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**Accounting of intangibles under IFRS –  
A comparative study of Sweden and Australia**

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## Abstract

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**Title:** *Accounting of intangibles under IFRS – A comparative study of Sweden and Australia*

**Background:** In 2002, both Sweden and Australia announced that they would to adopt the International Financial Reporting Standards (IFRS), issued by the International Accounting Standards Board (IASB), for reporting periods beginning on or after 1 January 2005. Prior to the execution of a single set of standards in 2005, the two countries had different accounting traditions. Within the IFRS one standard has been frequently discussed namely “IAS 38- intangible asset”. This standard altered the accounting practice heavily for both Sweden and Australia.

**Purpose:** The purpose of this study is to examine how biotechnology companies, in Sweden and Australia, account for intangible assets after the implementation, and if possible, to explain why they do things the way they do.

**Delimitations:** In order to find a graspable study, the study set outs its focuses on the biotech industry solemnly, due to the industry’s general high content of intangible asset. The study does not intend to answer the wide-ranging question if IFRS has harmonized the complete accounting system. Neither will it try to evaluate the IFRS regulation, nor will it assess the different valuations methods available for valuation of intangibles.

**Methodology:** The study is of an abductive nature and consists of a quantitative, as well as a qualitative approach. These two approaches are represented by an examination of financial reports and interviews with accounting experts from a selected amount of companies.

**Conclusions:** The study concludes that there are differences to be found between the two countries. Swedish biotech companies generally have more intangible assets in relation to total asset on their balance sheet. This goes especially for capitalized research and development, where the largest difference has been located, both in the examination of annual reports, as well as on the answers from the interviews.

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# 1 Introduction

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*This first chapter will start by describing the background of the essay's topic; accounting of intangible assets. The different markets that are analyzed are described briefly and the problem discussion will continue to examine the challenge that intangibles constitute. Finally, the essay's research question will be specified, and the purpose of the essay will be presented.*

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## 1.1 Background

During the last decades, countries practicing the Continental accounting tradition have been developing towards, and strongly influenced by, the Anglo-Saxon standard (Smith, 2006). This became especially clear in the year of 2002, when, in its pursuit to create a single capital market, the European Union announced the adoption of an international accounting standard (IFRS) developed by International Accounting Standard Board (IASB). The standard was to be implemented from 2005, and is to a large extent based on the Anglo-Saxon accounting tradition and previous work by the Financial Accounting Standards Board (FASB).

One of the standards that have been frequently discussed since the implementation of IFRS is the one regulating intangible asset; IAS 38. Today, companies consist of an increasing amount of intangible assets. For example, Doyle (2000) & Kanodia (2004) states that in some companies, intangible assets are today the majority of a firm's total assets. Gupta et al (2004) states that intangible assets are increasingly important to shareholders, and Riahi-Belkaoui (2003) declares intangibles assets to "provide a sustainable source of wealth creation for companies". Consequently, how to treat intangible assets has been a major topic of discussion for scholars and professionals within accounting (von Colbe et al, 2005, Kanodia, 2004). For example, Lev (2001) describes that "the accounting profession struggles with the task of determining the financial value of intangible assets".

In order to examine how the IFRS regulation has been received in different markets, it was preferred to examine markets that previously were regulated in different ways. Fortunately, during the time the essay was written, one of the authors, Martin Ekberg, was in Australia, and the other, Linus Lindgren, was in Sweden. Having the possibility to study these two markets, representing two different accounting traditions, was seen as a big opportunity, why these two countries were chosen.

For Sweden, the adoption of IFRS meant that for reporting periods beginning on or after 1 January 2005 all listed companies would mandatory have to adopt the international accounting standard IFRS. In Australia, on the same year as the European Union's announcement of the adoption of the international accounting standards, the Financial Reporting Council (FRC) announced that Australia would do the same thing. Thus, all Australian listed companies would mandatory have to implement IFRS for the reporting periods on or after 1 January 2005.

Previously in Sweden, intangible assets has been regulated by "RR 15 - Immateriella Tillgångar" (RR 15) since 2002. According to RR 15, it was not possible to recognize any internally generated intangible assets on the balance sheet, but only when acquiring them through acquisitions. Before 2002, the rules on intangibles were even more restrictive. In Australia on the other hand, many costs for intangible assets have been allowed to capitalize, including internally generated brands, and research and development projects. Before IFRS, the Australian Accounting Standards Board (AASB) regulated accounting. This change from the AASB to the IFRS seriously restricted the possibility for companies to capitalize intangible assets in Australia.

Naturally, since the decision of the implementation became public, capital market participants and professionals in the field have been keen to know the implications of IFRS on accounting, particularly the impact on intangible assets (Godfrey, 2006).

## ***1.2 Problem discussion***

In Sweden and Australia, IFRS as well as intangible assets are major topics for discussion within the accounting profession. Some of these issues will be discussed here, and will be the main points of examination in this thesis. Most issues derive from the main purpose of accounting - to reflect a true picture of a company (Smith, 2006). As the IFRS regulation does not allow some assets to be recognized on the balance sheet, the question can be raised if it thereby fails to reflect the true picture.

Many scholars have criticized the way IFRS deals with goodwill and other intangible assets with unlimited life span. For example Moehrle & Reynolds (2001) argue that impairment-testing gives a less comprehensive effect on the result, and Huefner & Largay (2004) also state that due to the effect on the result, it thereby lessens the possibility to analyze the result over time.

Further, the valuation of intangible assets has also been frequently discussed. For example Choi et al (2000) have shown that depending on which valuation method that is used, different values will be given. They also shows that companies with high contents of intangibles are more likely to give an incorrect picture in its financial report. Also Kumar (2005) discusses the problems of valuing intangibles, and points out that biotechnology companies, due to their high content of intangibles, are especially difficult to value.

The relation between market value of equity and book value of equity has also been of interest for scholars. Among them are Stewart (1997), Kaplan (1998), Fincham & Roslender (2003) and Kanodia (2004) who have illuminated the difference between these two values, and suggested different explanations for the discrepancies. Fincham & Roslender (2003) have argued that the difference can be explained as the intangible assets of a company.

Gauffin & Nilsson (2006) have criticized the way companies account for intangible assets in relation to the acquisitions. Further, they argue that a common practice of how intangibles should be accounted for is needed. This is something also discussed by Whitwell et al (2006), who argue that there are large flaws in the accounting of intangibles due to the lack of appropriate regulation and controls.

Harmonization has also been field of interest for various scholars, for example Nair & Frank (1981), Evans & Taylor (1985), Douppnik & Taylor (1985) and Emenyonu & Gray (1992). All have found discrepancies between the examined markets, and will be examined further in the theory chapter.

Withwell et al (2006) state that the confusion around intangible assets could potentially have a large impact on the market economy, and that it has resulted in a number of recent accounting scandals. Further, they argue that “over-valuation of intangible assets was the principal cause of corporate crashes such as WorldCom and Enron in the USA, and HIH and One Tel in Australia”. An agreed way of handling intangibles would decrease the risk of this happening again (Withwell et al (2006).

### **1.3 Research question**

These discussions have shown that there are a number of challenges when it comes to accounting of intangible assets, and naturally with the IFRS regulation. The discussion on harmonization among countries agreeing on one standard set the path to investigate how

the IFRS implementation has been received different markets. Based on this, and the different scholars discussing the high content of intangibles in the biotech industry, lead to the main question of this thesis has been defined as:

*How do Swedish and Australian biotechnology companies account for intangible assets under IFRS?*

This will be examined by studying how biotech companies account for intangible assets in their annual reports, and with interviews with a selection of the investigated companies in respective country. The question can be broken down into two smaller sub questions. Firstly,

*Are there any major differences in the accounting of intangibles between the two countries?*

Secondly,

*Is the view on IAS 38 different in the two countries?*

## **1.4 Purpose**

The purpose of this study is to gain further knowledge in how the IFRS implementation has affected accounting practice. More specifically, it is to investigate how Swedish and Australian biotechnology companies account for their intangible assets. Secondly, it aims to give ideas on if there are any main differences between the countries in the view on IFRS, from the companies' point of view. Comparing the results from Sweden and Australia should give a good ground to see how the regulation has worked in different environments. In short, the essay aims to investigate how intangibles are dealt with in the biotech industry today, and present how it is done, and why companies do what they do.

## 2 Methodology

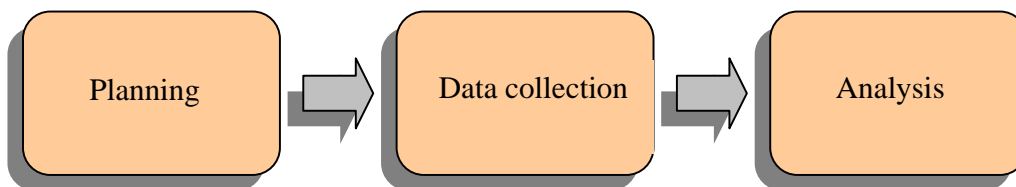
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*This chapter aims to describe the underlying methodology and in what manner the work has been conducted. Its purpose is to give the reader an idea of how the process of writing has been carried out, and especially why certain choices were made. The theory of how to write a thesis will be examined, as well as how to find a model for the analysis of the thesis. The concepts of quality, validity and reliability will also be discussed and exemplified, and how these concepts have been used in the writing process will be clarified.*

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### 2.1 Essay outline

When starting the essay, a work-outline was created. The purpose was to form a plan of how the ongoing work should proceed, where the plan would provide with helpful guidelines along the way. Since there is a broad selection of different literature available concerning different methods of how to write an essay of this kind, initially a lot of different literature was examined. Lundvahl & Skärvad (1999) describe the process of creating a thesis in three distinct steps. These are “the planning phase”, “the data collection phase”, and “the analytical phase”, described in the picture below.



Source: Lundvahl & Skärvad (1999)

This essay will to a large extent be based on the Lundvahl & Skärvad (1999) framework, although minor adjustments will be made in order for it to better suite the aim of this thesis, which will be presented in the figure below. Lundvahl & Skärvad (1999) discuss how a thesis like this can be written with different approaches depending on which aim the author has with the thesis. They discuss the differences of a deductive and inductive approach, and descriptive and normative aims of the thesis.

