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## **The Certainty of a CGU-Specific WACC**

*- Estimating Complications of Applying a Company-Wide  
Discount Rate*

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**Five key words:** WACC, cash generating units, impairment test, IAS 36, disclosures

**Purpose:** (1) Determine whether there is an inconsistency between the disclosed WACC and the WACC applied in CGU's for internal impairment tests, with respect to IAS 36. (2) Determine to what extent companies apply a company-wide WACC internally in all CGU's, when conducting impairment tests in accordance with IAS 36. (3) Describe and analyse the incentives for companies to apply a company-wide WACC in all CGU's, and what effect this could have on impairment tests.

**Methodology:** In this paper we used both an inductive and a deductive perspective. The survey we distributed, and the review of annual reports, examined the application of discount rates in practice, through a descriptive manner. We also applied case studies through a normative perspective, in order to analyse and prescribe how companies should operate in accordance with best practice.

**Theoretical perspectives:** The literature review concerned calculations of WACC for CGU's and how disclosure policy could affect the cost of capital. This was extended by a review of the positive accounting theory, in order to analyse whether companies had incentives to act opportunistic by applying a company-wide WACC. We also added the institutional theory, which allowed us to analyse if WACC disclosures were affected by decoupling or institutional factors.

**Empirical foundation:** We gathered data from the annual reports of 118 Swedish listed companies, regarding their application of discount rates within CGU's. We also distributed a survey that targeted CFO's from 40 of these 118 companies. This survey provided internal information and arguments regarding companies' application of WACC. Four case studies, modelled by data gathered from a database held by Stern School of Business in New York, exemplified and analysed best practice in IAS 36.

**Conclusions:** We concluded that a majority of the companies in this paper disclosed a company-wide WACC, and that this was consistent with the WACC the companies applied internally. Companies that applied a company-wide WACC often considered their CGU's to have the same risk. However, the arguments of some of these risk assessments could be questioned. It does not appear that companies apply a company-wide WACC to affect the impairment test, and we see no general reluctance towards the use of a CGU-specific WACC. However, companies appear to have difficulties of establishing CGU-specific WACC, which seems to have a negative effect on the degree of application.

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# **1 Introduction**

## **1.1 Background**

The valuation of external investments, such as mergers and acquisitions, is a subject that is a key part of corporate finance and accounting. These investments could be considered as different projects that a company should evaluate by using the specific risk characteristics of the particular project, if the risk differs from the rest of the company's assets (Oesch and Schmid, 2013). Kruger et al. (2011, p. 1-6) analysed the use of a company-wide discount rate (in this paper also referred to as WACC or cost of capital) in North American diversified conglomerates, and reached the conclusion that this was quite commonly applied for investments that did not have the same risk as the rest of a company's assets. This so called "WACC fallacy" was also proven by Graham and Harvey (2001, p. 3), who used a survey method to investigate the use of company-wide WACC within Fortune 500 companies. 60% of 392 surveyed CFO's admitted that they would almost always apply a company-wide discount rate, even if the investment would have different risk characteristics (Graham and Harvey, 2001, p. 10).

Companies that apply a company-wide discount rate, for investments that differ in risk from the rest of the company's assets, are exposed to certain problems and implications. For instance, this WACC fallacy could lead to an overestimation of investments that are riskier than the company's typical investments (Kruger et al., 2011, p. 2). Companies could therefore tend to overinvest in divisions that have a beta value higher than the company-wide beta, and vice versa (Kruger et al., 2011, p. 25). This could be evident in conglomerates, as it is almost useless to apply a company-wide discount rate for investments in different unrelated industries and segments (Brealey et al., 2011, p. 243-249). Companies that apply a company-wide discount rate could perform very random estimations of the company's value and performance (Bancel et al., 2013, p. 18).

Financial expert CEO's and CFO's seems to be less likely to fall into the WACC fallacy (Custodio and Metzger, 2012, p. 38). The use of a company-wide discount rate could therefore relate to a lack of sophistication, or that companies might consider it to be a sort of arbitrage opportunity to value risky investments with a low cost of capital (Kruger et al., 2011, p. 4).

Managers could therefore have incentives to act opportunistic, by alternating their choice of discount rates to gain advantages (Watts and Zimmerman, 1990, p. 136).

## **1.2 Problem Discussion**

Goodwill acquired in a business combination should be allocated to each of the acquirer's cash generating units (henceforth referred to as CGU) that are expected to benefit from the synergies of the combination (EY, 2011, p. 6). IAS 36 requires companies, which have immaterial assets with indefinite useful lives, to each year test these assets for impairment. If the carrying amount of the asset, or the CGU it has been allocated to, exceeds the recoverable amount, there is a need for impairment. The recoverable amount is determined by the highest value of fair value less cost of disposal, and the value in use for the asset. Regardless of which method that was used to determine the recoverable amount, companies should disclose the discount rate used in the calculations (IAS 36:134).

CGU's are often exposed to different risks, due to being in different industries, markets, products, having different currencies, interest rates etc. (BDO, 2013, p. 44). For many companies it could therefore be inappropriate to apply a company-wide discount rate across multiple CGU's, as this discount rate will not incorporate CGU-specific risk (BDO, 2013, p. 44). When the surveillance unit of NASDAQ OMX reviewed the application of IAS 36:134 in Swedish listed companies, they further emphasised that disclosures should be supplied per CGU (NASDAQ OMX Stockholm, 2013, p. 11). However, this was seldom the case, as many companies used the same assumptions for all CGU's within their disclosures.

We found it interesting to apply the theoretical perspectives of a company-wide WACC on new investments, on how companies use discount rates for impairment tests in CGU's. However, the analysis of an application of a company-wide discount rate somewhat relies on the prerequisite that the internal company-wide WACC is not decoupled from the discount rates disclosed in the annual report. This link between internal practices and disclosed information has previously only been limitedly empirically tested (Ax and Marton, 2008, p. 434). We argued that impairment tests in CGU's could be seen as a continuum from evaluating new investments, since part of a new investment, e.g. an acquisition, would probably be allocated as goodwill in one or more CGU's. Therefore, our research added on to prior research, which demonstrated that the use of a

company-wide discount rate for new investments was common, by analysing if Swedish listed companies apply a company-wide discount rate in different CGU's. We also developed a second perspective, as we analysed the consistency between internal and disclosed discount rates.

In summary, we examined whether the WACC, that Swedish listed companies applied internally for impairment tests, were aligned with the WACC disclosed in their annual reports. We then analysed how common it was for the companies to apply a company-wide WACC for different CGU's internally. Finally, we analysed why companies might apply a company-wide WACC in different CGU's, and what the effects this application could have on the impairment tests. Our different perspectives resulted in three purposes.

### **1.3 Purpose**

*1:* Determine whether there is an inconsistency between the disclosed WACC and the WACC applied in CGU's for internal impairment tests, with respect to IAS 36.

*2:* Determine to what extent companies apply a company-wide WACC internally in all CGU's, when conducting impairment tests in accordance with IAS 36.

*3:* Describe and analyse the incentives for companies to apply a company-wide WACC in all CGU's, and what effect this could have on impairment tests.

## **2 Method**

### **2.1 Introduction**

We were initially determined to gather quantitative data to identify facts and trends about CGU's and what type of discount rate companies disclosed in accordance with IAS 36. We decided that the best way to collect this information was to gather data from a large number of annual reports. Furthermore, we created and distributed a web-based survey. The purpose of the survey was to provide us with more in-depth information on how companies applied discount rates in different CGU's. We also conducted minor case studies on four specific companies. The case studies were meant to identify and exemplify fundamental issues on the use of a company-wide discount rate in multiple CGU's. The following sections provide more thorough explanations of the methods we used to gather and analyse data.

## **2.2 Population**

We chose to study Swedish listed companies on NASDAQ OMX Stockholm's Large Cap, Mid Cap and Small Cap segments, i.e. all of the companies reported in accordance with IFRS. Another requirement to determine the population was that the chosen companies were in possession of immaterial assets with indefinite useful lives. Companies that were included in the population were also obliged to have allocated immaterial assets with indefinite useful lives, most often goodwill, to more than one CGU. Otherwise we would not be able to determine if the company would apply CGU-specific discount rates if additional CGU's were established. This led to a total population of 118 companies.

## **2.3 Annual Reports**

When the population of 118 companies was established, we gathered data from the entire population. A compilation of this data can be viewed in *Appendix A*. The quantitative data we gathered from annual reports provided a foundation for the thesis and further analysis. We used a structured observation approach, as we had formulated purposes and identified the objectives of the thesis prior to collecting information (Bell, 2011, p. 188). Thus, we were analysing selected parts of the annual reports. Although we used a structured approach, we reduced sampling errors by collecting data from the entire population, which is also known as taking a census (Cooper and Schindler, 2013, p. 84). This eliminated the problem of only addressing a sample of the population, which could reduce certainty of the representativeness (Greener, 2008, p. 47). Since we gathered complete data from annual reports, without conducting any further calculations, there was no room for the data to be influenced by the perception of the person that collected the information (Bell, 2011, p. 184).

An alternative from gather data from annual reports was to include more questions in the survey. For example, we could have asked if a company disclosed a company-wide or CGU-specific discount rate. However, as these disclosures were simple for us to observe, we determined that gathering this data from annual reports, would secure that the disclosed information was correct. This also reduced the risk for companies to misinterpret the survey questions, answer incorrectly, or to mystify their answer. This approach also decreased the amount of survey questions, and therefore lessened the burden of the respondents.



We reviewed the latest published annual reports at the time of our data gathering. Since the data was gathered during a publishing period of annual reports, it included annual reports from 2012 or 2013. We determined that there were no changes in regulation between 2012 and 2013 that could have influenced the data. Although, if specific companies had changed their discount rates from the annual report of 2012 to 2013, we did not consider this to have an impact on the thesis, as we to a larger extent sought to determine trends rather than specific discount rates. Even though the survey did not ask for specific disclosures, it worked as a complementary method to secure that the data gathered from annual reports was up to date. The annual report data included in our case studies was all gathered from annual reports of 2013.

The data from annual reports was analysed in both quantitative and qualitative manners. Foremost, we could determine in quantitative terms to what extent companies disclosed a company-wide discount rate or specific discount rates for different CGU's. We also analysed tendencies, such as if the amount of CGU's could have an impact on a company's choice of a company-wide or CGU-specific discount rates.

The data was also used in a qualitative manner, and as a reference point, when we created the survey and analysed its results. By cross-referencing survey answers with information gathered from annual reports, we could trace and validate survey answers. For example, we compared survey answers regarding similarity in risk between a company's CGU's, to how their CGU's were divided within their annual report, e.g. by product/market/geographical area. This information was then to discuss whether it was reasonable for these companies to regard their CGU's as having the same risk.

## **2.4 Survey**

The population of 118 companies was also used when we created the survey. Thus, if a company on NASDAQ OMX Stockholm did not fulfil the requirements for the population, they were also excluded as possible survey respondents. These requirements were retained as we only wanted to address companies that had encountered the scenario of establishing discount rates for two or more CGU's when they conducted their impairment tests.

The survey was designed to gather information that we were not able to find from data in annual reports, or from a literature review. The survey, as well as the compilation of data from annual

reports, should be considered as primary sources. These primary sources were the least accessible, but were created by us to directly address our research problems (Greener, 2008, p. 21). When we formulated survey questions, we used our literature review for advice. For example, we took some guidance from the article “The theory and practice of corporate finance: Evidence from the field” by Graham and Harvey (2001), which surveyed Fortune 500 companies regarding the use of cost of capital.

A corporate finance director at PwC in Malmö, as well as our thesis supervisors, piloted and reviewed our survey and gave us insightful comments before it was sent to possible respondents. The piloting was mainly conducted to ensure that the formulation of the questions was interpreted in the same manner as we intended (Bell, 2011, p. 14). This would increase the reliability of the study and the notion that the study would produce similar answers on multiple occasions, and also limit value-based interpretations (Bell, 2011, p. 117). The piloting strengthened the validity of our research, i.e. survey questions were formulated in a way that made it possible to draw conclusions aligned with our purposes (Bell, 2011, p. 118).

When we had reached a somewhat manageable population, we conducted a census survey by addressing the entire population (Bell, 2011, p. 13). The survey was created as a web-based self-completion questionnaire through SurveyMonkey. The reason for this was that we had a limited time scope to collect answers, and that a web-based survey made it easier to gather and analyse respondent data. The survey was aimed at CFO’s. However, if a company considered another employee as more eligible, we would also accept their responses. The non-CFO respondents included Group Controllers and Accounting Specialists/Accounting Experts. We requested email contact information from the population of 118 companies. Out of these 118 companies, we obtained contact information to 80 possible respondents. We could therefore no longer regard the survey as a census, but rather as a sample of the population.

The survey was sent out on April 15th. Two reminder emails were sent out, the first after five working days and the second after eight working days from the initial dispatch. Out of the 80 surveys we sent out we received 40 answers, which gave a respondent ratio of 50%. We regarded this as a satisfactory result, as the survey required somewhat sensitive internal information and since it was aimed at top management (Cooper and Schindler, 2013).

Seven possible respondents out of the sample of 80 had requested to not receive surveys through SurveyMonkey. Therefore we distributed the survey in a separate web-link to these potential respondents. However, if a respondent answered through the web-link we would not be able to trace the respondent, and compare their answer with information from their annual report. Since only one respondent answered through the web-link, we did not consider this to cause any sampling errors. Another respondent did not want to answer through the survey, but insisted on a brief telephone interview. We asked this respondent the exact same survey questions, and the answers were included into the compilation of survey answers.

We regarded the sample as having resemblance to the entire population. We also argued that the respondents indicated an unbiased sample and that there was no major risk of systematic variance, i.e. influences in the sample that could have affected the results (Cooper and Schindler, 2013, p. 341). Since we addressed the entire population, we considered the sample as a probability sample with a random selection (Cooper and Schindler, 2013, p. 343). Thus, we considered the 40 survey respondents to make out quite a reliable sample out of the population of 118 companies.

