IMPAIRMENT OF GOODWILL

- *A study about differences in goodwill impairment and the enforcement*
regarding impairment of goodwill in Europe, the US
and in the UK, France, Germany and Sweden

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Preface

We want to thank our tutors Jan Marton and Emmeli Runesson for the help and guidance that we received during the time of the thesis. We also want to give a special thanks to Emmeli Runesson for the technical support. Last, but not least, we want to thank the opponent groups for their valuable thoughts and opinions.

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Abstract

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Title: *Impairment of goodwill – A study about differences in goodwill impairment and the enforcement regarding impairment of goodwill in Europe, the US and in the UK, France, Germany and Sweden*
Subject heading: goodwill, impairment of goodwill, IAS 36, SFAS 142, enforcement

Background and problem: Since 2005, every listed company in Europe has to implement the statements by IASB in the consolidated financial statements. This is a step in the convergence process between the IFRS and the US GAAP. Even if differences are eliminated, some still remain. There are also differences in the implementation of IFRS within Europe. One difference regards the treatment of goodwill and the impairment of goodwill. This item allows a great scope of interpretations and evaluations by the corporate management, which can prevent the statements being properly implemented. Hence, a professional judgment and high quality enforcement is needed.

Purpose: The purpose of this thesis is to examine, at a country level, if there are differences in the goodwill impairments between Europe and the US and between the UK, France, Germany and Sweden. Continually, if there are differences we want to examine if it is a consequence of differences in the quality of the enforcement.

Delimitations: We only include listed companies stated in Europe and the US in our first comparison and the UK, France, Germany and Sweden in our second comparison. Since the IFRS is compulsory for listed European companies since 2005, we limit our data to 2005-2009.

Methodology: The thesis is of a quantitative character since we have collected data for the listed companies in Europe and the US during 2005-2009 and data for the listed companies in the UK, France, Germany and Sweden during 2005-2009. Two hypotheses are tested to distinguish statistical connections regarding impairment of goodwill for the two regions and for the four countries.

Results and conclusions: The empirical results show that there are differences regarding impairment of goodwill between the two regions and the four countries. We consider this being a consequence of differences in the quality of enforcement.

Suggestions for further research: We suggest a similar study but with different variables. We also suggest further and deeper research about impairment of goodwill between the UK, Germany, and Sweden.

Abbreviations

APB	Accounting Principles Board
BaFin	Bundesanstalt für Finanzdienstleistungsaufsicht
COB	Commission des Opérations de Bourse
DPR	Deutsche Prüfstelle für Rechnungslegung
DRS	Deutschen Rechnungslegungs Standard
ESMA	European Securities and Markets Authority
FASB	Financial Accounting Standards Board
FI	Finansinspektionen
FRRP	Financial Reporting Review Panel
FRS	Financial Reporting Standard
GAAP	Generally Accepted Accounting Principles
IAS	International Accounting Standard
IASB	International Accounting Standard Boards
IASC	International Accounting Standards Committee
IFRS	International Financial Reporting Standards
RR	Redovisningsrådets Rekommendationer
SEC	Securities and Exchange Commission
SFAS	Statement of Financial Accounting Standards

Explanations

In this thesis Europe is the same as the member countries in the European Union. The countries are Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, and United Kingdom

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1. Introduction

This chapter starts with a historical background about the IFRS in Europe and the US GAAP in the US and a short definition of goodwill. This is followed by a problem discussion, which includes a deeper discussion about goodwill and goodwill impairment. The problem discussion results in the formulation of our research questions and the purpose of this thesis. Finally, necessary delimitations and the disposition are presented.

1.1 Background

The purpose of accounting is to inform different users about a company's economic situation and its progress during the latest financial year. Different users have a need for different information and the companies have to adapt their financial statements to these needs. To achieve useful financial statements and to satisfy users, financial statements should have qualitative characteristics such as relevance, reliability, comparability and cost-effectiveness. (Smith, 2006)

In 2002, a new regulation[1] of the European Parliament was approved. The regulation dictated that listed companies in Europe apply the standards of the International Accounting Standards Board (IASB) in their consolidated financial statements, by January 1 2005. The aim was to harmonize and create convergence of accounting standards across European countries and by doing so, reach a better cross-border comparativeness between companies. It is also important to note that the regulation contributes to a better cost-effective functioning of the capital market and to protect investors so that the trust of the financial market can be maintained.

The IASB is an independent organization, whose purpose is to contribute to a better comparativeness between companies across countries by developing accounting standards that are understandable, globally accepted and of high in quality. The standards are named the International Financial Reporting Standards (IFRS) and International Accounting Standards (IAS). To achieve its the purpose, the IASB works closely with stakeholders around the world, including other accounting standard-setters, for example the Financial Accounting Standards Board (FASB). (IASB) The FASB is the American counterpart to the IASB. Their mission is to establish and improve standards of financial accounting in the US. The accounting standard is named the US Generally Accepted Accounting Principles (US GAAP), which mostly consists of Statements of Financial Accounting Standards (SFAS). Every company in the US has to apply the US GAAP (FASB, Delaney, Epstein, Nach and Weiss Budak, 2001).

The IASB and the FASB declared publicly in The Norwalk Agreement in October 2002, that they are committed to a convergence of the IFRS and the US GAAP. The aim is to create comparable accounting standards that can be used for domestic and cross-border financial reporting. (The Memorandum of Understanding) In a research project in November 2002, the

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[1] No 1606/2002/EC

two boards identified many differences related to revenue recognition, business combinations and financial performance. They agreed that these areas are crucial for a further convergence and that the differences have to be reduced or even eliminated. (Johnson, 2002)

Business combinations are stated in IFRS 3 and SFAS 141[2]. In SFAS 141, it is declared that IFRS 3 and SFAS 141 are the results of the collaboration between IASB and the FASB in an effort to achieve a convergence of their accounting standards. Furthermore, it is stated in IFRS 3 that the introduction of IFRS 3 in 2005 has contributed to amendments of IAS 38 *Intangible assets* and IAS 36 *Impairment of Assets*, while it is stated in SFAS 141 that the SFAS 141 has contributed to amendments of SFAS 142[3] *Goodwill and other Intangible Assets*. Schroeder, Clark and Cathey (2011) explain that the amendments are results from the issuance of pronouncements on the valuation of intangible assets. An intangible asset is a non-monetary asset without physical substance (IAS 38.8). Goodwill is also an intangible asset, but it is non-identifiable and represents the future economic benefits arising from other assets acquired in a business combination. It shall be tested for impairment since amortization is not allowed (IFRS 3, SFAS 141). However, this has not always been the treatment for goodwill.

Before the standards IFRS 3, IAS 38 and IAS 36, and the statements SFAS 141 and 142, goodwill was treated different in local Generally Accepted Accounting Principles (GAAP) across countries. Seetharaman, Balachandran, and Saravanan (2004) declare that it is because goodwill is the most controversial item in financial statements.

- In the US, companies had to amortize goodwill against income over the benefit period, but with a maximum period of 40 years, in accordance with the Accounting Principle Board (APB) Opinion 17 *Intangible assets*.

- IAS 22 *Business combinations* stated that goodwill shall be "amortized to income over a systematic basis over its useful life or immediately adjusted against shareholders interest" (IAS 22.140). But if the amortization period exceeds 20 years, then goodwill shall also be tested for impairment.

- In the UK, the Financial Reporting Standard (FRS) 10 *Goodwill and Intangible Assets* recommended companies to use capitalization and amortization against reserves with a maximum period of 20 years. If goodwill was estimated to have a greater useful life than 20 years, then an impairment review was required at the end of each year.

- In France, goodwill had to be amortized through the profit and loss account, over an economic life, which was evaluated by the company. The most common amortization period was 20 years, but a maximum period of 40 years was also accepted. (Alexander and Archer, 1996)

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[2] In 2009 the FASB reclassified all their statements. SFAS 141 is now called ASC 805.
[3] SFAS 142 is now called ASC 350.

- In Germany, the consolidated financial statements had to be established in accordance with the Deutschen Rechnungslegungs Standard (DRS) 4, which stated that goodwill had to be amortized over the useful life against reserves, but with a maximum useful life of 20 years. There were no guidelines about impairments. (Crampton, Dorofeyev, Kolb and Meyer-Hollatz, 2001)

- In Sweden, in accordance with Redovisningsrådets Rekommendationer (RR) 1:00 and RR17, goodwill had to be amortized over the useful economic life, but with a maximum period of 20 years. Furthermore, the value of goodwill had to be estimated and if it had been reduced, then goodwill had to be tested for impairment (Lars-Erik Persson and Karin Hultén, 2006).

Even though the IASB and the FASB are committed to a convergence of accounting standards and that the introduction of IFRS 3 in 2005 eliminated many differences, some differences still remain regarding the treatment of goodwill. (Jerman and Manzin, 2008) It is also considered that the implementation is different across countries, due to the historical treatments of goodwill accounting, cultural differences and that controversy still remains. (Seetharaman et al. 2004)

1.2 Problem discussion

Goodwill has an important impact on financial statements and therefore, also on qualitative characteristics. It is one of the aspects of accounting that is most difficult to manage, especially with regards to impairment testing. Even the companies themselves confirm this, since the aspects demands important judgments and contributes to uncertainty financial statements. (Marton, 2009) The impairment tests are based on cash-generating units (or reporting units under the US GAAP), but there is a difference in identifying the units between the two standards. Under the IFRS, more cash-generating units can be identified compared to the identification of reporting units under the US GAAP. The method of testing impairment regarding the US GAAP is a two-step process and differs from the IFRS, which is based on a one-step process. (Jerman and Manzin, 2008)

A complete harmonization of the two accounting standards cannot be reached without a harmonization of accounting practices. Researches show that harmonization of accounting practices can be accomplished through strict and uniform enforcement across countries. (Bradshaw and Miller, 2008) This is supported in a study by Bushman and Piotroski (2006) that is based on countries around the world using different GAAPs and reported earnings. They found that high quality of enforcement leads to more conservative reporting. Another similar study by Van de Poel, Maijoor and Vanstraelen (2009) draws the same conclusion. The difference is that their study is based on European countries using the same GAAP and goodwill impairments during the financial years 2005-2006. Their conclusion is that companies located in countries with low quality judicial system, acknowledge less goodwill impairments compared to companies located in countries with high quality judicial system.

Another similar study by Marton, Runesson and Catasus (2011) claim that Swedish companies have not taken the impairment tests seriously enough and therefore, goodwill, in relation to total assets, has been and remains too high. The study anticipates that goodwill is increasing and can contribute to financial statements being useless. This increase depends on the accounting standards since they are principle-based and allows interpretations. The interpretations made by corporate management affect the quality of financial statements and therefore, there is a need for high quality of enforcement. In comparison with the US it is shown that goodwill, in relation to total assets, has been and remains on an even level. The authors suggest that this may be due to the high quality and strong enforcement in the US. This is also supported by Gauffin and Thörnsten (2010) who also declare that the differences are not only a consequence of the financial credit crisis in 2008 and its greater impact on the US markets, but rather a consequence of the enforcement and the pressure on corporate management.

