UNIVERSITY OF GOTHENBURG
SCHOOL OF BUSINESS, ECONOMICS AND LAW

Master Degree Project in Accounting

The Recognition of Identifiable Intangible Assets in a Business Combination

The influence of enforcement

Carin Enocson and Veronica Rodriguez Labra

Supervisor: Jan Marton, Niuosha Samani and Markus Rudin
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Carin Enocson

Veronica Rodriguez Labra

Abstract

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School of Business, Economics and Law, Gothenburg University

Authors: Carin Enocson, Veronica Rodriguez Labra
Supervisors: Jan Marton, Niousha Samani and Markus Rudin

Title: The recognition of identifiable intangible assets identified in a business combination -*The influence of enforcement*

Keywords: Intangible Assets, Enforcement, Accounting, IFRS 3, European Union, Business Combinations.

Background and discussion of the problem: In 2005, the EU mandated all listed firms to report their consolidated financial statement in accordance with IFRS. By doing so, it was claimed that the comparability of the financial information would be enhanced. However, studies have shown that this has not been the case and one of the reasons for this are differences between EU countries enforcement practices. Furthermore, the economy has during the last decade developed into being more knowledge driven and technology based. Because of this transition, intangible assets are becoming more important than fixed assets in driving business performance. In a review of IFRS 3 Business Combinations, IASB stated that there are differences between countries in the implementation of the standard, which might influence the recognition of intangible assets. It was also stated that a potential explanation could be the enforcement differences between countries.

Purpose: The purpose of the study is to investigate if enforcement influences the recognition of identifiable intangible assets, when acquiring a business in accordance with IFRS 3 Business Combinations.

Delimitations: This master's thesis is limited to only study country-level and firm-level enforcement separately or by interaction, and its influence on the recognition of identifiable intangible assets in a business combination. Another limitation is the period of investigation, which is between the years 2006 and 2013. This research is also limited to only study listed companies within the EU that have made business combinations during the years studied.

Methodology: In this study a quantitative approach has been used, where a number of hypotheses connected to enforcement's effect on the recognition of identifiable intangible assets in a business combination are tested. The empirical data is primarily gathered from databases and thus from secondary sources. The study sample consists of listed companies within the EU that have made acquisitions between the years 2006 and 2013. Finally, to test the hypothesis and reach the purpose, statistical regression analysis has been used.

Results and conclusion: The results of the statistical tests show that there are country differences in the recognition of identifiable intangible assets. More so, accounting enforcement on a country-level has a positive influence on the recognition of identifiable intangible assets in a business combination. However, neither enforcement on firm-level nor the interaction between firm-level enforcement and country-level enforcement has an influence of the recognition of identifiable intangible assets. Accordingly, this study concludes that only country-level accounting enforcement has an influence on the recognition of identifiable intangible assets in a business combination.

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Abbreviations and Concepts

Acquiree = “the business or businesses that the acquirer obtains control of in a business combination” (IFRS 3 Appendix A).

Business combination= “A transaction or other event in which an acquirer obtains control of one or more businesses. Transactions sometimes referred to as ‘true merger’ or ‘mergers of equals’ are also business combinations as that term is used in this IFRS.” (IFRS 3 Appendix A).

CESR= Committee of European Securities Regulators

Enforcement = “*accounting enforcement is the activities undertaken by independent bodies (monitoring, reviewing, educating and sanctioning) to promote firms’ compliance with accounting standards in their statutory financial statements*” (Brown, Preiato & Tarca, 2014 p. 2)

Enforcement body = “the government authorised or appointed bodies which have been delegated the task of supervising and enforcing listed companies’ compliance with mandatory accounting standards” (Brown et al. 2014, p. 3).

ESMA = European Securities and Market Authority

EU= European Union

IAS= International Accounting Standards

IASB =International Accounting Standards Board

IFRS = International Financial Reporting Standards

Intangible asset = an identifiable non-monetary asset without physical substance. The resource should be controlled by the entity as a result of past events and it is expected to yield future economic benefits (IAS 38).

Goodwill = “Future economic benefits arising from assets that are not capable of being individually identified and separately recognised. “ (IFRS 3 Appendix A).

PiR = Post implementation Review

Purchase Price Allocation (PPA)= "the allocation of the purchase price of a business to values underlying individual assets and liabilities" (Forbes, 2006, p. 8).

1 Introduction

This chapter aims to introduce the chosen research area by presenting a background and a problem discussion about the topic. This is complemented by the purpose and the research question that guide this research. Moreover, the delimitations of the research are discussed followed by a section describing the contribution of this study. Finally, an outline of the research is presented in order to illustrate how the study is structured.

1.1 Background

As the world is becoming more globalized and capital markets are becoming increasingly more integrated, it is logical to have one single set of accounting standards (Sir David Tweed IASB Chairman see Ball, 2006). By having a single set of accounting standards it is argued that the comparability of the financial information will be enhanced and that the allocation of capital across countries will be more efficient. More so, it is claimed that the consistency in audit will be improved, and that the cost of compliance for companies will be reduced (Ball, 2006). A step towards this was taken by the European Union (EU) in 2005, which mandated that all listed firms within the member nations should report their consolidated financial statement in accordance with the International Financial Reporting Standards (IFRS) (Pope & McLeay, 2011). Each member nation was also obligated to set up a proper enforcement mechanism to secure consistent application of the standards across countries and thus promote investor confidence. To coordinate the countries' security regulators (Pope & McLeay, 2011) and secure that the enforcement develops mutually within the EU, the central institution: Committee of European Securities Regulators (CESR) was established (Berger, 2010).

Concurrently with the last decades of globalization, the economy has developed into being more knowledge driven and technology based. Because of this transition, intangible assets are becoming more important than fixed assets in driving business performance and in making firms maintain their competitiveness. For companies, this development has led to new items in financial statements such as licenses, patents and goodwill (Rehnberg, 2012). According to Forbes (2007), reporting these assets instead of bundling them as one item i.e. goodwill is important for users of financial information. Rehnberg (2012) states that if companies report identifiable intangible assets inconsistently, users of this information will not be able to make comparisons between firms and the faithful representation of the financial reporting will be undermined. The author also argues that disclosed information that is not faithfully represented is of low accounting quality and therefore not relevant. According to IASB, the notions faithful representation and relevance are fundamental in the sense that the information presented shall have both these characteristics in order to be useful in the decision-making process of investors. More so, since the standards are based on principles, and therefore involves judgments, these notions should work as guidance for the preparers when interpreting the standards (Conceptual framework IASB, 2014).

One of the financial reporting standards that involve a significant amount of judgment and concerns intangible assets is IFRS 3 Business Combinations. This standard gives guidance on how acquisitions of a business should be treated within accounting. When the purchase price is allocated, the regulatory framework is fully based on principles and the preparers of the financial information have to use their judgment. Here decisions have to be made on whether or not an identifiable intangible asset exists and if it is separable. Judgment also has to be used when assessing the value of the identifiable intangible assets. The remaining value after the recognition of identifiable intangible assets is recognized as goodwill (IFRS 3). These situations put pressure on the preparer of the financial information and, due to the broad scope of interpretation of the standard, similar phenomenon may be assessed differently (Rehnberg, 2012).

1.2 Discussion of the problem

Several studies have examined whether or not the implementation of IFRS has resulted in actual convergence of reporting practices and in the expected outcomes. Some studies find that the harmonization of accounting standards do not lead to convergence of the financial reporting and expected outcomes due to differences in countries enforcement practices (Leuz, 2010; Christensen, Hail & Leuz, 2013). Another study claims that variations in accounting practices are unavoidable due to the principle-based nature of IFRS (Kvaal & Nobes, 2010). There is also a risk that the motives of the management may influence the financial reporting (Ford, 2008). Pope & McLeay (2011) concludes that the degree of compliance with the IFRS standards relies on the incentives of the preparers, which in turn partly relies on the quality of enforcement. They base this statement on findings in previous research such as Garcia-Osma and Pope (2010) result that earnings management depends on the strength of countries enforcement and legal institutions. They further mention that, "there are good reasons to predict that benefits will only follow if implementation and enforcement are high quality" (Pope & McLeay, 2011, p. 246).

Various studies have been conducted on enforcement. Some studies focus on country-level enforcement by studying the legal environment within countries (La Porta, Lopez-de-Silanes, Shleifer & Vishny, 1998). Others analyze activities of national enforcement bodies (Brown, Preiato & Tarca, 2014) or World Governance Indicators[1] (Bonetti, Parbonetti & Magnan, 2013; Daske, Hail, Leuz & Verdi 2008). In general, these studies find that there are differences in financial reporting across countries, for example, due to differences in legal traditions (La porta et al. 1998). Other studies have analyzed enforcement on firm-level through corporate governance mechanisms and its interaction with country-level enforcement (Ernsberger & Grüning 2013; Bonetti, Parbonetti & Magnan, 2013; Durnev & Kim, 2005). For example, Bonetti et al. (2013) found that both firm-level enforcement (corporate governance mechanism) and country-level enforcement (legal enforcement) are of importance for

[1] The World Governance indicators are provided by the World Bank and include indicators that capture several dimensions of

accounting quality and also that there is interaction between the two levels of enforcement. Firm-level enforcement had a substitutive effect to a certain level, when the country-level enforcement was weak. However, as country-level enforcement got stronger the two levels of enforcement complemented each other. Daske, Hail & Leuz (2008) and Christensen et al. (2013) stated that the enforcement systems are key drivers for the differences in the accounting quality. Further, Daske et al. (2008) found that the accounting quality is only high in countries with strong legal enforcement and where the reporting incentives of firms are transparent (Daske et al. 2008). Thus, these studies have shown the importance of both country-level enforcement and firm-level enforcement.

Since intangible assets have become drivers of firms' business performance, it would be interesting to examine the potential differences in reporting practices of identifiable intangible assets and their association with enforcement on both firm-level and country-level. More specifically, in the situation when a company acquires a business in accordance with IFRS 3, a significant amount of identifiable intangible assets can be recognized depending on how the acquirer interprets the standard and assesses the assets. Moreover, reasons for particularly studying the recognition of identifiable intangible assets under IFRS 3 are several. Firstly, IFRS 3 and the recognition of identifiable intangible assets involve a high amount of judgment and are considered a complex area. More so, it brought significant changes for listed firms after the EU adoption of IFRS in 2005 (Beattie, Fearnley & Hines, 2008). Secondly, ESMA (2014) argues that acquiring a business has a significant influence on the financial reporting. Thirdly, ESMA states in a review of IFRS 3 that there are differences between countries in the implementation of the standard, which might influence (among other things) the amount of recognized identifiable intangible assets and their value. They further state that this issue is largely unaddressed in the academic literature and that enforcement differences between countries might explain differences in implementation (IASB, 2014).

1.3 Purpose

The purpose of the study is to investigate if enforcement influences the recognition of identifiable intangible assets, when acquiring a business according to the IFRS 3 Business Combinations.

1.4 Problem statement

To fulfill the purpose the following research question will be investigated:

-Have differences in country-level and firm-level enforcement, separately or by interaction, influenced the recognition of identifiable intangible assets in business combinations within the European Union?

1.5 Delimitations

This master thesis is limited to examine the association between country-level enforcement, firm-level enforcement and the recognition of identifiable intangible assets in a business combination. Thus, this study will neither address identifiable intangible assets recognized without a business acquisition taking place, nor concern recognitions of other assets, such as goodwill or tangible assets identified in a business combination. Another limitation is the period of investigation and this thesis will only study the years between 2006 and 2013. Furthermore, this research is also limited to listed companies within the EU that have made business combinations during the years of investigation.

1.6 Contributions

This research aims to contribute to the on-going discussions about the recognition of identifiable intangible assets in business combinations, as well as the importance and level of impact enforcements have on the consistent application of the IFRS standards. Previous studies have focused on the compliance with IFRS 3 and disclosures across EU countries and find that enforcement on both country-level and firm-level is of importance (Glaum, Schmidt, Street & Vogel, 2013). Other studies have focused on the recognition of identifiable intangible assets when IFRS 3 Business Combinations is applicable and differences related to company features in Swedish listed firms (Rehnberg, 2012). However, to our knowledge this is the first study investigating enforcement differences in relation to the recognition of identifiable intangible assets when a business is acquired within the EU. Therefore, this master thesis has been designed to fill this apparent knowledge gap.

This study also contributes to accounting research by showing statistical evidence of the accounting enforcement differences of IFRS within EU, on both firm-level and country-level as well as their potential interaction. Furthermore, the potential interaction between firm-level and country-level enforcement is a relatively uncovered area[2] within the accounting literature and therefore this study can be seen as contributing to its progress.