Byrman & Bell (2005) state that a quantitative research approach is often connected to a deductive aim of the thesis. This means that the over-all goal with the thesis is to test an idea or hypotheses. An inductive approach, which is the opposite of deductive, means that the author does not have a specific idea that he or she wants to test, but by empirical evidence create a new hypothesis (Lundvahl & Skärvad, 1999). Critics of the deductive



approach argue that it can lead to the author only seeing what it is he or she is looking for (Lundvahl & Skärvad, 1999). This would be an argument for using an inductive approach. The inductive and the deductive approaches are described as the extremes of the scale. Somewhere in between these, an abductive approach can be found, which would be the best description of this thesis. In an abductive approach the authors go back and forth from theory to empirical data, in order to gain understanding of the field.

Lundvahl & Skärvad (1999) also discuss different aims of the thesis, descriptive and normative. A descriptive approach aims to explain how something works, and give the reader increased understanding of something. This differs from a normative approach, which aims to give the reader an idea of how things should be (Lundvahl & Skärvad, 1999). This thesis is not a normative study, but neither has it a strictly descriptive aim. The research question is in it self explanatory, and consequently so is the essay's aim. Being of both descriptive and explanatory character, the essay will first describe how accounting is done, and then try to explain why companies do things the way they do.

Based on these choices, a wide array of previous research dealing with the essay's topic were scrutinized and examined, and out of this data, a research question was established. Secondly, after identifying relevant areas for the study, a theoretical framework was shaped, which in conjunction with additional gathered data, later on underpinned this essay's analysis. Thirdly, the study's data was gathered through primary and secondary sources. After the data collection's completion, the fourth step of the thesis work-process was started, namely the analysis. Finally, a conclusion, generated from the analysis, is presented.

More specifically, the essay starts with an introduction to describe the background of IFRS and the problem with intangible assets, followed by this chapter explaining the different methodologies that are used. Different theories available are examined, and empirical evidence gathered, in form of annual reports from Australia and Sweden, as well as interviews with concerned parts. The analysis chapter focuses on how the empirical findings match theories on the topic, which is done by comparing empirical data with the different theories and the existing IFRS regulation. In the concluding chapter, the essay aims to sum up what the essay was able to prove, and what contribution the essay has given to research in the field.

## **2.2 Planning**

Lundvahl & Skärvad (1999) determine four different steps in the planning process. These are problem formulation, literature exposure, theoretical starting point, and hypothesis creation. As this thesis is not of deductive character, a hypothesis has not been formulated, but apart from this, these steps have been followed.

In order to answer to the research question of this thesis, and its two sub-questions, a mix of qualitative and quantitative approach has been used. To answer the main question; how Swedish and Australian biotechnology companies account for intangible assets under IFRS, the quantitative study will constitute the base. However, the qualitative study with interviews will also be helpful in explaining the results in the quantitative study (Solme & Solvang, 1991). As for the sub-question of the view on IAS 38, the qualitative part of the study will hopefully provide these answers. The qualitative study is made to get a complete picture of a smaller number of respondents, and is used to gain an increased understanding of the companies view on the regulation. The decision on these two types of methods for answering the research question laid the foundation for the data collection.

## **2.3 Data collection**

Ejvegård (2003), states that there are two main sources of data: primary data, and secondary data. Primary data is what the author has gathered first hand; whereas secondary data is information others have gathered (Ejvegård, 2003). This essay is based on a mix of these two types of data.

### **2.3.1 Secondary data**

Secondary sources will in this thesis mainly be used to connect to theory, and to give the essay a strong base. For this purpose, textbooks have been of great use while carrying out the study. The use of textbooks has been one way of finding implementations of models and theories in an easy and accessible manner. Further, articles from academic journals have been used in order get proper academic base, which textbooks sometimes are criticized of not having due to its nature of simplifying (Halvorsen, 1989). Also, as is discussed under “reliability” below, the extensive process of having articles published in these journals makes them more trustworthy than textbooks, which sometimes are criticized for being published on commercial grounds (Halvorsen, 1989). The articles have been located though academic databases such as EBSCO and JSTOR, and local university library databases of Gothenburg University. In order to attain valid data, key words linked to the topic have been used when searching in academic databases. Examples of search terms that have been combined are “accounting harmonization”,

“IFRS implementation”, “Sweden”, “Australia”, “intangible assets”, “capitalization”, “biotechnology”, “research and development” etc.

The base for the quantitative part of the essay, which is made on annual reports from the different companies, is also classified as secondary sources. The companies that are the focus of analysis for this thesis were chosen because of them belonging to the biotechnology industry. The definition of biotechnology was set to be the one of Global Industry Classification Standard (GICS). The standard classifies companies on their principal activity; by the business area that generates the largest proportion of revenue for the company. GICS is based on 24 sectors, with an additional 64 industries, and another 147 sub-industry groups - biotechnology being one of these sub-industry groups (GICS:1).

Out of all the companies belonging to the “biotechnology” sub-industry listed at the Stockholm and the Sydney stock exchange, 13 and 21 companies respectively, the 10 largest companies in each country were chosen in order to make a graspable selection suitable for this study. Choosing the similar companies in each country increases the chance of having comparable companies (Jacobsen, 2004).

The annual reports used in the study have been from the fiscal year of 2006. In order to meet comparability between the Swedish companies using Swedish Kronor (SEK) as currency in their accounting, and the Australian companies using Australian Dollars (AUD), the exchange rate of the last trading day in 2006, the 29<sup>th</sup> of December, is used, with a value of 5,4375 SEK per AUD.

### **2.3.2 Primary data**

Primary data is used in the form of interviews in order to see how companies in the respective countries practically do their accounting, and also to get their view on the regulation. The interviews constitute the qualitative part of this essay, and aim to give a deeper insight than what would have been possible with a strictly quantitative approach from only secondary sources.

The choice of interviews has been made from the selection of companies within the biotechnology industry, as described above. Out of the 20 companies that are the focus of the study, three companies from each country were selected for interviews. Originally, a higher number of companies was planned to be interviewed, but as it turned out not all companies were able to take the time for being interviewed. Out of the 10 companies in respective country, all were contacted with interview requests. Lundahl & Skärvad

(1999) state that a random selection is the best way of ensuring that the sample is not biased. However, it might also be argued that it might have been better to adjust the selection of companies to be similar between the two countries, in order to increase comparability. These arguments being considered, the companies interviewed in this study were chosen on the ground for being the ones available for interviews. As it was not possible to live up to the criteria of strict random selection, the interviewed companies cannot be seen as representative for the entire group of companies. Neither does the companies make a perfect match to compare between countries, as the interviewed companies are of rather different character among each other. The authors of this essay still believe that valuable information was given through these interviews, even though it is important to keep in mind that the selection will limit the possibilities to generalize, when interpreting the results.

All the interviews were performed by telephone, as it due to distance was not possible to conduct any of the interviews face-to-face. Telephone interviews have both advantages and disadvantages. One advantage is that it has been shown to lessen the effect of the interviewer over the answers from the interviewee, compared to face-to-face interviews (Jacobsen, 2004). One main disadvantage with telephone interviews is that it has been shown to give less extensive answers from the interviewees, and is less suited for interviews dominated by open answer questions (Jacobsen, 2004). Further, telephone interviews are not preferred if the subject demands a high level of trust between the interviewer and the interviewee, as it has shown that interviewees are less likely to discuss sensitive matters over the telephone than in person (Jacobsen, 2004). Despite the risks with telephone interviews, this was the only realistic choice for interviews, due to the distance. However, being aware of the risks should minimize the negative effects, and the authors believe that valuable information was given and that it has helped building the empirical data chapter.

To make sure that the interviews were conducted in the same way, and to minimize the effect of the interviewers, an interview guide was made in advance with the questions for the interviews. The guide also helped comparing the answers once all the interviews were completed. An interview could be made to be either standardized, structured, or both. A standardized interview is made out of the same questions, in the same order, and by the same design. This is to make sure that the interviewer does not affect the answers (Halvorsen, 1989). A structured interview is made out of questions formulated in a similar way, in order for the interviewees to understand the same meaning from the questions (Jacobsen, 2004). The interview guide seen below is a standardized interview,

and was used for all the interviewees. As the questions led to different answers from respective interviewee, they were encouraged to develop their answers. This means that the interview procedure used can be classified as semi-structured, as the interviews has not been performed in exactly the same way, but still based on the same interview guide.

Before final print of this essay, all interviewees where shown in what way their comments was used in the essay, and had the chance to correct any possible misinterpretations from the authors. As it turned out, none of the interviewees felt that they had been quoted incorrectly or wanted to change anything from their comments.

### ***Guide for interviews***

#### **Introduction**

What is your position in the company?

What other positions have you held previously?

What is your general view on the IFRS implementation, positive or negative?

More specifically, what are the positive and negative impacts of IFRS on your company?

Have you had any specific problem concerning accounting of intangible assets, if yes, which ones?

#### **Goodwill**

How do you feel about the IRFS goodwill change from limited time and depreciation, to unlimited time and impairment test?

Do you think it is reasonable to give goodwill an unlimited usage time, why?

#### **Capitalization**

How do you feel about the difference between internally generated and externally acquired intangible assets?

What do you think about the separation of research phase and development phase concerning internally generated projects?

Which criteria is the most difficult to reach in order to determine something to be in development phase?

#### **Market value vs equity**

Your capitalized value of equity is xx% of the market value of equity, comment on this difference?

Do you think that you market value is affected by capitalization of projects or other intangible assets, why?

Do you account for this value in any other place in the annual report or other communication, where?

It is said that the overall goal with accounting is to be true and fair, do you feel that IFRS gives a true and fair picture of your company?

### **2.3.3 Validity**

Halvorsen (1989) defines validity of data as the correspondence between the description of problems and the data and theories presented as support for the thesis. This essay's

starting-point is that the reader should already have general knowledge of accounting and economics, and at least know the basics about intangible assets. All the theory parts should not be seen as a part of solving a problem, but in order for the reader to gain a deeper understanding of a larger area (Lundahl & Skärvad 1999).

Further, in order to increase the validity from the interviews, the interviewees were given the chance to correct any misinterpretations.