We created both an English and a Swedish version of the survey, since the sample also included non-Swedish respondents. Both versions are otherwise identical, and the English version can be seen in its entirety in *Appendix B*. To increase the validity of the answers, the first question in the survey asked the respondent to specify their position in the organisation. After this initial question, the survey was divided into three parts: (1) Internal Use of Discount Rates/WACC and CGU's, (2) Discount Rates/WACC and CGU's Within the Disclosures in the Annual Report, and (3) Creating a New CGU - a Hypothetical Example. We chose this structure to guide the respondents and to describe the area addressed in the forthcoming section of the survey. The three parts contained six questions in total, out of which four were mandatory. The mandatory questions contained pre-determined answers that the respondents had to choose from. In two of the mandatory questions the pre-determined answers were Yes or No, and the other two had pre-determined answers which consisted of a variation of statements. These pre-determined statements were created and adjusted by us, with help from the literature review and the piloting of the survey.

The two non-mandatory questions were follow-up questions, which were included to obtain a deeper understanding of companies internal conduct. In one of these questions the respondent had to write their own answer. The other question provided both the possibility to choose multiple pre-determined statements, and for the respondent to write their own answer. The overall order of questions was divided with respect to complexity and potential inherent sensitivity (Cooper and Schindler, 2013, p. 318). Complex or somewhat sensitive questions were placed at the end of the survey, as we believed this would lessen respondent fallout. We considered that respondents might be reluctant to continue answering subsequent questions if these sensitive questions were in the beginning of the survey.

We used different theoretical perspectives when we analysed the survey in a qualitative manner. The qualitative approach was used to obtain a deeper understanding of how companies reasoned about their discount rates in CGU's (Cooper and Schindler, 2013, p. 144). The survey consisted of several different categorical questions, and we argued that a qualitative analysis of its statistical material would be beneficial. It would not have been useful for us to apply regression analysis on the material, since we did not have one dependent variable that we were interested in understanding and modelling (Gujarati and Porter, 2010, p. 21). A regression analysis would be more beneficial if we chose to analyse how, for example, the use of a company-wide WACC was dependent on variables such as age or size of the company, amount of CGU's, or differences for CGU's in markets/products/countries.

## **2.5 Case Studies**

We complemented our analysis with the use of case studies. These case studies were analysed in a qualitative manner, since we analysed the norm of how to apply CGU-specific WACC, as established by reviewed literature, and the possible effects of a different conduct. The analysis was not quantitative as we, for example, did not review how many companies that should have used, or would be affected by changing their company-wide WACC to, various CGU-specific WACC. Due to time limitation, we concluded upon four case studies as this amount was regarded as a minimum, by authors of business research methods (Cooper and Schindler, 2013, p. 166).

The information used for the case studies consisted solely of quantitative data from annual reports and a financial database. The financial database was held by Stern School of Business in New York (Damodaran 2014), and should therefore be considered as secondary data. Since the information from the financial database was not created for our specific purposes, we held a higher degree of caution when we applied it, especially regarding its initial intended purpose (Cooper and Schindler, 2013, p. 100). Furthermore, the material from Stern School of Business was updated in January 2014, and compiles information from Morningstar, Bloomberg and S&P Capital IQ (Damodaran, 2014). These are all trustworthy sources and should therefore be considered as reliable.

The four case companies were chosen out of the 63 companies that disclosed a company-wide WACC for all CGU's, in our population of 118 annual reports. Another criteria was that none of the four companies had participated in the survey, as this could have harmed the anonymity of the survey respondents. This limited our selection, as 45 companies now remained. When we evaluated the excluded companies and the ones that were left, we did not consider this limitation to have an impact on the selection of companies for the case studies.

The database from Stern School of Business only had company and industry specific information for certain countries/industries (Damodaran, 2014). Therefore, we focused on finding case companies that had allocated CGU's to those specific countries/industries from the database. Thus, the selection could not be seen as random. However, the four case companies were our first and final sample. Thus, we did not test our calculations on a number of cases and thereafter decided upon which companies to include in the paper. The four case companies have remained anonymous, as we did not consider revealing their names would add any value to the analysis.

Instead of using the company-wide WACC that was disclosed in the annual reports from the four case companies, we used the company WACC that was provided in the material from Stern School of Business (Damodaran, 2014). Damodaran (2014) highlighted some potential limitations that should be considered when using the data from Stern School of Business. For instance, the data was collected in order to obtain industry average numbers, and more detailed information about specific companies is better obtained from annual reports. However, since we wanted to analyse and compare company-wide WACC with industry average WACC, we

decided that this comparison should be undertaken by only using the material from the database, and not the annual reports of the case companies. We considered this as especially important, due to the subjectivity inherited in the establishment of WACC components.

## **2.6 Literature Review**

All sources gathered in the literature review were secondary sources. We initially used these sources to study previously known research in order for us to establish a focus, and to understand what primary sources we should gather or create (Bell, 2011, p. 123). Some of the reviewed articles provided theory of how to make calculations using the correct WACC. We made a clear distinction of articles that concerned WACC for evaluating new investments, and articles that concerned WACC for impairment tests. Articles that concerned WACC for impairment tests were used to gain knowledge of best practice and where the different components in WACC are derived from. These articles also helped us understand and analyse how companies might seek to use and adjust WACC in ways that would benefit the company. Connected to this issue, the positive accounting theory was reviewed to further gain a theoretical understanding of how a company-wide WACC could be part of an opportunistic act. In other words, if a company-wide WACC might be used as a tool for a company to put CGU's, and the company, in a better position than what might be the truth, with regards to risk. This theoretical view was especially useful when we analysed the case studies.

We also gathered and analysed articles that concerned disclosure policy. This literature provided knowledge about how disclosures in annual reports may be affected by how competitors disclose information. Closely related to this was literature regarding if, or why, companies might disclose different information than what reflects reality. This discussion could be further connected to the data we gathered from the survey. The institutional theory, which focuses on disclosures, was reviewed to establish a deeper theoretical understanding and analysis of our empirical findings. The institutional theory made it possible to discuss both how isomorphisms and competitors might influence company disclosures, but also the possibility and reason for companies to decouple internal discount rates from those disclosed in the annual report.

The choice of the positive accounting theory and the institutional theory also worked as an explanatory device for the key factors and relationships we analysed (Bell, 2011, p. 103). The

positive accounting theory and the institutional theory helped us to distinguish and discuss if the application of a company-wide discount rate was based on internal, and perhaps opportunistic factors, or more on an external institutional behaviour, e.g. to mimic other companies through disclosures. Another possibility was that the choice of a company-wide discount rate derived from a combination of the two theoretical perspectives.

A substantial amount of the articles included in the literature review were academic articles published in peer-reviewed journals. These articles were gathered using trusted academic search engines, such as Lund University's LUBsearch. We also used information from textbooks published by well renowned academic publishers. This ensured reliability and empirically established conclusions in both the articles and the textbooks we used. Other publications included material from large auditing or consulting firms. The content of these publications were not always empirically established, and it was important to recognise that it could contain bias towards the use of specific elements and procedures. Therefore, to ensure reliability, we obtained a critical perspective regarding possible underlying purposes or audiences for these publications.

## **2.7 Method Summary**

*Figure 1*, on the next page, summarise the main methods used when we collected and analysed data. The figure describes which of the purposes these methods were mainly aimed at and with what intent the methods were used.

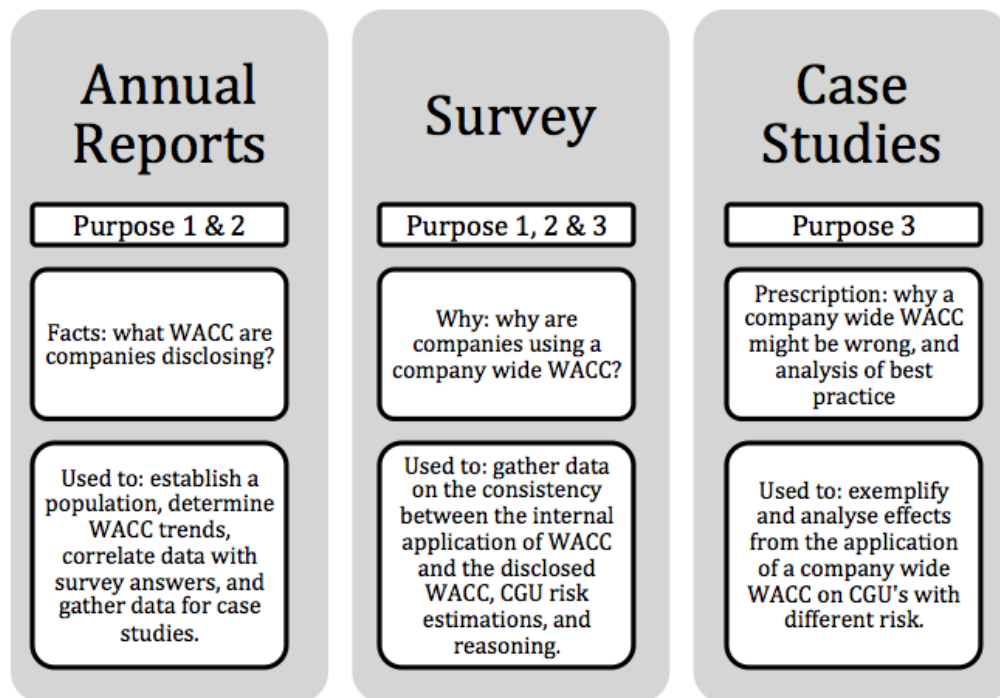


Figure 1

*Methodological scheme*

When we applied the methodological scheme, we initially gathered data on disclosures of WACC with regards to IAS 36:134. Then we used the annual report data and reviewed literature to define facts and procedures, and created a survey to gather additional empirical data (Cooper and Schindler, 2013, p. 66). Lastly, we used results from the two data gathering methods to create case studies. In addition to the three chosen methods, we also conducted a literature review. The literature review supported both the gathering and analytical stages of all three methods, but mainly the analysis of the case studies.

By using a deductive method, we took advantage of theory and experience to argue why a certain conduct, the use of a company-wide discount rate for all CGU's, should or should not be desired (Cooper and Schindler, 2013, p. 66). Therefore, some parts of our analysis were based on a normative theoretical perspective, as we, mainly through case studies, sought to prescribe how companies should operate (Deegan and Unerman, 2011, p. 9). However, our analysis of annual reports, as well as the survey we distributed, was mostly based on an inductive approach, as both these sought to examine the application of discount rates (Cooper and Schindler, 2013, p.



69). Thus, the survey and the analysis of annual reports were more closely connected to a descriptive theoretical perspective than a normative one (Deegan and Unerman, 2011, p. 254).

### **3 Literature Review**

#### **3.1 Application and Disclosure of WACC**

One prerequisite for our analysis of the application of a company-wide discount rate, and its implications, was to certify that the WACC disclosed in the annual report was in fact also used internally. If this was not the case, an analysis that were partly based on discount rates provided in annual reports, would be based on inaccurate information (Ax and Marton, 2008, p. 434). Users of the annual report would then also have received information that was not aligned with internal procedures, which could impact the decisions of users, competitors and managerial actions (Lambert et al., 2007, p. 408). This could be viewed as an opportunistic act, in which managers decouples the internal accounting procedures from the information provided in annual reports (Deegan and Unerman, 2011, p. 274-275). In this scenario, decoupling, as a part of the institutional theory, is a method in which actual managerial and operational practices are different from those presented in, for example, financial statements and disclosures. Decoupling is a method managers may use in order to make it seem as the organisation is adopting particular institutional practices (Deegan and Unerman, 2011, p. 364)

The quality of a company's disclosures could also have an impact on the cost of capital of the company, due to having an effect on the expected cash flows and covariance of expected cash flows of the company. Effects on the expected cash flows are related to market participant's perception of the distribution of these cash flows (Lambert et al., 2007, p. 410). The covariance effect relates to an effect on the real decisions of the company, which could alter the future distribution of cash flows. An effect on the cost of capital would, in turn, have an impact on the investments that companies view as optimal (Lambert et al., 2007, p. 408).

Better accounting information should improve the capital investment decisions between firms and investors (Lambert et al., 2007, p. 409). Investors would therefore require a lower expected return, due to not having to incorporate poor accounting information quality in the share price. The benefits of a lower cost of capital could be viewed in the light of the efficiency perspective within positive accounting theory, since it assumes that managers use accounting practices that

best reflect the performance of the company (Deegan and Unerman, 2011, p. 273). However, the perspectives of the positive accounting theory also inherit some critique. Positive accounting theory relies on assumptions such as individuals acting in self-interest, if it would increase their wealth. These assumptions may be seen as far too simplistic when describing how individuals make decisions. Another implication is that much empirical material seems to reject the hypotheses used in the positive accounting theory (Deegan and Unerman, 2011, p. 256).

### **3.2 Influences On and Benefits From Disclosures**

The institutional theory also analyses, through a theoretical perspective, information and disclosures as a mean to gain advantages, with regards to the relationships between organisations and stakeholders (Deegan and Unerman, 2011, p. 321). Primarily, it is proposed that behaviour is used as a tool for organisations to increase legitimacy (Deegan and Unerman, 2011, p. 358). In this paper, two isomorphisms of the institutional theory help to explain why organisations might be prone to adopt similar characteristics and form (Deegan and Unerman, 2011, p. 357). The normative isomorphism is a result of professional pressure, e.g. from group norms favouring certain practices (DiMaggio and Powell, 1983, p. 152). The mimetic isomorphism examines how some organisations might seek to imitate practices of other organisations, often in order to decrease uncertainty and increase legitimacy (DiMaggio and Powell, 1983, p. 151).

