

Cross-country differences in the reporting of business combinations

An empirical study of purchase price allocations

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Abstract

Whether or not the introduction of the common, principles-based IFRS framework in 2005 has led to true harmonization of international accounting practice is a debated topic. An area where there is a potential of differing implementations of the standards is within the reporting of business combinations. This thesis aims to investigate the occurrence of differing cross-country practice with regards to the purchase price allocation performed after an acquisition. The underlying hypothesis states that the implementation of the standards is affected by the pre-IFRS accounting tradition of the country in which the acquirer operates. Using the accounting values of conservatism and transparency to define previous accounting tradition, purchase price allocations made by British, German and Swedish companies are investigated to see if this reasoning holds within the area of business combinations. By performing statistical analyses on a sample of 160 observations, we find that German companies are more conservative but less transparent in their reporting than British companies, in line with their respective previous accounting tradition. The results for Sweden are less clear-cut. In extension, this leads us to question the comparability of earnings and balance sheet valuations across companies from European countries with differing accounting traditions.

Keywords: business combinations, purchase price allocation, IFRS 3, intangible assets, conservatism, transparency, comparability

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1. Introduction

1.1. Background

Since 2005, all listed companies within the European Union are to apply the international accounting standards IFRS in the preparation of their consolidated financial statements. The standards aim at contributing to the efficient and cost-effective functioning of the capital market, as well as at protecting investors and the maintenance of confidence in the financial markets. Furthermore, they are believed to reinforce the freedom of movement of capital in the internal market and enable companies to compete for capital on an equal footing (ESMA, 2002). With countries previously having conducted their financial reporting in accordance with a national framework, it is believed that comparability among companies will be enhanced if all companies use the same. However, being a principles-based framework, it allows companies to use their discretion and professional judgment in the financial reporting rather than prescribing rules and strict guidelines to follow. Whether or not the introduction of a common framework has really led to a true harmonization of accounting practices is, however, a widely debated topic. Ball (2006) argues it to be naïve to anticipate uniform financial reporting from the introduction of uniform standards alone. Rather than achieving true convergence, Ball expects international differences in reporting quality to be “hidden under the rug of seemingly uniform standards” (Ball, 2006, p. 15) with the introduction of a common framework. Similarly, Nobes (2008) proves that there in fact are differences in implementation and practice of IFRS across countries and explains these by each country’s previous accounting tradition and regulatory prerequisites.

One area where the issue of differing national practices is of interest is within the reporting of business combinations. When it comes to firms’ investment activities, mergers and acquisitions are one of the largest items (Shalev, 2009). The value of corporate acquisitions has during the last decade averaged around the equivalent of ten percent of total market capitalization of listed securities, with around half of the total number of transactions completed by companies applying IFRS (IASB, 2008). In view of the magnitude of corporate acquisitions, the reporting of business combinations becomes important. Not only do business combinations affect balance sheets and future earnings to a large extent (Ernst & Young, 2009), it is also an area where the IFRS allows for the reporters’ own accounting discretion. This, in combination with the high frequency and value of acquisitions, makes it interesting to see if the above-mentioned arguments put forward by Ball (2006) and Nobes (2008) are valid for this area of reporting. Are there any systematic differences in implementation of the standards on business combinations across countries and if so, can they be traced back to the country’s pre-IFRS accounting tradition? Would this be the case, these difference have the potential of distorting the comparability of firms’ results and financial positions across countries, something that would merit consideration when, for example, external capital providers evaluate potential investment opportunities.

1.2. Purpose

The underlying hypothesis for this study is that the interpretation and implementation of the standards are affected by the national context in which the companies operate. It is assumed that traditions of local accounting practices are not easily erased and that there is reason to believe that the previous national accounting practices and traditions still today are affecting the way in which companies apply the IFRS standards, as argued by Ball (2006) and Nobes (2008). The purpose of this thesis is to investigate if this is the case in the area of business combinations, with the object of study being the purchase price allocation conducted after an acquisition of a company.

More specifically, we aim to investigate two aspects relating to the accounting practice of the PPA. Firstly, we turn to the *measurement* aspect by studying the allocation of the consideration between goodwill, intangible assets and tangible net assets across companies applying IFRS in different countries. Secondly, we look into the *disclosure* aspect by studying the extent of the reported information in relation to the PPA. Thereby, we aim to determine whether or not national patterns can be found in company practices across different countries, and if so, whether those patterns correspond to characteristics commonly associated with the accounting practice within the countries of study. The background for this reasoning will be further developed in the Previous Research and Theoretical Framework chapter. Thereafter, the hypotheses serving the purpose of this thesis will be formulated, with a starting point in the outlined theoretical framework.

1.3. Study Object

A purchase price allocation (hereafter referred to as the “PPA”) is the accounting practice taking place when an acquirer obtains control of a subsidiary, whereby the consideration paid is allocated between different types of assets and liabilities. The two standards mainly regulating this process are IFRS 3 *Business Combinations* and IAS 38 *Intangible Assets*.

The core principle of IFRS 3 is that an acquirer of a business recognizes the assets acquired and the liabilities assumed at their fair value on the acquisition date and discloses information that enables users to evaluate the nature and the financial effects of the acquisition. In practice this means adjusting the book value of the target’s net tangible assets to fair value and recognizing acquired intangible assets previously not recognized in the target’s balance sheet, also at fair value. The residual, i.e. the difference between the price paid and the fair value of the net assets, is allocated to goodwill, as shown in Figure 1 below. The identifiability criterion determines whether an intangible asset is part of goodwill or separately recognized, but does not provide any guidance for measuring the fair value of an intangible asset or restrict the assumptions used for estimating fair value of an intangible asset. Instead it is expected that the acquirer takes into account assumptions that market participants would consider when measuring fair value. The parts of acquired intangible assets that are not identifiable at the acquisition date are subsumed into goodwill. Thus, the goodwill recognized in a business combination represents future economic benefits arising

from other assets acquired in the business combination that are not separately identified and recognized.

Purchase Price Allocation	
Purchase price	
- Book value of acquired net assets	
- Fair value adjustments of net assets	
- Fair value of previously not recognized identifiable intangible assets	
+ Deferred tax liabilities	
= Goodwill	

Figure 1: The Purchase Price Allocation and its components

In accordance with IAS 38, the intangible assets arising from the acquisition are decided to have a finite or indefinite useful life. Those that are considered to have a finite useful life are amortized. The depreciable amount of an intangible asset with a finite useful life shall be allocated on a systematic basis over its useful life and should reflect the pattern in which the asset's future economic benefits are expected to be consumed. If a pattern cannot be estimated, the straight-line method should be applied. The amortization charge shall typically be recognized in the income statement. Uncertainty justifies estimating the useful life of an intangible asset on a prudent basis, but it does not justify choosing a life that is unrealistically short. Goodwill and intangible assets with an indefinite useful life are tested for impairment each year. For each class of intangible assets, the entity shall disclose information on whether the useful life of the intangible assets are finite or indefinite as well as the useful lives and amortization methods applied. The acquirer should also disclose reasons for an intangible asset having an indefinite useful life.

For the remainder of this thesis, the aggregate of goodwill and identified intangible assets will be referred to as *intangible value*.

2. Theoretical Framework and Previous Research

In attempting to find a theoretical background and a suitable research approach to the above stated purpose, we turn to reviewing previous research pertaining to the area of PPA and potential explanations for differing accounting practices. Firstly, a theoretical framework explaining cross-country differences in overall accounting practice will be outlined, followed by studies linking these theories to the harmonization of financial reporting within Europe. Secondly, research relating specifically to PPA practice will be presented, as well as reasons to why this may differ on a company level. We conclude by presenting our interpretation of how the frameworks may be applied to a PPA context.

2.1. Theoretical Framework

2.1.1. International Differences in Accounting Practice

As previous research has attempted to understand and compare different international accounting systems and practices, a common approach has been to classify them into groups. This is believed to contribute to the understanding of similarities and differences across systems as well as of development patterns. Additionally, it may help regulators and standard setters to assess problems and possibilities in international harmonization (Gray & Radebaugh, 1997).

One of the first influential studies in the area, attempting to make a classification of countries into groups with regards to accounting practice, was made in 1980 by Frank and Nair. They distinguished between measurement and disclosure practice, as these were claimed to develop differently, and classified countries into four main groups; the British Commonwealth, the Latin American, the Continental European and the United States. Since this first attempt to create a classification between clusters of countries, many researchers have continued to develop systems of classification to refine the underlying causes of differences in accounting practices. Two of the most influential authors within this field of research are Gray and Nobes. They essentially reach the same conclusions in terms of classification of accounting systems, but differ in study approach as well as in their explanations of the reasons to why practice differs across countries.