### **2.3.4 Reliability**

Halvorsen (1989) describes reliability as the degree of trustworthiness of sources used. Another definition is given by Wiedersheim & Eriksson (1982), who states that reliability can be measured by a second objective paper examining the same topic, where high reliability would mean high correlation of results. To make sure that this is attained, it is important to acknowledge that data from other authors may have been written for other purposes than what is obvious. Consequently, their work may be “biased, angled in order to attain certain results, or incomplete” (Lundvahl & Skärvad, 1999). The resources used in this paper have to a large extent been articles from well-known and acknowledged academic journals, where all material has to go through severe scrutiny before being published. Further, many different sources have been used simultaneously throughout the essay in order to pursue accurate and reliable information.

## **2.4 Scope and delimitations**

Being of descriptive nature, the thesis does not aim to evaluate the different valuations methods available for valuation of intangibles. Neither will it try to evaluate the IFRS regulation.

## 3 Theoretical framework

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*This chapter is focusing on the theoretical framework. It will begin with describing the origin of IFRS from the two dominating accounting traditions. This will be done to give the reader a broader understanding of the accounting concepts, and the thinking that lies behind it. Intangible assets will be defined and previous research in the field will be discussed and examined.*

---

### 3.1 International accounting traditions

Accounting standards have been evolving through diverse practice, developed by accounting experts in order to meet legal and economic requirements and to avoid intentional misuse of financial reporting (Walton P, et. al, 1998).

According to Douplik & Salter (1995) nine different groups of accounting traditions can be discerned. The majority of the different traditions are based on cultural, political and institutional differences (Nobes & Parker, 2004), and the fact that different interest groups with different agendas have been the important influencers in various countries (Artsberg, 2005). There are however, two major international accounting traditions that are more widely acknowledged and practiced than the rest, the Anglo-Saxon tradition and the Continental tradition (Smith, 2006).

The Anglo-Saxon accounting tradition has its origin in Great Britain. The tradition has been used in countries like Great Britain, Australia, the US, Ireland, the Netherlands, Canada and other English speaking countries such as former British colonies (Smith, 2006). The Anglo-Saxon accounting tradition is influenced by the English Common law system, a case based system that focuses on customs and precedent cases (Nobes & Parker, 2004).

The Continental accounting tradition has its origin from Western European countries. It is influenced by the Roman law system, a civil law system that focuses on written laws instead of providing an answer to a specific case (Smith, 2006).

A major cause of dissimilarity between the two major accounting traditions is the difference in company ownership (Henriksen & Breda, 1992). In countries where the Anglo-Saxon tradition has been developed and practiced, companies have been represented on the stock exchange to a greater extent than in the countries where the Continental tradition has been dominant. Thus, ownership in the Anglo-Saxon countries

has historical been scattered among a larger amount of investors, and therefore forcing accounting to focus on satisfying the need for information for these investors. The accounting system in these countries focuses on generating a “true and fair view” of the economic situation of a company (Smith, 2006). In the Continental countries, on the other hand, the need for external information has been less important, since the owners have traditionally been major players such as governments, banks and important “families” (Smith, 2006).

The relationship between accounting and taxation is another key cause between the two major accounting traditions. In the Continental tradition tax regulations and financial accounting are closely joint together (Smith, 2006). In countries using a Continental tradition, financial information is primarily used for taxation purposes, thus leading to a cautious and conservative accounting approach and modest valuation of companies (Blake et al, 1997). In the Anglo-Saxon tradition however, financial accounting and tax regulations are kept separated. Thus, according to Smith (2006) creating more suitable market information.

For the two countries of this study, Sweden and Australia, this harmonization effort meant that from 2005, the International Financial Reporting Standards (IFRS) was implemented over the previous regulation in respective country. Actually, in Australia, the Australian equivalence of the International Financial Reporting Standards (AIFRS) was adopted, but there are no differences of importance between AIFRS and IFRS concerning intangible assets. The only existing difference is concerning not-for-profit companies. In all other aspects the AIFRS is an exact copy of IFRS (Ernst & Young, 2005:1), why only the term IFRS will be used when discussing the regulation in both Sweden and Australia.

### **3.2 Accounting harmonization**

International accounting harmonization is an area that has been of great interest for scholars, accounting practitioners and investors in the past, and it is likely that it will generate interest among users of financial reports even in the future. Especially, since an increasing number of countries are involved in global every day transactions and international harmonization of accounting practice is considered to be an important step towards facilitating the business environment (Walton et al, 1998). There have been a lot of different organizations that have put an effort in to harmonize accounting standards across jurisdictions in order to pursue the goal of an international uniformity of accounting; International Accounting Standards Board (IASB), the Organization for



Economic Co-operation and Development (OECD) the United Nations Centre of Transnational Corporations (UNCTAD) and the European Union (EU) have all devoted significant means over the years for the cause of harmonization (Emenyonu & Gray, 1992).

There have also been a lot of different scholars that have conducted extensive research on the topic of international accounting harmonization and, thus, the benefits and cost that one set of standards generates. But before reviewing prior research and literature of the different reason for harmonization and obstacles to harmonization, it is important to clarify the involved concepts. Prior research focuses on both harmonization and standardization. According to Choi & Mueller (1984), harmonization means there might be a variety of accounting standards in various countries, however, harmonization imply a gathering around a few available standards so that they are in harmony with each other. On the other hand, standardization implies that a single standard is used in all situations. Thus, a firm compliance to the one set of rules in order to achieve consistency in practice. Tay & Parker (1990) argue that harmonization can be viewed as a process that is moving away from a total diversity of practice, and that standardization can be viewed as a process that is moving towards uniformity. However, Emenyonu & Gray (1992) argue that, in an accounting regulatory process, this distinction between harmonization and standardization, and when more precisely the change from one to the other is difficult to distinguish.

In conjunction with increasing globalization, rising trade between countries, large multinational companies, and the growing importance of financial centres like the London stock exchange and the New York stock exchange, a consistent platform of accounting standards has been highly sought after (Smith, 2006). A harmonization of accounting standards has been considered to be an essential step towards facilitating the global business environment. Nobes & Parker (2004) state that, the accountancy profession would benefit vastly by developing one international set of accounting principles, thus simplify auditing and make it less time consuming. Carroll (2003) argues that, the benefits of consistent standards are obvious, citing more effective interaction between international companies and investors.

Comparable standards would greatly help investors and other stakeholders comprehend and evaluate the information from multi national companies, since the transparency would increase the ability to interpret, and assess financial reporting across jurisdictions (Alfredson, 2003). Smith (2006) argues that, it is important that financial reporting is

reliable and comparable. Furthermore, a consistent platform of accounting standards would make it easier, and hence, more economically justifiable to conduct financial reporting.

Previous researchers have written broadly about measuring the international harmonization and the number of obstacles and problems that might hinder harmonization in the accounting regulatory process. According to Nobes & Parker (2004) nationalism and other country specific political interests can affect a country's willingness to adapt and to agree on one accounting practice, citing the fact that there are several ways of accounting and that one way may suite one country's perspective, but not the other. Furthermore, Nobes & Parker (2004) argue that another issue to harmonization is the, in some cases, immense difference between accounting standards in various countries. Thus in some cases, resulting in a trade-off between different views; the requirement of reliable and transparent financial reporting on one side, and the more conservative view that focuses on taxation, on the other.

Nobes & Parker (2004) also argue that another problem to international harmonization is the lack of powerful financial accounting standard setting bodies in certain countries, citing that organizations like IASB will not be able to work effectively in all countries. This is however not the case for neither the US nor the European Union, since both regions have well working professional accountancy organizations that are greatly involved in the standard setting process. A minor issue to the harmonization of one single set of accounting standards according to Nobes (1992) is different languages. Converting standards from one language to another is not always simple and thus creates problem for the standardization.

Scholars also argue that there is a risk that international conformity to some extent might work against the whole idea of a harmonization of accounting standards. It can be argued that, due to international dissimilarities between countries, there might be a necessity for two different financial statements; one domestic and one conformed to the international standards (Nobes & Parker, 2004).

Nair & Frank, Evans & Taylor, Doupnik & Taylor and Emenyonu & Gray are all scholars that conducted prior research on measuring the harmonization of accounting standards between countries. Nair & Frank (1981) set out to assess the harmonization impact of the IASB. They surveyed the effect of IAS accounting practices 1 to 10, in 37 different countries. They found that during the period of the IASC's existence there had

in fact been an increase of harmonization in accounting standards between the countries surveyed. However, Evans & Taylor (1985) conducted a similar survey aiming to study the effect of IAS accounting practices 2,3,4,6 and 7 in three European countries, France, UK and West Germany, and two additional countries outside Europe, USA and Japan. Their findings concluded that IASC had had limited positive effect on harmonization between the countries surveyed. Furthermore, Douppnik & Taylor (1985) assessed the IAS accounting practices 1 to 8 in 17 various European countries. They came to the conclusion that, even though, there had been some conformity according to IASC recommendations, there were still major differences in accounting practice between the countries surveyed. Another survey that coincides with the conclusions of the surveys conducted by both Douppnik & Taylor (1985) and Evans & Taylor (1985) is a survey by Emenyonu & Gray (1992). Emenyonu & Gray (1992) set out to assess to what extent accounting harmonization has been fulfilled in France, Germany and the UK. They studied 26 companies with a turnover in excess of 1 billion euro in each country, with the conclusion that there were significant differences in practice between large French, German and UK companies.

The differences found can have many different explanations. Different scholars have in different surveys found different reasons for the discrepancies. For example, Nobes & Parket (2004) mention previous political, cultural, and other national characteristics as possible reasons. As seen above, Nobes (1992) argues that language might be one reason for discrepancies. Others have mentioned the society's degree of openness and ownership traditions (Emenyonu & Gray, 1992), accounting practices, regulation, and taxation (Smith, 2006) as possible explanations.

### **3.3 Definition of intangible assets**

As intangible assets are intangible, they are also tricky to define and quantify. Encyclopedia Britannica defines "intangible" as something not tangible, and "incapable of being perceived by the sense of touch". Further, they define "intangible assets" as something "existing only in connection with something else, or as the goodwill of a business".

Plakalo (2006) sums up the most common types of intangible assets. Basically, she divides them in to three main groups, "structured capital", "relation capital", and "human capital". As for the biotechnology industry, the "structured capital" group is said to be the most important (Plakalo, 2006), where product development, research and development, information systems etc., are located. However, also "relation capital", were licensing,

brands, and partnership should be of high importance for the biotechnology industry. The last group, “human capital”, are probably equally important, but by far the most difficult one to capitalize, which will be discussed further in the next section. Comparing Plakalo (2006) chart to the Encyclopedia Britannica definition, one can see that the “existing only in connection with something else” is a rather good way of looking at it. For example, the human capital of a business is only worth something as long as the business is going, and the same goes for licenses, partnerships, un-commercialized research projects, and so on.

