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Identification of Intangible Assets in Business Combinations
- A comparison between the US and Sweden

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Abstract

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Title: Identification of Intangible Assets in Business Combinations - A comparison between the US and Sweden

Background and Discussion: In 2002, IASB and FASB started working on a convergence project with the aim of identifying and minimizing differences between the two regulations, IFRS and US GAAP. Since 2005, when it became mandatory to prepare the financial statements in accordance with IFRS for all listed companies in the EU, goodwill has grown remarkably in Sweden but stayed rather stable in the US. Is this partly depending on differences in recognition of intangible assets in business combinations? Since the standards are similar to each other, could quality of enforcement affect accounting choices and the recognition of intangibles?

Purpose and Research Questions: The purpose of this thesis is to examine if there are any significant differences in recognition of intangible assets when acquiring firms perform their purchase price allocations in business combinations.

The research questions are: Are there any differences in the recognition of specific intangible assets in business combinations in the US, between the examined years, and due to the characteristics of the acquiring firms, and the size of the acquisitions? Are there any significant differences in the recognition of intangible assets when comparing the US and Swedish samples?

Methodology: To test for differences in recognition of intangible assets in business combinations, this thesis is approached by a deductive method of quantitative character, using secondary data. Financial data is gathered from databases and annual reports, and the hypotheses are tested with Kruskal-Wallis tests and linear regression models.

Results and Conclusions: The characteristics of the acquiring firm that significantly showed to affect the recognition of intangible assets were firm size, industry affiliation and technology-level. Size of the acquisitions was also a significant factor. The results from the regression model showed that US firms recognizes a larger share of intangible assets in business combinations than Swedish firms and we assume this is the result of stronger enforcement in the US.

Keywords: Intangible Assets, Business Combinations, Goodwill, IFRS 3, Accounting Choices, Enforcement

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ABBREVIATIONS

ASC	Accounting Standards Codification
EBA	European Banking Authority
EDGAR	Electronic Data Gathering, Analysis and Retrieval system
EIOPA	European Insurance and Occupational Pensions Authority
ESMA	European Securities and Markets Authority
ESRB	European Systemic Risk Board
FASB	Financial Accounting Standards Board
FI	Finansinspektionen
GAAP	Generally Accepted Accounting Principles
IAS	International Accounting Standards
IASB	International Accounting Standards Board
ICB	Industry Classification Benchmark
IFRS	International Financial Reporting Standards
SEC	U.S. Securities and Exchange Commission
SFAS	Statement of Financial Accounting Standards
US GAAP	United States Generally Accepted Accounting Principles

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1. Introduction

This chapter provides a background and problem discussion, the purpose of our research as well as a presentation of the research questions. This is followed by the limitations of the research and ended with our contribution and outline.

1.1 Background

The purpose of accounting is to convey a company's financial information and situation during the latest fiscal years to different users. Since different users have different needs, the financial statement amongst companies varies depending on the end users. With an outset in providing information useful in decision-making, financial statements should have qualitative characteristics such as relevance, reliability, comparability and cost-effectiveness (Smith, 2006). Financial reports of high quality that provides relevant information for the stakeholders lead to better decisions. Better information and better decisions leads to better allocation of resources. Continually, this leads to more effective capital markets and higher global wealth. The main organizations responsible for setting accounting standards with the aim of higher accounting quality are the International Accounting Standards Board (IASB) in Europe and the Financial Accounting Standards Board (FASB) in the US.

IASB is an independent organization with the objective of developing a single set of accounting standards, that are of high quality, understandable and globally accepted, thus create a better comparativeness between countries and companies. These accounting standards are named International Accounting Standards (IAS) and International Financial Reporting Standards (IFRS). The process of standard setting is open and transparent where public comment on consultative documents, such as discussion papers and exposure drafts, is important. Working closely with stakeholders and other accounting standard-setters around the world assures the standards are developed towards a greater harmonization (IFRS, 2014).

The US counterpart is Financial Accounting Standards Board (FASB). FASB is the designated organization in the private sector for establishing and improving standards of financial accounting that govern the preparation of financial reports by non-governmental entities. Their mission is accomplished through a comprehensive and independent process that encourages broad participation, they objectively considers all stakeholder views, and is subject to oversight by the Financial Accounting Foundation's Board of Trustees. The regulations issued by FASB are called Statement of Financial Accounting Standards (SFAS) and are covered in United States Generally Accepted Accounting Principles (US GAAP). The US GAAP standards are officially recognized as authoritative by the American authority of accounting enforcement, the U.S. Securities and Exchange Commission (SEC), as well as the American Institute of Certified Public Accountants (FASB, 2014).

In 2002, the European Parliament and the Council of the European Union approved of a new regulation with the aim of achieving greater harmonization in the financial information presented by listed companies within the member states of the European Union. The regulation stated that as of 1 January 2005, companies should prepare their consolidated accounts in accordance with the international accounting standards admitted by the IASB (No 1606/2002/EC). In the same year, International Accounting Standards Board (IASB) and Financial Accounting Standards Board (FASB) started working on a convergence project with the aim of identifying and minimizing differences between the two regulations, IFRS and US GAAP, in order to achieve better comparability and facilitate the work of investors, while lowering the cost of accounting because of a single regulation (Marton et al., 2013).

1.2 Problem discussion

The transition into a knowledge based and technology driven economy that has happened over the last decades have highlighted the importance of intangible assets as a driver in business performance (Neely et al. 2003, Harris & Moffat 2013). It is argued that intangibles, instead of fixed assets, are now most important for economic growth and social wealth in this “new economy” (Blair & Wallman, 2001). To succeed on the market and maintain a competitive position it has become increasingly important for companies to make long-term investments in human resources, information technology, development, marketing, brands and intellectual capital (Wyatt & Abernethy, 2008). Since intangible assets and goodwill is an increasingly important economic resource and is also an increasing proportion of the assets acquired in many transactions (Summary of Statement No. 141, FASB), it will be vital for the financial reports to be able to value these assets in an accurate way. In the long run growing balances of goodwill will cause problems on the financial markets. It is not reflecting the economic reality in a desired way when the goodwill grows larger for every year as the trend shows in Sweden since 2005 according to Gauffin & Nilsson (2013). They claim that the objective of the new standard IFRS 3, which is to enhance the relevance, reliability and comparability of information provided about business combinations and their effects, has not been met. There has been shown an increase in recognized intangible assets since 2005, but not in a sufficient extent. Also the information about the acquired assets has shown to be insufficient. This makes the financial reports less useful for the stakeholders, in contrary to the aim of the standard, which is to make the financial reports more reliable and useful for the stakeholders (Gauffin & Nilsson, 2013). A study by Hamberg et al. (2011) is pointing in the same direction that there’s been a substantial increase in goodwill in Swedish firms following the implementation of IFRS 3 in 2005.

The process of identification and valuation of intangible assets is without doubt problematic. However, the researchers are consistent that these assets exist and are valuable for the future growth of the company (Aboody & Lev 1998, Basu & Waymire 2008, Skinner 2008, Wyatt 2008, Ittner 2008, Stark 2008). The value of an intangible

asset can change rapidly, in both directions. For example, an intangible asset can be used by an infinite amount of users simultaneously, and the value depends on the amount of users. This relation is the opposite compared to tangible assets, where the usage decreases the value. This often makes it difficult to, at a given time, estimate the future cash flows and the value of the asset (Rehnberg 2012).

A study by Marton, Runesson & Catasus (2011) claim that goodwill, in relation to total assets, has been and remains too high in Swedish companies. The authors anticipate an increase in goodwill, which can contribute to financial statements being useless. Further, the authors suggest that the reason for the increase is that the accounting standards allow for interpretations, since they are principle-based. Because these interpretations, by company management, affect the quality of financial statements there is a need for a high quality of enforcement. Marton et al. suggest that high quality and strong enforcement might be the reason why we have not seen a similar increase of goodwill in the US, where goodwill, in relation to total assets, has been and remains on an even level. An article by Gauffin & Thörnsten (2010) supports the theory that strong enforcement makes up for a difference in accounting between US and Swedish firms, because of the survey and pressure on corporate management by SEC. Larsson & Kadfors (2008) conducted a study comparing four companies in the telecom industry, two from the US and Sweden respectively. The study indicates that American companies identifies and separately recognizes intangible assets from goodwill to a greater extent, compared to the Swedish counterparts.

In a study by Hope (2003), a sample of 22 countries was examined and it is shown that strong enforcement encourages managers to follow accounting rules, which in turn reduces uncertainty about future earnings. Evidence is also found for the importance of strong enforcement when more choice of accounting methods is allowed. Hope stress that although accounting measurements and rules are moving towards harmonization, there's still considerable variation in the enforcement of accounting standards internationally.

In a study by Ahlmark & Karlsson (2012), they came to the conclusion that the financial accounting of intangible assets separately from goodwill in business combinations, in accordance with IFRS 3, is flawed. The companies included in the study were all listed on the Nasdaq OMX Stockholm exchange between the years 2005-2012. The study provide results in line with previous studies (Rehnberg 2012, Lang & Lundholm 1993, Botosan & Plumlee 2002, Schilling et al. 2011), supporting that company-specific characteristics, i.e. firm size, industry, purchase price, etc., are having an effect on the recognition and identification of intangible assets in business combinations.

A presumption for reaching a good comparison of financial reports is the usage of the same regulations. However, this is not enough. Since both IFRS and US GAAP are principle based, it could be large differences in how the regulations are applied.

Theunisse (1994) explains that the financial reporting is not only a matter of technical intervention, it is also closely related to the socio-economic environment. There are mainly five socio-economic factors that affect the reporting. The legal environment where some countries prefer basic legislation and leave the details to be worked out by professionals, while other countries prefer detailed legislation on accounting matters. The financial environment depends on the ownership structure, companies with equity capital originating from many individual investors owe much information to their shareholders while companies that obtain most of their capital from institutional investors with representatives on the board are informed by internal reports. In certain countries the social environment is strong, with powerful trade unions in economics and politics. They often insist on detailed financial disclosure by companies in order to inform the workers about the economic and financial situation of companies. In other countries the pressure by trade unions to provide financial information is less strong. When it comes to the fiscal environment, some countries have a close relationship between accounting and taxation system, while others allow sets of annual reports for different purposes. The last factor is professional environment. In some countries financial reporting is legally regulated while in others the professional bodies are very influential and develop their own “soft law” instead of the “hard” rules made by governments (Theunisse, 1994).

A study by Bradshaw & Miller (2008) discuss whether a harmonization of accounting standards is going to result in the desired harmonization of accounting practices. The result indicates that harmonizing accounting standards is likely going to increase comparability in accounting methods and numbers, while they see regulatory oversight and enforcement as more important factors in reaching sought after result. Bushman & Piotroski (2006) supports this in a study about the institutional structure of countries and the response of gains and losses in reported earnings. Strong enforcement was found to lead to a more conservative accounting.

Several studies show that the harmonization of accounting standards is not enough, and that there’s a need for a strong enforcement to make it work as intended. We therefore assume that recognition of intangible assets acquired in business combinations would be lacking in countries with weaker enforcement. The enforcement in the US is said to be one of the strongest, while Sweden is believed to have a relatively weak one (Brown et al., 2014). We could not find any previous research comparing the US and Sweden in this matter. Previous studies have been looking into company-specific characteristics in Sweden; i.e. firm size, industry etc, but no research were found comparing these results to a similar study on the US market. With this thesis we hope to present general evidence in support of previously mentioned studies by Marton, Runesson & Catusus (2011) and Gauffin & Thörnsten (2010), that enforcement and other factors play a major role in the increasing difference in goodwill between the US and Sweden.