2.1.1.1. *The Gray Framework*

Gray (1988) explores whether the societal values³ put forward by Hofstede (see e.g. Hofstede, 1980) can be used to explain international differences in accounting systems and practice. He proposes a framework relying upon the assumption of social values being linked to accounting values. Four accounting values are introduced, correlating differently with Hofstede's dimensions, related to the four areas of *authority*, *enforcement*, *measurement* and *disclosure*.

³ Hofstede (1980) defined culture as systems of societal norms and values shared by groups of people. Through a survey conducted in a large multinational company, he discovered four main dimensions that explained cross-cultural differences across 50 countries, namely *Power Distance*, *Uncertainty Avoidance*, *Individualism* and *Masculinity*.

Authority and enforcement are captured by the accounting values of Professionalism versus Statutory Control, reflecting the preference to use individual judgment or rely on legal requirement, and Uniformity versus Flexibility, reflecting the extent to which accounting practice should be uniform and consistent for all companies or flexible for each individual company. However, the two aspects of accounting practice that have been in focus for most subsequent research on international differences are measurement and disclosure. As for the measurement aspect, it is reflected by the accounting value of Conservatism versus Optimism. In short, it is the preference for either a cautious or a more risk-taking approach to measurement of assets and profits. Disclosure is captured by the accounting value of Secrecy versus Transparency; the preference for confidentiality or publicly available information. Gray's framework (1988) is used to classify countries into groups with regards to the four aspects.

Gray's framework has been empirically tested in several studies, including one or more of the four aspects and with varying results. For example, Salter and Niswander (1995) show the model's explanatory power to be statistically significant, in particular when it comes to the actual financial reporting practice and the measurement and disclosure aspects. These aspects are also the most tested of the four, much owing to them being the easiest attributes of an accounting system to explore (Doupnik & Tsakumis, 2004). The aspects of measurement and disclosure will be discussed in more detail below.

Measurement: Conservatism versus Optimism

The Conservatism versus Optimism dimension is defined as "a preference for a cautious approach to measurement so as to cope with the uncertainty of future events as opposed to a more optimistic, laissez-faire, risk-taking approach" (Radebaugh & Gray, 1997, p. 76). The degree of conservatism varies across countries, with Continental Europe including Germany and France being viewed as highly conservative, as opposed to UK and the US taking a much less conservative approach to accounting (Gray, 1988). However, several researchers emphasize the absence of a generally accepted definition of conservatism and consequently clear evidence on the types of measures correctly gauging levels of conservatism (Givoly & Hayn, 2010; Richardson & Tinaikar, 2004). In deciding upon a study approach to the level of conservatism across countries, a definition of the concept must be assumed in order to measure it appropriately. Below follow the two main types of accounting conservatism that have been identified and investigated during the last decades.

Traditionally, conservatism has been defined as "[to] anticipate no profit, but anticipate all losses", where anticipating means recognizing before there are legal claims on verifiable cash flows (Watts, 2003, p. 208). This definition has later been interpreted as "the accountant's tendency to require a higher degree of verification to recognize good news as gains than to recognize bad news as losses" (Basu, 1997, p. 7). In this viewpoint, conservatism boils down to the asymmetrical verification requirements for gains and losses, where a larger difference means a higher degree of conservatism. Ball et al. (2000) describe this asymmetric timeliness in incorporating gains and losses as *income statement conservatism*, while others refer to it as

conditional conservatism (Beaver & Ryan, 2005; Givoly et al., 2007; Roychowdhury & Watts, 2007). Conservatism in this sense has increased over the last four decades; while profitability generally has declined, this has not been reflected in a corresponding decline in cash flows, indicating a higher level of income statement conservatism in accounting. Thus, income statement conservatism stems from accruals rather than cash flows (Givoly & Hayn, 2010; Pae et al., 2005). Under this type of conservatism, the income statement is more informative to users interested in the company's downward risk rather than the upside potential, such as creditors (Roychowdhury & Watts, 2007).

The second type of conservatism emphasizes the balance sheet and implies reporting low book values of net assets, by understating assets and overstating liabilities (Ball et al., 2000; Beaver & Ryan, 2005; Givoly et al., 2007). This is called *balance sheet conservatism* or *unconditional conservatism*, and is often approximated by the market-to-book ratio for research purposes. A high market-to-book ratio then implies a higher degree of conservatism than does a lower ratio (Feltham & Ohlsson, 1995; Givoly & Hayn, 2000; Pae et al., 2005). However, the market-to-book ratio not only represents accounting conservatism, but also growth, which is why the measure can only provide insight into the joint implication of these, rather than to isolate the degree of conservatism (Feltham & Ohlsson, 1995; Givoly & Hayn, 2000).

Whether and how these two concepts of conservatism are interrelated is a debated issue. Ball et al. (2000) argue that income statement conservatism implies balance sheet conservatism, but not vice versa. For example, accelerated amortization reduces profits as well as net assets, while a low valuation of net assets not necessarily implies a reduction in results (Roychowdhury & Watts, 2003). The link between the two types of conservatism has been tested by several researchers, who have used the market-to-book ratio as a proxy for balance sheet conservatism. Most of these studies show that the two conservatism concepts are negatively correlated (Pae et al., 2005; Givoly et al., 2007; Richardson & Tinaikar, 2004). This is challenged by Roychowdhury and Watts (2007) who argue that the two concepts are negatively correlated only when income statement conservatism is measured over short periods. When it is measured cumulatively over longer periods, the two concepts are positively correlated. This boils down to one of the main criticism of income statement conservatism; understating profits in the short run often leads to an overstatement of profits in the long run. Thus, what is seen as conservative in one reporting period may be seen as non-conservative in subsequent periods. Balance sheet conservatism, on the other hand, normally persists over time (Givoly & Hayn, 2000; Givoly et al., 2007; Watts, 2003).

Researchers emphasize that there are no perfect measures for conservatism; to rely on any single measure is typically insufficient (Givoly et al., 2007; Roychowdhury & Watts, 2007). In particular, the market-to-book ratio, the most commonly used proxy for balance sheet conservatism, fails to isolate and measure this type of conservatism correctly. It is argued that income statement conservatism, as measured by the recognition of losses before gains, provides the most reliable indicator available to researchers (Richardson & Tinaikar, 2004).

Basu (1997, p. 8) states that there has traditionally been an emphasis on the income statement within the field of financial accounting and that "conservatism in the balance sheet is of dubious value if attained at the expense of conservatism in the income statement, which is far more significant".

Especially within quantitative research investigating accounting differences internationally, focus has been on the effects and impacts on results rather than financial position (Hellman, 1993). For example, Gray (1980) measures conservatism in income statement terms by constructing an index of conservatism and studies whether profit levels are correlated with national characteristics. Weetman and Gray (1991) further use this index to compare US GAAP with accounting principles in European countries and their impact on national profits. Giner and Rees (2001) also use the income statement conservatism approach when comparing the tendency to recognize losses before gains in Germany, UK and France. Joos and Lang (1994) expect traditional differences in accounting philosophies to imply the highest profits to be reported in UK, followed by France and, at the other end, Germany. They argue British firms to be liberal when measuring net income, but more conservative than French and German firms when it comes to net assets. In sum, in classifying countries with regards to Conservatism versus Optimism, the income statement approach seems to be the most commonly used.

Disclosure: Secrecy versus Transparency

The Secrecy versus Transparency values are defined as reflecting a "preference for confidentiality and the disclosure of information about the business only to those who are the most closely involved with its management and financing as opposed to a more transparent, open, and publicly accountable approach" (Gray & Radebaugh, 1997, p. 76). Transparency in a corporate setting is further defined in Bushman et al. (2004, p. 208) as "the availability of firm-specific information to those outside publicly traded firms". Gray (1988) states that secrecy appears to be closely related to conservatism, in the sense that it in general reflects a cautious approach to financial reporting. However, while conservatism relates to the measurement dimension, secrecy relates to the level of disclosure provided. Gray points out that the extent of secrecy seems to vary across countries, with lower levels of disclosure in e.g. France, Germany and Switzerland than in UK and US. The differences are further reinforced by the differential development of capital markets and the public ownership of shares, which also affect the voluntary disclosure of information. In many studies relating to transparency, disclosures in the financial statements have been used as an instrument in measuring transparency (see e.g. Morris & Gray 2007; Shalev, 2009).

The research relating to differences in levels of transparency have sought to explain the differences by firm-level factors or by country-level factors. In Doidge et al.'s (2006) study of the impact of country characteristics on governance and transparency it is argued that country characteristics have a significantly higher explanatory power than firm-specific variables. Other research confirms the influence of country characteristics on corporate accounting practices, including the level of disclosure. Bushman et al. (2004, pp. 219-220)

distinguish between financial transparency, defined as “the availability of financial information to those outside the firm due to the disclosure, interpretation and dissemination of financial information”, and governance transparency, defined as “the availability of information for outside investors to hold officers and directors accountable”. They find that governance transparency is higher in countries with a common law origin, such as UK, and that financial transparency is higher in countries with low state ownership of enterprises and banks. The legal origin is further investigated by Jaggi and Low (2000) as they test empirically whether there are differences in corporate financial disclosure in common and code law countries, and find that firms from common law countries are associated with higher financial disclosure compared to firms from code law countries⁴.