[2] Authors that have conducted research within this area: Bonetti, Parbonetti, Magnan (2013), Ernsberger &Grüning (2013), Durnev & Kim, (2005)

1.7 Outline

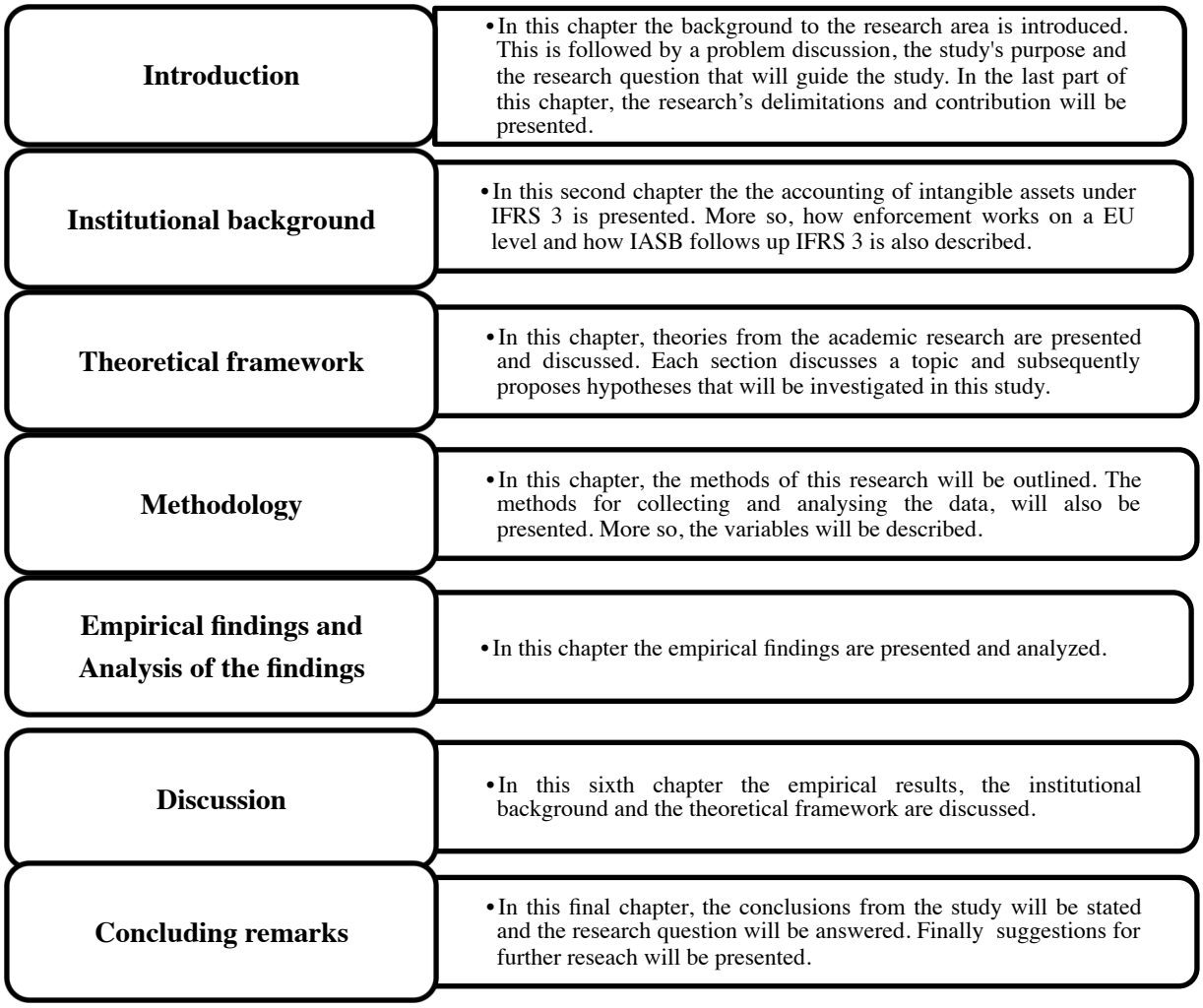

Figure 1:1 The outline of the study

2 Institutional Background

The aim of this chapter is to provide an insight into the accounting of identifiable intangible assets under IFRS 3 and to describe how enforcement works on a European level. More so, an insight is given into how IASB is following up IFRS 3.

2.1 IFRS 3 and identifiable intangible assets

In 2004, IASB released IFRS 3 Business Combinations, which outlines how an acquirer that obtains control of a business should account for it. The purpose of IFRS 3 is to increase the relevance, reliability and comparability of the financial information that the acquirer provides regarding business combinations. When acquiring a business, the acquirer should provide information regarding recognition and measurement of identifiable assets in the acquisition. In order to do so the acquirer has to apply an acquisition method, where the purchase price is allocated over the acquired net assets measured at fair value. This includes recognizing the self-generated intangible assets and contingent liabilities that have not been recognized in the acquired company's own balance sheet (IFRS 3).

An intangible asset is defined as an identifiable non-monetary asset without physical substance. Furthermore in order for a resource to be identified as an asset it has to meet certain criteria. The resource should be controlled by the entity as a result of past events and be expected to yield future economic benefits. Intangible assets can for example be trademarks, marketing rights, licensing agreements and computer software (IAS 38). Under IFRS 3, an intangible asset is identifiable if it meets either the criterion of *separability* or the criterion of *contractual-legal*. The separability criterion implies that it should be possible to separate or divide the acquired intangible asset from the acquiree, and the contractual-legal criterion entails that the asset arises from contractual or other legal rights (IFRS 3). In order to decide if the criteria are met, the acquiree has to use its judgment. The acquiree has to assess the existence of an asset, and when the existence is established, the assets should be valued (Rehnberg, 2012).

2.2 European enforcement body

Enforcement of accounting refers to the task: "to protect capital markets by ensuring proper application of accounting standards" (Berger 2010, p 15). With the mandatory adoption of IFRS in 2005, the European Commission (EC) required each country to set up a proper enforcement mechanism. This was done in order to secure consistent application across countries and thereby promote investor confidence. More so, to develop a common approach towards enforcement the EC gave the Committee of European Securities Regulators (CESR) the responsibility to coordinate the countries' security regulators (European parliament, 2002). CESR was in 2011 replaced by European Securities and Market Authority (Schammo, 2011). ESMA took over CESR's work of coordinating the countries' security regulators and also attained more power; it has more authority in the sense that

it is a legal personality and it is a EU body (CESR, 2010). The aim of ESMA is to enhance investor protection and maintain the stability of the EU financial system by safeguarding and ensuring transparency, efficiency, integrity and orderly functions of the securities markets (ESMA, 2015).

2.3 Consistent application of IFRS 3

Approximately two years after a standard has been released, an evaluation is conducted of the implementation of the standard. The aim of the evaluation is to identify potential areas of improvement (IASB, 2015). In the case of the standard IFRS 3 Business Combinations, the standard was revised in 2008 and reviewed by IASB in 2014 in a so-called post-implementation review (PiR). The review was based on comment letters and academic research. In the review, focus was on the separate recognition of intangible assets from goodwill and amortization of goodwill (IASB, 2014).

The PiR showed that in practice, the recognitions of identifiable intangible assets are viewed differently. Some practitioners find it costly, subjective and of little value. The academic research shows, however, that the recognition of intangible assets apart from goodwill is value relevant and that it has become even more important after the implementation of IFRS. IASB state in the PiR that one reason for the scattered results can be that prior national GAAP practices vary between countries, which in turn affect the responses from the comment letters received. More so, differences in national enforcement systems may influence the implementation of IFRS and hence the outcomes. Additionally, the PiR raises the issue that academic research sheds light on namely the usage of estimates and judgments in the identification of goodwill and intangible assets. These estimates and judgments may thereby be used by managers in ways that can be considered beneficial for them and linked to their own incentives (IASB, 2014).

In an attempt to assist IASB in the PiR process, ESMA released a report in June 2014 that evaluates the consistent application of IFRS 3. The review consisted of 56 issuers of financial statements within EU in 2012. The aim of the report was, according to ESMA, to identify potential areas where IFRS 3 leads to differences in practices or lack of comparability. The results of the review show that some areas needed to be improved. For example, ESMA found that 24% of the issuers reviewed had not recognized any separate intangible assets (excluding goodwill) when conducting the PPA. More so, goodwill represented approximately 45% of the total intangible assets (including goodwill) identified among the reviewed issuers, and in several cases, information was missing considering what the goodwill consisted of. Based on these findings ESMA concluded that issuers should ensure that all identifiable intangible assets are recognized, since this will improve users' understanding of what the acquiring firm receives for the consideration paid (ESMA report, 2014).

3 Theoretical Framework

The aim of this chapter is to present theories from academic research. Firstly, reporting differences across EU countries will be outlined. Thereafter country-level enforcement and firm-level enforcement and IFRS are presented. Finally, the potential link between country-level enforcement and firm-level enforcement is discussed. Each section discusses a topic and subsequently proposes hypotheses that are investigated in this study.

3.1 Reporting differences across EU countries

Several studies have found that there are significant differences in the financial reporting between countries. Leuz (2010) reported that the legal institution of countries influences companies' reporting incentives and that this has an important impact on the convergence of reporting practices across countries. More so, according to Brown et al. (2014), the institutional settings of a country in which financial reporting is included, might hamper the effectiveness associated with the adoption of IFRS. Kvaal & Nobes (2010) found that one explanation to the EU country differences among firms' financial reporting practices depends on that firms that have the possibility to continue with the same reporting practices as they used before the adoption of IFRS, continues to do so.

Brown (2011) argues that the social and economic differences that have developed between countries through history are often deeply rooted. These traditions will not automatically be abandoned with the adoption of IFRS and will thus lead to accounting differences. According to La Porta et al. (1998) a distinction can be made between the legal origin traditions: *civil law* developed from Roman law, and *common law*, which has an English origin. Furthermore La Porta et al. (1998) found in their study that the legal environment has a strong association with the development of capital markets across countries. The authors also conclude that the legal rules protecting the investors and the quality of the enforcement varies across countries, partly due to differences in the legal origin (La Porta et al, 1998).

Glaum et al. (2013) investigated disclosures of the standard IFRS 3 Business Combinations in 17 EU countries in 2005. They found significant differences in the compliance, which partly depends on country-level variables, such as the strength of enforcement systems, and accounting traditions. Glaum et al. (2013) therefore concluded that despite the mandatory adoption of IFRS, in 2005 there were differences in reporting practice across EU countries. Due to these findings, a question that arises is whether there still are differences between the countries when it comes to the recognition of identifiable intangible assets in a business acquisition. Therefore, the following hypothesis is outlined:

H_1: Differences exist between European countries in how companies recognize identifiable intangible assets when acquiring a business.

3.2 Country-level enforcement and IFRS

Accounting enforcement can be defined in various ways. The definition presented by Brown et al. (2014), which will be used in this study is: "*accounting enforcement is the activities undertaken by independent bodies (monitoring, reviewing, educating and sanctioning) to promote firms' compliance with accounting standards in their statutory financial statements*" (Brown et al. 2014, p.3).

At the time IFRS standards became mandatory for listed companies within EU, the member nations were mandated to assure that companies complied with the standards (Berger, 2010). However, the countries were left to decide for themselves what "appropriate" enforcement implied and how it could be achieved, since the regulation did not specify what appropriate enforcement entailed. This in turn led to that some countries made significant changes in their financial reporting enforcement, while other countries did not (Christensen et al. 2013). Within the EU, each country is since the adoption in 2005, responsible for the enforcement of compliance to the financial standards (Berger, 2010) and ESMA has the role as coordinator in order to secure that the enforcement develops mutually (CESR, 2010).

Brown et al. (2014) stated that it is challenging for research to use reliable measures to capture accounting enforcement differences across countries. In an attempt to help researchers with this challenge, the authors created an audit and enforcement index that aims to capture the enforcement of accounting standards. This index considers both the environment of auditors' performance and the differences among national enforcement bodies' activities. La Porta, et al. (1998) used the nature of the legal system and the degree of legal protection as a proxy for enforcement. Other researchers such as Bonetti et al. (2013) and Daske et al. (2008) have used the world governance indicator *rule of law*[3] as proxy for enforcement. In general, these researchers found that enforcement has an important explanatory role in capital market and financial reporting outcomes (Brown et al. 2014).

Daske et al. (2008) found that the capital market outcomes are not distributed equally across countries, due to the mandatory adoption of IFRS. They showed that weak legal systems and limited reporting incentives in countries that adopted IFRS led to unchanged market value and liquidity of firms after the implementation. Hence, they concluded that the capital market outcomes are linked to the enforcement system and the legal system of the country and also the firms' reporting incentives. Christensen et al. (2013) also analyzed market liquidity effects but only within the EU. This study found that enforcement is an important factor and that only changing to mandatory IFRS does not lead to the desired market benefits. In a study conducted by Leuz (2010), differences in regulatory approaches to financial reporting between countries were explored. The author found that there exist institutional differences across countries and emphasized the importance of enforcement in the

[3] The rule of law index captures the overall legal setting and legal enforcement within countries. For more information see section 4.2.2.

harmonization process. More so, Leuz (2010) stated that eliminating the differences in the enforcement systems of the country would likely be harder than adopting a single set of accounting standards. The author therefore concluded that true convergence in reporting practices is unlikely to occur in the near future.

Marton & Runesson (2014) investigated enforcement and judgment in financial reporting under IFRS and credit losses in banks. They found that in settings with high-judgment, stronger enforcement increases the accounting quality, while in low-judgment settings strong enforcement had the opposite effect. The authors therefore conclude that depending on the accounting standard being enforced, stronger enforcement can have different effects. Rehnberg (2012) investigated the recognition of identifiable intangible assets under IFRS 3 and discussed the risk of not fully applying the standard. The author stated that one risk is that intangible assets are not recognized separately from goodwill, due to the high level of judgment this standard involves. This is in contrast to the goal of the standard, which is to recognize identifiable intangible assets in a business combination as far as possible, since according to IFRS, goodwill does not provide any information to users and should therefore be as low as possible (Rehnberg, 2012). Relating the recognition of identifiable intangible assets in a business combination to the findings of Marton and Runesson (2014), one might reflect upon if stronger enforcement leads to higher degree of compliance with IFRS 3. A question that arises is whether companies in countries with stronger enforcement identify a higher proportion of identifiable intangible assets in a business combination compared with companies in countries with lower enforcement? Accordingly, the following hypothesis is postulated:

H_2: There is a positive association between recognizing identifiable intangible assets in a business combination and country-level enforcement.