Much of the literature on providing disclosures discusses voluntary disclosures, but providing discount rates in accordance with IAS 36 is mandatory. However, the requirements of IAS 36 provide some room for how information is disclosed and expressed in the annual report. The theoretical perspectives of voluntary disclosures could therefore be used when we analyse a company's choice of disclosing and/or applying a company-wide WACC for all CGU's, or specific per CGU WACC.

A survey made by Graham et al. (2005, p. 27-35) demonstrated that many CFO's in the U.S. considered reducing uncertainty about company prospects the most important issue for making voluntary disclosures. The authors also argue that companies do not want to set a level of disclosures that could be difficult to maintain in the future and that companies have a concern of revealing proprietary information. In this sense, managers could have an incentive to limit public information in order to avoid an effective monitoring from the financial markets (Deegan and

Unerman, 2011, p. 286). This could also be analysed in the light of institutional practices and isomorphisms.

In a similar manner, Ax and Marton (2008) analysed the consistency between human capital disclosures and internal human capital management practices. Although their research did not concern disclosure practices regarding WACC, we argue that parts of their discussion was applicable for our analysis. The authors provided some points on how annual report disclosures could be affected by disclosure strategies and internal measurement difficulties (Ax and Marton, 2008, p. 447). First, there might be a risk of providing strategic information to competitors. Second, there is a cost of collecting information and creating disclosures. Third, the lack of knowledge about how to measure certain information, caused by an absence of a common framework on measurement and reporting, might influence the disclosures (Ax and Marton, 2008, p. 449).

The potential loss of proprietary information from disclosures, and the benefits of reducing information asymmetry with capital markets, might be seen as a trade-off for managers. The Conceptual Framework of IFRS (§44) highlights the relationship between cost and benefit with regards to information in annual reports. The cost of providing the information should not exceed the benefits derived from it. Although the Conceptual Framework of IFRS does not discuss the relationship of cost and benefit with regards to the choice of a specific accounting practice, the reasoning of cost and benefit could be used to analyse how companies may decide upon using a company-wide discount rate or CGU-specific discount rates.

### **3.3 WACC for Impairment Tests**

In order to analyse WACC for different CGU's, it was necessary to clarify what these CGU's are and how they could be established. A CGU is the smallest identifiable group of assets that generate cash inflows that are mostly independent of from other cash inflows generated by other assets or groups of assets (Deloitte, 2012). BDO (2013, p. 11) adds that the segmentation of CGU's could include an entire company, different businesses within a company, or production lines within a company or a department. CGU's could also include groups of equipment, or plant and property within a company or department.

The discount rate used for impairment tests on immaterial assets in CGU's may not always be the same discount rate as the one a company evaluate external investments with. IAS 36:A17, recommends that the company WACC is used as a starting point for obtaining a CGU-specific discount rate. Husmann and Schmid (2008, p. 60) further argues that the company WACC is in fact the only suitable starting point to determine a suitable discount rate for impairment in CGU's. However, IAS 36:A18 clarifies that WACC must be further adjusted to reflect how the market might assess the specific risk of the asset, and exclude risk that is not relevant. Adjustments for specific risks such as country risk, price risk and currency risk associated with the CGU's are also necessary to undertake (PwC, 2012). This method of obtaining a CGU-specific WACC, which we focus on in this thesis, is labelled as the traditional approach.

IAS 36 also specifies the expected cash flow approach. When applying this method, companies should adjust their cash flows instead of the discount rate. The cash flows should then be discounted with a WACC that does not include the risk reflected in the cash flows. This approach might be more effective in some cases, namely when it is too difficult to produce a risk-adjusted discount rate, or when there exists multiple cash flow scenarios (Wiecek et al., 2013, p. 46). IAS 36:A15 emphasises that it is important to not adjust both the discount rate and the cash flows for specific risks, as this will result in double counting some assumptions.

Companies should use surrogates/pure plays whenever an asset specific discount rate is not directly available from the market (EY, 2011, p. 8). Surrogates/pure plays are companies that are publicly traded in the market, in the same line of business segment as the specific CGU, and not involved in any other type of business (Oesch and Schmid, 2013). If a company choose to use a discount rate prior to or after tax does not really matter, the important thing is that the company applies a pre-tax rate to pre-tax cash flows and vice versa, since both procedures should lead to the same result (McPhee, 2012, p. 32).

It does seem as calculation of WACC is a difficult issue. EY (2011, p. 10) recognises that the calculations are complex and that there seems to be a lack of any general consensus. Although, companies should put much effort into obtaining an appropriate discount rate, as it is a crucial part of the impairment test.

### 3.4 Components of WACC for CGU's

In conjunction with the prior section of WACC for impairment tests, this section reviews literature that analysed the components inherited in the WACC formula. We relate this section both to positive accounting theory and cost/benefit from the Conceptual Framework of IFRS, since we provide the norm of best practice from the Appendix in IAS 36. The positive accounting theory complement this further, when we analyse if companies might act opportunistic, due to being exposed to a complex framework.

The WACC formula is a blended measure of the company cost of capital, i.e. a weighted average of a cost and required return (Fernandez, 2011, p 5):

$$WACC = \frac{E}{(E + D)} \times R_e + \frac{D}{(E + D)} \times R_d \times (1 - T_c)$$

*Equation 1, WACC*

#### *Debt and Equity Levels in CGU's*

The amount of weightings of debt (D) and equity (E) for a CGU should be based upon a market capital structure, i.e a capital structure that reflects what an investor would apply when investing in the CGU (BDO, 2013, p. 43). This is also recognised in IAS 36:A19, which emphasises that a company should use a typical market debt level. The discount rate a company applies to different CGU's for impairment tests is therefore independent of a company's capital structure and the way the company financed the purchase of the asset. The debt-equity ratio for the CGU is best obtained by identifying an average level of gearing for entities operating in the same industry as the CGU (EY, 2011, p. 10).

#### *Cost of Equity and the Risk Free Rate in CGU's*

The next part we look at is the cost of equity (Re). The Capital Asset Pricing Model (CAPM) is often used for estimating the cost of equity, by adding risk premiums to the risk-free rate (McPhee 2012, p. 33):

$$E(R_i) = R_f + \beta_i(E(R_m) - R_f)$$

*Equation 2, CAPM*

CGU beta ( $\beta$ ) could be estimated from listed comparable companies, but would need deleveraging due to reflecting the capital structure of those companies. A listed company has some benchmark in its own beta, but it should be compared to other market participants as well (McPhee, 2012, p 35). Financial managers often use an industry beta in order to reduce estimation errors. beta should be based upon the typical market levels of debt and equity for the CGU. In practice it is quite common that companies apply an entity level beta to all CGU's within the company, but the company should apply separate CGU-level levered betas to each CGU (BDO, 2013, p. 45).

The risk free rate ( $R_f$ ) in *Equation 2*, could be established from issued long term bonds in the different jurisdiction of the CGU's of the company, i.e. government bonds with 10-30 years to maturity, or by using high quality corporate bonds if the CGU operates in a high quality market for this type of bonds (McPhee, 2012, p. 34). Although, there seems to be little consensus regarding what time horizon for the risk free rate that financial managers use, which results in the fact that two companies operating in the same industry might estimate different costs of equity (Jacobs and Shivdasani, 2012, p. 6). Companies are required to use a risk free rate that applies to the jurisdiction in which the CGU operates (BDO, 2013, p. 41). The market risk premium is usually determined based upon a comparison of long-term stock yields and risk free bond yields over a certain period of time (KPMG, 2012, p. 27).

#### *Cost of Debt in CGU's*

If a company does not have debt instruments traded in the market, the cost of debt ( $R_d$ ) could be determined by using the risk free rate and adjust it to include market risk premium that would apply to a similar entity or CGU (BDO, 2013, p. 43). The cost of debt should reflect the financing cost of a potential purchaser and could be derived from ratings of peer group companies, or returns from industrial bonds of peer group companies (KPMG, 2012, p. 25).

#### *The Tax Rate in Different CGU's*

It is quite common that companies disclose a post-tax discount rate, since WACC is estimated on a post-tax basis, even though IAS 36 requires the disclosure of a pre-tax discount rate (BDO, 2013, p. 44-50). Companies should recognise that the pre-tax discount rate is often not equal to the post-tax discount rate grossed up by a standard tax-rate (KPMG, 2012, p. 27). A marginal tax rate should be used for each country the CGU's are located in, and a weighted average of the tax

rate where applicable (KPMG, 2012, p. 25). However, Jacobs and Shivdasani (2012, p. 6) recognises that it is quite common for companies to use an effective tax rate. The use of an effective tax rate could have a vast impact on the WACC, due to sometimes being significantly lower than the marginal tax rate.

## 4 Empirical Results

### 4.1 Population and Survey Respondent Ratios

*Table 1* below provides an overview of the ratio between company-wide WACC and CGU-specific WACC, from the information we gathered from annual reports of the population of 118 companies. The information is divided by the various segments that the companies are listed on, i.e. Large Cap, Mid Cap, and Small Cap. The entirety of the gathered information from annual reports can be viewed in *Appendix A*.

	Large Cap	Mid Cap	Small Cap	Total
<b>Total</b>	40 (34% out of total)	29 (24% out of total)	49 (42% out of total)	118
<b>Company Wide WACC</b>	18 (45% out of Large Cap)	12 (41% out of Mid Cap)	33 (67% out of Small Cap)	63 (53% out of total)
<b>Per CGU WACC</b>	22 (55% out of Large Cap)	17 (59% out of Mid Cap)	16 (33% out of Small Cap)	55 (47% out of total)

*Table 1*

*Data gathered from annual reports from the population of 118 companies*

*Table 2* below depicts the distribution of survey respondents.

	Large Cap	Mid Cap	Small Cap	Unknown (web-link)	Total
<b>Total</b>	11 (27,5% out of total)	10 (25% out of total)	18 (45% out of total)	1 (2,5% out of total)	40
<b>Company Wide WACC</b>	7 (64% out of Large Cap)	3 (30% out of Mid Cap)	8 (44% out of Small Cap)	-	18 (45% out of total)
<b>Per CGU WACC</b>	4 (36% out of Large Cap)	7 (70% out of Mid Cap)	10 (56% out of Small Cap)	-	21 (55% out of total)

*Table 2*

*Survey respondents*

The Company-wide WACC and Per CGU WACC rows in *Table 1* and *Table 2* describes if a specific company disclosed a company-wide WACC for all CGU's, or CGU-specific WACC for CGU's. Comparing the 40 survey respondents to the total population of 118 companies, we were satisfied by the distribution of respondents. The ratio of respondents on Large Cap, Mid Cap, and Small Cap was similar to what was represented in the total population. The total ratio of companies that disclosed a company-wide WACC or CGU-specific WACC was also somewhat

aligned with what was represented in the total population. Even though some deviances existed, we did not see this as an indication of a sampling error. The allocation of respondents in each segment in the survey is quite small and minor changes would therefore cause rather large changes in percentage ratios. Furthermore, the deviances concerned both a larger percentage ratio of Large Cap survey respondents, and a smaller percentage ratio of Small Cap respondents, that disclosed a company-wide WACC, than what was the case for the total population. Again, this indicated that there did not exist any large sampling errors.

The first question in the survey asked what position the respondent held in the company. Out of the 40 respondents 21 were CFO's, 14 were Group Controllers, and 5 were Accounting Specialists/Accounting Experts.

**4.2 Comparison Between the Amount of CGU's and Type of WACC**

Figure 2 presents a general overview by comparing the amount of CGU's our population of 118 companies disclosed in their latest annual report, with whether the companies disclosed a company-wide WACC for CGU's or CGU-specific WACC.

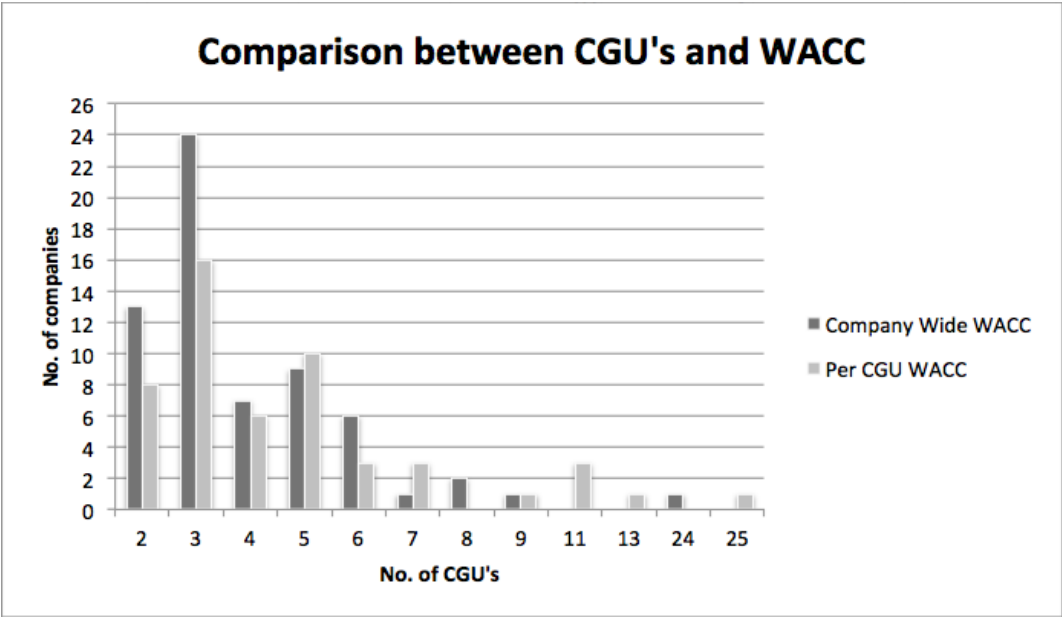


Figure 2

*The amounts of CGU's for companies that disclosed a company-wide discount rate and CGU-specific discount rates*



83% of the companies that disclosed a company-wide WACC had between two and five CGU's, and 73% of the companies that disclosed CGU-specific WACC had between two and five CGU's. As seen in *figure 2*, there was a somewhat larger amount of companies with two or three CGU's that disclosed a company-wide discount rate, than companies that disclosed specific per CGU. However, there were 63 companies that disclosed a company-wide WACC in our population, and 55 companies that disclosed different CGU-specific WACC. It is therefore hard to determine if there is any correlation between the amounts of CGU's reported by the companies and whether they disclosed a company-wide discount rate or a CGU-specific discount rate. If these trends were to be analysed further, it would be possible to run a regression analysis and discover whether there is a significant relationship between the amount of CGU's and what type of WACC that companies apply in these CGU's. However, this was not included in the main purposes of the thesis.

