive relation between company size and disclosure has been recorded (Lang & Lundholm, 1993). Studies provide different explanation for positive relation between company size and disclosure. One of the explanations is that large companies have more users of financial information and are more exposed to public scrutiny. Besides, if some component of disclosure cost is fixed, then larger companies have to spend proportionally less resources on disclosure processes. Another explanation for positive relationship between company size and level of disclosure is that large companies have enough resources to employ highly skilled specialists who may introduce more sophisticated management reporting systems which can provide a lot of information without extra costs (Moore & Buzby, 1972). Finally, large companies produce a lot of information for internal reporting, therefore the direct costs of disclosure are considered to be minimal (Cooke, 1989 a).

Company size can be measured differently: when using a market approach to measuring size, it can be measured as the market value of equity (Lang & Lundholm, 1993) or the natural logarithm of the market value of equity and when using a non-market approach, company size can be measured as the natural logarithm of total assets or turnover (Leuz & Schrand, 2009).

High performance is also believed to affect disclosure level. However, the direction of relation is not clear. On the one hand, higher disclosure scores are predicted for high-performing companies as they have positive information to disclosure and being transparent may distinguish these companies from low-performers. On the other hand, low-performing companies may be forced to reveal negative information for legal liability reasons, which means that a negative relationship between disclosure and performance may be observed. Even empirical studies of disclosure level show mixed results. Performance is measured in studies as return on assets, unexpected earnings, or abnormal returns (Lang & Lundholm, 1993 and Webb, Cahan & Sun, 2008 and Leuz & Schrand, 2009).

Financial needs may affect disclosure level as companies with greater financial needs may have incentives to disclose more information in order to reduce asymmetrical information between companies and their creditors. As a result, companies may get cheaper financing. Studies, which are using financial needs as a variable, use leverage, equity issue, debt issue and capital intensity as proxies (Lang & Lundholm, 1993 and Webb, Cahan & Sun, 2008 and Leuz & Schrand, 2009).

Ownership dispersion is considered to be another determinant of voluntary disclosure. When a company has many small shareholders the information asymmetry is greater and more disclosure is required to reduce information asymmetry. Ownership dispersion can be measured as percentage of widely held shares (i.e. free float) (Leuz & Verrecchia, 2000).

The relation between *type of industry* and the level of disclosure has been examined by Cooke (1989a, 1989b, 1992) and Camfferman & Cooke (2002). For example, Cooke (1992) found that manufacturing companies in Japan provide more disclosures than nonmanufacturing companies which can be explained by the importance of manufacturing for the economy of this country. In another study Camfferman & Cooke (2002) came to a conclusion that

companies in the trading and services sectors in both UK and the Netherlands provide less disclosure than conglomerate companies and companies in the manufacturing sector.

The impact of *auditor type* on level of disclosure has been examined in several disclosure studies (Camfferman & Cooke, 2002). As Wallace, Naser & Mora (1994) argue the financial statements of companies are not only audited but even influenced by audit firms. The relationship between auditor type and level of disclosure is examined in Camfferman & Cooke's (2002) comparative study of the comprehensiveness of disclosure of UK and Dutch companies where auditor type is categorized using dummy variables: Big 6 or not Big 6. This study shows that there is a statistically significant positive relationship between Big 6 audit firms and the level of disclosure.

2.4 Summary and Expectations

As the IASB regulation is of a principle-based character, there is a risk that various interpretations of regulations may exist across the companies. In order to enable users of financial accounts to evaluate the reliability of the information presented by companies, several standards contain extensive disclosure requirements. As impairment tests on goodwill depend to a great extent on management judgement, IAS 36 requires disclosure on the impairment testing procedures. Paragraph 134 of IAS 36 contains disclosure requirements on various estimates, used to measure recoverable amounts of CGUs containing goodwill or other intangible assets with indefinite useful lives. This type of information allows users of financial accounts to compare financial information from various companies and to assess the reliability of impairment tests.

Both international and Swedish studies on goodwill impairment accounting practices show that companies experience difficulties in complying with disclosure requirements in paragraph 134 of IAS 36. Companies often provide disclosure on an aggregate level, using standardized text from IAS 36. The majority of companies do not provide compliant disclosure on key assumptions, used for value in use calculations, and the sensitivity analysis. As Swedish companies have been reluctant to recognize goodwill impairment loss, users of financial information may require extensive disclosure in order to assess the reliability of impairment tests on their own. We expect to find a better degree of compliance with disclosure requirements in 2011 in comparison with previous studies of Swedish companies' compliance as previous studies were conducted during the first years of the IFRS implementation. Furthermore, we believe that Swedish companies may have difficulties in providing compliant disclosure on the key assumptions and the sensitivity analysis, as previous studies show that the majority of companies using IAS 36 have such difficulties.

Previous studies on corporate disclosure indicate the existence of various company characteristics that may influence the level of corporate disclosure. The determinants of the level of disclosure discussed in this chapter are company size, high performance, financial needs, ownership dispersion, type of industry and auditor type. The majority of these determinants will be examined in our study. We believe that larger companies and companies with greater financial needs may have a higher degree of compliance with disclosure

requirements. We further expect that type of industry and auditor type may influence the degree of compliance.

3. Research Design and Methodology

The study examines the degree of compliance with disclosure requirements in paragraph 134 of IAS 36 and relationship between company characteristics and degree of compliance with disclosure requirements. As it was discussed in Chapter 2, various proxies may be used to measure the level or the quality of disclosure. We decided to use a disclosure index which enables to assess the level of disclosure in a direct way. The same approach was used in several disclosure studies (see, for example, Botosan, 1997 and Cooke, 1989a). As the purpose of our study is to examine to what extent various company characteristics may explain the degree of compliance with disclosure requirements, we decided to use a multiple regression analysis. It allows to examine the impact of combination of various company characteristics on the degree of compliance with disclosure requirements, as well as to measure the strength and the direction of the relationship between the studied company characteristics and the degree of compliance. Multiple regression models are commonly used to establish whether various company characteristics have an impact on the level of disclosure (see, for example, Lang & Lundholm, 1993, Camfferman & Cooke, 2002). As even simple relationships between the degree of compliance and each company characteristics might be of interest for this study, Pearson's correlation test is conducted which allows to obtain correlation coefficients for each pair of variable and to describe the strength and the direction of the simple relationships. We believe that the results of this combination of statistical tests will be sufficient to answer the research question of this study.

Hence, the study is based on a model where degree of compliance, measured as Index, constitutes a dependent variable, which is believed to be affected by company-specific, institutional and goodwill-related characteristics. As paragraph 134 of IAS 36 contains disclosure requirements, previous studies of both mandatory and voluntary disclosure are used to choose what company characteristics may affect degree of compliance. In this study we decided to examine three company-specific characteristics – namely company size, financial needs and company performance – two institutional characteristics– namely industry and audit firm –, and two goodwill-related characteristics,– namely amount of goodwill on the company's balance sheet and amount of goodwill impairment recognized in 2011. Using this model we get a possibility to examine whether degree of compliance depends on these various characteristics and if it does to what extent.

Further in this chapter, we present our research model, as well as dependent and independent variables.

3.1 Model Specification

The model applied in this study is based on suggestions that degree of compliance with disclosure requirements in paragraph 134 of IAS 36 depends on a range of various company characteristics. The degree of compliance is operationalized by completing a disclosure scoring sheet of items, chosen from paragraph 134 of IAS 36. The measured variable is calculated as an index of actual disclosure to total possible disclosure. In order to examine to what extent degree of compliance with disclosure requirements of IAS 36 may be explained by various company-specific, institutional and goodwill-related characteristics, degree of compliance in the form of index (Y) is chosen as a dependent variable in the model. As

degree of compliance may be affected by a range of various characteristics, a multiple regression analysis is used to examine to what extent compliance might be explained by a combination of these characteristics and what marginal effect each independent variable has on degree of compliance.

$$Y = \alpha_0 + \beta_1 Industry + \beta_2 Audit\ Firm + \beta_3 Company\ Size + \beta_4 Goodwill\ Amount + \beta_5 Goodwill\ Impairment + \beta_6 Company\ Performance + \beta_7 Financial\ needs + \varepsilon$$

It should be mentioned that the regression model applied in this study is linear, which means that it presupposes the existence of linear relationships between the examined variables (Newbold, Carlson & Thorne, 2010). However, in practice, relationships between the studied variables may be of other character than strictly linear.

3.2 The Dependent Variable

It was decided to use a self-constructed index to measure the degree of compliance with paragraph 134 of IAS 36. As it was mentioned in Chapter 2, constructing of indices is a usual way of assessing the level of disclosure. One of the advantages of using indices in disclosure studies is that it allows assessing the level of disclosure in a more direct way. On the other hand, it may be a difficult task to construct a disclosure index. Therefore, it would be a great advantage for this study to use some sort of index, which was constructed by a prominent researcher. However, our examinations of studies of mandatory disclosure requirements in IAS 36 showed that no research on the basis of disclosure index has been done. Therefore, a self-constructed index is developed for this study.

The index is obtained by completing a disclosure scoring sheet of items. Based on a careful review of paragraph 134 of IAS 36, Illustrative example 9 of IAS36 and related literature, a scoring sheet, containing 21 items, is developed. The degree of compliance is calculated as an index of actual disclosure to total possible disclosure according to the formula below:

$$I_j = \frac{\sum_{i=1}^{n_j} x_{ij}}{n_j}$$

where:

n_j = number of items applicable to the jth firm;

$n_j \leq 21$

$x_{ij} = 1$ (or 0,5) if ith (applicable) item disclosed, 0 otherwise

so that $0 \leq I_j \leq 100$.

The approach to scoring items used in this study is mainly dichotomous which means that a company gets 1 for a specific item if this item is disclosed and 0 if this item is not disclosed. As a number of items included in the scoring sheet must be disclosed only if special conditions are met, some judgement is required on the basis of relevance to the company, when completing the scoring sheet. The same approach for constructing a disclosure index is used by Camfferman & Cooke (2002).

We assume further that each item of disclosure is equally important. This approach was used, for example, by Spero (1979), Cooke (1989a) and Camfferman & Cooke (2002). Spero's (1979) study shows that weighting disclosure items may be irrelevant as those companies that are better at disclosing more important items are also better at disclosing less important items. Therefore, it was decided not to weight disclosure items in order to avoid subjectivity.

The scoring sheet used to obtain disclosure index contains 21 items, which are defined using paragraph 134 of IAS, Illustrative example 9 of IAS 36 and previous research. As paragraph 134 of IAS 36 contains several requirements that involve substantial judgement, a number of simplifications were made which enables to assess all the studied companies' disclosure in a consistent way. Below, we provide explanations for 21 items in our scoring sheet (the scoring sheet is available in Appendix 2).

134 (a) Companies have to disclose how the carrying amount of goodwill is allocated to CGUs to get 1 point.

134 (b) Companies have to disclose how the carrying amount of intangible assets with indefinite lives is allocated to CGUs to get 1 point.

134 (c) Companies have to disclose whether use value or fair value less costs to sell value was used to determine the recoverable amount of the CGU to get 1 point.

If a company used value in use to determine the recoverable amount of the CGU, following information should be provided:
134 (d) (i) Companies have to describe each key assumption on which projections of cash flows for the period covered by budgets or forecasts are based. According to ESMA (2013), other assumptions than long-term growth rate and the discount rate should be disclosed in this subparagraph. It may be gross margin, specific product price inflation, market share, development of the exchange rate and others. As it is difficult for us to control which assumptions are key assumptions for each specific company, any assumption, named by the company, is considered to be a key assumption. ESMA's study (2013) shows that disclosure practice regarding this subparagraph varies a lot and some companies describe more than ten different assumptions. As IAS 36 provides no information about how many key assumptions a company should disclose, it was decided that a company gets 1 point whenever it discloses any other key assumption than the discount rate or the terminal growth rate. It is sufficient to name the key assumption to get 1 point.

134 (d) (ii) Companies have to describe an approach used by management to decide what value or values should be assigned to each key assumption. A company scores 1 point when it provides a description of the approach for key assumption in the level of detail, suggested in Illustrative example 9 of IAS 36. Furthermore, companies must disclose whether the values assigned to key assumptions reflect past experience or consistent with external sources of information. A company scores 1 when it provides this type of disclosure.

134 (d) (iii) Companies have to disclose the period over which cash flow projections are made to gain 1 point. When a company uses longer period than five years, it has to provide an explanation of the reasons that justify the longer period. Even here a company scores 1 point when it discloses this information and 0 point when it does not do it.

134 (d) (iv) Companies have to provide information about the growth rate used for extrapolation of cash flow projections beyond the period covered by budgets or forecasts. According to ESMA (2013), a company should disclose the growth rate for each CGU with significant goodwill. In practice, some companies disclose the growth rate for each CGU while others provide a range of growth rate or single growth rate for all CGUs. Therefore, we decided to deviate from a dichotomous approach for this item in order to have a possibility to evaluate the degree of compliance more precisely. A company gets 1 point when it discloses the growth rate for each CGU, 0,5 point is granted to a company that discloses a range of growth rate or a single growth rate. A company scores 0 point when no effective disclosure is provided.

When a company uses a growth rate that exceeds the average long-term rate for products, industries or countries in which it operates, it should provide reasons for it. When such an explanation is provided, a company gets 1 point, when there is no such an explanation in the financial statements, a company scores 0 point.

134 (d) (v) Companies have to disclose the rate/rates used to discount projected cash flows. Even here the practice varies as some companies provide a discount rate for each CGU while others disclose a range of discount rates or a single discount rate for all CGUs. As in subparagraph 134 (d) (iv), a company gets 1 point when a discount rate for each CGU is provided, 0,5 point when a company discloses a range of discount rates or a single discount rate for all CGUs and 0 point when no effective disclosure is available.

If a company used fair value less costs to sell to determine the recoverable amount of CGU, following information should be disclosed:
134 (e) Companies have to disclose which method was used to determine fair value less costs to sell. Paragraphs 20 and 25 to 29 of IAS 36 contain a fair value hierarchy according to which the fair value less costs to sell can be determined by referring to a binding sales agreement, an active market where the asset is traded, recent transaction for similar assets, or when no such information is available, the best evaluations that reflect the amount the company may get when selling the asset. A company scores 1 point when the method used to determine fair value less costs to sell is disclosed and 0 point when no such information is available.

When companies used other method to determine the fair value less costs to sell than a market price for the asset, even following disclosure should be provided:
134 (e) (i) Companies have to describe all key assumptions used by management to determine the fair value less costs to sell. It was decided to use the same approach for this item as for

subparagraph 134 (d) (i) which means that a company scores 1 point when disclosing any other key assumption than the growth rate and the discount rate.

134 (e) (ii) Companies have to disclose the approach used to determine the value of each key assumption. A company gets 1 point when the approach to determine the value for each key assumption is provided. Furthermore, companies have to disclose whether values are based on past experience or external sources of information and when values differ from past experience or external sources of information, companies have to explain why and how. Companies get 1 point when they provide this information.

When projected cash flows are used to determine the fair value less costs to sell, companies have to provide following information:
134 (e) (iii) the period for cash-flow projections. A company is awarded 1 point when disclosing the period and 0 point when no information about the period is available.
134 (e) (iv) the growth rate to extrapolate cash flow projections. A company scores 1 point when disclosing the growth rate and 0 point when no information about the growth rate is available.
134 (e) (v) the discount rate. A company gains 1 point when providing this information and 0 point when no information about the discount rate is available.

134 (f) Companies have to provide the sensitivity analysis, if a reasonable possible change in any of key assumptions management used to determine the recoverable amount of the unit would cause the carrying amount of the CGU to exceed its recoverable amount. According to ESMA (2013), disclosure of the sensitivity analysis provides users of financial statements with important information, which helps to understand how imminent a possible impairment loss is. However, the disclosure, according to this subparagraph, relies on management judgement. If management believe that a possible change in any key assumption would result in impairment loss, this disclosure is required, otherwise it is not obligatory to provide this information. Therefore, the following requirements are applicable only to the companies that provide disclosure of a sensitivity analysis:
134 (f) (i) Companies have to disclose the amount by which the recoverable amount of the CGU exceeds the carrying amount of the unit (the headroom). A company gains 1 point when it discloses this information.
134 (f) (ii) Companies have to provide information about the value assigned to key assumptions. A company scores 1 when this information is disclosed.
134 (f) (iii) Information on the amount, by which the values of key assumptions must change, in order to the headroom disappear. A company gets 1 point when it provides this information.

3.3 Independent Variables

Based on previous research, several company characteristics were identified that may explain the degree of compliance with paragraph 134 of IAS 36 in practice. In considering the examined characteristics, it was decided to combine them in three groups: company-specific

characteristics, institutional characteristics and goodwill-related characteristics. Below, we describe all three groups of company characteristics in detail.

3.3.1 Company-Specific Characteristics

Company-specific factors include both structure-related characteristics, such as company size and financial needs, and performance-related characteristics, such as company performance.

Variable *company size* is examined in a range of disclosure studies. Various size measures may be used to constitute a size variable. It was decided to use two different variables of size in this study. The first variable is a dummy variable based on three segments in accordance with companies' market value, namely Large Cap, Mid Cap and Small Cap. The second size variable used in this study is company turnover, measured as the natural logarithm of turnover. We decided to use the natural logarithm as the proxy of company size in order to get a lower scale of the size variable. As previous studies show that there is a positive relationship between company size and the level of disclosure, we believe that larger companies are likely to have a higher degree of compliance with paragraph 134 of IAS 36.

Return on assets (ROA) is selected as the measure of *company performance* in this study. The same approach was used, for example, by Webb, Cahan & Sun (2008). As the results of empirical studies of relation between firm performance and disclosure are mixed, it is difficult to predict whether high or low performing companies have more incentives to disclose more information about impairment of goodwill testing.

The proxy for *financial needs* used in this study is leverage which is measured as total liabilities over total assets. As goodwill on the balance sheet of companies is of great interest for all types of investors, more highly leveraged companies have to disclose more information to satisfy information needs of long-term creditors. Thus, companies that have higher leverage are presumed to have a higher degree of compliance with disclosure requirements in paragraph 134 of IAS 36.

3.3.2 Institutional Characteristics

This study includes following variables, based on institutional characteristics: categorical industry variables, representing 10 industries, and auditor type variable, categorized into five variables, representing Big 4 audit firms, each for itself, and not Big 4 audit firms.

This study includes categorical *industry* variables that represent ten industries: Basic Materials, Consumer Goods, Consumer Services, Financials, Health Care, Industrials, Oil & Gas, Technology, Telecommunications and Utilities. It was decided to use industry classification applied by NASDAQ OMX Stockholm, which in its turn is based on the Industry Classification benchmark (ICB). The ICB is considered to be reliable (as it is frequently updated to make it sure that all new and changing securities are included), comprehensive (as it covers all the securities that investors may encounter) and accurate (as it is supervised by an independent committee and monitored by professional researchers) (Rules Version 1.2/1 February, 2012).