3.3 Firm-level enforcement and IFRS

One of the problematic features of identifiable intangible assets is that the assessment when evaluating the value and the existence of the identifiable intangible asset, can differ among preparers and users. A potential reason for this can be that rules in the standard have been interpreted in different ways. In this case, the principle-based standards are not working as intended and the problematic feature appears (Rehnberg, 2012). There are several researchers who have been discussing the pros and cons with principle based standards such as Ford (2008), Leuz (2010) and Ball (2006). For example, Ford (2008), argued that, compared to rule-based standards, the principle-based standards are more flexible, more adjustable to the accounting context and thereby more fair. On the contrary, the author also claimed that principle-based standards could create uncertainty, be expensive and challenging to understand. More so, they may also be seen as permitting arbitrary conduct since the principle-based standards only provide guidance and it is therefore a risk that the motives of the management might influence the accounting (Ford, 2008). Barth, Landsman & Lang, (2008) argued that the quality of

accounting can be defined as high when the opportunity for performance management and prepares' incentives to impact the financial reporting is low, and when the information disclosed is relevant and losses are reported in time.

According to Lombardo and Pagano (2000) mechanisms of corporate governance monitoring have an important role in achieving high accounting quality. Corporate governance can be defined in many ways Gillan and Starks (1998) defines it as: systems of laws, factors and rules that control the operations in a firm. According to Glaum et al. (2013), the goal of corporate governance is to reduce the information asymmetry that exists between investors and managers. One way in which this could be done is through internal control mechanisms such as letting the board monitor the firm managers. Thus, when a sound board monitors the firm, the firm managers use the flexibility that is inherent in the accounting regulations to transmit information that is of high accounting quality (Lombardo and Pagano 2000). Denis (2001) argues that the ownership concentration of a firm is one of the primary internal corporate governance mechanisms, to influence the managers to represent the interest of the shareholders. Glaum et al. (2013) finds evidence that being audited by one of the big-4 auditing firms is an important corporate governance mechanism, since it results in higher compliance with IFRS 3 with regards to disclosures. Furthermore, Bonetti et al. (2013) presented the following other internal control mechanism of importance to reduce managerial leeway and increase the transparency and quality of financial reporting: the board members independence, the independence of the audit committee and their financial expertise.

Chih-Hsien (2009 p. Vii) investigates *"…whether corporate governance can reduce firms' information asymmetry associated with intangibles by encouraging more intangibles-related voluntary disclosures"*. The results of this study revealed that a firm's corporate governance is positively related to its voluntary disclosures of intangible assets. Relating this to the recognition of identifiable intangible assets in a business combination, one can wonder if this association is upheld. Do firms with strong firm-level enforcement, which in this study is interpreted as stronger corporate governance, recognize a higher proportion of identifiable intangible assets than companies with lower firm-level enforcement? This leads us to the third hypothesis:

H_3: There is a positive association between recognizing identifiable intangible assets in a business combination and firm-level enforcement.

3.4 The interaction between firm-level and country-level enforcement

According to Berglof & Claessens (2004), countries' enforcement mechanisms (country-level enforcement) and corporate governance (firm-level enforcement) are closely linked since they both impact how well a firm commit to its stakeholders, specially to its investors. Several studies have investigated the importance of the two levels of enforcement. For example, Pope & McLeay (2011)

studied accounting quality and found that it is affected by the incentives and the constraints that a preparer face, which in turn depends on both country-level enforcement and firm-level enforcement. Moreover, Wysocki (2011) claimed that the outcome of financial reporting depends upon both country-level enforcement and firm-level enforcement.

The interaction between firm-level enforcement and country-level enforcement is, according to Bonetti, Parbonetti & Magnan (2013), still a controversial area and studies have conflicting results. Doidge, Karolyi & Stulz, (2007) found that although country-level enforcement explains much more of the differences in corporate governance ratings of firms than firm-level enforcement does, the two enforcement levels can still *complement* each other. The authors argue that in countries with weak legal enforcement, adopting strong corporate governance mechanisms is extremely expensive and the payoff of adopting such mechanisms can be considered insignificant. This compared to countries with strong country-level enforcement where the benefits from adopting strong corporate governance mechanism are expected to be higher. Since an effective legal-system within a country enables investors to trust that it monitors managers' behavior.

Conversely, Ernstberger & Grüningen (2013) found in their study about the effects of country-level enforcement and firm-level enforcement on disclosures, a *substitutive* effect between the two levels of enforcement and that the impact of firm-level enforcement is especially high in countries with weak country-level enforcement. The authors argued that in countries with weak legal enforcement, firms react by improving disclosures to gain legitimacy and thereby increase their competitiveness in the capital market. As an explanation to this, the authors refer to Choi and Wong (2007) who stated that in countries with weak legal enforcement there would be a higher demand for firms to have stronger firm-level enforcement in order to protect investors from information withholding and expropriation. However, Bonetti et al. (2013) found both a substitutive effect and a complementary effect between firm-level and country-level enforcement when studying the quality of reporting earning. They found that firm-level enforcement works as a substitute for country-level enforcement when the latter one is weak, and as the country-level enforcement gets stronger the two will complement each other (Bonetti et al. 2013).

Undoubtedly this area is still at issue since research findings are inconsistent. It would therefore be interesting to examine how levels of enforcement interact and influence the recognition of identifiable intangible assets. Hence, the following question arises: do firm-level enforcement and country-level enforcement interact and thus complement or substitute one another and lead to an increased proportion of identifiable intangible assets recognized in a business combination? This leads to the following hypothesis:

H_4: There is an interaction between firm-level enforcement and country-level enforcement that influence the recognition of identifiable intangible assets in a business combination.

4 Methodology

This fourth chapter aims to outline how the study will be performed. Firstly, an overview of the research design and a description of the data collection will be presented. This is followed by an outline of the sample, variables and statistical testing used in the study.

4.1 Research approach

This study takes a positivist approach, where theories are developed and then tested on empirical observations (Collis & Hussey, 2014). To establish a theoretical framework, academic literature and previous research within the area of investigation was studied. Subsequently, hypotheses were developed based on the theories. The aim of the hypotheses was to enable the answering of the research question. Moreover, to test the hypotheses statistical tests were conducted to analyze if the dependent variable (change in the share of identifiable intangible assets recognized in a business combination in %) was influenced by different independent variables (such as the audit and enforcement index and rule of law). The empirical results, the analysis of the statistical tests and the theoretical framework then constituted the base for the discussion. When the discussion was conducted, conclusions were drawn and the research question was answered.

In Figure 4:1 an illustration of the research outline is presented. Firstly, the potential association between country-level enforcement and the recognition of identifiable intangible assets under IFRS 3 was investigated followed by an analysis of the potential association between firm-level enforcement and identifiable intangible assets under IFRS 3. Secondly, how firm-level and country-level enforcement interact with one another and influence the recognition of identifiable intangible assets under IFRS 3 was explored.

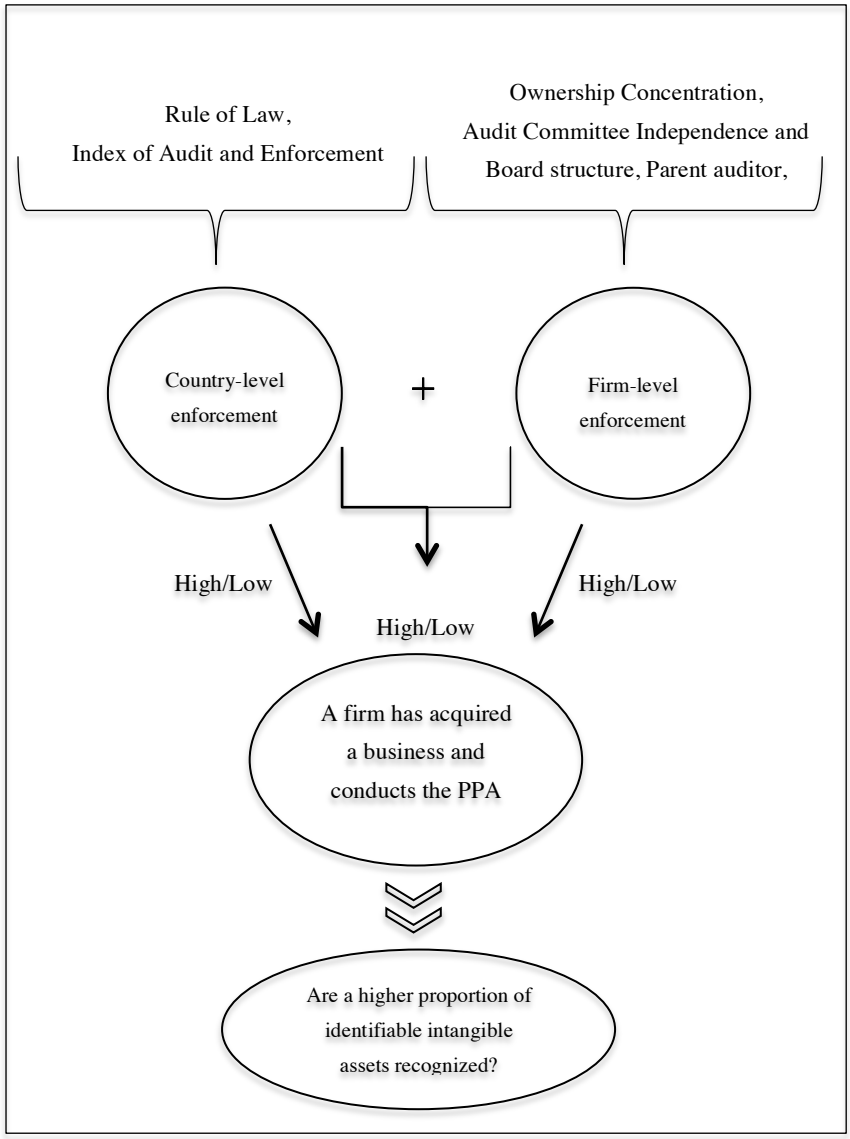

Figure 4:1 The design of the study

4.2 Variables

4.2.1 The dependent variable

The dependent variable has to capture the yearly changes in the share of identifiable intangible assets recognized in a business combination. The data collection has been conducted by using the database DataStream. DataStream only provided data on goodwill and intangible assets (including goodwill) and not on companies' business combinations nor on intangible assets (excluding goodwill). Hence, in order to identify acquisitions the assumption had to be made that a positive change of goodwill in a company's balance sheet only occurred when a business is acquired. Thus, if a company showed an increase in goodwill from one year to another, this was considered to be due to a business acquisition. For identifiable intangible assets, this assumption was also applied and an increase in the recognition

of identifiable intangible assets in a company's balance sheet was assumed to have been recognized in relation to the business acquisition.

The yearly amortization of identifiable intangible assets had to be taken into account since it affects the value of the intangible assets (excluding goodwill) negatively. DataStream was not able to provide amortization data for all the companies and years that were studied. Due to this, an average amortization was calculated on the data available. For approximately 4600 observations the average amortization was calculated by firstly dividing the amortization by intangible assets (excluding goodwill) including amortization for each company (see Formula 4:1 Calculation of the amortization share of identifiable intangible assets in %). Thereafter the percentage of share in amortization for all observations were added up and then divided by the number of observations that had available amortization data. The calculation resulted in an average of 21.83 %. Subsequently, the yearly amortization value for all companies included in the sample was calculated and then the value was reversed to intangible assets (excluding goodwill).

$$\frac{Amortization}{(Identifiable\ intangible\ assets + amortization)} = Amortization\ share\ of\ identifiable\ intangible\ assets\ in\ \%$$

Formula 4:1 Calculation of the amortization share of identifiable intangible assets in %

The following step was to calculate the yearly change in the share of recognized intangible assets (excluding goodwill) for the acquiring firms. This was achieved by using the calculation in Formula 4:2.

$$\frac{\Delta\ Identifiable\ intangible\ assets}{(\Delta\ Identifiable\ intangible\ assets + \Delta\ Goodwill)} = \Delta\ Share\ of\ identifiable\ intangible\ assets\ in\ \%$$

Formula 4:2 Calculation of the dependent variable

4.2.2 The independent variables

The notion enforcement can consist of several different factors and due to this there is no precise measure of enforcement. However, in order to try to capture enforcement in this study several proxies were used. On country-level, the index: Audit and Enforcement by Brown et al (2014) was used as well as the World Bank's index: Rule of Law. On firm-level, proxies for corporate governance such as the single biggest owner, the independence of the board members, the independence of the audit committee and the parent auditor of the company were used.

Audit and Enforcement Index (AE)

Brown et al.'s (2014) index, which has been mentioned in the previous chapter, aims to capture country level differences in the enforcement of accounting standards. The index considers both the differences among national enforcement bodies' activities and the environment of auditors' performance. The items included in the index are assumed to influence the quality of information that investors use for decision making. The audit part of the index is for example based on if the country has set up an audit oversight body, if the auditor must be licensed and the level of litigation risk for auditors. The enforcement part of the index is for example based on if the security market regulator or another body monitors the financial reporting, if enforcement actions have been taken by the monitoring body and the resource levels of security market regulators. More so, the index includes data for 22 countries within the EU, and is mainly based on data collected from surveys conducted by the International Federation of Accountants (IFAC) and the Reports on the Observance of Standards and Codes (ROSC). The respondent of the IFAC surveys were its own members and includes professional audit and accounting associations. The ROSC have been created by experts and practitioners and focus on the situation of countries in relation to IFRS adoption, the function of auditors and enforcement bodies. For more details of the index see Appendix 1.