### **4.3 Survey Results**

In this section of the empirical results we compiled the data gathered from the survey. We have presented the data by how it best represents the gathered information and how we chose to analyse it. Therefore, this section does not necessarily follow the structure of the survey, as the structure of the survey was decided by other factors. Some data has been presented in tables which cross-references two or more questions, in order to establish a more thorough understanding of the survey answers. The complete survey answers of each respondent can be seen in *Appendix C*.

Initially we presented the data that established whether there was a consistency between the internally applied WACC and the disclosed WACC. Second, we show the results of CGU risk assessment and specification of the type of WACC that was applied internally. Then, we display the arguments that companies gave for using a company-wide WACC. Finally, this section ends with a presentation of which type of WACC companies would choose internally and in the disclosures for a new hypothetical CGU.

#### **4.3.1 Consistency Between Internal and Disclosed WACC, Questions 5 and 6**

*Question 5* is related to whether companies decoupled their internally used discount rates from the disclosed ones. This issue was important to clarify, since we primarily wanted to discuss how

the use of a company-wide discount rate would affect internal operations. The survey results displayed that all 40 companies except one used the same WACC internally as the WACC they disclosed in the annual report.

*Question 6* was related to *Question 5* as it targeted those respondents, who in *Question 5* answered that their disclosed discount rates were not consistent with the discount rates used internally, to specify the reason for this. The only respondent applicable to answer *Question 6* chose to express their arguments in their own words. This respondent answered, “We do not disclose our discount rates in the annual report”. We were somewhat confused by this answer, since the company did in fact disclose WACC for different CGU’s in their annual report from 2012 and 2013.

#### **4.3.2 CGU Risk Assessment and Internal WACC, Questions 2 and 3**

*Question 2* asked if the respondents considered their different CGU’s to have a similar risk profile, with respect to markets, products and/or geographical areas. Out of 40 answers, 23 answered “yes” and 17 answered “no”.

*Question 3* investigated what type of WACC the companies applied internally when they performed impairment tests in different CGU’s. The respondents could choose between three pre-determined alternatives. Out of the 40 respondents, 21 answered that they applied the same company-wide WACC for all of their CGU’s and 14 respondents answered that they applied a specific per CGU WACC for each of their CGU’s. 5 respondents answered that they used a company-wide WACC for some CGU’s, and specific WACC for others.

In order to attain a better understanding of the procedures within the companies, we created *Table 3*, which cross-references the answers of *Question 2* and *Question 3*. Row Q2 in *Table 3*, i.e. *Question 2*, demonstrates whether a company considered all of their CGU’s to have the same risk. The three Q3 rows, i.e. the alternatives of *Question 3*, explains what type of WACC a specific company used internally, with regards to their response in *Question 2*.

Q2	Same risk for all CGU's	Yes	No
Q3	Company wide WACC for all CGU's internally	20	1
	Per CGU WACC for all CGU's internally	2	12
	Company wide WACC for some CGU's internally and specific WACC for some CGU's	1	4

Table 3

*Cross-reference between Question 2 and Question 3*

As we see, the most common choice, for respondents considering their CGU's to have the same risk profile, was to use a company-wide WACC for all CGU's internally. It is also evident that most of the respondents, who considered their CGU's to have different risks, would use CGU-specific WACC for different CGU's.

#### 4.3.3 Arguments for Internal Use of a Company-wide WACC, Question 4

*Question 4* was aimed at respondents who in *Question 3* answered that they used a company-wide WACC internally for all of their CGU's. We requested the respondent to specify their arguments for using a company-wide WACC, in a text box. We combined similarly expressed answers in order to make the 21 acquired remarks more manageable. The answers are presented in *Table 4*.

Arguments for applying a company-wide WACC internally	
Same type of risk for all CGU's	9
Different risks in short-terms, but equal risk in long-terms	1
Same discount rate for investments in the same geographical area	1
Same type of risks, and new investments are financed in the same way	1
No relevant method to produce different discount rates	1
Practical reasons	1
Hard to evaluate differences in risk	1
Risks are already calculated in cash flows	1
There was only one CGU to aggregate goodwill to	3
No answer	2

Table 4

*Question 4, arguments from respondents for choosing a company-wide WACC in all CGU's*

The most common answer was that a company-wide WACC was used for all CGU's, as the CGU's were affected by the same prerequisites and levels of risk. Some of these nine answers

included companies that considered their different CGU operations as being the same and exposed to the same risks.

As seen in *Table 4*, three respondents expressed somewhat differently that they had difficulties with producing specific WACC for different CGU's. These answers included that it was hard to evaluate differences in risks, that they had no relevant method to produce specific WACC, and that a company-wide WACC was used for practical reasons.

Three respondents answered that they only allocated goodwill to one single CGU. These respondents all changed their distribution of CGU's from two or more CGU's in 2012 to one single CGU in their annual report of 2013. Their annual reports from 2013 were not published at the time we gathered our data, which lead to an inconsistency from the annual report of 2012. However, as all of these respondents had goodwill allocated to two or more CGU's in the annual report from 2012, we chose to include their answers in the data.

#### **4.3.4 Creating a New CGU – a Hypothetical Example, Question 7**

In *Question 7* the respondents were told that they had to create a new CGU, which goodwill was allocated to, due to entering a new market/product/industry and/or geographical area with a different risk profile than existing CGU's. The respondents then chose both what type of WACC they would apply for the new CGU in the internal impairment tests, and within the disclosures in the annual report. We provided four pre-written choices, as well as an additional option for respondents who wanted to specify their choice. The respondents were only able to choose one of the five options.

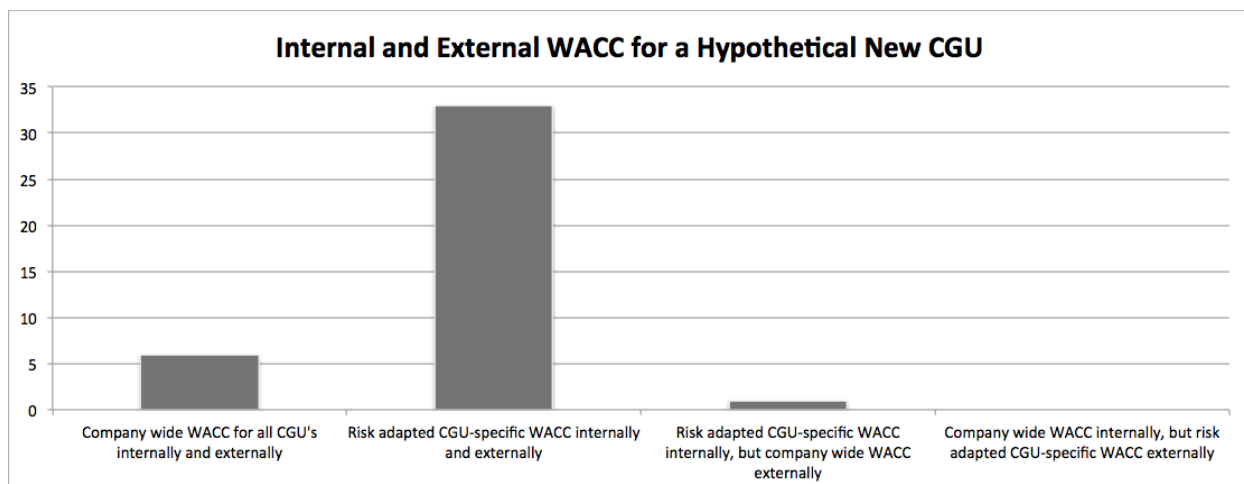


Figure 3

*Question 7, what type of WACC the respondents would apply both internally and in the disclosures for a new CGU, which inherited a different risk profile than existing CGU's*

As seen in *Figure 3*, 33 of the 40 respondents, answered that they would choose a CGU-specific WACC, adapted to the different risk profile of the new CGU, both for the internal impairment tests as well as within the disclosures. Six respondents concluded that they would choose a company-wide WACC for all CGU's, including the newly created CGU, for both the internal impairment tests and within the disclosures. One respondent answered that they would choose a CGU-specific WACC adapted to the different risk profile internally, but a company-wide WACC in the disclosures.

The option of applying a specific WACC for the new CGU, for both internal impairment tests and within the disclosures, was by far the most common response in *Question 7*. As depicted in *Table 5* on the next page, this was a common choice both by companies who previously used a company-wide WACC for all CGU's, as well as by companies who previously used CGU-specific WACC.

Q7	Would use a specific WACC for the new CGU internally and externally		
Q2	Same risk for all CGU's	Yes	No
Q3	Company wide WACC for all CGU's internally	14	-
	Per CGU WACC for all CGU's internally	2	13
	Company wide WACC for some CGU's internally and specific WACC for some CGU's	1	3

Table 5

Respondents that would apply a specific WACC both internally and externally for the new CGU. The respondents' answer in Question 7 was cross-referenced with their answer in Questions 2 and 3.

Table 6 displays that five out of the six companies, which in Question 7 answered that they would use a company-wide WACC for the new CGU internally and externally, considered all of their existing CGU's to have the same risk and used a company-wide WACC in all of them. The single company in the right column was the company that, in Table 4, explained that they used risk-adjusted cash flows instead of CGU-specific WACC.

Q7	Would use the company wide WACC for the new CGU's internally and externally		
Q2	Same risk for all CGU's	Yes	No
Q3	Company wide WACC for all CGU's internally	5	1
	Per CGU WACC for all CGU's internally	-	-
	Company wide WACC for some CGU's internally and specific WACC for some CGU's	-	-

Table 6

Respondents who would apply a company-wide WACC both internally and externally for the new CGU. The respondents' answer in Question 7 is cross-referenced with their answer in Questions 2 and 3.

As seen in Figure 3, only one company chose an option in Question 7 that lead to an inconsistency between the WACC they used internally and the WACC they disclosed in the annual report. We cross-referenced this answer with the respondent's answer in Questions 2 and 3, and found that the company considered their already existing CGU's to have the same risk, and applied a company-wide WACC in all of these.

## 5 Case Studies - Applying Best Practice for CGU-specific WACC

The case studies are meant to provide understanding of best practice in accordance with IFRS and the previously presented literature from EY (2011), PwC (2012), KPMG (2012) and BDO

(2013). We intended to display praxis and analyse how a CGU-specific discount rate could be obtained and why the use of company-wide discount rate might be a simplistic approach.

In the case studies we assumed that no asset specific discount rate were available on the market. The correct approach would therefore be to identify a peer group of companies to compare the WACC with (IAS 36:Appendix). The peer group companies should all be similar to the company in terms of size, industry, turnover, etc. We chose to use industry average WACC instead, as this allowed us to easier demonstrate differences in WACC components between a specific company and the market for specific CGU's. A company that tries to identify a peer group for CGU-specific WACC from the database we used, should only include similar companies in the calculations, and make sure that these companies are only operating in the same industry as the CGU (EY, 2011). As described, we applied the traditional approach from IAS 36 in the case studies.

The modelling of a new discount rate is simplified, and we admit that without thorough information about internal operations and procedures, it would be difficult for us to make true estimations of what WACC the companies should apply in different CGU's. However, as explained, the intention of the case studies was not to generate an exact discount rate that the companies should use, or to discuss how many rate points should be considered as a significant difference. As mentioned in section 2.5 of the thesis, the data used when we created the case studies was gathered from the database established by Stern School of Business (Damodaran, 2014). First, we give a brief description of the chosen case companies. Then, we analyse the modelling of the case studies with the use of best practice and related literature.

## **5.1 The Case Companies**

### *Company A*

Company A (2013) is operating in the healthcare equipment industry and is listed on Large Cap. The company has three CGU's, and stated that China, which is included in their Asia/Pacific CGU, is their second largest overall market. This would make China an appropriate comparison to use within the Asia/Pacific CGU. Company A was compared to a group of 22 Chinese companies operating in the health care equipment industry (Damodaran, 2014).

Table 8 illustrates Company A's division of CGU's. This was used to determine that the specific CGU was substantial enough for calculating a specific CGU WACC. A similar review was made for all four case companies, but we have not provided CGU-specific tables for each company, as we did not consider disclosing this would add additional value to the analysis.

Company A, CGU's	Allocated goodwill, Mkr
North and South America	1 543
Europa, Middle East and Africa	1 478
Asia and the Pacific region	1 390
<b>Total</b>	<b>4 411</b>

Table 7

*Company A's CGU's and allocated goodwill (Company A, 2013)*

#### *Company B*

Company B (2013) is listed on Large Cap and operates in the machinery industry. The company has allocated goodwill to three different CGU's, where two CGU's consisted of geographical areas, and one CGU as the industry Construction. We chose to study the WACC for Construction, as it is separated from the other CGU's, due to not being established by geographical factors. As Company B stated that a majority of sales for Construction can be referred to Europe, we chose construction companies in Europe as a suitable comparison. The group of European companies constituted 59 companies operating in the construction industry (Damodaran, 2014).

#### *Company C*

Company C (2013) is listed on Small Cap and operates within the printing and publishing sector. Company C has six CGU's divided between different geographical areas. We regarded the CGU located in the U.S. as suitable, partially because it constituted a significant part of their total goodwill. Company C was compared to 97 American companies within the printing and publishing sector (Damodaran, 2014).