Hope (2003) criticizes legal origin being the main focus of prior literature and empirically shows that national culture, in addition to legal origin, plays an important role in determining the level of disclosure. Zarzeski (1996) also takes a more cultural approach to disclosure levels, and specifically links it to the Gray value dimension of Secrecy versus Transparency. By developing an International Disclosure Model, Zarzeski finds that the level of disclosure is related to the secretive nature of a culture but also to whether or not the company is of a local or international nature, as international companies seem to be influenced by the culture of their global competitors. However, the author still notes that total accounting harmonization across countries may be difficult to achieve within this area. This is supported by Morris and Gray (2007), who examine whether countries matter more than firms in explaining differences in financial transparency in a sample of Asian countries, and find that country-level variables matter more than firm-level variables in explaining variance. Legal system, bank-oriented economy and enforcement of standards are found to matter the most at the country-level. The authors argue that if differences in transparency are mainly associated with country-level factors, converging practices will be more difficult as country-level factors by their nature are more difficult to change.

By coupling the dimensions of measurement and disclosure, as described above, Gray (1988) is able to map and relate countries as exemplified in Figure 2.

⁴ Traditional literature (see e.g. Joos & Lang, 1994) commonly divides legal systems within the developed world into two types; common law and code or Roman law. Common law implies law developed by prejudices, while code law is developed through legislative statutes. UK is an example of a common law country, whereas Germany has code law.

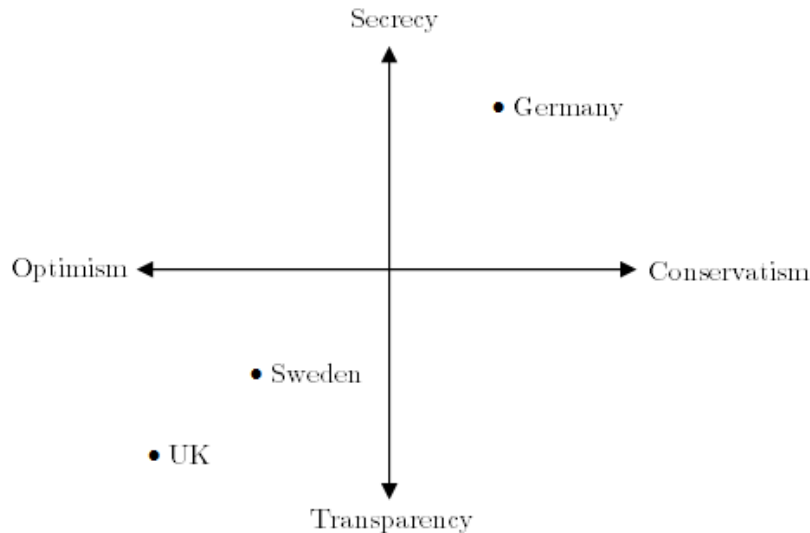


Figure 2: Gray's (1988) classification matrix

2.1.1.2. The Nobes Framework

Nobes (1998) claims that the major reason for international differences in financial reporting in essence is the countries' respective financing systems. He starts out in the two different types of financial systems introduced by Zysman in 1983; *the capital market-based system* and *the credit-based system*. What differs between these is essentially the external sources of funds. In a capital market-based system investors trade in large, active secondary markets and a wide range of capital instruments and financial institutions exists. In a credit-based system, on the other hand, capital markets are more limited and companies have to rely on banks. In such systems it is more difficult for investors to change their holdings and they are therefore more interested in long-term control of management.

Nobes (1998) further develops this along two dimensions: *insider/outsider dominance* and *equity/creditor dominance*. Insider-dominant systems are characterized by long-term and close relationships between company and owner, often being banks, governments or families, while in outsider-dominant systems private owners with many and diverse holdings prevail. Equity or creditor dominance reflects how companies are financed. These factors have different implications for accounting practice; the equity/creditor split seem to influence the measurement aspect, whereas the insider/outsider split affects disclosure practice. From this, Nobes identifies two main groups of systems; *Class A* and *Class B accounting*. Class A systems have an outsider dominance in combination with a strong equity financing, where private investors demand extensive disclosure practice and external audits, as well as information providing a true and fair view as a basis for optimal financial decision-making. Class B systems, on the other hand, have an insider dominance and a strong creditor financing, implying a greater concern for prudence and protection of creditors, who do not have the same need for public information.

As opposed to Gray (1988), Nobes (1998) suggests that culture should be seen as one of the main background factors contributing to the financing system in question rather than the key factor explaining differences. Also, he distinguishes between countries that are culturally self-sufficient and those that are culturally-dominated, with regards to colonial heritage; the different financial systems had their starting points in culturally self-sufficient countries that subsequently have influenced other parts of the world through colonization or invasion. His illustration of the relation between culture, financing system and the classification of accounting practice can be seen in Figure 3.

Culture type	Characteristics of financing system	Group of accounting system
Type 1	Strong equity / outsider	Class A: accounting for shareholders
Type 2	Weak equity / insider	Class B: accounting for tax and creditors

Figure 3: Nobes' (1998) classification of accounting systems

Joos and Lang (1994) describe the same two groups as does Nobes (1998); what they call the traditional *Anglo-Saxon model* corresponds to the Class A type of system, whereas the *Continental model* corresponds to Class B. They describe the Anglo-Saxon model to allow for discretion, flexibility and room for interpretation whereas the Continental model applies a highly prescriptive and codified reporting practice, based on legal requirements. The authors also claim the extent to which financial statements and reporting has been influenced by tax law to play an important role in the development of international differences. In the Anglo-Saxon model, financial and tax reporting are traditionally decoupled, while in the Continental model they have been required to overlap, creating incentives to lower, more conservative measures of profits in order to minimize tax payments.

2.1.2. Aspects of Harmonization

The theories put forward by both Gray (1988) and Nobes (1998) indicate that there are differences across accounting systems affecting the financial reporting practice. Since the emergence of their frameworks, researchers have continued to test these empirically. Joos and Lang (1994), for example, investigate the differences in accounting measurement between Germany, UK and France, before and after the introduction of common EU directives for financial reporting. They claim it to be a suitable context for examining these differences, due to Germany and UK being the originators and extreme cases when it comes to the Continental and the Anglo-Saxon accounting philosophies and models, and France being an intermediate case. Also, the barriers to trade within the EU are limited, and the countries are similar in many respects, reducing the effects of macro-economic variables. The authors argue that if there are any cross-country differences in accounting measurement, they should be most obvious in the comparison of Germany and UK. Such differences also have the potential

of being generalized and providing insights for large parts of the world that traditionally have been influenced by the two models, as previously argued by Nobes (1998).

The two different EU directives were intended to minimize the differences in financial reporting across European countries and facilitate cross-border investments. These defined the true and fair view, traditionally characteristic of the Anglo-Saxon or Class A model, as the overriding principle. Joos and Lang (1994) find that significant differences exist across countries, in line with the expected differences in accounting measurement practice. Measurement of profits are found to consistently be more conservative in Germany compared to France and UK. Further, no evidence on the EU directives reducing these differences is found. This is much in line with Nobes (1998) who suggests that it might be difficult and even inappropriate for any standard setter to encourage countries with Continental or Class B accounting systems to adopt an Anglo-Saxon or Class A system, as financial reporting practice follows from the financing system.

With the introduction of IFRS and the harmonization of international accounting practice, new attention was given to how common standards would affect the cross-country differences. Nobes (2006) sets out motives and opportunities for international difference to continue and different national versions to emerge under IFRS. Motives include differences in financing systems, legal systems and tax systems, which in many cases are still relevant and likely to continue where scope exists within the IFRS. In addition, inertia as well as managements' aversion towards disrupting accounting practice may be motives for sustained differences. Further, Nobes (2006) identifies eight sources of opportunities for different practices under IFRS: different versions and translations, gaps, overt options, vague criteria and interpretations, estimations, transitional or first-time adoption issues as well as imperfect enforcement of the standards. It is concluded that there is still scope for national differences within the use of IFRS and that "the death of 'international accounting' has been greatly exaggerated" (Nobes, 2006, p. 243).