The maximum score of the index is 56 and Brown et al. (2014) present data for the years 2002, 2005 and 2008. To be able to use the index in the current study the data presented for 2005 has been used as a proxy for the years 2006 and 2007, and the data given for 2008 has been used as a proxy for the years 2009-2013 (see Appendix 1). More so, the index does not provide data for the all the countries included in this study and the countries concerned do therefore have missing values[4]. Despite these drawbacks the index was used, since it was considered to be one of the best indexes available due to its specific focus on country-level accounting enforcement.

Rule of Law (ROL)

To capture the overall legal setting or legal enforcement within the different EU nations the World Governance Indicators (WGI) provided by the World Bank has been used. The WGI entails several dimensions of countries' legal setting and one of them is the indicator: Rule of Law. The Rule of Law indicator aim to capture "*...the perception of the extent to which agents have confidence in and abide by the rules of the society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence*." (Kaufmann et al. 2009 p.5). Furthermore, the rule of law indicator is based on surveys of firms and households and assessments from non-governmental organizations, commercial risk rating agencies and public sector organizations (see Appendix 2. for more details). The unit in which the indicator is measured follows a normal distribution with a mean of 0 and range from -2.5 to 2.5, where higher score implies a better outcome

[4] The index does not provide score for the following countries: Cyprus, Estonia, Lithuania, Luxemburg, Malta and Slovakia.

(see Appendix 2. for the score of each EU country). The indicator can, according to Kaufmann et al (2009), be useful for broad cross-country comparisons and for evaluating broad trends over time.

The rule of law index does not focus specifically on accounting enforcement. However, it has been used by previous researchers (Daske et al. 2008; Bonetti et. al. 2013) as a proxy for accounting enforcement and yielded significant results, and was therefore used in this current study.

4.2.3 Internal corporate governance proxies for firm-level enforcement

Parent Auditor (PA)

Previous research (Glaum et al. 2013; Glaum and Street 2003) has found that auditors play an important role for the enforcement of financial reporting standards. Glaum et al. (2013) found that on firm-level, being audited by a big-4 auditor increases the compliance with regards to mandatory disclosures of IFRS 3. Consequently, this study used Parent auditor (PA) as one of the proxies for firm-level enforcement. The expectations were that companies that are audited by a big-4 firm have higher compliance with IFRS 3 and therefore recognize a higher proportion of identifiable intangible assets. Data for parent auditor was downloaded on DataStream and thereafter transformed to a binary variable. The companies with one of the big four auditing firms (PwC, EY, KPMG and Deloitte) as parent auditor was coded with 1, while the companies with other parent auditor firms was coded with a 0. This was done for all companies and years included in study, since a company is able to switch parent auditor from one year to another.

Board Structure (BS)

According to Bonetti et al. (2013), board independence is an important factor in reducing managerial leeway. This is supported by Xie, Davidson and DaDalt (2013) who found in their study that greater independent outside representation in the board is associated with lower accounting manipulation. It is further argued for that independent board members are more effective as monitors of management, since they are not affiliated with the managers nor have family ties to the company (Denis, 2001). Due to this, the percentage of independent board members was used as a proxy for corporate governance in the current study and data for this variable was downloaded from DataStream.

Ownership Concentration (BIGO)

According to Coffee (2005), one of the major governance problems in EU companies is the conflict of interest between majority and minority shareholders, since majority shareholders can use their control to extract personal benefits. Renders & Gaeremynck (2012) further argue that the conflicts between minority and majority shareholders can lead to that these companies have weaker corporate governance. The reasoning behind this is that corporate governance in many EU countries is largely of voluntary nature and based on “comply and explain” principles, which enables the majority

shareholders to decide upon the quality of corporate governance. When deciding the quality of governance, the majority shareholders view the costs of installing corporate governance of high quality as a loss of their private benefits, which therefore could result in weaker corporate governance (Renders & Gaeremynck, 2012). Furthermore, concentrated ownership is according to Smith (1976) and Landry & Callimaci (2003) when a shareholder or another related party have 10% or more of a company's voting shares.

In accordance with previous research, in this study, data of the single biggest owner of a company (by voting power) was used as a proxy for corporate governance and DataStream provided this data. More so, companies with a high ownership concentration were seen as having weaker corporate governance.

Audit Committee Independence (ACI)

Previous studies have used audit committee independence to capture the strength of corporate governance (Bonetti et al., 2013). Klein (2002) argues that an independent audit committee is the most suitable active overseer of the financial accounting process. The author also found evidence that earnings manipulation increase when the number of independent audit board members decreases. Thus, in this current study audit committee independence was used as proxy for corporate governance and data for the variable was downloaded from DataStream.

4.2.4 The control and interaction variable

Firm size (LOG_TOTA) and capital structure (WINDTOE)

Rehnberg (2012) found, for Swedish listed companies, that companies of a large size and highly leveraged companies was the ones who tend to recognize a higher proportion of identifiable intangible assets separated from goodwill in a business combination. Due to these findings, both firm *size* and the *capital structure* were used as control variables in this current study. Data for the two variables were downloaded from DataStream. In the case of total assets, the data was downloaded expressed in thousands of euros.

Industry classification (Industry)

Glaum et al (2013) argues that differences could exists between industries when it comes to the recognition of assets in acquired companies, since in some industries it may be more complex and costly to identify and value the assets. Consequently, type of *industry* has been used as a control variable in this study. DataStream provided industry classification data in binary form and all companies included in the sample was categorized into one of the six industry sectors: 1.Industry 2.Utility 3.Transportation 4.Bank/Savings/Loans 5.Insurance 6.Other financials. Hence, companies classified as belonging to the industry sector were given the code 1, while companies within the

transportation industry were the code 3 and so forth. In all the regressions industry (1) was the industry sector of comparison and all the other industry sectors was compared to it. However, since industry sector was only included as a control variable, the following chapters will not explain the results obtained from this variable in detail.

Year

The recognition of identifiable intangible assets can vary between the years studied. However, it may have nothing to do with enforcement. Therefore, *Year* was used as binary variable in this study in order to control for the yearly differences.

Country

Country was used as a binary variable in the statistical tests to capture the effects that differences between countries can have upon the recognition of identifiable intangible assets. In order to do so, the observations were divided by country and each country obtained a number between 1 and 25. In the regressions for hypotheses 2-4, Austria (Country 1) was the country of comparison and all the other countries were compared to it. Since country was included as a control variable in the regressions for hypotheses 2-4, the results for this variable in the following chapter will not be analyzed in detail.

Interaction variable

New variables were created when analyzing if there is an interaction between firm-level enforcement and country-level enforcement and their potential influence on the dependent variable. The new variables were achieved by multiplying each country-level variable (AE and ROL) with each firm-level variable (BIGO, PA, BS and ACI). By multiplying two of the independent variables, for example AE and BIGO, the effect on the dependent variable (IA) of a change in AE will depend on the value of BIGO. If the results from the statistical tests show that the coefficient for the interaction variable is negative and significant, it implies that one has cancelled out the effect of the other variable and thus showing a substitutive interaction. Conversely, if the coefficient is positive and significant it indicates that the variables strengthen each other indicating a complementary interaction (Stock & Watson, 2011). When running the statistical tests for hypothesis 4, each interaction variable was used in different regressions. However, only one of these regressions was presented and analyzed in the analysis of the empirical finding, namely the regression with AEBIGO. For more information see section 5.5.

4.2.5 The variable definition table

Name	Abbreviation	Proxies	Calculation	Capture
Δ Share of identifiable intangible assets in %	IA	Identifiable intangible Assets	Δ IA /(Δ IA + Δ Goodwill)= Δ Share of IA in %	Δ Share of identifiable Intangible Asset in %
Rule of Law	ROL	Country-level enforcement	Index of overall regulatory quality	Over all legal rule and legal institutions in a country
Index of Audit and Enforcement	AE	Country- level enforcement	Index of Enforcement	Accounting enforcement
Audit Committee Independence	ACI	Firm- level enforcement	% of independent board members within the audit committee	Differences in enforcement across firms
Single Biggest Owner	BIGO	Firm- level enforcement	% Ownership of the single biggest owner (by voting power)	Differences in enforcement across firms
Big 4 Auditing	PA	Firm- level enforcement	O= Non-Big 4 Audit firm 1= Big 4 Audit firm	Differences in enforcement across firms
Board structure	BS	Firm-level enforcement	% of independent board members	Differences due to board structure
Firm Size (log natural of total assets)	LOG_TOTA	Firm size	Total assets expressed in thousands euros, log transformed.	Differences due to size of the companies
Debt-to-equity in % ratio (winsorized)	WINDTOE	Capital structure	Debt/Equity in %	Differences due to the debt structure of the companies.
Year	YEAR	Year	2005-2013	Differences due to year
Industry classification	INDUSTRY	Industry	1. Industry 2. Utility 3.Transportation 4.Bank/Savings/Loans 5. Insurance 6. Other financials	Differences across industries
Country	COUNTRY	Country	-	Differences due to country characteristics

Table 4:1 The variable definition table

4.3 Sample and data collection

The data sample of this research is based on the companies listed on the major stock markets within the EU (see appendix table 1). The reason for specifically choosing listed companies within the EU was that these companies are mandatory adopters of IFRS and are thereby also connected to the European coordination unit: European Securities and Markets Authority (ESMA). For these companies, both the financial reporting and the enforcement requirements changed at the same time and therefore constitute an appropriate sample for this research.

The sample only included companies that have recognized intangible assets, which have been identified in a business combination between the years 2006 and 2013. The reason for choosing 2006 as the starting year is to avoid the potential transitional effects from the implementation of IFRS in

2005, which could have created noise in the study. The countries Romania, Croatia, and Bulgaria are not included in the study since they became EU members after 2006 and were therefore neither mandated to follow IFRS during the entire period that is studied nor mandated to set up a "proper" enforcement mechanism.

The ESMA database[5] was used to identify the listed companies within the EU and to create a sample list. The database shows the shares that have been admitted to trading on EU regulated markets between the years 2007 and 2013[6]. There were a total of 9479 companies on the list. These companies have been active or are still active on the European security markets between the years 2007 and 2013. The list included each company's International Securities Identification Number (ISIN), which enabled the search for relevant data in DataStream. The list was then used in DataStream where it was filtered with regard to *exchange name* and companies in the largest exchange markets in each country were kept. This yielded a new list that included 6798 companies, which in turn was filtered with regard to *major security flag* and subsequently yielded a list of 6190 companies. The security flag filter showed companies with more than one equity security, and only the companies that had their major security on the selected exchange markets were kept (see Appendix 3 for exchange markets included in the study). For these companies, data on goodwill for each of the year between 2006 and 2013 was then downloaded. After excluding companies with missing values and companies with zero goodwill, the yearly change in goodwill was calculated. All companies that had a negative change in goodwill or no change in goodwill during all the years were excluded since it was assumed that these companies had not made acquisitions. This generated a list of 3298 companies, which at least once during the studied years had made business acquisitions.

Data for intangible assets was downloaded based on the list of companies that had made acquisitions during the years between 2006 and 2013. Thereafter the calculation of the change in share of the identifiable intangible assets for each company and year was carried out (see Formula 4:2 for the calculation). Some of the values showed negative figures when calculating the change in share of identifiable intangible assets. Analyzing the reason for this it was possible to see that in some cases the value for intangible assets including goodwill was missing or incorrect. Hence, when subtracting the goodwill value from the intangible assets value including goodwill, a negative figure appeared. In other cases when calculating the yearly change in identifiable intangible assets, a negative result was shown. It seemed odd that companies could have a negative change in identifiable intangible assets, but a positive change in goodwill. However, a spot check was made in the annual reports for two of the concerned companies, which confirmed a decrease in identifiable intangible assets because of sales and reclassification[7].

[5] http://mifiddatabase.esma.europa.eu/Index.aspx?sectionlinks_id=14&language=0&pageName=MiFIDLiquidSearch (2015-03-20)

[6] Data for shares emitted 2006, was not available.

[7] Decrease in identifiable intangible assets: Hemtex 2011: tenancy rights were sold. Skanska 2011: motorway concessions were sold.

Unfortunately, due to the assumptions made in this study, in all the cases mentioned above the data for goodwill and identifiable intangible assets had to be excluded, in order to avoid potential noise in the result. Thus, the final sample of the study consisted of the 2965 companies that between the years 2006 and 2013 had made 7760 business acquisitions. As a final step in the data collection process, data for the independent variables were retrieved. All the independent variables were downloaded from DataStream, except the rule of law index and the audit and enforcement index, which was gathered from the World Banks Governance Indicators Database and from Brown et al.'s (2014) article. In all cases where the data was monetary, it was converted and expressed in thousands of Euros[8]. For an overview of the DataStream codes used in this study see Appendix 3:1.

The sample selection process	
Companies with shares emitted on EU Regulated Markets between 2007-2013	9479
Companies not listed on the largest exchange markets in each EU nation	-2681
Companies that do not have their major security on the largest exchange markets in each EU nation	-608
Companies that have not made business acquisitions between 2006-2013	-2892
Companies with missing or incorrect data	-333
Firms in the final sample	2965

Table 4:2 Sample selection process

4.4 Statistical testing

To test the hypotheses of this research, statistical tests within the area of multivariate analysis was used. This refers to statistical tests that analyze the simultaneous relationship between three or more variables (Blumberg, Cooper & Schindler, 2011), which is the main focus of this study. Three statistical tests within multivariate analysis were applied, namely the ordinary least square-regression, the Hausman specification test and the fixed-effect regression. When analyzing the results from the different tests, the significance level of 5% was chosen. This level is, according to Collis & Hussey (2014), usually considered an acceptable level in most business research. Additionally, all the statistical tests were conducted for both identifiable intangible assets with and without amortization included. However, since there were no significant differences between the results, the regressions with identifiable intangible assets including amortization were the only ones presented in the empirical findings.