#### *Company D*

Company D (2013) is listed on Large Cap, and operates in the food processing industry. Company D has goodwill allocated to four CGU's based on geographical areas. The case



analysis targeted the CGU consisted by the U.S., as this CGU accounted for a quite large amount of the overall allocated goodwill. The group of U.S. companies in the food processing industry that were used for comparison amounted to 97 (Damodaran, 2014).

## 5.2 Case Study Analysis

The data we gathered from the Stern School of Business database can be seen in *Table 8*.

	Company A	Company B	Company C	Company D
Cost of Debt	4,04 (6,14)*	4,04 (5,90)	4,54 (5,54)	4,04 (5,54)
Cost of Equity	7,48 (8,79)	8,67 (11,30)	10,97 (8,45)	6,80 (7,30)
Marginal Tax Rate	22 (25)	22 (40)	22 (40)	22 (40)
E/(E+D)	88,45 (97,53)	73,91 (56,76)	32,12 (73,09)	84,54 (78,17)
D/(E+D)	11,55 (2,47)	26,09 (43,24)	67,88 (26,91)	15,46 (21,83)
Beta ( $\beta$ )	0,89 (0,97)	1,13 (1,31)	1,59 (1,08)	0,75 (0,85)
Cost of Capital (before tax)	7,08 (8,72)	7,46 (8,79)	6,61 (7,64)	6,37 (6,92)

*\*The numbers in the parantheses presents the geographical/industry average of the group of companies operating in the same industry as the analysed CGU's of the case companies*

*Table 8*

*Comparison of the components from a company-wide WACC and industry averages for the four case companies (Damodaran, 2014)*

Below, we demonstrate the WACC calculation for Company A, and the 22 companies in the Chinese healthcare equipment industry. The WACC components from *Table 8* are generated into *Equation 1*, but without the marginal tax rate effect:

$$\text{Company A: } WACC = (0,8845 * 0,0748) + (0,1155 * 0,0404) = 0,0708$$

$$\text{China: } WACC = (0,9753 * 0,0879) + (0,0247 * 0,0614) = 0,0872$$

*Equation 1* gives an output before tax for Company A of 7,08% for their primary market. The average WACC for the Chinese healthcare equipment industry was 8,72%. The same calculations were undertaken for the other three companies and their different industry averages.

The output of discount rates in *Table 8* should be interpreted with caution. The level of WACC only demonstrates that there may exist a difference between industry average WACC where the specific CGU's are located, and the company-wide WACC used by Companies A-D. The input

in *Table 8* has not used unlevered betas, which means that the beta value is affected by the capital structure of the different companies.

We now turn to analysing the different components displayed in *Table 8*. Let us recall the article from BDO (2013), which claimed that the use of a company-wide discount rate for CGU's exposed to different markets, industries, jurisdictions, products, interest rates etc. is a common error in practice. An analysis of the components in *Table 8* could help us understand why and where there may exist faults in the use of a company-wide discount rate for different CGU's. In the following section we often refer to Company C. The reason for this is that it allows us to analyse one company more thoroughly. However, this analysis is also applicable on the other companies. Another interesting reason for choosing Company C was that the capital structure of Company C and the market capital structure displayed a substantial difference.

#### *Cost of Equity and the Risk Free Rate*

From our results in *Table 8* we see indications both of companies having lower and higher cost of equity than their respective comparisons. To understand the differences, we need to recall *Equation 2* and the different components in the cost of equity. We take a closer look at Company C and its cost of equity compared to the industry average in the U.S.

The beta for Company C is a company-wide beta used in all of their CGU's. This beta could be used as a benchmark, but should, according to (McPhee, 2012), be compared to other market participants. We start by finding unlevered betas in the material from Stern School of Business for both Company C and the U.S. publishing and newspapers industry average. These unlevered betas are 0,91 for company C and 0,87 for the industry average (Damodaran 2014). The beta should be levered by the market capital structure where the CGU is located (BDO, 2013). Company C's current use of a higher beta than the industry unlevered average could have the impact that they would calculate a higher cost of equity than necessary, which could have an effect on the impairment test. Companies that apply a company-wide beta to all CGU's could obtain a too high cost of equity in CGU's located in industries/markets where the average beta is lower, and vice versa.

The risk free rate and risk premium is also included in *Equation 2*. If we again use Company C for comparison we see that the long-term treasury bond rate for the U.S. and Sweden seems to be

almost the same. The material from Stern School of Business indicates that this rate is approximately 3,04%, and that the risk premium in Sweden and the U.S. are approximately 6% (Damodaran, 2014). This would therefore only have a limited effect on the cost of equity, but it is easy to realise that a company which has located CGU's to, for instance emerging markets, which has a substantially higher risk premium, would obtain different values for their cost of equity and thereby WACC for those CGU's.

### *Cost of Debt*

We turn again to Company C and notice in *Table 8* that the cost of debt is lower for Company C than the U.S. industry average. KPMG (2012) implies that returns from peer group industrial bonds and ratings could be used to derive the cost of debt. If Company C used ratings from peer groups or its own debt instruments could be hard to determine, but its more likely that they used the cost of debt derived from their own debt instruments traded in the market if they have such instruments.

The tax rate displayed in *Table 8* is the marginal tax rate for the country where the company is located, which is applicable according to KPMG (2012). The tax effect on WACC has been excluded in *Table 8*, since IAS 36 requires companies to use a pre-tax discount rate. If we again look at Company C, we see that the marginal tax rate differs between the U.S. and Sweden. This means that if a company would choose to disclose a post-tax discount rate, which is quite common according to BDO (2013), it leads to an inconsistency when they assume a company-wide discount rate in all CGU's. The marginal tax effect on the cost of debt, see *Equation 1*, could be quite substantial if the market debt level is high where the CGU is located. This would imply that companies make assumptions about marginal tax rates that are quite vague, when they disclose a post-tax company-wide discount rate, even if they have CGU's located in markets that are heavily debt financed.

### *Debt and Equity*

As seen in *Table 8*, some of the companies have a quite different capital structure compared to the industry average they are operating in. Compared to the norm described by IAS 36:A19, EY (2011) and BDO (2013), this indicates a lack of comparability to the average market structure of companies operating in the same industry as the CGU. In their current state, it seems that the companies applied their overall company capital structure on all of their CGU's. For instance,

*Table 8* displays that Company C has a substantially different gearing ratio, i.e. debt/equity ratio, than the industry average in the U.S. The difference in gearing could probably partly be explained by the lower cost of debt for Company C than the U.S. industry average and vice versa regarding the cost of equity. If Company C had applied a market capital structure in the CGU in the U.S., the gearing would be different. The different gearing could then have an impact on the WACC for the CGU in the U.S., due to the difference in cost of equity etc. If Company C would try to calculate different WACC for their CGU's, it is crucial that they calculate and estimate all of the included variables thoroughly. Otherwise, if Company C only use a market capital structure, but do not recalculate the cost of equity, they would overestimate the WACC for the CGU located in the U.S.

The relation between a company's capital structure and the market capital structure is perhaps the most interesting component in the case analysis. A company that would use its overall capital structure in all CGU's, even if these are located in markets with a substantially higher risk, or a totally different industry, would make very random estimations of WACC (Bancel et al., 2013). For instance, if a company has one CGU in an emerging market and the rest of the CGU's in mature markets with low risk, the cost of equity in the markets might differ substantially, but also the capital structure. If the emerging markets are more heavily equity financed, and suffers from a higher cost of equity, there could be a substantial difference in WACC between the different CGU's. Therefore, it is necessary that companies make comparisons of components such as beta, capital structure and interest rates that are inherited in WACC with similar companies operating in the same industry/location as the CGU, as demonstrated by EY (2011) and McPhee (2012).

## **6 Analysis**

### **6.1 Analysis of Consistency Between Internal and Disclosed WACC**

The empirical results in section 4.3.1 concluded that there was a large consistency among the survey respondents, between disclosed WACC and the WACC that were applied in internal impairment tests in CGU's. As seen in *Figure 3*, the consistency between internal and external was also prevalent when we asked the companies to determine a WACC for a new hypothetical CGU, which had a different risk profile than already existing CGU's.

If a company chose to disclose another discount rate in the annual report than the discount rate applied internally, it could be considered as opportunistic. Especially if the disclosed company-wide discount rate was lower than the discount rate used internally in the impairment tests. This would also impact the sensitivity analysis that companies perform in accordance with IAS 36, as this analysis would be modelled by using a lower discount rate than what is applied internally. Contrary, if the disclosed discount rate would be higher than those used internally, it would have a negative impact on the company and the annual report, as it would lead users of the annual report to consider the CGU as more risky than what it actually is. This could also have an effect on what CGU's stakeholders of the company considers optimal for the company to make internal investments in (Lambert et al., 2007).

The results from our survey promotes the view that companies are not acting in an opportunistic manner, but instead in accordance with the efficiency perspective of the positive accounting theory. This was supported by *Figure 3*, which demonstrates that a vast majority of the companies would apply a risk adapted CGU-specific WACC both internally and externally, when they established a new CGU with a different risk profile. Since *Question 7* did not specify whether the risk for the new CGU, and thereby the discount rate, would be higher or lower than the company-wide discount rate, it is also an indication that companies would act according to the efficiency perspective, even if they would not benefit from it. One possible reason for companies to act in accordance with the efficiency perspective is that it might reduce their cost of capital (Lambert et al., 2007).

The results presented in *Table 5*, is another factor that indicated an efficiency perspective from the companies. Both companies that applied a company-wide discount rate, due to having same risk in CGU's, and companies that applied CGU risk-adjusted discount rates, due to having different risk in CGU's, would use a specific risk-adjusted WACC for a new CGU internally and externally. Though, one implication needs to be considered. First, the respondents of the survey could be considered as financial experts by the definition from Custodio and Metzger (2012). Therefore, as also proposed by the normative isomorphism, the survey answers may be influenced by what is considered as common professional conduct, and could therefore be biased towards an option aligned with best practice.

Therefore, we analysed if a common professional conduct might have influenced the companies that stated they would choose a CGU-specific WACC both internally and externally for a new CGU. We reviewed the 14 companies that in *Table 5* considered their previous CGU's to have the same risk and only used a company-wide WACC. These 14 companies were reduced by two companies, which claimed that they only had one CGU. One especially interesting observation was that one of the 12 companies that remained, had stated that their reason for previously using a company-wide WACC, was that they did not have any relevant method to produce WACC for different CGU's. If this company did not have any relevant method to produce different specific WACC, this could be an indication that their answer in *Question 7* was influenced by what they believed to be the correct answer, instead of how they actually would act.

We then analysed the existing CGU's of the remaining 11 companies. We admit that the internal estimation of risk in specific CGU's is often based on information that is not disclosed and could be hard to evaluate as an outsider. It was therefore difficult for us to make a thorough analysis of the specific risk in the CGU's for these companies. However, the most prevalent cases of doubt, regarding similarities in risks for CGU's, is when CGU's are divided between substantially different markets, products and/or geographical areas (BDO, 2013). This type of distribution of CGU's were evident for some of the 11 companies, which was an indication that the CGU's faced different circumstances and were exposed to different risks (PwC, 2012). Furthermore, some of the 11 companies also concluded in their annual reports that the markets, where the CGU's were located, would develop differently in the future. This was another indication that the CGU's might be exposed to different risk. To conclude, it would be hard to determine an exact number of companies that would not, based on their existing CGU's, actually choose a CGU-specific WACC for a new CGU, even though they stated it in *Question 7*. However, we consider it to be likely that some of the answers from these 11 companies were influenced by a common professional practice.

*Question 7* also has a clear connection to the perspective of decoupling. The decoupling perspective is related to whether companies choose to disclose a CGU-specific WACC, even though they would use a company-wide WACC for all CGU's internally. Although we did not find any indication of this conduct in *Question 7*, we found some evidence of this in *Questions 2* and *3*. As seen in *Table 3*, two companies answered that they regarded all their CGU's to have

the same risk, but nonetheless chose to apply various specific WACC for different CGU's internally and in the disclosures. Furthermore, in *Table 3*, another company also regarded all their CGU's to have the same risk, but applied CGU-specific WACC for some CGU's and a company-wide WACC for some. The application and disclosure of CGU-specific WACC, although CGU's have the same risk, could indicate that a company would like to be perceived as operating in a certain manner, and to have followed certain institutional practices. The reason for the three companies to apply and disclose CGU-specific WACC, when this procedure was perhaps not necessary, could be that they wanted to be regarded as knowledgeable about risk and specific WACC assessments. Related to this is the mimetic isomorphism of the institutional theory, since companies might try to mimic disclosure conduct of competitors perceived to be operating after a best practice, in order to gain legitimacy.

In *Question 7* one company answered that they would use a specific WACC for the new CGU internally, but the company-wide WACC within the disclosures. This company also stated in the survey that they regarded their existing CGU's to have the same risk, and that a company-wide WACC was used in all of these. As the company previously only had disclosed a single WACC, they might have considered this as an opportunity to continue to disclose a company-wide WACC, even though they would use a specific WACC for the new CGU internally. This could be connected to Ax and Marton's (2008) points on disclosure strategies, as this conduct perhaps would be used to avoid disclosing specific risk assessments about the new CGU for competitors. Companies may be reluctant of disclosing CGU-specific WACC, due to competitors operating in the same markets and due to revealing future possibilities or concerns.

Earlier in the analysis we argued that it would be considered an opportunistic act if companies disclosed a company-wide WACC that was lower than an actual CGU-specific WACC applied internally. We have now also introduced a possible opportunistic behaviour, which was evident among some respondents. Namely, that some companies are inconsistent between their internal and disclosed WACC, in order to gain competitive advantages or increase legitimacy.

## **6.2 Incentives for Applying a Company-wide WACC**

An analysis of the incentives for why companies might choose to apply a single company-wide WACC for all CGU's, adds on to the prior section of the analysis. Therefore, we focused

primarily on the companies that, in *Table 3*, stated that they applied a company-wide WACC for all CGU's internally. *Table 4* was also analysed extensively, as it displayed how companies argued about their choice of a company-wide WACC.