### **3.4 IFRS on intangible assets**

IAS 38 is the part of the IFRS regulation that deals with how intangible assets, such as described in the previous section, should be treated in accounting. IAS 38 was issued in early 2004 as a part of “IFRS 3 – Business Combinations”, by the International Accounting Standards Board. The Standard requires an enterprise to recognize an intangible asset if, and only if, certain criteria are met (Artsberg, 2005). The standard also specifies how to measure intangible assets and requires certain disclosures.

By IFRS, an intangible asset is defined as “a non monetary asset without physical substance” (IAS 38:8). Examples that are given in the standard are computer software, patents, copyrights, motion picture films, customer lists, mortgage servicing rights, licenses, import quotas, franchises, customer and supplier relationships, and marketing rights. According to Smith (2006), the central problem with intangibles is the fact that they are intangible, and how to classify and value them. Therefore, IAS 38 consists of a number of requirements in order for intangibles to be recognized. The three main ones are *identifiability, control, generation of future economic benefits and reliable measurement of these benefits* (IAS 38:8).

According to IAS 38:12, identifiability can be achieved in two ways. Firstly, if the asset can be separated. Secondly, if the asset was created as the consequence of a contract or other legal rights. By separated means that the assets should be able to separate from an entity and transferred by some way, be it sold, rented, licensed or exchanged (Epstein & Miraz, 2005). The second criteria points out that even if the asset cannot be separated from the entity and transferred, it is still accepted as separable if it was created as the consequence of an action (Smith, 2006).

The control criteria is discussed in IAS 38:13-16, and is said to be met when a company controls the future economic benefits deriving from the asset. This includes that the

company must be able to stop others from obtaining those economic benefits (Epstein & Miraz, 2005).

The last criteria mentioned above, of future economic benefits from IAS 38:17, states that unless the asset will create revenues, cost savings, or other benefits for the company, it cannot be recognized as an asset (Epstein & Miraz, 2005). Moreover, if the economic benefits cannot be reliably determined, it cannot be recognised on the balance sheet. Further, the standard states that the assumptions of these cash flows must be made on probable grounds, and that the assumptions must be made with concern to all relevant and available information (IAS 38:21-23). Unless all the above-mentioned criteria are met, the cost for acquiring the asset should be expensed and not capitalized (IAS:68).

If an asset has been defined as an intangible asset and also reaches the criteria to be capitalized, the questions arise on how to determine the value of the asset. There are two different methods concerning this, based on if the asset came into the company's possession by acquisition or created by the company itself (IAS 38:38). For intangibles that were bought, there are two options here too, depending on if the asset was bought as a part of a larger acquisition or if it was only the asset that was being bought. If the asset was paid for separately, that price should be used on the balance sheet as well (Artsberg, 2005). If the asset was a part of an acquisition, the assets needs to be able to separate and be identifiable if it should be separated from the goodwill from an acquisition.

Under IFRS, internally generated goodwill can never be capitalized (Artsberg, 2005). Although, identifiable and separable intangible assets can be capitalized under certain circumstances. All projects run within a company are divided in to either research or development phase. Projects that are labelled as research cannot be capitalized, but should be expensed (IAS 38:54). This is due to the uncertainty of them generating future benefits for the company (IAS 38:55). In contrast, projects that are labelled as development should be capitalized (Nilsson, 2005). But, if they can be classified as development depends on the character of the project. IAS 38:57 stipulates that costs can be classified as development costs only "after technical and commercial feasibility of the asset for sale or use have been established". The meaning of this is that the enterprise must be able to demonstrate how the asset will generate future economic benefits (Artsberg, 2005).

Moreover, some types of internally generated intangible assets can never be capitalized (Smith, 2006). The standard mentions that "brands, mastheads, publishing titles,

customer lists and items similar in substance” and are internally generated should not be recognized as assets on the balance sheet (IAS 38:63). Further, there are other types of costs that also never can be capitalized under IFRS, for example internally generated goodwill (IAS 38:48), “start-up, pre-opening, and pre-operating costs”, “training cost”, “advertising costs”, and “relocation costs” (IAS 38.69). The main reason why IFRS does not allow these assets to be capitalized is that they are “complex and difficult to measure” (Srivastava et al, 1998).

After the first valuation, the company has the choice to value the asset by either a cost model, or a revaluation model (IAS 38:72). This must be done for each kind of intangible assets (Epstein & Miraz, 2005). A cost model, described in IAS 38:72, states that “assets should be carried at cost less any amortization and impairment losses”. A revaluation should be based on the price from an active market (IAS 38:75), which severely limits the possibility to use these methods for the many assets that are not frequently traded (IAS 38:78), like most intangibles (Epstein & Miraz, 2005).

Depending on the intangible, IAS also stipulates that the asset is classified as either “infinite life” or “finite life”. An asset should be classified as having a finite life if it is determined to only having a limited period of benefit. Infinite life is consequently given to assets with “no foreseeable limit to the period over which the asset is expected to generate net cash inflows for the entity.” (IAS 38:88). As for assets with finite life time, they should be amortized over their expected life (IAS 38:97). However, assets with infinite life spans, should not be amortized (IAS 38:107). Instead it should be reviewed each reporting period to determine whether “events and circumstances continue to support an indefinite useful life assessment” (IAS 38:109). Both kinds of assets should also be assessed for impairment as stipulated in IAS 36 (IAS 38:111).

For goodwill, IFRS 3 is even more specific. As mentioned above, internally generated goodwill can never be capitalized. However, by IFRS 3:51, goodwill should be recognized if acquired. Further, it stipulates that it should be measured as the “excess of the cost of the business combination over the acquirer's share of the net fair values of the acquiree's identifiable assets, liabilities and contingent liabilities” (IFRS 3:51). Amortization of goodwill is by IFRS 3:54 prohibited, and instead it should be tested for impairment as by IAS 36, at least annually.

### **3.5 Previous research and discussions on intangibles**

Within the accounting profession, and among concerned companies the discussion on intangible assets has been especially heated. This part will try to give an overview of some of the ideas on intangibles that has been raised in the past, and also give an overview of the main research that has been done in the field.

#### **3.5.1 Project valuation**

There are many ways to value assets. At least three main methods are required to mention; cost based, current value based and future value based (Smith, 2006). Cost based valuation is based on what cost that have occurred in order to acquire the asset. Current value-based methods examines how much the asset would be worth if sold today, and future value based methods examines how much the asset will be worth if it is kept in the company until a future date. When evaluating an asset, these methods are likely to all give different answers to the correct value of the asset (Choi et al, 2000), and it gives an idea of the difficulties with valuing asset. With intangible assets it is especially difficult to estimate the different values to base the calculation on (Srivastava et al. 1998).

For example, it is often difficult to say which costs that are relevant for the creation of an internally generated intangible asset. It is also difficult to estimate how much the intangible asset could be sold for, as there are no active markets for most kind of intangible assets (Choi et al, 2000). As for a future value, it could be even more difficult to estimate. Of course, this future value should be based on the cash flows that derives from the specific intangible asset, for example the company brand name. Choi et al (2000) sum this up, by stating that most valuation models indicate that *“the value of an asset is inversely related to the uncertainty of the associated future benefits expected from that asset”*. As the uncertainty of future benefits of intangible assets are high, it is also difficult to give them correct values.

Kumar (2005) points out that in today’s world where intangibles are increasingly important, it is also an increasing need to find appropriate valuation methods for intangible assets. This especially concerns companies who are depending on research and development and dealing with new technologies, such as the information technology and the biotechnology industries. Kumar (2005) argues that today many intangible assets are incorrectly valued, due to the lack of objective valuation methods. This results in higher difficulties for investors to analyze and compare investments options, and consequently results in a less effective market. Kumar (2005) also points out the effect incorrectly valued intangibles can have on a company’s financial figures, for example, solvency and return on total capital.

Whitwell et al (2006) states; “because of the lack of regulated reporting controls, disclosure by firms of the perceived value of intangibles is irregular, subjective, selective, and informal”. This is relevant for a number of stakeholders. Choi et al (2000) prove that “the more intangible-dominant the firm, the more likely its financial reports do not reflect the full potential of the firm's future returns on investment”.

### **3.5.2 Goodwill**

Nicander & Lagerström (2006) examined 51 Swedish companies that did acquisitions during the year of 2005, and found that half had capitalized intangible assets that previously were not recognized within the acquired entity. They commented on the lack of disclosure for the intangible assets, for example valuation basis, lifetime, and impairment testing.

Gauffin & Nilsson (2006) have studied all acquisitions made by companies on the Stockholm stock exchange in 2005, and found several points for improvement concerning the accounting of intangible assets in relation to the acquisitions. Mainly, they point out the lack of separated intangible assets from goodwill derived from acquisitions, which according to IFRS should always be performed when the acquisition is made. Further, they find it peculiar that many companies, which have made acquisitions resulting in goodwill, have not accounted for any intangible assets outside of goodwill. They conclude their findings with a comment on the lack of common practice of how intangibles should be accounted for, and where.

There are many different views on IFRS 3's regulation on impairment tests on goodwill. On the positive side, Moehrle & Reynolds (2001) argue that impairment test gives a more transparent and useful information for the user, than scheduled depreciation would do. One of the main disadvantages is that the impairment tests might cause substantial fluctuations to a company's result, which would not have been the case if was distributed over a number of years (Huefner & Largay, 2004). This might be especially likely for companies that are not developing in the way that was planned, due to financial difficulties or similar. It might also lead to problems analyzing the company's result, as it is not clear when the costs have actually occurred, even though the impairment occurs under a certain year. Other obvious disadvantages are the increased cost having to hire valuation experts, at least once a year, to make sure the assets are not subject to impairment.