It is stated in the new regulation of the European Parliament that high quality of enforcement is essential for investors' confidence in the financial markets. It is up to member states to enforce that their companies apply international accounting standards in their consolidated financial statements properly. However, the Commission of the European Parliament is aware of that a mutual enforcement strategy in the European Union is needed. They work together with the European Securities and Markets Authority (ESMA) to ensure that the implementation of the IFRS is uniform across Europe. In the US, the enforcement authority is named the Securities and Exchange Commission (SEC) and their mission is to protect investors from false or misleading information in financial statements (Ball, 2005).

Numerous studies have noted that there are differences in goodwill impairments between European companies, and between Sweden and the US. We continue with this subject by including every listed company in Europe in comparison with every listed company in the US. Previous research, with data from 2005-2006, indicates that goodwill impairments and the quality of enforcement in European countries have a connection. But the research is based on the year when the IFRS was compulsory for the European listed. It does not consider revised standards, which improve the standards and clarify how the standards should be applied. To make our study more reliable and comparable, we use data from 2005-2009. First, we compare the goodwill impairments in European and American companies. We also compare the goodwill impairments for the listed companies in the UK, France, Germany and Sweden.

1.3 Research questions

- How has the development of impairment of goodwill been for the listed companies in Europe compared to the listed companies in the US during 2005-2009?

- In comparison, how has the development of impairment of goodwill been for the UK, French, German and Swedish listed companies during 2005-2009?

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1.4 Purpose

The purpose of this thesis is to examine, at a country level, if there are differences in the goodwill impairments between Europe and the US, and between the UK, France, Germany and Sweden. Additionally, if there are differences, we intend to examine whether they are a consequence of differences in the quality of enforcement.

1.5 Delimitations

Our study does not include listed companies outside Europe and the US, and is limited to those whose consolidated financial statements contain goodwill. For our second comparison, we chose the greatest European countries in the civil law traditions and the common law tradition. Hence, the UK, Germany, France and Sweden are chosen for our second comparison. We do not consider data before the new regulation of the European Parliament since we only seek to compare the IFRS and the US GAAP companies. Neither do we consider data after 2009, since the consolidated financial statements from all European and American companies for 2010 were not published when this study was introduced. Hence, our data is limited to 2005-2009.

1.6 Outline

Introduction	• In the first chapter the background is introduced. It is followed by a problem discussion, research questions and the purpose of this thesis. Finally, the delimitations and the disposition are presented.
Standards	• In this chapter, the treatment of goodwill in accordance with the IFRS and the US GAAP is presented.
Frame of referance and hypothesis development	• The third chapter includes information about the accounting traditions, principle- and rule-based standards and enforcement authorities. Finally, previous research and the hypothesis developement are presented.
Methodology	• The fourth chapter includes the method that presents the approach of the collection and compilation of data.
Empirical results	• In chapter five, we display the empirical results.
Analysis	• In the sixth chapter the frame of references and the empirical results are analyzed in relation to the hypotheses.
Conclusions	• In the final chapter, conclusions are presented, and the research questions are answered. This chapter also contains suggestions for further research.

2. Standards

In this chapter the management of goodwill under the IFRS and the US GAAP is presented. This is followed by a short summary with the main differences between the two standards regarding the treatment of goodwill.

2.1 Management of goodwill under IFRS

2.1.1 Emergence of goodwill

The three requirements for an asset are that it is probable that future economic benefits associated with the item will flow to the entity, that the cost of the item can be measured reliably and that it has incurred as a result of past events. In addition to the three requirements for an asset, there is one that distinguishes intangible assets from other assets; the identifiable criterion. An intangible asset is a non-monetary asset without physical substance. (Smith, 2006) Goodwill is defined and managed under IAS 38 *Intangible Assets*, IAS 36 *Impairment of Assets* and IFRS 3 *Business Combinations*. There are two ways of acquiring goodwill; through internally generated goodwill and through business combinations. The first way is not allowed since the three requirements for an intangible asset is not met. (IAS 38.48-49) The second way is through business combinations, where goodwill represents the future economic benefits[4] that arise from other assets acquired in the acquisition. The assets that are acquired cannot be identified individually or recognized separately. (IFRS 3.Appendix: Defined terms) Goodwill is measured as the excess of the cost of the acquisition over the net of the acquisition-date amount of the assets, liabilities and contingent liabilities that are acquired. (IFRS 3.32) IFRS 3 allows an option between partial and full goodwill. The difference is that non-controlling interests are included in full goodwill. (Marton, Lumsden, Pettersson, and Rimell, 2010) Furthermore, goodwill does not generate cash flows independently of other assets and often contributes to the cash flows of multiple cash-generating units (IAS 36.81).

2.1.2 Cash-generating units

An attribution of future cash flows to a specific asset is not always possible since some assets are part of a larger production and do not generate individual cash flows. This also means that they cannot be identified separately. It is thus a cash-generating unit, a combination of assets, which gives rise to in- and outflows. (Marton et al. 2010) A cash-generating unit is defined as "the smallest identifiable group of assets that generates cash inflows that are largely independent from the cash inflows from other assets or groups of assets" (IAS 36.6). Calculation of the recoverable amount of the cash-generating unit which the asset belongs to, is necessary in an impairment test when separate identification and calculation of the recoverable amount of the individual asset is not possible (Marton et al, 2010). As previously described, goodwill is an asset that cannot be identified separately and does not generate cash flows independently of other assets. This means that goodwill is treated as a part of a cash-generating unit in an impairment test. (IAS 36.81)

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[4] For example from synergy between the identifiable assets acquired

2.1.3 Goodwill impairment

Before 2005, goodwill was considered as an asset that could be amortized over a maximum of 20 years. Followed the changes made in 2005 to the standards that treat goodwill, amortization was no longer allowed. Now, goodwill has to be tested for impairment at least annually. (Jerman and Manzin, 2008) Goodwill which has been acquired in a business combination has to be allocated to cash-generating units that are expected to benefit from the synergies of the combination, on the acquisition date when tested for impairment. (IAS 36.80) The impairment test is done in the same way for an asset and a cash-generating unit and that is by comparing the carrying amount with the recoverable amount. (IAS 36.Appendix C3) The time of the test is not specified and can be done any time during a year. (IAS 36.96) If there are indications that a cash-generating unit or an asset's value have depreciated and should be impaired in connection with the test, these indications should be determined by external and internal sources of information. The type of information source that must be considered is specified in IAS 36.12:

External sources of information
- An asset's market value has declined significantly more than would be expected as a result of the passage of time or normal use.
- Changes in the technological, market economic or legal environment have adverse effects on the entity.
- The discount rate used in the calculation of the asset's value in use is affected by the increased market interest rates. This in turn decreases the asset´s recoverable amount.
- The carrying amount of the net assets of the entity is more than its market capitalization.

Internal sources of information
- Evidence is available of obsolescence or physical damage of an asset.
- Significant changes in which an asset is used or is expected to be used, that has an adverse effect on the entity, has taken place during the period, or is expected to take place in the near future.
- The internal reporting indicates that the economic performance of an asset is, or will be, worse than expected.

If there is any such indication, the asset's recoverable amount has to be calculated to determine whether there is a need for impairment or not. If an individual estimation is not possible, there is a need for estimating the recoverable amount of the cash-generating unit to which the asset belongs. (IAS 36.66) The recoverable amount of an asset is defined in IAS 36.6 as "the higher of its fair value less costs of sell and its value in use" (IAS 36.6). The fair value less costs of sell is the price that a knowledgeable and independent party, with an interest in the transaction, would be willing to pay after deducting the costs of disposal[5]. (IAS

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[5] With the assumption that there is no binding sale agreement or an active market for goodwill

36.27) The value in use can be measured as the present value of future cash flows that an asset or cash-generating unit is expected to give rise to. (IAS 36.31; Smith, 2006) The discount rate that is used to obtain the present value of future cash flows has to reflect the time value of money and the risks associated with future cash flow estimates. (IAS 36.55)

The need for impairment occurs when the recoverable amount is less than the carrying amount. (Smith, 2006) There is a difference in how the impairment loss is recognized depending on whether it is an asset or a cash-generating unit. An impairment loss for an asset is recognized through a reduction of the carrying amount to the recoverable amount. This impairment loss must affect the result immediately and is done by recognizing it in profit or loss. (IAS 36.59-60) For a cash-generating unit, the impairment loss is allocated in two steps to be able to reduce the carrying amount of the assets of the unit. First, the impairment loss has to be allocated to reduce the carrying amount of goodwill allocated to the cash-generating unit. The second step is to reduce the carrying amount of goodwill allocated to other assets. The impairment losses are treated in the same as for an asset and must affect the result immediately. (IAS 36.104)

2.2 Management of goodwill under the US GAAP

2.2.1 Emergence of goodwill
Under the US GAAP, goodwill is managed under SFAS 141 *Goodwill and Other Intangible Assets* and SFAS 142 *Business Combinations*. The requirement that distinguishes intangible assets from other assets under the US GAAP is the identifiable criterion. (SFAS 141.3) An intangible asset is a non-monetary asset that lacks physical substance. There are also similarities in the treatment of goodwill, since goodwill arises in a business combination and represents the future economic benefits that arise from other assets that are not individually identified and separately recognized. (SFAS 141.3) Internally generated goodwill is not allowed to be recognized, which means that it is goodwill that has been acquired in a business combination that can only be recognized as an intangible asset. (SFAS 142.10) In SFAS 141 it is stated that only full goodwill is allowed, which means that non-controlling interests' share of goodwill have to be included. (SFAS 141.B205) Goodwill is measured as the difference between the cost of an acquisition and the fair value of the net assets that have been acquired. (SFAS 141.34) Distinguishes is made between contractual and non-contractual contingencies. Both are recognized to the fair value but the second one is only recognized if it is likely that the contingency will be identified as an asset or liability. (SFAS 141.24)

2.2.2 Reporting units
For the purpose of testing goodwill for impairment, the acquired assets and assumed liabilities have to be assigned to a reporting unit. A reporting unit is an operating segment or a component[6]. If there are two or more components of an operating segment that have similar economic characteristics, they have to be aggregated to a single reporting unit. The

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[6] A component is a reporting unit one level below an operating segment

assignment to a reporting unit that must be done on the acquisition date can only be done if the two following criteria are met; "the asset will be employed in or the liability relates to the operations of a reporting unit" and "the asset or liability will be considered in determining the fair value of the reporting unit" (SFAS 142.32). According to SFAS 142, all goodwill that is acquired in a business combination must be assigned to one or more reporting units and the used methodology for this must be reasonable and applied in a consistent manner. The approach to determine the amount of goodwill that is going to be assigned to a reporting unit is similar to the approach that is used for determining goodwill in a business combination. The amount of goodwill is determined by comparing the purchase price for each reporting unit, which is the fair value, with the amount assigned to the net assets. If there is any excess, that might be considered as goodwill. (SFAS 142.30-35)

2.2.3 Goodwill impairment

Through the changes made in IFRS 3, IAS 36 and IAS 38, the standards moved closer to the guidelines in the US GAAP. The FASB introduced such an approach and issued SFAS 141 and SFAS 142 in 2001 (Jerman and Manzin, 2008) According to SFAS 142, which was revised in 2001, an intangible asset has to be tested for impairment if it is not subject to amortization. Since goodwill cannot be amortized, it is an intangible asset that must be tested for impairment. The impairment test has to be done at least annually, where the fair value of the intangible asset is compared with its carrying amount. Impairment occurs when the carrying amount of goodwill exceeds its estimated fair value. (SFAS 142.17-18)

The goodwill impairment test under the US GAAP is a two-step process that must be used to identify potential goodwill impairment. If there should be an impairment loss, it has to be presented as a separate line item on the income statement. (SFAS 142.43) The approach of the two-step process is specified in paragraphs 19-22 and can briefly be explained as:

The first step
The first step is used to identify potential impairment. Here, the fair value of a reporting unit is compared with its carrying amount, including goodwill. This step is sufficient if the fair value of a reporting unit exceeds its carrying amount. The fair value used in this step applies to a reporting unit, thus refers to the amount at which the unit as a whole could be bought or sold (in a current transaction) between two willing parties. If there is an active market that has quoted marked prices available for the unit, it is these prices that must be used as the basis for the measurement of the fair value.