Degree of compliance with disclosure requirements and level of disclosure in general may differ throughout different industries for a number of reasons. For example, some industries may have a few lead players that influence all other companies operating in the same industry. If lead players provide a high level of disclosure which is in compliance with disclosure requirement, it may influence other companies to disclose more information and meet disclosure requirements in the IFRS. However, we find it difficult to predict which of the ten industries included in this study are going to have a higher level of compliance with disclosure requirements in paragraph 134 of IAS 36.

The *audit firm* variable is categorized into five dummy variables, four variables, representing Big 4 audit firms, each for itself, and one variable, representing not Big 4 audit firms. Wallace, Naser & Mora (1994) and Firth (1979) suggest that auditors do not only audit corporate annual reports and accounts but also influence their content. As numerous empirical studies show that Big 4 auditors provide better audit quality, we suggest that companies audited by Big 4 audit firm are more likely to be in compliance with disclosure requirements in paragraph 134 of IAS 36. As the number of companies that do not have Big 4 auditor is limited, we decided to examine the relationship between each a Big 4 audit firm and the degree of compliance.

3.3.3 Goodwill-Related Characteristics

As this study is concentrated on disclosure related to goodwill impairment tests, it was decided to introduce goodwill-related factors in our regression model. Two variables are used in this study: amount of goodwill and goodwill impairment loss.

The variable *amount of goodwill* is measured as goodwill in percent of total assets at the end of the fiscal year. We assume that companies allocate more resources on goodwill impairment testing and provide more disclosure related to goodwill impairment tests when the carrying amount of goodwill is significant as the effect of possible impairment losses on earnings may be significant. Therefore, we believe that companies with a larger amount of goodwill on their balance sheet are more likely to comply with the requirements in paragraph 134 of IAS 36.

The variable *goodwill impairment loss* is measured as goodwill impairment recognized during the fiscal year divided by amount of goodwill recognized at the beginning of the fiscal year. As goodwill impairment loss is considered to have a very important signalizing effect (Gauffin & Thörnsten, 2010,1), we believe that companies that recognize a significant goodwill impairment loss are more willing to provide detailed disclosure on their goodwill impairment testing in order to explain why goodwill impairment loss was recognized. Thus, companies that recognize goodwill impairment loss are predicted to have a higher degree of compliance with requirement in paragraph 134 of IAS 36.

3.4 Regression Model

After including all the described variables in the equation, we get the following regression model:

$$Y = \alpha_0 + [\beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10}] + [\beta_{11} X_{11} + \beta_{12} X_{12} + \beta_{13} X_{13} + \beta_{14} X_{14} + \beta_{15} X_{15}] + [\beta_{16} X_{16} + \beta_{17} X_{17} + \beta_{18} X_{18}] + \beta_{19} X_{19} + \beta_{20} X_{20} + \beta_{21} X_{21} + \beta_{22} X_{22} + \beta_{23} X_{23} + \varepsilon$$

How all the studied variables are defined and calculated is available in Table 3.1:

Table 3.1 Variables and their definitions

Dependent variable	**Definition**
Index (Y)	A ratio of actual disclosure to total possible disclosure, measured in percent
Independent variables	
Basic materials (X_1)	Dummy variable: 1 if the company's industry is Basic Materials, 0 if otherwise
Consumer Goods (X_2)	Dummy variable: 1 if the company's industry is Consumer Goods, 0 if otherwise
Consumer Services (X_3)	Dummy variable: 1 if the company's industry is Consumer Services, 0 if otherwise
Financials (X_4)	Dummy variable: 1 if the company's industry is Financials, 0 if otherwise
Health Care (X_5)	Dummy variable: 1 if the company's industry is Health Care, 0 if otherwise
Industrials (X_6)	Dummy variable: 1 if the company's industry is Industrials, 0 if otherwise
Oil & Gas (X_7)	Dummy variable: 1 if the company's industry is Oil & Gas, 0 if otherwise
Technology (X_8)	Dummy variable: 1 if the company's industry is Technology, 0 if otherwise
Telecommunications (X_9)	Dummy variable: 1 if the company's industry is Telecommunications, 0 if otherwise
Utilities (X_{10})	Dummy variable: 1 if the company's industry is Utilities, 0 if otherwise
Ernst & Young (X_{11})	Dummy variable: 1 if the company's audit firm is Ernst & Young , 0 if otherwise
PwC (X_{12})	Dummy variable: 1 if the company's audit firm is PwC, 0 if otherwise
Deloitte (X_{13})	Dummy variable: 1 if the company's audit firm is Deloitte, 0 if otherwise
KPMG (X_{14})	Dummy variable: 1 if the company's audit firm is KPMG, 0 if otherwise
Not Big 4 Audit Firms (X_{15})	Dummy variable: 1 if the company's audit firm is Not Big 4, 0 if otherwise
Large Cap (X_{16})	Dummy variable: 1 if the company is Large Cap, 0 if otherwise
Mid Cap (X_{17})	Dummy variable: 1 if the company is Mid Cap, 0 if otherwise
Small Cap (X_{18})	Dummy variable: 1 if the company is Small Cap, 0 if otherwise
Turnover (X_{19})	Natural logarithm of turnover (tSEK)
Amount of goodwill (X_{20})	$\frac{\text{amount of goodwill recognized at the end of the fiscal year}}{\text{total assets at the end of the fiscal year}}$
Goodwill impairment rate (X_{21})	$\frac{\text{goodwill impairment recognized during the fiscal year}}{\text{amount of goodwill recognized at the beginning of the fiscal year}}$
ROA (X_{22})	$\frac{\text{income after financial incomes}}{\text{total assets at the end of the fiscal year}}$
Debt-to-asset ratio (X_{23})	$\frac{\text{total liabilities at the end of the fiscal year}}{\text{total assets at the end of the fiscal year}}$

3.5 Sample and Data Collection

This study covers companies listed on NASDAQ OMX Stockholm. We decided not to include other companies listed on NASDAQ OMX Nordic since we wanted to examine the accounting practice related to goodwill impairment of one country, Sweden. Besides, including companies from other countries might influence the results of the regression analysis as accounting practices may be influenced by cultural differences. It was decided to study all three segments of the companies listed on NASDAQ OMX Stockholm, namely the Large Cap segment (companies with a market value over one billion Euros), the Mid Cap segment (companies with a market value between 150 million and one billion Euro) and the

Small Cap segment (companies with a market value below 150 million Euros) (Rules Version 1.2/1 February, 2012).

Samples are often used instead of the entire population in the empirical studies as it may be difficult and costly to measure each item of the population, as well as a greater accuracy may be achieved by carefully measuring a sample of the population (Newbold et al., 2010). In our case, however, the entire population of NASDAQ OMX Stockholm listed companies consists of 254 companies. As the entire population is not so large that it would be impossible to obtain and measure each item of the population, the study covers the entire population.

As the focus of this study is paragraph 134 IAS 36 in which companies have to disclose information about estimates used to measure recoverable amounts of CGUs containing goodwill or intangible assets with indefinite useful lives, only companies that used the IFRS in their annual reports and had goodwill or intangible assets with indefinite useful lives on their balance sheet are included in this study. To identify firms that carry goodwill on their balance sheet and use the IFRS in their annual reports, corporate annual financial reports for 2011 or 2011/2012 were collected from Internet homepages of all the companies listed on NASDAQ OMX Stockholm. 172 of 254 companies meet these requirements and, therefore, 172 financial statements are used in this study (see Appendix 3). 82 companies are not included in this study for three reasons: 3 companies use U.S. GAAP instead of the IFRS, 2 companies use Canadian GAAP instead of the IFRS, 21 companies do not have significant goodwill or intangible assets with indefinite useful lives on their balance sheet (see Appendix 4). The distribution of the studied companies in accordance with industry type, companies' market value and audit firm is available in Appendix 5.

The first stage of data collection was completing an annual accounts` scoring sheet for each of the 172 companies studied in this thesis. The empirical data for this study is retrieved from the annual financial reports of the studied companies and collected in Microsoft Excel document. As mentioned above, the annual reports were collected manually from the companies' official homepages during February and March 2013. For the majority of companies English versions of annual reports were used. However, in some cases the Swedish version of financial reports was used. The reason for taking the Swedish version was that the only version available was in Swedish or there were no notes to consolidated financial statements available in the English version. This was the case for some of the Small Cap companies. The empirical data was collected from the consolidated income statements, the consolidated balance sheets and the notes to the consolidated financial statements. The numbers that were most difficult to find were the amount of goodwill impairment loss recognized during the fiscal year, because this information was available only in the notes and different companies disclosed this information in different notes. One of the advantages with this type of data collection is that all the numbers are collected from the primary source of information, the same that is available for users of financial information. On the other hand, collecting a large quantity of data manually may result in inaccurate data. In order to minimize the risk of inaccuracy to occur, a sample test was done after all the data had been collected. The data for every tenth company was double checked. No inaccurate data was found.

The next stage of data collection was completing a disclosure scoring sheet of disclosure items for each of the 172 studied companies. Even here the data was collected manually from official financial reports of the companies. All the data collected was registered in Microsoft Excel document which made it easy to calculate the final disclosure index. One of the difficulties for collecting data on goodwill disclosure was to find the note or notes where this information was presented. The majority of the companies disclosed this type of information in note Goodwill or note Intangible Assets. However, there were several companies that disclosed information about goodwill impairment testing in other notes, for example note Important estimates and assumptions for reporting purposes (Read Soft AB) or note Critical accounting estimates and judgements (Cavotec). Therefore, one of the disadvantages of this method of data collection is that some information that companies did disclose was probably not found. However, this probability was minimized by an extra careful examination of all the notes, which could contain disclosure on goodwill impairment tests, when this information was not found during the first examination.

Another difficulty that we came across during the stage of completing a disclosure scoring sheet, was assessing each disclosure item in such a way that as little personal judgement as possible was exercised. For the disclosure items, which were clearly defined in IAS 36, no such a problem arose. However, assessing some of the disclosure items was challenging as requirements in IAS 36 are not precise enough and some disclosures rely on management judgement. Therefore, it was decided to use Illustrative Example 9 as a model. For instance, it was very helpful when assessing disclosure on all the three items regarding a description of key assumptions for cash-flow projections. Another area that required careful examination, was sensitivity analysis. As disclosure on sensitivity analysis relies entirely on management judgement, it was decided to score these items only for those companies that decided to include sensitivity analysis in their financial reports.

When both the annual accounts scoring sheet and disclosure scoring sheet were completed, all the collected data was analyzed in order to find possible outlier points. Outlier points are defined as such values that deviate substantially from the mean (the predicted value) (Newbold et al., 2010). As outlier points influence the regression equation more than other observations, it is important to decide whether they are a part of the phenomenon being studied (then they should be included in the analysis) or not (then they should be excluded) (Newbold et al., 2010). Exclusion is just one of the ways of dealing with outlier points. Another way of working with outlier points is winsorization. This approach was used, for instance, by Hagberg (2012). Winsorization is a process of transformation of extreme values, for example, by setting all outliers to four standard deviations of the set data (Newbold et al., 2010). The data collected for values of dependent and independent variables included some outlier points. The first stage of dealing with this problem was to examine all these points individually to make sure that no measuring or recording errors occurred. After careful individual examination some of the values were corrected. When it comes to remaining extreme values, it was decided to transform them using winsorization. The method of winsorization was chosen because we did not want to lose any observations from our sample. All the extreme values were set to four standard deviations from the mean value.

3.6 Data Analysis Procedures

After all the data was collected, descriptive statistics were obtained by using SPSS version 21. Then, the relationships between all the variables were examined with the help of Pearson's correlation coefficient which gives a standardized measure of the linear relationship between two variables. The correlation coefficient provides information about both the direction and the strength of a relationship (Newbold et al., 2010). The results of this test are shown in Chapter 4. Examining the results of the test, we could see that there was a strong correlation between independent variables Turnover and Large Cap as well as Turnover and Small Cap. When two independent variables have a positive or negative correlation with each other, it would be difficult to identify which independent variable affects the dependent variable. As a result, the regression coefficients would not be statistically significant and could even be misleading. This phenomenon is referred to as multicollinearity (Newbold et al., 2010). Several approaches can be used when there is a problem of multicollinearity. For example, one of the independent variables that are highly correlated with each other may be removed. In this study, it was decided to use two multiple regression models. In Model 1 the variable Turnover was removed, whereas in Model 2 dummy variables Large, Mid and Small Cap were excluded.

The final stage of data processing was to use a multiple regression analysis. Regression is used to determine relationship between the dependent variable (Index) and independent variables (various company characteristics). The coefficient of determination, R-square is used to describe the proportion of the total variability in the dependent variable that can be explained by the regression model, namely by the relationships with the independent variables (Newbold et al., 2010).

3.7 Validity and Reliability

In order to assess the quality of this study we have to discuss the study's validity and reliability.

Validity refers to the extent to which the research tool measures what it is designed to measure. In the area of research design by validity means whether the study is able to scientifically answer the research question or questions it claims to answer (Bryman & Bell, 2011). High validity is achieved when the research question is well formulated and when the research method is chosen based on the research question. Validity of this study may be affected by the way which was chosen to calculate the degree of compliance (dependent variable Index). As it was mentioned earlier, not all the requirements in paragraph 134 of IAS 36 are clearly defined which means that they may be interpreted by different companies in a different way. If our interpretation of some of the requirements is incorrect, it may result in a systematic error that influences the results. However, this risk was minimized by consulting Illustrative Example 9 of IAS 36, which contains detailed examples of the disclosures that should be provided by companies. These examples were used when assessing whether disclosure was considered complaint or not.

Reliability refers to the consistency of the measurements of the chosen research tool. A study that has high reliability generates the same results in similar circumstances. As it was

mentioned before, all the data for this research was collected manually which means that some random errors may occur. Another factor that may affect the reliability of this study is that the data was collected by two researchers. When two researchers collect all the data separately and then the results are compared, it may lead to a higher reliability of the study. In this study, however, it was decided to work with data collection in the following way: after the scoring sheets had been prepared, a sample of thirty companies was chosen (ten companies from Large, Mid and Small Cap, one company from each industry). The data for these companies was collected by the two researchers separately. Afterward, the results were compared and no significant differences were found. Therefore, it was decided to proceed with data collection by dividing the remaining financial reports between the researchers.

3.8 Discussion

The research question of this study was to what extent company characteristics may explain the degree of compliance with disclosure requirement in paragraph 134 of IAS 36. There requirements are mandatory for all the companies that use the IFRS in their financial reports. Therefore, the expected mean value of Index that measures degree of compliance with these requirements must be relatively high. Furthermore, it may affect even the distribution of the independent variable as it is expected that companies should follow the mandatory requirements. All this may influence the results of this study. For example, the trends would not be as observable as expected.

Another factor that may affect the results of this study is that some of the company characteristics that were chosen as independent variables for the regression model have mainly been studied in the context of voluntary disclosure or a combination of mandatory and voluntary disclosure. Therefore, it may affect this study in such a way that no expected relationships would be observed.

Even the fact that largely binary approach to measuring disclosure was used in this study may affect our findings. Several subparagraphs of IAS 36 paragraph 134 contain requirements of more descriptive character which complicates assessing the degree of compliance using a binary approach. Even though a binary approach is probably not a perfect measure of disclosure, it allowed us to assess the degree of compliance in such a way that as little subjective judgement as possible was used. Besides, we chose to deviate from a binary approach when assessing disclosures on the growth rate and the discount rate in order to assess the degree of compliance more precisely.

As this study is of the quantitative character, a large number of observations is generally required in order to obtain the results that may be used to make reliable conclusions. The number of observations that was used in the study was not as large as it was wished. Out of the 254 companies listed on NASDAQ OMX Stockholm, only 172 companies fulfilled all the requirements. On the other hand, the financial reports of all the 172 companies were examined which means that the results of this study are applicable for all the companies that have significant goodwill, use the IFRS and are listed on NASDAQ OMX Stockholm.

In order to examine to what extent company characteristics may explain the degree of compliance with disclosure requirements in IAS 36, several company characteristics were chosen for this study. However, it should be mentioned that degree of compliance may be affected by other company characteristics that were not included in this study. We discuss other company characteristics that may affect the degree of compliance with paragraph 134 of IAS 36 in Chapter 5.

4. Empirical Results and Analysis

This chapter begins with the descriptive statistics of the studied population and the variables included in the study as well as general information on goodwill impairment tests. Then, the simple relationships between the studied variables are discussed using the correlation matrix. The results and analysis of two multiple regression models used in this study concludes this chapter.

4.1 Description of the Population

Turnover in 2011 or 2011/2012 is used in order to describe companies listed on NASDAQ OMX Stockholm. Table 4.1 shows that more than 40 % of companies have a turnover between 1 000 and 10 000 million SEK. 32 % of listed companies have a turnover between 100 and 1 000 million SEK and about 20 % of companies have a turnover between 10 000 and 100 000 million SEK. The largest companies (5,2 %) have a turnover in excess of 100 000 million SEK.

Table 4.1 Turnover of Swedish listed companies 2011

Turnover (mSEK)	Number of companies	Percent
< 100	6	3,5 %
> 100 < 1 000	49	28,5 %
> 1 000 < 10 000	72	41,9 %
> 10 000 < 50 000	26	15,1 %
> 50 000 < 100 000	10	5,8 %
> 100 000	9	5,2 %
Total	172	100 %

Turnover of listed companies can also be described by using Figure 4.1 that shows number of companies on the horizontal axis and turnover in 2011 or 2011/2012 in million SEK on the vertical axis.