### **3.5.3 Market value vs book value**

Another topic, which has been frequently discussed, is the relation between market value of equity and book value of equity. There is normally a substantial difference between the market value of a company and the book value of shareholder equity (Stewart 1997, Kaplan 1998, Kanodia 2004). The reason for this discrepancy has many explanations. Technically, the difference is due to book value being controlled by regulations and implementation, where as the market value is controlled by the markets expectations of the company's future performance (Bild 1998, Stewart 1997 & Ross et al 1997). By others, the discrepancy is explained as the value of future profits, or as the intangible assets of a company (Fincham & Roslender, 2003).

Brealey & Meyers (2003) argue that the discrepancy is due to the market's estimation of how the company control their assets. If the market believes the company can make a higher return than the risk free rate on its assets, a positive value is recognized. If not - the market value would simply be the sum of its assets. Hall (2001) argues that the discrepancy between market value and book value consists of intangible assets. This would mean that how to account for intangible assets is the key for how much the book value varies from the market value of a company.

This will round off the theoretical framework, and the next chapter will look into what this study has seen when examining companies' annual reports, and what information what was given in the interviews.

## 4 Empirical data

*To start with, this chapter will deal with the quantitative part of the study, the one made on the annual reports from the 20 companies examined. The study will preset how biotechnology companies in Sweden and Australia practically account for their intangible assets. The second part is based on the interviews with companies, and constitutes the qualitative part of this examination. The interviews are used to gain a deeper understanding of the annual reports studied, and also to see how the companies have reasoned for their respective accounting decisions.*

### 4.1 Study of Annual reports

#### 4.1.1 The companies

The companies that are part of the study were selected on the basis of being the 10 largest companies from the list of available companies of respective stock exchange. This list was created from the sub-industry of biotechnology from the GISC classification, as described in the methodology chapter.

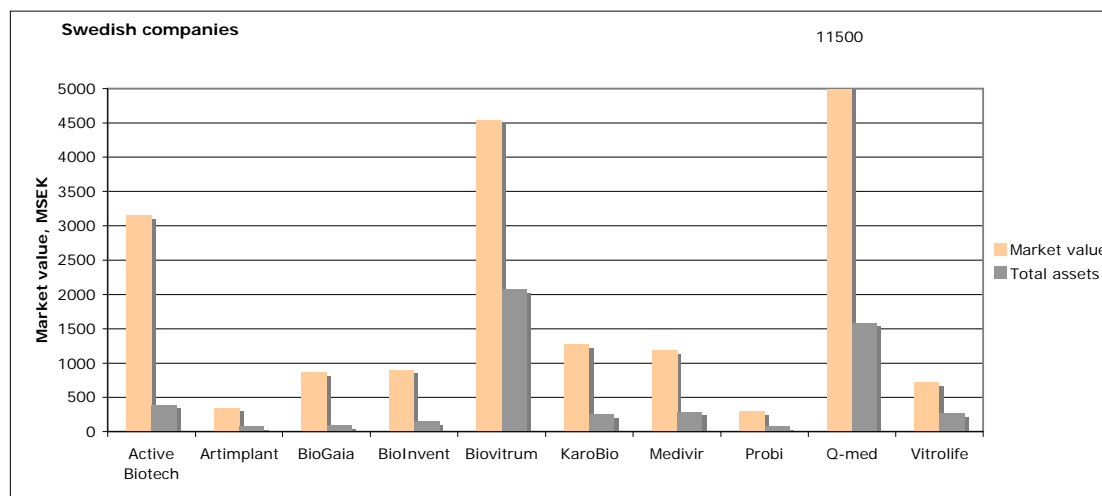
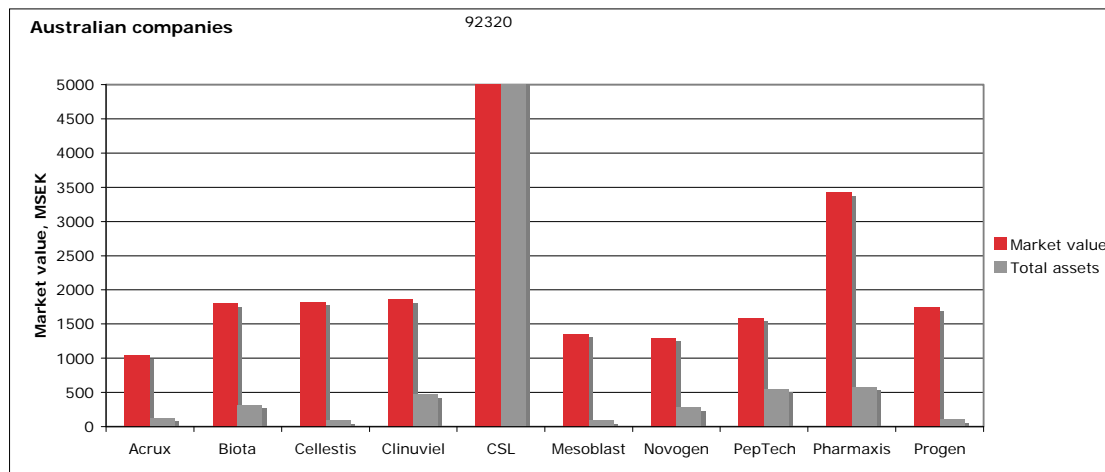


Chart 1.

Looking at the market values of the Swedish companies, half are valued between 500 million Swedish kroner (MSEK) and 1.5 billion Swedish Kronor (BSEK). Two companies are valued less than 500 million SEK, and three companies above 1.5 BSEK. One company stands out especially, Q-med, with a market value of around 11.5 BSEK. This gives an average value of 2.4 B SEK, with a mean value of 1.1 BSEK of the market values of the examined Swedish companies. Total capitalized assets on the other hand, has an average value of 530 MSEK, and a mean value of 260 MSEK.

For the Australian companies the majority of companies can be found in the span between 1 and 2 BSEK. Only two companies are outside this span, CSL and Pharmaxis. Pharmaxis is valued to 3.4 BSEK, and CSL, by far the largest company in this survey, is valued to 92 BSEK. Due to the high value of CSL, the average value is not a very useful measure, 10.8 BSEK for market value and 2.6 BSEK total capitalized assets. As for the mean, which gives a better picture, those values are 1.7 BSEK and 300 MSEK respectively.



#### 4.1.2 Impairment test

Almost all companies from both countries mention that they have performed impairment test on their intangible assets. The one company that has not mentioned impairment test did not have any capitalized intangible assets. On the other hand, four companies without intangibles still comment on impairment test, by stating that the company tests all assets with unlimited life span.

#### Comment on impairment test in the annual report?

Sweden		Australia	
Yes	No	Yes	No
x		Acrux	x
x		Biota	x
x		Cellestis	x
x		Clinuviel	x
x		CSL	x
x		Mesoblast	x
x		Novogen	x
x		PepTech	x
x		Pharmaxis	x
x		Progen	x

Varying by company, the information on impairment tests has been found in different places in the annual report. Some have placed this information included in the comments for the balance sheet, some in the notes for intangibles, some in the notes for assets, and some in the accounting principles.

### 4.1.3 Types of intangibles

In the examined companies annual reports, eight different types of intangible assets have been termed in the companies' annual reports. The most frequently figured intangible asset in Swedish biotech companies' annual reports are capitalized "research and development", which five companies have included. Four companies have capitalized "patents" and another four have "goodwill" in their annual reports. Three companies have capitalized the value of the brands they own in their balance sheets, the same number that has capitalized "licenses". Two companies have capitalized "software". Two of the Swedish companies have not accounted for any intangibles, and three companies have not specified what kind of intangibles it owns, but only stated "other intangibles". Over all, it is clear that most value is capitalized research and development project, accounting for nearly 50 percent of the total. However, if the company with most intangibles, Biovitrum is removed, most value is found under goodwill.

#### Types of intangibles – Sweden (MSEK)

Company	Brands	Licenses	Patents	Goodwill	R&D	Software	N/s
<b>Active Biotech</b>							
<b>Artimplant</b>			1,1		7,2		
<b>BioGaia</b>	0,1	0,1			11,4		
<b>BioInvent</b>							18,9
<b>Biovitrum</b>		56,4	56,4	41,2	305,5	13,5	
<b>KaroBio</b>							
<b>Medivir</b>							1,4
<b>Probi</b>		12,1	12,1	2,8			
<b>Q-med</b>	10,4			41,4	2,9	13,4	0,0
<b>Vitrolife</b>	5,3		3,7	83,3	15,7		
<b>Total</b>	16	69	73	169	343	27	20

For Australian companies the most frequent intangible is "licenses", capitalized by four companies, followed by "intellectual property", with three companies, and "patents" by two companies. The rest of the different types of intangibles only have one company each accounting for it. Most value is found in goodwill, but only due to the largest company of the examination, CSL. If CSL's values are removed, licenses and intellectual property constituted the largest part.

#### Types of intangibles – Australia (MSEK)

Company	Intellectual property						
	Brands	Licenses	Patents	Software	Goodwill	R&D	
Acrux			5,9				
Biota							
Cellestis		3,8					
Clinuviel		6,3					
CSL				478,0	4113,8		
Mesoblast		2,3		2,3			
Novogen							
PepTech		16,4		27,8			0,9
Pharmaxis	0,3		5,6		0,8		
Progen							
Total	0	29	12	508	1	4114	1

#### 4.1.4 How were the intangibles created?

In Sweden, four companies account for intangibles that they have generated themselves internally. All those companies plus another four also account for intangibles that they have acquired. The remaining two companies have not accounted for any intangible assets whatsoever. In these two companies' annual reports it is mentioned that due to IFRS and the distinction between research and development phases it is not possible to account for any intangible assets as none of them are estimated to be in development stage.

In Australia, seven companies out of the ten companies examined account for intangible assets in the annual reports. Out of these, 4 companies have only acquired intangibles on their balance sheet, and one company have only internally generated intangibles. Two companies have both internally generated and externally acquired intangibles on their balance sheet.