Nobes (2008) further investigates the application of IFRS in relation to the classification system outlined in his framework, based on countries' national approach to IFRS. His findings suggest that the approaches vary with respect to different aspects. Firstly, the extent to which regulators allow and require IFRS for different types of reporting matters. In some countries, such as in UK, IFRS applies to both consolidated and unconsolidated accounts, whereas in others, such as Germany, national standards are required for the unconsolidated accounts. This is assumed to influence the accounting practice also under IFRS. Secondly, IFRS is not required for unlisted companies in some countries, which is why a large part of the financial reporting is conducted according to national standards. Thirdly, the national standards vary in their respective convergence with IFRS rules, which affects how IFRS is applied. Ultimately, the author claims IFRS practice and implementation to still differ largely across countries, and the differences to be connected to previous accounting tradition as well as the aspects of practice described above.

Kvaal and Nobes (2010) empirically investigate whether there are systematic differences in countries' application of IFRS. The authors look at a number of reporting issues for companies in Australia, France, Germany, Spain and UK. Through this study, they prove that different national IFRS versions exist. Not only do the opportunities for international differences put forward by Nobes (2006) exist, they are also exploited by companies, both for trivial and more complex matters. The differences in IFRS versions are proven to be explained by national pre-IFRS requirements; where there is scope, companies tend to sustain their previous national practices. This is in conflict with the objective of comparability and international harmonization of accounting practice, limiting the advantages of common standards. It is concluded that the IFRS include options and flexibility, which enables companies to present a fair view of their operations, but constitutes one of the main reasons for accounting practice to differ internationally. The authors deem the disadvantages of the systematic differences to outweigh the benefit of flexibility, which is why they advocate for removing options and room for interpretation in the IFRS.

As stated in the introduction, the purpose of requiring listed companies within the EU to apply IFRS is to achieve harmonization in order to enhance comparability in financial reporting across countries. However, the above research illustrates the difficulties in harmonizing accounting practices for a range of different reasons relating to both country-level factors, such as financing systems and pre-IFRS practice, as well as the principles-based character of the IFRS framework allowing for different interpretations and applications at a company level.

2.2. Previous research on PPA

Despite the focus on country-level factors explaining differences in accounting practice in previous literature, most studies relating to business combinations and PPA are either descriptive or investigate differences on a company level. To provide a background to the object of study, this research will be briefly summarized below.

2.2.1. Empirical studies on PPA

The focus of attention of empirical research when it comes to the PPA is on the allocation decision between tangible assets, identifiable intangible assets and goodwill. On this matter, IFRS 3 and IAS 38 do not prescribe clear rules. In particular, the allocation between goodwill and intangible assets of the premium paid for an entity could be argued to be open for interpretation. In the PPA process following an acquisition many issues are subject to the acquirer's judgment, e.g. the identification of intangible assets, their measurement and the choice of useful life and amortization method. It is suggested by Intangible Business (2008), for example, that there exist differences in the level of intangible assets recognized after an acquisition between companies in different countries. By looking at the simple average of identifiable intangible assets as a percentage of total intangible assets including goodwill in different countries applying IFRS 3, they show that the ratio in Australia is as low as 20 percent whereas the corresponding ratio in UK is 37 percent. The differences in the reporting

of business combinations could be related to the complexity inherent in the principles-based character of IFRS. For example, the German Financial Reporting Enforcement Panel (FREP) states the complexity of IFRS to be the main reason behind reporting errors in German companies' financial statements, with the most frequent error being the accounting treatment of business combinations. The two most common infringements relating to business combinations are goodwill impairments and the allocation of purchase price to intangible assets (FREP, 2011). Companies' erroneous practice within this area is highlighted in a study by Intangible Business (2006), concluding that despite the aim of IFRS 3 to provide increased transparency, "the accounting for business acquisition is still opaque, and creative accounting is still occurring" (Intangible Business, 2006, p. 3).

Despite the reporting of business combinations seemingly being a troublesome area, the amount of research relating to IFRS 3 and PPA is still relatively limited. Gauffin and Nilsson (2011) and Ernst & Young (2009) have contributed with descriptive reports on the topic. Gauffin and Nilsson (2011) have since the introduction of IFRS every year conducted a study on how Swedish companies report acquisitions in general, and how they identify intangible assets in particular. For 2010, they note that of the consideration paid, on average 15 percent represent tangible net assets, 29 percent represent intangible assets and the remaining part, 56 percent, represent goodwill. They also study the disclosed information of the transactions and conclude that only 16 percent of the companies reporting intangible assets disclose information regarding the useful life of these intangible assets, despite the disclosure of useful life being one of the requirements of IFRS 3. The authors conclude that the share of goodwill reported correlates with acquisition intensity; in years with high purchase prices, companies report higher goodwill shares. The allocation of purchase price between different asset groups on the Swedish market represented by the findings of Gauffin and Nilsson are similar to what is found by Ernst & Young in their 2009 global survey of PPA practices. The survey finds goodwill to represent almost two-thirds of the combined intangible value and the recognized intangible assets to represent the remaining third. Ernst & Young further shows that there are significant variations between industries; for example, companies within the consumer products industry report a comparably high level of goodwill, pharmaceutical companies recognize a high level of intangible assets and real estate as well as oil and gas companies have the highest level of tangible assets. The existence of goodwill is in general explained by synergies or the value of assets that are not allowed to be recognized as intangible assets, such as a trained workforce. With regards to disclosure, the survey finds that the information regarding useful life of the recognized assets is limited as it is disclosed for less than 20 percent of the transactions (Ernst & Young, 2009).

2.2.2. Firm-Level Factors Explaining Differences in PPA Practice

Being an area allowing for the reporters' accounting discretion with regards to e.g. classification and measurement of acquired net assets, previous studies have sought to explain the differences in PPAs by investigating the impact of certain company-specific features. Literature studying the implications of IFRS 3 specifically is fairly limited, which is why studies relating to PPA in general are consulted.

Shalev (2007) suggests that firms act strategically in the allocation of purchase price between non-amortizable and amortizable intangible assets to improve post-acquisition earnings. Zhang and Zhang (2007) study whether and to which extent management's opportunism affects the valuation of goodwill and identified intangible assets. The companies in their study apply SFAS 142, under which goodwill is tested for impairment whereas identified intangible assets are amortized over its useful life, as in the case of IFRS 3. They find that managers allocate more of the purchase price to goodwill after the introduction of SFAS 142 to reduce amortization expenses, if expecting to avoid future impairment charges. Further, they find that older CEOs, who are likely to care more about short-term accounting earnings and bonuses, record more goodwill, also to avoid amortization expenses.

When studying a sample of Australian companies during the 1990s, Wyatt (2005) on the other hand finds that underlying economics, such as strength and cycle-time of the technology impacting the firms' operations as well as property rights-related factors, are highly correlated with identifiable intangible assets in a company. However, these factors are found to explain less of the variation in purchased goodwill. The inconsistency in the application of IFRS within this area is studied by Lundqvist et al. (2008). By performing case studies with regards to the PPA process in Swedish companies, they find that bonus plans, legal setting and existing practice are influential factors in making the allocation decision. Other influential factors are lack of resources, lack of knowledge and the development of local practice.

2.3. Operationalization of Theory

The summary of previous research shows that there exist two streams of literature; one stream explaining differences in accounting practice by country-level factors, and another stream explaining the PPA practice by firm-level factors. However, there is an absence of studies specifically linking the PPA decision to the national context of the acquirer, and it is in this gap we hope to contribute with our research. In order to link the literature regarding country-level factors to PPA specifically, we consider it necessary to further clarify how we perceive conservatism and transparency to be present in a PPA context.

2.3.1. Conservatism in a PPA context

We argue that balance sheet conservatism, as described in the theoretical framework above, does not exist in a PPA context; the paid consideration and thus the amount of net assets to put on the acquirer's balance sheet is the same, irrespective of the allocation among different types of assets. Goodwill and intangible assets are no different from a balance sheet perspective; what differentiate them are the effects on results. This reasoning implies taking an income statement conservatism approach, which, as previously shown, is also favored by many researchers. While intangible assets with a finite life are amortized over their useful life, goodwill and intangible assets with an indefinite life are tested for impairment annually. Thus, intangible assets will decrease in value each year with a subsequent amortization

expense dampening the income statement result, whereas research suggests that the value decrease in goodwill to a large extent will depend on companies' own judgment.