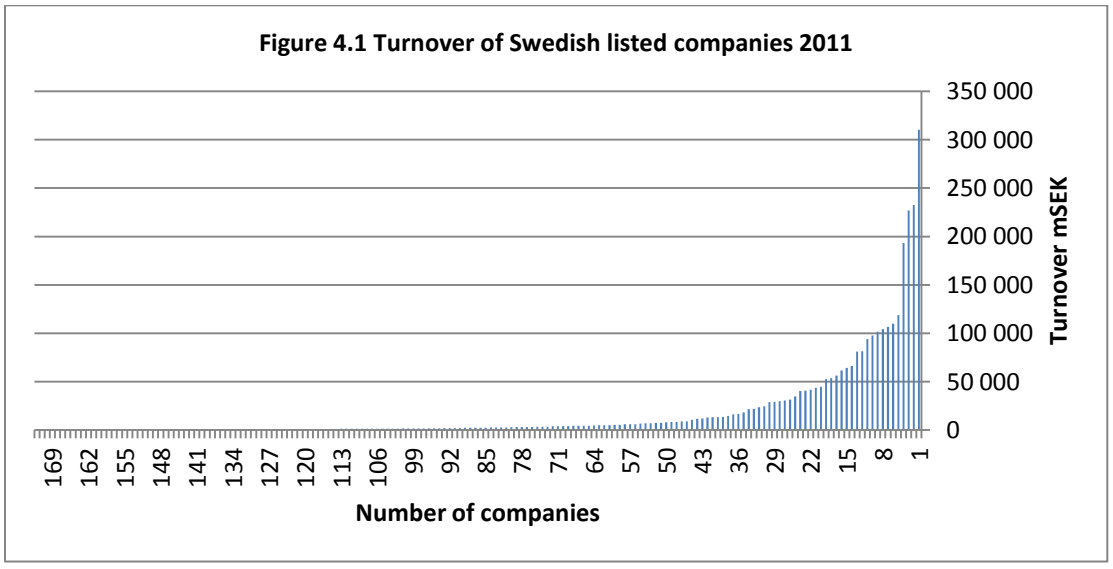


Figure 4.1 indicates that the population of listed companies comprises a small number of companies with a relatively high turnover and a lot of companies with a relatively low turnover.

Table 4.2 provides descriptive statistics on Index and numeric scale explanatory variables, discussed in Chapter 3.

Table 4.2 Descriptive statistics for the population

Total population (n=172)	**Min**	**Max**	**Mean**	**Median**
Index	15 %	100 %	69,8 %	71,8 %
Turnover (the natural logarythm)	10,64	19,55	14,92	14,64
Amount of goodwill	0,0 %	69,51 %	21,91 %	20,04 %
Goodwill impairment loss	0,0 %	42,61 %	2,41 %	0,0 %
Return on assets	– 63,32 %	34,80 %	6,45 %	8,53 %
Debt-to-asset ratio	7,43 %	132,07 %	53,36 %	53,91 %

The descriptive statistics show that the mean of Index variable (69,8 %) is less than the median (71,8 %) which suggests that the distribution of Index variable is negatively skewed. The lower mean can be explained by the fact that one company had an extremely low Index-value of 15 % (next minimum value is 31,8 %). At the same time, a vast majority of the studied companies (92,4 %) have an Index-value of more than 50 %, which affects both the mean and the median. Index variable shows that the degree of compliance with mandatory disclosure requirements in paragraph 134 of IAS 36 is relatively high with the mean of 69,8 %. However, there is one company that has a maximum Index value of 100 % (next maximum value is 95 %). The index values for all the studied companies are available in Appendix 6.

Regarding the amount of goodwill on the balance sheet of listed companies, descriptive statistics indicate that there are several companies that have a relatively large amount of goodwill (about 7 % of the studied companies have goodwill rate of more than 51 %). Therefore, the mean (21,97 %) is slightly greater than the median (20 %) and the distribution is positively skewed.

Even goodwill impairment rate has a positively skewed distribution with the mean (2,41 %) which is slightly greater than the median (0 %). The median is 0 %, because approximately 80 % of the studied companies did not recognize any impairment loss in 2011 or 2011/2012. At the same time, the variable has the mean of 2,41 %, because several companies (about 5 %) recognize goodwill impairment loss of more than 22 % with a maximum of 42,61 %.

Return on assets (ROA) has a negatively skewed distribution with the mean (6,45 %) that is less than the median (8,53 %). The lower mean is explained by the fact that about 5 % of the companies under study have a ROA that is lower than -15 %.

Even the debt-to-asset ratio has a negatively skewed distribution with the mean of 53,36 % and the median of 53,91 %. The median is slightly greater than the mean because about 5 %

of the studied companies have a debt-to-asset ratio of less than 20 %. At the same time, both the mean and the median have relatively high values because a large number of the studied companies (about 62 %) have a debt-to-asset ratio of more than 50 %.

4.2 General Information on Goodwill Impairment Testing

4.2.1 Information on Impairment Losses

About 17 % of the studied companies recognized a goodwill impairment loss in 2011 or 2011/2012. Goodwill impairment loss amounted to 2,2 % of goodwill recognized on the balance sheet of the companies at the beginning of the fiscal year which somewhat lower than the impairment rate of European companies (5,1 %), presented in the ESMA report (2013). One of the possible explanations of Swedish companies' lower impairment rate may be the fact that Swedish companies are less willing to recognize impairment loss on goodwill in comparison with other European companies. Similar results were found in Gauffin and Thörnsten's (2010, 8-9) study that showed that goodwill impairment rate of Swedish companies was 1,5 % in 2008 and 1,9 % in 2009. Even though the goodwill impairment rate in 2011 is higher in comparison with that of 2008 and 2009, it is still lower than the goodwill impairment rate of other European countries. Extent of impairment varies greatly between industries as showed in Table 4.3

Table 1.3 Goodwill impairment per industry

Industry	Number of companies	Amount of goodwill recognized in 2010/tSEK	Amount of goodwill recognized in 2011/tSEK	Goodwill impairment recognized in 2011/tSEK	2011 impairment rate
Basic Materials	8	26 634 098	26 989 762	0	0,0 %
Consumer Goods	20	34 437 424	30 210 488	5 542 984	16,1%
Consumer Services	21	20 034 224	17 844 710	3 039 040	15,2%
Financials	13	102 065 767	102 095 192	2 331 912	2,3 %
Health Care	16	99 607 153	106 859 067	30 000	0,03 %
Industrials	56	156 005 360	175 675 549	1 500 254	10 %
Oil & Gas	2	827 263	879 265	0	0,0 %
Technology	30	36 523 130	36 606 153	436 350	1,2 %
Telecommunications	5	97 140 535	97 259 566	0	0,0 %
Utilities	1	12 919	11 770	0	0,0 %
Total	172	573 287 872	594 431 521	12 880 540	2,2 %

The impairment rate by industry ranges from no impairment loss in Basic Materials, Oil & Gas, Telecommunications and Utilities, insignificant impairment rate in Financials, Health Care, Industrials and Technology to relatively high impairment rate of more than 15 % in Consumer Services and of more than 16 % in Consumer Goods. This study shows a similar concentration of impairment to that, reported by ESMA (2013). A single company in the Consumer Services industry accounts for slightly more than 80 % of the goodwill impairment,

reported in the financial statements, and more than 88 % of the goodwill impairment recognized in Consumer Goods is reported by one company.

4.2.2 Allocation of Goodwill and Intangible Assets with Indefinite Useful Lives to Cash-Generating Units

The degree of compliance with subparagraph 134 (a) (disclosure of the amount of goodwill distributed to the unit or groups of units) is 89 %, which is rather high. 19 companies did not comply with this requirement because of two reasons: 10 companies (5,8 %) did not allocate goodwill to CGUs and carried out goodwill impairment tests on the whole group level and 9 companies (5,2 %) did not disclose any information about allocation of goodwill. Those companies that carried out goodwill impairment tests on the group level violated IAS 36 requirements where it is stated that goodwill must be allocated to CGUs that should not be larger than an operating segment.

The number of CGUs varied greatly across the studied companies as shown in Table 4.4. On average (median), the companies allocated goodwill to 3 CGUs. The majority of companies (79,7 %) distributed goodwill on between 1 or 5 CGUs. One company allocated goodwill to 17 CGUs and one company to 18 CGUs. These results indicate that determining a CGU may be difficult in practice, because IAS 36 do not provide detailed guidance on how to determine a CGU. However, the need to recognize impairment on goodwill depends to a great extent on the way a company defines a CGU. Petersen and Plenborg (2010) found that Danish companies had a similar problem of determining a CGU. They argue that the variety in the way of determining CGUs may affect the comparability of the financial reports negatively.

Table 4.4 Number of CGUs for goodwill allocation in Swedish companies 2011

Number of CGUs	Number of companies	Percent
1	26	17,0 %
2 to 5	96	62,7 %
6 to 10	25	16,3 %
11 to 18	6	3,9 %
Total	153	100 %

About 20 % of the studied companies recognized intangible assets with indefinite useful life in their financial reports. The degree of compliance with subparagraph 134 (b) of IAS 36 (disclosure of the amount of intangible assets distributed to the unit) is 82,4 %, which is somewhat lower than the degree of compliance with subparagraph 134 (a). The lower degree of compliance with subparagraph 134 (b) in comparison with subparagraph 134 (a) can be explained by the general trend that was observed in this study: the studied companies disclosed more information about impairment tests on goodwill than those on intangible assets.

4.2.3 Determination of the Recoverable Amount

The degree of compliance with subparagraph 134 (c) of IAS 36 (the basis for determination of the recoverable amount) is 88,4 %, which may be considered to be rather high. On the other hand, this requirement is one of the easiest ones to fulfill. Among the companies that did not

comply with the requirement the majority disclosed that the recoverable amount was determined on the basis of discounted cash flows. As both value in use and fair value less costs to sell can be determined using projected discounted cash flows, this type of disclosure is not considered to be sufficient. As Table 4.5 shows more than 87 % of companies covered in the study used value in use, whereas one company used fair value less costs to sell and one company applied both methods. Compared to the results of the ESMA report (2013), the usage of value in use seems to be more widely spread in Sweden. At the same time, the results indicate that Swedish companies do not use fair value less costs to sell to the same extent as European companies (6 % of the studied companies in the ESMA report used fair value less costs to sell).

Table 4.5 Basis for determination of the recoverable amount

Basis for recoverable amount calculations	Number of companies	Percent
Value in use	150	87,2 %
Fair value less costs to sell	1	0,6 %
Both	1	0,6 %
No information	20	11,6 %
Total	172	100 %

4.2.4 Parameters Used in Discounted Cash Flows Calculations

When it comes to disclosure on *key assumptions* on which management based its cash flow projections (134 (d) (i), (ii)), the study shows that 83,1 % of the studied companies named at least one more key assumption in addition to the discount rate and the long-term growth rate. At the same time, only about 41,3 % of the issuers provided a description of the approach used to determine the value of key assumptions and about 56 % of companies commented whether those values reflect past experience or consistent with external sources of information. These findings are similar to the results of the studies by Persson and Hultén (2006, 6-7), Edlund and Arnell (2007) and Junger and Kull (2007) as well as to the results of the ESMA report (2013) and the UK's Financial Reporting Council report (2008). Similar to the ESMA report (2013) and the UK's Financial Reporting Council report findings, this study shows that the quality of explanations regarding key assumptions varies greatly. Even though a majority of the studied companies named at least one more key assumption in addition to the discount rate and the growth rate, less than half of the studied companies described the approach used to determine the values of key assumptions. In comparison with other studies, mentioned above, this study shows which particular parts of requirements regarding key assumptions are most challenging for Swedish companies.

Table 4.6 shows examples of typical key assumptions that companies in different industries disclose.

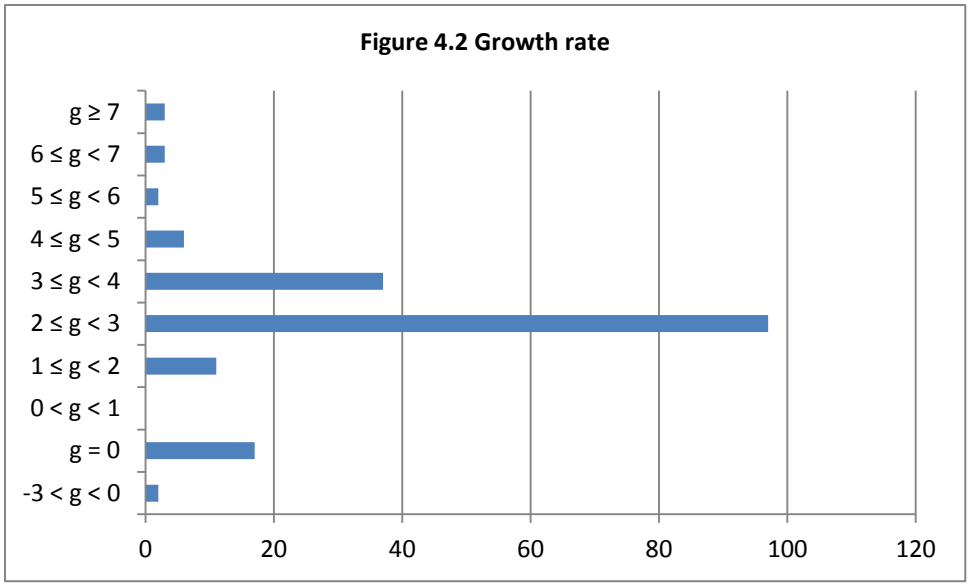
Table 4.6 Key assumptions for cash flow projections per industry

Industry	Examples of key assumptions
Basic Materials	metal prices, exchange rates, sales prices, cost structure
Consumer Goods	sales volume, price, product mix, cost structure, profit margins, investment requirements, exchange rates, raw material prices, personnel costs
Consumer Services	operating margins, future prices, volume development, development of cost base, working capital requirements, market conditions
Financials	number of safe deposits, safe deposit value, net income per safe deposit, product launches, competition, pricing policy, forecasted margins, sale volumes, cost development
Health Care	market share and market growth, cost of materials and gross profit, general costs, rate of exchange
Industrials	market growth, competitiveness, technological development, overall cost trends, investment levels, working capital, demand, cost of input goods, labour costs, competition, demographic and interest rates trends
Oil & Gas	sales growth, operating income, working capital
Technology	adjusted operating profit margins, income tax, working capital, capital expenditures, license renewal cost, growth in sales, earnings, hourly rates, competitiveness
Telecommunications	profit margins, investments, sales growth, steel prices
Utilities	future market prices, inflation, operating costs

93 % of the studied companies disclosed the *period for cash flow projections* (134 (d) (iii)). It is the highest degree of compliance, leaving out of account disclosures provided by companies that used fair value less costs to sell. More than 59 % of companies that disclosed the period for cash flow projections used the period of 5 years, whereas about 30 % applied a shorter period and about 11 % used a longer period with a maximum of 20 years. Of those companies that used a longer period for cash flow projections, only 52,9 % included explanation of the reasons to do it, which is in line with the results of the ESMA report (2013). In comparison with previous studies of Swedish companies, this study shows that Swedish companies improved the degree of compliance with this requirement to a great extent. The studies by Persson and Hultén (2006) and Junger and Kull (2007) indicated that Swedish companies had difficulties to comply with the requirement in subparagraph 134 (d) (iii), whereas this study shows that Swedish companies have a high degree of compliance with this requirement.

Regarding disclosure on *terminal growth rate*, used to extrapolate cash flow projections (134 (d) (iv)), only 29,1 % of companies were in full compliance with IAS 36 requirements as they provided information about terminal growth rate for each CGU. 64 % of companies were partially compliant because they included only disclosure on a range of terminal growth rates or a single growth rate for all CGUs. Consequently, only about 7 % of companies did not have any disclosure on terminal discount rate. Even these results show that Swedish companies improved the degree of compliance with subparagraph 134 (d) (iv). In the study by Junger and Kull (2007) the degree of compliance with this requirement was only 36 %. However, the findings of this study show that there is still some room for improvement as the majority of the studied companies do not provide specific growth rate per CGU.

About 30 % of the studied companies applied a growth rate equal or exceeding 3 %. Only about 11 % of issuers used a terminal growth rate equal to 0 or negative terminal growth rate. The distribution of the disclosed discount rate is shown in Figure 4.2.



39 % of the companies under study disclosed the *discount rate* specific for each CGU (134 (d) (v)), whereas 61 % disclosed an average discount rate or a range of discount rates. Thus, 100 % of the companies provided some type of disclosure on the discount rate which is a high degree of compliance. The majority of the companies (67 %) used discount rates between 8 and 12 %. In comparison with the ESMA report (2013), this study shows that on the one hand, Swedish companies are generally better at disclosing the discount rate (compare with 8 % of non-disclosure companies according to the ESMA report). On the other hand, the majority of the studied companies do not provide a CGU-specific discount rate which is required.

Regarding disclosures on *fair value less costs to sell*, only two companies under study used fair value less costs to sell. One company used offers received, whereas the other company used comparable transactions in order to determine the recoverable amount.

4.2.5 Sensitivity Analysis

The calculations of the degree of compliance for sensitivity analysis are based on the sample of 40 companies (23 % of the population). As it was mentioned earlier, disclosures on sensitivity analysis depend on management judgement. Therefore, only companies that disclosed the statement indicating that reasonably possible changes in key assumptions could cause an impairment loss were assessed here.

Only 30 % of the sample disclosed all the information on sensitivity analysis required by subparagraph 134 (f) of IAS 36. The highest degree of compliance was observed for subparagraph 134 (f) (ii) (disclosure on values of key assumptions) with the score of 92,5 %. This requirement was easier to meet, because this type of disclosure is required by other subparagraphs and the majority of companies disclosed values assigned to the discount rate and the terminal growth rate. Only 30 % of companies disclosed the amount by which the recoverable amount of the unit exceeds its recoverable amount (headroom) (134 (f) (i)). It appears that the companies are reluctant to disclose this type of information, because it is

considered to be sensitive. For example, several companies avoided to disclose values and headroom in numbers and used different type of index to provide this information.

Even these findings are in line with the results of the ESMA report (2013) which showed that European companies were reluctant to provide all the information required by subparagraph 134 (f). This study shows that Swedish companies are somewhat better at complying with the requirements regarding sensitivity analysis (only 25 % of European companies provided all this information compared to 30 % of Swedish companies). However, negative confirmation of impairment that is criticized in the ESMA report (2013) is a widely spread practice even in Sweden. Therefore, there is much room for improvement regarding disclosure on sensitivity analysis for Swedish companies.

To sum up, the goodwill impairment rate of Swedish companies in 2011 was 2,2 %. About 17 % of the studied companies recognized a goodwill impairment loss with relatively high goodwill impairment rate in Consumer Services and Consumer Goods. The majority of Swedish companies used value in use as a basis for determination of recoverable amount. Regarding the degree of compliance with different subparagraphs in paragraph 134 of IAS 36, the study shows that the majority of the studied companies provided complaint disclosures for several subparagraphs of IAS 36 with the degree of compliance of more than 80 %. At the same time, the studied companies seem to have difficulties in disclosing the approach used to determine values of key assumptions and the headroom between the recoverable and the carrying amount in the sensitivity analysis. Degree of compliance with each of the Index items is available in Appendix 7.