The second step
Since the second step is only necessary if the carrying amount of a reporting unit exceeds its fair value in the first step, the implied fair value has a significant role. The purpose of this step is to measure the amount of the impairment loss. This is done by comparing the implied fair value of reporting unit goodwill with the carrying amount of that goodwill. The impairment loss is equal to the possible excess that occurs when the carrying amount of reporting unit

goodwill exceeds the implied fair value of that goodwill. Once the impairment loss is recognized and the process is completed, reversals of these losses are not possible.

The implied fair value used in this step of the process differs from the fair value used in the first step. The implied fair value refers to "the excess of the fair value of a reporting unit over the amounts assigned to its assets and liabilities". (SFAS 142.21) To be able to determine the implied fair value, the fair value of a reporting unit has to be allocated to the assets and the liabilities of that unit. The fair value can be seen as the price that would have been paid if the reporting unit was acquired in a business combination, since the determination of the fair value follows the same manner as the amount of goodwill recognized in a business combination.

2.3 Summary of differences in the management of goodwill between the IFRS and the US GAAP

Table 1: Summary of differences in the management of goodwill between the IFRS and the US GAAP

Standard	IFRS	US GAAP
Assets and liabilities arising from contingencies	Contingent liabilities are recognized if the fair value can be measured reliably. Contingent assets are not recognized.	Generally recognized when the contingent assets or liabilities are resolved.
Goodwill is measured as	The excess of the cost of the acquisition over the net of the acquisition-date amount of the assets, liabilities and contingent liabilities that are acquired.	The difference between the cost of the acquisition and the fair value of the net assets that have been acquired.
Goodwill alternative	Partial or full goodwill	Full goodwill
The method of testing	One-step process.	Two-step process.
Impairment loss calculation	Carrying amount minus the recoverable amount. The recoverable amount is the higher of fair value and value in use.	Carrying amount minus the fair value. The definition of fair value differs from the definition in IFRS.
Allocation of goodwill	Cash generating units (CGU) represent the lowest level within the entity at which the goodwill is monitored. Cannot be larger than an operating segment.	Reporting units (RU) are an operating segment or a component (a level under the operating segment).
Impairment loss for a CGU/RU is allocated	First to goodwill and then to other assets in the CGU.	To an asset group excluding goodwill. Goodwill is tested separately from assets groups.

Source: Jerman and Manzin (2008), Ernst & Young (2009), Pwc (2010), KPMG (2010)

3. Frame of reference and hypothesis development

This chapter starts with an introduction of the different law traditions in Europe and the US and followed with information about the enforcements in the different countries. Finally, the hypothesis development is presented.

3.1 The Continental tradition and the Anglo-Saxon tradition

The accounting traditions in Europe and the US are influenced by history, which are characterized by two law traditions; the Continental civil law tradition and the Anglo-Saxon common law tradition. A contributing factor to this development is the differences in ownership structures. In the Continental tradition, the government, banks and families have had a ruling impact, while in the Anglo-Saxon tradition the ownership structure has been more diversified since many companies have been listed on the stock exchange. As a result of the ownership structure in companies in the Anglo-Saxon countries, the accounting profession has grown and become stronger compared to the Continental countries. Another contributing factor is their connection to the taxation system. However, in recent years the civil law countries have moved closer to the common law tradition. (Smith, 2006)

The Continental civil law tradition has its origins in Roman civil law and involves Western Europe except the UK, Ireland and the Netherlands. It is based on written laws that direct the form of accounting documents. The Anglo-Saxon common law tradition has its origin in the English common law tradition and involves the US, the UK, Ireland and the Netherlands. The tradition has no connection to the taxation system, therefore the adaption to the needs of information to the market has been better and the market has been more satisfied. Accounting is principle-based and has contributed to the vision of "true and fair" and has become unidentified and unclear. It has been up to the accounting profession to create strict standards of what "true and fair" entails. (Smith, 2006)

In research by La Porta, Lopez-de-Silanes, Shleifer and Vishny (1998), the quality of enforcement is examined depending on legal origins. The proxies for enforcement are efficiency of the judicial system, rule of law and government stance. In the research it is concluded that laws vary across countries due to differences in legal origin. There is the common law, which is English in origin, and the civil law, which can be divided into three civil laws; the French, the German and the Scandinavian. The research shows that common law countries give shareholders and creditors the strongest protection from the corporate management's incentives, followed by the German civil law and the Scandinavian civil law, with the French civil law, providing the weakest protection. When it comes to the quality of law enforcement, it is highest in the Scandinavian and the German civil law countries, followed by the common law countries and lowest in the French civil law countries. It was also found in a research by Ball, Kothari and Robin (2000) that the common law countries implement a more conservative accounting than the civil law countries. According to

Bushman and Piotroski (2006) a conservative accounting is a consequence of a high quality of enforcement.

3.2 Principle-based and rule-based standards

The implementation of accounting standards in different countries is not considered to be equal, since accounting accruals require subjective judgment and can be influenced by the incentives of corporation management and auditors. This especially concerns impairments and intangible assets, which shall be accounted to the fair value. Historically, common law countries have had a greater propensity to recognize economic losses than civil law countries. This is due to the strength of the enforcement authorities, who monitor and penalize companies if financial statements are considered to have low quality. Low quality is considered as weak implementation of the standards by managers and auditors. (Ball, 2005) Bennett, Bradbury and Prangnell (2006) conclude that the more principles-based the standards are, the more professional judgment and enforcement are required, compared to those standards which are rule-based. However, "the distinction between standards that are rule-based and those that are principle-based is not well defined and is subject to a variety of interpretations" (Bennet et al., 2006 p.190). There is an agreement that the IFRS are principle-based and content to provide only limited guidance in the establishment of standards in financial statements. This contributes to a great scope for interpretation and evaluation by the management. (Bennet et al. 2006, Ball 2005, Marton et al. 2010) However, the reason why the standards are principle-based and give poor guidance is because the standards must be able to be applied in every company stated in different countries. (Marton, 2007) Nobes (2005) discusses whether the US GAAP is rule-based or principle-based. Some US GAAP standards are considered as rule-based, while others are considered as principle-based. This may be because some rules are based on poor, or lack of, principles. However, he clarifies that a principle-based standard is not considered as better than a rule-based standard, or the other way around. It is essential whether the rules are clear and understandable, or that the principles are appropriate. In the last decade, the FASB has moved towards more principle-based standards, due to recommendations from the SEC and the Sarbanes-Oxley Act. (Greenspan and Hartwell, 2009)

3.3 The Securities and Exchange Commission (SEC) in the US

The SEC is the enforcement authority in the US and their mission is to protect investors from false or misleading information from companies in their financial statements. (SEC) In a comment letter, the SEC can claim more information about certain items in the financial statements. Johnson (2009) observes that the SEC has recently been keen on goodwill impairments and fair-value measurements. It is stated in SFAS 142 that goodwill shall be tested for impairment at least yearly or even more frequently when a "triggering event" occurs. The credit crisis in 2008 is considered as a triggering event, and therefore, the SEC wants more information about the impairment tests, for example about the timing of the impairment tests and how the processes were done. In addition, in a study by KPMG (2009), it is found that goodwill impairments in US-based publicly traded companies more than

doubled during 2008, compared to levels in 2007. This may confirm the concerns that the US companies rely on impairment triggers and therefore, do not directly associate the test with fair values. Investors could be harmed by too many intangible assets and goodwill in financial statements because large impairments can be done with no advance notice to investors when a triggering event occurs. (Colson, 2001)

3.4 Enforcement in Europe and in Sweden, the UK, France and Germany

The IFRS, developed by the IASB, do not have an enforcement regulatory. (Ball, 2005) It is up to member states to enforce that their companies properly apply the IFRS in their consolidated financial statements. The ESMA coordinate the enforcement to member states of the European Union and is responsible for a uniform implementation of the IFRS in European countries. (Regulation No 1606/2002/EC of the European Parliament) If ESMA discovers deviations in the implementation of the IFRS, they can provide guidance on how to implement the standards more properly. However, the guidance is not legally binding for member states. (Berger, 2010) The ESMA suggest that enforcement in European countries should be independent from government, only concentrate on enforcement and have the power to enforce listed companies. (Brown and Tarca, 2005) Ball (2005) is critical and explains that due to the differences between the IFRS-adopting countries, the IFRS will not be applied identically in financial statements and, therefore, an international IFRS enforcement is necessary. It is crucial to the quality of the standards that there is an effective enforcement, which can penalize companies that do not properly apply the IFRS in their consolidated financial statements.

Due to the credit crisis in 2008, the investors are skeptical to the goodwill impairments in European companies. Hayn (2010) maintains that the European companies listed on the Dow Jones Stoxx 600 index reported goodwill impairments for 32 billion Euros in 2008. Compared to the goodwill impairments´ values of 28 billion Euros in 2007 and 44 billion Euros in 2006 respectively, it seems that European companies have not properly reflected the scale of the latest crisis. Furthermore, between 2005 and 2008, acquisitions were made worth 1,7 trillion Euros, which also indicates that the goodwill impairments are relatively small. This is also concluded by Grefsberg (2009), who has studied the 50 largest companies listed on Nasdaq OMX Stockholm. In 2008, goodwill had a value of 788 billion Swedish Kronor, while the impairments had a value of 6 billion Swedish Kronor. This shows that the impairments do not reflect the credit crisis properly in financial statements and that company management is avoiding the impairment of goodwill. Hellman (2011) agrees with the conclusion that goodwill impairments, of companies listed on Nasdaq OMX Stockholm, may be relatively small and discusses whether this is due to the enforcement in Sweden.

According to Berger (2010), the enforcement in Sweden is unique since it differs from the enforcement in other European countries. It is the Swedish stock exchanges that enforce financial reporting and recommend companies to correct their errors. If companies refuse to correct their errors, the Swedish stock exchange reports the case to Finansinspektionen (FI).

FI is a state-run organization and has the authority to penalize a company for misleading information in its financial statements. In addition, it has been noted that the Swedish stock exchanges did not identify any errors and, therefore, it is questioned "whether the quality of the financial reporting by Swedish companies is so much better than in other countries or the enforcement being less strict" (Berger, 2010 p.32).