That the recognition of goodwill as well as the subsequent impairments often hinges upon management discretion rather than the underlying economic value is supported by several studies. Shalev (2009) argues that allocation to goodwill enables companies to improve the post-acquisition earnings. Roychowdhury and Watts (2007) suggest that companies recording a lot of goodwill are not as timely in writing off goodwill as they are in writing down other tangible assets. Petersen and Plenborg (2010) find empirical support for the notion that in companies with a modest magnitude of goodwill not much attention is given to impairment tests. Furthermore, they find that approximately 22 percent of the companies in their sample are not carrying out impairment tests at all. Similarly, Ramanna and Watts (2011) find that in a sample of companies with market indications of goodwill impairment, as many as 69 percent of the companies did not conduct any impairment. The research questioning goodwill impairments is in line with the findings of FREP (2011), as they conclude that goodwill impairment tests are "complex to perform in practice, particularly challenging in times of economic difficulty, and contain a large number of subjective elements" (FREP, 2011, p. 7). They find that despite high levels of reported goodwill as a consequence of high purchase prices during a period of positive business climate, the economic downturn during 2010 has not led to the expected goodwill impairments; few companies reported any impairment losses at all. Even if companies in fact would impair goodwill, research suggests that managers believe such charges to be viewed as non-recurring items by investors and analysts, thus not affecting earnings expectations to the same extent as yearly amortization charges (Shalev, 2007).

As the discussion above shows, there is reason to believe that impairments of goodwill take place much less frequently than do amortizations of intangible assets. This implies that conservatism in a PPA context would rather take the shape of income statement conservatism, in which allocation of the purchase price to intangible assets can be considered more conservative than allocation to goodwill. This is also in line with the ideas and expectations of the previous literature described in section 2.1. (see e.g. Joos & Lang, 1994; Basu, 1997). Taking this approach to conservatism for the PPA process could be illustrated as in the following simple numerical example. Consider three transactions, where goodwill and intangible assets are allocated as follows, assuming a useful life of ten years and straight-line depreciation:

	Transaction 1	Transaction 2	Transaction 3
Intangible assets	20	50	80
Goodwill	80	50	20
Total Intangible value	100	100	100
Amortization (assuming a useful life of 10 years)	-2	-5	-8

Figure 4: Numerical example I – the income statement effect of amortization

When allocating more of the purchase price to intangible assets, the amortization expense will be higher, thus reducing the company’s net profit, illustrating a conservative approach to profits. However, this assumes that the useful lives of the intangible assets in each transaction are equal. If we instead consider the possibility of the intangible assets having different useful lives, the resulting amortizations will be as follows:

	Transaction 1	Transaction 2	Transaction 3
Intangible assets	20	50	80
Goodwill	80	50	20
Total Intangible value	100	100	100
Amortization (5 years)	-4	-10	-16
Amortization (10 years)	-2	-5	-8
Amortization (20 years)	-1	-2.5	-4

Figure 5: Numerical example II – the income statement effect of amortization

Thus, it cannot be concluded that allocating a larger amount to intangible assets by definition is more conservative; the applied useful lives must be considered as well. For example, if the useful life in Transaction 1 is five years, whereas the useful life in Transaction 3 is 20 years, the resulting amortization will be the same (see Figure 5), even though a much larger amount is allocated to intangible assets in Transaction 3 than in Transaction 1. Basu (1997) highlights the importance of the useful life assigned to assets, since it is accruals rather than cash flows that represents income statement conservatism.

2.3.2. Transparency in a PPA context

We argue that transparency in a PPA context is in line with how previous research has defined it, i.e. “the availability of firm-specific information to those outside publicly traded firms” (Bushman et al., 2004, p. 208). After an acquisition whereby the acquiring company obtains control of the target, the acquirer has to disclose a PPA in its annual report. What differentiates a transparent acquirer from a secretive one, from our point of view, is the extent of additional information disclosed. Despite a common IFRS framework with common disclosure requirements concerning the reporting of business combinations and the identification of acquired, previously unrecognized, intangible assets, there are differences in how much information companies actually choose to share in their financial statements. To link transparency to the level of disclosure is a common approach that has been used by e.g. Morris and Gray (2007) and Bushman et al. (2004). The reasoning is straightforward; by creating a checklist of items required to be disclosed, it is possible to calculate a score for each company based on how many items on the checklist they include in their disclosures. A high score implies a greater willingness to share information, i.e. a greater level of transparency.

The above discussions of the interpretation of Gray’s accounting values are summarized in Figure 6 below.

Accounting value	Interpretation in a PPA context
<i>Measurement</i>	
Conservative	High proportion of intangible value allocated to intangible assets High percentage of amortization of intangible value
Optimistic	Low proportion of intangible value allocated to intangible assets Low percentage of amortization of intangible value
<i>Disclosure</i>	
Transparent	High proportion of disclosure index items reported
Secretive	Low proportion of disclosure index items reported

Figure 6: Interpretation of accounting values in a PPA context

3. Hypotheses and Delimitations

Previous research shows that while differences in accounting practice across countries is a widely discussed topic, little attention has been given to potential country-level differences in the reporting of business combinations. In the following section, hypotheses are formulated with the aim of investigating this previously overlooked area. This is followed by the delimitations of our study with regards to choices of study object, countries to investigate and time period.

3.1. Hypotheses

In this thesis, we intend to investigate *whether potential differences in the PPA can be partly attributable to the acquirer's country of origin*. With this being the overall intention, a subset of hypotheses relating to Gray's (1988) accounting values of measurement and disclosure are formulated.

Our first hypothesis concerns the measurement aspect; *companies from countries with a conservative accounting tradition are more conservative also in conducting the PPA, whereas companies with origin in a country with an optimistic accounting tradition are less conservative*. Assuming an income statement approach, conservatism in this context would translate into allocating a high proportion of intangible value to identifiable intangible assets, whereas a low proportion would indicate optimism. Furthermore, conservatism according to the income statement approach also translates into comparatively high amortization charges, whereas optimism translates into comparatively low amortization charges. The formal hypotheses for testing this reasoning statistically are formulated in section 5.2.1.

Our second hypothesis concerns the disclosure aspect; *companies from countries with a transparent accounting tradition are more transparent also when it comes to PPA, as opposed to companies from countries with a secretive accounting tradition*. Transparency in this context translates into a higher level of disclosure relating to the PPA, whereas secrecy is interpreted as a lower level of disclosure. The formal hypotheses for testing this reasoning statistically are formulated in the section 5.2.2.

3.2. Delimitations

As stated above, we have chosen to test two of Gray's (1988) four accounting values: *measurement* and *disclosure*. The reason for focusing on these is that the two other dimensions, *authority* and *enforcement*, cannot be investigated from firm-level data, but are rather decided upon by the regulatory structure in each country. In addition, the measurement and disclosure dimensions are the most tested by previous researchers of the four, and are considered to be the most straightforward attributes of an accounting system to investigate (Doupnik & Tsakumis, 2004).

Since we intend to more specifically investigate whether there are differences in the financial reporting between countries with regards to measurement and disclosure, we have chosen to study the countries of UK, Germany and Sweden. UK and Germany are typically referred to as the extreme cases in previous research. Gray and Radebaugh (1997) found Germany to be an example of a highly conservative country whereas UK showed to take a much less conservative approach to accounting. The two countries have also been classified as examples of different accounting systems according to Nobes (1998) with regards to Class A and Class B accounting systems. UK as a country with a Class A system is thought to provide accounting for shareholders by adopting a true and fair view as well as being transparent. In contrast, Germany, as a Class B country, is thought to provide accounting focusing on creditors and tax systems, which implies a greater concern for prudence and protection of creditors. Also Joos & Lang (1994, p. 142) support the notion of Germany and UK contrasting greatly in their accounting systems and practices: "Germany and the U.K. are the originators, and arguably the most extreme examples, of the two primary accounting philosophies worldwide, the Anglo-Saxon and Continental models". In sum, we believe that if there in fact exist differences on national level, these should be the most visible when comparing the PPA process in UK and Germany. The accounting systems and practices of Sweden are not as easily categorized as those of Germany and UK. As noted by Hellman (2011), the country has been classified differently over time. Having been originally classified as highly influenced by government and tax regulation by Nobes in 1983, Sweden has developed into being more capital market-oriented, resulting in what seems to be a positioning of Sweden closer to the Anglo-Saxon accounting tradition. Thus, Sweden is chosen as a study object due to its position in between the two extreme cases, Germany and UK. Choosing three countries within the EU, also reduces effects from macro-economic variables, such as barriers to trade (Joos & Lang, 1994).

Another reason for believing that differences can be observed across these three countries is that they differ in their pre-IFRS standards in the area of business combinations. Some examples of differences between the pre-IFRS GAAPs of each country and the common IFRS framework should be highlighted. Firstly, UK GAAP, pre-IFRS, is not strict on the identification of intangible assets and opens up for the possibility of many intangible assets being subsumed into goodwill (PwC, 2005). Further, German GAAP, pre-IFRS, treats goodwill as an intangible asset, to be amortized over a finite useful life. An explanation in the notes to the financial statements is required if the economic life of goodwill exceeds five years (PwC, 2010). UK GAAP too allows for amortization of goodwill, but permits for assigning an indefinite life with subsequent impairment testing, similar to the IFRS approach of assigning indefinite life to goodwill (PwC, 2005). In the Swedish GAAP, both intangible assets and goodwill are amortized over their assigned useful lives. There is a rebuttable presumption that the useful life cannot exceed 20 years for neither goodwill nor intangible assets (KPMG, 2005). With regards to disclosure, the requirements of IFRS seem to be more extensive than those of all three different pre-IFRS GAAPs. The maximum disclosures required for public companies are approximately 3000 for IFRS, whereas the corresponding number is 270 for the German GAAP (PwC, 2010).