4.3 Relationships between the Studied Variables

In order to exemplify the simple relationships between the studied variables, the correlation matrix is used. Table 4.7 contains the correlation matrix for the studied variables prepared by using SPSS. The correlation coefficient shows both the direction and the strength of the relationship between the variables. The correlation coefficient (r) can range from -1 to + 1. When r is close to -1, it indicates a negative linear relationship between the variables. When r is close to + 1, it indicates a positive linear relationship between the variables. When r = 0, there is no linear relationship between the studied variables (Newbold et al., 2010).

Table 4.7 Correlation Matrix

	Index	Basic Materials	Consumer Goods	Consumer Services	Financials	Health Care	Industrials	Oil & Gas	Technology	Telecommunications	Utilities	Ernst & Young	PwC	Deloitte	KPMG	Not Big 4 Audit Firms	Large Cap	Mid Cap	Small Cap	Turnover	Goodwill amount	Goodwill impairment	ROA	Debt-to-asset
Index	1																							
Basic Materials	,148*	1																						
	(,053)																							
Consumer Goods	,050	-,080	1																					
	(,512)	*(,296)*																						
Consumer Services	-,017	-,082	-,135*	1																				
	(,827)	*(,283)*	*(,077)*																					
Financials	,049	-,063	-,104	-,107	1																			
	(,526)	*(,410)*	*(,176)*	*(,164)*																				
Health Care	-,152**	-,071	-,116	-,119	-,092	1																		
	(,047)	*(,357)*	*(,129)*	*(,119)*	*(,232)*																			
Industrials	,027	-,153**	-,252***	-,259***	-,199***	-,223***	1																	
	(,723)	*(,044)*	*(,001)*	*(,001)*	*(,009)*	*(,003)*																		
Oil & Gas	-,100	-,024	-,039	-,040	-,031	-,035	-,075	1																
	(,193)	*(,755)*	*(,608)*	*(,598)*	*(,686)*	*(,651)*	*(,326)*																	
Technology	-,076	-,102	-,167**	-,171**	-,131*	-,147*	-,319***	-,050	1															
	(,323)	*(,185)*	*(,029)*	*(,025)*	*(,086)*	*(,054)*	*(,000)*	*(,516)*																
Telecomminucations	,084	-,038	-,063	-,065	-,049	-,055	-,120	-,019	-,080	1														
	(,272)	*(,619)*	*(,413)*	*(,400)*	*(,519)*	*(,470)*	*(,116)*	*(,807)*	*(,300)*															
Utilities	,027	-,017	-,028	-,029	-,022	-,024	-,053	-,008	-,035	-,013	1													
	(,724)	*(,826)*	*(,718)*	*(,710)*	*(,776)*	*(,750)*	*(,489)*	*(,914)*	*(,647)*	*(,863)*														
Ernst & Young	-,114	,158**	-,142*	,070	,123	,032	-,113	,078	-,048	,081	-,039	1												
	(,138)	*(,039)*	*(,063)*	*(,361)*	*(,107)*	*(,677)*	*(,138)*	*(,312)*	*(,530)*	*(,290)*	*(,608)*													

	Index	Basic Materials	Consumer Goods	Consumer Services	Financials	Health Care	Industrials	Oil and Gas	Technology	Telecommunications	Utilities	Ernst & Young	PwC	Deloitte	KPMG	Not Big 4 Audit	Large Cap	Mid Cap	Small Cap	Turnover	Goodwill amount	Goodwill impairment	ROA	Debt-to-asset
PwC	,133*	-,134*	,019	-,069	-,112	-,032	,056	-,093	,163**	-,009	,089	-,442***	1											
	(,082)	*(,080)*	*(,807)*	*(,370)*	*(,143)*	*(,677)*	*(,465)*	*(,224)*	*(,032)*	*(,911)*	*(,245)*	*(,000)*												
Deloitte	-,087	,006	,038	-,080	-,035	,134*	-,020	,130*	-,071	,045	-,028	-,187**	-,311***	1										
	(,254)	*(,938)*	*(,619)*	*(,298)*	*(,648)*	*(,081)*	*(,797)*	*(,090)*	*(,354)*	*(,556)*	*(,718)*	*(,014)*	*(,000)*											
KPMG	,084	,009	,058	,089	,051	-,082	,058	-,060	-,108	-,095	-,042	-,283***	-,473***	-,200***	1									
	(,271)	*(,905)*	*(,451)*	*(,246)*	*(,508)*	*(,288)*	*(,449)*	*(,437)*	*(,159)*	*(,214)*	*(,583)*	*(,000)*	*(,000)*	*(,009)*										
Not Big 4 Audit Firms	-0,207***	-,029	,090	-,050	-,038	-,043	,002	-,014	,056	-,023	-,010	-,069	-,114	-,048	-,073	1								
	(,006)	*(,702)*	*(,239)*	*(,517)*	*(,620)*	*(,578)*	*(,977)*	*(,851)*	*(,467)*	*(,764)*	*(,894)*	*(,372)*	*(,135)*	*(,529)*	*(,339)*										
Large Cap	,225***	,064	,000	-,051	,241***	,000	-,029	,063	-,195**	,140*	-,044	-,099	-,007	,042	,095	-,077	1							
	(,003)	*(,406)*	*(1,00)*	*(,504)*	*(,001)*	*(1,00)*	*(,709)*	*(,414)*	*(,011)*	*(,067)*	*(,565)*	*(,196)*	*(,930)*	*(,585)*	*(,213)*	*(,316)*									
Mid Cap	-,064	,044	,133*	,158**	,014	-,113	,001	,052	-,154**	-,109	-,048	-,008	,005	-,068	,018	,113	-,364***	1						
	(,406)	*(,566)*	*(,083)*	*(,038)*	*(,851)*	*(,138)*	*(,987)*	*(,501)*	*(,043)*	*(,154)*	*(,530)*	*(,916)*	*(,945)*	*(,374)*	*(,810)*	*(,141)*	*(,000)*							
Small Cap	-,138*	-,095	-,120	-,098	-,223***	,103	,024	-,101	,309***	-,023	,082	,093	,001	,025	-,099	-,035	-,538***	-,589***	1					
	(,072)	*(,214)*	*(,117)*	*(,198)*	*(,003)*	*(,180)*	*(,757)*	*(,187)*	*(,000)*	*(,769)*	*(,285)*	*(,224)*	*(,989)*	*(,741)*	*(,194)*	*(,647)*	*(,000)*	*(,000)*						
Turnover	,220***	,122	,061	-,006	,189**	-,171**	,169**	,076	-,366***	,086	-,085	-,090	-,031	,011	,131*	-,054	,777***	,036	-,708***	1				
	(,004)	*(,110)*	*(,427)*	*(,940)*	*(,013)*	*(,025)*	*(,027)*	*(,320)*	*(,000)*	*(,262)*	*(,268)*	*(,239)*	*(,688)*	*(,887)*	*(,086)*	*(,480)*	*(,000)*	*(,637)*	*(,000)*					
Goodwill amount	-,004	-,107	-,118	,078	-,217***	,061	,048	-,126*	,207***	-,032	-,101	-,024	,141*	-,133*	-,038	-,009	-,187**	-,016	,177**	-,158**	1			
	(,958)	*(,164)*	*(,123)*	*(,309)*	*(,004)*	*(,425)*	*(,532)*	*(,099)*	*(,006)*	*(,674)*	*(,186)*	*(,756)*	*(,065)*	*(,081)*	*(,618)*	*(,907)*	*(,014)*	*(,838)*	*(,020)*	*(,039)*				
Goodwill impairment	,117	-,066	,209***	,142*	-,039	-,080	-,151**	-,032	,050	-,052	-,023	-,049	-,087	,012	,139*	,000	,001	-,075	,067	-,052	,108	1		
	(,126)	*(,391)*	*(,006)*	*(,063)*	*(,608)*	*(,299)*	*(,047)*	*(,674)*	*(,518)*	*(,502)*	*(,767)*	*(,526)*	*(,258)*	*(,875)*	*(,069)*	*(,997)*	*(,992)*	*(,330)*	*(,382)*	*(,501)*	*(,160)*			
ROA	-,055	,018	,049	-,074	-,046	-,158**	,124	,079	-,019	,029	-,023	-,114	,102	,032	-,056	,073	,137*	,202***	-,302***	,309***	-,139*	-,419***	1	
	(,472)	*(,815)*	*(,521)*	*(,335)*	*(,547)*	*(,038)*	*(,105)*	*(,300)*	*(,809)*	*(,704)*	*(,766)*	*(,138)*	*(,184)*	*(,680)*	*(,464)*	*(,342)*	*(,074)*	*(,008)*	*(,000)*	*(,000)*	*(,069)*	*(,000)*		
Debt-to-asset	,103	,032	-,004	,044	,100	-,145*	,150*	-,005	-,257***	,062	,182**	,004	-,083	,030	,088	-,061	,210***	-,107	-,085	,318***	-,064	,108	-,134*	1
	(,178)	*(,680)*	*(,955)*	*(,568)*	*(,193)*	*(,058)*	*(,050)*	*(,947)*	*(,001)*	*(,422)*	*(,017)*	*(,955)*	*(,282)*	*(,693)*	*(,250)*	*(,430)*	*(,006)*	*(,162)*	*(,267)*	*(,000)*	*(,404)*	*(,159)*	*(,079)*	

Correlation is significant (marked cursive script) at the 0,1* level (2-tailed), 0,05** level(2-tailed), 0,01***level (2-tailed)

The correlation matrix shows that there are several statistically significant relationships between the studied variables.

First of all, the correlation matrix shows that Index (the degree of compliance with disclosure requirements in paragraph 134 of IAS 36) has a statistically significant correlation with some of the independent variables. The results indicate that Index has a statistically significant correlation with two industries: a positive correlation with Basic Materials and a negative correlation with Health Care. There is a statistically significant correlation between Index and two of the Audit Firm variables: a positive correlation with PwC and a very strong negative correlation with Not Big 4 Audit Firms. Furthermore, Index has a very strong positive correlation with Large Cap, a negative correlation with Small Cap and a very strong positive correlation with Turnover. The positive relationships between Index and Turnover as well as a positive relationship between Index and Large Cap and a negative relationship between Index and Small Cap were in line with our expectations. The reasons why larger companies tend to have a higher level of disclosure have been discussed in Chapter 2. One of possible explanations is that larger companies have more users of financial information and therefore they spend more resources on disclosure. Even a negative relationship between Index and Not Big 4 Audit Firms was expected, because Big 4 audit firms are generally considered to provide better audit quality. At the same time, the correlation matrix shows a significant positive correlation with just one of four Big 4 audit firms, PwC. As for relationships between Index and two of the studied industries, these relationships were difficult to predict. This study shows that companies operating in Basic Materials are generally better at disclosing information on goodwill impairment tests, whereas companies belonging to Health Care seem to disclose less information required by paragraph 134 of IAS 36.

Regarding Audit firm variables, Ernst & Young, PwC and Deloitte have statistically significant correlations with several industry variables. For example, Basic Materials has a positive correlation with Ernst & Young and a negative correlation with PwC, which can be interpreted to mean that companies operating in Basic Materials use more often Ernst & Young and more seldom PwC as their audit firm. At the same time, PwC has a statistically significant positive correlation with Technology which indicates that Technology companies use more often PwC as an audit firm. Deloitte has a statistically significant positive correlation with Health Care and Oil & Gas which shows that in these industries companies' audit firm is more often Deloitte.

Even variables based on companies' market value (Large, Mid and Small Cap) have several statistically significant correlations with several industry variables. Thus, Large Cap shows a positive correlation with Financials and Telecommunications and a negative correlation with Technology, which indicates that if a company belongs to Financials or Telecommunications, it is more often rated as a Large Cap company than a Mid or Small Cap one. At the same time, companies, operating in Technology, are more seldom Large Cap companies. The latter is also confirmed by a positive correlation between Small Cap and Technology. Small Cap has also a negative correlation with Financials that shows that Financials companies are more seldom rates as Small Cap which confirmed a positive correlation between Financials and Large Cap. Mid Cap has a statistically significant correlation with Consumer Goods and

Consumer Services and a negative correlation with Technology. These relationships can be interpreted to mean that companies operating in Consumer Goods and Consumer Services are more often rated as Mid Cap companies, whereas Technology companies are more seldom classified as Mid Cap. These relationships are confirmed by descriptive statistics.

Regarding the company size variable Turnover, the correlation matrix shows several statistically significant correlations. Thus, Turnover has a positive correlation with Financials and Industrials, which indicates that these industries have companies with higher turnover. At the same time, there is a negative correlation between Turnover and Health Care and a very strong negative correlation between Turnover and Technology, which means that companies operating in Health Care and Technology have a lower turnover. Similar relationships between company size and industry variables Financials and Technology were found when interpreting relationships between market value and industry type above. Turnover has even a statistically significant correlation with one of the studied audit firms, KPMG, which can be interpreted to mean that companies with larger turnover tend to use more often KPMG as their audit firm. Turnover has even a very strong statistically significant correlation with Large Cap and Small Cap. Both of them have high coefficients. The correlation between these variables was discussed in Chapter 3 where it was argued that high correlation between independent variables may cause problems in multiple regression analysis.

As for goodwill-related variables, even here several statistically significant relationships were found. Thus, Goodwill amount is positively correlated with Technology and negatively correlated with Financials and Oil & Gas, which indicates that Technology companies tend to have more goodwill on their balance sheet, whereas companies in Financials and Oil & Gas tend to have a lower amount of goodwill. Furthermore, there is a statistically significant correlation between Goodwill amount and two audit firms. Goodwill has a positive correlation with PwC and a negative correlation with Deloitte which can be interpreted to mean that PwC seems to have more clients with a larger goodwill amount, whereas Deloitte tends to have clients with a lower amount of goodwill. The correlation matrix shows that there is a relationship between company size and the amount of goodwill. Goodwill amount is negatively correlated with both Large Cap and Turnover and positively correlated with Small Cap. These correlations may be interpreted to mean that companies with larger turnover or classified as Large Cap seem to have a lower amount of goodwill in percent of total assets. Regarding goodwill impairment rate, this variable has a statistically significant positive correlation with Consumer Goods and Consumer Services. These results show that companies operating in these industries tend to have a higher goodwill impairment rate that companies in other industries, which is in line with the results shown in the descriptive statistics (see Table 4.3).

Regarding return on assets (ROA), there is a negative correlation between ROA and Health Care, which means that Health Care companies seem to have a lower ROA. Furthermore, ROA has a very strong positive correlation with turnover and a positive correlation with Large and Mid Cap. At the same time, there is a strong negative correlation between ROA and Small Cap. These results can be interpreted to mean that companies with a larger turnover or the companies that belong to Large or Mid Cap tend to have a higher ROA, whereas

companies that are classified as Small Cap seem to have a lower ROA. Besides, the correlation matrix shows even statistically significant correlations between ROA and goodwill-related variables. Thus, ROA has a negative correlation with both amount of goodwill and goodwill impairment rate, which indicates that companies that have a higher ROA tend to have a lower amount of goodwill on their balance sheet. Furthermore, goodwill impairment rate seems to be lower for those companies that have a higher ROA. This relationship can be easily explained as goodwill impairment loss has a negative impact on earnings.

Finally, the variable Debt-to-asset ratio is positively correlated with Industrials and Utilities and negatively correlated with Health Care and Technology, which means that companies, operating in Industrials and Utilities seem to be more highly leveraged, whereas companies in Health Care and Technology tend to be financed more through equity. Besides, there is a statistically significant correlation between debt-to-asset ratio and company size, namely Large Cap and Turnover. This shows that companies with a larger turnover or those that are Large Cap tend to be more highly leveraged. At the same time, companies with a higher debt-to-asset ratio seem to have a lower profitability (a negative correlation between debt-to-asset ratio and ROA).

To sum up, Large Cap companies that operate in Basic Materials have a large turnover and PwC as an audit firm appears to be in better compliance with disclosure requirements in IAS 36 in comparison with other companies. At the same time, Small Cap companies that operate in Health Care and have a not Big 4 audit firm seem to have a lower degree of compliance with disclosure requirements regarding goodwill impairment tests. Furthermore, Technology companies in Small Cap seem to have a higher amount of goodwill on their balance sheet, whereas companies in Financials and Oil & Gas rated as Large Cap tend to have a lower amount of goodwill in percent of total assets. Besides, PwC seem to have more clients with a higher amount of goodwill, whereas Deloitte tend to have clients with lower amount of goodwill. Finally, companies in Consumer Goods and Consumer Services seem to have a higher goodwill impairment rate in 2011.

In order to examine further the relationships between the studied variables, a multiple regression analysis is done. The results of this analysis are discussed in the next section.

4.4 Multiple Regression Analysis

As it was discussed in the chapter on Methodology, the independent variable Turnover is highly correlated with two other independent variables Large and Small Cap. Therefore, we decided to use two versions of multiple regression model. In the first model, the variable Turnover was excluded. In the second model, dummy variables for segments in accordance with market value, namely Large, Mid and Small Cap, were excluded. Below, we show the results of the two final multiple regression models.

Multiple regression model 1 with excluded variable turnover is described below:

$$Y = \alpha_0 + [\beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10}] + [\beta_{11} X_{11} + \beta_{12} X_{12} + \beta_{13} X_{13} + \beta_{14} X_{14} + \beta_{15} X_{15}] + [\beta_{16} X_{16} + \beta_{17} X_{17} + \beta_{18} X_{18}] + \beta_{19} X_{19} + \beta_{20} X_{20} + \beta_{21} X_{21} + \beta_{22} X_{22} + \varepsilon$$

Table 4.8 Definition of the studied variables for Multiple regression model 1

Dependent variable	**Definition**
Index (Y)	A ratio of actual disclosure to total possible disclosure, measured in percent
Independent variables	
Basic materials (X_1)	Dummy variable: 1 if the company's industry is Basic Materials, 0 if otherwise
Consumer Goods (X_2)	Dummy variable: 1 if the company's industry is Consumer Goods, 0 if otherwise
Consumer Services (X_3)	Dummy variable: 1 if the company's industry is Consumer Services, 0 if otherwise
Financials (X_4)	Dummy variable: 1 if the company's industry is Financials, 0 if otherwise
Health Care (X_5)	Dummy variable: 1 if the company's industry is Health Care, 0 if otherwise
Industrials (X_6)	Dummy variable: 1 if the company's industry is Industrials, 0 if otherwise
Oil & Gas (X_7)	Dummy variable: 1 if the company's industry is Oil & Gas, 0 if otherwise
Technology (X_8)	Dummy variable: 1 if the company's industry is Technology, 0 if otherwise
Telecommunications (X_9)	Dummy variable: 1 if the company's industry is Telecommunications, 0 if otherwise
Utilities (X_{10})	Dummy variable: 1 if the company's industry is Utilities, 0 if otherwise
Ernst & Young (X_{11})	Dummy variable: 1 if the company's audit firm is Ernst & Young , 0 if otherwise
PwC (X_{12})	Dummy variable: 1 if the company's audit firm is PwC, 0 if otherwise
Deloitte (X_{13})	Dummy variable: 1 if the company's audit firm is Deloitte, 0 if otherwise
KPMG (X_{14})	Dummy variable: 1 if the company's audit firm is KPMG, 0 if otherwise
Not Big 4 (X_{15})	Dummy variable: 1 if the company's audit firm is Not Big 4, 0 if otherwise
Large Cap (X_{16})	Dummy variable: 1 if the company is Large Cap, 0 if otherwise
Mid Cap (X_{17})	Dummy variable: 1 if the company is Mid Cap, 0 if otherwise
Small Cap (X_{18})	Dummy variable: 1 if the company is Small Cap, 0 if otherwise
Amount of goodwill (X_{19})	$\frac{\text{amount of goodwill recognized at the end of the fiscal year}}{\text{total assets at the end of the fiscal year}}$
Goodwill impairment rate (X_{20})	$\frac{\text{goodwill impairment recognized during the fiscal year}}{\text{amount of goodwill recognized at the beginning of the fiscal year}}$
ROA (X_{21})	$\frac{\text{income after financial incomes}}{\text{total assets at the end of the fiscal year}}$
Debt-to-asset ratio (X_{22})	$\frac{\text{total liabilities at the end of the fiscal year}}{\text{total assets at the end of the fiscal year}}$

The coefficients and their statistic significance are shown in Table 4.9.