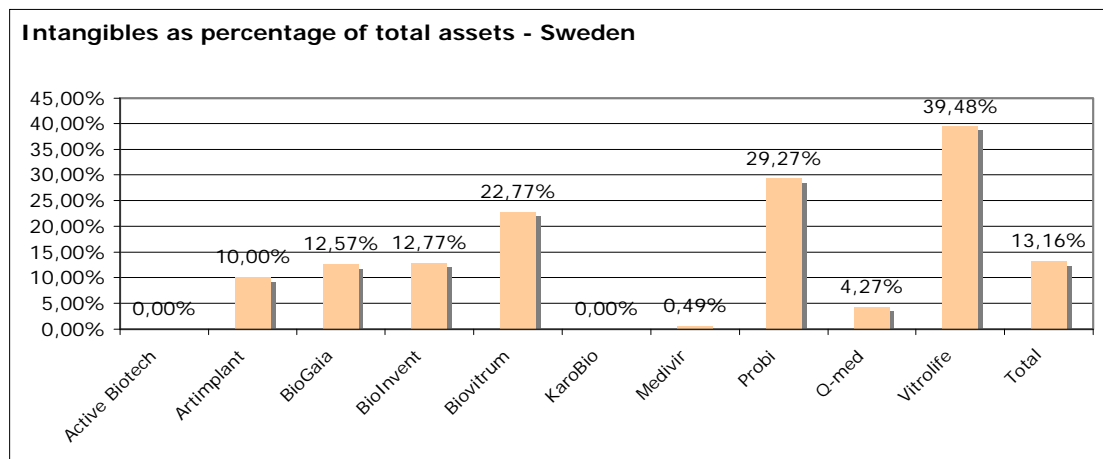
#### How was the intangibles created?

Sweden	Internally	Acquired	Australia	Internally	Acquired
Active Biotech			Acrux	x	
Artimplant	x	x	Biota		
BioGaia	x	x	Cellestis		x
BioInvent		x	Clinuviel		x
Biovitrum		x	CSL		x
KaroBio			Mesoblast		x
Medivir		x	Novogen		
Probi		x	PepTech	x	x
Q-med	x	x	Pharmaxis	x	x
Vitrolife	x	x	Progen		

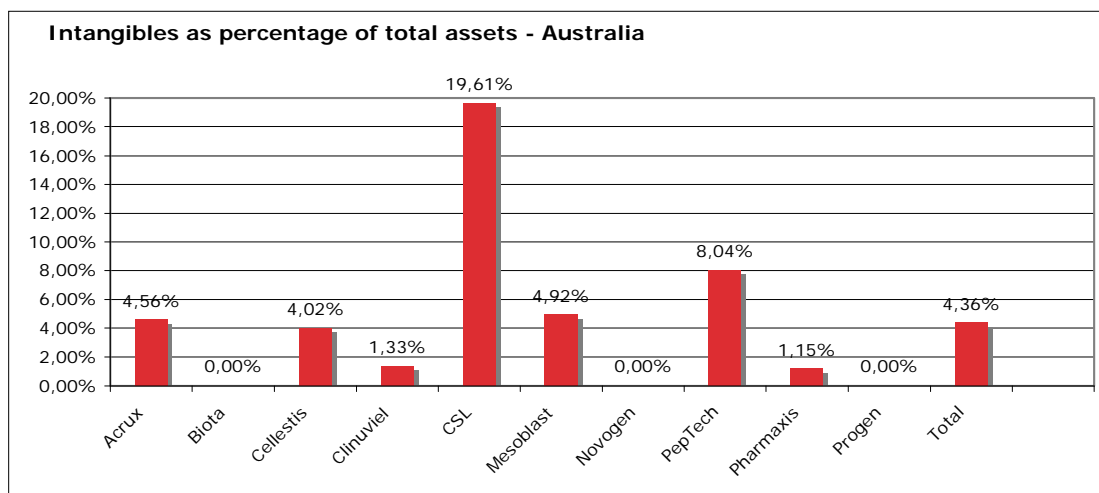
In some cases it has been difficult to find whether the assets capitalized had come in to existence due to a takeover, acquisition, or from internal work. Out of the companies that have internally generated intangibles, all refer to internal research and development projects that have been capitalized, and clearly stated that it derives from internal work.

#### 4.1.5 Value

Among the Swedish companies, the amount of intangibles as percentage of total assets are varying. Apart from the two companies in the study that do no account for any intangibles, only one company accounts for intangibles with value of less than 10 per cent of total assets. Vitrolife, the company accounting for the largest part of intangibles, close to 40 percent of the value of total assets, accounts the main part of this value to goodwill deriving from an acquisition. The average of intangibles to total assets ratio is 13 percent for the examined Swedish companies, which is slightly higher than the mean value of 11 percent.



For Australia, the main part of the examined companies account for intangibles of less than 10 percent of the value of total assets. Only one company accounts for a larger value, CSL, who accounts for intangibles of close to 20 percent of the value of total assets. These intangibles mainly consist of goodwill deriving from an acquisition, and to a smaller part from the broader term “intellectual property”. In total, the average for the examined Australian companies of intangibles as percentage of total assets is 4 percent, close to the mean of a bit less than 3 percent.



## 4.2 Interviews

As mentioned in the methodology chapter, out of the 20 companies examined above, 3 from each country were chosen for further interviews. These companies are Active Biotech, Biovitrum, and Karo Bio from Sweden, and Acrux, CSL and Pharmaxis from Australia. All figures below will be presented in Swedish Kronor (SEK), and have been translated from AUD with an exchange rate of 1 AUD per 5,4 SEK as mentioned in the methodology chapter. Here a short description of the companies follows:

Active Biotech develops drugs that regulate the body's own immune defence, which is used towards cancer and inflammatory diseases. The company had total income of 66 MSEK in 2006, with a net result of -139 MSEK. The majority of the company's projects are in clinical development. The interview was made May 15<sup>th</sup>, 2007, with Hans Kolam, Chief Financial Officer (CFO) at Active Biotech for the last 7 years.

Biovitrum describes itself as one of the largest biopharma companies in Europe, with activity in Sweden and England. The drugs mainly focus on obesity, diabetes and inflammatory diseases. The company had a total income of 1201 MSEK in 2006, with net result of +92 MSEK. The interview was made with Anders Bornéus and Mattias Ung, responsible for accounting at Biovitrum Stockholm, on May 15<sup>th</sup>, 2007.

Karo Bio is a drug discovery and development company specializing in nuclear receptors for the development of novel pharmaceuticals with focus on metabolic diseases. The company had net sales of 44 MSEK in 2006, and a negative net result of -126 MSEK. The interview was made on May 14<sup>th</sup>, 2007, with Leif Carlsson, CFO at Karo Bio for the last 4 years.

AcruX is a global drug developing and delivering company specializing in drugs that are administered through the skin. The company's product range includes treatment of hormonal deficiencies, central nervous system disorders, and contraception and dermatological conditions. The company had a total income of 15 MSEK in 2006, and a negative net result of -97 MSEK. The interview was made on May 18<sup>th</sup>, 2007, with Tony Dipietro, financial controller at AcruX Sydney.

CSL Limited is a global company that develops, manufactures and markets pharmaceutical products of biological origin. The company focuses on life-saving products derived from human plasma and other pharmaceuticals and diagnostics essential to health. The company had total sales revenue of 15600 MSEK in 2006, with a net result of +1900 MSEK. The interview was made on May 18<sup>th</sup>, 2007, with Michael R Burnett, group financial manager world wide at CSL. Prior current position, Mr Burnett worked at PWC in both London and Sydney for 14 years.

Pharmaxis develops and markets human therapeutic products that address chronic respiratory and autoimmune diseases. The company had total sales income of 15 MSEK in 2006, and a negative net result of -54 MSEK. The interview was made on May 18<sup>th</sup>, 2007, with Paul Miller, financial controller at Pharmaxis Sydney.

#### **4.2.1 General idea about IFRS**

Among the Swedish companies all interviewees thought that in general IFRS has been a positive and needed change to the previous Swedish regulation. The one thing that is viewed as the main advantage is the unification in Europe, and globally, over one standard (Carlsson, Kolam and Bornéus & Ung). Bornéus & Ung stated that the comparability of having one standard is by far the largest advantage for Biovitrum. By Carlsson, this gives smaller companies the chance to be analyzed on the same basis as the larger ones. Further, Carlsson welcomed a regulation that actually questioned all values that are to be capitalized on the balance sheet. On the downside, the IFRS regulation is viewed as sometimes too much effort demanding (Carlsson and Kolam). Bornéus & Ung argued that sometimes it is questionable if the usage of the material IFRS demands is larger than the effort it takes to produce it, however, on the direct question whether the effort spent reaching IFRS standards was worth the up-side, all three company representatives stated that the positive sides with IFRS out-weighted the downsides.



Among the Australian companies all interviewees though the relative merits of the adoption of IFRS have been positive. The major benefit of the adoption is the international unification and the increase in transparency between different jurisdictions (Dipietro). Making accounts from Australian companies instantly comparable with other international players (Burnett). Miller argues that, the implementation brings consistency over different jurisdictions, enabling benchmarking to a higher extent, due to a consistent platform of standards. Thus, creating a more effective communication and involvement between international businesses and investors. From an investors point of view the IFRS implementation makes the analysis more straightforward (Dipietro). Burnett cites that, due to the fact that CSL's majority of business are generated overseas, having one standard is by far the largest advantage for CSL. Furthermore, Burnett argues, that the big four accounting firms (PWC, Ernst & Young, KPMG and Deloitte) proclaim the acclimatization to the new international standard to be harder than it really is. They try to complicate it (Burnett).

On a negative note, all interviewees argued that, one major problem with IFRS is that the adoption has increased the amount of financial information. This is a major issue because IFRS provides far too much information for investors to digest (Burnett). According to Burnett, the implementation of IFRS has made financial statements more comprehensive. In general 30-40 pages have extended the financial statements (Burnett).

#### **4.2.2 Project valuation**

Concerning valuation and capitalization of research projects the Swedish representatives argued that it was sound to have some kind of restriction on which projects that are allowed to be capitalized. Kolam described that internally at Active Biotech they use the term "phase 3" which a project has reach before capitalization can become an issue. This phase is the last step where a drug is tested on a larger number of patients before it can be offered to the public. Before this phase, a positive outcome of the project is too far away, and thus it is viewed as impossible to determine a realistic value. Bornéus & Ung see the rather harsh demands for being allowed to capitalize intangible assets as something generally good and sound, and Kolam states that analysts who are valuing biotech companies anyway do not give values to projects that are this far away from commercial use.