Finally, we have chosen to focus on acquisitions that have been carried out during 2010. The reason for this is two-fold. Firstly, with the time of the thesis writing process being spring 2012, it is the most recent year available for which all companies have released their annual reports. Secondly, a revised version of IFRS 3 is currently effective on business combinations where the acquisition point in time occur during a financial year starting July 1st, 2009 or later. Some of the changes included in the revised standard relate to the accounting for transactions costs, the accounting for non-controlling interest and the revaluation of previously held equity interest in stepwise acquisitions. These two reasons, i.e. the current timing of the annual reports and the application of the most recent version of the standard, infer that basing the study on data from 2010 will provide the most relevant results possible. Looking at the PPAs performed during one single year could potentially be problematic if the countries studied were in different states of their business cycle, as periods of good business climate leads to an increase in acquisition activity and higher purchase prices, which in turn seem to lead to a higher share of reported goodwill (Gauffin & Nilsson, 2011). However, the three countries studied seem to have a similar business cycle, and to experience a similar trend in economic growth during the last decade (see Appendix A).

4. Method

In this chapter, the design of our study will be presented. As we have taken a quantitative approach, this section will firstly handle the underlying assumptions that have been necessary to make in order to specify which sample of data to research. Thereafter follows a description of how this data has been selected and collected. Finally, the statistical methods for analyzing the data set are outlined. As we intend to focus on the accounting values of measurement and disclosure, the sub-sections of this method chapter will each deal with these two aspects individually.

4.1. Underlying Assumptions

In order to investigate whether or not different patterns in company accounting practice across accounting systems with regards to measurement and disclosure exist, we have taken a deductive research approach. With a starting point in the theory presented above, we have formulated a set of hypotheses that will be empirically and statistically tested (see 3. Hypotheses and Delimitations). In order to delimit and define statistical hypotheses, a few underlying assumptions have been made in operationalizing the purpose of this thesis. Firstly, we assume that the notion of country and that of accounting system are the same. Thereby, we are able to link research on differences across accounting systems with country-level differences, which is in line with previous studies on the subject (see e.g. Gray, 1988; Nobes, 1998). Secondly, as was discussed in section 2.2.1.1., the aspects of measurement and disclosure are typically captured by the accounting values of conservatism and transparency. In line with our interpretation of how these can be applied to a PPA context (see section 2.3.), conservatism is approximated by the ratio of intangible assets to intangible value, whereas transparency is approximated by a constructed disclosure index. These assumptions underlie the research methodology outlined below, and the validity of these choices is further discussed in section 6.2.

4.2. Sample Selection

4.2.1. Countries

As the purpose of the thesis is to study the impact of the national context on how companies implement the IFRS framework with regards to PPA, the first step in the sample selection process is a matter of choosing the countries to study. It follows naturally from the purpose that these countries need to apply the IFRS framework for listed companies. Currently 90 countries have fully conformed to IFRS (AICPA, 2012), but as the data needed to perform this study is to be collected by hand from annual reports, due to resource constraints in terms of time, the number of countries studied is restricted to three: Germany, UK and Sweden. The reasons underlying the choice of countries are outlined in section 3.2.

4.2.2. Transactions

Having decided to focus on these three countries, the next step of the sample selection process is to gather information on PPAs performed and disclosed in the notes of the financial statements in the companies' annual reports. In order to limit the possibility of a bias in the sample set, the method for collecting data is the same for each country. Thus, consistency in the collection of data is emphasized, rather than equality in sample size for each country. A second choice made in order to limit the possibility of bias in the sample is to collect the transaction data on company level; instead of reporting every transaction individually, the data is reported on an aggregated level for those companies which have made multiple acquisitions during the year. In doing so, the risk of one company biasing the sample within one country by having made several transactions is alleviated. The aggregated sums should still be representative since it is expected that a company reports all its acquisitions during the same year with the use of the same methods. Furthermore, as many companies report their transactions in an aggregated manner when several acquisitions have been completed during the year, the availability of comparable information between companies increases.

In order to find transactions, we initially used the mergers and acquisitions database Mergermarket, in which we searched for acquisitions completed during 2010 for each country, and where the acquirer is a public company. Due to limited resources and time constraints, the benefit of using Mergermarket is to quickly obtain information on large transactions. We manually went through the available annual reports for each acquirer and collected data from those where the PPA was fully reported. Thereafter we complemented the data collected from Mergermarket by using the global company database Orbis, where we compiled the 100 largest listed companies for each country (based on turnover) and went through their annual report for 2010 to see if they had reported acquisitions that were not captured by Mergermarket. In our sample, purchase bargains, i.e. when goodwill is negative, have been excluded. The reasoning behind this is that a purchase bargain does not reflect the allocation of the purchase price that we are interested in investigating; when purchase price is lower than net assets there is no value left to allocate, i.e. there is no active choice being made in the measurement of goodwill and intangible assets. Finally, we have also chosen to exclude acquisitions where the company has not reported in English or Swedish, as we would not be able to make a fair judgment of the reporting in a language we do not fully understand. See Table 1 for the final sample.

	Germany	UK	Sweden	Sum
Number of observations	39	66	55	160

Table 1: Sample distribution across countries

4.3. Data

The data for each observation has been collected manually from the selected companies' annual reports for the year 2010. In those cases where the company's fiscal year does not correspond to the calendar year, both the annual report for 2009/2010 and for 2010/2011 have been investigated to find the reporting of transactions completed in 2010. As we in this report study measurement and disclosure separately, we will in the following section describe the data collection for each of the two areas.

4.3.1. Measurement

4.3.1.1. Data Collection

In order to find how the acquirer has allocated the purchase price, we have searched through the notes to the consolidated financial statements to find the one describing PPAs, after which the information has been entered into an excel model (see Appendix B). The value upon which the model is based is the measure of enterprise value (EV), defined as in Figure 7 below.

Enterprise value
Fair value of equity
+ Net debt
+ Debt
+ Minority interest
- Cash and cash equivalents
= Enterprise value

Figure 7: Enterprise value and its components

In the case of an acquisition, the fair value of equity is the consideration paid for the target's net assets plus any previous holding, valued at the new market value as implied by the paid consideration. Net debt is defined as debt, or interest-bearing liabilities, plus minority interest, less cash and cash equivalents. In collecting the data, emphasis has been put on materiality, so that assets have only been grouped into the category in which they with certainty can be considered to belong. In line with the reasoning of Penman (2010), cash is always classified as a financial asset, whereas liabilities are only classified as financial debt if explicitly stated. If there is no information specifying whether the liabilities are interest-bearing, they have been included in other net tangible assets. Minority interest is included in net debt, as it reflects a claim on assets consolidated into the acquirer's balance sheet. The intuition behind using EV as the basis of allocation instead of simply taking the paid

consideration, is that EV is unaffected by how the transaction is financed. In essence, the reason why debt is added and cash subtracted from the paid purchase price in calculating EV, is that once the acquirer has complete ownership of the target, the debt and the cash belongs to the acquirer. The debt is to be repaid in the future, whereas the cash in fact replaces some of what the acquirer expended in purchasing the target.

The EV is then allocated to net tangible assets, intangible assets and goodwill in the purchase price allocation. As for the net tangible assets, property, plant and equipment (PPE) and inventory are specified individually in the model, as these two categories are the most commonly revalued to fair value in the PPA. The remainder of the tangible assets and non-interest bearing liabilities is shown in aggregate in the other net tangible assets item. With regards to intangible assets, they have been allocated to different asset classes when it has been specified in the annual reports. If the companies have not disclosed what their intangible assets are made up of, they have been allocated to other intangible assets.

In addition to the data collected from each company's annual report, we have obtained the company's market capitalization (closing share price multiplied by the number of outstanding shares) as of January 1st, 2010 in Euro from the database Thomson Reuters Datastream. The reason for choosing the market capitalization from that point in time is that none of the acquisitions had yet been completed by the beginning of the year. Thus, as we want a measure of the size of the company pre-acquisition, choosing the beginning of year value minimizes the effect of the acquisitions on the acquirers' share price.