1.3 Purpose

The purpose of this thesis is to examine if there are any significant differences in recognition of intangible assets when acquiring firms perform their purchase price allocations in business combinations. The research is divided into two different parts. First we look at the differences between firms in the US, to see if the identification is depending on different characteristics such as firm size, purchase price and ownership structure. In the second part we compare the results from the first study with a previous similar study performed by Ahlmark & Karlsson (2013) for the Swedish market, and examine if there are any significant differences in recognition of intangible assets between Sweden and the US.

1.4 Research questions

- *Are there any differences in the recognition of specific intangible assets in business combinations in the US, between the examined years, and due to the characteristics of the acquiring firms, and the size of the acquisitions?*
- *Are there any significant differences in the recognition of intangible assets when comparing the US and Swedish samples?*

1.5 Limitations

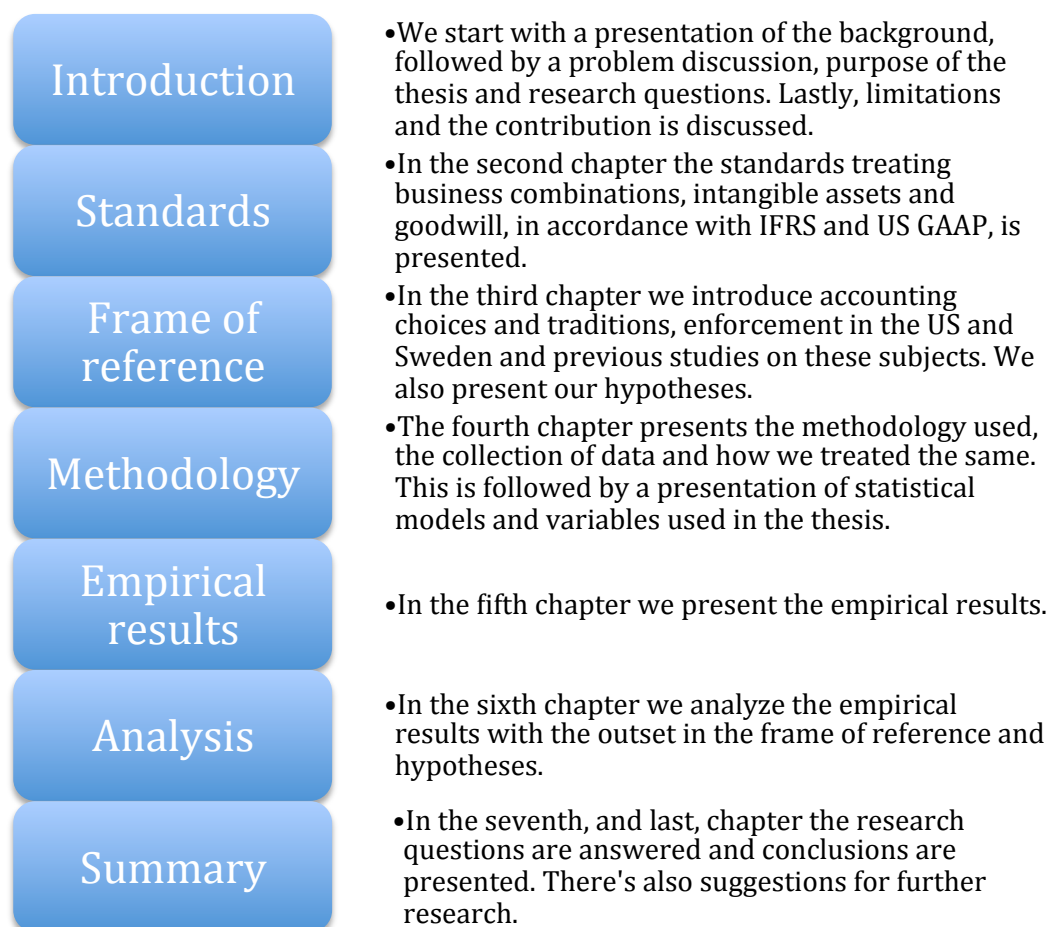
The research is limited to a comparison between listed companies in the US and Sweden. The reason for this is because there has shown to be differences in both recognition of intangible assets and accounting for goodwill between the countries. There is also the time aspect that affect our decision of investigating only these two countries, it would be too time consuming to expand it to a larger sample, e.g. include all of Europe. Further on we are limiting the study to the sample used by Ahlmark & Karlsson (2013), which consist of the listed companies on the Swedish stock market NASDAQ OMX Stockholm, supplemented with a matching U.S. sample of listed companies on the American NASDAQ Stock Market. The reason that we chose to match the sample from NASDAQ Stock Market is because it is the second largest stock market in the U.S. as well as it is the same company that operates the Swedish stock market.

The time frame investigated starts at 2010 and ends at 2012. The reason for our choice of investigating the years 2010-2012 is because we are going to perform a comparison with Ahlmark & Karlsson (2013), who performed a similar investigation during this time period for Swedish companies. They also included the years 2005-2009, but the data for 2005-2007 was not gathered by themselves, but by Pernilla Rehnberg in 2008, and due to the time aspect we chose to narrow it down to the three most recent years, 2010-2012.

1.6 Contribution

With this thesis we hope to contribute to the on-going research and discussion regarding the increasing differences in accounting for intangible assets and goodwill between countries. Previous studies focus mainly on the differences in impairment of goodwill, while we aim to contribute with a study comparing the differences in recognition of goodwill. In other words, instead of looking at how companies write down their accounted goodwill, we look at how they account for it in their balance sheets in the first place. This is done by examining the allocation of intangible assets in business combinations. Furthermore, there has been some research examining different firm characteristics' influence in recognition of intangible assets in business combinations for Swedish firms. This thesis provides research in a similar extent for US firms, which contributes with knowledge in how different characteristics of firms, and the size of acquisitions, affect the purchase price allocations, and also maps out the extent of how the selected variables affects the accounting for intangible assets in Swedish and US firms respectively. In addition to the examination of the firm characteristics' influence, this thesis also aims to contribute to the research of the strength of enforcement as an influential factor in accounting choices.

1.7 Outline



2. Standards

This chapter presents and shows the similarities of the standards that concern intangible assets and business combinations in IFRS and US GAAP.

2.1 IFRS 3 - Business Combinations

In 2004, as a part in the convergence project, IASB issued a new standard, IFRS 3 - Business Combinations (IASB), with the purpose of increasing the relevance, reliability and comparability of the financial information provided regarding acquisitions and the effects on the acquirers financial statement. The standard states that the acquirer is obligated to provide certain information regarding recognition and measurement of identifiable assets in the acquisition (§1). For the reporting company to achieve said information, the acquisition method is applied where the purchase price is allocated over the acquired net assets measured at fair value on the acquisition date (§18). This method consists of four steps. First, you have to identify who the acquirer is. Second, establishing the time of the purchase. Third and fourth, recognition and measuring of the identifiable acquired assets, the liabilities assumed, the non-controlling interests in the acquiree and goodwill (§§4-5). For a business combination to occur, a transaction or other event must occur, and the assets acquired and liabilities assumed must constitute a business (§3). IFRS 3 also specifies that previously unreported intangibles assets in the acquiree, that meets the criteria for identification, are to be reported separated from goodwill in the acquisition (§B31).

In acquisitions, goodwill arises when the purchase price of an acquirer's net assets exceeds the fair value (§32). This difference in value is classified as an intangible asset in the balance sheet and the only way to obtain goodwill is through business combination, hence the regulation in the standard. IFRS 3 defines goodwill as an asset representing future economic benefits arising from assets in an acquisition that are not individually identified or separately recognized (IFRS 3 Appendix A). In 2008, IASB released a revised version of IFRS 3, which resulted in several changes and applied to business combinations with an acquisition date of July 1 2009 or later. Two changes made that concern our thesis are the treatment of consideration transferred and goodwill accounting in non-controlling interests. Transaction costs are no longer included in the consideration transferred, instead they are expensed for, which will have an impact on both goodwill and the income statement. With the revised standard it is possible to either account for full or partial goodwill in non-controlling interests, meaning there's an option to measure the non-controlling interest on the basis of the value of acquired net assets or the fair value in it is entirety (PWC 2008).

2.2 ASC 805 - Business Combinations (former SFAS 141R)

In June 2001 FASB issued the new standards SFAS 141 - Business Combinations (revised in 2007, in order with the convergence project with IASB) and SFAS 142 - Goodwill and Other Intangible Assets. Before this, companies could choose between two accounting methods when acquiring a new company; the pooling of interests method and the purchase method. The pooling of interests method allowed the balance sheets of the two companies to be added together, while the purchase method adds the acquired company's assets to its fair market value. Using the first one, it was possible to avoid goodwill in the balance sheet, which meant you could avoid goodwill amortizations. In the latter, you shall recognize all identifiable assets at fair value and balance the rest as goodwill. The new standards aimed to increase the comparability of companies, leaving only the purchase method left as an option, also called the acquisition method. To meet the strong reactions of companies unwilling to increase their amortizations due to increasing goodwill, and also in order to give better information and reflect the economic reality better, the new standards also introduced the impairment tests for goodwill and removed the amortizations. Further on, to limit companies from balancing too much goodwill, they also introduced stricter requirements for recognition of intangible assets (Marton et al., 2013).

Intangible assets acquired in a business combination are initially recognized and measured in accordance with Statement 141. The acquirer shall recognize separately from goodwill the identifiable intangible assets acquired in a business combination. An intangible asset is identifiable if it meets either the separability criterion or the contractual-legal criterion (A19). The separability criterion means that an acquired intangible asset is capable of being separated or divided from the acquiree and sold, transferred, licensed, rented, or exchanged, either individually or together with a related contract, identifiable asset or liability. An intangible asset that the acquirer would be able to sell, license, or otherwise exchange for something else of value meets the separability criterion even if the acquirer does not intend to sell, license or otherwise exchange it (A21). The contractual-legal criterion is fulfilled if the assets are a result of a contract or other legal rights (Jarnagin, 2008). To qualify for recognition as part of applying the acquisition method, the identifiable assets acquired and liabilities assumed must meet the definitions of assets and liabilities in FASB Concepts Statement No. 6, Elements of Financial Statements, at the acquisition date. In addition, the identifiable assets acquired and liabilities assumed must be part of what the acquirer and the acquiree (or its former owners) exchanged in the business combination transaction rather than the result of separate transactions.

2.3 IAS 38 - Intangible Assets

Within the framework of IFRS an intangible asset is defined as an identifiable non-monetary asset without physical substance. For a resource to be identified as an asset it should be controlled by the entity as a result of past events and future economic benefits should be expected from it. The three critical attributes of an intangible asset are: identifiability, control and future economic benefits (IAS 38.8). An intangible asset is identifiable if it is separable or arises from contractual or other legal rights (IAS 38.12). Continually, IAS 38 requires an entity to recognize an intangible asset if: it is probable that the future economic benefits that are attributable to the asset will flow to the entity; and the cost of the asset can be measured reliably (IAS 38.21). There is a presumption that the fair value of an intangible asset acquired in a business combination can be measured reliably. An expenditure on an intangible item that does not meet both the definition of and recognition criteria for an intangible asset should form part of the amount attributed to the goodwill recognized at the acquisition date (IAS 38.35).