Correlation coefficient tests

Before running the statistical test, it was important to check for multicollinearity between the variables, since multicollinearity makes it difficult to identify the influence of the independent

[8] This includes: data for: goodwill, identifiable intangible assets and total assets.

variables on the dependent variable (Collis & Hussey, 2014). In order do so; both the Spearman's rho correlation coefficient and the Pearson correlation coefficient tests were conducted. The reasoning to conduct both of the tests was that the data for some of the variables was not perfectly normally distributed. In the Pearson correlation coefficient test one of the assumptions is that the data is normally distributed, while in the Spearman's rho test this is not required (Collis & Hussey (2014). However, in both the tests the correlations results differed only to a minor extent and due to this, the test results from the Spearman's rho will only be presented and analyzed in the following chapter.

When analyzing a correlation test, the size of correlation coefficient signals the strength of the association between two variables. A correlation of 1/-1 indicates perfect positive/negative linear correlation. While, a correlation coefficient between +/-0 and +/-0.39 is considered to be a low positive/negative correlation. A correlation between +/-0.40 and +/-0.69 is a medium positive/negative correlation and above or below +/-0.69 is a strong positive/negative correlation. A strong correlation is problematic and could create noise in the regression results (Collis & Hussey, 2014).

Multiple ordinary least square regression

The multiple ordinary least square (OLS) regression (from now on only referred to as OLS-regression) is used in order to analyze whether there exists a significant relationship between the dependent and the independent variables. More specifically, the regression is used when analyzing the variation in the dependent variable and to what degree it can be explained by the independent variables (Anderson Sweneey & Williams, 2009). In this study, the OLS-regression was used to analyze if the variables for county-level enforcement and firm-level enforcement have had an effect on the share of recognized identifiable intangible assets.

The Hausman specification test and fixed-effect regression

The Hausman test was used when deciding whether to apply the random-effect model or the fixed-effect regression model (Wooldridge, 2014). The difference between these two models is that the fixed-effect model can be used to analyze the influence of independent variables that vary over time and excludes time-invariant variables. Consequently, only the net effects from time variant variables are analyzed in the regression (Allison, 2009). The random-effects model, on the other hand, includes time-invariant variables and allows these to play an explanatory role. The Hausman-test results (see Appendix 4) indicated that with the variables used in this study, the fixed-effect model was the most appropriate model to use. Furthermore in this study fixed-effect regressions was used to investigate differences in firm-level enforcement and its association to the recognition of identifiable intangible assets. One can argue that this type of test was appropriate to use additionally to the OLS-regressions, since one specifically can analyze differences both between and within the firms without the interference of time invariant factors.

Control for heteroscedasticity

One assumption when conducting OLS-regressions and fixed-effect regressions is that the standard error terms have a constant variance (homoscedasticity). If this is not the case heteroscedasticity is present, which can result in that the regression shows incorrect regression coefficients and t-statistic results. However, one way to overcome this problem is by making the standard errors robust, through clustering by firm (Stock & Watson, 2012). Thus, to avoid the problems with heteroscedasticity, all the OLS regressions and fixed-effect regressions were clustered by firm.

4.5 Limitations of the study

There are several limitations to this study. Firstly, since DataStream did not provide data for business combinations, the assumption had to be made that an increase in a company's goodwill is due to an acquisition. This implies that not all acquisitions may have been included in the study. For example, there might have been companies who acquired another company but did not identify any goodwill. In this study it would therefore not be classified as an acquisition and thus not included in the sample. Moreover, the yearly change in goodwill can be due to several acquisitions, but in this study it was only seen as one acquisition. This can however be considered as a minor drawback, since the main interest of this study is to analyze the recognition of identifiable intangible assets by acquiring companies and not the number of acquisitions. A second limitation concerns the collection of the sample. In the ESMA database it was only possible to retrieve data for companies listed on the EU stock exchanges between the years 2007 and 2013. Hence, an assumption had to be made that the companies that were listed in 2007, were also the companies that were listed in 2006. This might have resulted in that some companies that were listed in 2006 and not 2007 were excluded from the study.

A third limitation regards the number of companies included in the study for each country. The countries Estonia, Latvia, Lithuania, Malta and Slovakia have less than ten companies that have made acquisitions during the studied years. Therefore, they may not be representative for all the listed firms within these countries. Despite this, the companies from these countries were kept in the study to not reduce the number of observations. A fourth limitation is that due to missing values in the independent variables for firm-level enforcement, some countries and a substantial amount of observations were dropped from the regression for hypothesis 3 and hypothesis 4. This may have influenced the results negatively. However, since the number of observation is approximately 1800, the sample is still large enough to be able to use for generalizations[9] (Collis & Hussey, 2014). A fifth limitation was that DataStream did not provide data for amortization of identifiable intangible assets for all companies included in the study. This resulted in that an amortization average had to be calculated, which might have led to an incorrect amortization rate for some companies. However, to test whether the average

[9] To be able to make generalizations a population >10 000 requires a sample size of 370.

amortization rate had an impact on the results, all the empirical tests were carried out both with and without the average amortization reversed data and no significant differences appeared. A final limitation in this study was that the Audit and Enforcement index did not present data for all 25 countries and for all the years included in this study[10], this is obviously a drawback and may have had an effect on the results.

4.6 Summary of statistical tests and models for each hypothesis

Table 4:2 presents a summary of the statistical tests that was used to examine the hypothesis. More so, in Figure 4:3 the equations for each of the regressions is outlined.

	OLS-regressions	Fixed-effect regression
Hypothesis 1	x	
Hypothesis 2	x	
Hypothesis 3	x	x
Hypothesis 4	x	

Figure 4:2 Statistical tests for each hypothesis

H_1: $IA_{it} = \beta_0 + \beta_1 \text{LOG\_TOTA}_{it} + \beta_2 \text{WINDTOE}_{it} + \sum_{n=1}^{25} \eta\, Country_{it} + \sum_{n=1}^{5} \eta INDUSTRY_{it} + \sum_{n=1}^{8} \eta YEAR_i + \varepsilon$

H_2: $IA_{it} = \beta_0 + \beta_1 \text{AE}_{it} + \beta_2 \text{ROL}_{it} + \beta_3 \text{LOG\_TOTA}_{it} + \beta_4 \text{WINDTOE}_{it} + \sum_{n=1}^{25} \eta\, Country_{it} + \sum_{n=1}^{5} \eta INDUSTRY_{it} + \sum_{n=1}^{8} \eta YEAR_i + \varepsilon$

H_3: $IA_{it} = \beta_0 + \beta_1 \text{BIGO}_{it} + \beta_2 \text{BS}_{it} + \beta_3 \text{ACI}_{it} + \beta_4 \text{PA}_{it} + \beta_5 \text{LOG}_{\text{TOTA}_{it}} + \beta_6 \text{WINDTOE}_{it} + \sum_{n=1}^{25} \eta\, Country_{it} + \sum_{n=1}^{5} \eta INDUSTRY_{it} + \sum_{n=1}^{8} \eta YEAR_i + \varepsilon$

H_4: $IA_{it} = \beta_0 + \beta_1 \text{AE}_{it} + \beta_2 \text{ROL}_{it} + \beta_3 \text{BIGO}_{it} + \beta_4 \text{BS}_{it} + \beta_5 \text{ACI}_{it} + \beta_6 \text{PA}_{it} + \beta_7 \text{AEBIGO}_{it} + \beta_8 \text{LOG\_TOTA}_{it} + \beta_9 \text{WINDTOE}_{it} + \sum_{n=1}^{25} \eta\, Country_{it} + \sum_{n=1}^{5} \eta INDUSTRY_{it} + \sum_{n=1}^{8} \eta YEAR_i + \varepsilon$

Figure 4:3 Equations for the statistical analysis

IA= Δ share of identifiable intangible assets in %

β = coefficient
AE = audit and enforcement index
ROL = rule of law index
BIGO = single biggest owner
BS = board structure
ACI = audit committee independence
PA = parent auditor
AEBIGO = interaction variable of AE and BIGO
LOG_TOTA = natural logarithm of total assets
WINDTOE = Debt-to-equity (winsorized)
Industry = binary variable industry sector
Country = binary variable country
Year = binary variable year
i = Company
t = year
ε = error term

[10] The index does only provide data for the years 2002, 2005 and 2008. Further it not provide score for the following countries: Cyprus, Estonia, Lithuania, Luxemburg, Malta and Slovakia and.

5 Presentation and Analysis of the Empirical Findings

This chapter aims to present and analyze the results from the statistical tests conducted. Firstly, some descriptive statistics will be presented and analyzed. This is followed by the analysis of results from the tests conducted in order to answer the hypotheses of the study.

5.1 Descriptive statistics

Country	Observations	Percent
Austria	131	1.69%
Belgium	203	2.62%
Cyprus	43	0.55%
Czech Rep.	33	0.43%
Denmark	257	3.31%
Estonia	16	0.21%
Finland	253	3.26%
France	1079	13.90%
Germany	954	12.29%
Greece	147	1.89%
Hungary	34	0.44%
Ireland	31	0.40%
Italy	488	6.29%
Latvia	6	0.08%
Lithuania	16	0.21%
Luxembourg	34	0.44%
Malta	17	0.22%
Netherlands	278	3.58%
Poland	714	9.20%
Portugal	79	1.02%
Slovakia	5	0.06%
Slovenia	34	0.44%
Spain	213	2.74%
Sweden	704	9.07%
UK	1991	25.66%
Total	7760	100.00%

Table 5:1 Observations of dependent variable distributed by country

Table 5:1 present an overview of how the dependent variable is distributed between the countries. Some of the countries, such as Estonia, Latvia, Malta and Slovakia, represent a small part of the sample. The UK, Germany and France stand for approximately 50 % of the total number of observations. One explanation for these differences could be that the UK, Germany and France have more listed firms and therefore more acquisitions were captured in these countries.

Variable	IA	AE	ROL	BS	BIGO	ACI	AEBIGO	TOTA	LOG_TOTA	DTOE (%)	WINDTOE (%)
Mean	42.244	41.657	1.412	54.997	22.926	82.082	1002.036	1.66E+07	13.07643	138.0282	71.71717
Median	38.156	44.000	1.640	54.550	15.000	100.000	702.000	362044.000	12.800	30.240	30.240
Sd.	31.92	10.158	0.499	21.307	19.073	29.282	821.848	1.20E+08	2.410	7140.275	134.717
Min	0.000	16.000	0.350	0.000	0.060	0.000	3.240	24.000	3.178	-15048.170	0.000
Max	100.000	54.000	2.000	100.000	97.410	100.000	5022	3.26E+09	21.905	1024167	924.230

Table 5:2 Descriptive statistics of the variables

Table 5:2 present a summary of the descriptive statistics for the variables included in the study. The table shows the mean, median, standard deviation, number of observations (N), minimum and maximum for each variable. For the variables IA, AE, ROL, BS, BIGO and ACI one can see that there are only relatively minor differences between the mean and the median. However, the mean and median for DTOE differ to a relatively great extent, which could indicate that there might be outliers present in the data. This was confirmed when looking at the five highest and five lowest values for DTOE (see Appendix 5). To overcome the negative effect that the outliers might have on the results, DTOE was winsorized with one percent in both tails before applied in the coming statistical tests. By winsorizing the data (WINDTOE), the abnormal values within the sample are replaced by the next coming value inwards. Hence, the tails are pulled in and the mean becomes less influenced by abnormal values (Wilcox, 2012). AEBIGO also seems to have a notable difference between the mean and median, however since it is an interaction variable of AE and BIGO, it was not winsorized.

Table 5:2 also present TOTA[11], which is used as a proxy for company *size*. The variable has been log transformed to facilitate the comparability between the variables. By log transforming TOTA to LOG_TOTA, the data values in the higher end of the sample are "pressed together" which makes the sample more normally distributed (see Appendix 5 for histograms).

Variable	IA	AE	ROL	BIGO	BS	PA	ACI	LOG_TOTA	WINDTOE	AEBIGO
IA	1									
AE	-0.0573*	1								
ROL	-0.0806*	0.1322*	1							
BIGO	0.0609*	-0.2769*	-0.2414*	1						
BS	-0.008	-0.0228	0.3369*	-0.3003*	1					
PA	0.0139	0.0867*	0.1326*	-0.1090*	0.1041*	1				
ACI	-0.0489*	0.4716*	0.3835*	-0.3767*	0.4382*	0.1575*	1			
LOG_TOTA	0.0651*	-0.2717*	-0.2128*	0.0059	0.0850*	0.0396	-0.1721*	1		
WINDTOE	-0.0591*	-0.0970*	-0.1131*	-0.009	-0.0299	-0.0377	-0.0583*	0.3917*	1	
AEBIGO	0.0513*	-0.0506*	-0.2582*	0.9639*	-0.3360*	-0.0951*	-0.3138*	-0.0404	-0.0301	1

Table 5:3, Spearman correlation matrix, *significance level 0.05

Correlation coefficient tests were conducted to establish if there is a high correlation[12] between any of the variables included in the study. Table 5:3 present a matrix with the results from the Spearman

[11] Total assets are expressed in thousands of euros.
[12] Low correlation: +/- 0 and +/- 0.39. Medium correlation: +/- 0.40 and +/- 0.69 High correlation: +/- 0.7 and +/-1.0

correlation test. When looking at the correlation matrix, one firstly notices that AE, ROL, BIG, ACI show a low significant negative association with IA, while BIGO show a low positive significant relation. This may be seen as a first indication of what the associations between the independent and the dependent variable will point towards in the coming statistical tests. One can also see that some of the other variables correlate to some extent. For example ACI and AE, ACI and BS have a medium positive correlation while AEBIGO and BIGO have a strong positive correlation. The reason for the relatively high correlation between BIGO and AEBIGO is that the latter one is a combination of AE and BIGO. The correlation between ACI and AE and ACI and BS is not considered problematic, since the association is below 0.7 and will therefore, according to Collis & Hussey (2009), not create noise in the results. Accordingly, the result from the Spearman Correlation test implies that no variable needs to be dropped in the future statistical tests.