We first identified different scenarios in which it could be correct to apply a company-wide WACC on all CGU's internally. We decided upon two different scenarios, which both are represented in *Table 4*. The first scenario is related to the company that considered their CGU's to have different risk, but explained that those risks were already calculated for in the CGU's cash flows. This conduct is aligned with the expected cash flow approach explained in the Appendix of IAS 36, and should therefore be considered as aligned with the efficiency perspective. Other than adjusting the WACC for different CGU's, i.e. the traditional approach, adjusting the cash flows is the only valid option, if the CGU's are affected by different risk (McPhee, 2012). Since it was only one company that claimed they applied the expected cash flow approach instead of the traditional approach, it was especially interesting to analyse the other arguments displayed in *Table 4*.

We considered it unlikely that companies that claimed to have the same risk for all CGU's had risk-adjusted their cash flows, as this would indicate that the CGU's did in fact not have the same risk. This leads us to the second scenario that is correct, which is that all CGU's actually have the same risk, and therefore should use the same level of WACC. As mentioned earlier, some of the arguments that companies considered their CGU's similar with respect to risk, could be questioned. Though, we again have to emphasise that it could be hard for us to determine if the risk between CGU's actually differ for companies that claimed that their CGU's had the same risk. However, we could argue that for companies to decide upon a company-wide WACC in all their CGU's, they should have identified an asset specific WACC on the market, or if this was not applicable, identified a peer group of companies to compare the CGU WACC with. We questioned the likelihood that companies did an analysis of best practice, and nonetheless decided to apply the exact same company-wide WACC for all CGU's.

The application of a company-wide WACC also inherits some more questionable scenarios than the ones we previously presented. If a company conducted best practice in order to establish CGU-specific WACC, and found some variance from the company-wide WACC, but still chose to apply a company-wide WACC, it would be an opportunistic act. The opportunistic conduct



could be exemplified by the four case studies, displayed in *Table 8*. For all four case companies, the modelling of WACC displayed a lower company WACC than what the CGU-specific WACC might have been. We could argue that if a company followed best practice from the Appendix in IAS 36 and identified an asset specific WACC, or a peer group of companies, and then came to the same result as we did for the industry averages, an application of the company-wide WACC would be an opportunistic act, e.g. in order to apply a lower WACC and avoid an impairment of goodwill in certain CGU's. This could be somewhat supported by what Kruger et al. (2011) claimed, i.e. companies that benefit from a low company-wide WACC might consider it as an arbitrage opportunity for risky investments.

A possible opportunistic behaviour is also represented in *Table 6*, from the five companies that would use a company-wide WACC internally and externally for a new CGU, even though they have not claimed to apply the expected cash flow approach. This would be an incorrect conduct, since we clearly stated in the survey question that the new CGU would have a different risk-profile than existing CGU's. All of these companies stated in *Question 2* that they considered their prior CGU's to have the same risk. This means that their choice in *Question 7* could be to simplify their impairment procedures and the application of WACC, as well as to gain the advantage of not having to disclose a CGU-specific WACC.

To understand the choices made by these five companies in *Question 7*, we looked at *Table 4*, which displayed their arguments for choosing a company-wide WACC. One of the companies claimed that they applied a company-wide WACC for practical reasons. We also look at the respondent that considered it hard to determine differences in risk between CGU's, and the company that claimed to have no relevant method to produce specific WACC for CGU's. However, this last company stated that they would choose a CGU-specific WACC for the new CGU. Though, as discussed earlier in the analysis, we considered that this company's choice in *Question 7* might have been influenced by common professional conduct. We found it somewhat remarkable that companies, which had difficulties to produce CGU-specific WACC with the traditional approach, did not apply the expected cash flow approach, since the expected cash flow approach could be applied if a company has problems with identifying an asset specific discount rate or a peer group. If a company chose to apply a company-wide WACC on CGU's

with different risk, when cash flows could be adjusted, it might indicate an opportunistic act to gain advantages.

The reasons for companies to apply a company-wide WACC, even though differences in risk are evident, could be analysed by the ambiguity that seems to exist in calculation of WACC. EY (2011) claimed that the calculation of WACC is complex and that there seems to be no general consensus about how these calculations are made. Jacob and Shivdasani (2012) reviewed each of the components in the WACC equation, and determined that users chose to derive the various components from different sources and thereby obtained different outcomes. If the components are hard to calculate and if there is no real consensus, it might indicate a complex framework. We see an indication of this in *Table 4*, as one company argued for a company-wide WACC due to financing their new investments in the same way. This procedure is not aligned with IAS 36:A19, which specifies that the discount rate is independent from how the company financed the purchase of the asset. The reason for this is that the future cash flows from the asset is not affected by how the company financed the purchase of it. Another indication of a complex framework is derived from the company that claimed to have no relevant method of producing CGU-specific WACC.

The identification of a peer group, if an asset specific WACC is not available on the market, is another issue that adds even more complexity into the establishment of CGU-specific WACC. We obtained industry averages provided by Stern School of Business for our case studies when we analysed the components to include in a CGU-specific WACC. If companies would use figures from similar databases in actual internal impairment tests, they should bear in mind that they put a large amount of trust in the information provided in the database, and how the information was gathered.

The liberal regulation for establishing CGU's could further complicate the idea of finding a peer group with similar prerequisites as a specific CGU. For example, if a company has very unusual products, which are not manufactured by many other companies, it could be quite hard to identify a peer group. Another complication is if a company has a CGU located in a foreign country, e.g. where companies may not comply with IFRS, which could make it even more difficult to find relevant figures. Somewhat related to this is the discussion by Ax and Marton's (2008), regarding how companies might avoid disclosing information from a lack of knowledge

on how to measure it. Hence, if companies find the procedures of producing CGU-specific WACC incomprehensible, or impractical, they might stick with a more general assessment and apply a company-wide WACC.

The discussion on how to establish CGU-specific WACC could be further analysed by the concept of cost and benefit, from the Conceptual Framework of IFRS. If we recall the arguments made by respondents in *Table 4*, we argue that some these arguments are likely influenced by the time and cost it could take to establish a CGU-specific WACC. Again, we could relate this to disclosure strategies, and how companies might be reluctant to disclose information associated with a high gathering cost (Ax and Marton, 2008). The process of establishing CGU-specific WACC could be time consuming, and the components inherited in it might not always be truly reliable. Therefore, companies might feel reluctant to follow best practice, and produce CGU-specific WACC, as they may consider a company-wide WACC to be more aligned with a cost-benefit approach.

The analysis of the complexity of establishing CGU-specific WACC could also be discussed with the use of *Figure 2*. As presented in *Figure 2*, there were five companies that had ten or more CGU's with CGU-specific WACC. It could be argued that if some of the companies with the largest amount of CGU's were able to establish CGU-specific WACC, companies with a more limited number of CGU's with different risk should therefore also be able to do this in a cost beneficial manner.

## **7 Discussion of Results**

In this paper we questioned how a company-wide WACC is aligned with the fact that it is common for companies to allocate CGU's to different markets/geographical areas/products, as those CGU's could be exposed to different risks. We considered this as an important issue to analyse, since the application of a company-wide WACC might imply that companies act opportunistic when performing impairment tests in CGU's. In order to recognise incentives to apply a company-wide WACC, it was also important to analyse if there was consistency between internally applied WACC and disclosed WACC.

We found that a majority of the Swedish listed companies studied in this paper, did in fact apply a company-wide WACC within different CGU's. Our survey answers then indicated that some companies decoupled their internal WACC from the WACC disclosed in the annual report. However, decoupling does not seem to be the reason for the large amount of companies that disclosed a company-wide WACC within their annual reports. Instead, our survey concluded that there was a large consistency among companies between the WACC applied internally and the WACC disclosed in the annual report.

The subjective nature of calculating WACC and performing impairment tests in CGU's could enable ways for companies to act opportunistically. We found limited evidence that supported an opportunistic behaviour among the included companies, but companies seemed to a larger extent apply an efficiency perspective. However, we identified a risk of an opportunistic action when applying a company-wide WACC, which was likely enlarged when a company had a CGU in a market with a substantially higher risk than other CGU's. Companies residing in Sweden, which might benefit from a low cost of capital, could consider it an arbitrage opportunity to apply their company-wide WACC in CGU's with a higher risk, possibly in order to avoid an impairment. We did not find substantial evidence for this specific opportunistic action from the results of our survey, as the majority of the companies in fact would choose to apply an appropriate risk-adjusted WACC for a new CGU.

The practical reasons for applying a company-wide WACC seems to be aligned with difficulties of producing CGU-specific WACC. There is likelihood that companies do not consider the benefits of a CGU-specific WACC to outweigh the costs of producing it. For Swedish companies, which might have a low cost of capital, the benefits for a company to follow best

practice and produce CGU-specific WACC could be viewed as somewhat ambiguous. We only recognised one benefit, which is related to a decreased cost of capital, due to being perceived as legitimate through extensive disclosures.

The inconsistent use, both regarding the application of a company-wide WACC and how the components of WACC are derived could harm the comparability between annual reports. In order to increase the comparability, there might be a need to increase the incentives of applying CGU-specific WACC, or to regulate the area differently. The subjective manner of how companies are allowed to establish CGU's is one factor that seems to influence the inconsistencies in the application of WACC. This subjectivity further influences the practice of finding a suitable peer group of companies for a CGU, in order to create a specific WACC. The lack of application of the expected cash flow approach, as well as other inconsistencies with the norm established in the Appendix of IAS 36, is an indication that IASB should work to increase the knowledge of both the expected cash flow approach and how to produce CGU-specific WACC. From the survey answers, as well as in the case studies, we recognised that impairment of goodwill is a method that contains a lot of subjective estimates and valuations. Consequently, IASB should consider the question whether impairment is a method to prefer, or if it would be better to amortise goodwill.

Overall, our findings suggest that companies do not seem reluctant towards the idea of applying CGU-specific WACC for different CGU's. However, some companies appear to have difficulties of finding efficient ways of establishing a CGU-specific WACC.

## **7.1 Future Research**

- In order to get at better understanding of the practices and difficulties of establishing CGU-specific WACC, more thorough case analyses could be conducted. One or several companies could be approached to discuss internal procedures of CGU risk assessments. If the approached companies previously only applied a company-wide WACC, the information could be used to find a suitable peer group with a number of identical companies, to produce a CGU-specific WACC. By conducting these case studies, a deeper discussion could also be made on the reasonability of these procedures, especially with regards to cost and benefit.

- Companies that benefits from a low cost of capital might have incentives to apply their company-wide WACC in CGU's that are located in markets with a substantially higher risk. Therefore it would be interesting to use regression analysis in order to see if there is a statistically significant relationship between the use of company-wide WACC and CGU's located in markets with higher risk than the overall company.

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## **Annual Reports of 2012**

AAK Annual Report

ACAP Invest Annual Report

Addnode Annual Report

Addtech AB Annual Report

AllTele Annual Report

Alfa Laval Annual Report

Anoto Annual Report

Aspiro Annual Report

Assa Abloy Annual Report

Atlas Copco Annual Report

Availo Annual Report

Axfood Annual Report

Beijer Annual Report

Bergs Timber Annual Report

Björn Borg Annual Report

Boliden Annual Report

Boule Diagnostics Annual Report

BTS Group Annual Report

Bure Equity Annual Report

Cision Annual Report

Connecta Annual Report

Consilium Annual Report

Cybercom Annual Report

Dedicare Annual Report

Elanders Annual Report

Elos Annual Report

Etrion Annual Report

Elekta Annual Report

Electrolux Annual Report

Ericsson Annual Report

Feelgood Annual Report

FinnvedenBulten Annual Report

FormPipe Software Annual Report

Fenix Outdoor AB Annual Report

Geveko Annual Report

Global Health Partner Annual Report

Hexagon Annual Report

Hexpol Annual Report

Husqvarna Annual Report

Image Systems Annual Report

Intellecta Annual Report

Investor Annual Report	Peab Annual Report
Intrum Justitia Annual Report	Poolia Annual Report
KnowIT Annual Report	Partnertech Annual Report
Lammhults Design Group Annual Report	RNB Retail Annual Report
Lagercrantz Group Annual Report	Sandvik Annual Report
Lindab International AB Annual Report	SAS Annual Report
Malmbergs Annual Report	SCA Annual Report
Meda Annual Report	Scania Annual Report
Medivir Annual Report	Securitas Annual Report
Mekonomen Annual Report	Sectra Annual Report
Midsona Annual Report	Skanska Annual Report
Midway Annual Report	Svenska Handelsbanken Annual Report
MTG Annual Report	Sweco Annual Report
MultiQ International Annual Report	Swedbank Annual Report
NCC Annual Report	Swedish Match Annual Report
Nederman Annual Report	Systemair Annual Report
Note Annual Report	Tele2 Annual Report
Nordic Service Partner Holdings Annual Report	Transcom Worldwide Annual Report
Nibe Annual Report	Tradedoubler Annual Report
Nobia Annual Report	TeliaSonera Annual Report
	Trelleborg Annual Report

Vitec Annual Report	Investment Kinnevik Annual Report
VBG Group Annual Report	Loomis Annual Report
Volvo Annual Report	Nolato Annual Report
Xano Industri Annual Report	Nordea Annual Report
<b>Annual Reports of 2013</b>	Opcon Annual Report
Acando Annual Report	Opus Group Annual Report
BE Group Annual Report	Orexo Annual Report
Cloetta Annual Report	Oriflame Annual Report
Company A Annual Report	PA Resources Annual Report
Company B Annual Report	Prevas Annual Report
Company C Annual Report	Proffice Annual Report
Company D Annual Report	Ratos Annual Report
Concentric Annual Report	Rejlers Annual Report
Eniro Annual Report	SEB Annual Report
Fagerhult Group Annual Report	Studsvik Annual Report
Getinge Annual Report	Semcon Annual Report
Gunnebo Annual Report	Stora Enso Annual Report
HiQ Annual Report	Tieto Annual Report
ICA Annual Report	Unibet Annual Report
IFS Annual Report	ÅF Annual Report
Indutrade Annual Report	

## Appendix

### Appendix A – Data from Annual Reports

The entirety of our gathered data from the 118 annual reports. The spreadsheet depicts company name, type of discount rate, level of discount rate, NASDAQ OMX Stockholm segment, number of CGU's, and the names of their CGU's.