2.4 ASC 350 - Intangibles - Goodwill and Other (former SFAS 142)

An intangible asset that is acquired either individually or with a group of other assets (but not those acquired in a business combination) shall be initially recognized and measured based on its fair value. The cost of a group of assets acquired in a transaction other than a business combination shall be allocated to the individual assets acquired based on their relative fair values and shall not give rise to goodwill (SFAS 142.9). Costs of internally developed intangible assets (including goodwill) that are not specifically identifiable, that have indeterminate lives, or that are inherent in a continuing business and related to an entity as a whole, shall be recognized as an expense when incurred (SFAS 142.10). The accounting for a recognized intangible asset is based on its useful lifetime. An intangible asset with a finite useful life is amortized, while an intangible asset with an indefinite useful life is not amortized. The useful lifetime is the period over which the asset is expected to contribute directly or indirectly to the future cash flows of that entity (SFAS 142.11).

2.5 Similarities between the standards in IFRS & US GAAP

Table 1: Similarities between the standards in IFRS & US GAAP

Standards	Similarities between IFRS & US GAAP
Business Combinations	All business combinations are accounted for using the acquisition method
	Upon obtaining control of another entity, the underlying transaction is measured at fair value, establishing the basis on which the assets, liabilities and non-controlling interests of the acquired entity are measured
Intangible assets	They both define intangible assets as nonmonetary assets without physical substance
	The recognition criteria for both accounting models require that there be probable future economic benefits and costs that can be reliably measured
	Goodwill is recognized only in a business combination, with the exception of development costs
	Internally developed intangibles are not recognized as assets
	Internal costs related to the research phase of R&D are expensed as incurred
	Amortization of intangible assets over their estimated useful lives is required, with one US GAAP exception in ASC 985-20, Software - Costs of Software to be Sold, Leased or Marketed, related to the amortization of computer software sold to others
	If there is no foreseeable limit to the period over which an intangible asset is expected to generate net cash inflows to the entity, the useful life is considered to be indefinite and the asset is not amortized
	Goodwill is never amortized

(EY, 2014)

As seen above, the standards regarding business combinations, intangible assets and goodwill are very similar to each other and are essentially treated in the same way in the two regulatory frameworks. These similarities, that is a result of the aforementioned convergence project between the European IASB and the American counterpart FASB, shows that the difference in accounting for intangible assets and goodwill should not be due to the use of different regulations anymore, but rather for reasons resulting from the principle-based character of the standards.

3. Frame of reference

In this chapter we put our research in a context, present previous studies in the area and form our hypotheses.

3.1 Accounting choices

A presumption for reaching a good comparison of financial reports is the usage of the same regulations. However, this is not enough. Since the standards used in this thesis are considered to be principle-based, there could be large differences in how the regulations are applied. A study by Marton, Runesson & Catusus (2011) claim that goodwill, in relation to total assets, has been and remains too high in Swedish companies. The authors anticipate an increase in goodwill, which can contribute to financial statements being useless. Further, the authors suggest that the reason for the increase is that the accounting standards allow for interpretations, since they are principle-based.

Previous studies have pointed out some variables that affect accounting choices regarding goodwill in business combinations. Firm size has been shown to affect accounting choices, where variables related to political costs are much more important in explaining the choice of accounting principles for larger firms than for smaller ones (Daley & Vigeland 1983). According to a study by Lang & Lundholm (1993), a relation between disclosure and firm size is expected if disclosure cost is decreasing in firm size. The notion that preparation costs are decreasing in firm size underlies much of the FASB's and SEC's consideration of firm size in mandating disclosure requirements. In addition, the cost of disseminating disclosures may be higher for small firms because the news media are more likely to carry stories about large firms and analysts are more likely to attend their meetings. Also, Botosan & Plumlee (2002) suggest that firms with a high analyst following benefit from providing greater annual report disclosure. Rehnberg (2012) shows that large firms are more inclined to account for intangible assets separately from goodwill. To determine the firm size, Lang & Lundholm (1993) suggest looking at market value by equity, which is also what Ahlmark & Karlsson (2012) does.

Ong & Hussey (2004) believe that the kind of industry a company operates in affects the accounting for intangible assets. They suggest that frequency of business acquisitions and the importance of trademark in different industries are influencing factors. Marton & Rehnberg (2009) comes to the conclusion that intangible assets are of great importance for low-tech companies as well as high-tech ones, which speaks against the industry as an important factor. However, further on they come to the conclusion that in spite of this, industry is an influential factor. Also, a study of Schilling, Altmann & Fiedler (2012) at PwC in Zürich supports the claim that the identification of intangible assets varies between industries.

Using ownership concentration as a proxy when examining accounting choices is motivated since companies with a less dispersed ownership is believed to have owners that are more involved in the business and accounting choices made by the management (Warfield et al. 1995, Fan & Wong 2002). This is supported by Landry & Callimaci (2003), who says that concentrated ownership leads to a larger share identified intangible assets, because the management have less ability to affect the financial accounting when the owners are more involved. La Porta et al. (1999) and Lee & O'Neill (2003) finds that ownership concentration is affecting a company's accounting choices when making a comparison between multiple countries. In another study by La Porta et al. (1998), they find that good accounting standards and a high investor protection are associated with low ownership concentration, which indicates that high ownership concentration is a response to weak investor protection.

Rehnberg (2012) finds that purchase price has a positive relationship with identified intangibles. The higher the price of the acquisition is in relation to the acquirer's turnover, the higher the extent of identified intangible assets is. This is explained by the assumption that significant acquisitions are treated differently than less significant acquisitions, and in the significant acquisitions there are more specialists that affect the financial statements, such as external auditors and other persons who may be engaged as consultants or employees with specialist skills. This relationship is also mentioned by Gauffin & Nilsson (2012), where they point out that purchase price can be one of the reasons for differences in recognition of intangible assets in acquisitions, since some companies make limited efforts to recognize intangible assets in smaller acquisitions.

Since most companies are partially funded through loans of external financiers. The higher the debt to equity ratio is, the more dependent the company is of its creditors. In other words, the more debt funded the company is, the more disclosure they will need to have to be able to show their creditors that they are creditworthy. If the creditors believe the risk of default is low, it will be cheaper with loans for the company (Sweeney, 1994; DeAngelo et al., 1994; Sengupta, 1998). Rehnberg (2012) also claims that firms with a large part external financing are more willing to account for specific intangible assets.

In a study by Ahlmark & Karlsson (2013), including companies listed on the Nasdaq OMX Stockholm exchange between the years 2005-2012, they came to the conclusion that the financial accounting of intangible assets separately from goodwill in business combinations, in accordance with IFRS 3, is flawed. They found that most companies have recognized few or no specific intangible assets in their business combinations. They also found that there exist significant differences between the shares of recognized intangible assets in business combinations, both between the years and due to the characteristics of the acquiring firm and the size of the acquisitions. They got significant results showing that there is a difference in recognition of intangible assets on an annual basis, though not an incremental increase per year as indicated by Rehnberg (2012),

with the highest value in 2012. Firm size also revealed a significant result, where firms listed on the Large Cap had the largest general share of recognized intangible assets and Small Cap the smallest. This result is supported by Lang & Lundholm (1993), Botosan & Plumlee (2002) and Rehnberg (2012), who argue that the size of the firm is having an effect on the amount of disclosures. Industry affiliation was also found to have an impact on the recognition of intangible assets, which is in line with the results of a study conducted by Schilling, Altmann & Fiedler (2011), where they found that different industries accounted for different proportions of intangible assets in business combinations. Whether the company was operating in a high- or low-tech industry did not produce any significant results, but high-tech firms are, according to a study Collins (1997), prone to recognize a higher share of intangible assets from goodwill than low-tech firms. This due to high-tech firms depending more on these types of assets and might feel a need to be more transparent regarding intangible assets attained in acquisitions. A significant difference was also found between the proportion of intangible assets and the size of the purchase price, where the results indicate that a larger share of the intangible assets are recognized separately from goodwill at a higher purchase price. Significant results were also found showing that firms with a higher debt to equity ratio recognize more intangible assets in business combination, in contrast to firms with low external financing.

These results show that company-specific characteristics affect accounting choices made by Swedish firms when accounting for intangible assets in business combinations. Since we expect to find similarities when examining the US firms, our hypotheses will be as follows:

H_{1.1}: There is a difference in recognition of intangible assets between the years.

H_{1.2}: There is a difference in recognition of intangible assets between the sizes of the firms.

H_{1.3}: There is a difference in recognition of intangible assets between industries.

H_{1.4}: There is a difference in recognition of intangible assets between high- and low-tech firms.

H_{1.5}: There is a difference in recognition of intangible assets due to the purchase price.

H_{1.6}: There is a difference in recognition of intangible assets between firms with a high and low debt to equity ratio.

H_{1.7}: There is a difference in recognition of intangible assets due to the ownership concentration in firms.

3.2 The Continental tradition and the Anglo-Saxon tradition

The development of accounting in Europe and the US is characterized by two essentially different law traditions, the Continental civil law tradition and the Anglo-Saxon common law tradition. A major contributor to the divergent development in accounting practice between these traditions is the ownership structure in large firms. In the Continental tradition, the most influential owners usually are the state, banks or familial interests. While in the Anglo-Saxon tradition, firms are to a larger extent listed and the ownership more dispersed. Because of this dispersion of ownership in the large firms, investors and shareholders are relying on external information which in turn caused the accounting profession, chiefly accounting firms, to grow stronger and bigger in the Anglo-Saxon compared to the Continental countries. Another contributing factor have been the connection to the taxation system, where Continental civil law have had a much closer connection to it than the Anglo-Saxon common law. In the last decades, the civil law is embracing parts of the common law practice resulting in accounting moving closer towards each other (Smith, 2006).

The difference in the law traditions can be traced back to its origins in civil traditions, where the Continental law tradition has its origin in the Roman civil law and comprises of Western Europe, with the exception for the United Kingdom, Ireland and the Netherlands. As a consequence of the civil law tradition being legalistic, meaning regulations are based on written laws, and comprising of the corporate law, the accounting practice has been highly influenced. There's also been a strong connection between accounting- and tax regulations during the 20th century, which had further impact on the accounting in the countries practicing under the Continental law tradition. While the Anglo-Saxon common law tradition is in turn less based on written laws, instead customs and precedents ruled in courts been acting as a complement. As a consequence, the corporate law, including the accounting, is regulated for in the legislation to a lesser extent and it has been up to the accounting professions to develop standards, usually called Generally Accepted Accounting Principles (GAAP), of what is "true and fair" (Smith, 2006).

In a study by La Porta, Lopez-de-Silanes, Shleifer and Vishny (1998) the quality of enforcement of laws protecting investors is examined. As a starting point the legal origin is recognized, since it will have an impact on the enforcement of the country. Commercial law originates from two broad traditions: common law, which is English in origin, and the civil law. The civil law tradition can be further divided into three families: French, German and Scandinavian. The study shows that laws vary a lot across countries, partly because of difference in legal origin. Further, both creditors and shareholders get the strongest protection against corporate management's incentives in common-law countries, while French-civil-law countries have the weakest protection. German-civil-law and Scandinavian countries are somewhere in between. In contrary, the quality of law enforcement is the highest in Scandinavian and German-civil-law countries, followed by common-law countries and again the lowest in French-civil-law

countries. Ball, Kohtari and Robin (2000) found that common-law countries applies a more conservative accounting, and it is said to be an important part in monitoring of managers in common-law corporate governance. Rehnberg (2012) believes that identifying and separating intangible assets from goodwill in business combinations is a conservative approach to accounting. Conservative accounting is, according to Bushman and Piotroski (2006), the result of a high quality judicial system. This is found to be true, especially in countries with both a high quality judicial system and more dispersed ownership structure, such as the US.