5.2 Differences between countries

H_1: There exist differences between European countries in how companies recognize identifiable intangible assets when acquiring a business.

To test the first hypothesis, a total of 25 OLS-regressions clustered by firms were conducted. In the regressions, *country* was a binary variable and all countries were compared to a country of comparison. For each of the 25 regressions the country of comparison was changed so that all countries were compared with one and other. This resulted in a total of 600 combinations of countries that was compared and all of the combinations have been plotted in a matrix (see Appendix 7). The results from each regression were then analyzed and each combination of countries that yielded a significant result was given a cross in the matrix. For example, when the UK was the country of comparison, the result from the regression (see Appendix 6), showed that nine countries had a significant difference in the share of recognized identifiable intangible assets; those countries were Austria, Cyprus, Denmark, Germany, Hungary, Italy, Poland, Slovenia and Spain. Consequently, these countries were marked by a cross to show that they differed from the UK. In the matrix only Estonia and Latvia did not show any significant differences with the rest of the countries. However, these two countries only include a small amount of companies and this should be taken into account when analyzing the results. Additionally, in all the regressions the control variable firm *size* showed a significant result, while the control variable *capital structure* showed no significant result. This indicates that *size* of the company influence the recognition of identifiable intangible assets whereas the *capital structure* does not. The control variables *industry* and *year* also showed significant results, which point towards that for some of the years/ industries, there is a difference in the recognition of identifiable intangible assets.

To sum up, the tests conducted to investigate hypothesis 1 all points toward that there exist differences between countries when it comes to the recognition of identifiable intangible assets. The results from the regressions (presented in the matrix) indicate that the share of recognized identifiable intangible assets differ between most countries. Therefore, hypothesis 1 is supported, differences between EU countries do exist when it comes to the recognition of identifiable intangibles in a business combination.

5.3 Country-level enforcement and identifiable intangible assets

H_2: There is a positive association between recognizing identifiable intangible assets in a business combination and country-level enforcement.

$$IA_{it} = \beta_0 + \beta_1 AE_{it} + \beta_2 ROL_{it} + \beta_3 LOG\_TOTA_{it} + \beta_4 WINDTOE_{it} + \sum_{n=1}^{25} \eta\, Country_{it} + \sum_{n=1}^{5} \eta INDUSTRY_{it} + \sum_{n=1}^{8} \eta YEAR_i + \varepsilon$$

	Hypothesis 2 OLS-regression		***Hypothesis 2*** OLS-regression IA forward 1 year	
	β	t	β	t
AE	0.520***	3.830	0.280**	1.990
ROL	-8.411	-1.460	0.540	0.090
LOG_TOTA	0.577**	2.130	0.390	1.540
WINDTOE	0.000	0.090	0.003	0.600
I.COUNTRY	Yes		Yes	
I.INDUSTRY	Yes		Yes	
I.YEAR	Yes		Yes	
Constant	44.130	3.900***	34.949***	3.060
N	7499		7074	
R^2	0.059		0.051	

p < 0.1* p < 0.05, ** p < 0.01, ***
Both regressions are clustered by firm

Table 5:4 Regression results, country-level enforcement

An OLS regression clustered by firm were run in order to investigate the effect of country-level enforcement on the recognition of identifiable intangible assets. In the OLS-regression the result presented in Table 5:4 (see OLS-regression), show that the audit and enforcement index (AE) had a positive significant association at 1% level with the dependent variable. Due to this, the results points towards that AE has an influence on the recognition of identifiable intangible assets. As one can interpret from the audit and enforcement index's coefficient, an increase of one score in AE would imply a rise of 0.52% in the dependent variable.

The rule of law index (ROL) showed to have no impact on the recognition of identifiable intangible assets. Furthermore, the results for the control variables are consistent with the OLS-regressions carried out to test hypothesis 1. LOG_TOTA showed a significant result, while WINDTOE did not. The results for the other control variables: *industry* and *year* were also consistent with the regressions

conducted for hypothesis 1 and showed significant results for some of the years/industries. More so, as can be seen in Table 5:4 the OLS-regression's r-square value was 0.059 indicating that the model explains 5.9% of the variance in IA. More so, one could also notice from results (see Appendix 8) that seven countries are missing, which is due to missing values in the independent variables[13].

A potential influence on the result might be that the enforcement changes that several EU countries made concurrently with the implementation of IFRS took time to implement and to influence changes in the share of identifiable intangible assets to be recognized. In order to control for this potential time lag, the OLS-regression clustered by firm was conducted once more with the share of identifiable intangible assets forwarded one year. The result from this regression (see Table 5:4 OLS-regression IA forward one year) show that AE still is significantly associated (although at a 5% level) with the dependent variable and that ROL continues to be insignificant.

To sum up the findings from the statistical tests conducted, there seems to be support for hypothesis 2 when considering the impact of audit and enforcement index presented in Table 5:4 (see OLS-regression).

[13] Cyprus, Luxembourg, Slovakia, Estonia, Latvia, Malta, Lithuania

5.4 Firm-level enforcement and identifiable intangible assets

H_3: There is a positive association between recognizing identifiable intangible assets in a business combination and firm-level enforcement.

$$IA_{it} = \beta_0 + \beta_1 \text{BIGO}_{it} + \beta_2 \text{BS}_{it} + \beta_3 \text{ACI}_{it} + \beta_4 \text{PA}_{it} + \beta_5 \text{LOG\_TOTA}_{it} + \beta_6 \text{WINDTOE}_{it} + \sum_{n=1}^{25} \eta\, Country_{it} + + \sum_{n=1}^{5} \eta INDUSTRY_{it} + \sum_{n=1}^{8} \eta YEAR_t + \varepsilon$$

	Hypothesis 3 OLS-regression		***Hypothesis 3*** FE- regression		***Hypothesis 3*** FE-regression, Companies with one acquisition omitted	
	β	t	β	t	β	t
PA	2.797	0.640	Omitted		Omitted	
BIGO	0.018	0.320	-0.041	-0.230	-0.041	-0.230
BS	0.010	0.170	0.098	1.300	0.098	1.290
ACI	-0.011	-0.200	-0.092	-1.010	-0.092	-1.010
LOG_TOTA	0.516	0.720	1.626	0.590	1.626	0.590
WINDTOE	0.008	1.120	0.015	1.290	0.015	1.290
I.COUNTRY	Yes		No		No	
I.INDUSTRY	Yes		No		No	
I.YEAR	Yes		Yes		Yes	
Constant	33.083***	2.710	22.858	0.530	22.600	0.520
N	1857		1857		1661	
R^2	0.076					
R^2 within			0.052		0.052	
R^2 between			0.013		0.008	
R^2 overall			0.021		0.008	

* p < 0.1, ** p < 0.05, *** p < 0.01
The regressions are clustered by firm

Table 5:5 Regression results, firm-level enforcement

Several regressions were conducted in order to examine if there is support for the third hypothesis. In all the regression results (see Table 5:5) one can first notice that the numbers of observations dropped notably compared to the regressions conducted for the study of hypothesis 1 and 2. This is due to missing values in the independent variables.

The first regression run was an OLS-regression. It was clustered by firm and included the variables BIGO, PA, ACI and BS as proxies for firm-level enforcement. As can be seen in Table 5:5 (OLS-regression) the model explains (r-square) 7,6% of the variation in IA. However, neither of the firm-level enforcement proxies seemed to have a significant association with the dependent variable. The second regression conducted was a fixed-effect regression, which enables the control of time-invariant variables that could have an effect on the dependent variable and thus exclude their potential influence (See Table 5.5 for the FE-regression[14]). In the fixed-effect regression the variable PA was omitted due to collinearity. The reason for this was that PA does not seem to have varied over time. This indicates that in the sample none of the companies changed from a big-4 auditing firm to another auditing firm. Furthermore, the control variables *industry* and *country* were omitted in the regression since they are

[14] Only the FE-regression clustered by firm is presented, the FE-regression without cluster not presented.

time invariant. When interpreting the results (see Table 5:5) from the fixed-effect regression one can see that neither of the firm-level enforcement proxies yielded a significant result. More so, the regression model (the r-square within) explain approximately 5 % of the variation in the recognition of identifiable intangible assets within firms, while the model explain approximately 1.3% of the variation between firms (r-square between).

In a fixed-effect regression where the aim is to analyze variation within and between firms, there is a risk that companies, which only have made one acquisition and therefore do not have a variation, might have had an effect upon the results. In order to control for this, the single acquisition companies were dropped from the sample and a new regression was conducted. The results showed only a minor difference from the previous regressions, thus indicating that single acquisition companies did not seem to have a significant impact on the results. In neither of the statistical tests for hypothesis 3 did LOG_TOTA or WINDTOE show significant results. This implies that they do not seem to have an influence on the recognition of identifiable intangible assets.

From tests conducted to investigate hypothesis 3, one can conclude that there does not seem to be a significant association between the proxies for firm-level enforcement and the share of recognized identifiable intangible assets. Hence, the results are not in favor of hypothesis 3 and it is therefore not supported.

5.5 The interaction between the two levels of enforcement

H_4: There is an interaction between firm-level enforcement and country-level enforcement that influence the recognition of identifiable *intangible assets in a business combination*.

$$IA_{it} = \beta_0 + \beta_1 AE_{it} + \beta_2 ROL_{it} + \beta_3 BIGO_{it} + \beta_4 BS_{it} + \beta_5 ACI_{it} + \beta_6 PA_{it} + \beta_7 AEBIGO_{it} + \beta_8 LOG\_TOTA_{it} + \beta_9 WINDTOE_{it} + \sum_{n=1}^{25} \eta\, Country_{it} + \sum_{n=1}^{5} \eta INDUSTRY_{it} + \sum_{n=1}^{8} \eta YEAR_i + \varepsilon$$

	Hypothesis 4 OLS-regression	
	β	t
AE	0.588*	1.740
ROL	-25.964	-1.350
PA	2.613	0.600
BIGO	0.229	0.800
BS	0.015	0.240
ACI	-0.004	-0.070
AEBIGO	-0.004	-0.720
LOG_TOTA	0.498	0.690
WINDTOE	0.008	1.130
I.COUNTRY	Yes	
I.INDUSTRY	Yes	
I.YEAR	Yes	
Constant	46.029	1.240
N	1854	
R^2	0.078	

* p < 0.1, ** p < 0.05, *** p < 0.01

The regression is clustered by firm

Table 5:6 OLS-regression with interaction variable

A total of eight regressions were carried out in order to analyze if there is an interaction between firm-level enforcement and country-level enforcement and their potential influence on the dependent variable. In each of the regressions one interaction variable was included together with the all the independent variables and control variables. The results from one of the eight OLS-regressions, presented in Table 5:6, show non-significant result for the interaction variables[15]. Furthermore, aside from the control variables: *year*, *industry* and *country*, the variables AE, ROL, BIGO, PA, BS, ACI, WINDTOE and LOG_TOTA, also showed a non-significant result. The r-square of the regression shows that the model can explain 7,8% of the variation in IA. One can also notice that in all the regressions run for hypothesis 4, several observations were dropped due to missing values in the

[15] The reason for only presenting one regression, is that none of them yielded a significant result, thus presenting one can be seen as representative for the results of the other seven regressions.

independent variables. For some of the countries all the observations were dropped which resulted in that these countries are not present in the statistical results[16].

In summary, the tests conducted for examining hypothesis 4 all point towards that there is no significant interaction between firm-level enforcement and country-level enforcement when it comes to the recognition of identifiable intangible assets. Thus, the empirical results do not show support for hypothesis 4.

5.6 Summary of the empirical findings

H_1: Differences exist between European countries in how companies recognize identifiable intangible assets when acquiring a business .	Supported
H_2: There is a positive association between recognizing identifiable intangible assets in a business combination and country-level enforcement.	Supported
H_3: There is a positive association between recognizing identifiable intangible assets in a business combination and firm-level enforcement.	Not supported
H_4: There is an interaction between firm-level enforcement and country-level enforcement that influence the recognition of identifiable intangible assets in a business combination. .	Not supported

Figure 5:1 Summary of the empirical findings

[16] Cyprus, Luxembourg, Slovakia, Estonia, Latvia, Malta, Lithuania

6 Discussion

In this section the empirical results, the institutional background and the theoretical framework are tied together in a discussion.