#### Companies 1-39

Company	WACC	Discount Rate	Segment	No. CGU	CGU
Boliden 2012	Company wide WACC	10% (pre-tax)	Large Cap	5	Individual mines or mining areas with shared refining facilities, copper smelters, zinc smelters, Boliden Bergsöe AB, Boliden Commercial AB
Ericsson 2012	Company wide WACC	8% (after-tax)	Large Cap	3	Networks, Professional Services, Support Solutions
Husqvarna 2012	Company wide WACC	11% (pre-tax)	Large Cap	3	Europe & Asia/Pacific, America, Construction
Sandvik 2012	Company wide WACC	10% (pre-tax)	Large Cap	5	Sandvik Mining, Machining Solutions, Materials Technology, Construction, Venture
Alfa Laval 2012	Company wide WACC	7,36% (pre-tax)	Large Cap	3	Equipment, Process Technology, Marine & Diesel
Getinge 2013	Company wide WACC	9,9% (pre-tax)	Large Cap	3	Infection Control, Extended Care, Medical Systems
Skanska 2012	Per CGU WACC	9%, 9%, 11%, 11%, 12% (pre-tax)	Large Cap	5	Norway, Finland, Czech Republic, United Kingdom, USA Civil
Stora Enso 2013	Per CGU WACC	8,1%, 8,1%, 8,1%, 8,1%, 8,1%, 9,1% (pre tax)	Large Cap	6	Newsprint and Book Paper, Uncoated Magazine Paper, Central Europe, Finnish House Building Operations, Renewable Packaging Solutions, Renewable Packing - Asia
TeliaSonera 2012	Per CGU WACC	5% to 20,6% (pre-tax)	Large Cap	25	Both by business area and by country
Trelleborg 2012	Company wide WACC	8,2% (after-tax)	Large Cap	6	Trelleborg Coated Systems, Industrial Systems, Offshore & Construction, Sealing Solutions, Wheel Systems, Group Items
Volvo 2012	Company wide WACC	12% (pre-tax)	Large Cap	5	Trucks, Construction Equipment, Buses, Volvo Rents, Other Business Areas
Electrolux 2012	Per CGU WACC	14,1%, 9,6%, 9,1%, 16,0%, 8-11,3% (pre-tax)	Large Cap	5	Major Appliances EMEA, Major appliances North America, Major appliances Asia/Pacific, Major appliances Latin America, Other
Atlas Copco 2012	Company wide WACC	10,5% (pre-tax)	Large Cap	4	Compressor Technique, Industrial Technique, Mining and Rock Excavation Technique, Construction Technique
SCA 2012	Per CGU WACC	6,6%, 5,5%, 4,8%, 4,8%	Large Cap	4	Personal Care, Tissue, Forest Products, Other Operations
Scania 2012	Company wide WACC	11% (pre-tax)	Large Cap	2	Vehicles and Services, Financial Services
Securitas 2012	Per CGU WACC	5,4% to 19,7%	Large Cap	5	Security Services North America, Security Services Europe, Mobile and Monitoring, Security Services Ibero-America, Other
NCC 2012	Per CGU WACC	7,2%, 7,2-7,7%, 7,2% (after-tax)	Large Cap	3	NCC Construction, NCC Roads, NCC Housing
Peab 2012	Per CGU WACC	6,1%, 7,3%, 6,4% (pre-tax)	Large Cap	13	6,1% used for segments in Sweden, 7,3% for segments in Norway, 6,4% for segments in Finland
Assa Abloy 2012	Per CGU WACC	9%, 9%, 10%, 10%, 9%	Large Cap	5	EMEA, Americas, Asia Pacific, Global Technologies, Entrance Systems
Tele2 2012	Per CGU WACC	9% to 23% (pre-tax)	Large Cap	11	Sweden, Norway, Russia, Estonia, Lithuania, Latvia, Croatia, Kazakhstan, Netherlands, Austria, Other
Investor 2012	Per CGU WACC	9,9%, 9,6% (pre-tax)	Large Cap	2	Mölnlycke Health Care and Aleris
Axfood 2012	Company wide WACC	9,5% (pre-tax)	Large Cap	5	Hemköp, Willys, PrisXtra, Axfood Närlivs, Dagab
Ratos 2013	Per CGU WACC	11%, 10%, 11%, 11% (pre-tax)	Large Cap	4	Bisnode, Inwido, Nordic Cinema Group, SB Seating
Hexagon 2012	Per CGU WACC	8%, 9%, 9%, 9%, 9% (pre-tax)	Large Cap	5	Hexagon Geosystems, Hexagon Metrology, NovAtel, Intergraph, Other Operations
AAK 2012	Company wide WACC	12,8% (pre-tax)	Large Cap	3	Scandinavia including The Netherlands, United Kingdom, United States
MTG 2012	Company wide WACC	12% (pre-tax) (Could depend on territory)	Large Cap	6	Viasat Film, Prima Group, P4 Radio, Nova, Ukraine, Other Units
Meda 2012	Per CGU WACC	13%, 12%, 12% (pre-tax)	Large Cap	3	The U.S., Nordics, Europe and the rest of the world
Swedish Match 2012	Per CGU WACC	6,2%, 13,9%, 6,1% (pre-tax)	Large Cap	3	US cigars and chewing tobacco operations, Match and lighter operations, US snuff operations
Elekta 2012	Company wide WACC	9% (pre-tax)	Large Cap	3	North and South America, EMEA, Asia Pacific
Nordea 2013	Per CGU WACC	remium of 170 points Poland and 260 points Russia	Large Cap	7	Retail Banking Norway, Retail Banking Denmark, Retail Banking Sweden, Retail Banking Poland, Life & Pensions, Banking Russia, Shipping Offshore & Oil services
Swedbank 2012	Per CGU WACC	11,1%, 12,8%, 12,1%, 9%, 12% (pre tax)	Large Cap	5	Estonia, Latvia, Lithuania, Sweden (Banking operations in these countries), Other CGU's non banking operations
Nibe 2012	Per CGU WACC	10,0%, 10,1% 10,0% (pre-tax)	Large Cap	3	Nibe Energy Systems, Nibe Element, Nibe Stoves
Hexpol 2012	Company wide WACC	12,1% (pre-tax)	Large Cap	2	Hexpol Compounding, Hexpol Engineered Products
Tieto 2013	Per CGU WACC	8,9%, 8,9%, 9,2%, 9,5% (pre-tax)	Large Cap	4	Managed Services, Consulting and System Integration, Industry Products, Product Development Services
Intrum Justitia 2012	Company wide WACC	10,21% (pre-tax)	Large Cap	3	Northern Europe, Central Europe, Western Europe
ICA 2013	Per CGU WACC	6,1%, 8,0%, 13,8%, 11,5%	Large Cap	4	ICA Sverige, Rimi Baltic, InkClub, Hemtex
SEB 2013	Company wide WACC	11-13% (pre-tax)	Large Cap	6	Wealth management with SEK, Merchant Banking with SEK, Retail Banking with SEK, Retail Banking SEK with Card, Life Denmark, Life Denmark with SEK
Investment Kinnevik 2013	Per CGU WACC	15%, 10-17% (pre-tax)	Large Cap	3	G3 Good Governance Group, Metro, Other
Oriflame 2013	Company wide WACC	9% (pre-tax)	Large Cap	5	CIS & Baltics, EMEA, Latin America, Asia, Manufacturing

## Appendix A, continued

### Companies 40-79

Company	WACC	Discount Rate	Segment	No. CGU	CGU
Svenska Handelsbanken 2012	Company wide WACC	10,9% (pre-tax)	Large Cap	3	Branch operations in Sweden, Branch Operations outside Sweden, Capital Markets
Addtech AB 2012	Company wide WACC	12% (pre-tax)	Mid Cap	4	Addtech Components, Addtech Energy, Addtech Industrial Solutions, Addtech Life Science
Bure Equity 2012	Per CGU WACC	12%, 12%, 12% (pre-tax)	Mid Cap	3	Mercuri, Theduction, RushRail
SAS 2012	Per CGU WACC	between 13,8-14,2% (pre-tax)	Mid Cap	3	SAS Scandinavian Airlines Norge, Wideröe, Blue 1 (Finland)
Cloetta 2013	Per CGU WACC	12%, 9%, 9%, 9% (pre-tax)	Mid Cap	4	South/Italy, Scandinavia/Sweden, Finland, Middle/The Netherlands
Concentric AB 2013	Per CGU WACC	9,3%, 9,3%, 11% (pre-tax)	Mid Cap	3	Europé, Rest of the World, Americas
Eniro 2013	Per CGU WACC	0,7%, 11,4%, 11,8%, 10,1%, 12,4%, 10,2% (pre-tax)	Mid Cap	7	Sweden Local Search, Sweden Voice, Norway Local Search, Norway Voice, Denmark Local Search, Poland Local Search, Finland Voice
Fagerhult Group 2013	Company wide WACC	11% (pre-tax)	Mid Cap	4	Northern Europé, UK Ireland and the Middle East, Other Europé, Asia and Australia
Fenix Outdoor AB 2012	Company wide WACC	10% (pre-tax)	Mid Cap	2	Brand, Retail
Gunnebo 2013	Company wide WACC	10,5% (pre-tax)	Mid Cap	5	Bank/Security and Cash Handling, Secure Storage, Global Services, Entrance Control, Gateway
HIQ 2013	Company wide WACC	10,3% (pre-tax)	Mid Cap	6	HIQ Finland (consultancy), HIQ Oresund (consultancy), HIQ Göteborg (consultancy), HIQ (Stockholm), HIQ Ace (consultancy), Friends Technology (consultancy Finland)
IFS 2013	Company wide WACC	13,3% (pre-tax)	Mid Cap	8	Europé North, Europé West, Europé Central, Europé East, Americas, Africa/Asia/Pacific, Defense, Group Items
Indutrade AB 2013	Company wide WACC	14% (pre-tax)	Mid Cap	5	Engineering & Equipment, Flow Technology, Fluids & Mechanical Solutions, Industrial Components, Special Products
Lagercrantz group 2012	Company wide WACC	11% (pre-tax)	Mid Cap	24	Goodwill is allocated to different group companies
Lindab International AB 2012	Company wide WACC	11,1% (pre-tax)	Mid Cap	3	Ventilation, Building Components, Building Systems
Loomis 2013	Per CGU WACC	6,4% to 28,7% (pre-tax)	Mid Cap	11	Frankrike, Storbritannien, Portugal, Schweiz, Slovakien, Spanien, Sverige, Tjeckien, Turkiet, Argentina, USA
Medivir 2012	Company wide WACC	9% (pre-tax)	Mid Cap	2	Pharmaceuticals, Parallel Imports
Mekonomen 2012	Company wide WACC	10,3% (pre-tax)	Mid Cap	6	MECA Scandinavia, MECA Denmark, Mekonomen Sweden, Mekonomen Norway, Mekonomen Finland, Sorensen o Balchen
Nederman 2012	Per CGU WACC	12,99%, 12,93%, 10,25% (pre-tax)	Mid Cap	3	EMEA, International, EFT(Environmental Filtration Technologies)
Nobia 2012	Per CGU WACC	13,2%, 16,4%, 11,8%, 12,7%, 12,6-13,0% (pre-tax)	Mid Cap	5	Nobia UK, Hygena, Nobia DK, Nobia SweNo, Other
Nolato 2013	Per CGU WACC	9,2%, 10%, 10% (pre-tax)	Mid Cap	3	Nolato Medical, Nolato Gota AB, Nolate Hertila AB
Opus Group 2012	Per CGU WACC	10%, 12,7%, 10% (pre-tax)	Mid Cap	3	Vehicle Inspection Sweden, Vehicle Inspection International, Equipment
Orexo AB 2013	Per CGU WACC	10%, 10%, 10% (pre-tax)	Mid Cap	3	Noster System, Prostrakan, Wagner Analysen Technik
Proffice 2013	Per CGU WACC	10,4%, 10,7%, 9,8% (pre-tax)	Mid Cap	3	Sweden, Norway, Finland
Sectra 2012	Company wide WACC	10% (pre-tax)	Mid Cap	3	Medical Systems, Secure Communications, Other Operations
Sweco 2012	Per CGU WACC	10%, 11%, 10%, 12%, 16%, 10% (pre-tax)	Mid Cap	6	Sweco Sweden, Sweco Norway, Sweco Finland, Sweco Central and Eastern Europé, Sweco Russia, Sweco Industry
Systemair 2012	Per CGU WACC	10%-14% (pre-tax)	Mid Cap	11	Systemair HSK, Systemair LLC, Systemair India Pvt. Ltd, Rucon Systemair Beheer B.V, Systemair S.p.A, Change Air, Systemair AC, Holland Heating, Tekador GMBH, Fantech Inc., Other
Unibet 2012	Per CGU WACC	10%, 8,5%, 8,5% (pre-tax)	Mid Cap	3	Unibet group and Maria Brand, Solfive acquisition, Betchoice acquisition
ÅF 2013	Per CGU WACC	8,9% to 17,3% (pre-tax)	Mid Cap	9	Industry Division, Infrastructure Division, Technology Division, Int Div. Finland, Int Div. Russia, Int Div. Switzerland, Int Div. Spain, Int Div. Czech Republic
Acando 2013	Per CGU WACC	12,2%, 11,6%, 12,6% (pre-tax)	Small Cap	5	Sweden, Germany, Norway, Finland, United Kingdom
ACAP Invest 2012	Company wide WACC	10,18% (pre-tax)	Small Cap	8	Sonesson Inredningar AB, Kallin och Franzén AB, Tranås Skolmöbler AB, Form o Miljö Sweden AB, Vaccum Technology, DISAB Vacuum AB, DISAB Tella AB, Gotland Ltd, Cetec Electric AB
Addnode 2012	Company wide WACC	13,0% (pre-tax)	Small Cap	5	Sweden, Norway, Finland, Denmark, Serbia
AllTele 2012	Company wide WACC	14,5% (pre-tax)	Small Cap	5	Kramnet Networks AB, Spinbox AB, LandNCall AB, iCentrex AB, AllTele Företag Sverige AB
Anoto 2012	Company wide WACC	15,00% (pre-tax)	Small Cap	3	Anoto, Destiny Wireless, Ubisys
Aspiro 2012	Per CGU WACC	42,3%, 18,5%, 15% (pre-tax)	Small Cap	3	Mobile search, TV, WIMP
Avallo 2012	Company wide WACC	15,88% (pre-tax)	Small Cap	2	Phonera Telefoni, Avallo
BE Group 2013	Per CGU WACC	10,6%, 9,7% (pre-tax)	Small Cap	2	Sweden, Finland
Beijer Electronics 2012	Company wide WACC	10,0% (pre-tax)	Small Cap	3	Automation, HMI Products, IDC
Bergs Timber 2012	Company wide WACC	11,3% (pre-tax)	Small Cap	3	Bergs Timber Bitus, The Sawmill in Mörlunda, The Sawmill in Orrefors
Björn Borg 2012	Company wide WACC	17,0% (pre-tax)	Small Cap	3	Björn Borg Brands, Björn Borg Clothing, Björn Borg Footware