The enforcement in the UK is named the Financial Reporting Review Panel (FRRP) and is a private organization. (Brown and Tarca, 2005) The FRRP enforces cases that draw its attention and has the power to penalize companies. If the FRRP finds errors in a company's financial statement, the company can choose to correct the errors and send in a revised financial statement. If the FRRP does not accept the revised financial statement, they can notify the press and penalize the company to force the management to adopt proper accounting. (Brown and Tarca, 2005, Financial Reporting Review Panel) In a research by Berger (2010), the FRRP is criticized for being mostly focused on disclosures without testing the valuation approach, which limits the effectiveness of the enforcement.

The enforcement authority in France is named the Commission des Opérations de Bourse (COB) and is a governmental body that has the power to request that companies revise their financial statements, if errors are found. If firms do not follow the COB's directions, they can be notified publicly, penalized and prosecuted. (Brown and Tarca, 2005) In the research by Berger (2010), the enforcement in France is considered to have a close control, since a high examination frequency is used.

The enforcement in Germany is a two-tier system that consists of the Deutsche Prüfstelle für Rechnungslenung (DPR) and Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin). The DPR is a private organization that investigates financial statements of publicly traded companies. They work on both a reactive and a proactive basis, and have authority to demand information about certain items in financial statements. If errors are found, the case is sent to BaFin, which is the German securities regulator which has the power to penalize companies. (Ernstberger, Hitz and Stich, 2011) Berger (2010) concludes that the companies in Germany are monitored closely, since the DPR manages to identify many errors.

3.5 Previous research

Van de Poel et al. (2009) have studied impairment of goodwill in companies, in fifteen European countries that are required to apply the IFRS in their consolidated financial statements. The data they used dates between 2005 and 2006. They include the proxies used in the research by La Porta et al. (1998) for the enforcement. Their conclusion is that goodwill impairments are not uniform across countries and they are highly associated with financial reporting incentives from managers. They also conclude that the differences in impairment are because of the quality of the judicial system among countries. By this, they suggest that the higher the quality of the judicial system, the more conservative the accounting, and a more

impairments of goodwill are acknowledged than companies stated in countries with low quality judicial system.

A study by Cukierman and Dahlström (2010) they conclude that goodwill impairments in companies located in European countries differ and depends on whether the country belongs to the common law tradition, German civil law tradition, French civil law tradition or Scandinavian civil law tradition. Their data is based on the years 2007, 2008 and 2009. The study shows that goodwill impairments have increased during the three years in all four traditions. However, the results show that when the economy declines, the impairments are different among the four traditions. The results are presented in table 2.

Table 2: Results from previous research about law tradition

Tradition	Impairment more/equal	Compared to	Years
Common law	more	French civil law	2007, 2008, 2009
Common law	equal	German civil law	2007, 2008, 2009
Common law	more	Scandinavian civil law	2007
German civil law	more	French civil law	2007, 2008, 2009
German civil law	more	Scandinavian civil law	2007
Scandinavian civil law	more	French	2009

Source: Cukierman and Dahlström (2010)

Some conclusions are that companies in common law countries are first to react to declines in the economy and that companies in French civil law countries underestimate the impairments of goodwill in comparison with companies in other traditions. The companies in the German civil law tradition seem to implement conservative accounting when they impair goodwill since they seem to underestimate the value of goodwill. The authors discuss that the differences may be due to the IFRS being principle-based and that the European countries not having a mutual enforcement.

In a study by Cukierman and Iderheim (2009), it is tested whether companies follow the indications of goodwill impairment that are stated in IAS 36. In IAS 36 there is an indication of impairment if the book value exceeds the market value of an entity. Therefore, the researchers tested if goodwill impairments are acknowledged as a consequence of the P/B ratio being lower than one. They found that there is no significant difference between the impairments and a P/B ratio below zero. This is not in line with the guidelines in IAS 36 and the researchers discuss whether it can be because the study is based on data from the credit crisis early stage. A connection may be found if data from other years were used.

3.6 Hypothesis development

In our study, we want to examine the impairments of goodwill in the US and in European countries. We also want to investigate whether there are differences between the goodwill impairments between the UK, France, Germany and Sweden. To exclude effects from forces that can affect the impairments we use four control variables and a dummy variable.

3.6.1 Dependent variable

The dependent variable is the variable that is tested in relation to the other variables. (Anderson, Sweeney, Williams, Freeman and Shoesmith, 2009) Our dependent variable is impairment of goodwill, scaled as a percentage before impairment. We use total assets before impairment because we need to estimate the effect from impairment on a company's balance sheet. Van de Poel et al. (2009) and Hamberg, Paananen and Novak (2010) also use this.

3.6.2 Control variables

Control variables are independent variables that are used as a control on their effect on dependent variable. The control variables are goodwill on the opening balance, scaled as a percentage of total assets before impairment (GW), market capitalization scaled as a percentage of total assets before impairment (MC), price-to-earnings ratio (P/E) and price-to-book value (P/B). We consider GW to be a control variable since it could have an impact on impairment. It is also used by Van de Poel et al. (2009). Since we scaled the dependent variable, we do the same for goodwill. But we must use goodwill on the opening balance, scaled as a percentage of total assets before impairment so that a proper scale of goodwill in relation to total assets can be reached. This is also done by Van de Poel et al. (2009).

MC is a control variable that represents the market value of a company and is used as an economic indicator for the company's economic situation. In a study by Churyk (2004), it is discovered that impairments are associated with market value of a company. The study shows that when the market capitalization declines, the impairment of goodwill increases. With the support that market capitalization has an impact on goodwill impairment, we use market capitalization, scaled as a percentage by total assets before impairment (MC).

Continually, we use the P/E ratio as a control variable for valuation of investors' expectations. Gu and Lev (2008) examined companies stated in the US during 1990-2006 and found that impairment of goodwill, scaled by total assets, increases when shares are overpriced. They also found that overpricing has a significant predictive ability regarding impairment of goodwill. We find that a control for this effect on impairment is necessary. But, when using P/E as a control variable we have to keep in mind that it may not be fully adjusted to accounting changes. Miles and Asbra (2001) found that P/E ratios may not immediately adjust to fully reflect the change from amortization to impairment of goodwill under SFAS in 2001.

Finally, we also use the P/B value to include the relationship between the market value and the book value of a firm. In IAS 36 it is stated that there is an indication of goodwill impairment when the P/B ratio is less than one. It means that in association with the market capitalization, when net assets are greater than the market value, it is an indication of goodwill impairment. Since the P/B ratio is scaled by total shareholders' equity, it is different from the control variable MC. The P/B ratio is used as a control variable by Cukierman and Dahlström (2010) and Cukierman and Iderheim (2009) and since these studies examines impairment of goodwill we find the P/B ratio to be a useful control variable.

3.6.3 Dummy variable

A dummy variable is an independent variable which helps compare two or more groups with each other and it represents the difference in enforcement between the groups. In our first hypothesis, we examine whether there are differences in the impairment of goodwill between Europe and the US under control of the control variables. In our second hypothesis, we examine if there are differences in impairment of goodwill between the UK, France, Germany and Sweden under control of the control variables.

3.6.4 Variable summary

Table 3: Variable summary

Variable	Name	In model
Dependent	impairment of goodwill	impairment / (total assets + impairment)
Independent / control	Goodwill (GW)	(goodwill + impairment) / (total assets + impairment)
Independent / control	market capitalization (MC)	market capitalization / (total assets + impairment)
Independent / control	P/E ratio (P/E)	price per share / earnings
Independent / control	P/B ratio (P/B)	Price per share / total shareholder equity
Independent / dummy	Region	Europe = 0, the US = 1
Independent / dummy	Country	Comparison country = 0, remaining three countries = 1

3.6.5 Hypotheses

The first hypothesis tests impairment of goodwill between Europe and the US:

> H_0 = *Impairment of goodwill is the same in the European and the US companies during 2005- 2009.*
> H_1 = *H_0 is rejected.*

If H_1 is true and H_0 is rejected, it means that there are differences between the impairment of goodwill between the European and the US companies during 2005-2009.

The second hypothesis tests impairment of goodwill between the UK, France, Germany and Sweden.

> H_0 = *Impairment of goodwill is the same in the UK, France, Germany and Sweden during 2005-2009.*
> H_2 = *H_0 is rejected.*

If H_0 is rejected then H_2 is true and it is statistical significant that differences between impairment of goodwill exist between UK, France, Germany and Sweden during 2005-2009.

4. Methodology

This chapter begins with an introduction of the choice of method and follows with an explanation of which research approach that is used. Continually, the collection of data, the processing of data and the statistical testing are presented.

4.1 Choice of method

When choosing the method, there are two different methodical approaches that can be used to process and examine the data, namely the qualitative and quantitative methods. While the qualitative method is characterized by words and visual images, the quantitative method is a method that is more standardized and structured, and is, for example associated with survey studies, tests and experiments. (Holme and Solvang, 1997) The quantitative method is used in measurements of different phenomena and the data used often has the form of numbers. (Eneroth, 1994) This gives our study a quantitative character since we use data that contains numbers and measurements of goodwill. We test if there is a relationship between impairment of goodwill and the enforcement which is associated with this type of method since it is possible to find relationships between different variables with the quantitative data. (Eneroth, 1994) The tests are conducted using data from a database.

4.2 Research approach

We consider that we use a deductive approach since we, with help from the IFRS, the US GAAP and previous researches, have examined what affects impairment of goodwill. Patel and Davidsson (2003) explain that the deductive approach is about when the researcher creates hypothesis with help from theories and other knowledge. A disadvantage can be that the researcher misses important information because the researcher focuses on the information that is considered to be interesting from the theories. We have created hypotheses to discover if there still remain differences in the goodwill impairments even under control for the effects that have an impact on impairments. If there is a remaining difference, we consider that it could be due to the quality of the enforcement between the two regions in the first hypothesis or between the four countries in the second hypothesis. We do not reject that important information about other effects that have an impact on impairments have been missed. However, we consider, with support from previous research and what is written in the standards, that the independent variables that are used in the research model should have an impact and that we will be able to test our hypotheses and answer our research questions. One effect that is considered to have a great impact on the impairment of goodwill is the managers' incentives. (Wines, Dagwell and Windsor 2007, Ball 2006) We consider that this effect is partly captured through our dummy variables since it is up to the enforcement of the specific country to enforce that the accounting rules are implemented properly in the financial statements.

4.3 Collection of Data

Secondary data is used in this thesis, since we find primary data to be less useful to help us answer our research questions. For example articles, books, databases, research reports are considered as secondary data (Jacobsen, 2002). To find useful literature and articles we have used the databases that can be accessed through Gothenburg University Library. The most useful databases to find researches have been Harvard Business Source Premier, Science Direct and FAR Komplett. Some keywords that have been used are goodwill impairments, enforcement in Europe, the US, the UK, France, Germany, Sweden, IASB/FASB goodwill and SEC goodwill.

Furthermore, to collect the data to this study we have used Thomson Reuters Datastream. A high degree of reliability depends on how the measurement and the processing of the data are done. (Holme and Solvang, 1997) Since we used Datastream, which is the world's largest financial statistical database, we consider that the data have high reliability. (Datastream) The data is collected from period 2005-2009, which makes 2005 the base year and includes data from every company that was listed on the European or the US markets on 31/12 2005.