6.1 Differences in reporting practices across EU countries

To be able to answer the research question and fulfill the purpose of this thesis, the first step was to conduct statistical tests that investigated differences in how identifiable intangible assets are recognized in a business combination between EU countries. Hence, hypothesis 1 was tested and the results from the 25 regressions conducted showed that differences do exist between several of the EU countries. Furthermore, looking at the control variables for all the 25 regressions, firm *size* showed a significant result, indicating that the size of a company has an influence on the recognition of identifiable intangible assets in a business combination. This is in accordance with Rehnberg's (2012) findings. However, the *capital structure* of a company did not seem to have an influence on the recognition of identifiable intangible assets. This is contrary to Rehnberg's (2012) findings that highly leveraged companies recognize more identifiable intangible assets. More so, the results from the *industry* variable show that that there is a difference between industries in how identifiable intangible assets are recognized. This indicates that industry belonging can have an influence on the recognition of identifiable intangible assets in a business combination. This finding could therefore be seen as in accordance with Glaum et al.'s (2013) discussion; that in some industries it may be more complex or costly to identify assets, and thus lead to differences between industries. Finally, as expected the control variable for *year* also showed that differences in the recognition of identifiable intangible assets exist between the years. The empirical findings for the control variables *year* and *industry* (and *country*), are consistent in all the regressions conducted to test the other three hypotheses. Due to this they will not be mentioned further in the following discussion.

The results from the empirical tests of hypothesis 1 are in accordance with findings from previous research that have investigated differences in reporting practices across EU countries. Although Glaum et al. (2013) examined disclosures of IFRS 3, this current study can be seen as confirming the findings Glaum et al. (2013) that the reporting practice of a business combination still differs between countries when IFRS 3 is applicable.

A potential explanation for these reporting differences between EU countries could be, as Kvaal & Nobes (2010) found, that companies continue with old reporting practices where the standards allow them to do so. Allocating the purchase price in business combinations can be seen as a situation where this is possible. The regulatory framework IFRS 3 is principle based (Rehnberg, 2012) and considered a complex among users (Beattie, Fearnley & Hines, 2008). It might therefore seem reasonable to approach the purchase price allocation in a business combination as it has previously been done in the past. In this scenario the old accounting practices continue.

6.2 Country-level enforcement and identifiable intangible assets

When testing if country-level enforcement has an impact on the recognition of identifiable intangible assets in a business combination (hypothesis 2), the results from the statistical tests showed that companies in countries with stronger accounting enforcement recognize a higher amount of identifiable intangible assets. However, the overall legal institutions and legal rules of the countries did however not appear to have an impact. This might be explained by that the index rule of law is designed to capture the overall legal institutions of countries and legal rules and not specifically related to country-level accounting enforcement. Nevertheless, Bonetti et al. (2013) found significant results when they used this index as a proxy for country-level accounting enforcement. One explanation for the inconsistent result could be that there is a difference of focus between the two studies and the different dependent variables might not be affected by the same factors.

The control variable for firm *size* showed a significant result, indicating that firm size has an influence on the recognition of identifiable intangible assets in business combinations. This is in accordance with previous research. *Capital structure* did not show to have an effect in the recognition of identifiable intangible assets, which is contrary to the findings in Rehnberg's (2012) study. When controlling for potential time lag that might have occurred when IFRS was adopted by the EU, the result for the rule of law index also showed no significance. This might be seen as strengthening the discussion that the index is not designed to specifically capture accounting enforcement per se. The accounting enforcement index did however show a significant result, which is in accordance with the expectations. The expectation was that the association would remain fairly the same as the regression without time lag, since the AE index was adjusted to be suitable for this study[17].

Even though the rule of law index did not yield a significant result, the audit and enforcement index did. The previous one focus on countries overall legal setting, while the latter one focused specifically on accounting enforcement. Due to this one can argue that the audit and enforcement index is more focused on accounting and therefore might capture aspects that the rule of law index is not able to capture. The conclusion is therefore that enforcement has an affect on the recognition of identifiable intangible assets and accordingly, hypothesis 2 is supported. The results in this study can therefore be seen as in accordance with previous studies, such as Daske et al. (2008) and Christensen et al. (2013) who found that enforcement is of importance when examining its association to IFRS. More so, one can also argue that the empirical results for hypothesis 2 are in line with Marton & Runesson's (2014) findings that stronger enforcement in high judgment settings leads to improved accounting quality. The reasoning behind this is that allocating the purchase price in a business combination can be considered a high judgment setting. More so, the aim of IFRS 3 is to recognize identifiable intangible assets as far possible, and if it is applied inconsistently the faithful representation of the business

[17] The scores for 2005 have been used as proxies for 2006 and 2007 and the scores for 2008 has been used as proxies for the years between 2009 and 2013.

acquisition will be undermined and result in financial accounting of low quality (Rehnberg, 2012). The results from this study can therefore be interpreted as that stronger enforcement increases the recognition of identifiable intangible assets and the faithful representation of the business acquisition, which results in higher accounting quality of the financial reporting. Finally, the findings can also be seen as confirming ESMA's review of IFRS 3 and their statement that enforcement differences might explain differences in the recognition of identifiable intangible assets.

6.3 Firm-level enforcement and identifiable intangible assets

Both OLS-regressions and fixed-effect regressions were carried out to test if there is a positive association between recognizing identifiable intangible assets in a business combination and firm-level enforcement (hypothesis 3). Contrary to the expectations, the empirical results from all the tests showed no significant association between firm-level enforcement and the share of recognized identifiable intangible assets. The expectations were that higher firm-level enforcement would lead to a higher amount of identifiable intangible assets recognized and thus higher accounting quality. These expectations were based on previous research that stressed the importance of firm-level enforcement in achieving high accounting quality (Lombardo & Pagano, 2001; Bonetti et al. 2013). Furthermore, the statistical tests indicated that neither firm *size* nor *capital structure* have an influence on the recognition of identifiable intangible assets. This is inconsistent with Rehnberg's (2012) findings. Consequently, there is no support for hypothesis 3 since the results from the empirical findings do not show an association between any of the firm-level enforcement variables.

One reason for the non-significant results in this study could be that the chosen firm-level enforcement proxies' do not capture corporate governance as intended. However, this seems unlikely since all the firm-level enforcement proxies were selected based on previous research findings. Another explanation could be that firm-level enforcement simply does not have an influence on the recognition of identifiable intangible assets. However this seems also unlikely, since one could imagine that companies with strong corporate governance mechanism most likely would scrutinize the purchase price allocation process due to the large amount of capital involved. The strong corporate governance would in such a situation make the preparers comply with the IFRS regulations since they are monitored and this would result in that a higher proportion of identifiable intangible assets are recognized. Finally, as mentioned before the divergent results could be that previous research have had a different focus area and may therefore be influenced by different factors.

6.4 Enforcement interaction and identifiable intangible assets

One might reason that it is pointless to test hypothesis 4 since firm-level enforcement did not appear to have an influence on the recognition of identifiable intangible assets. However, there is a possibility that the interaction between the country-level and firm-level enforcement variables might result in that country-level enforcement either complemented or substituted the firm-level enforcement and thereby influence the recognition of identifiable intangible assets significantly. The expectation in this study was that the levels of enforcement would interact with each other by either having a complementing or substituting effect. The reason for this expectation was the findings presented in previous research. Although the results are divergent, Ernstberger & Grüning (2013) and Bonetti et al. (2013) found that there is an interaction between firm-level and country-level enforcement, which results in higher levels of disclosures and improved accounting quality.

When exploring the interaction between country-level enforcement and firm-level enforcement, the empirical findings showed that none of the interaction variables had a significant influence on the recognition of identifiable intangible assets. More so, neither of the accounting enforcement variables nor *capital structure* or firm *size* seemed to have an influence on the recognition of identifiable intangible assets. Consequently, there was no support for the hypothesis since country-level enforcement did not influence the firm-level enforcement so that a higher proportion of identifiable intangible assets were recognized. As mentioned in section 6.3, one explanation to the non-significant results could be that the proxies for firm-level enforcement do not capture corporate governance as intended and therefore are not influenced by the country-level enforcement. However, as previously mentioned this seems unlikely since all the firm-level enforcement proxies were selected based on previous research findings. Another explanation could be that the recognition of identifiable intangible assets within a firm is simply not influenced by the interaction of firm-level and country-level enforcement.

7 Concluding Remarks

This final chapter aims to present the conclusions drawn in this thesis and to give suggestions for future research.

7.1 Conclusion

Prior studies have showed that there exist differences in the financial reporting across EU countries when it comes to disclosure practices, and that there are differences among Swedish listed-firms in how identifiable intangible assets are recognized in a business combination. This thesis shows that differences also exists across EU countries in how identifiable intangible assets are recognized in a business combination. Prior research has found that enforcement is of importance when it comes to the quality of accounting. This current research shows that country-level accounting enforcement has an impact on the accounting quality, since stronger enforcement leads to an increased recognition of identifiable intangible assets. This study can therefore be seen as confirming IASB's suggestion of whether enforcement can explain differences in the recognition of identifiable intangible assets.

Previous research has found that firm-level enforcement, or the interaction between firm-level and country-level enforcement, can have an impact on the accounting quality. The research presented in this current thesis point towards contrary results. Firm-level enforcement, or the interaction between firm-level enforcement and country-level enforcement, did not have an influence on the recognition of identifiable intangible assets in a business combination. Furthermore, the results of this study are also inconsistent with the findings from previous research since capital structure has no influence on the recognition of identifiable intangible assets in business combinations. More so, the size of the firm did only have an impact on the recognition of identifiable intangible assets when the firm-level enforcement proxies were not included in the regression model. Finally, this study has also found evidence that there are differences in the recognition of identifiable intangible assets in a business combination between the years included in the analysis, and that difference exists across industry sectors.

To summarize, the results of this study support that differences in reporting practices do exist between EU countries. The results indicate that accounting enforcement on a country-level has an impact on the financial reporting, when it comes to the recognition of identifiable intangible assets. Thus, the answer to the research question is, that differences in country-level accounting enforcement have an influence on the recognition of identifiable intangible assets in a business combination within the EU. However, the firm-level and the interaction between firm-level enforcement and country-level enforcement do not have an impact on the recognition of identifiable intangible assets when IFRS 3 is applicable. Thereby, the purpose of this thesis is considered to be fulfilled.

7.2 Suggestion for future research

A first suggestion for future research is to include the United States (US) in the study, in order to compare the influence of European enforcement and US enforcement on the recognition of identifiable intangible assets. The IFRS standard for business combination and the equivalent US standard (FASB) are fairly similar (EY, 2014). However, since it is argued that the accounting enforcement in the US is higher than in the EU, it would be interesting to investigate if companies in the US recognize more identifiable intangible assets due to stronger accounting enforcement (Brown et al. 2014). A second suggestion is to repeat this study using different firm-level proxies. The proxies used in this study were based on previous literature that stated their importance. However, there are other proxies for corporate governance, such as board size, board based monitoring and the financial expertise of the audit committee members, which could be of importance but are not covered in this study. It would therefore be interesting to see if different results are yielded repeating the study with the other corporate governance proxies. A final suggestion for future research is to do a qualitative study and to analyze the views of the preparers of the financial statements on the recognition of identifiable intangible assets and enforcement. By doing so, one would get an understanding for how the preparers view that the standard works in practice and how the present enforcement influences the recognition of identifiable intangible assets in a business combination.

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Appendix 1

	Audit and Enforcement Index									
	Countries	2005	2006	2007	2008	2009	2010	2011	2012	2013
1	Austria	26	26	26	27	27	27	27	27	27
2	Belgium	40	40	40	44	44	44	44	44	44
3	Cyprus									
4	Czech Rep.	16	16	16	19	19	19	19	19	19
5	Denmark	49	49	49	49	49	49	49	49	49
6	Estonia									
7	Finland	32	32	32	32	32	32	32	32	32
8	France	48	48	48	45	45	45	45	45	45
9	Germany	42	42	42	44	44	44	44	44	44
10	Greece	26	26	26	26	26	26	26	26	26
11	Hungary	17	17	17	18	18	18	18	18	18
12	Ireland	29	29	29	41	41	41	41	41	41
13	Italy	43	43	43	46	46	46	46	46	46
14	Latvia									
15	Lithuania									
16	Luxembourg									
17	Malta									
18	Netherlands	21	21	21	43	43	43	43	43	43
19	Poland	17	17	17	28	28	28	28	28	28
20	Portugal	26	26	26	29	29	29	29	29	29
21	Slovakia									
22	Slovenia	19	19	19	19	19	19	19	19	19
23	Spain	35	35	35	42	42	42	42	42	42
24	Sweden	30	30	30	34	34	34	34	34	34
25	UK	54	54	54	54	54	54	54	54	54

Appendix 1. Audit and Enforcement index

Enforcement Proxy (2002/2005/2008)	Data sources
AUDIT	
Auditors must be licenced	FEE (2001), IFAC (2011) Item 76
More extensive licence requirements	FEE (2001), IFAC (2011) Item 78
Ongoing professional development	FEE (2001), IFAC (2011) Item 79
Quality assurance programme is in place	IFAC (2011) Item 124
A audit oversight body has been set up	FEE (2001), IFAC (2011) Item 111
The oversight body can apply sanctions	FEE (2001), IFAC (2011) Item 111
Audit (firm or partner) rotation is required	FEE (2001), IFAC (2011) Item 42
Level of audit fees (0 =low, 1 = medium, 2 = high, based on total audit fees/number of listed companies)	Based on Worldscope WC1801 for individual firms in each country
Level of litigation risk for auditors (0 = low, 1 = medium, 2 = high based on Wingate Index),	Wingate (1997) sources data from insurers in each country. Countries not covered by Wingate score 1
ENFORCE	
Security market regulator or other body monitors financial reporting	FEE (2001), CESR (2007; 2009), IFAC (2011) IFAC (2011) Items 106, 110, 123
The body has power to set accounting and auditing standards	IFAC (2011) Item 108
The body reviews financial statements	IFAC (2011) Item 108; CESR 2007, 2009; Annual reports (2002–2008)
The body provides a report about its review of financial	Annual reports (2002–2008)
The body has taken enforcement action re financial statements	Annual reports (2002–2008)
Level of resourcing (0 = low, 1 = medium, 2 = high, based on number of staff employed by the securities market regulator).	Courtis (2006); Jackson and Roe (2009); Hora´kova´ (2011)