## Appendix A, continued

### Companies 80-118

Company	WACC	Discount Rate	Segment	No. CGU	CGU
Boule Diagnostics 2012	Per CGU WACC	10,0%, 11,0% (pre-tax)	Small Cap	2	Boule Medical AB, Clinical Diagnostic Solutions Inc
BTS Group 2012	Company wide WACC	9,5% (pre-tax)	Small Cap	4	North America, Europe, Other markets, APG
Cision 2012	Per CGU WACC	9,49% to 21% (pre-tax)	Small Cap	?	North America, One CGU per country in Europe
Connecta 2012	Company wide WACC	12,2% (pre-tax)	Small Cap	3	Connecta, Techta, Tarento
Consilium 2012	Company wide WACC	7,0% (pre-tax)	Small Cap	2	Marine & Safety, Fire safety & Automation
Cybercom 2012	Company wide WACC	10,9% (pre-tax)	Small Cap	4	Cybercom Sweden, Cybercom Singapore, Cybercom Denmark, Cybercom Finland
Dedicare 2012	Company wide WACC	12,5% (pre-tax)	Small Cap	4	Care Staffing Sweden, Care Staffing Norway, Care Sweden, Care Norway
Elanders 2012	Company wide WACC	9,3% (pre-tax)	Small Cap	6	Sweden/Poland, Germany/Hungary, The U.S., China, Great Britain, Brazil
Elos 2012	Company wide WACC	7,6% (pre-tax)	Small Cap	2	Medical technology, Metrology
Etrion 2012	Company wide WACC	7,7% (pre-tax)	Small Cap	7	SVE, Helios ITA, Helios ITA-3, Etrion Lazio, Cassiopea, Centauro, Sagittario
Feelgood 2012	Company wide WACC	10% (pre-tax)	Small Cap	2	Business, Private
FinnvedenBulten 2012	Company wide WACC	8,2% (pre-tax)	Small Cap	3	Bulten, Finnvedel Metal Structure, Other
FormPipe Software 2012	Company wide WACC	12% (pre-tax)	Small Cap	2	Sweden, Denmark
Geveko 2012	Company wide WACC	7,7% (pre-tax)	Small Cap	3	Material, Contracting Nordic, Other
Global Health Partner 2012	Per CGU WACC	11% to 15% (pre-tax)	Small Cap	4	Spine/ortho, Dental, Gastro/Surgery, Arrhythmia/New spec.
Image Systems 2012	Company wide WACC	13,4% (pre-tax)	Small Cap	3	Digital Vision, RemaSawco, Motion Analysis
Intellecta 2012	Company wide WACC	7,9% (pre-tax)	Small Cap	2	Business unit Consulting, Business unit Infolog
KnowIT 2012	Per CGU WACC	12%, 13% (pre-tax)	Small Cap	2	Sweden, Other Nordic countries
Lammhults Design Group 2012	Per CGU WACC	9,1%, 8,5% (pre-tax)	Small Cap	2	Public interiors, Office & home interiors
Malmbergs 2012	Company wide WACC	11% (pre-tax)	Small Cap	2	Sweden, Norway
Midsöna 2012	Per CGU WACC	9,6%, 10,1%, 10,3%	Small Cap	3	Sweden, Norway, Finland
Midway 2012	Company wide WACC	10,2% (pre-tax)	Small Cap	9	Sigarth, Stans&Press, MidTrailer, Onrox, Sporrang, Cbiz, FAS, Landqvist, Eribel
Xano Industri 2012	Company wide WACC	10,5% (pre-tax)	Small Cap	3	Industrial Solutions, Precision Technology, Rotational Moulding
Vitec 2012	Per CGU WACC	5,04%-8,74% (pre-tax)	Small Cap	6	Broker, Property, Media, Energy, Finance, Insurance
VBG Group 2012	Company wide WACC	7% (pre-tax)	Small Cap	3	VBG Truck Equipment, EDSCHA trailer systems, Ringfeder power transmission
Transcom Worldwide 2012	Per CGU WACC	9,6%- 11,9% (pre-tax)	Small Cap	5	CRM North, CRM Central Europe, CRM Iberia, CRM North America & Asia Pacific, CMS
Tradedoubler 2012	Per CGU WACC	15,5%- 16,2% (pre-tax)	Small Cap	7	North East, North West, Central, France, South East, South West, Technology
Studsvik 2013	Per CGU WACC	10,3%, 9,9%, 14,2%, 10,4% (pre-tax)	Small Cap	4	United Kingdom, Germany, USA, Global Services
Semcon 2013	Company wide WACC	9% (pre-tax)	Small Cap	3	Automotive R&D, Design & Development, Informatic
RNB Retail 2012	Company wide WACC	11% (pre-tax)	Small Cap	3	Polarn O. Pyret, Departments & Stores, Brothers and Sisters
Rejlers 2013	Per CGU WACC	15%, 16% (pre-tax)	Small Cap	2	Sweden/Norway, Finland
Prevas 2013	Per CGU WACC	16%, 19%, 16%, 18%, 18% (pre-tax)	Small Cap	5	PD Sweden and Norway, PD Denmark, IS Sweden, IS Norway, MC
Poolia 2012	Company wide WACC	10% (pre-tax)	Small Cap	2	Poolia Sweden, Poolia Germany
Partnertech 2012	Company wide WACC	16,3% (pre-tax)	Small Cap	3	Electronics, Systems Integration and Enclosures, Machining
PA Resources 2013	Per CGU WACC	9%-11% (pre-tax)	Small Cap	3	North Africa, West Africa, North Sea
Opcon 2013	Per CGU WACC	13%, 22,3% (pre-tax)	Small Cap	2	Bioenergy, Compressor technology/Waste heat recovery
Note 2012	Company wide WACC	11,8% (pre-tax)	Small Cap	2	Nearshoringcenter, Industrial Plants
Nordic Service Partner Holdings 2012	Company wide WACC	12% (pre-tax)	Small Cap	3	Burger King Sweden, Burger King Denmark, Taco Bar
MultiQ International 2012	Company wide WACC	12,7% (pre-tax)	Small Cap	2	Sweden, Norway

## Appendix B – Survey

The English version of the survey. An asterisk indicates that the question was mandatory.

1. What is your position/title within the company?

Internal use of discount rates/WACC and CGU's

\*2. When considering markets, products and/or geographical areas, do you consider your different CGU's having a similar risk?

- Yes  
 No

\*3. Which type of discount rate/WACC do your company use internally when performing impairment tests for different CGU's? Please state an alternative.

- The same discount rate/WACC for all of our CGU's (If yes, continue with question 4)  
 Specific discount rates/WACC for different CGU's (If yes, continue with question 5)  
 Specific discount rates/WACC for some CGU's, and the same discount rate for some (If yes, continue with question 5)

4. Please provide a brief description of the reason/reasons for why your company choose to use the same discount rate/WACC internally.

Discount rates/WACC and CGU's within the disclosures in the annual report

\*5. Are the discount rates your company disclose in the latest annual report consistent with the discount rates that your company use internally for impairment tests of intangible assets.

- Yes (please continue with question 7)  
 No

6. What is the reason for the discount rates within the disclosures of your latest annual report not being consistent with the discount rates that you use in the internal impairment tests? You may choose several alternatives.

- We do not want to disclose our actual discount rates to competitors  
 We want the discount rates we disclose to be at the same level with the discount rates our competitors disclose  
 Other (please specify)

Creating a new CGU - a hypothetical example

\*7. Your company has to create a new CGU, because you are entering a new market/product/industry and/or geographical area with a different risk profile. Which discount rate/WACC would your company use in the internal impairment tests and which discount rate/WACC would you provide within the disclosures in the annual report? Please choose one alternative.

- The company wide discount rate/WACC for all CGU's in both internal operations and within the disclosures in the annual report  
 A CGU specific discount rate/WACC adapted to the different risk profile for the impairment tests and within the disclosures in the annual report  
 A CGU specific discount rate/WACC adapted to the different risk profile for the impairment tests, but the company wide discount rate/WACC for all CGU's within the disclosures  
 The company wide discount rate/WACC for all CGU's within the disclosures, but a CGU specific discount rate/WACC adapted to the different risk profile for the impairment tests  
 Other (please specify)



## Appendix C – Survey Answers

The answers received from each of the companies. The questions can be viewed in Appendix B.

N = 40	Q1	Q2	Q3	Q4	Q5	Q6	Q7*
Company 1	CFO	Yes	Company wide WACC	Same risk & financed the same way	Yes	-	1
Company 2	Group Controller	Yes	Specific per CGU WACC	-	Yes	-	2
Company 3	Accounting Specialist	No	Company wide WACC	Risk adjusted cash flows instead	Yes	-	1
Company 4	Group Controller	No	Specific per CGU WACC	-	Yes	-	2
Company 5	Group Controller	Yes	Company wide WACC	Practical reasons	Yes	-	1
Company 6	CFO	Yes	Company wide WACC	One CGU	Yes	-	3
Company 7	Group Controller	Yes	Company wide WACC	Same risk for CGU's, which spans over different countries	Yes	-	1
Company 8	Group Controller	Yes	Company wide WACC	No relevant method to produce WACC for different CGU's	Yes	-	2
Company 9	CFO	Yes	Company wide WACC	One CGU	Yes	-	2
Company 10	CFO	No	Specific per CGU WACC	-	Yes	-	2
Company 11 (web-link)	CFO	Yes	Company wide WACC	Impairment test only made on one large immaterial asset	Yes	-	2
Company 12	Accounting Specialist	Yes	Company wide WACC	No substantial different in risk between CGU's	Yes	-	2
Company 13	CFO	Yes	Company wide WACC	-	Yes	-	2
Company 14	Accounting Specialist	No	Company wide for some/Specific for some	Same WACC for investments in same geographical area	Yes	-	2
Company 15	CFO	No	Specific per CGU WACC	-	Yes	-	2
Company 16	Group Controller	No	Company wide for some/Specific for some	-	Yes	-	2
Company 17	Group Controller	Yes	Company wide WACC	Same exposure to risk in Scandinavian countries	Yes	-	2
Company 18	Group Controller	No	Specific per CGU WACC	-	Yes	-	2
Company 19	Accounting Specialist	Yes	Specific per CGU WACC	-	Yes	-	2
Company 20	CFO	No	Company wide for some/Specific for some	-	Yes	-	2
Company 21	CFO	No	Specific per CGU WACC	-	Yes	-	2
Company 22	Group Controller	Yes	Company wide WACC	-	Yes	-	2
Company 23	CFO	Yes	Company wide WACC	-	Yes	-	2
Company 24	CFO	No	Specific per CGU WACC	-	Yes	-	2
Company 25	CFO	Yes	Company wide WACC	Same prerequisites for CGU's	Yes	-	2
Company 26	CFO	No	Specific per CGU WACC	-	Yes	-	2
Company 27	Group Controller	Yes	Company wide WACC	Same risk	Yes	-	2
Company 28	CFO	No	Company wide for some/Specific for some	-	Yes	-	2
Company 29	CFO	Yes	Company wide WACC	Same type of operations and risks	Yes	-	2
Company 30	CFO	No	Specific per CGU WACC	-	No	Does not disclose WACC in annual report	2
Company 31	CFO	Yes	Company wide WACC	Same risk	Yes	-	2
Company 32	CFO	No	Specific per CGU WACC	-	Yes	-	2
Company 33	Group Controller	No	Specific per CGU WACC	-	Yes	-	2
Company 34	Group Controller	Yes	Company wide WACC	Different risk short-term, same risk long-term	Yes	-	1
Company 35	Group Controller	No	Specific per CGU WACC	-	Yes	-	2
Company 36	CFO	Yes	Company wide WACC	No substantial different in risk between CGU's for different geographies	Yes	-	2
Company 37	CFO	Yes	Company wide WACC	Practical, hard to determine differences in risk	Yes	-	1
Company 38	Group Controller	Yes	Company wide for some/Specific for some	-	Yes	-	2
Company 39 (telephone)	Accounting Specialist	Yes	Company wide WACC	Same risk	Yes	-	2
Company 40 (English version)	Group Controller	No	Specific per CGU WACC	-	Yes	-	2

\*1=Company wide WACC internally and in disclosures, 2=Specific risk adapted WACC internally and in disclosures, 3=Specific risk adapted WACC internally and company wide WACC in disclosures