3.3 Enforcement in Sweden

In the European Union every member state has their own national body of enforcement, however there's also the European Securities and Markets Authority (ESMA). ESMA is an independent authority with the goal of safeguarding the stability of the European Union's financial system by ensuring the integrity, transparency, efficiency and orderly functioning of securities markets, as well as enhancing investor protection. ESMA's work on securities legislation contributes to the development of a single rulebook in Europe. This ensures the consistent treatment of investors in the European Union, enabling an adequate level of protection of investors through effective regulation and supervision. It also promotes equal conditions of competition for financial service providers, as well as ensuring the effectiveness and cost efficiency of supervision for supervised companies. ESMA also contribute to the strengthening of international supervisory co-operation through its role in standard setting and reducing the scope of regulatory arbitrage (ESMA, 2014). The Board of Supervisors, which is responsible for taking the policy decisions and approval of ESMA's work, is composed of the heads of 27 national authorities, with observers from Iceland, Lichtenstein and Norway, from the European Commission, a representative of European Banking Authority (EBA) and European Insurance and Occupational Pensions Authority (EIOPA) and one representative of the European Systemic Risk Board (ESRB), (ESMA, 2014).

The national financial supervisory authority in Sweden is Finansinspektionen (FI). FI is a government agency designed to oversee the financial market. They develop rules and make sure that companies comply with them. FI also analyse the risks that could lead to instability in the financial system and are working to empower consumers in the financial market (FI, 2014). In addition to FI, the two stock exchanges, NASDAQ OMX and Nordic Growth Market, are required to enforce financial reporting. However, according to Berger (2010), neither of the privately organized stock exchanges is a competent authority or a delegated authority in the sense of Article 24, Section 1 of the Transparency Directive.

3.4 Enforcement in the US

In the US, the responsible authority is the US Securities and Exchange Commission (SEC). Like ESMA and FI, the mission of the U.S. Securities and Exchange Commission is to protect investors, maintain fair, orderly, and efficient markets, and facilitate capital formation. As the commission states at their website, more and more first-time investors turn to the markets to help secure their futures, pay for homes, and send children to college, which make their investor protection mission more compelling than ever. Also, when the securities exchanges mature into global for-profit competitors, there is an even greater need for sound market regulation. Further on, it is the enforcement authority that is crucial to the SEC's effectiveness. Each year the SEC brings hundreds of civil enforcement actions against individuals and companies for violation of the securities laws. Typical infractions include insider trading, accounting fraud, and providing false or misleading information about securities and the companies that issue them. The SEC consists of five presidentially appointed Commissioners, with staggered five-year terms. One of them is designated by the President as Chairman of the Commission, the agency's chief executive. By law, no more than three of the Commissioners may belong to the same political party, ensuring non-partisanship (SEC, 2014).

3.5 Previous studies in enforcement

In the previously mentioned study by Marton, Runesson & Catusus (2011) the authors further suggest that interpretations of the principle-based regulations, by company management, affect the quality of financial statements and that there is a need for a high quality of enforcement. Marton et al. suggest that high quality and strong enforcement might be the reason why we have not seen a similar increase of goodwill in the US, where goodwill, in relation to total assets, has been and remains on an even level compared to Sweden.

Berger (2010) examined how the goal of enforcement (to protect capital markets by ensuring proper application of accounting standards) was pursued on a European level and explored the different structures and processes of the national enforcement agencies. The examinations by the OMX stock exchange in Sweden led to no errors being identified. Hence, the question arises as to whether the quality of financial reporting by Swedish companies is so much better than in other countries or the enforcement is less strict. Noteworthy is that about half of the companies received notifications of potential deviations from the accounting standards, which were not considered so material as to warrant further investigation.

In a study by La Porta et al. (1998), the authors found that ownership concentration is negatively correlated with the quality of legal protection of investors, i.e. a country with high concentration in ownership tends to have weaker protection for investors. A study by Jaggi and Low (2000) shows similar results, indicating that there's a higher financial

disclosure level towards the capital market in common-law countries, where it is common for firms to have a wide dispersion in ownership and a high level of debt financing, compared to civil-law countries.

An article by Gauffin & Thörnsten (2010) supports the theory that strong enforcement makes up for a difference in accounting between the US and Swedish firms, because of the survey and pressure on corporate management by SEC. A study performed by Brown, Preiato and Tarca (2014) compares the level of auditing and enforcement between 51 countries in the years 2002, 2005 and 2008. In the proxy they've set up, the US gets remarkably better scores than Sweden in both auditing and enforcement, all years investigated. In 2002, when Sweden had not yet adopted IFRS, the total score for the country was 22. In 2005 and 2008 when IFRS was implemented the total score increased to 30 and 34 respectively. However, the US got the total scores of 39, 53 and 56 the same years, which was the highest scores of all countries investigated.

Because of the stronger enforcement in the US compared to Sweden, and previously presented studies, we expect to see differences in the recognition of intangible assets in business combinations between the countries. Therefore our hypothesis will be as follows:

H₂: There is a difference in recognition of intangible assets between the US and Swedish firms during the years 2010-2012.

4. Methodology

In this chapter we are showing how we performed our research, including the overall design, the collection of data and the statistical models and variables used in the study.

4.1 Research design

This thesis intends to examine if there are any differences amongst the acquiring US companies, within the collected sample, in recognition of intangible assets when accounting for business combinations. Further, we intend to make a comparison between the US sample and Swedish sample gathered in a previous study and examine if there are differences in identification of intangible assets between the countries. The main focus when collecting data for this study will be the allocation of intangible assets in acquisitions, i.e. share of intangible assets allocated to identifiable intangible assets and goodwill respectively.

To be able to answer the research questions, data for the years 2010-2012 will be included. For the Swedish data we will use data collected by Ahlmark & Karlsson (2013). For the US data, we will manually examine annual reports of companies listed on American Nasdaq Stock Market, with a market value similar to those of the companies in the Swedish sample, which carried out business combinations during the investigated years 2010-2012.

Based on theories and previous research, we set up a number of hypotheses to help us answer our research questions. In order to test these hypotheses we need to examine how a dependent variable (share of identified intangible assets in relation to total intangible assets in an acquisition) is affected by independent variables, i.e. industry, firm size, debt to equity ratio, technology level and purchase price. The tests used in this study will be Kruskal-Wallis tests for the comparison between the companies in the US sample and regression analysis for the comparison between the US sample and the Swedish sample.

The study will have a quantitative character, which involves gathering data from databases to use in statistical tests (Holme & Solvang, 1997). These statistical tests are then used to see if there are any differences or relationships between the examination objects to confirm or reject our hypotheses. Since we are using regulatory frameworks, IFRS and US GAAP, along with previous research, this study is approached by the deductive method. In this method, a hypothesis is formed using theories and previous research. The purpose of the deductive method is to lead us to a conclusion, representing proof, based on the reasons given (Blumberg et al. 2011).

4.2 Collection of data

We are conducting a quantitative research and we will only be using secondary data in this thesis. Since the data we are looking for is available through the financial databases Thomson Reuters Datastream, Orbis and the SEC database EDGAR, where we can find

the American companies' annual reports, there will not be any need to collect primary data since it would not contribute to the tests performed.

4.2.1 Swedish Data for 2010 - 2012

The Swedish data for 2010 - 2012 was provided to us by our tutor Jan Marton, and was gathered and processed during 2012 - 2013 by Ahlmark & Karlsson (2013) for their Master thesis. All companies included in the Swedish collection were gathered from the three main lists; Small, Mid and Large Cap on Nasdaq OMX Stockholm. The selection was based on companies listed on these lists as of November 1st 2012, and included the years ranging from 2008 - 2012. The sample is comprised only of companies reporting in accordance with IFRS and that have carried out acquisitions during the years 2008 to 2012. Further, what is defined as a business, or classified as a business combination, must be fulfilled in accordance with IFRS 3. For an acquisition to be regarded as useful for the study, a certain amount of information were required in the financial statements made by the companies since calculations are made for some of the variables used. For example, companies were required to have reported either intangible assets or goodwill, or both, in an acquisition to make it useful.

Since the data that was handed to us was lacking a lot of values for ownership concentration, we collected new data for that by ourselves. This data was gathered in the database Orbis, where we collected the latest available ownership information for every company. Even though it is not a hundred per cent accurate, it still gave us a better sample than the old one.

4.2.2 US Data for 2010 - 2012

The data for the US firms was retrieved by Datastream, Orbis and manually examining the sample companies' annual reports, specifically the notes to the financial statements regarding acquisitions during the fiscal year, as well as the consolidated statements of cash flow. The annual reports were found using the SEC database EDGAR. Through the use of Datastream we distinguished companies listed on the Nasdaq OMX Stock Market that made acquisitions during the years 2010-2012 and then manually matched them against the Swedish ones based on firm size, where we tried to match them as precise as possible after market value to make it a comparable sample. When the sample was selected by firm size, we gathered the information about the acquisitions, including purchase price and the allocation of intangible assets and goodwill, manually using the SEC database EDGAR.

We also used this database to gather the debt to equity ratios by manually check the total liabilities and shareholders' equity in the consolidated balance sheets and then calculated the ratios in Microsoft Excel, by dividing the liabilities with the shareholders' equity. We used this method for debt to equity ratio because Datastream did not provide sufficient data for the examined companies. Since the data for ownership structure were

missing for most of the examined companies in Datastream, we used Orbis to collect the ownership data. As well as for the Swedish data, we gathered the latest available ownership information for every company in Orbis.

The industry affiliation was gathered directly from Datastream. When classifying the industries into categories, we used the ICB system. The ICB is a definitive system categorizing over 70,000 companies and 75,000 securities worldwide, enabling the comparison of companies across four levels of classification and national boundaries (ICB, 2014). The reason that we used the ICB is both because that is the classification that was used by Ahlmark & Karlsson (2013) and it is also adopted by the Nasdaq OMX Stock Market. Since we matched our sample by firm size, and since the American and Swedish stock exchanges are comprised of different industry distributions, the industry affiliation is different between our two samples. There is a large enough spread though to test for the significance of industry affiliation, which made it unnecessary to try and match it perfectly.

4.3 Statistical models

4.3.1 Kruskal-Wallis test

The Kruskal-Wallis test is a non-parametric test, used when comparing if any difference exists between two or more independent samples, where the sample observations are ranked and the variance is analysed. Since the test is non-parametric there's no need to make assumptions about the distribution in the population, since no assumptions about normal distribution in the parent population is required. It is also used when sample groups are of unequal size. The ranking is performed on the pooled data from all samples and ranked in ascending order. In case of ties, the observations with the same value will be assigned the average of the ranks they would have received if they were of different values, i.e. if the observations for the fourth and fifth lowest observations is of the same value they will be assigned rank 4.5 with the following rank being 6. The null hypothesis to be tested implies that the examined populations means are identical (Newbold et al. 2010).

When conducting statistical tests, such as Kruskal-Wallis test, an important factor is to set the significance level. The significance level can be said to define the probability to reject a true null hypothesis. While dealing with significance there's a possibility for two types of errors, type 1 and type 2 errors. Type 1 error is the probability of rejecting a null hypothesis when the null hypothesis is true, while a type 2 error occur when we fail to reject a false null hypothesis (Newbold et al. 2010). We are going to use a significance level of 5 % when conducting our tests. If the results show a significance level of 5 % or less, the test can explain the tested variables with a probability of 95 %. Meaning that 5 % or less of the result is expected to have occurred by chance alone (Newbold et al. 2010).

4.3.2 Multiple linear regression

A multiple linear regression is used when trying to explain or test for a significant relationship between a dependent variable and two or more independent variables. The variability in the dependent variable can, to an extent, be explained by the linear function of the chosen independent variables. The coefficient of determination, R square, is used to measure the strength of the linear relationship between the dependent and independent variables.

4.3.3 Variables

4.3.3.1 Dependent variable

For the Kruskal-Wallis tests our dependent variable is the share of identified intangible assets, calculated as *Identified intangible assets / Identified intangible assets + Goodwill*.