Table 4.9 Results of Multiple regression model 1

Variable	Coefficients	Std. error	Sig.
Constant	0,713	0,048	0,000
Basic Materials	0,100*	0,055	0,069
Consumer Goods	0,007	0,038	0,858
Consumer Services	– 0,022	0,037	0,548
Financials	– 0,001	0,047	0,999
Health Care	– 0,076*	0,042	0,075
Oil & Gas	– 0,115	0,104	0,269
Technology	– 0,026	0,034	0,456
Telecomminucations	0,056	0,067	0,403
Utilities	0,046	0,145	0,753
Ernst & Young	– 0,058*	0,031	0,061
Deloitte	– 0,055	0,037	0,139
KPMG	– 0,018	0,029	0,534
Not Big 4 Audit Firms	– 0,236***	0,083	0,005
Large Cap	0,069**	0,031	0,028
Mid Cap	0,011	0,029	0,712
Goodwill	0,025	0,072	0,730
Goodwill impairment	0,166	0,157	0,292
ROA	– 0,084	0,097	0,389
Debt-to-asset	– 0,007	0,062	0,915

*p < 0,1 **p <0,05 ***p < 0,01 N=172 $R^2 = 0,091$

First of all, the multiple regression analysis shows that independent variables Amount of goodwill, Goodwill impairment rate, ROA and Debt- to-asset ratio do not seem to influence the degree of compliance with disclosure requirements. At the same time, several institutional factors show statistically significant impact on the Index-variable. Basic Materials has a statistically significant positive relationship with Index. Besides, Basic Materials has a very high positive coefficient. At the same time, Health Care has a statistically significant negative relationship with Index. Not Big 4 Audit Firms have a very high negative coefficient and a significance level of 1%. Variable Large Cap shows a positive and significant relationship with Index. These results are in line with the analysis of correlation matrix. At the same time, regression analysis shows that Ernst & Young has a significant negative relationship with Index which we could not see from the correlation matrix. However, it can be easily explained. As our multiple regression model contains a lot of dummy variables, one dummy variable from each category implicitly serves as the baseline to which the other dummy-variables are compared. The baseline dummy variable for Audit Firms is PwC which has a significant positive correlation with Index (see the correlation matrix). Therefore, the results that regression analysis shows for Ernst & Young can be interpreted in the following way: if we have two companies that have the same characteristics with one exception that one of them has PwC and the other Ernst & Young as an audit firm, then the company that has Ernst & Young tends to have a lower disclosure index than the company that has PwC by 5,8 %. Therefore, even these results are in line with our interpretation of the correlation matrix.

It should be mentioned that constant coefficient has a very high value and a very significant level. The high constant coefficient can be explained partially by the baseline which includes three dummy variables from three different categories: PwC, Industrials and Small Cap. Another explanation may be the existence of other company characteristics that influence the

dependent variable, Index, and are not examined in this study. The value of the adjusted R-square shows that only 9,1 % of the variation in the dependent variable Index may be explained by the independent variables studied in this thesis. Therefore, the degree of compliance with disclosure requirements seems to be affected even by other company characteristics not examined in this study.

Multiple regression model 2 with excluded dummy variables Large, Mid and Small Cap is described below:

$$Y = \alpha_0 + [\beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10}] + [\beta_{11} X_{11} + \beta_{12} X_{12} + \beta_{13} X_{13} + \beta_{14} X_{14} + \beta_{15} X_{15}] + \beta_{16} X_{16} + \beta_{17} X_{17} + \beta_{18} X_{18} + \beta_{19} X_{19} + \beta_{20} X_{20} + \varepsilon$$

Table 4.10 Definition of the studied variables for Multiple regression model 2

Dependent variable	**Definition**
Index (Y)	A ratio of actual disclosure to total possible disclosure, measured in percent
Independent variables	
Basic materials (X_1)	Dummy variable: 1 if the company's industry is Basic Materials, 0 if otherwise
Consumer Goods (X_2)	Dummy variable: 1 if the company's industry is Consumer Goods, 0 if otherwise
Consumer Services (X_3)	Dummy variable: 1 if the company's industry is Consumer Services, 0 if otherwise
Financials (X_4)	Dummy variable: 1 if the company's industry is Financials, 0 if otherwise
Health Care (X_5)	Dummy variable: 1 if the company's industry is Health Care, 0 if otherwise
Industrials (X_6)	Dummy variable: 1 if the company's industry is Industrials, 0 if otherwise
Oil & Gas (X_7)	Dummy variable: 1 if the company's industry is Oil & Gas, 0 if otherwise
Technology (X_8)	Dummy variable: 1 if the company's industry is Technology, 0 if otherwise
Telecommunications (X_9)	Dummy variable: 1 if the company's industry is Telecommunications, 0 if otherwise
Utilities (X_{10})	Dummy variable: 1 if the company's industry is Utilities, 0 if otherwise
Ernst & Young (X_{11})	Dummy variable: 1 if the company's audit firm is Ernst & Young , 0 if otherwise
PwC (X_{12})	Dummy variable: 1 if the company's audit firm is PwC, 0 if otherwise
Deloitte (X_{13})	Dummy variable: 1 if the company's audit firm is Deloitte, 0 if otherwise
KPMG (X_{14})	Dummy variable: 1 if the company's audit firm is KPMG, 0 if otherwise
Not Big 4 Audit Firms (X_{15})	Dummy variable: 1 if the company's audit firm is Not Big 4, 0 if otherwise
Turnover (X_{16})	Natural logarithm of turnover (tSEK)
Amount of goodwill (X_{17})	$\frac{\text{amount of goodwill recognized at the end of the fiscal year}}{\text{total assets at the end of the fiscal year}}$
Goodwill impairment rate (X_{18})	$\frac{\text{goodwill impairment recognized during the fiscal year}}{\text{amount of goodwill recognized at the beginning of the fiscal year}}$
ROA (X_{19})	$\frac{\text{income after financial incomes}}{\text{total assets at the end of the fiscal year}}$
Debt-to-asset ratio (X_{20})	$\frac{\text{total liabilities at the end of the fiscal year}}{\text{total assets at the end of the fiscal year}}$

The coefficients and their statistical significance are shown in Table 4.11:

Table 4.11 Results of Multiple regression model 2

Variable	Coefficients	Std. error	Sig.
Constant	0,518	0,106	0,000
Basic Materials	0,102*	0,054	0,063
Consumer Goods	0,010	0,038	0,796
Consumer Services	– 0,017	0,037	0,650
Financials	0,013	0,045	0,777
Health Care	– 0,057	0,042	0,174
Oil & Gas	– 0,108	0,103	0,297
Technology	– 0,011	0,035	0,753
Telecomminucations	0,072	0,066	0,279
Utilities	0,065	0,147	0,657
Ernst & Young	– 0,062**	0,030	0,044
Deloitte	– 0,055	0,037	0,135
KPMG	– 0,019	0,029	0,513
Not Big 4 Audit Firms	– 0,237***	0,083	0,005
Goodwill	0,011	0,072	0,881
Goodwill impairment	0,169	0,157	0,284
ROA	– 0,109	0,099	0,272
Debt-to-asset	– 0,020	0,063	0,754
Turnover	0,015**	0,007	0,038

*p < 0,1 **p <0,05 ***p < 0,01 N=172 $R^2 = 0{,}091$

Multiple regression model 2 shows similar results to those of Multiple regression model 1. The results indicate that goodwill-related factors do not seem to influence the degree of compliance with goodwill disclosure requirements. Even in this model, institutional variables, Basic materials, Ernst & Young and Not Big 4 Audit Firms, have a statistically significant relationship with Index. The interpretation is the same as for regression model 1, namely that companies operating in Basic Materials seem to be better at disclosing on goodwill impairment testing in comparison with the baseline category Industrials. The negative relationship between Index and Ernst & Young and Not Big 4 Audit Firms can be interpreted to mean that companies that have Ernst & Young seem to disclose less information required by paragraph 134 of IAS 36 than those companies that have PwC. Not Big 4 Audit Firms variable has a high negative coefficient with a significant level of 1 %, like in Multiple regression model 1. As the dummy variables, Large, Mid and Small Cap were excluded from this regression model, and the variable Turnover was introduced, the multiple regression analysis shows a new significant relationship, between the variable turnover and Index with a coefficient of 0,069 at the significance level of 5 %. These results can be interpreted to mean that companies with a larger turnover seem to be better at complying with disclosure requirements, which is in line with our predictions and the interpretation of the correlation matrix.

Even multiple regression model 2 has an adjusted R-square of 9, 1 % which means that 9,1 % of the variation in the variable Index may be explained by the independent variables included in the model.

To sum up, the results of both multiple regression models show that only 9,1 % of the variation in the degree of compliance with disclosure requirements in paragraph 134 of IAS 36 can be explained by the company-specific, institutional and goodwill-related company

characteristics, studied in this thesis. The multiple regression analysis shows no significant relationships between the degree of compliance and goodwill-related factors, which confirms the results of Junger and Kull's (2007) study. Furthermore, the analysis indicates that ROA and debt-to-asset ratio have no significant influence on the degree of compliance. At the same time, the company-specific variable company size in the form of both types of independent variables: Turnover and the dummy variable Large Cap seem to have a positive impact on the degree of compliance with the significant level of 5 %. Even several institutional company characteristics appear to have a significant impact on the degree of compliance. Thus, companies operating in Basic Materials seem to be better at complying with disclosure requirements. Furthermore, companies that have PwC as their audit firm appear to be in better compliance with disclosure requirements as regression analysis shows significant difference between PwC and Ernst & Young and PwC and Not Big 4 Audit Firms.

Comparing the results of this study with previous studies of both mandatory and voluntary disclosure, it should be noted that this study partly confirms the results of previous studies. Thus, this study confirms that the company size has a positive impact on the disclosure level. In this study, two different company size variables were tested and both showed a significant relationship. Possible explanations for positive relationships between company size and disclosure level were discussed in Chapter 2. Several of these explanations may be relevant in the discussion of the possible explanations for a positive relationship between the degree of compliance with disclosure requirements and company size. Firstly, larger companies have resources to employ highly skilled specialists which may have more knowledge about impairment testing procedures. Secondly, larger companies usually use a lot of information for internal reporting, therefore the majority of information required for goodwill impairment disclosure may be obtained easily without extra costs. Finally, larger companies may be more concerned about disclosing important information for users of financial statements because they tend to be more exposed to public scrutiny.

Furthermore, this study shows that institutional factors seem to influence the degree of compliance. These results are in line with the results of Cooke's (1989a, 1989b, 1992) and Camfferman and Cooke's (2002) studies that showed the existence of relationship between industry type and disclosure level. Furthermore, this study shows that audit firms seem to influence the degree of compliance. Both the correlation matrix and multiple regression analysis shows that there is a significant difference in the degree of compliance with disclosure requirements between companies that have Big 4 audit firms and those that have not Big 4 audit firms. Besides, it appears that clients of one of Big 4 audit firms, namely PwC, seem to be in better compliance with disclosure requirements. The possible explanation why companies that have PwC as their audit firm are better at disclosing information about their goodwill impairment testing may be found in the correlation matrix. PwC seem to have clients with a larger amount of goodwill on their balance sheet, therefore it is possible that PwC's auditors have better routines and are more critical when auditing disclosure on goodwill impairment testing.

At the same time, this study shows no significant relationships between high performance and disclosure level or financial needs and disclosure level. However, it should be mentioned that

even previous disclosure studies of the impact of high performance on disclosure level showed mixed results. There are several possible reasons why the results of this study do not show significant relationship between the discussed company characteristics. Firstly, this study examined a specific disclosure type, mandatory disclosure regarding goodwill impairment tests, which probably affects the relationship between high performance and disclosure level. Secondly, high performance and financial needs can be measured in different ways. The choice of measure for these variables might have influenced the results of this study.

Furthermore, we expected to find a better compliance with disclosure requirements for companies with a larger amount of goodwill on their balance sheet as we believed that companies should allocate more resources and provide more disclosure because an impairment loss may cause a significant effect on companies' earnings. One of the possible explanations why the results show no significant relationship between degree of compliance and the amount of goodwill may be found in the correlation matrix, discussed in Chapter 4. The study shows a negative relationship between company size and the amount of goodwill, which means that smaller companies, that are in less compliance with disclosure requirements in comparison with larger companies, tend to have proportionally higher amount of goodwill on their balance sheet. This relationship is explained in Rehnberg's study (2012) where the author argues that smaller and not-indebted companies indentify a smaller proportion of intangible assets in conjunction with their acquisition accounting, which consequently leads to the higher amount of goodwill on the balance sheet of the smaller companies. As it was mentioned in Chapter 2, Rehnberg (2012) suggests that companies are influenced by political and contract costs when applying the principle-based regulation. Rehnberg's study indicates that larger and more leveraged companies appear to apply the IFRS in a better way. A similar relationship was found in our study, as our results show that larger companies are in better compliance with disclosure requirements.

We also expected to find a significant impact of goodwill impairment rate on the degree of compliance as we believed that companies provide more disclosure when they actually recognize an impairment loss. Although goodwill impairment rate had a positive coefficient in our regression analysis, this relationship was not found to be statistically significant, which may be explained by the fact that a small number of companies recognized goodwill impairment loss which means that the number of observations was probably not enough to show a significant relationship.

4.5 Summary

This study shows that the population of the Swedish listed companies comprises a small number of companies with a relatively high turnover and a lot of companies with a relatively low turnover.

The descriptive statistics shows further that the impairment rate in 2011 was 2,2 % which is lower than the impairment rate for a sample of European countries in the ESMA report (2013). The degree of compliance with disclosure requirements in paragraph 134 of IAS 36, measures as Index, has the mean of 69,8 % and the median of 71,8 % which can be

considered relatively high. There are several requirements in paragraph 134 of IAS 36 that more than 80 % of the studied companies are in compliance with. The results show also that Swedish companies have difficulties in complying with the disclosure requirements regarding the description of the approach used to determine the values of key assumptions 134 (d) (ii), and the headroom between the recoverable amount and the carrying amount 134 (e) (i).

The correlation matrix shows several significant relationships between the studied variables. The dependent variable, Index, appears to have a positive correlation with Large Cap, Basic Materials, PwC and Turnover and a negative correlation with Small Cap, Health Care and Not Big 4 Audit Firms. These relationships were examined further with the help of two multiple regression models in order to find out to what extent the degree of compliance with disclosure requirements in paragraph 134 of IAS 36 can be explained by company-specific, institutional and goodwill-related company characteristics. The results show that company size, measured as turnover, has a positive impact on the degree of compliance. Even the other variable for company size (Large, Mid and Small Cap) indicates that there is a significant relationship between the degree of compliance and the size of the company. Furthermore, several institutional variables, namely industry type and audit firm seem to influence the degree of compliance. At the same time, the results show that goodwill-related company characteristics do not affect the degree of compliance with disclosure requirements. The results of the multiple regression analysis indicate further that only about 9,1 % of the degree of compliance with disclosure requirements can be explained by the company characteristics examined in the study.

5 Conclusions, Discussion, Contribution and Further Research

5.1 Conclusions

The research question of this thesis was to what extent company characteristics may explain the degree of compliance with disclosure requirements in paragraph 134 of IAS 36. In order to answer the research question, relationships between three different groups of company characteristics, namely company-specific, institutional and goodwill-related ones, and degree of compliance with disclosure requirements were examined with the help of multiple regression analysis. Company size measured as turnover and company's market value, company performance measured as return on assets and company's financial needs were chosen as company-specific characteristics. Institutional characteristics examined in this thesis are industry type and audit firm. Finally, the amount of goodwill and goodwill impairment rate were chosen as goodwill-related characteristics.

The results of this study, presented in Chapter 4, show that a combination of examined company characteristics explain about 9 % of the degree of compliance with disclosure requirements in paragraph 134 of IAS 36. Regarding company-specific characteristics, this study indicates that larger companies seem to have a higher degree of compliance with disclosure requirements, which is in line with our expectations. Both variables, used in this study to measure company size, have a statistically significant impact on the degree of compliance. At the same time, no significant relationships between company performance and degree of compliance as well as between financial needs and degree of compliance were found in this study. Furthermore, the study indicates that degree of compliance with disclosure requirements regarding goodwill impairment tests varies across industries and auditor firms. Thus, it was found that companies, operating in Basic Materials, seem to provide more compliant disclosures on goodwill impairment. Even companies that have PwC as their audit firm appear to be at better compliance with disclosure requirements in paragraph 134 of IAS 36. Finally, the results of this study show that goodwill-related characteristics do not seem to have a significant impact on the degree of compliance with disclosure requirements, as no significant relationships between the degree of compliance and the amount of goodwill on the balance sheet of the company and the degree of compliance and the goodwill impairment rate were found.

In order to measure the degree of compliance with disclosure requirements in paragraph 134 of IAS 36, the examination of goodwill impairment accounting practices was conducted. The descriptive statistics, provided in Chapter 4, shows that the impairment rate in 2011 was 2,2 %, which is lower than the impairment rate for a sample of European countries, studied by ESMA (2013). Based on the previous studies, where goodwill impairment accounting practices of Swedish companies were in focus, we expected to find a better degree of compliance in 2011 than during the first years of the IFRS implementation. The descriptive statistics on goodwill impairment tests, provided in Chapter 4, indicate that Swedish companies have improved their accounting practices related to goodwill impairment disclosure. The study shows a high degree of compliance with several subparagraphs of paragraph 134 of IAS 36. Thus, all the examined companies disclosed the growth rate, used to extrapolate cash flow projections and the rate, used to discount projected cash flows.