Variables that were used when searching for data were *Goodwill/Cost in Excess of Assets Purchased, Net* and *Impairment of Goodwill*. Both of the variables yielded a large number of errors in the form of E100[7] and E4540[8]. Even if the variable Impairment of Goodwill yielded many errors we decided to include it in our study as the dependent variable since that is what we want to investigate. This has led to an exclusion of companies from the study. However, we do not consider this as a problem since we are limited to companies that apply the IFRS in Europe and the US GAAP in the US. We are also limited to companies that have goodwill and have impaired goodwill during one or more years in 2005-2009.

Continually, the information about *Accounting Standards Followed* and the variable *Total assets* were used. The first one was collected for the selection of companies and the second one for the scaling of variables with values in absolute terms. Further the variables *Market Capitalization*, *Price-to-Earnings ratio (P/E)* and *Price-to-Book value (P/B)* were collected for the same period as the variables goodwill and impairment of goodwill. These variables were collected since there is no data on the quality of the enforcement in countries and a decision was made to only include these three together with goodwill as the control variables in our study. A high validity depends on how many control variables are tested in the statistical testing to be able to measure the quality of the enforcement. Since we have limited time and want to control the variables that are considered to have a significant impact on impairment, we had to exclude some variables. We made the decision to use the variables that reflect what is described as an indication of impairment of goodwill in IAS 36 and SFAS 142 and what precious research have used and found is having an impact on impairments. Some

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[7] NO WORLDSCOPE DATA FOUND FOR THIS CODE.
[8] NO DATA VALUE FOUND.

caution was also needed to avoid correlation between the independent variables. Sharpe, De Veaux, and Velleman (2010) explain that multicollinearity is a usual problem in a multiple regression model, which is used in this study, and regards the problem if two independent variables are correlated. This means that the two independent variables are affected from each other and that they measure the same effect on the dependent variable. In Appendix 1 the correlation for the control variables are presented and it is based on data from both Europe and the US. A strong correlation is found if the value is near -1 or 1. We consider that there is no significant correlation among our independent variables.

4.3.1 Control of data

The values received using Goodwill/Cost in Excess of Assets Purchased, Net was verified by examining 23 financial statements in Europe, whereof three in the UK, ten in Sweden and ten in Germany, and 20 financial statements in the US. The examination was done by manually checking the goodwill item in each financial statement and see if it matches the value received in Datastream. Each value was identical with the values found in the financial statements and therefore it was decided that the data that is collected from Datastream is reliable and that the values represents total goodwill.

A sample survey was also made to investigate what the result E4540 means for the two variables goodwill and impairment of goodwill. The survey was done by 40 financial statements in Europe, whereof ten in the UK, twenty in Sweden and ten in Germany, being examined manually. The survey also included an examination of fifteen financial statements in the US. The result that we got from the survey was that the companies did not have such an item in their financial statements or the value was equal to zero; hence decision was made to exclude companies that yielded the result E4540. The other error, E100, which was received as a result, was excluded from this thesis without further investigation.

4.4 Processing of data

To reach a high reliability, errors have to be avoided and a structured process is needed. (Holme and Solvang, 1997) Since we use seven variables (from Datastream), an organized process was needed and used, while a rigorous attitude helped us avoid errors, so that a high reliability could be reached. The data that was received in Datastream was exported to Excel for processing. Since we had a large number of errors and some companies that did not have values for a few variables certain years, we had to process all data through four steps so that we only included companies that had information about every variable each year. If a company had missing values one or a few years, these years were excluded.

The first exclusion was to not include companies that follow standards other than the IFRS and the US GAAP. The second step in the exclusion was to only include companies that have a goodwill item and a value for total assets, greater than zero, in their balance sheets. Third, only companies that had an impairment of goodwill greater than zero were included. The last

exclusion was to only include companies that had a value for the remaining variables; Market Capitalization, P/E and P/B. These four steps, which were done for every year, are presented in figure 1. For the first hypothesis the four exclusion steps yielded the results in Appendix 2.

Figure 1: Process for data collection

IFRS / US GAAP → Goodwill item and total assets → Impairment of goodwill → Values for Market Capitalization, P/E & P/B
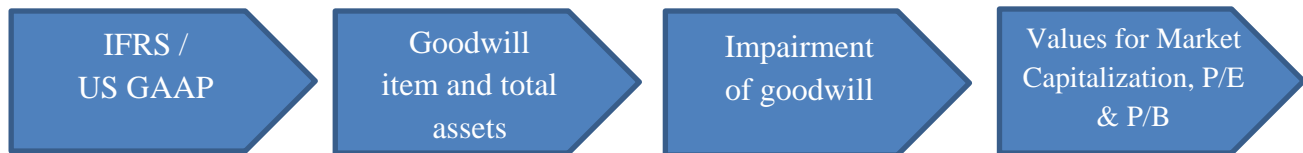
Continually, when all four steps where done, the outliers for all the variables where excluded. In Anderson et al. (2009) it is stated that an outlier is a value that is greater than ± three standard deviations in the sample. In table 4 the percentage of outliers and the final number of companies from Europe and the US included in the study, are presented. The descriptive statistics for the included companies are found in Appendix 3.

Table 4: Outliers and total number of companies included from Europe and the US

2005-2009	Number of companies in the study	Outliers	Percentage of outliers	Total number of companies in the study	Total loss
Europe	1 439	73	5,1 %	1 366	689
The US	551	53	9,6 %	498	898

For the second hypothesis, the results from the four exclusion steps from figure 1 are presented in Appendix 4 and the outliers and total number of companies from the UK, France, Germany and Sweden included in this thesis are presented in table 5. The descriptive statistics for the included companies are found in Appendix 5.

Table 5: Outliers and total number of companies included from the UK, France, Germany and Sweden

2005-2009	Number of companies in the study	Outliers	Percentage of outliers	Total number of companies in the study	Total loss
The UK	382	31	8,0 %	351	178
France	246	4	1,4 %	242	94
Germany	225	15	6,7 %	210	178
Sweden	102	6	5,9 %	96	43

4.5 Statistical testing

To be able to investigate whether differences of the impairment in goodwill exist between Europe and the US and to answer the questions of this study we did statistical tests. Statistical testing can be divided into parametric and non-parametric methods depending on the distribution of the population. If the population distribution has a normal probability distribution, a parametric method can be used. (Anderson et al. 2009) Hence, we make the assumption that the population has a normal probability and use a parametric method. Previous researches like La Porta et al. (1998), Van de Poel et al. (2009), Gu and Lev (2008)

and Churyk (2004) have also used a parametric method. Continually, our sample also has a normal probability distribution in accordance with the central limit theorem. The theorem says that samples can be approximated by a normal distribution whenever the sample size is 30 or more. (Anderson et al. 2009) Further, for the hypotheses testing we chose to use multiple regression models. To form the multiple regression models, the data were analyzed and processed in SPSS, which is a computer program that is used for statistical analysis.

4.5.1 Multiple Regression

In a multiple regression model, two or more independent variables are tested for the effect on the dependent variable. (Sharpe et al. 2010) Since we want to test if goodwill on the opening balance, scaled as a percentage of total assets before the impairment (GW), market capitalization scaled as a percentage of total assets before the impairment (MC), P/E, P/B and the dummy variable have a significant impact on impairment of goodwill we find this research model to fit our problem well. The multiple regression model is also used by Van de Poel et al. (2009), Hamberg et al. (2010), Gu and Lev (2008) and Churyk (2004), which also have examined impairment of goodwill in association with independent variables.

In a multiple regression model, the entire model with all the independent variables is tested through an F-test. (Anderson et al. 2009) We use the following two regression models and the F-test, with a significance level of $\alpha = 0,05$, to test our two hypotheses.

$$\frac{Impairment\ of\ goodwill}{total\ assets + impairment} = \beta_0 + \beta_1 GW + \beta_2 P/E + \beta_3 MC + \beta_4 P/B + \beta_5 region$$

The dummy variable, $\beta_5 region$, used in the regression model for hypothesis 1 represents Europe and the US. The dummy is coded to 0 when representing Europe and coded to 1 when representing the US. If the dummy is significant and receives a value, even under control from the control variables, then there is a difference between Europe and the US regarding impairment of goodwill. We make the assumption that this difference may be because of differences in the quality of the enforcement between the two regions.

$$\frac{Impairment\ of\ goodwill}{total\ assets + impairment} = \beta_0 + \beta_1 GW + \beta_2 P/E + \beta_3 MC + \beta_4 P/B + \beta_5 country$$

The dummy variable, $\beta_5 country$, used in the regression model for hypothesis 2 represents the UK, France, Germany and Sweden. To avoid a dummy trap, four tests will be done with a different comparison country. The comparison country is coded to 0 while the three other countries are coded to 1.

Continually, the impact from one single independent variable on the dependent variable is tested through a t-test. (Anderson et al. 2009) This will help us examine the impact on impairment of goodwill from a single control variable.

General hypothesis for t-test: $H_0: \beta_x = 0$

         $H_1: \beta_x \neq 0$

5. Empirical results

In this chapter the empirical findings are presented. The chapter is divided into three sections and starts with selection of the data, results for hypothesis 1 and results for hypothesis 2.

5.1 Selection of the data

During the period 2005-2009 there were a total of 1396 companies in the US, 2055 companies in Europe, 529 companies in the UK, 336 companies in France, 388 companies in Germany and 139 companies in Sweden that had acknowledged impairment of goodwill. (Appendix 2 and 4) Since data could not be found for all the required variables for every company that acknowledged impairment of goodwill, this thesis is based on a sample presented in table 6.

Table 6: Total number of companies in the study

2005-2009		Total number of companies			Total number of companies
Hypothesis 1	Europe	1 366	**Hypothesis 2**	The UK	351
	The US	498		France	242
				Germany	210
				Sweden	96

After the collection of data, the impairment of goodwill in the two regions was compared. The impairment was scaled as a percentage of total assets before the impairment. This scaling was also done for goodwill for which the impairment was added back so that goodwill before the impairment could be achieved. Then an average value for the years 2005, 2006, 2007, 2008 and 2009 was counted for both ratios. This yielded the results in table 7.

Table 7: Average goodwill and impairment of goodwill for the US and the European companies 2005-2009

Year	The US companies		The European companies	
	(Goodwill+ impairment)/(total assets+impairment)	Impairment/(total assets+impairment)	(Goodwill+ impairment)/(total assets+impairment)	Impairment/(total assets+impairment)
2005	20,31%	2,30%	12,91%	0,76%
2006	17,38%	2,48%	16,19%	1,09%
2007	16,02%	2,19%	16,49%	0,91%
2008	19,40%	5,50%	18,00%	1,72%
2009	18,06%	2,62%	19,58%	1,91%

The results show that companies stated in the US acknowledge more impairment of goodwill compared to the European companies. The results also show that goodwill before the impairment is on an even level in the US while in Europe it seems to increase every year during the period 2005-2009.