Table 2: Calculation of the dependent variable

Purchase Price Allocation	USD (Thousands)
Net tangible assets	200,000
Intangible assets:	
Developed technology	50,000
Trademarks	25,000
Customer relationships	75,000
In-process research and development	150,000
Total Intangible assets	300,000
Goodwill	500,000
Total purchase price	1,000,000

In the above example, the dependent variable would be 0,375 ($300,000 / (300,000 + 500,000)$), i.e. 37,5 % of the intangible assets is recognized and allocated to identified intangible assets, and 62,5 % is allocated to goodwill.

Table 3: Definition of the dependent variable

Variable (abbreviation)	Variable	Definition
IntA	Share of identified intangible assets	“Identified intangible assets” divided by “identified intangible assets + goodwill”

4.3.3.2 Independent variables

Our independent variables are firm size, industry, ownership structure, purchase price and debt to equity ratio. The variables are presented further below.

Firm size

The market value is obtained every year at year ending. When performing the Kruskal-Wallis tests, firm size is divided into three different groups. The first group is companies with a market value below 150 million Euros, the second between 150 million Euros and 1 billion Euros, and the third one consist of companies with a market value greater than 1 billion Euros. The reason for this grouping is because we want it to be similar to the tests performed by Ahlmark & Karlsson (2013) where they use the Nasdaq OMX Stockholm lists; Small Cap, Mid Cap and Large Cap as grouping. We will use the natural logarithm of market value in the regression, to avoid outliers and achieve normal distribution in the sample, because the distribution is skewed in it is natural state (Appendix 1 & 2).

Formula: Market value = Share price x Outstanding shares.

Industry

When dividing the industry into high-tech and low-tech industries we used the same grouping as Rehnberg (2012) and Ahlmark & Karlsson (2013). High-tech industries consist of Technology, Telecommunication and Health Care, while Basic Materials, Consumer Goods, Consumer Services, Financials, Industrials, Oil & Gas and Utilities are regarded as low-tech industries.

Ownership structure

Landry & Callimaci (2003) suggests using 10 % or more of voting shares, held by an individual shareholder or related party, as an indicator of concentrated-ownership in firms. These firms are, according to the authors, more likely to have owners involved in management, which can lead to unwanted managerial behaviour. Hence, this is what we will use as a limitation when categorizing companies in our data.

Purchase price

When performing the Kruskal-Wallis tests we divide the purchase price into three different groups. To match our sample as good as possible with Ahlmark & Karlsson (2013) we use their grouping converted into US Dollars. The first group is purchase prices lower than 15 million USD, the second is between 15 million USD and 80 million USD, while the third group is purchase prices greater than 80 million USD. We will use the natural logarithm of purchase price in the regression model, to avoid outliers and achieve normal distribution in the sample, because the distribution is skewed in it is natural state (Appendix 1 & 2).

Debt to equity ratio

For the Kruskal-Wallis test we will examine if there's a significant relationship between debt to equity ratio and identification of intangible assets. If the D/E-ratio is lower than 1, it is considered to be low in our tests. If it is 1 or higher, it is instead considered to be high. Once again, this is the same grouping as used in Ahlmark & Karlsson (2013).

Formula: Debt to equity ratio = Debt / Common Equity

Country variable

For our second hypothesis we will use a dummy variable since we assume, based on previous studies and theory, there will be differences in the recognition of intangible assets between Sweden and the US, caused by a stronger enforcement in the US. The dummy variable will be representing the difference in level of enforcement between the countries. A dummy variable is an independent variable used when comparing two or more groups with each other.

Table 4: Definition of the independent variables

Variable (abbreviation)	Variable	Definition
Ind	Industry	The industry where the acquiring company is listed on NASDAQ Stock Market the year of the business acquisition, following ICB classification.
lnMV	The natural logarithm of market value	The natural logarithm of market value for the acquiring company the year of the business combination. Proxy for firm size.
lnPP	The natural logarithm of purchase price	The natural logarithm of purchase price for the acquiring company in the year of the business acquisition.
Year	Year	The year of the business combination.
Owner	Ownership concentration	The voting share for the single biggest owner in the acquiring company.
DE	Debt to equity ratio	The debt to common equity for the acquiring company the year of the business combination.
Country	Dummy country	Each country transformed into a dummy variable, where US=0 and Sweden=1

5. Empirical findings

This chapter presents the results of the statistical tests performed. It starts with the results of the Kruskal-Wallis tests and is followed by the regression analyses.

Chart 1: Intangible assets in relation to Goodwill, 2010 - 2012

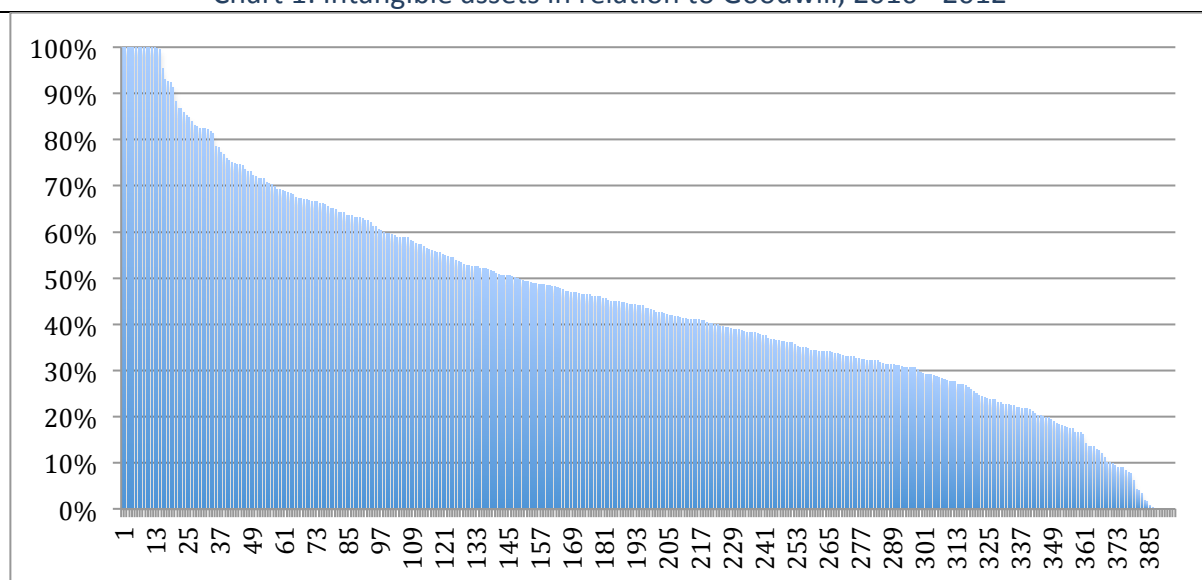


Chart 1 presents how the firms in the US sample have allocated acquired intangible assets as either specific intangible assets or goodwill in their acquisitions during the years 2010 to 2012. There are a total of 149 acquisitions, out of the 395, where 50 % or more were reported as specific intangible assets. In 12 acquisitions, 100 % of the intangible assets were specified, and in 8 acquisitions, all were allocated as goodwill and no specific intangible assets were reported.

5.1 Non-parametrical testing of the difference in recognition of intangible assets

Table 5: Share of Intangible Assets in relation to Goodwill, divided into groups of the recognized percentage, 2010 - 2012

Share of Intangible Assets in relation to Goodwill	Number of Acquisitions
0 %	10
1-20 %	43
21-40 %	127
41-60 %	119
61-80 %	61
81-99 %	23
100 %	12
Total	395

In the above table the population has been divided into seven groups, with similar intervals for the share of identified intangible assets in relation to goodwill. It presents how intangible assets have been reported for every purchase price allocation for the examined companies, listed on the NASDAQ Stock Market during the years 2010 to 2012.

Kruskal-Wallis test based on the recognition of Intangible Assets in relation to Goodwill, for the examined years 2010-2012

H_{1.1}: There is a difference in recognition of intangible assets between the years.

Table 6: Recognition of Intangible Assets in relation to Goodwill, for the examined years 2010-2012

Year	N	Mean Rank	Rank Of Intangible Assets	
2010	137	208,14	Chi-Square	1,937
2011	158	195,62	df	2
2012	100	187,87	Asymp. Sig.	0,38
Total	395			

To examine if there are any differences in recognition of intangible assets between the examined years 2010-2012, we performed a Kruskal-Wallis test with the results as shown in the table above. The 395 PPA:s examined were divided into 3 different groups, divided by year. Year 2010 consists of 137 acquisitions with the mean rank of 208,14. Year 2011 consists of 158 acquisitions and has the mean rank of 195,62. Year 2012 consists of 100 acquisitions with the mean rank of 187,87. The tests significance of 0,38 is above the required value of 0,05. This means that the test results cannot tell if there are differences in recognition of intangible assets between the examined years. Thus, the null hypothesis is not rejected.

Kruskal-Wallis test based on the recognition of Intangible Assets in relation to Goodwill by Firm size

H_{1.2}: There is a difference in recognition of intangible assets between the sizes of the firms.

Table 7: Recognition of Intangible Assets in relation to Goodwill by Firm size

Market Value (MEUR)	N	Mean Rank	Rank Of Intangible Assets	
<150	102	216,66	Chi-Square	6,155
150 - 1 000	98	206,33	df	2
>1 000	195	184,05	Asymp. Sig.	0,046
Total	395			

To examine if there are any differences in recognition of intangible assets depending on firm size, we performed a Kruskal-Wallis test with the results as shown in the table above. The 395 PPA:s examined were divided into 3 different groups. Firms with a market value up to 150 million Euros consist of 102 acquisitions with the mean rank of 216,66. Firms with a market value from 150 million Euros up to 1 billion Euros consist of 98 acquisitions and have the mean rank of 206,33. Firms with a market value greater than 1 billion Euros consist of 195 acquisitions with the mean rank of 184,05. The tests significance of 0,046 is below the required value of 0,05, which shows that there are differences in recognition of intangible assets depending on market value. Thus, the null hypothesis is rejected.

Kruskal-Wallis test based on the recognition of Intangible Assets in relation to Goodwill by Industry

H_{1.3}: There is a difference in recognition of intangible assets between industries.

Table 8: Recognition of Intangible Assets in relation to Goodwill by Industry

Industry	N	Mean Rank	Rank Of Intangible Assets	
Basic Materials	6	188,75	Chi-Square	18,245
Consumer Goods	23	222,87	df	8
Consumer Services	45	196,77	Asymp. Sig.	0,019
Financials	28	140,05		
Health Care	52	237,40		
Industrials	76	183,34		
Oil & Gas	2	84,25		
Technology	160	201,53		
Telecommunications	3	161,33		
Total	395			

To examine if there are any differences in recognition of intangible assets depending on industry affiliation, we performed a Kruskal-Wallis test with the results as shown in the table above. The 395 PPA:s examined were divided into 9 different groups. Basic Material companies consist of 6 acquisitions with the mean rank of 188,75. In a similar manner, the companies in the industries Consumer Goods, Consumer Services, Financials, Health Care, Industrials, Oil & Gas, Technology, and Telecommunications received the rank averages of 222,87, 196,77, 140,05, 237,40, 183,34, 84,25, 201,53, and 161,33. The tests significance of 0,019 is below the required value of 0,05, which shows that there are differences in recognition of intangible assets depending on industry affiliation. Thus, the null hypothesis is rejected.

Kruskal-Wallis test based on the recognition of Intangible Assets in relation to Goodwill by Technology-level

H_{1.4}: There is a difference in recognition of intangible assets between high- and low-tech firms.