However, it should be mentioned that the companies under study often did not provide specific information for each CGU. Furthermore, this study indicates that Swedish companies still have difficulties in providing compliant disclosure on the subparagraphs that require more descriptive information, such as the description of the approach, used to determine the values of key assumptions. Finally, Swedish companies seem to be reluctant to provide information on the sensitivity analysis. The possible explanation is that companies do not want to disclose too much quantitative information as it may cause a significant commercial harm to the company. It is worth mentioning that the main purpose of disclosure on goodwill impairment is to provide users of financial accounts with the necessary information for evaluating the reliability of the impairment tests. The lack of quantitative information may influence this ability in a negative way.

5.2 Discussion

As the company characteristics, used in this study, explain only partially why some companies are better at complying with disclosure requirement, it is worth discussing what other factors might influence the level of goodwill impairment disclosure. In Chapter 2 we discussed various company characteristics that may influence the level of disclosure. The majority of them were included in our regression model. However, there were several company characteristics that we did not use in our final regression model. One of them is ownership dispersion. It may be considered to be one of company characteristics that may explain the degree of compliance with disclosure requirements related to goodwill impairment tests. When a company has many small shareholders, more disclosure is required in order to reduce the information asymmetry between the management and shareholders. Another company characteristic that has not been discussed in this study but might have an impact on the degree of compliance with disclosure requirements is company growth. A company that grows fast through mergers and acquisitions might have incentives to pay more attention to goodwill accounting practices as goodwill on the balance sheet may grow large and become significant. As earlier studies show, it requires some time for companies to learn how to comply with the IFRS requirements. Therefore, another company characteristic that might be interesting to examine is company's experience regarding goodwill impairment accounting practices. For instance, companies that provided goodwill disclosure in accordance with IAS 36 during all the years since 2005 might have developed extensive practices related to goodwill impairment tests and therefore might be more in compliance with the disclosure requirements in comparison with companies that provide this type of disclosure for the first time. Regarding other company characteristics that may influence the degree of compliance with disclosure requirements, factors of more qualitative character might be considered. It may be some internal factors, such as the organization of the company, for example, what level of the organization the persons responsible for the disclosure belong to, or whether a company has special routines and procedures when carrying out and providing disclosure on goodwill impairment tests.

One of the findings of this study is that variation in the degree of compliance with disclosure requirements may be explained by institutional characteristics in the form of industry type and audit firm. Therefore, it is worth discussing possible explanations to these relationships. One

of the possible explanations to why industry type influences the degree of compliance with disclosure requirements may be the fact that companies' behavior, in general, and accounting practices, in particular, may be influenced by the lead companies operating in the same industry. Smaller companies that do not have the same resources and the same experience, regarding corporate disclosure and goodwill impairment tests, in comparison with larger companies may look up to the larger companies and try to use similar accounting practices that larger companies have. For example, we could see that some companies within one and the same industry type use a similar text in their disclosures, regarding goodwill impairment. As the IFRS is a principle-based regulation, when companies face uncertainty, for example in the way a special requirement can be interpreted, it may create an extra incentive to use lead companies' accounting practices as examples.

This study shows also that the choice of audit firm influences the degree of compliance with disclosure requirements on goodwill impairment. The results indicate that there is not only a significant difference in the degree of compliance between companies that have Big 4 and companies that have Not Big 4 audit firms, but also that the degree of compliance varies significantly across clients of different Big 4 audit firms. It may be considered an indication that auditors do influence the accounting practices and not only audit financial reports. When examining financial reports of the studies companies, it was observed that the vast majority of listed companies choose one of Big 4 audit firms. It may be interpreted to mean that listed companies believe that Big 4 audit firms provide better service and are willing to pay a premium for it. Using a Big 4 firm may be of great importance for listed companies as users of financial information of listed companies require more trustworthy and reliable information and having an auditor from a Big 4 audit firm indicates that the required trustworthiness and reliability of financial information is achieved. The findings, that companies that have Not Big 4 audit firms seem to be in less compliance with disclosure requirements, are in line with our expectations. At the same time, we did not expect to find a significant difference in the degree of compliance with disclosure requirements across companies that have different Big 4 Audit Firms. It may indicate that Big 4 companies have different practices regarding auditing of disclosure on goodwill impairment tests or that interpretation of different requirements in IAS 36 may vary across Big 4 audit firms, which may influence the auditing process.

In Chapter 1 we mentioned the importance of disclosure on goodwill impairment tests for the users of financial information as this information is used by present and potential shareholders as well as by creditors when making decisions. At the same time, providing extensive disclosure makes great demands on companies. It requires both a lot of time and money, for example, companies must hire high-skilled specialists that are able to interpret the IFRS and provide the required disclosure. Another consideration that should be mentioned here is that even when companies have enough resources to provide compliant disclosure they may be unwilling to do it because they do not want to disclose more information than their competitors do, as well as because disclosing company-specific information may be harmful for the company. Even though the IASB tried to achieve a balance between the objectives of the disclosures and the potential magnitude of disclosures, a question arises whether the IASB succeeded in it. It was observed that companies' disclosure regarding goodwill impairment

tests often include standardized texts, for example the whole sentences taken from IAS 36, which do not contain any useful information for users of financial statements. Besides, companies seem to be reluctant to provide company-specific information of both quantitative and descriptive character which is important for users of financial information, for example, when they need to assess the reliability of goodwill impairment tests. The question, that arises, is whether goodwill impairment disclosures, provided by companies, achieve their objective, emphasized by the IASB, namely to provide users with information for evaluating the reliability of goodwill impairment tests.

5.3 Contribution and Further Research

The study conducted in this thesis combines two different areas of studies: studies of goodwill impairment practices and disclosure studies. The approach used for voluntary disclosure studies has been used in this study to examine the degree of compliance with disclosure requirements regarding goodwill impairment testing. As this study shows that several company characteristics have a significant impact on the degree of compliance with disclosure requirements in paragraph 134 of IAS 36, the results of this study may be of interest for users of financial reports, auditors, companies and standard setters.

The information on goodwill impairment tests is of great importance for users of financial information. Therefore, further studies of company characteristics that may explain the level of disclosure and degree of compliance with disclosure requirements might be fruitful.

Various types of studies can be conducted based on the results of this study. As this study shows that the degree of compliance can be explained by the examined company characteristics only to a small extent, it would be interesting to examine other factors. Possible factors that may be examined in further studies are company growth and ownership dispersion. Moreover, it might be interesting to do a similar study with a larger number of observations. Thus, a study of listed companies of NASDAQ OMX Nordic or a study of companies from different European countries may be conducted. Another possible path for further examination of degree of compliance with disclosure requirements might be a study of all the disclosure requirements regarding goodwill impairment testing in IAS 36 which will make it possible to obtain more items for the construction of Index.

Another kind of study would be to further examine accounting practices related to goodwill impairment testing in different industries because the results of this study show that there is a significant difference regarding the degree of compliance with disclosure requirements between companies operating in different industries. It would be also interesting to study more profoundly the considerations that companies have when deciding what information should be included in disclosures.

References

Botosan, C. A. (1997). Disclosure level and the cost of equity capital. *Accounting Review*. 72 (3), 323-350, 9 Charts.

Bryman, A., & Bell, E.(2011). *Business research methods.* Oxford: Oxford University Press.

Camfferman**,** K., Cooke, T. E.(2002). An Analysis of Disclosure in the Annual Reports of U.K. and Dutch Companies. *Journal of International Accounting Research*, 1(3), 3-28.

Carlin, T. M., Finch, N. (2011). Goodwill impairment testing under IFRS: a false impossible shore? *Pacific Accounting Review (Emerald Group Publishing Limited).* 23 (3), 368-392. doi: 10.1108/01140581111185544.

Cooke, T. E. (1989a). Disclosure in the Corporate Annual Reports of Swedish Companies. *Accounting and Business Research (Wolters Kluwer UK).* 19(74), 113-124.

Cooke, T. E. (1989b). Voluntary corporate disclosure by Swedish companies. *Journal of International Financial Management and Accounting*, 171-195.

Cooke, T. E. (1992). The impact of size, stock market listing and industry type on disclosure in the annual reports of Japanese listed corporations. *Accounting and Business Research*, 191-214.

Copeland, R. M., Fredericks, W. (1968).Extent of Disclosure. *Journal of Accounting Research*, 6(1), 106-113.3 Charts.

Edlund, C., Arnell, G. (2007). Lär av hur 60 svenska företag redovisade 2005 Andra året med IFRS. *Forefront*, 1, 25-26.

European Securities and Markets Authority. (2013).ESMA report. European enforcers review of impairment of goodwill and other intangible assets in the IFRS financial statements. France: European Securities and Markets Authority.

Financial Reporting Council. (2008).*Review of goodwill impairment disclosures.* London: Financial Reporting Council.

Financial Reporting Council. (2013) *About the FRC.* Retrieved 2013-03-02, from http://www.frc.org.uk/About-the-FRC.aspx

Firth, M.(1979). The impact of size, stock market listing and auditors on voluntary disclosure incorporate annual reports. *Accounting and Business Research*, 273-280.

Gauffin, B., Nilsson, S.-A. (2012). Fördjupning – Rörelseförvärv enligt IFRS 3 – sjunde året - hur stor kan goodwillposter bli? *Balans*, 12, 47.

Gauffin, B., Thörnsten, A.(2010). Fördjupning - Goodwillnedskrivningar 2009, en svårbedömd historia. *Balans*, 8-9,48.

Gauffin, B., Thörnsten, A.(2010). Fördjupning - Nedskrivning av goodwill. Få nedskrivningar 2008 som följd av finanskrisen. *Balans*, 1,38.

Hagberg, A.(2012). *Lönsamhet och finansiell flexibilitet. Rederinäring i Sverige 1997-2006* (Doctoral thesis). Göteborg: Handelshögskolan, Göteborgs universitet.

International financial reporting standards (IFRS) 2011:[official pronouncements issued at 1 January 2011. Includes IFRSs with an effective date after 1 January 2011 but not the IFRSs they will replace]. Part A, The conceptual framework and requierements/ International Accounting Standards Board. London: IASB.

Junger, C., Kull, J. (2007). Upplysningar enligt IAS 36 punkt 134 – Efterföljs kraven i större utsträckning år 2006 jämfört med år 2005?(Magisteruppsats). Göteborg: företagsekonomiska institutionen, Göteborgs universitet. From: http://www.uppsatser.se/uppsats/bb6dceaa78/

Lang, M., Lundholm, R.(1993). Cross-Sectional Determinants of Analyst Ratings of Corporate Disclosures. *Journal of Accounting Research*. 31(2), 246-271, 7 Charts.

Langton, J. (2013, 21 January). European regulator call for better disclosure on goodwill impairment. *Investment executive*. Retrieved 2013-02-01, from http://www.investmentexecutive.com/-/european-regulators-call-for-better-disclosure-on-goodwill-impairment?redirect=%2Fsearch

Leuz, C., Schrand, C. (2009). Disclosure and the cost of capital: Evidence from firms' responses to the Enron shock. Working paper available at SSRN eLibrary.

Leuz, C., Verrecchia, R. E.(2000). The Economic Consequences of Increased Disclosure. *Journal of Accounting Research*, 38(1), 91-124, ISSN 0021-8456.

Lindén, A. (2009). Tillämpningen av IFRS allt bättre**.** Den stora utmaningen 2007 var finansiella instrument *Balans*, 3,28

Marton, J. (2011). Inblick: Är ökade informationskrav i årsredovisningar lönsamma? *Balans*, 8-9,52

Marton, J., Lumsden, M., Lundqvist, P., Pettersson, A.K., Rimmel, G. (2010). *IFRS – i teori och praktik*. Stockholm: Bonnier utbildning.

Moore, M. L., Buzby, S.(1972). The Quality of Corporate Financial Disclosure: A Comment. *The Accounting Review*, 47(3), 581-584, ISSN 0001-4826.

Newbold, P., Carlson, W., & Thorne, B.(2010). *Statistics for Business and Economics*. Upper Saddle River, N.J.: Pearson.

Persson, L.-E., Hultén, K.(2006). Redovisning enligt IFRS: Tre ”heta” IFRS -områden. Goodwill – ett område som krävt betydande insatser. *Balans*, 6-7,29.

Petersen, C., Plenborg, T.(2010).How Do Firms Implement Impairment Tests of Goodwill? *Abacus*, 46(4), 419-446. doi: 10.1111/j.1467-6281.2010.00326.x.

Regulation (EC) No 1606/2002 of the Eoropean parliament and of the council of 19 July 2002 on the application of the international accounting standards. THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION.

Rehnberg, P.(2012).*Redovisning av immateriella tillgångar i samband med förvärvskalkylering* (Doctoral thesis). Göteborg: Handelshögskolan, Göteborgs universitet.

Rules for the Construction and Maintenance of the NASDAQ OMX Nordic All-Share, List, Tradable and Sector Indexes Version 1.2 / 1 February, 2012. From: https://indexes.nasdaqomx.com/docs/Methodology_OMXNORDIC.pdf

Spero, L. L.(1979). The extent and causes of voluntary disclosure of financial information in three European capital markets: An explanatory study. Doctoral dissertation, Harvard University.

Wallace, R. S.,Naser, K.,Mora, A. (1994).The relationship between the comprehensiveness of corporate annual reports and firm characteristics in Spain.. *Accounting and Business Research*, 25(97),41-53.

Webb, K. A., Cahan, S. F., and Sun, J. (2008). The effect of globalization and legal environment on voluntary disclosure. The International Journal of Accounting, 43(219), 245.

Appendices

Appendix 1 – IAS 36 Paragraph 134

134. An entity shall disclose the information required in paragraphs (a) to (f) below for each cash-generating unit (or group of units) for which the carrying amount of the goodwill or intangible assets with indefinite useful lives, have been distributed to the unit (or group of units) is significant compared with the total book value of goodwill or intangible assets with indefinite useful lives of the entity:

(a) The amount of the goodwill distributed to the unit (or group of units).

(b) The carrying amount of intangible assets with indefinite useful lives distributed to the unit (or group of units).

(c) The basis on which it was determined the recoverable amount of the unit (or group of units) (i.e., use value or fair value less costs to sell).

(d) If the recoverable amount of the unit (or group of units) is based on value in use:

(i) A description of each key assumption on which management has based its projections of cash flows for the period covered by budgets or most recent forecasts. Key assumptions are those to which the recoverable amount of units (or groups of units) is more sensitive.

(ii) A description of the approach used by management to determine the value or values assigned to each key assumption, as well as whether those values reflect past experience or, if they are consistent with external sources of information and, if were not, how and why they differ from past experience or external sources of information.

(iii) The period over which management has projected cash flows or projections based on budgets approved by management and, when used longer than five years for a cash-generating unit (or group of units), a explanation of the reasons that justify the longer period.

(iv) The growth rate used to extrapolate cash flow projections beyond the period covered by the most recent budgets or forecasts and the reasons relevant if it had used a growth rate that exceeds the average long-term growth for the products, industries, or the country or countries in which the entity operates, or for the market to which the unit (or group of units) is dedicated.

(v) The rate or rates used to discount projected cash flows.

(e) If the recoverable amount of the unit (or group of units) is based on the fair value less costs to sell, the methodology used to determine the fair value less costs to sell. If the fair value less costs to sell has not been determined using an observable market price for the unit (group of units), also disclosed the following information:

(i) a description of each key assumption on which management has based its determination of fair value less costs to sell. Key assumptions are those to which the recoverable amount of units (or groups of units) is more sensitive.

(ii) A description of the approach used by management to determine the value (or values) assigned to each key assumption, whether those values reflect past experience or, if appropriate, whether they are consistent with external sources of information and, if not they were, how and why they differ from past experience or external sources of information.

If the fair value less costs to sell is determined using projected discounted cash flows, they also reveal the following information:

(iii) The period in which management has projected cash flows.

(iv) The growth rate used to extrapolate cash flow projections.

(v) The rate or rates used to discount projected cash flows.

(f) if a reasonably possible change in a key assumption on which management has based its determination of the recoverable amount of the unit (or group of units), assume that the amount of the unit (or group of units) exceeds its recoverable amount:

(i) the amount by which the recoverable amount of the unit (or group of units) exceeds the amount of books.

(ii) the value assigned to key assumptions or.

(iii) the amount by which you must change the value or values assigned to the key assumptions that, after incorporating all the recoverable value, resulting effects of that change on other variables used to measure the recoverable amount is the amount equal recoverable from the unit (or group of units) to its book value.