5.2 Hypothesis 1: Impairments of goodwill in the European and the US companies

To test the impairment of goodwill between Europe and the US, we use a multiple regression model with a dummy variable. The hypothesis is:

H_0 = Impairment of goodwill is the same in the European and the US companies during 2005- 2009.

H_1 = H_0 is rejected.

In the model, the dependent variable is impairment of goodwill scaled as a percentage of total assets before the impairment. The control variables are GW, MC, P/E and P/B. The dummy variable used represents the companies in the two regions, where the European companies are coded to 0 and the US companies are coded to 1. The results are presented in table 8 and 9.

Table 8: The results of the F-test for Europe and the US 2005-2009

ANOVA			
Model	Degrees of freedom	F	Sig. (p-value)
Regression	5	109,560	0,000
Residual	1858		
Total	1863		

Table 9: The results of the t-test for Europe and the US 2005-2009

Coefficients			
	B	t	Sig. (p-value)
Constant	0,004	2,407	0,016
GW	0,095	18,523	0,000
P/E	-0,00001109	-0,285	0,776
MC	-0,009	-5,834	0,000
P/B	-0,00009171	-0,327	0,744
Region	0,023	12,781	0,000

Multiple regression model:
$$\hat{y} = 0,004 + 0,095\, GW - 0,00001109\, P\ E - 0,009\, MC - 0,00009171\, P\ B + 0,023\, Region$$

Table 8 shows the results from the F-test for the regression model and will help us make conclusions about hypothesis 1. The results shows that the model has a *p*-value of 0,000 and with a significance level at α = 0,05, we can reject H_0 because the *p*-value is less than α = 0,05. Thus, we reject that the impairment of goodwill is the same in Europe and the US.

The results from the t-test for the independent variables are shown in table 9. The control variable GW has a significant effect on impairment of goodwill since the *p*-value of 0,000 is less that α = 0,05. This also applies on the variable MC that has a *p*-value of 0,000, hence has a significant effect. The two variables P/E and P/B do not have a significant effect since their *p*-values are 0,776 and 0,744 and are greater than α = 0,05. The last variable, region, is the

one that is used as a dummy variable and helps us to make a conclusion of which region that acknowledges impairment of goodwill more than the other. The dummy's *p*-value is 0,000 which shows that there is sufficient evidence that Europe and the US differ in acknowledging impairment of goodwill. Further, the multiple regression model shows that the impairment of goodwill will differ with an adding value of 0,023 to the constant. The adding value of 0,023 will be added if the regression model represents impairment of goodwill in the US. Otherwise, if the regression model represents impairment of goodwill in the European countries it will be equal to 0. Therefore, the regression model shows that companies in the US acknowledge more impairment of goodwill than companies in the European countries.

5.2.1 Summary of the results

Table 10: Summary of the results for hypothesis 1

Hypothesis 1
- Europe and the US differs in acknowledging impairment of goodwill during 2005-2009
- P/E and P/B do not have a significant effect on impairment of goodwill
- MC has a weak negative impact on impairment of goodwill
- The US companies acknowledge **more** goodwill impairment than companies in Europe

5.3 Hypothesis 2: Impairments of goodwill in the UK, France, Germany and Sweden

To test and compare the impairments of goodwill in the UK, France, Germany and Sweden we do the same as for the previous hypothesis. But now we test hypothesis 2:

H_0 = *Impairment of goodwill is the same in the UK, France, Germany and Sweden during 2005-2009.*

H_2 = *H_0 is rejected.*

The dependent variable and the control variables are the same as in hypothesis 1. The dummy variable will now represent one country in comparison with the other three countries. In the following four sections, the results for the tests with each country as the comparison country will be presented. But first, we present the results from the F-test in table 11.

Table 11: The results of the F-test for the UK, France, Germany and Sweden 2005-2009

ANOVA			
Model	Degrees of freedom	*F*	Sig. (*p*-value
Regression	7	30,213	0,000
Residual	891		
Total	898		

The regression has a *p*-value of 0,000 which suggest that H_0 can be rejected since it is less than α = 0,05. This implies that we can make the conclusion that the impairment of goodwill differs between the UK, France, Germany and Sweden during the period during 2005-2009.

5.3.1 The UK as the comparison country

In our first model, the UK is the comparison country. The results are presented in table 12.

Table 12: Results for the UK as the comparison country

	B	t	Sig. (*p*-value)
Coefficients			
	B	t	Sig. (*p*-value)
Constant	0,012	4,929	0,000
GW	0,069	11,308	0,000
P/E	0,00009553	1,940	0,053
MC	-0,005	-2,475	0,014
P/B	0,000	-1,234	0,218
France	**- 0,016**	**- 6,450**	**0,000**
Germany	**- 0,009**	**- 3,285**	**0,001**
Sweden	**- 0,003**	**- 0,772**	**0,440**

Multiple regression model:

$$\hat{y} = 0,012 + 0,069\, GW + 0,00009553\, P\ E - 0,005\, MC - 0,000\, P\ B - 0,016\, France$$
$$- 0,009\, Germany - 0,003\, Sweden$$

The *p*-values for P/E and P/B are greater than α = 0,05, hence show that they do not have a significant effect on the impairment of goodwill. The *p*-values for GW and MC are 0,000 and 0,014 and show that the variables have a significant impact. These results are generated regardless which country that is used as the comparison country. Therefore, we interpret the results for the control variables only in this section.

Further, we see the generated *p*-values for the dummy variables. France has a *p*-value of 0,000 while Germany has a *p*-value of 0,001 and we can make the conclusion with sufficient evidence that both of the countries differs from the UK in acknowledging impairment of goodwill. The results also present which country acknowledges impairment of goodwill more or less than the UK. Looking at the coefficients (B-value), France has a value of -0,016 and Germany has a value of -0,009 which means that the UK acknowledges more impairment of goodwill than these two countries. Regarding the UK in comparison with Sweden, we see that the *p*-value 0,440 is greater than the significance level at α = 0,05. This tell us that we cannot reject H_0, when examining the UK and Sweden. Not being able to reject H_0, the impairments of goodwill in the UK and Sweden are the same.

5.3.2 France as the comparison country

We continue to test hypothesis 2 using France as the comparison country. The results are presented in table 13.

Table 13: Results for France as the comparison country

Coefficients			
	B	t	Sig. (*p*-value)
Constant	-0,004	-1,700	0,09
GW	0,069	11,308	0,000
P/E	0,00009553	1,940	0,053
MC	-0,005	-2,475	0,014
P/B	0,000	-1,234	0,218
Germany	**0,007**	**2,626**	**0,009**
The UK	**0,016**	**6,450**	**0,000**
Sweden	**0,014**	**3,766**	**0,000**

Multiple regression model:

$$\hat{y} = -0,004 + 0,069\, GW + 0,00009553\, P\,E - 0,005\, MC - 0,000\, P\,B + 0,007\, Germany \\ + 0,016\, the\, UK + 0,014\, Sweden$$

The *p*-values for every country are less than the significance level at α = 0,05. With these results we can reject H$_0$ for the dummy variable and make the conclusion that impairment of goodwill differ when comparing France with the UK, Germany and Sweden. This is also presented in the multiple regression model since all the coefficients (B-value) for the three countries are positive. This shows that France acknowledges less impairment of goodwill in comparison with the three countries. Examining the multiple regression models for the countries we see that the UK acknowledges most impairment of goodwill compared to France. The UK is followed by Sweden and then Germany.

5.3.3 Germany as the comparison country

The results for Germany as the comparison country are presented table 14.

Table 14: Results for Germany as comparison country

Coefficients			
	B	t	Sig. (*p*-value)
Constant	0,003	1,149	0,251
GW	0,069	11,308	0,000
P/E	0,00009553	1,940	0,053
MC	-0,005	-2,475	0,014
P/B	0,000	-1,234	0,218
The UK	**0,009**	**3,285**	**0,001**
Sweden	**0,006**	**1,669**	**0,096**
France	**-0,007**	**-2,626**	**0,009**

> *Multiple regression model:*
> $$\hat{y} = 0{,}003 + 0{,}069\,GW + 0{,}00009553\,P\ E - 0{,}005\,MC - 0{,}000\,P\ B + 0{,}009\,the\ UK$$
> $$+\ 0{,}006\,Sweden - 0{,}007\,France$$

As shown in table 14, Sweden has a *p*-value of 0,096 which is greater than the significance level at α = 0,05. This means that we cannot reject H$_0$, hence we do not have sufficient evidence that there is a difference in impairment of goodwill between Germany and Sweden. Germany in comparison with the two other countries show *p*-values of 0,001 for the UK and 0,009 for France. With these results we can make the conclusion that impairment of goodwill differ between the UK, France and Germany since the *p*-values are less than α = 0,05. The multiple regression model can help us determine the countries that acknowledge impairment of goodwill more or less than Germany. The coefficient (B-value) for the UK is positive, while the coefficient (B-value) for France is negative. This shows that Germany acknowledges less impairment of goodwill than the UK and more than France.

5.3.4 Sweden as the comparison country

Finally, we test hypothesis 2 using Sweden as our comparison country. The results are presented in table 15.

Table 15: Results for Sweden as comparison country

Coefficients			
	B	t	Sig. (*p*-value)
Constant	0,009	2,554	0,011
GW	0,069	11,308	0,000
P/E	0,00009553	1,940	0,053
MC	-0,005	-2,475	0,014
P/B	0,000	-1,234	0,218
The UK	**0,003**	**0,772**	**0,440**
France	**-0,014**	**-3,766**	**0,000**
Germany	**-0,006**	**-1,669**	**0,096**

> *Multiple regression model:*
> $$\hat{y} = 0{,}009 + 0{,}069\,GW + 0{,}00009553\,P\ E - 0{,}005\,MC - 0{,}000\,P\ B + 0{,}003\,the\ UK$$
> $$-\ 0{,}014\,France - 0{,}006\,Germany$$

When having Sweden as the comparison country, two countries receive a *p*-value greater than the significance level at α = 0,05. Table 15 shows that these countries are the UK and Germany with *p*-values of 0,440 and 0,096. Since the *p*-values are greater than α = 0,05 we cannot reject H$_0$ which means that the UK and Germany do not differ from Sweden in impairment of goodwill. However, we have sufficient evidence that France and Sweden differ since France has a *p*-value of 0,000 and is less than the significance level. The coefficient (B-Value) for France has a negative value and show that France acknowledge impairment of impairment less than Sweden.

5.3.5 Summary of the results

Table 16: Summary of the results for hypothesis 2

Hypothesis 2
- France, Germany, Sweden and the UK differ in acknowledging impairment of goodwill during 2005-2009
- P/E and P/B do not have significant effect on impairment of goodwill
- MC has a weak negative impact on impairment of goodwill
- The UK acknowledges **more** impairment of goodwill than France and Germany
- The UK **does not differ** from Sweden
- France acknowledge **less** impairment of goodwill than Sweden, the UK and Germany
- Sweden **does not differ** from Germany and the UK in impairment of goodwill

6. Analysis

In this chapter we discuss and analyze the results from the previous chapter. We start with the findings for the first hypothesis and then continue with a discussion about the findings for the second hypothesis.