Carlsson as well as Kolam showed no want to capitalize any of their research projects, as they felt it would not be worth the risk of having to write it down if a project does not turn out positive. Carlsson stated that the fear of having to write things down, which is

punished harder by the market, makes it attractive to expense costs as they occur rather than building values that are not certain. All interviewees describe the biotech industry as a very complex; extremely time consuming, and a high-risk business. Therefore, it is accepted that projects cannot be capitalized, and investors are less concerned with the balance sheet than in other industries (Kolam). However, Kolam as well as Carlsson stated that for Active Biotech, whether to capitalize research projects or not, has been a continuous discussion between the main stockholders, company management, and accountants.

Bornéus & Ung argue that the main problem when valuing intangible assets for Biovitrum is the subjectivity of which interest rates to use when discounting future cashflows, but also argue that due to the nature of the research driven biotech industry, it will always be difficult to judge a company based on its accounting alone.

Among the Australian interviewees all argued that it is logical to have some kind of limit on what type of project and furthermore, in what stage a project should be allowed to be capitalized on the balance sheet. However, Miller, Dipietro, and Burnett cite that, to them, the distinction between the research phase and the development phase is not particularly useful. They argue that, it does not matter to them if a project is in the research phase or the development phase, since they will look at it as a simply not yet finalized project. Therefore, it does not matter which phases the project is in (Dipietro). Burnett stated that, CSL has always been conservative and reserved in its accounting approach, a view shared by both Miller and Dipietro and applied by their respective companies.

All interviewees in Australia described the biotech industry as a complex of very high risk. Therefore, it is accepted that projects cannot be capitalized. Thus, investors are less worried about the balance sheet than in other industries (Miller). In the Biotech industry a project is never finalized until you get the final outside approval (Burnett). According to Burnett, there are a lot of different phases and clinical tests that need to be passed before the project can be considered finished. Under IFRS you can capitalize projects under the development phase, however, all the interviewed stated that their companies have strict and conservative approaches towards internally generated assets. Miller argued that, from Pharmaxis' point of view they do not capitalize internal generated research projects. This holds for both Burnett and Dipietro as well, they cite that, they do not capitalize any of their respective companies research projects, since it would not be worth risking of having to write down a project if it does not turn out as planned. Burnett argues that, the concern of having to write-down a project on the balance sheet, an act greatly punished

by the market, makes it appealing, nearly compulsory, to expense costs on the balance sheet as they occur, rather than building values that are far from certain.

### **4.2.3 Goodwill**

The Swedish companies looked with positive eyes on impairment testing of goodwill. Carlsson argues that giving assets unlimited lifetime and continuously test it for impairment gives a more realistic picture than by using annual amortization. Also Kolam argues in the same direction by stating that this way actually shows the values that are in the company, not scheduled “remaining values”.

Even though, the interviewed companies in Australia approached the project valuation reservedly, they still have other purchased intangible assets. When asked about goodwill and other externally acquired intangible assets, all interviewees thought unlimited time and impairment testing are the correct ways of handling purchased intangibles. Since, externally acquired intangibles take out a lot of the subjectivity, thus enhance the credibility (Miller). Basically, the rundown of impairment testing is that it enables an objective valuing of acquired intangibles (Dipietro).

Burnett argues that it is important that one chooses the appropriate approach towards impairment testing, otherwise, this will become a major hassle consuming both time and money. However, for CSL, the impairment tests seem to cause no major problem, nor does it for any of the interviewed companies, and all seemed fairly positive towards the tests.

### **4.2.4 Market value vs book value**

Both Kolam and Carlsson argue that the amount of intangible assets they keep on the balance sheet are not connected to the overall valuation of their respective companies. Instead, they argue, information that is used as valuation basis by investors are communicated by other means, such as separate project information (Kolam) or site visits and investors meetings (Carlsson). Both argue that they are not being valued by their balance sheet, rather cash flow (Carlsson), or simply the time the current funds can keep the company going (Kolam). Biovitrum’s accounting manager’s did not have an opinion on the market value of the company relation to equity value, and argued that such a relation is too complex to be speculated in.

Kolam expressed concern that smaller private investors might not have the knowledge and competence to value a biotech company correctly, and argued that in all of Sweden there are maybe 10 analytics who actually follow the biotech industry seriously and

understand what is going on. Carlsson also stated that it cannot be easy for the small private investor to get a correct picture of the company based on annual reports. Rather, they have to rely on professional's advice as they impossibly can determine this themselves. Carlsson questioned whether anyone but larger long-term institutional investors should risk their capital in biotech companies like KaroBio all together, due to the high risk and difficulties of determining risk versus probable future pay off.

In Australia, both Burnett and Miller argue that the amount of intangible assets they keep on their balance sheets, are not connected to the overall valuation of their respective companies. Instead, they argue that, both CSL's and Pharmaxis's market value are affected by unrecognizable projects. These are conducted projects that have not been capitalized on the balance sheet, but nevertheless is adding value to the companies. The information regarding these projects is distributed through various information channels, such as; homepages, quarterly operation newsletters, site visits and investor meetings (Burnett). Dipietro coincide both Burnett and Miller; in order to keep the investors up-to date, Acrux utilizes their homepage. On the homepage, all the different projects and information about them, either currently undertaken projects or soon to be started projects, are presented. All three argue that, they are not being valued by their balance sheet solemnly, thus making it hard for layman investors to actually grasp the comprehensive and sometimes complex information, in order to conduct a correct analysis of the companies.

## 5 Analysis

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*This chapter will aim to analyze the empirical data in order to find patterns and or differences between the two markets of Sweden and Australia. It will do so in three different levels. Firstly, it will compare the empirical data internally, citing a comparison with conducted interviews, and an examination of annual reports. Secondly, it will compare it to existing literature on the field, which will be used to see if others could show the same results, and what other scholars have had to say on the topic. Finally, the empirical data will be put in relation to the existing regulation, in other words, the IFRS.*

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### **5.1 The IFRS implementation**

When the IFRS was implemented in Sweden and Australia in 2005, it demanded a quite large adjustment for companies (Ernst & Young 2005:1). However, as show in this study, most of the company representatives felt that the efforts spent on changing the way of accounting to IFRS was well worth it. Main advantages that were pointed out were global harmonization, and increasing comparability and transparency between markets. These are the same advantages that are illuminated by scholars as well, for example Nobes & Parker (2004), Smith (2006), and Carroll (2003). On the negative side, the increased quantities of information were brought up, as well as the cost and effort it takes to live up to the IFRS requirements. The interviewees in Australia share the views of the interviewed in Sweden, that the benefits of the implementation of an international standard have out-weighed the downsides (Carlsson, Kolam, Bornéus & Ung, Miller, Dipietro and Burnett).

### **5.2 Problems with intangibles**

Scholars have argued that intangibles are problematic, and that the very nature of them, being intangible, makes them especially hard to deal with (Smith, 2006). Also von Colbe et al (2005) and Kanodia (2004) discuss the difficulties of intangibles, and the need to find appropriate ways of dealing with them. However, on the direct question what problem areas the interviewees have got with intangibles, little has been said. Valuation was brought up as a problem, and the difficulties of determining the correct discounting rate (Bornéus & Ung), but this goes for all kinds of assets, not only intangible assets. Further, as will be discussed more thorough in below, the company representatives showed little interest in how they accounted for their intangibles as they argued that this is not connected to company valuation (Carlsson, Kolam, Miller, Dipietro and Burnett).

### **5.3 Goodwill**

All the interviewees had a positive view on the change from scheduled depreciation and limited lifetime, to impairment test and unlimited lifetime of goodwill. The disadvantages, for example, the ones argued by Moehrle & Reynolds (2001) as well as Huefner & Largay (2004), like the impairments effect on the result, and thereby less possibility to analyze the result over time, were not mentioned by any of the company representatives. Instead, they argued that this gives a better view of what values the company actually controls (Carlsson, Kolam, Miller, Dipietro). Further, Dipietro argues that impairment test is the only correct way of achieving objective valuation. The fact that the test is rather time consuming, is mentioned only by one of the interviewed companies, CSL, and is still not seen as a major negative aspect.

Further, the quantitative study showed that all companies that had intangible assets with unlimited lifespan, such as goodwill, have commented on performed impairment test in the annual reports. This is contradicting previous studies on the Swedish market. For example Nicander & Lagerström (2006) showed that there were substantial flaws in the way impairment testing of listed Swedish companies was done in the annual reports of 2005, one year earlier than that the subject of this study. However, as their study was done on 51 companies from the Stockholm stock exchange, not only biotech companies, the results are not perfectly comparable. Nonetheless, it is not unlikely that companies have become better at following the new regulation over time. Gauffin & Nilsson (2006), followed up on their study, and complained on the lack of unified methods for where and how information of intangibles and goodwill from acquisitions was made. The lack of unified methods for where to account is also the result of this study, which found that companies irrespective of which country, locate their comments on impairment test in different sections in the annual reports, and makes a comparison more difficult than necessary. This is also stated in the research by Whitwell et al (2006) who state that the disclosure and reporting of intangibles are often “irregular, subjective, selective and informal”. As for this area however, there are no visible differences between the two countries, but large differences between companies.

### **5.4 Project valuation and capitalization**

Concerning project valuation, and capitalization of projects especially, there are some visible differences between Sweden and Australia. The main one being that in Australia, all the interviewed companies had pre-decided that they do not capitalize research and development projects no matter what phase they may be in. As for the Swedish companies, this was not the case. Rather, Carlsson and Kolam argued that even though

they do not aim to capitalize any of their research and development projects at this point, it has been a continuous discussion internally and with accountants whether they could, and or, should capitalize the projects. Carlsson argued that they do not want to capitalize the projects they are working on, but this due to the fact that they will never reach the phase where they can be capitalized according to the IFRS (they sell the projects before this phase). Kolam shared that at Active Biotech they use a certain product phase, “phase 3”. Reaching this phase is a requirement in order to start a discussion about capitalization of a project, but as they do not have any project that are close to this phase, it is not relevant for them. And the last Swedish company, Biovitrum, already have internally generated capitalized research and development projects. As stated above, this is in rather sharp contrast to Australia, where all three companies stated that they do not intend to capitalize their project no matter how far in development they get. Comparing this to what IFRS has to say, it is questionable if the Australian companies’ approach is not a violation to the regulation. IFRS clearly states that projects should be capitalized when reaching development phase (Nilsson, 2005), i.e., when reaching a certain degree of likeliness to give the company future benefits. The way the Australian companies in this study have reasoned, it was clearly stated that they simply do not capitalize internally generated research and development projects. No matter how the IFRS should be interpreted concerning this, it is visible that the professionals of Sweden and Australia have interpreted it in different ways.