Table 9: Recognition of Intangible Assets in relation to Goodwill by Technology-level

Technology	N	Mean Rank	Rank Of Intangible Assets	
High-Tech	215	209,64	Chi-Square	4,908
Low-Tech	180	184,09	df	1
Total	395		Asymp. Sig.	0,027

To examine if there are any differences in recognition of intangible assets depending on technology-level, we performed a Kruskal-Wallis test with the results as shown in the table above. The 395 PPA:s examined were divided into 2 different groups, divided by technology-level. High-tech firms consist of 215 acquisitions with the mean rank of 209,64. Low-tech firms consist of 180 acquisitions and have the mean rank of 184,09. The tests significance of 0,027 is below the required value of 0,05, which shows that there are differences in recognition of intangible assets depending on the technology-level. Thus, the null hypothesis is rejected.

Kruskal-Wallis test based on the recognition of Intangible Assets in relation to Goodwill by Purchase price

H_{1.5}: There is a difference in recognition of intangible assets due to the purchase price.

Table 10: Recognition of Intangible Assets in relation to Goodwill by Purchase price

Purchase Price (MUSD)	N	Mean Rank	Rank Of Intangible Assets	
<15	132	222,98	Chi-Square	10,448
15 – 80	126	192,65	df	2
>80	137	178,85	Asymp. Sig.	0,005
Total	395			

To examine if there are any differences in recognition of intangible assets depending on purchase price, we performed a Kruskal-Wallis test with the results as shown in the table above. The 395 PPA:s examined were also in this test divided into 3 different groups. Acquisitions with a purchase price up to 15 million USD consist of 132 acquisitions with the mean rank of 222,98. Purchase prices between 15 million USD and 80 million USD consist of 126 acquisitions and have the mean rank of 192,65. Purchase prices greater than 80 million USD, consists of 137 acquisitions with the mean rank of 178,85. The tests significance of 0,005 is below the required value of 0,05, which shows that there are differences in recognition of intangible assets depending on purchase price. Thus, the null hypothesis is rejected.

Kruskal-Wallis test based on the recognition of Intangible Assets in relation to Goodwill by Debt to equity-ratio

H_{1.6}: There is a difference in recognition of intangible assets between firms with a high and low debt to equity ratio.

Table 11: Recognition of Intangible Assets in relation to Goodwill by Debt to equity-ratio

Debt To Equity Ratio	N	Mean Rank	Rank Of Intangible Assets	
0 - 0,99	247	204,01	Chi-Square	1,828
1 -	148	187,97	df	1
Total	395		Asymp. Sig.	0,176

To examine if there are any differences in recognition of intangible assets depending on debt to equity ratio, we performed a Kruskal-Wallis test with the results as shown in the table above. The 395 PPA:s examined were divided into 2 different groups. Firms with a D/E-ratio below 1 consist of 247 acquisitions with the mean rank of 204,01. Firms with a D/E-ratio greater than 1 consist of 148 acquisitions and have the mean rank of 187,97. The tests significance of 0,507 is above the required value of 0,05. This means that the test results cannot tell if there are differences between the groups in recognition of intangible assets depending on the D/E-ratio. Thus, the null hypothesis is not rejected.

Kruskal-Wallis test based on the recognition of Intangible Assets in relation to Goodwill by Ownership concentration

H_{1.7}: There is a difference in recognition of intangible assets due to the ownership concentration in firms.

Table 12: Recognition of Intangible Assets in relation to Goodwill by Ownership concentration

Ownership	N	Mean Rank	Rank Of Intangible Assets	
< 10 %	167	187,25	Chi-Square	2,564
10 % -	228	205,87	df	1
Total	395		Asymp. Sig.	0,109

To examine if there are any differences in recognition of intangible assets depending on the ownership concentration, we performed a Kruskal-Wallis test with the results as shown in the table above. The 395 PPA:s examined were divided into 2 different groups. Firms where the single biggest owner owns less than 10 % of the outstanding shares consist of 167 acquisitions with the mean rank of 187,25. Firms where the single biggest owner owns 10 % or more of the outstanding shares consist of 228 acquisitions and have the mean rank of 205,87. The tests significance of 0,109 is above the required value of 0,05. This means that the test results cannot tell if there are differences between the groups in recognition of intangible assets depending on ownership concentration. Thus, the null hypothesis is not rejected.

5.2 Country as a proxy for enforcement

To test for relation between the chosen variables, we conducted a bivariate analysis of Pearson correlation. This test checks for variables that highly correlate with each other which might bias the following regression.

Table 13: Pearson correlation matrix

Variable	IntA	Ind	lnMV	lnPP	Year	Owner	DE	Country
IntA	1,000							
Ind	0,062	1,000						
lnMV	0,103**	0,061	1,000					
lnPP	0,100**	0,010	0,476**	1,000				
Year	0,010	-0,076*	0,042	0,091*	1,000			
Owner	-0,089*	-0,199**	0,009	-0,180**	0,024	1,000		
DE	-0,059	-0,073*	0,031	0,026	0,066	0,044	1,000	
Country	-0,242**	-0,094**	0,000	-0,316**	0,000	0,428**	0,101**	1,000

** Correlation is significant at the 0,01 level (2-tailed).

* Correlation is significant at the 0,05 level (2-tailed).

As seen in the table above, none of the variables were found to strongly correlate with each other. The dummy variable Country shows a modest correlation with Owner, and a weak correlation with IntA, lnPP and DE. Also, lnMv and lnPP shows a modest correlation. Since none of the variables show any strong correlation with each other, it indicates that the variables do not affect each other, nor will they bias the output when running the regression.

5.2.1 Descriptive statistics

Table 14: Descriptive statistics

Variable	N	Minimum	Maximum	Mean	Median	Std. Deviation
IntA	777	0,00	1,00	0,3880	0,3660	0,27687
Ind	790	1	10	5,7291	6,0000	1,97257
lnMV	790	1,60	10,68	6,9371	7,2113	2,00573
lnPP	769	3,36	17,22	9,8923	9,8915	2,01703
Year	790	2010	2012	2010,91	2011	0,769
Owner	788	1,36	81,33	22,2450	18,1800	16,67813
DE	768	-11,63	22,74	1,4113	1,0817	2,29312

The descriptive statistics show that the mean and median is close to each other for most of the chosen variables. Possible exceptions are Owner and DE, where the mean is a bit higher than the median, suggesting that the distribution is slightly positively skewed. This slight skewness arises when there are more observations with a value less than the median, than observations with a value above. For the rest of the variables we can assume a normal distribution.

5.2.2 Multiple linear regression

We will run a multiple regression to test the recognition of intangible assets between US and Swedish firms. To separate the firms, based on the country where they are listed, a dummy variable is used. The hypothesis for our second research question is:

H₂: There is a difference in recognition of intangible assets between the US and Swedish firms during the years 2010-2012.

The dependent variable used in the model is identified intangible assets scaled as a percentage of the total of identified intangible assets and goodwill. The independent variables used are industry affiliation (Ind), natural logarithm of market value (lnMV), natural logarithm of purchase price (lnPP), year of the acquisition (Year), ownership concentration (Owner), debt to equity ratio (DE) and a dummy variable for where the company is listed (Country). The dummy variable will represent the difference in enforcement between the countries, where US companies are coded as 0 and Swedish companies are coded as 1.

Table 15: The results of the F-test for the US and Sweden, 2010 - 2012

ANOVA			
Model	Degrees of freedom	F	Sig. (p-value)
Regression	7	7,597	0,000
Total	746		

Table 16: The results of the t-test for the US and Sweden, 2010 - 2012

Coefficients				
	N	B	t	Sig. (p-value)
Constant	747	-12,179	-0,467	0,640
Ind	747	0,006	1,158	0,247
lnMV	747	0,015	2,562	0,011*
lnPP	747	-0,006	-0,997	0,319
Year	747	0,006	0,482	0,630
Owner	747	0,000	0,482	0,630
DE	747	-0,004	-0,868	0,386
Country	747	-0,136	-5,918	0,000*

*: value of significance

Table 17: Model Summary

Model Summary	
R Square	Adjusted R Square
0,067	0,058

$$\hat{y} = -12,179 + 0,006Ind + 0,015lnMV - 0,006lnPP + 0,006Year - 0,000Owner - 0,004DE - 0,136Country$$

Table 15 shows the result from the F-test for the regression model and will help us answer and draw conclusions for our second hypothesis. The result of the test shows a p -value of 0,000 at a significance level of $\alpha = 0,05$, therefore we can reject the null hypothesis since the p -value is less than $\alpha = 0,05$. This supports our hypothesis that there is a difference in recognition of intangible assets between the US and Swedish firms during the years 2010 to 2012.

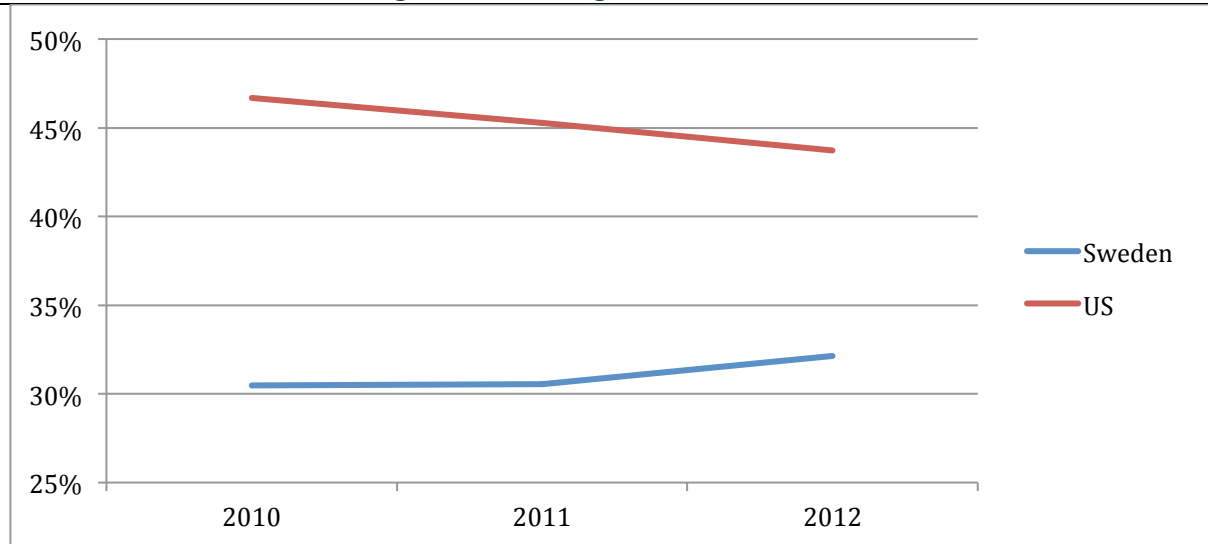
The result from the t-test for independent variables is shown in table 16. The independent variable $\ln MV$ is shown to have a significant impact on the recognition of intangible assets since the p -value of 0,011 is less than $\alpha = 0,05$. The variables \ln , $\ln PP$, Year, Owner and DE show no significant effect since they all receive a p -value greater than $\alpha = 0,05$. The variable Country, which is used as a dummy, helps us display and draw conclusions regarding which of the two countries that recognize a larger share of intangible assets in business combinations. The dummy variable shows a p -value of 0,000, which is significant at the $\alpha = 0,05$ level. Hence, showing evidence that the US and Sweden differ when it comes to recognition of intangible assets. The beta-value of the dummy variable, -0,136, will be added when the model represents recognition of intangible assets in Sweden. When representing recognition of intangible assets in the US it will be equal to 0. The regression model thereby shows that companies in the US recognize a larger share of intangible assets in business combinations than companies in Sweden.