Appendix 1:1 Data sources and enforcement proxies for the audit and enforcement index[18] *

[18] For more information see Brown et al. (2014)

* Modified table by authors, source Brown et al. (2014)

Appendix 2

Rule of Law	2006	2007	2008	2009	2010	2011	2012	2013
Austria	1.91	1.96	1.93	1.79	1.81	1.81	1.84	1.83
Belgium	1.20	1.31	1.33	1.36	1.37	1.40	1.40	1.40
Cyprus	1.07	1.08	1.19	1.19	1.20	1.05	1.07	1.00
Czech Repub.	0.84	0.86	0.89	0.94	0.93	1.02	1.01	1.00
Denmark	1.98	2.00	1.95	1.92	1.90	1.93	1.85	1.87
Estonia	1.09	1.12	1.16	1.09	1.13	1.16	1.13	1.16
Finland	1.96	1.89	1.90	1.97	1.98	1.96	1.94	1.93
France	1.45	1.43	1.48	1.43	1.51	1.44	1.43	1.40
Germany	1.76	1.75	1.72	1.64	1.62	1.61	1.64	1.62
Greece	0.86	0.84	0.84	0.62	0.61	0.55	0.39	0.44
Hungary	0.96	0.92	0.89	0.76	0.75	0.74	0.60	0.56
Ireland	1.70	1.71	1.69	1.74	1.77	1.77	1.73	1.72
Italy	0.35	0.44	0.42	0.35	0.38	0.42	0.36	0.36
Latvia	0.64	0.71	0.79	0.80	0.78	0.75	0.76	0.75
Lithuania	0.66	0.67	0.68	0.70	0.75	0.76	0.81	0.79
Luxembourg	1.68	1.75	1.80	1.82	1.83	1.80	1.77	1.79
Malta	1.54	1.58	1.60	1.48	1.44	1.30	1.34	1.32
Netherlands	1.76	1.76	1.75	1.80	1.81	1.81	1.84	1.81
Poland	0.35	0.37	0.51	0.60	0.66	0.75	0.74	0.79
Portugal	0.95	0.98	0.99	1.05	1.04	1.03	1.04	1.03
Slovakia	0.52	0.45	0.57	0.50	0.53	0.57	0.46	0.45
Slovenia	0.87	0.88	0.98	1.06	0.98	1.04	0.98	0.97
Spain	1.10	1.13	1.17	1.13	1.16	1.18	1.04	1.00
Sweden	1.84	1.88	1.91	1.97	1.96	1.95	1.93	1.95
UK	1.75	1.68	1.66	1.73	1.76	1.64	1.69	1.67

Appendix 2. Rule of law index

The rule of law index is based on data from the following sources[19]:

"The WGI compile and summarize information from 32 existing data sources that report the views and experiences of citizens, entrepreneurs, and experts in the public, private and NGO sectors from around the world, on the quality of various aspects of governance.
The WGI draw on four different types of source data:

- **Surveys of households and firms** (9 data sources including the Afrobarometer surveys, Gallup World Poll, and Global Competitiveness Report survey),
- **Commercial business information providers** (4 data sources including the Economist Intelligence Unit, Global Insight, Political Risk Services),
- **Non-governmental organizations** (11 data sources including Global Integrity, Freedom House, Reporters Without Borders), and
- **Public sector organizations** (8 data sources including the CPIA assessments of World Bank and regional development banks, the EBRD Transition Report, French Ministry of Finance Institutional Profiles Database)" *

[19] For more info see: http://info.worldbank.org/governance/wgi/index.aspx#doc-sources
* Source: : http://info.worldbank.org/governance/wgi/index.aspx#doc-sources (2014-02-15)

Appendix 3

	Countries	Exchange name
1	Austria	Vienna Stock exchange
2	Belgium	Euronext Brussels
3	Cyprus	Cyprus Stock Exchange
4	Czech Republic	Prague Stock Exchange
5	Denmark	Copenhagen Stock Exchange
6	Estonia	Tallinn Stock Exchange
7	Finland	Helsinki Stock Exchange
8	France	Euronext Paris
9	Germany	Berliner Börse , Börsen Hamburg und Hannover, Börse Stuttgart, Börse München, Börse Frankfurt
10	Greece	Athens Stock Exchange
11	Hungary	Budapest Stock Exchange
12	Ireland	Irish Stock Exchange
13	Italy	Borsa Italiana
14	Latvia	Nasdaq OMX Riga
15	Lithuania	Vilnius Stock Exchange
16	Luxembourg	Luxembourg Stock Exchange
17	Malta	Malta Stock Exchange
18	Netherlands	Euronext Amsterdam
19	Poland	Warsaw Stock Exchange
20	Portugal	Euronext Lisbon
21	Slovakia	Bratislava Stock Exchange
22	Slovenia	Ljubljana Stock Exchange
23	Spain	Madrid Stock Exchange
24	Sweden	Stockholm Stock Exchange
25	United Kingdom	London Stock Exchange

Appendix 3. Countries and stock exchanges included in this study

DataStream	
Code	
EXNAME	Exchange Name
MAJOR	Major Security Flag
WC18280	Goodwill/ Cost in Excess of Assets Purchased, Net
WC02649	Intangible Assets Net (incl. Goodwill)
WC04050	Amortization of Intangible Assets
WC06010	General Industry Classification
WC08226	Long Term Debt % Common Equity
WC02999	Total Assets
CGBFDP018	Audit Committee Independence
CGSRDP045	Single Biggest Owner
CGSR	Shareholders /Shareholder Rights
WC07800	Parent Auditor

Appendix 3:1. DataStream codes

Appendix 4

	Coefficients			
	Fixed (b)	Random (B)	Difference (b-B)	sqrt(diag(V_b-V_B)) S.E.
AE	.484	.089	0.396	0.388
ROL	-28.739	-8.241	-20.498	13.973
BIGO	-.059	.168	-0.227	0.543
BS	.072	.017	0.054	0.047
LOG_TOTA	5.300	.399	4.900	2.386
WINDTOE	.007	.003	0.004	0.009
AEBIGO	.002	-.003	0.005	0.011

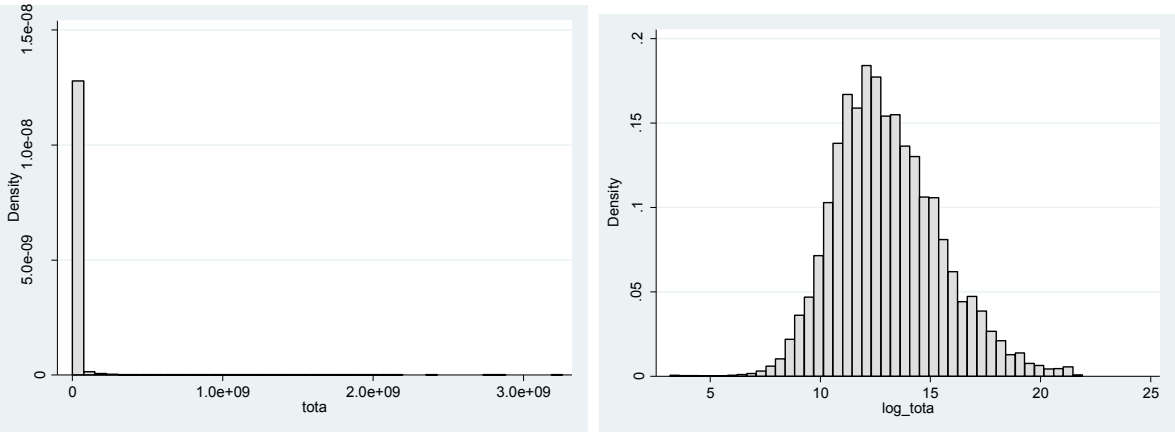
b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

Chi2 (7) = (b-B)'[(V_b-V_B)^(-1)](b-B) = 15.040
Prob >chi2 = 0.035

Appendix 4. The Hausman specification test

Appendix 5



Appendix 5. Total assets before and after log transformation

5 Lowest Values	
obs:	dtoe
11875	-15048.2
15065	-1722
1557	-1195.4
14484	-645.5
14485	-522.6
5 Highest values	
obs:	dtoe
10963	22663.6
287	25794.7
9820	31025.2
16800	35706.9
7149	1.00E+06

Appendix 5: 1 Extreme values of debt-to-equity ratio

Appendix 6

$$IA_{it} = \beta_0 + \beta_1 \text{LOG\_TOTA}_{it} + \beta_2 \text{WINDTOE}_{it} \sum_{n=1}^{25} \eta\, Country_{it} + \sum_{n=1}^{5} \eta INDUSTRY_{it} + \sum_{n=1}^{8} \eta YEAR_i + \varepsilon$$

	Hypothesis 1 OLS-regression	
	β	t
Austria	12.459***	3.52
Belgium	1.434	0.47
Cyprus	-21.013***	-3.94
Czech Repub.	-3.794	-0.46
Denmark	9.216***	2.77
Estonia	1.010	0.1
Finland	4.027	1.65
France	-2.257	-1.33
Germany	10.782***	6.34
Greece	3.599	1.07
Hungary	20.442***	4.3
Ireland	12.225	1.83
Italy	6.231***	2.98
Latvia	15.199	0.64
Lithuania	-12.246	-1.73
Luxembourg	-0.072	-0.01
Malta	8.615	1.52
Netherlands	-1.378	-0.56
Poland	7.200***	3.33
Portugal	8.186	1.65
Slovakia	14.522	1.28
Slovenia	12.830**	2.08
Spain	6.285**	2.14
Sweden	-1.194	-0.59
LOG_TOTA	0.566**	2.1
WINDTOE	0.000	1.10E-01
I.INDUSTRY	Yes	
I.YEAR	Yes	
Constant	28.999**	7.730
N	7636	
R^2	0.062	

* p < 0.1, ** p < 0.05, *** p < 0.01

The regression is clustered by firm

Appendix 6. OLS-regression UK as comparison country

Appendix 7

Country	Aust.	Belg.	Cyp.	Cze.	Den.	Est.	Finl.	Fran.	Ger.	Gre.	Hun.	Ire.	Ita.	Lat.	Lith.	Lux.	Mal.	Neth.	Pol.	Port.	Slova.	Slove.	Spa.	Swe.	UK
Aust.	**X**	X	X				X	X							X			X						X	X
Belg.	X	**X**	X						X		X														
Cyp.	X	X	**X**		X		X	X	X	X	X	X	X			X	X	X	X	X	X	X	X	X	X
Cze.				**X**							X														
Denm.			X		**X**			X			X				X			X						X	X
Est.						**X**																			
Finl.	X		X				**X**	X	X		X				X										
Fran.	X		X		X		X	**X**	X		X	X	X						X	X		X	X		
Ger.		X	X				X	X	**X**	X	X				X			X						X	X
Gre.			X						X	**X**	X				X										
Hun.		X	X	X	X		X	X	X	X	**X**		X		X	X		X					X	X	X
Ire.			X					X				**X**			X										
Ita.			X					X	X		X		**X**		X			X						X	X
Lat.														**X**											
Lith.	X				X		X		X	X	X	X	X		**X**		X		X	X	X	X	X		
Lux.			X								X					**X**									
Mal.			X												X		**X**								
Neth.	X		X		X				X		X		X					**X**	X			X	X		
Pol.			X					X			X				X			X	**X**					X	X
Port.			X					X							X					**X**						
Slova.			X												X						**X**				
Slove.			X					X							X			X				**X**		X	X
Spa.			X					X			X				X			X					**X**	X	X
Swe.	X		X		X				X		X		X						X			X	X	**X**	
UK	X		X		X				X		X		X						X			X	X		**X**

Appendix 7. Matrix of country differences

Appendix 8

	Hypothesis 2 OLS-regression	
	β	t
AE	0.520***	3.83
ROL	-8.411	-1.46
Belgium	23.809***	-3.84
Czech Republic	-19.767	-1.91
Denmark	-14.328**	-2.63
Finland	-10.654**	-2.61
France	-28.283***	-5.16
Germany	-11.889**	-2.61
Greece	-17.982**	-2.27
Hungary	3.635	0.44
Ireland	-6.650	-0.87
Italy	-28.163**	-2.72
Netherlands	-18.308***	-4.43
Poland	-15.115	-1.81
Portugal	-12.245	-1.57
Slovenia	-3.483	-0.41
Spain	-19.045**	-2.85
Sweden	-16.435***	-4.27
UK	-28.212***	-5.15
LOG_TOTA	0.576**	2.13
WINDTOE	0,000	0.09
I.INDUSTRY	Yes	
I.YEAR	Yes	
Constant	44.13	3.9
N	7499	
R^2	0.059	

* p < 0.1, * p < 0.05,** p < 0.01***
The regression is clustered by firm

Appendix 8. OLS-regression country-level enforcement and intangible assets [20]

[20] Cyprus, Luxembourg, Slovakia, Estonia, Latvia, Malta, Lithuania