4.3.1.2. Ratio construction

From the data collected, we obtain an EV for each transaction, allocated between net tangible assets, intangible assets and goodwill. In our analysis, we will not focus on net tangible assets. As these are derived from the target companies' book values, the acquirer can only affect it to a limited extent through fair value adjustments upon acquisition. The net tangible assets will therefore be highly dependent on for example which industry the target company belongs to and the decisions made by previous owners, and will therefore not clearly reflect allocation decisions made by the acquirer. In contrast, goodwill and identifiable intangible assets are initially recognized at acquisition. As the size of these two asset classes will reflect the allocation decision made by the acquirer, they will be in focus for the remainder of this report with regards to measurement.

Intangible Assets to Intangible Value

The ratio measuring intangible assets is the total amount of intangible assets as a fraction of intangible value (see Figure 8 below). In contrast, Zhang and Zhang (2007) measured the ratio of goodwill and intangible assets respectively by relating them to the total enterprise value. However, their study was performed within one single industry, implying that enterprise value can be expected to vary less. As we perform our study on several industries, we want to limit the importance of the weight of net tangible assets, and in extension, industry. Thus, by constructing the ratio like this, emphasis is put specifically on how the

residual between purchase price and tangible net assets is allocated. The ratio will show the allocation decision made by the acquirer in the PPA process.

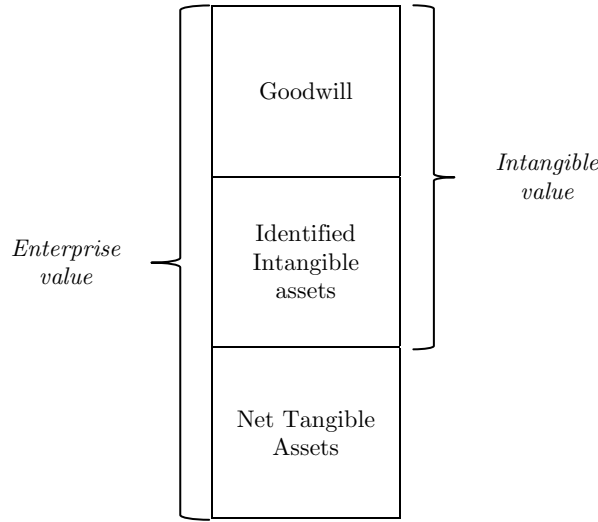


Figure 8: Enterprise and Intangible value

Percentage of Amortization

As previously discussed in section 2.3.1., in order to establish the occurrence of income statement conservatism in the PPA context, it is necessary not only to pay attention to the allocation to goodwill and intangible assets, but also to the useful life of the intangible assets. To be able to fully capture the income statement implication of allocating purchase price to intangible assets rather than to goodwill, we have constructed a percentage of amortization ratio in line with the numerical example illustrated in Figures 5 and 6. A measure of the total yearly amortization percent of intangible value for each country has been calculated as follows:

$$\text{AmortPercent}_j = \sum \frac{\text{PercentIntanVal}_{i,j}}{\text{UsefulLife}_{i,j}}$$

$\text{PercentIntanVal}_{i,j}$ represents the total amount of intangible assets class i within country j divided by the total intangible value observed in country j . By dividing the value of one class of intangible assets by the total intangible value, the relative size effect of the intangible assets is captured. $\text{UsefulLife}_{i,j}$ represents the useful life for asset class i in country j . Since not all companies disclose the useful life for each asset category, this measure has been approximated by taking an average of the useful lives on those observations within each category that do disclose a useful life. This average has then been applied as the common useful life for all observations within that asset category. Since useful life of intangible assets is commonly reported as a time span, we have calculated one average useful life based on the lower limit of the time span, one based on the upper limit of the time span and finally one

average of the whole time span $((\text{min.} + \text{max.}) / 2)$. Thereafter, an amortization percentage has been calculated for each of these three different measures of useful life.

4.3.2. Disclosure

4.3.2.1. Index construction

In determining how companies communicate the acquisition in their annual reports, we have firstly constructed a disclosure index consisting of 18 items required by the IFRS framework to be included in the disclosure for business combinations (IFRS 3) as well as for intangible assets (IFRS 38). The disclosure items included in the index are selected based on whether they can be assumed to be common for all acquisitions regardless of the character of the transaction. For example, disclosing name of target and date of transaction can be expected to be relevant for all business combinations, whereas disclosing contingent consideration only will be relevant in those cases where contingent considerations actually is part of the purchase price. The IFRS requirements relating to such specific situations have therefore been excluded from the index. See Appendix C for the list of disclosure items included.

The coding of the index follows the method of e.g. Shalev (2009), Cooke (1989) and Morris and Gray (2007); for each company, the checklist items have been coded “1” for disclosure, and “0” for non-disclosure. Thereafter, a disclosure score has been calculated for each company as the number of items disclosed divided by the maximum number of items in the disclosure index;

$$\text{TDis}_i = \frac{\sum a_{ij}}{\text{MaxDis}}$$

where a_{ij} is company i 's score (1 or 0) on the j^{th} item on the checklist, and where MaxDis is the total number of investigated items, i.e. 18. The TDis_i measure will vary between 0 and 100 percent.

Had our index included items that were non-applicable for all companies, this coding strategy would have created a bias, with some companies being punished for not being able to apply certain disclosure requirements. Thus, the advantage of our index design is that each company has the same opportunity in reaching a high disclosure score. Furthermore, the disclosure score being the amount of disclosed index items divided by the total amount of index items implies that each item carries the same weight, meaning that no disclosure is considered more important than another. This assumption is reasonable to make as the IFRS do not make any distinction regarding the importance of the disclosure requirements. Finally, as users of financial statements are likely to differ in their preferences for information both across groups and countries, there is no perfect way to assign weights in an objective manner. The unweighted approach in measuring disclosure levels is commonly used in previous research (see Cooke, 1989; Gray et al., 1995 and Shalev, 2009).

4.3.2.2. Data collection

In order to create a disclosure score for each company, we have gathered information from their annual reports. Firstly, the note disclosing the PPA has been investigated, as most of the disclosure requirements relating to IFRS 3 usually are reported in direct connection to the PPA. Secondly, we have searched through the rest of the annual report to gather additional information, such as the disclosures on goodwill reconciliation or useful lives of intangible assets. The disadvantage of this method is that it requires our subjective judgment in determining whether a disclosure requirement is fulfilled or not, which could create a bias. We have tried to limit this potential bias by taking different measures. Firstly, we have constructed the index out of items that to a great extent can be determined to exist or not in an objective manner; either the company reports it or it does not. Secondly, in those cases where the distinction is not clear-cut, we have been consistent for all companies in determining whether or not the disclosure requirement can be considered to be fulfilled.

4.4. Statistical Methods

4.4.1. Measurement

4.4.1.1. Regression

In order to test the hypothesis relating to measurement outlined in section 3.1., we intend to use a set-up similar to that used in previous research (see e.g. Zhang & Zhang, 2007) by performing an OLS regression, specified in Equation 1:

$$\begin{aligned} \text{IntA}_i = & \beta_0 + \beta_1 \text{UK}_i + \beta_2 \text{SWE}_i + \beta_3 \text{IND2}_i + \beta_4 \text{IND3}_i + \beta_5 \text{IND5}_i + \beta_6 \text{IND6}_i + \beta_7 \text{IND7}_i \\ & + \beta_8 \text{IND8}_i + \beta_9 \text{IND9}_i + \beta_{10} \ln \text{MCap}_i + \beta_{11} \text{TDis}_i + \varepsilon_i \end{aligned}$$

(Equation 1)

The variables used in the regression are specified below.

Dependent Variable

IntA_i is the amount of the purchase price allocated to intangible assets as a percentage of the intangible value for company i 's transaction. As previously discussed, this measure is expected to capture the allocation decision made by each company in allocating the intangible value between intangible assets and goodwill. This measure will take on a higher value for companies identifying more of the value as intangible assets, and a lower value for those who allocating more to goodwill.

Explanatory Variables

The explanatory variables are the dummy variables UK_i , SWE_i and DE_i , representing the country of origin for each company. With this system, a Swedish company will take on 0 for

UK_{*i*} and DE_{*i*}, and 1 for SWE_{*i*}. The variable representing Germany, DE_{*i*}, is used as the baseline category against which the other country categories of companies are compared, and is therefore dropped from the regression in order to avoid perfect multicollinearity between the variables. The beta-values for UK_{*i*} and SWE_{*i*} will show, all else equal, how much Swedish and English companies respectively will differ in their allocation to intangible assets in comparison to German companies. To establish the relation between the explanatory variables UK_{*i*} and SWE_{*i*}, a standard t-test will be performed.

Control Variables

Firstly, industry dummies indicating which industry each company belongs to are included as control variables (variables IND2-IND9). The companies have been classified into the different industry categories based on their two-digit SIC codes identified by Orbis. As there are no observations for IND1 and IND10, they are not included in the regression. See Appendix D for list of industries and SIC codes. Again, there is need for a baseline, why Industry 4 *Manufacturing* is dropped from the regression. The industry variables are used to control for differences in the allocation to intangible assets that are due to industry-specific factors, rather than country-specific factors. For example, Industry 7 *Retail Trade* could be expected to allocate more to goodwill in comparison to for example Industry 2 *Mining*, as indicated by Ernst & Young's report (see section 2.2.1.).