6.1 Impairment of goodwill

This study focuses on the goodwill impairment in Europe and in the US, and also in the UK, France, Germany and Sweden. Previous studies have found that companies stated in different countries acknowledge goodwill impairment differently. This can be because a harmonization of accounting standards cannot be reached without a harmonization of accounting practices and a mutual enforcement. Results of this study indicate support to these assumptions.

6.2 Differences between Europe and the US

The development of impairment of goodwill in Europe and in the US has been different during 2005-2009 and is presented in figure 2, which is based on the table 7 in the previous chapter.

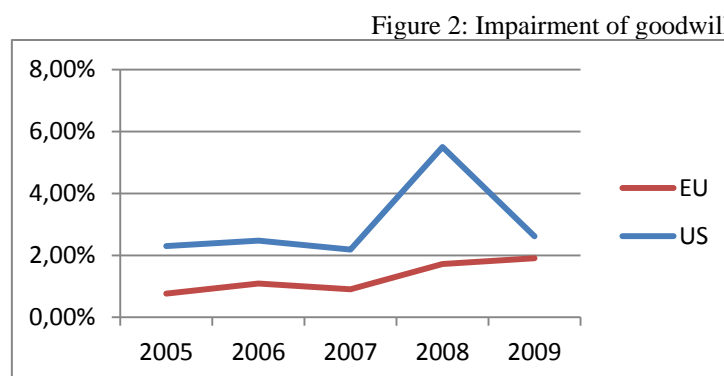Figure 2: Impairment of goodwill

Figure 2 shows that the impairment of goodwill in the US is on an even level during 2005-2007. In 2008 the impairments doubled in comparison with the year before. This is supported by the study by KPMG (2009) which also show that impairments in the US doubled in 2008. (KPMG, 2009) The increase in the impairment of goodwill could be because of the credit crisis and its effect on the company as a whole. However, like Colson (2001), we think that the size of the increase can be discussed whether the companies in the US are relying too heavily on impairment triggers and do not directly tie the tests to fair values. In Europe, the impairments slightly increased between 2005 and 2006, and decreased in 2007 to increase again in 2008. This development follows the study by Hayn (2010), which argues if the European companies have properly reflected the scale of the credit crisis. This draws our attention to the enforcements in the regions. Gauffin and Thörnsten (2010) discuss that differences in impairments between Sweden and the US are not only a consequence of the credit crisis and its greater impact on the US market, but rather a consequence of the enforcement and the pressure on the corporate management. We find this also applicable regarding the differences in impairments between Europe and the US.

The difference between figure 2 and the F-test, which was done for the first hypothesis, is that the F-test shows if the overall relationship between impairment of goodwill and the set of independent/control variables is significant. The results of the F-test show that H_0 can be rejected and that there is significant statistical evidence that there are differences in impairment of goodwill between Europe and the US during 2005-2009.

The t-test that was done for each of the control variables enables us to make assumptions about their separate impact on impairment of goodwill. Starting with the variable GW, H_0 could be rejected and the results show that goodwill has a positive impact on impairment of goodwill. This can be because more cash-generating or reporting units are tested when goodwill has a major proportion on the balance sheet, when the impairment test is done. This connection is also found in the research by Van de Poel et al. (2009) based on European companies. Hamberg et al. (2010) also found a positive impact of goodwill on impairment, hence supports our results.

Continually, when controlling for the effect from the control variable MC, H_0 could be rejected and a negative impact on impairments was found. This connection can be because when the market value decreases there are economic indications that the cash-generating units' value have depreciated and should be impaired. Churyk (2004) supports this connection, since she also found that market capitalization has a negative impact on impairment of goodwill. This can also be evidence that the companies are following the guidelines in the standards IAS 36 and SFAS 142, where a decline in market value is an external indication for impairment.

The results for the control variable P/E show that H_0 could not be rejected because there is no statistical evidence that it has an impact on impairment of goodwill. However, a discussion about the sign of the coefficient (B-value) can still be made even if the variable is not significant. P/E showed a slight negative effect, which contradicts the results from the study by Gu and Lev (2008) which found that impairment of goodwill increases when shares are overpriced. But, according to Miles and Asbra (2001) the P/E ratio may not immediately and fully adjust to reflect the change from amortization to impairment of goodwill under SFAS in 2001. Appendix 6 includes the results for the regions separately and shows that P/E is still not significant. But, it shows a slight negative effect in the US while it shows a slight positive effect in Europe. Hence, this can be supported by Miles and Asbra (2001) and may explain our results.

The variable P/B is found to have no impact on impairments regardless if the value is over or below one, in the study by Cukierman and Iderheim (2009). In our study we found no connections whatsoever between the P/B value and impairments since H_0 could not be rejected. Therefore it can be questioned if the companies are applying the guidelines in IAS 36 properly. This can be due to that the companies rely too heavily on the indications regarding the market capitalization when testing for impairment.

The dummy variable that was used yielded sufficient evidence that the region has an impact on impairment of goodwill, since H_0 could be rejected. It also showed that the US acknowledged more impairment of goodwill than Europe during 2005-2009. Our assumption is that the differences can be a consequence of the quality of the enforcement. In the US, the enforcement is considered to be strong, while it in Europe is questioned. This, since the European countries have to enforce the implementation of the IFRS separately because there is no international IFRS enforcement. Both the IFRS and the US GAAP enable a great scope of interpretations and evaluations by the management, which can be driven by incentives and own interests that can hurt the investors. A high quality of the enforcement is considered to ensure that the investors are protected and that the standards are implemented properly (Bushman and Piotroski, 2006, Ball, 2006). Also, in accordance with Van de Poel et al. (2009), a high quality of enforcement leads to more impairment of goodwill. The enforcement still has to enforce the management incentives even if there are differences regarding goodwill and impairment of goodwill under the IFRS and the US GAAP, and therefore we question the quality of the enforcement in the two regions. Figure 3 is based on table 7 in the previous chapter and shows goodwill before the impairment, scaled by total assets before the impairment during 2005-2009 in Europe and in the US.

Figure 3: Total goodwill
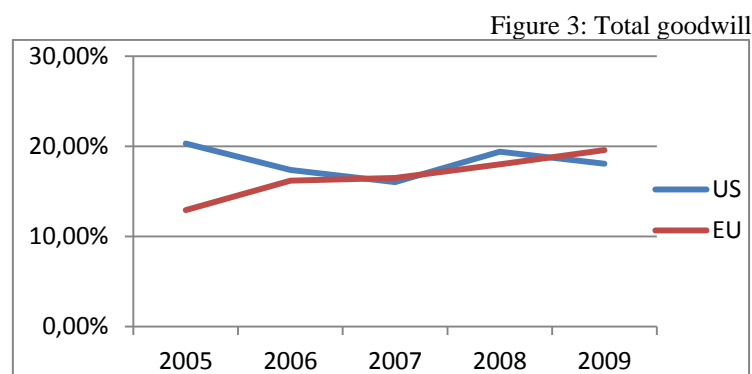
Examining the level of the value of goodwill in the US we can see that it has increased and decreased during the period, while in Europe it has only increased. When also considering figure 2 about the differences in the impairment, we can see that the proportions are not equal. By this we mean that even if the value of goodwill is almost on the same level in 2007 (16,49% in Europe and 16,02% in the US) for the two regions, figure 2 shows a great difference in the impairment of goodwill in the same year (0,91% in Europe and 2,19% in the US). As mentioned before, this difference can be due to the difference in the quality of the enforcement. La Porta et al. (1998) show that the investor protection is the strongest in common law countries in comparison with civil law countries. We consider this to be applicable on our results since the US is a common law country and most of the European countries belong to the civil law tradition.

6.3 Differences between the UK, France, Germany and Sweden

The F-test for the second hypothesis shows that there are statistical significant differences in impairment of goodwill between the UK, France, Germany and Sweden and shows that the overall relationship between impairment of goodwill and all independent/control variables are significant. A difference in the impairments of goodwill between the countries was also found by Van de Poel et al. (2009), Cukierman and Dahlström (2010) and La Porta (1998). In the research by Bradshaw and Miller (2008), it is concluded that a harmonization of accounting practices can be accomplished through a strict and uniform enforcement across countries. We consider that the differences in impairment of goodwill between these four IFRS countries can be an evidence of a lack of a harmonization of accounting practices and the absence of an international IFRS enforcement. (Bradshaw and Miller, 2008) Due to principle-based standards the guidelines may not give directions that are strict enough which can have an effect on impairment of goodwill. These standards may give the corporate management a great scope for interpretations and evaluations. (Ball, 2005 and Bennet et al. 2006) The differences can also be due to cultural and historical differences between the countries that can affect the implementation of the same accounting standards (Seetharaman et al. 2004).

Continuing with the results from the t-test, two of the four control variables have a significant impact on impairment of goodwill. The first variable is GW and like the results for hypothesis 1 it has a positive effect on impairment of goodwill. We make the same assumptions as in hypothesis 1 under *6.2 Differences between Europe and the US*, that impairment of goodwill is positively associated with the proportion of goodwill on the balance sheet. The second variable is MC and has a negative effect on impairment of goodwill. This also follows the results from hypothesis 1, that a decrease in market value is an indication of impairment.

The two control variables, P/E and P/B, have no significant impact on impairment of goodwill since H_0 could not be rejected. P/E shows a slight positive effect on impairment, which supports the study by Gu and Lev (2008) but since it is not statistically concluded that P/E has an impact on impairment of goodwill, we cannot make an assumption about this variable. As in the results for hypothesis 1, P/B has no impacts on impairments of goodwill and this is surprising since it is not in accordance with the guidelines in IAS 36.

The empirical results from the dummy variables when comparing the UK with France, Germany and Sweden show that the UK acknowledge more impairment of goodwill than France and Germany. The UK in comparison with Sweden did not show sufficient evidence that there is a difference between these countries regarding impairment. According to La Porta (1998), the UK belongs to the common law tradition while France and Germany belong to the French civil law tradition and the German civil law tradition. It is found that the common law countries give shareholders and creditors the strongest protection from the corporate management's incentives, followed by the German civil law, the Scandinavian civil law and the French civil law. These findings are applicable to our results since we consider that the incentives of the management can avoid goodwill impairment, hence can prevent the

standards to be implemented properly, and therefore hurt the investors. Our results show that the enforcement regarding impairment of goodwill is stronger in the UK than the enforcement in France and Germany. However, Berger (2010) criticize that the FRRP in the UK often does not test the valuation approaches in different valuation decisions, which limits the effectiveness of the enforcement. This is in contrast to our results, but these critics regard valuation in general while our results regard only valuation approaches of goodwill impairment. We wonder if Berger's results are applicable on the enforcement of goodwill impairment, since our results are supported by La Porta (1998), Ball et al. (2000), Bushman and Piotroski (2006) and to a certain extent by Cukierman and Dahlström (2010). In the study by Ball et al. (2000), it was found that the common law countries implement a more conservative accounting compared to the civil law countries. A conservative accounting is when the companies acknowledge economic losses timelier. This matches our findings that the UK acknowledges more impairment of goodwill than France and Germany. Bushman and Piotroski (2006) imply that a conservative accounting is due to a high quality of enforcement and our study may provide evidence of this even after control for the effect of the control variables on impairment of goodwill.