Appendix 2 – Disclosure Scoring Sheet

Item	IAS 36 requirements	Scale	Max Points
1	(a) The amount of the goodwill distributed to the unit (or group of units).	0 or 1	1
2	(b) The carrying amount of intangible assets with indefinite useful lives distributed to the unit (or group of units).	0 or 1	1
3	(c) The basis on which it was determined the recoverable amount of the unit (or group of units) (i.e., use value or fair value less costs to sell).	0 or 1	1
4	(d) If the recoverable amount of the unit (or group of units) is based on **value in use:** (i) A description of each key assumption on which management has based its projections of cash flows for the period covered by budgets or most recent forecasts. Key assumptions are those to which the recoverable amount of units (or groups of units) is more sensitive (other assumptions than long-term growth rate and the discount rate).	0 or 1	1
5	(d) If the recoverable amount of the unit (or group of units) is based on value in use: (ii) 1.A description of the approach used by management to determine the value or values assigned to each key assumption, as well as	0 or 1	1
6	(d) If the recoverable amount of the unit (or group of units) is based on value in use: (ii) 2. whether those values reflect past experience or, if they are consistent with external sources of information and, if were not, how and why they differ from past experience or external sources of information.	0 or 1	1
7	(d) If the recoverable amount of the unit (or group of units) is based on value in use: (iii) The period over which management has projected cash flows or projections based on budgets approved by management and,	0 or 1	1
8	(d) If the recoverable amount of the unit (or group of units) is based on value in use: (iii) when used longer than five years for a cash-generating unit (or group of units), an explanation of the reasons that justify the longer period.	0 or 1	1
9	(d) If the recoverable amount of the unit (or group of units) is based on value in use: (iv) The growth rate used to extrapolate cash flow projections beyond the period covered by the most recent budgets or forecasts and	0 - no disclosure 0,5 - range of growth rates or a single growth rate for all CGU 1 - discount rate for each CGU	1
10	(d) If the recoverable amount of the unit (or group of units) is based on value in use: (iv) the reasons relevant if it had used a growth rate that exceeds the average long-term growth for the products, industries, or the country or countries in which the entity operates, or for the market to which the unit (or group of units) is dedicated.	0 or 1	1
11	(d) If the recoverable amount of the unit (or group of units) is based on value in use: (v) The rate or rates used to discount projected cash flows.	0 - no disclosure 0,5 - non-CGU-specific 1- for each CGU	1
12	(e) If the recoverable amount of the unit (or group of units) is based on **the fair value less costs to sell**, the methodology used to determine the fair value less costs to sell (binding sales agreement, comparable transaction or discounted cash flow computations, other methodologies)	0 or 1	1
13	(e)If the fair value less costs to sell has not been determined using an observable market price for the unit (group of units), also disclosed the	0 or 1	1

Item	IAS 36 requirements	Scale	Max Points
	following information: (i) a description of each key assumption on which management has based its determination of fair value less costs to sell. Key assumptions are those to which the recoverable amount of units (or groups of units) is more sensitive.		
14	(e) If the fair value less costs to sell has not been determined using an observable market price for the unit (group of units), also disclosed the following information: (ii) A description of the approach used by management to determine the value (or values) assigned to each key assumption,	0 or 1	1
15	(e) If the fair value less costs to sell has not been determined using an observable market price for the unit (group of units), also disclosed the following information: (ii) whether those values reflect past experience or, if appropriate, whether they are consistent with external sources of information and, if not they were, how and why they differ from past experience or external sources of information.	0 or 1	1
16	(e) If the fair value less costs to sell has not been determined using an observable market price for the unit (group of units), also disclosed the following information: If the fair value less costs to sell is determined using projected discounted cash flows, they also reveal the following information: (iii) The period in which management has projected cash flows.	0 or 1	1
17	(e) If the fair value less costs to sell has not been determined using an observable market price for the unit (group of units), also disclosed the following information: If the fair value less costs to sell is determined using projected discounted cash flows, they also reveal the following information: (iv) The growth rate used to extrapolate cash flow projections.	0 or 1	1
18	(e) If the fair value less costs to sell has not been determined using an observable market price for the unit (group of units), also disclosed the following information: If the fair value less costs to sell is determined using projected discounted cash flows, they also reveal the following information: (v) The rate or rates used to discount projected cash flows.	0 or 1	1
19	(f) if a reasonably possible change in a key assumption on which management has based its determination of the recoverable amount of the unit (or group of units), assume that the amount of the unit (or group of units) exceeds its recoverable amount: (i) the amount by which the recoverable amount of the unit (or group of units) exceeds the amount of books.	0 or 1	1
20	(f) if a reasonably possible change in a key assumption on which management has based its determination of the recoverable amount of the unit (or group of units), assume that the amount of the unit (or group of units) exceeds its recoverable amount: (ii) the value assigned to key assumptions	0 or 1	1
21	(f) if a reasonably possible change in a key assumption on which management has based its determination of the recoverable amount of the unit (or group of units), assume that the amount of the unit (or group of units) exceeds its recoverable amount: (iii) the amount by which you must change the value or values assigned to the key assumptions that, after incorporating all the recoverable value, resulting effects of that change on other variables used to measure the recoverable amount is the amount equal recoverable from the unit (or group of units) to its book value.	0 or 1	1

Appendix 3 – Companies Covered in the Study

N	Company	Size	Industry
1	Boliden AB	LARGE	Basic Materials
2	SSAB AB	LARGE	Basic Materials
3	Stora Enso Oyj	LARGE	Basic Materials
4	Electrolux, AB	LARGE	Consumer Goods
5	Husqvarna AB	LARGE	Consumer Goods
6	Oriflame Cosmetics S.A, SDB	LARGE	Consumer Goods
7	Swedish Match AB	LARGE	Consumer Goods
8	Svenska Cellulosa AB SCA	LARGE	Consumer Goods
9	Axfood AB	LARGE	Consumer Services
10	Hakon Invest AB	LARGE	Consumer Services
11	Hennes & Mauritz AB, H & M	LARGE	Consumer Services
12	Modern Times Group MTG AB	LARGE	Consumer Services
13	Investor AB	LARGE	Financials
14	Kinnevik, Investment AB	LARGE	Financials
15	Latour, Investmentab.	LARGE	Financials
16	Nordea Bank AB	LARGE	Financials
17	Ratos AB	LARGE	Financials
18	SEB	LARGE	Financials
19	Swedbank AB pref	LARGE	Financials
20	Svenska Handelsbanken	LARGE	Financials
21	AstraZeneca PLC	LARGE	Health Care
22	Elekta AB	LARGE	Health Care
23	Getinge AB	LARGE	Health Care
24	Meda AB	LARGE	Health Care
25	Alfa Laval AB	LARGE	Industrials
26	ASSA ABLOY AB	LARGE	Industrials
27	Atlas Copco AB	LARGE	Industrials
28	Hexagon AB	LARGE	Industrials
29	NCC AB	LARGE	Industrials
30	Peab AB	LARGE	Industrials
31	SAAB AB	LARGE	Industrials
32	Sandvik AB	LARGE	Industrials
33	Securitas AB	LARGE	Industrials
34	Skanska AB	LARGE	Industrials
35	SKF, AB	LARGE	Industrials
36	Trelleborg AB	LARGE	Industrials
37	Volvo, AB	LARGE	Industrials
38	Alliance Oil Company Ltd. SDB	LARGE	Oil & Gas
39	Ericsson, Telefonab. L M	LARGE	Technology
40	Tieto Oyj	LARGE	Technology
41	Millicom International Cellular S.A. SDB	LARGE	Telecommunications
42	Tele2 AB	LARGE	Telecommunications
43	TeliaSonera AB	LARGE	Telecommunications
44	BE Group AB	MID	Basic Materials
45	HEXPOL AB	MID	Basic Materials
46	Höganäs AB	MID	Basic Materials
47	AarhusKarlshamn AB	MID	Consumer Goods
48	Björn Borg AB	MID	Consumer Goods
49	Cloetta AB	MID	Consumer Goods
50	Duni AB	MID	Consumer Goods
51	Fenix Outdoor AB	MID	Consumer Goods
52	Haldex AB	MID	Consumer Goods
53	Mekonomen AB	MID	Consumer Goods
54	New Wave Group AB	MID	Consumer Goods
55	Nobia AB	MID	Consumer Goods
56	Betsson AB	MID	Consumer Services

N	Company	Size	Industry
57	Bilia AB	MID	Consumer Services
58	Byggmax Group AB	MID	Consumer Services
59	CDON Group AB	MID	Consumer Services
60	Eniro AB	MID	Consumer Services
61	KappAhl AB	MID	Consumer Services
62	SAS AB	MID	Consumer Services
63	SkiStar AB	MID	Consumer Services
64	TradeDoubler AB	MID	Consumer Services
65	Unibet Group Plc	MID	Consumer Services
66	Bure Equity AB	MID	Financials
67	Intrum Justitia AB	MID	Financials
68	JM AB	MID	Financials
69	Nordnet AB	MID	Financials
70	Medivir AB	MID	Health Care
71	Swedish Orphan Biovitrum AB	MID	Health Care
72	Addtech AB	MID	Industrials
73	B&B TOOLS AB	MID	Industrials
74	Beijer AB, G & L	MID	Industrials
75	Beijer Alma AB	MID	Industrials
76	Concentric AB	MID	Industrials
77	Fagerhult, AB	MID	Industrials
78	Gunnebo AB	MID	Industrials
79	Indutrade AB	MID	Industrials
80	Lindab International AB	MID	Industrials
81	Loomis AB	MID	Industrials
82	NIBE Industrier AB	MID	Industrials
83	Nolato AB	MID	Industrials
84	Proffice AB	MID	Industrials
85	SWECO AB	MID	Industrials
86	Systemair AB	MID	Industrials
87	ÅF AB	MID	Industrials
88	EnQuest plc	MID	Oil & Gas
89	HiQ International AB	MID	Technology
90	Industrial & Financial Systems AB	MID	Technology
91	Net Insight AB	MID	Technology
92	Transmode Holding AB	MID	Technology
93	Bergs Timber AB	SMALL	Basic Materials
94	ProfilGruppen AB	SMALL	Basic Materials
95	ACAP Invest AB	SMALL	Consumer Goods
96	FinnvedenBulten AB	SMALL	Consumer Goods
97	Lammhults Design Group AB	SMALL	Consumer Goods
98	Midsona AB	SMALL	Consumer Goods
99	Opcon AB	SMALL	Consumer Goods
100	VBG GROUP AB	SMALL	Consumer Goods
101	A-Com AB	SMALL	Consumer Services
102	Electra Gruppen AB	SMALL	Consumer Services
103	Hemtex AB	SMALL	Consumer Services
104	MQ Holding AB	SMALL	Consumer Services
105	Nordic Service Partners Holding AB	SMALL	Consumer Services
106	RNB RETAIL AND BRANDS AB	SMALL	Consumer Services
107	Venue Retail Group AB	SMALL	Consumer Services
108	Midway Holding AB	SMALL	Financials
109	Allenex AB	SMALL	Health Care
110	Biotage AB	SMALL	Health Care
111	Boule Diagnostics AB	SMALL	Health Care
112	Dedicare AB	SMALL	Health Care
113	Elos AB	SMALL	Health Care

N	Company	Size	Industry
114	Feelgood Svenska AB	SMALL	Health Care
115	Global Health Partner AB	SMALL	Health Care
116	Orexo AB	SMALL	Health Care
117	Probi AB	SMALL	Health Care
118	Vitrolife AB	SMALL	Health Care
119	Beijer Electronics AB	SMALL	Industrials
120	Bong AB	SMALL	Industrials
121	BTS Group AB	SMALL	Industrials
122	Cavotec SA	SMALL	Industrials
123	Cision AB	SMALL	Industrials
124	Consilium AB	SMALL	Industrials
125	Duroc AB	SMALL	Industrials
126	Elanders AB	SMALL	Industrials
127	Geveko, AB	SMALL	Industrials
128	Image Systems AB	SMALL	Industrials
129	Intellecta AB	SMALL	Industrials
130	ITAB Shop Concept AB	SMALL	Industrials
131	Lagercrantz Group AB	SMALL	Industrials
132	Malmbergs Elektriska AB	SMALL	Industrials
133	Micronic Mydata AB	SMALL	Industrials
134	Nederman Holding AB	SMALL	Industrials
135	NOTE AB	SMALL	Industrials
136	OEM International AB	SMALL	Industrials
137	PartnerTech AB	SMALL	Industrials
138	Poolia AB	SMALL	Industrials
139	Pricer AB	SMALL	Industrials
140	Rejlerkoncernen AB	SMALL	Industrials
141	Rörvik Timber AB	SMALL	Industrials
142	Semcon AB	SMALL	Industrials
143	Studsvik AB	SMALL	Industrials
144	Transcom WorldWide S.A SDB	SMALL	Industrials
145	XANO Industri AB	SMALL	Industrials
146	Acando AB	SMALL	Technology
147	AddNode Group AB	SMALL	Technology
148	Anoto Group AB	SMALL	Technology
149	Aspiro AB	SMALL	Technology
150	Connecta AB	SMALL	Technology
151	Cybercom Group AB	SMALL	Technology
152	DORO AB	SMALL	Technology
153	Enea AB	SMALL	Technology
154	FormPipe Software AB	SMALL	Technology
155	HMS Networks AB	SMALL	Technology
156	I.A.R Systems Group AB	SMALL	Technology
157	Know IT AB	SMALL	Technology
158	MSC Konsult AB	SMALL	Technology
159	MultiQ International AB	SMALL	Technology
160	NOVOTEK AB	SMALL	Technology
161	Phonera AB	SMALL	Technology
162	Prevas AB	SMALL	Technology
163	Proact IT Group AB	SMALL	Technology
164	ReadSoft AB	SMALL	Technology
165	Seamless Distribution AB	SMALL	Technology
166	Sigma AB	SMALL	Technology
167	Softronic AB	SMALL	Technology
168	StjärnaFyrkant AB	SMALL	Technology
169	Vitec Software Group AB	SMALL	Technology
170	AllTele Allmänna Svenska Telefonab	SMALL	Telecommunications

N	Company	Size	Industry
171	DGC One AB	SMALL	Telecommunications
172	Etrion corp.	SMALL	Utilities

Appendix 4 – Excluded Companies

N	Company	Reason for exclusion	Size	Industry
1	Holmen AB	no goodwill or intangible assets with indefinite useful lives	LARGE	Basic Materials
2	Lundin Mining Corporation SDB	no goodwill or intangible assets with indefinite useful lives	LARGE	Basic Materials
3	SEMAFO Inc.	no goodwill or intangible assets with indefinite useful lives	LARGE	Basic Materials
4	Autoliv Inc. SDB	U.S.GAAP	LARGE	Consumer Goods
5	Atrium Ljungberg AB	no significant goodwill	LARGE	Financials
6	Castellum AB	no goodwill or intangible assets with indefinite useful lives	LARGE	Financials
7	Fabege AB	no goodwill or intangible assets with indefinite useful lives	LARGE	Financials
8	Hufvudstaden AB	no goodwill or intangible assets with indefinite useful lives	LARGE	Financials
9	Industrivärden, AB	no goodwill or intangible assets with indefinite useful lives	LARGE	Financials
10	Lundbergföretagen AB, L E	no significant goodwill	LARGE	Financials
11	Melker Schörling AB	no goodwill or intangible assets with indefinite useful lives	LARGE	Financials
12	Wallenstam AB	no goodwill or intangible assets with indefinite useful lives	LARGE	Financials
13	ABB Ltd	U.S.GAAP	LARGE	Industrials
14	SCANIA AB	no significant goodwill	LARGE	Industrials
15	Lundin Petroleum AB	no goodwill or intangible assets with indefinite useful lives	LARGE	Oil & Gas
16	BillerudKorsnäs AB	No goodwill left	MID	Basic Materials
17	Nordic Mines AB	no goodwill or intangible assets with indefinite useful lives	MID	Basic Materials
18	Black Earth Farming Ltd. SDB	No goodwill left	MID	Consumer Goods
19	Clas Ohlson AB	no goodwill or intangible assets with indefinite useful lives	MID	Consumer Services
20	Net Entertainment NE AB	no goodwill or intangible assets with indefinite useful lives	MID	Consumer Services
21	Rezidor Hotel Group AB	no goodwill or intangible assets with indefinite useful lives	MID	Consumer Services
22	Swedol AB	no significant goodwill	MID	Consumer Services
23	Avanza Bank Holding AB	no significant goodwill	MID	Financials
24	Corem Property Group AB	no goodwill or intangible assets with indefinite useful lives	MID	Financials
25	Diös Fastigheter AB	no goodwill or intangible assets with indefinite useful lives	MID	Financials
26	East Capital Explorer AB	no goodwill or intangible assets with indefinite useful lives	MID	Financials
27	Fast Partner AB	no goodwill or intangible assets with indefinite useful lives	MID	Financials
28	Fastighets AB Balder pref.	no goodwill or intangible assets with indefinite useful lives	MID	Financials
29	Heba Fastighets AB	no goodwill or intangible assets with indefinite useful lives	MID	Financials
30	Klövern AB	No goodwill left	MID	Financials
31	Kungsleden AB	no significant goodwill	MID	Financials
32	Sagax AB pref	no goodwill or intangible assets with indefinite useful lives	MID	Financials
33	Wihlborgs Fastigheter AB	no goodwill or intangible assets with	MID	Financials

N	Company	Reason for exclusion	Size	Industry
		indefinite useful lives		
34	Vostok Nafta Investment Ltd, SDB	no goodwill or intangible assets with indefinite useful lives	MID	Financials
35	Öresund, Investment AB	no significant goodwill	MID	Financials
36	Active Biotech AB	No goodwill left	MID	Health Care
37	BioGaia AB	no goodwill or intangible assets with indefinite useful lives	MID	Health Care
38	BioInvent International AB	no goodwill or intangible assets with indefinite useful lives	MID	Health Care
39	Karolinska Development AB	no goodwill or intangible assets with indefinite useful lives	Mid	Health Care
40	Black Pearl Resources Inc	Canadian GAAP	MID	Oil & Gas
41	PA Resources AB	no goodwill or intangible assets with indefinite useful lives	MID	Oil & Gas
42	Axis AB	no goodwill or intangible assets with indefinite useful lives	MID	Technology
43	Endomines AB	no goodwill or intangible assets with indefinite useful lives	SMALL	Basic Materials
44	Rottneros AB	no goodwill or intangible assets with indefinite useful lives	SMALL	Basic Materials
45	KABE AB	no goodwill or intangible assets with indefinite useful lives	SMALL	Consumer Goods
46	Odd Molly International AB	no goodwill or intangible assets with indefinite useful lives	SMALL	Consumer Goods
47	Trigon Agri A/S	no goodwill or intangible assets with indefinite useful lives	SMALL	Consumer Goods
48	Coastal Contacts Inc	Canadian GAAP	SMALL	Consumer Services
49	Catena AB	no goodwill or intangible assets with indefinite useful lives	SMALL	Financials
50	Havsfrun Investment AB	no goodwill or intangible assets with indefinite useful lives	SMALL	Financials
51	Luxonen S.A. SDB	no goodwill or intangible assets with indefinite useful lives	SMALL	Financials
52	NAXS Nordic Access Buyout Fund AB	no goodwill or intangible assets with indefinite useful lives	SMALL	Financials
53	Novestra AB	no goodwill or intangible assets with indefinite useful lives	SMALL	Financials
54	Svolder AB	no goodwill or intangible assets with indefinite useful lives	SMALL	Financials
55	Traction AB	no goodwill or intangible assets with indefinite useful lives	SMALL	Financials
56	Aerocrine AB	no goodwill or intangible assets with indefinite useful lives	SMALL	Health Care
57	Artimplant AB	no goodwill or intangible assets with indefinite useful lives	SMALL	Health Care
58	CellaVision AB	no goodwill or intangible assets with indefinite useful lives	SMALL	Health Care
59	Diamyd Medical AB	no significant goodwill	SMALL	Health Care
60	EpiCept Corporation	U.S.GAAP	SMALL	Health Care
61	Karo Bio AB	no goodwill or intangible assets with indefinite useful lives	SMALL	Health Care
62	Moberg Derma AB	no goodwill or intangible assets with indefinite useful lives	SMALL	Health Care
63	Oasmia Pharmaceutical AB	no goodwill or intangible assets with indefinite useful lives	SMALL	Health Care
64	Ortivus AB	no significant goodwill	SMALL	Health Care
65	RaySearch Laboratories AB	no goodwill or intangible assets with	SMALL	Health Care