In table 17 the R square (coefficient of determination) and adjusted R square are presented. The value for R square shows that the dependent variable is explained to 6,7 % by the chosen independent variables in the regression model. Since the value for adjusted R square are close to R square, none of the independent variables in the regression were redundant.

6. Analysis

In this chapter the analysis of the results is presented

Chart 2: The mean share recognition of intangible assets in the US and Sweden, 2010 - 2012



The companies who accounted for business combinations in the US between 2010-2012 recognized a mean share of intangible assets between 40-50 %. Meanwhile, in the Swedish sample, the companies who accounted for business combinations recognized a mean share of intangible assets between 30-35 %. This clearly shows that there is a difference between the countries in recognition of intangible assets. An interesting finding though is that the recognition seems to slowly increase in Sweden and decrease in the US. With the short time period in mind, as well as the relatively small sample compared to the total amount of acquisitions made in the US, this data is insufficient to base any real conclusions on. However, in Sweden where the sample consists of every acquisition made by listed companies over the years, the upward trend is supported by Gauffin & Nilsson (2013), where the authors found the recognition and identification of specific intangible assets to be at an all time high in Sweden for the year 2012. Thus, the increase we see in the above table is assumed to reflect the actual development in Sweden.

6.1 Accounting choices

When testing for recognition of intangible assets between the years 2010-2012, there was no significant result. As expected, this indicates that the recognition of intangibles in the US lies at a quite stable level and is neither increasing nor decreasing significantly. For a similar test in Sweden, Ahlmark & Karlsson (2013) found significant results for difference in recognition of intangibles between the years 2005-2012. This could partly be explained by a sample stretching over a longer time period. Also, Marton, Runesson & Catasus (2011) claim that goodwill, in relation to total assets, has been and remains too high in Swedish companies, as well as suggest that strong enforcement with high quality

might be the reason why we have not seen a similar increase of goodwill in the US. The strong enforcement in the US could explain the results for this test as well. Since the goodwill remains on an even level, we could also expect the recognition of intangible assets to do so.

When testing for firm size, the test shows that market value affects the recognition of intangible assets. This was also the expected result and Ahlmark & Karlsson (2013) found the same result for the Swedish market as well. As Daley & Vigeland (1983) points out, variables related to political costs affect larger firms more. This is mainly because large firms rather keep their results down, by using different accounting methods, to avoid political attention and interference. Lang & Lundholm (1993) supports the influence of firm size with the explanation that the costs of disclosure is higher for small firms, causing larger firms to disclose their financial information in a higher extent. Additionally, large firms tend to benefit more from providing greater annual report disclosure, because they use to have a higher analyst following.

The test for industry, as well as for technology-level, shows that there is difference between the groups in recognition of intangible assets in the US. This is also what was expected, based on the previous studies presented in the frame of reference. With help from these studies, the reason for industry as an influencing factor can be explained by the difference in frequency of business acquisitions and importance of trademark between high-tech firms and low-tech firms (Ong & Hussey, 2004). Based on the study by Collins (1997), high-tech firms also tend to recognize more intangible assets than low-tech ones, since they are depending on these types of assets in a higher degree and could thereby feel the need to be more transparent regarding intangible assets. Ahlmark & Karlsson (2013) found significant results for industry but not for technology level in Sweden. One reason for why the US sample showed a significant relationship between technology-level and recognition of intangible assets could be that the US sample consisted of a much larger share of high-tech firms than in the Swedish sample. Rehnberg (2012), which thesis Ahlmark & Karlsson (2013) is based on, found that there was a higher share of recognition of intangible assets for low-tech firms. These different results make it difficult to come to a general conclusion of how technology-level affect the recognition of intangibles.

Purchase price is another variable our tests showed to affect the recognition of intangible assets. Once again, this was the expected result and the same as for Ahlmark & Karlsson (2013). Rehnberg (2012) supports this result and explains it with the assumption that significant acquisitions are treated in another way than insignificant acquisitions, involving more specialists to affect the financial statements. This is also in line with Gauffin & Nilsson (2012), who explains the difference with the assumption that some companies do not make any efforts to recognize intangible assets in smaller business combinations.

The test for debt to equity ratio showed no significant result. This was not the expected result for the test. Since firms with large part external financing should be more inclined to account for intangible assets separately from goodwill (Rehnberg, 2012) and a higher debt to equity ratio should lead to more disclosure to show the creditors (Sweeney 1994; DeAngelo et. al 1994; Sengupta 1998), the expected result was that debt to equity ratio should affect the recognition of intangible assets. One reason for this result could be that the enforcement in the US already keeps the general disclosure at a high level, resulting in even companies with low debt to equity ratios being transparent. In Sweden, Ahlmark & Karlsson (2013) got significant result that the recognition differs between firms, depending on the debt to equity ratio.

Ownership concentration did not show any significant result either, which was not in line with the expectations. This is because the owners are not involved in the business and accounting choices made by management, in the same extent as for firms with less dispersed ownership (Warfield et. al 1995, Fan & Wong 2002). In another country, like Sweden, where the enforcement system is weaker, we would expect a relationship between ownership concentration and recognition of intangible assets. This is also the result Rehnberg (2012) found in Sweden for the years 2005-2007. However, since the US has got a high quality judicial system, conservative accounting is applied regardless of the ownership structure (Bushman & Piotroski, 2006).

Comparison of the Kruskal-Wallis tests performed in the US and Sweden:

Table 18: Comparison of the Kruskal-Wallis tests performed in the US and Sweden

Variable	US	Sweden
Year	Not Significant	Significant
Firm Size	Significant	Significant
Industry	Significant	Significant
Technology	Significant	Not Significant
Purchase Price	Significant	Significant
Debt To Equity Ratio	Not Significant	Significant
Ownership Concentration	Not Significant	Not Significant

Above table shows the results of the Kruskal-Wallis tests performed in this thesis for the US sample and compares the results with the Kruskal-Wallis tests performed for the Swedish sample by Ahlmark & Karlsson (2013). To be able to compare the results for ownership concentration, which Ahlmark & Karlsson (2013) did not include, this table includes the result Rehnberg (2012) found for ownership concentration in Sweden for the years 2005-2007.

6.2 Enforcement

The F-test for the second hypothesis shows whether there is significance in the overall relationship between our dependent variable, recognition of intangible assets, and the chosen independent variables. Since the results of the F-test show that null hypothesis can be rejected at a significance level of $\alpha = 0,05$, there's significant statistical evidence for differences in recognition of intangible assets between US and Swedish firms between the years 2010 to 2012.

While the regression model provides us with sufficient evidence for an overall relationship between the variables, the value of R square (table 17) tells us that variations in our dependent variable is only explain to 6,7 % by the chosen independent variables in the regression model. We expected a much high coefficient of determinations since the variables used were the one most discussed and used in other studies and articles (i.e. Ahlmark & Karlsson (2013), Rehnberg (2012)).

Further, the t-test examines the independent variables and gives an indication on their separate impact on the recognition of intangible assets. We will start by analysing the independent variables that were shown to affect our dependent variable in a significant way. First off is lnMV, which we expected to show a positive relation with our dependent variable, since market value has been shown to affect the accounting choices by management in numerous studies (Rehnberg (2012), Lang & Lundholm (1993), Daley & Vigeland (1983)). For lnMV, we can reject null hypothesis, and the positive beta-value shows that the larger the firm, the larger the share of specific intangible assets recognized.

The other independent variable that is shown to affect our dependent variable is Country, our dummy variable used to separate the US and Swedish firms. Since we can reject the null hypothesis, this provides adequate evidence that the country where firms are listed has an impact on recognition of intangible assets. The negative beta-value tells us that Swedish firms recognize less specific intangible assets in business combinations than the US firms during the examined years 2010 - 2012. This is the result we expected to see, since our assumption is that differences between the countries could arise on account of the quality and level of enforcement. The US is said to have one of the strongest level of enforcement in the world, if not the strongest, while Sweden is somewhere in the middle, considered having a somewhat mediocre level of enforcement. This is shown in a study by Brown et al. (2014) where US scores higher than Sweden in all of the investigated years when examining the level of auditing and enforcement. Since every member state in the EU has their own body of enforcement when it comes to the implementation of IFRS, this is reason to doubt that accounting regulations will be sufficient when it comes to harmonization of financial statements and accounting standards.

This is in line with what is suggested in studies by Marton et al. (2011) and Gauffin et al. (2010) that a high quality in enforcement might be the reason why the goodwill is on a more stable level in the US compared to Sweden. This is further supported in a study by Bushman et al. (2006) where it is found to be true that enforcement is a major factor for companies to apply a more conservative and transparent accounting, thus including identifying a larger share of intangible assets when accounting for business combinations. Since the US and Sweden origins from different law traditions, the Anglo-Saxon and the Continental respectively, we would expect to see a more conservative accounting in the US firms. As La Porta et al. (1998) pointed out in a study, common law countries tend to apply a more conservative accounting because of its history of dispersed ownership and a need for investor protection, since firms are listed to a larger extent in common law countries, such as the US. We consider this to be reflected in our results since firms in the US account for a larger share of identified intangible assets, compared to Sweden, which belongs to the civil law tradition. This difference in enforcement also applies to questions raised about unwanted managerial behaviour, because IFRS and US GAAP are principle-based and open to interpretations. We assume the pressure and survey on management by SEC suppresses the unwanted managerial behaviour, which could arise in companies with a more dispersed ownership concentration, as mentioned in a study by Bushman et al. (2006).

Our variable for industry affiliation, *Ind*, was found to have no significant impact on the recognition of intangible assets since the null hypothesis could not be rejected. We expected industry to have an impact on the recognition, as suggested in studies by Ong & Hussey (2004) and Schilling et al. (2012). For the independent regression of the Swedish data (Appendix 4), industry affiliation was shown to have an impact on the recognition. Therefore, we assume industry to impact the recognition in some countries more than others.

The results for *lnPP* show no significant impact on the recognition of intangible assets since the null hypothesis could not be rejected. This is opposed to what we expected to see based on the results presented by Rehnberg (2012) and Ahlmark & Karlsson (2013), where an increasing purchase price were shown to affect the recognition of intangibles assets in business combinations in a positive way. Even though the variable is not of significance, we expected the beta-value to be positive but instead we got a negative value, indicating that an increasing purchase price would affect the recognition of intangible assets in a negative way.

For the variable *DE*, we can see a result similar to *lnPP*, where it opposes what we expected based on previous studies. While it does not have a significant affect on the recognition of intangible assets, since the null hypothesis could not be rejected, the beta-value is negative which indicates that an increasing debt to equity ratio would affect the recognition in a negative way.

The variable Year shows no significance in the results, since the null hypothesis could not be rejected. As mentioned by Marton et al. (2011), the level of goodwill in the US has been and remains on an even level. This led us to expect Year not to have an impact in the linear regression model since the share of identified intangible assets should have remained on a fairly even level as well.