Looking at the result of the study of annual reports, it is also clear that the examined Swedish companies to a much larger extent capitalize on research and development projects. In Australia, only one company had capitalized research and development, where as the same number for Sweden is five, i.e., found in half of the examined companies’ accounting. Reasons for this difference are of course hard to tell. As the selection of companies has not been made randomly, they are not representative for the group out of which they were chosen. Further, it is of course possible that the companies in Australia and more specialised on project with a higher degree of uncertainty. This difference could also derive from national discrepancies such as taxation (Smith, 2006), languages (Nobes, 1992), culture, political, institutional, (Nobes & Parker, 2004) or degree of openness (Emenyonu & Gray, 1992).

When it comes to how much intangibles the different companies account for there is a large variation both among companies and among countries. In Sweden, the average intangibles to total assets ratio is around 13 percent. In Australia, this figure is around 4 percent. In Sweden, two companies that have especially a lot of intangibles, which

increase the average. Measured by value, most intangibles are to be found in capitalized research and development project, these projects alone account for approximately 50 percent of the total value of intangibles for Swedish companies. After research and development projects there is goodwill, then patents and finally licenses in descending order of value.

For Australia, one company, CSL, has especially a lot of intangibles, which mostly consists of goodwill from acquisitions. After goodwill, the broader term “intellectual property” follows, together accounting for more than 95 percent. Research and development projects do not consist of any larger sums for Australia’s biotech companies, less than one percent. By removing the largest company of the study, CSL, most value can be found in “intellectual capital”, followed by “licenses”, which is also the most frequent capitalized intangible asset among the Australian companies.

### **5.5 Market value and book value**

The market values of the Swedish companies are in general smaller than those of the Australian. The mean market value, of the examined Swedish companies, is 1.1 billion Swedish Kronor (BSEK), compared to that for Australian companies of 1.7 BSEK. However, despite being smaller in size by market value, the Swedish companies account for almost as much total asset as their Australian counterparts, 260 MSEK, compared to 300 MSEK.

As for the interviewed companies, all companies that had an opinion on the relation between market value and book value have argued that there is no relation at all between the book value and market value for their respective company (Carlsson, Kolam, Miller, Dipietro, Burnett). The argument has been that, due to the complexity and high risk of the biotechnology industry, investors do not value them by the balance sheet, but by other means, such as site visits and investor meetings (Carlsson, Burnett). All argue that they in a more informative way use their homepage too keep investors up to date about the development of their non-capitalized projects, and that it is these projects that the respective company is valued by (Carlsson, Kolam, Miller, Dipietro and Burnett).

Finchham & Roselender (2003) have argued that a company’s intangible assets can explain the difference between a company’s market value and book value. This goes well with what the company representatives have argued as well, that their companies to a large extent is based on the values of “unrecognizable projects” (Burnett, Miller). In other words, project that are not yet specified on the balance sheet, consist the main asset of



these companies. Carlsson cited that in the biotechnology industry it is not possible to value a company solely on its financial reports, due to the high risk of the business. This was also the view of Burnett and Miller, who argued, that information from the homepage, investor meetings etc., is also a vital part when valuating a company of their kind.

## **5.6 Classification and categorizations**

In the quantitative study, all different types of intangibles found in the annual reports are listed. Overall, the same terms are visible in both countries; licenses, patents, brands, software, goodwill and research and development project were found in companies from both countries. However, small discrepancies were found here as well. For example, two Swedish companies accounted for “Other intangibles”, and did not specify it further than that. In Australia, the same phenomenon could be seen, but here the term “Intellectual property” seemed to be used, as it was found in the accounting of three Australian companies.

IFRS states clearly that all assets that can, should in fact be separated from goodwill at the time of an acquisition. Only declaring intangibles as “identifiable intellectual property” or “other intangible assets”, is not in line with IFRS regulation, and concludes with previous studies in the Swedish market made by Gauffin & Nilsson (2006).

## 6 Results & Conclusion

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*As the analysis has shown, the quantitative study found some main differences of the accounting between the examined companies. Further, the qualitative part of the study has also shown some differences in the way the companies have reasoned when deciding of how to do their accounting. Below these main differences will be presented, and what this essay actually can conclude will be determined. Finally, recommendations for further research on the topic will be given.*

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### **6.1 Introduction**

Studying the analysis, some main findings can be concluded. The main research question of this thesis: how Swedish and Australian biotechnology companies account for intangible assets under IFRS, will first be answered through its two sub-questions. Having answered the sub-questions, the main research question will be discussed and what can be concluded on will be presented.

### **6.2 Results from the research questions**

The first of the two sub- research questions of this thesis; if there are any major differences in the accounting of intangibles between Sweden and Australia, have mainly been answered by the quantitative study. There are some clear differences that can be seen between the accounting of the examined Swedish and Australian biotechnology companies. One main difference this study has been able to illuminate is that the examined Australian biotech companies account for less intangibles than do their Swedish counterparts. As the Australian companies generally are larger, this is true in relative terms, but also in absolute terms if the by far largest company of the study, CSL, is removed.

Further, the composition of intangible assets also differs between the countries. Even though, in general, the same terms are used to describe the intangibles, such as licenses, patents, research and development, brands, goodwill and so on, the majority of values have been found in different types of intangibles between the countries. In Sweden, the by value most capitalized intangible asset is research and development projects, constituting almost half of the total value of intangible assets. As for Australia, the largest part is made of goodwill, however, deriving mainly from one company's acquisition. As for the Swedish companies, goodwill also represents a large part of the value of capitalized intangible assets, around 25 percent. Interestingly, research and development projects in Australia does not account any larger value at all. Among the examined

companies in Australia, only one had capitalized research and development on their balance sheet, and this project did not constitute any major value for the company.

One other finding that also differed Sweden and Australia in the examined annual reports, was the term for non specified intangible asset. In Australia, the term “intellectual property” is used, whereas in Sweden “other intangibles” seems to be the preferred term.

In general, as what can be seen in the examined annual reports, Swedish companies capitalized more intangibles than their Australian counterparts. For the Swedish companies, the intangibles’ explanation of the value of total assets was 13 percent, in Australia the same number was 4 percent. This, together with the lack of capitalized research and development, are the main differences found from the study of annual reports.

As for the second sub-question, if the view on IAS 38 is different between the two countries, some conclusions have also been possible to make. In the view on goodwill, all the company representatives have had the same view, that the change to infinite life and impairment testing is a positive change. Further, on the question of market value and book value, the companies seem to agree on that their financial reporting is not the most important way for them to communicate. Instead, it was argued that due to the complexity of the project in the biotechnology industry, it is not possible to value a company based on its balance sheet.

In the interviews it became clear that all of the three Australian companies had the policy to not capitalize internally generated research and development projects, no matter what phase or how close the project was to commercialization. This differs from the interviews with the Swedish companies, where one company had internally generated assets, and the two other companies stated that it had been and still was a discussion between management and accountants when a research and development project could be capitalized. To sum up the second research question; the over all results are that the Swedish and the Australian company representatives see the IAS 38 in a very similar way. However, there is a clear difference in the view on internally generated research and development project.

### **6.3 Conclusion**

The results from the two sub- research questions lead to the conclusion of this paper. The main research question, how Swedish and Australian biotechnology companies account

for intangible assets under IFRS, does not have a single answer. However, what has been able to conclude in this study is that they do account generally in the same way; as IFRS stipulates, but that there are also discrepancies to be found. Important to remember is that when drawing conclusions from the results it is also important to be aware of the effect of the selection of the examined and interviewed companies.

As has been discussed in the theoretical framework, most studies that are done on harmonization find discrepancies between countries. The reasons for these differences however, are not as easy to explain. Different scholars have argued different causes for these discrepancies, for example nationalistic characteristics, culture, degree of openness in the society, previous regulation, language, and so on. This means that the results of the quantitative study would not have been as interesting if they were presented alone. However, together with the qualitative part of this essay, a probable explanation ground can be found.

Judging by the quantitative study where only one Australian company was found to have capitalized research and development, together with the qualitative study of interviews, it would imply that the difference derives from an aware action from the Australian companies; to not capitalize internally generated research and development projects. Again, how the selection of companies for the study was made, of course affects how far this conclusion can be drawn. As the two Swedish companies without any capitalized intangible assets stated that capitalization was a constant topic for debate, it is probably fair to assume that the same discussion has been held in companies with capitalized intangibles. Further, as the Australian companies are of rather different character in between, it would be reasonable to see their view on project capitalization as something likely to find in other Australian companies as well.

To sum up the main concluding from this thesis; in general, biotech companies from the two countries account by, and see, the IFRS regulation on intangibles in the same way. However, there are some differences. Australian biotech companies on average capitalize less intangible assets than Swedish biotech companies, relative to their size. Especially, in number of companies, as well as the value of assets, Australian companies have much less capitalized research and development projects. This seems to be an effect of an aware decision, to not capitalize these projects when they are created internally. This differs from the Swedish view of IAS, where whether to capitalize internally generated research and development projects or not, is a topic for discussion. Further, in Sweden research and development project are frequently figured in companies' balance sheets,

constituting major values for the respective companies. This is not the case for Australia. Consequently, there is a need for further investigation on how these discrepancies should be taken into account when comparing companies across jurisdictions.

#### **6.4 Further research**

As the aim of this thesis is rather broad; to examine the accounting of intangible assets, some topics that should be interesting to examine further has been touched upon. For example, it would have been interesting to complement the study with the investors view, in order to see how they reason when dealing with companies with a lot of intangible assets, capitalized or not. It would also be interesting to compare how investors analyse companies in the sector, with how the companies believe they are being analysed. What was found in this essay, that almost all interviewed companies believe that their balance sheet does not affect their market value, would be interesting to look further into.

Another question is if the restrictiveness to capitalize intangible assets found in Australian companies in this study, also would go for all of the companies in the biotechnology sector. Further, it could be investigated if it is the same in other industries as well. It could also be interesting to look closer at what is classified as “other intangibles” in the Swedish companies’ annual reports, compared to the “intellectual property” found in Australian companies annual reports. What is hidden behind these terms could be investigated, as well as the reasons for the companies not to disclose what it consists of.

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