When using France as the comparison country, the test yielded results that showed that impairment of goodwill is the lowest in France. This can be evidence of that IAS 36 is not implemented properly in France or may be that the quality of the enforcement is low regarding impairment of goodwill. The last-mentioned is discussed by La Porta (1998), which considered that the differences can be due to differences in investor protection and judicial systems. The research found that the common law, the German and the Scandinavian civil law tradition have stronger investor protection than the French civil law tradition. It was also found that an investor in the French civil law country is poorly protected by the laws and the enforcement. These connections seem also to be found in our study when comparing France with the three other countries. Our results also agree with the findings by Cukierman and Dahlström (2010). However, according to Berger (2010) the enforcement in France has close control since a high examination frequency is used. This draws our attention to whether a high examination frequency can be the same as high quality of enforcement, since several studies including ours show that the enforcement in France is the weakest in comparison with Germany, Sweden and the UK.

Continuing with Germany as the comparison country, the results show that Germany is acknowledging impairment of goodwill more than France but less than the UK. Berger (2010) concludes that the companies in Germany are enforced closely. This can have a connection to the German companies acknowledging more impairment of goodwill than companies in France. Furthermore, the test did not yield evidence that there is a difference between Germany and Sweden. According to La Porta (1998), when examining the judicial system, the German civil law is close behind the Scandinavian civil law that is on top. Van de Poel et al. (2009) conclude that differences in goodwill impairments are because of the quality of the judicial system among countries. This can support why our results did not yield statistical

significant differences in impairment of goodwill between Germany and Sweden. Another explanation can be that these civil law traditions are influenced by each other. (Smith, 2006)

The last country that was in comparison with the other three countries was Sweden. The only country that showed sufficient evidence of a difference in impairment of goodwill compared to Sweden was France. That Germany is no different from Sweden in terms of goodwill impairment was discussed in the previous section. Cukierman and Dahlström (2010) found differences in impairment of goodwill between the common law countries and the Scandinavian civil law countries in 2007, while no other significant differences were found for 2008 and 2009. This is in accordance with our results for Sweden in comparison with the UK, since our test show no statistical significant difference either. Smith (2006) declares that Sweden has, in the recent years, moved closer to the common law tradition. In connection with the entry of the UK to the European Union the principle of "true and fair" has become more important in accounting. This, together with the civil law tradition moving closer to the common law tradition the latest decades, may explain why no differences are found between Sweden and the UK regarding impairment of goodwill.

7. Conclusions

In this chapter we present our conclusions about the empirical results and the analysis. We answer our research questions that were presented in the introduction of this thesis. There are also suggestions for further research regarding impairment of goodwill.

7.1 Introduction

The purpose of this thesis has been to study if there are differences in impairments of goodwill between Europe and the US, and between the UK, France, Germany and Sweden. Goodwill is considered to be one of the most controversial items in the financial statements. Due to a principle-based accounting, a great scope of interpretations and evaluations by the corporate management is allowed which contributes to that more professional judgment and enforcement is required. The IASB and the FASB is committed to a convergence of the IFRS and the US GAAP and one step in this process was taken when IFRS 3 was introduced in 2005. However, studies show that differences still remain and we test these differences under control for control variables that are considered to have an impact on impairment of goodwill. We consider that if differences are shown, even under control for the variables, the region/country variable is a proxy for differences in the quality of the enforcement.

7.2 Europe and the US

Our first research question regards the development of the impairment of goodwill between the listed companies in Europe and the US during 2005-2009. We found that the development of impairment of goodwill during 2005-2009 differs between the two regions. The variables Goodwill (GW) and Market Capitalization (MC) yielded significant evidence that they have an impact on impairments. Goodwill has a positive impact on impairments and we consider that this is because more cash-generating/reporting units are tested for impairment when goodwill is a great proportion of the balance sheet. Market Capitalization has a negative impact on the impairments and we conclude that this is because when the market value of a company decreases then there is an indication of an impairment of goodwill. We find that the economic situation of a company affects the impairment of goodwill. The results follow the guidelines in IAS 36 and SFAS 142. When testing the P/E ratio, which was used as a proxy for investors' expectations, it was found to not have an impact on goodwill impairments. The P/B value show that it has no impact on impairment of goodwill and we consider that this can be due to that the companies rely more on indications from Market Capitalization.

The results show that the US acknowledges more impairment of goodwill than Europe. The difference can be a consequence of that there still are differences between the standards and that a full convergence of the standards is not achieved yet. The differences that still remain among others are the treatment of contingencies and the goodwill alternatives (partial/full goodwill). But even if a complete convergence is achieved in the future, the standards can be implemented differently in companies stated in different countries and therefore the enforcement is crucial in the process in the accounting convergence. Since the US showed

more impairment of goodwill when including the impact from the control variables, we presume that the enforcement in the US is of a higher quality than the enforcement in Europe.

7.3 The UK, France, Germany and Sweden

Our second research question regards the development of the impairment of goodwill between listed companies in the UK, France, Germany and Sweden during 2005-2009. The results show that there are differences in impairment of goodwill, between the UK, France and Germany, while it showed that Sweden only differed from France. The control variables show the same indications as between Europe and the US, hence same conclusions about the variables for comparing the UK, France, Germany and Sweden are made.

Continually, since these countries implement the IFRS, the differences can be due to historical and cultural differences which influence the interpretations of impairment decisions. To eliminate the historical and cultural influence, an international IFRS enforcement is needed to enforce all the IFRS-adapting countries. Our results support previous research that the common law countries have the strongest protection for investors and creditors and have a high quality of enforcement, since we found that the UK acknowledge most impairment of goodwill compared to France and Germany. No statistical evidence was found about differences between the UK and Sweden. We consider that this can be due to Sweden moving closer to the common law tradition. We find that the impairments of goodwill are lowest in France and this can be due to poor investor protection and low quality of enforcement. When it comes to differences in impairment of goodwill between Germany and Sweden, our study give no significant support that there are differences. Our assumption is that they enforce impairment of goodwill similarly. Overall, we agree with previous studies that a harmonization of accounting standards cannot be reached without a harmonization of accounting practices.

7.4 Suggested further research

For further research, we suggest a similar study with the control variables goodwill and market capitalization together with other variables that are considered to have an impact on impairment of goodwill. This, since we found that goodwill and market capitalization have an impact on impairment. One variable that we consider interesting is Return on Equity, since we found that this variable was used in some previous studies.

We also suggest a study that examines more closely the impairment of goodwill between the UK, Germany and Sweden. Since our results did not show significant evidence that there are differences between the UK and Sweden, and Sweden and Germany.

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Appendix

Appendix 1 Correlation of the independent variables

Correlation between independent variables				
n=1864	GW	MC	P/E	P/B
GW	1	0.115	- 0.008	0.025
MC	0.115	1	0.171	0.354
P/E	- 0.008	0.171	1	0.079
P/B	0.025	0.354	0.079	1

Appendix 2 Selection of companies for Europe and the US depending on the variables

2005-2009	IFRS/US GAAP companies	Companies that have goodwill and total assets	Companies that have acknowledged impairment of goodwill	Companies that have a value for P/B, P/E and Market Capitalization
Europe	22 587	13 663	2 055	1 439
The US	36 017	15 100	1 396	551

Appendix 3 Descriptive statistics Europe and the US

Descriptive statistics - Europe					
	imp/(tot.a+imp)	GW	MC	PE	PB
N	1366	1366	1366	1366	1366
Mean	0,01371	0,17062	0,64229	17,942	1,992
Median	0,00240	0,12300	0,52235	13,300	1,550
Std. dev.	0,03081	0,16029	0,53625	19,312	2,993
Minimum	0,00000	0,00000	0,00600	0,300	-65,960
Maximum	0,22040	0,70470	2,85150	175,300	27,900

Decriptive statistics - the US					
	imp/(tot.a+imp)	GW	MC	P/E	P/B
N	498	498	498	498	498
Mean	0,03805	0,18510	0,64533	20,577	1,672
Median	0,01520	0,15561	0,48495	14,500	1,320
Std. dev.	0,05133	0,14521	0,55003	0,145	0,051
Minimum	0,00000	0,00150	0,00850	0,000	-37,400
Maximum	0,22420	0,60310	2,80490	186,300	33,220

Appendix 4 Selection of companies from the UK, France, Germany and Sweden depending on the variables

2005-2009	IFRS companies	Companies that have goodwill and total assets	Companies that have acknowledged impairment of goodwill	Companies that have a value for P/B, P/E and Market Capitalization
The UK	5 160	3 240	529	382
France	2 521	1 915	336	246
Germany	3 015	2 070	388	225
Sweden	1 653	1 046	139	102

Appendix 5 Descriptive statistics the UK, France, Germany and Sweden

Decriptive statistics – The UK					
	imp/(tot.a+imp)	GW	MC	P/E	P/B
N	351	351	351	351	351
Mean	0,02588	0,23763	0,62675	14,197	1,946
Median	0,00526	022129	0,49911	10,900	1,440
Std. dev	0,04211	0,19247	0,55163	16,352	4,870
Minimum	0,00000	0,00068	0,00610	0,600	-65,960
Maximum	0,19138	0,72419	2,90140	166,700	22,770

Descriptive statistics - France					
	imp/(tot.a+imp)	GW	MC	P/E	P/B
N	242	242	242	242	242
Mean	0,00608	0,18041	0,61216	19,799	1,960
Median	0,00165	0,17532	0,47886	14,900	1,500
Std. dev.	0,01093	0,12595	0,51091	19,996	2,176
Minimum	0,00000	0,00270	0,01070	2,700	0,100
Maximum	0,06970	0,47380	0,70620	170,200	27,900

Descriptive statistics - Germany					
	imp/(tot.a+imp)	GW	MC	P/E	P/B
N	210	210	210	210	210
Mean	0,01079	0,14000	0,680	23,171	1,966
Median	0,00251	0,09462	0,550	16,750	1,640
Std.dev	0,02268	0,14253	0,538	26,065	1,792
Minimum	0,00000	0,00001	0,007	1,200	-8,430
Maximum	0,18400	0,67607	2,767	175,300	11,330

Descriptive statistics - Sweden				
	imp/(tot.a+imp)	GW	MC	P/E	P/B
N	96	96	96	96	96
Mean	0,02207	0,22968	0,78906	16,998	2,038
Median	0,00297	0,20441	0,67805	12,300	1,770
Std. dev	0,04255	0,19529	0,56755	23,142	1,281
Minimum	0,00000	0,00452	0,01740	1,000	0,150
Maximum	0,18610	0,73892	2,27240	209,700	5,880

Appendix 6 The results of the t-tests for Europe and the US separately

Coefficients - Europe			
	B	t	Sig. (p-value)
Constant	0,003	2,047	0,041
GW	0,007	16,075	0,000
P/E	**0,00002534**	**0,631**	**0,528**
MC	-0,004	-2,456	0,014
P/B	0,000	-1,048	0,295

Coefficients – The US			
	B	t	Sig. (p-value)
Constant	0,025	6,113	0,000
GW	0,154	10,900	0,000
P/E	**-0,000005284**	**-0,613**	**0,540**
MC	-0,024	-5,988	0,000
P/B	0,000	0,516	0,606