Also, the variable Owner is shown to have no impact on the recognition of intangible assets, since null hypothesis could not be rejected. The beta-value of 0 indicates that even if it had been significant it would not have affected the recognition in any way. The expected relation was to see a larger share of intangible assets recognized, as the ownership got more concentrated. As mentioned by Landry & Callimaci (2003), where it is suggested that a more concentrated ownership would result in higher recognition of intangible assets. This expected relationship were found in the US sample when we ran independent linear regressions for the two country samples (Appendix 3), the variable Owner was found to impact the recognition in a significant way, with a mean of ownership, for the single biggest owner, at 15,1 %. It is shown affecting the recognition of intangible assets in a positive way, with a beta-value of 0,002, when ownership is less dispersed in a company. From the regression we see that the independent variable Owner does not have a significant impact on recognition of intangible assets in Swedish firms. This might be because of the highly concentrated ownership structure that is found in these firms, as seen in the descriptive statistics for the Swedish sample (Appendix 4) where the mean of ownership for the single biggest owner is 29,4 %. Landry & Callimaci (2003) suggested using 10 % or more of the voting shares as an indication of concentrated ownership. In the Swedish firms the ownership concentration is almost three times as high, with a mean of 29,4 %, which we suspect might cause ownership not to show any significance in the regression for the Swedish sample. We expected to see a less dispersed ownership in the US, since its origin is in Anglo-Saxon tradition, in contrary to Sweden whose origin is in Continental tradition where it is common to see a more concentrated ownership structure.

7. Summary

This chapter summarizes the results and conclusions for the thesis and gives suggestions for further research in the topic.

7.1 Conclusions

- Are there any differences in the recognition of specific intangible assets in business combinations in the US, between the examined years, and due to the characteristics of the acquiring firms, and the size of the acquisitions?

The findings in this thesis show that there exist significant differences for the share of recognized intangibles assets separate from goodwill in business combinations. We could not find any significant result showing any differences in the recognition of specific intangible assets in business combinations between the examined years in the US. The characteristics of the acquiring firm that showed to affect the recognition of intangible assets were firm size, industry affiliation and technology-level. The size of the acquisitions was also affecting the share of intangible assets recognized. The characteristics, debt to equity ratio as well as ownership concentration, did not show any significant result and thereby cannot be said to influence the recognition in the US, based on the sample used in this thesis.

- Are there any significant differences in the recognition of intangible assets when comparing the US and Swedish samples?

The results show that US firms recognizes a larger share of intangible assets in business combinations than Swedish firms. Since the accounting standards regarding business combinations, intangible assets and goodwill are very similar to each other, and essentially treated in the same way in the two regulatory frameworks, the difference in recognition should not be due to differences in the regulations anymore. Rather, we assume it is a result of the principle-based character of the regulations and interpretations of the same. Since these interpretations affect the quality of financial statements, the quality of each country's enforcement becomes more crucial in the process of accounting convergence.

We make the assumption that it is hard to make generalizations about accounting for business combinations between countries, because of the differences in investor protection, law- and accounting traditions. Mainly because market value were the only variable found to impact the recognition in a significant way, when comparing the US and Sweden.

Since the US were found to recognize a larger share of intangible assets in business combinations, we assume the enforcement to be stronger and of a higher quality in the US than in Sweden.

7.2 Further Research

The coefficient of determination in our regression model was much lower than expected, and showed that the variables we examined did not explain much of the variations in the dependent variable. For further research it would be interesting to include more variables, or different ones, to find a regression model with a higher coefficient of determination that better reflects the relation between accounting choices and the recognition of intangible assets.

Since we expect enforcement to be an important factor for the recognition of intangible assets in business combinations and conservative accounting in general, it would be interesting to examine this on a deeper level, and focus on the influence of the strength of enforcement and institutional structure.

This thesis was rather limited in various ways. Things that could improve the credibility and make the research more accurate and comprehensive would be to expand the time period a couple of years and to include more acquisitions made in the US, where only a small sample was gathered compared to the total acquisitions made.

8. References

In this chapter all the references used to write this thesis can be found. The references are order alphabetically, under the subheadings: literature, scientific articles and electric materials.

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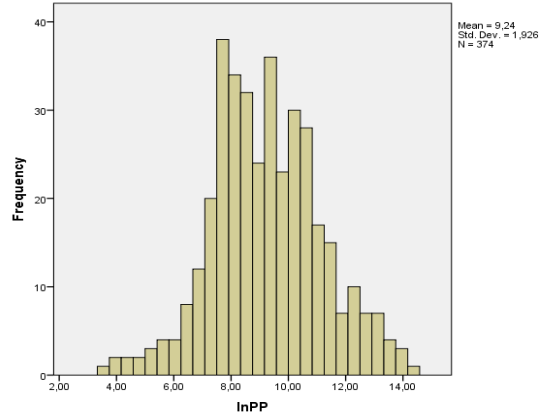
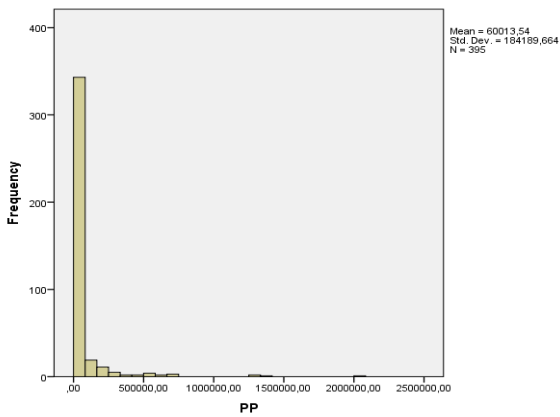
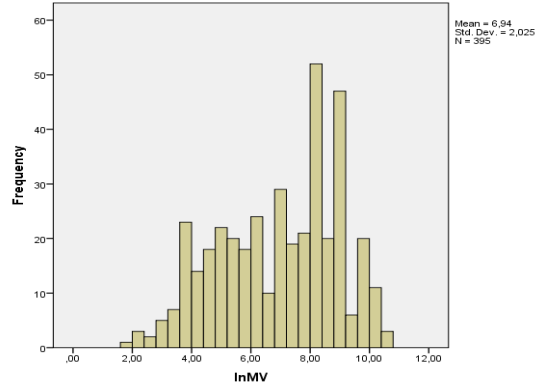
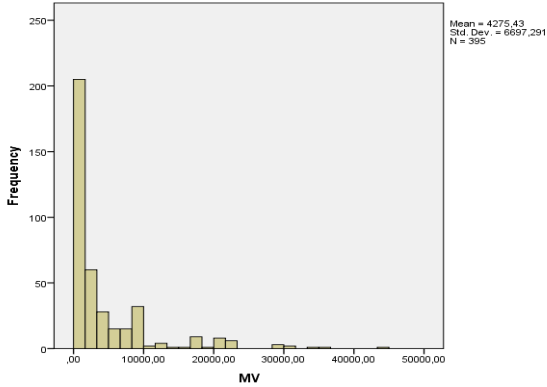
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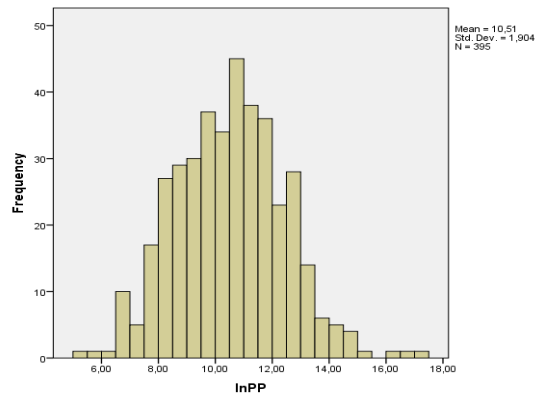
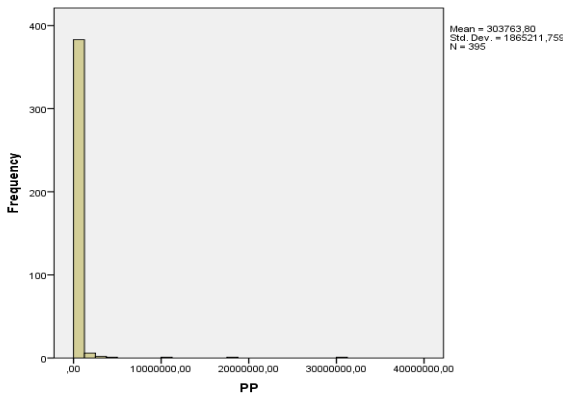
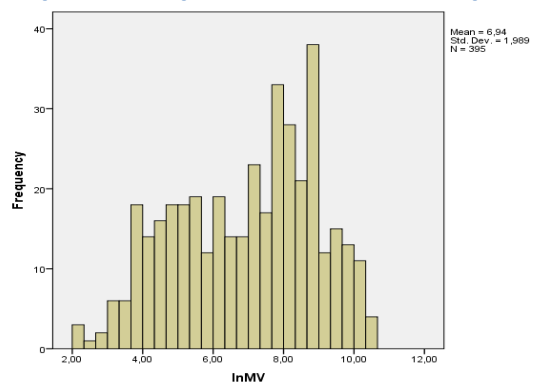
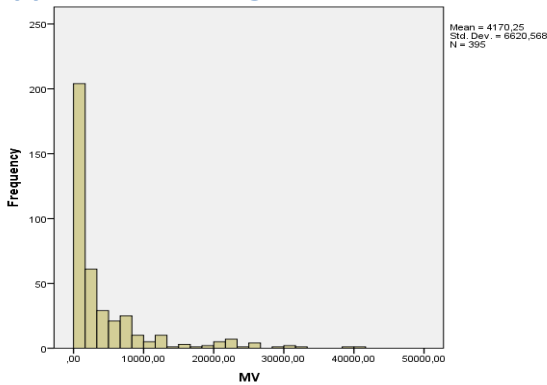
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Appendix

Appendix 1: Histogram for market value and purchase price for the Swedish sample



Appendix 2: Histogram for market value and purchase price for the US sample



Appendix 3: Descriptive statistics and results of the F- and t-test for the US sample

Variable	N	Minimum	Maximum	Mean	Median	Std. Deviation
IntA	395	0,00	1,00	0,4539	0,4335	0,23189
lnMV	395	2,01	10,60	6,9363	7,2138	1,98898
lnPP	395	5,19	17,22	10,5122	10,5524	1,90444
Owner	395	1,36	81,33	15,1240	10,7700	12,77806
DE	395	-11,63	14,44	1,1863	0,7102	2,64142

ANOVA

Model	Degrees of freedom	F	Sig. (p-value)
Regression	6	2,253	0,038
Residual	388		
Total	394		

Coefficients

	B	t	Sig. (p-value)
Constant	20,886	0,679	0,498
Ind	-0,001	-0,163	0,871
lnMV	0,001	0,116	0,908
lnPP	-0,014	-1,794	0,074
Year	-0,010	-0,660	0,510
Owner	0,002	2,191	0,029
DE	-0,006	-1,275	0,203

$$\hat{y} = 20,886 - 0,001Ind + 0,001lnMV - 0,014lnPP - 0,010Year + 0,002Owner - 0,006DE$$

Appendix 4: Descriptive statistics and results of the F- and t-test for the Swedish sample

Variable	N	Minimum	Maximum	Mean	Median	Std. Deviation
IntA	382	0,00	1,00	0,3198	0,2722	0,30224
lnMV	395	1,60	10,68	6,9379	7,2088	2,02486
lnPP	374	3,36	14,52	9,2377	9,2176	1,92588
Owner	393	3,00	81,00	29,4023	28,000	17,08457
DE	373	0,00	22,74	1,6494	1,4025	1,82801

ANOVA

Model	Degrees of freedom	F	Sig. (p-value)
Regression	6	5,281	0,000
Residual	345		
Total	351		

Coefficients

	B	t	Sig. (p-value)
Constant	-49,240	-1,160	0,246
Ind	0,024	2,537	0,012
lnMV	0,034	3,915	0,000
lnPP	0,008	0,900	0,369
Year	0,024	1,160	0,247
Owner	-0,001	-0,797	0,426
DE	0,001	0,138	0,890

$$\hat{y} = -49,240 + 0,024Ind + 0,034lnMV + 0,008lnPP + 0,024Year - 0,001Owner + 0,001DE$$