N	Company	Reason for exclusion	Size	Industry
		indefinite useful lives		
66	SECTRA AB	no goodwill or intangible assets with indefinite useful lives	SMALL	Health Care
67	Arcam AB	no goodwill or intangible assets with indefinite useful lives	SMALL	Industrials
68	Concordia Maritime AB	no goodwill or intangible assets with indefinite useful lives	SMALL	Industrials
69	CTT Systems AB	no goodwill or intangible assets with indefinite useful lives	SMALL	Industrials
70	eWork Scandinavia AB	no goodwill or intangible assets with indefinite useful lives	SMALL	Industrials
71	Fingerprint Cards AB	no goodwill or intangible assets with indefinite useful lives	SMALL	Industrials
72	Precise Biometrics AB	no significant goodwill	SMALL	Industrials
73	Rederi AB Transatlantic	no significant goodwill	SMALL	Industrials
74	Sensys Traffic AB	no goodwill or intangible assets with indefinite useful lives	SMALL	Industrials
75	SinterCast AB	no goodwill or intangible assets with indefinite useful lives	SMALL	Industrials
76	Svedbergs i Dalstorp AB	no significant goodwill	SMALL	Industrials
77	Uniflex AB	no goodwill or intangible assets with indefinite useful lives	SMALL	Industrials
78	Morphic Technologies AB	no goodwill or intangible assets with indefinite useful lives	SMALL	Oil & Gas
79	Shelton Petroleum AB	no significant goodwill	SMALL	Oil & Gas
80	Avega Group AB	no significant goodwill	SMALL	Technology
81	Micro Systemations AB	no goodwill or intangible assets with indefinite useful lives	SMALL	Technology
82	Arise Windpower AB	no goodwill or intangible assets with indefinite useful lives	SMALL	Utilities

Appendix 5 – Distribution of the Studied Companies

	Large Cap	Mid Cap	Small Cap	Ernst & Young	PwC	Deloitte	KPMG	Not Big 4 Audit Firms	Total
Basic Materials	3	3	2	4	1	1	2	0	8 (5%)
Consumer Goods	5	9	6	1	9	3	6	1	20 (12%)
Consumer Services	4	10	7	6	7	1	7	0	21 (12%)
Financials	8	4	1	5	3	1	4	0	13 (8%)
Health Care	4	2	10	4	6	4	2	0	16 (9%)
Industrials	13	16	27	8	26	6	15	1	56 (33%)
Oil & Gas	1	1	0	1	0	1	0	0	2 (1%)
Technology	2	4	24	5	18	2	4	1	30 (17%)
Telecommunications	3	0	2	2	2	1	0	0	5 (3%)
Utilities	0	0	1	0	1	0	0	0	1 (1%)
Total	43 (25%)	49 (28%)	80 (47%)	36 (21%)	73 (42%)	20 (12%)	40 (23%)	3 (2%)	172 (100%)

Appendix 6 – Index-values for the Studied Companies

N	Company	Size	Industry	Index
1	Boliden AB	LARGE	Basic Materials	0,92
2	SSAB AB	LARGE	Basic Materials	0,75
3	Stora Enso Oyj	LARGE	Basic Materials	0,91
4	Electrolux, AB	LARGE	Consumer Goods	0,86
5	Husqvarna AB	LARGE	Consumer Goods	0,50
6	Oriflame Cosmetics S.A, SDB	LARGE	Consumer Goods	0,85
7	Swedish Match AB	LARGE	Consumer Goods	0,77
8	Svenska Cellulosa AB SCA	LARGE	Consumer Goods	0,63
9	Axfood AB	LARGE	Consumer Services	0,80
10	Hakon Invest AB	LARGE	Consumer Services	0,77
11	Hennes & Mauritz AB, H & M	LARGE	Consumer Services	0,64
12	Modern Times Group MTG AB	LARGE	Consumer Services	0,77
13	Investor AB	LARGE	Financials	0,73
14	Kinnevik, Investment AB	LARGE	Financials	0,70
15	Latour, Investmentab.	LARGE	Financials	0,77
16	Nordea Bank AB	LARGE	Financials	0,80
17	Ratos AB	LARGE	Financials	0,85
18	SEB	LARGE	Financials	0,80
19	Swedbank AB pref	LARGE	Financials	1,00
20	Svenska Handelsbanken	LARGE	Financials	0,68
21	AstraZeneca PLC	LARGE	Health Care	0,75
22	Elekta AB	LARGE	Health Care	0,58
23	Getinge AB	LARGE	Health Care	0,62
24	Meda AB	LARGE	Health Care	0,90
25	Alfa Laval AB	LARGE	Industrials	0,59
26	ASSA ABLOY AB	LARGE	Industrials	0,81
27	Atlas Copco AB	LARGE	Industrials	0,64
28	Hexagon AB	LARGE	Industrials	0,60
29	NCC AB	LARGE	Industrials	0,83
30	Peab AB	LARGE	Industrials	0,75
31	SAAB AB	LARGE	Industrials	0,85
32	Sandvik AB	LARGE	Industrials	0,82
33	Securitas AB	LARGE	Industrials	0,71
34	Skanska AB	LARGE	Industrials	0,88
35	SKF, AB	LARGE	Industrials	0,82
36	Trelleborg AB	LARGE	Industrials	0,60
37	Volvo, AB	LARGE	Industrials	0,64
38	Alliance Oil Company Ltd. SDB	LARGE	Oil & Gas	0,55
39	Ericsson, Telefonab. L M	LARGE	Technology	0,80
40	Tieto Oyj	LARGE	Technology	0,92
41	Millicom International Cellular S.A. SDB	LARGE	Telecommunications	0,59

N	Company	Size	Industry	Index
42	Tele2 AB	LARGE	Telecommunications	0,91
43	TeliaSonera AB	LARGE	Telecommunications	0,85
44	BE Group AB	MID	Basic Materials	0,79
45	HEXPOL AB	MID	Basic Materials	0,60
46	Höganäs AB	MID	Basic Materials	0,95
47	AarhusKarlshamn AB	MID	Consumer Goods	0,50
48	Björn Borg AB	MID	Consumer Goods	0,73
49	Cloetta AB	MID	Consumer Goods	0,60
50	Duni AB	MID	Consumer Goods	0,90
51	Fenix Outdoor AB	MID	Consumer Goods	0,61
52	Haldex AB	MID	Consumer Goods	0,80
53	Mekonomen AB	MID	Consumer Goods	0,77
54	New Wave Group AB	MID	Consumer Goods	0,82
55	Nobia AB	MID	Consumer Goods	0,65
56	Betsson AB	MID	Consumer Services	0,73
57	Bilia AB	MID	Consumer Services	0,67
58	Byggmax Group AB	MID	Consumer Services	0,80
59	CDON Group AB	MID	Consumer Services	0,73
60	Eniro AB	MID	Consumer Services	0,81
61	KappAhl AB	MID	Consumer Services	0,77
62	SAS AB	MID	Consumer Services	0,50
63	SkiStar AB	MID	Consumer Services	0,55
64	TradeDoubler AB	MID	Consumer Services	0,73
65	Unibet Group Plc	MID	Consumer Services	0,32
66	Bure Equity AB	MID	Financials	0,63
67	Intrum Justitia AB	MID	Financials	0,60
68	JM AB	MID	Financials	0,83
69	Nordnet AB	MID	Financials	0,62
70	Medivir AB	MID	Health Care	0,35
71	Swedish Orphan Biovitrum AB	MID	Health Care	0,60
72	Addtech AB	MID	Industrials	0,64
73	B&B TOOLS AB	MID	Industrials	0,73
74	Beijer AB, G & L	MID	Industrials	0,70
75	Beijer Alma AB	MID	Industrials	0,80
76	Concentric AB	MID	Industrials	0,50
77	Fagerhult, AB	MID	Industrials	0,90
78	Gunnebo AB	MID	Industrials	0,67
79	Indutrade AB	MID	Industrials	0,68
80	Lindab International AB	MID	Industrials	0,80
81	Loomis AB	MID	Industrials	0,75
82	NIBE Industrier AB	MID	Industrials	0,45
83	Nolato AB	MID	Industrials	0,80

N	Company	Size	Industry	Index
84	Proffice AB	MID	Industrials	0,62
85	SWECO AB	MID	Industrials	0,90
86	Systemair AB	MID	Industrials	0,60
87	ÅF AB	MID	Industrials	0,55
88	EnQuest plc	MID	Oil & Gas	0,58
89	HiQ International AB	MID	Technology	0,80
90	Industrial & Financial Systems AB	MID	Technology	0,70
91	Net Insight AB	MID	Technology	0,70
92	Transmode Holding AB	MID	Technology	0,70
93	Bergs Timber AB	SMALL	Basic Materials	0,75
94	ProfilGruppen AB	SMALL	Basic Materials	0,70
95	ACAP Invest AB	SMALL	Consumer Goods	0,65
96	FinnvedenBulten AB	SMALL	Consumer Goods	0,90
97	Lammhults Design Group AB	SMALL	Consumer Goods	0,85
98	Midsona AB	SMALL	Consumer Goods	0,77
99	Opcon AB	SMALL	Consumer Goods	0,75
100	VBG GROUP AB	SMALL	Consumer Goods	0,46
101	A-Com AB	SMALL	Consumer Services	0,80
102	Electra Gruppen AB	SMALL	Consumer Services	0,50
103	Hemtex AB	SMALL	Consumer Services	0,50
104	MQ Holding AB	SMALL	Consumer Services	0,60
105	Nordic Service Partners Holding AB	SMALL	Consumer Services	0,90
106	RNB RETAIL AND BRANDS AB	SMALL	Consumer Services	0,85
107	Venue Retail Group AB	SMALL	Consumer Services	0,82
108	Midway Holding AB	SMALL	Financials	0,40
109	Allenex AB	SMALL	Health Care	0,75
110	Biotage AB	SMALL	Health Care	0,40
111	Boule Diagnostics AB	SMALL	Health Care	0,70
112	Dedicare AB	SMALL	Health Care	0,60
113	Elos AB	SMALL	Health Care	0,67
114	Feelgood Svenska AB	SMALL	Health Care	0,56
115	Global Health Partner AB	SMALL	Health Care	0,83
116	Orexo AB	SMALL	Health Care	0,86
117	Probi AB	SMALL	Health Care	0,50
118	Vitrolife AB	SMALL	Health Care	0,40
119	Beijer Electronics AB	SMALL	Industrials	0,78
120	Bong AB	SMALL	Industrials	0,58
121	BTS Group AB	SMALL	Industrials	0,80
122	Cavotec SA	SMALL	Industrials	0,75
123	Cision AB	SMALL	Industrials	0,75
124	Consilium AB	SMALL	Industrials	0,50
125	Duroc AB	SMALL	Industrials	0,70

N	Company	Size	Industry	Index
126	Elanders AB	SMALL	Industrials	0,58
127	Geveko, AB	SMALL	Industrials	0,33
128	Image Systems AB	SMALL	Industrials	0,50
129	Intellecta AB	SMALL	Industrials	0,70
130	ITAB Shop Concept AB	SMALL	Industrials	0,70
131	Lagercrantz Group AB	SMALL	Industrials	0,70
132	Malmbergs Elektriska AB	SMALL	Industrials	0,90
133	Micronic Mydata AB	SMALL	Industrials	0,80
134	Nederman Holding AB	SMALL	Industrials	0,65
135	NOTE AB	SMALL	Industrials	0,80
136	OEM International AB	SMALL	Industrials	0,73
137	PartnerTech AB	SMALL	Industrials	0,75
138	Poolia AB	SMALL	Industrials	0,45
139	Pricer AB	SMALL	Industrials	0,70
140	Rejlerkoncernen AB	SMALL	Industrials	0,79
141	Rörvik Timber AB	SMALL	Industrials	0,90
142	Semcon AB	SMALL	Industrials	0,75
143	Studsvik AB	SMALL	Industrials	0,92
144	Transcom WorldWide S.A SDB	SMALL	Industrials	0,71
145	XANO Industri AB	SMALL	Industrials	0,60
146	Acando AB	SMALL	Technology	0,75
147	AddNode Group AB	SMALL	Technology	0,90
148	Anoto Group AB	SMALL	Technology	0,75
149	Aspiro AB	SMALL	Technology	0,55
150	Connecta AB	SMALL	Technology	0,80
151	Cybercom Group AB	SMALL	Technology	0,60
152	DORO AB	SMALL	Technology	0,60
153	Enea AB	SMALL	Technology	0,85
154	FormPipe Software AB	SMALL	Technology	0,70
155	HMS Networks AB	SMALL	Technology	0,70
156	I.A.R Systems Group AB	SMALL	Technology	0,90
157	Know IT AB	SMALL	Technology	0,68
158	MSC Konsult AB	SMALL	Technology	0,80
159	MultiQ International AB	SMALL	Technology	0,60
160	NOVOTEK AB	SMALL	Technology	0,35
161	Phonera AB	SMALL	Technology	0,75
162	Prevas AB	SMALL	Technology	0,65
163	Proact IT Group AB	SMALL	Technology	0,42
164	ReadSoft AB	SMALL	Technology	0,60
165	Seamless Distribution AB	SMALL	Technology	0,80
166	Sigma AB	SMALL	Technology	0,62
167	Softronic AB	SMALL	Technology	0,40

N	Company	Size	Industry	Index
168	StjärnaFyrkant AB	SMALL	Technology	0,70
169	Vitec Software Group AB	SMALL	Technology	0,15
170	AllTele Allmänna Svenska Telefonab	SMALL	Telecommunications	0,70
171	DGC One AB	SMALL	Telecommunications	0,80
172	Etrion corp.	SMALL	Utilities	0,75

Appendix 7 – Degree of Compliance with IAS 36 paragraph 134

Item	IAS 36 requirements	Degree of compliance (%)		
		Full compliance	Partial compliance	N/A
1	(a) The amount of the goodwill distributed to the unit (or group of units).	89,0%		
2	(b) The carrying amount of intangible assets with indefinite useful lives distributed to the unit (or group of units).	82,4%		138
3	(c) The basis on which it was determined the recoverable amount of the unit (or group of units) (i.e., use value or fair value less costs to sell).	88,4%		
4	(d) If the recoverable amount of the unit (or group of units) is based on **value in use:** (i) A description of each key assumption on which management has based its projections of cash flows for the period covered by budgets or most recent forecasts. Key assumptions are those to which the recoverable amount of units (or groups of units) is more sensitive (other assumptions than long-term growth rate and the discount rate).	83,1%		
5	(d) If the recoverable amount of the unit (or group of units) is based on value in use: (ii) 1.A description of the approach used by management to determine the value or values assigned to each key assumption, as well as	41,3%		
6	(d) If the recoverable amount of the unit (or group of units) is based on value in use: (ii) 2. whether those values reflect past experience or, if they are consistent with external sources of information and, if were not, how and why they differ from past experience or external sources of information.	56,4%		
7	(d) If the recoverable amount of the unit (or group of units) is based on value in use: (iii) The period over which management has projected cash flows or projections based on budgets approved by management and,	93,0%		
8	(d) If the recoverable amount of the unit (or group of units) is based on value in use: (iii) when used longer than five years for a cash-generating unit (or group of units), an explanation of the reasons that justify the longer period.	52,9%		155
9	(d) If the recoverable amount of the unit (or group of units) is based on value in use: (iv) The growth rate used to extrapolate cash flow projections beyond the period covered by the most recent budgets or forecasts and	29,1%	64,0%	
10	(d) If the recoverable amount of the unit (or group of units) is based on value in use: (iv) the reasons relevant if it had used a growth rate that exceeds the average long-term growth for the products, industries, or the country or countries in which the entity operates, or for the market to which the unit (or group of units) is dedicated.	38,4%		13
11	(d) If the recoverable amount of the unit (or group of units) is based on value in use: (v) The rate or rates used to discount projected cash flows.	39,0%	61,0%	
12	(e) If the recoverable amount of the unit (or group of units) is based on **the fair value less costs to sell**, the methodology used to determine the fair value less costs to sell (binding sales agreement, comparable transaction or discounted cash flow computations, other methodologies)	50,0%		170
13	(e)If the fair value less costs to sell has not been determined using an observable market price for the unit (group of units), also	100,0%		171

Item	IAS 36 requirements	Degree of compliance (%)		N/A
		Full compliance	Partial compliance	
	disclosed the following information: (i) a description of each key assumption on which management has based its determination of fair value less costs to sell. Key assumptions are those to which the recoverable amount of units (or groups of units) is more sensitive.			
14	(e) If the fair value less costs to sell has not been determined using an observable market price for the unit (group of units), also disclosed the following information: (ii) A description of the approach used by management to determine the value (or values) assigned to each key assumption,	100,0%		171
15	(e) If the fair value less costs to sell has not been determined using an observable market price for the unit (group of units), also disclosed the following information: (ii) whether those values reflect past experience or, if appropriate, whether they are consistent with external sources of information and, if not they were, how and why they differ from past experience or external sources of information.	100,0%		171
16	(e) If the fair value less costs to sell has not been determined using an observable market price for the unit (group of units), also disclosed the following information: If the fair value less costs to sell is determined using projected discounted cash flows, they also reveal the following information: (iii) The period in which management has projected cash flows.	0,0%		172
17	(e) If the fair value less costs to sell has not been determined using an observable market price for the unit (group of units), also disclosed the following information: If the fair value less costs to sell is determined using projected discounted cash flows, they also reveal the following information: (iv) The growth rate used to extrapolate cash flow projections.	0,0%		172
18	(e) If the fair value less costs to sell has not been determined using an observable market price for the unit (group of units), also disclosed the following information: If the fair value less costs to sell is determined using projected discounted cash flows, they also reveal the following information: (v) The rate or rates used to discount projected cash flows.	0,0%		172
19	(f) if a reasonably possible change in a key assumption on which management has based its determination of the recoverable amount of the unit (or group of units), assume that the amount of the unit (or group of units) exceeds its recoverable amount: (i) the amount by which the recoverable amount of the unit (or group of units) exceeds the amount of books.	30,0%		132
20	(f) if a reasonably possible change in a key assumption on which management has based its determination of the recoverable amount of the unit (or group of units), assume that the amount of the unit (or group of units) exceeds its recoverable amount: (ii) the value assigned to key assumptions	92,5%		132
21	(f) if a reasonably possible change in a key assumption on which management has based its determination of the recoverable amount of the unit (or group of units), assume that the amount of the unit (or group of units) exceeds its recoverable amount: (iii) the amount by which you must change the value or values assigned to the key assumptions that, after incorporating all the recoverable value, resulting effects of that change on other variables used to measure the recoverable amount is the amount equal recoverable from the unit (or group of units) to its book value.	82,5%		132