Secondly, market capitalization of the acquirer has been added as a control variable for size, as it could be expected that larger companies could put more resources into identifying intangible assets after an acquisition. Thus, by including size in the regression we control for differences in the allocation of intangible assets between large and small companies. In order to induce more symmetry into this variable, we have used the logarithm of the market capitalization for each company.

Finally, the disclosure score calculated for each company, denoted by TDis_{*i*}, is used as a variable to control for the differences in accounting transparency which are not directly attributable to country-level factors. In essence, we want to isolate the country-level effect on measurement, without it being distorted by the firm-specific extent of PPA information, as represented by TDis_{*i*}.

4.4.1.2. Expectations

The regression specified in Equation 1 is used to test the null-hypothesis H₀: $\beta_1 \geq 0$; $\beta_2 \geq 0$ against the alternative hypothesis H₁: $\beta_1 < 0$; $\beta_2 < 0$. In doing so, we aim to investigate whether any potential differences could be related to the pre-IFRS accounting tradition of the three countries. Given our interpretation of the income statement approach to conservatism, this would imply that companies from Germany, a country generally considered to have a conservative accounting tradition, can be expected to allocate comparatively more of the purchase price to intangible assets as these are continuously amortized. In contrast, British companies, coming from an optimistic accounting tradition, could be expected to allocate

more to goodwill. If this reasoning is to hold, the coefficient for the UK variable will have to take on a negative sign. In the case of Sweden, with the Swedish accounting tradition usually considered to lie somewhere in between conservative and optimistic, the coefficient for SWE_i need to take on a positive sign to distinguish it from Germany, but less positive than UK to support the notion of its position as an “in between” country. However, with Sweden having been reclassified continuously over time (see e.g. Hellman, 2011), the expectations are less clear-cut. The relation between Swedish and British companies will be further investigated by testing the null-hypothesis $H_0: \beta_1 \geq \beta_2$ against the alternative hypothesis $H_1: \beta_1 < \beta_2$ in a t-test.

With regards to the variables controlling for industries, we have no specific expectations about their coefficients as there are no clear assumptions to be made about the industry categories and their respective allocation of purchase price. The control variable for size, $\ln MCap_i$, is expected to take on a positive sign in line with the reasoning that large companies could be expected to put more resources into identifying intangible assets. Finally, we also predict $TDis_i$ to obtain a positive coefficient, as it could be expected that companies who identify more intangible assets have reason to disclose more information, than companies identifying less intangible assets.

4.4.1.3. Percentage of Amortization

As the sample size used in the construction of the percentage of amortization measure is too limited to make any statistical test viable, we will not perform any such test on those measures. Rather, an analysis will be made based on the ratios calculated for the three different useful life measures used. Our expectations are that Germany in general will have the highest percentage of amortization and UK the lowest, with Sweden reaching an intermediate value. This would be in line with the income statement approach to conservatism, where a country with a conservative pre-IFRS accounting tradition, such as Germany, would amortize more than a country with an optimistic tradition, such as UK.

4.4.2. Disclosure

4.4.2.1. Z-tests

Firstly, in order to investigate the differences in disclosure level between countries, we test the simple means of both the total disclosure score ($TDis_i$) and each of the 18 index items with the use of Z-tests. Z-tests are generally used to test for differences in the means of two populations. When the two sample sizes to be compared each is larger than 40, the central limit theorem gives that these can be regarded to be approximately normally distributed. Thus, with the null-hypothesis being $H_0 : P_X \leq P_Y$ against the alternative hypothesis $H_1 : P_X > P_Y$, the Z-score is estimated as follows:

$$Z = \frac{(\hat{P}_X - \hat{P}_Y) - (P_X - P_Y)}{\sigma_{\hat{P}_X - \hat{P}_Y}} \sim N(0,1)$$

(Equation 2)

Where $\sigma_{\hat{P}_X - \hat{P}_Y}$ is approximated by the point estimate

$$S_{\hat{P}_X - \hat{P}_Y} = \sqrt{\frac{\hat{p}_0(1 - \hat{p}_0)}{n_x} + \frac{\hat{p}_0(1 - \hat{p}_0)}{n_y}} \quad \text{where} \quad \hat{p}_0 = \frac{n_x \hat{p}_x + n_y \hat{p}_y}{n_x + n_y}$$

H_0 can be rejected if z_{obs} is larger than z_α , where α is the chosen significance level. In this context, $\hat{P}$ is the simple mean for a given disclosure parameter or the total disclosure score. Since the samples can only be tested in pairs, several tests are performed. Firstly, the simple means of both the TDis score and each individual index item is tested pair-wise between the countries (with X and Y denoting the countries being compared) to establish whether or not the differences in means are statistically significant. In addition, tests are performed on samples based on size; companies with a market capitalization of less than 400 MEUR are classified as small, companies exceeding 3 000 MEUR as large and companies with a market capitalization of between 400 and 3 000 MEUR as medium. The classification is been made in order to form three groups of fairly equal size. The tests of the means between companies of different size are performed in order to determine whether or not size can have an impact that possibly biases the results of the z-test with regards to countries. Tests are also performed across countries within these size categories. However, as the sample sizes in those tests are not large enough to assume a normal distribution, the results can only be regarded as approximations.

4.4.2.2. *Expectations*

Based on previous accounting tradition, we expect Germany to disclose the lowest proportion of the index items and UK to disclose the highest, with Sweden in between. It results in the three following hypotheses to be tested;

- a) $H_0 : P_{UK} \leq P_{DE}$ against $H_1 : P_{UK} > P_{DE}$
- b) $H_0 : P_{UK} \leq P_{SWE}$ against $H_1 : P_{UK} > P_{SWE}$
- c) $H_0 : P_{SWE} \leq P_{DE}$ against $H_1 : P_{SWE} > P_{DE}$

When testing for differences in the simple means between size categories, the null-hypothesis $H_0 : P_X \leq P_Y$ is tested for two size categories at a time, with X and Y instead denoting each category being compared. In this context, we expect larger companies to disclose a higher proportion of the index items, as they can be assumed to have more resources for disclosing information.

4.4.2.3. Regressions

To further test the differences in disclosure levels between countries, a regression has been run, as specified in Equation 3. In the z-tests, it was not possible to test for industry belonging as the sample sizes were too small. Therefore, control variables for industries are included:

$$\begin{aligned} TDis_i = & \beta_0 + \beta_1 UK_i + \beta_2 SWE_i + \beta_3 IND2_i + \beta_4 IND3_i + \beta_5 IND5_i + \beta_6 IND6_i + \beta_7 IND7_i \\ & + \beta_8 IND8_i + \beta_9 IND9_i + \beta_{10} \ln MCap_i + \epsilon_i \end{aligned}$$

(Equation 3)

The variables used in the regression are specified below.

Dependent Variable

$TDis_i$ is specified as the number of items disclosed divided by the maximum number of items in the disclosure index for company i (see section 4.3.2.). The measure will thus lie between 0 and 100 percent, and, as previously discussed, the more items disclosed, the higher score a company will obtain.

Explanatory Variables

The explanatory variables are again the dummy variables UK_i , SWE_i and DE_i , representing the country of origin for each company. The variable representing Germany, DE_i , is still used as the baseline category against which the other categories of companies are compared. The beta-values for UK_i and SWE_i will show, all else equal, how much Swedish and English companies respectively differ in their disclosure of PPA information in comparison to German companies. To establish the relation between the explanatory variables UK_i and SWE_i , a standard t-test will be performed.

Control Variables

As in the z-test, differences in size are controlled for. However, in this test, the companies are not grouped into size categories, but instead the size is controlled for by including the logarithm of the market capitalization of each acquiring company ($\ln MCap_i$). The industry dummies indicating which industry each company belongs to are also included in the regression (variables $IND2$ - $IND9$). Again, as there are no observations for $IND1$ and $IND10$, they are not included in the regression and Industry 4 *Manufacturing* serves as a baseline. The industry variables are used to control for differences in the level of disclosure that are due to industry-specific factors.

4.4.2.4. Expectations

The regression specified in Equation 3 will be used to further test the results obtained in the z-tests concerning the total disclosure score. The null-hypothesis H_0 : $\beta_1 \leq 0$; $\beta_2 \leq 0$ will be

tested against the alternative hypothesis $H_1: \beta_1 > 0; \beta_2 > 0$. As previously discussed (see section 2.3.2.), we expect a country with a transparent pre-IFRS accounting tradition to disclose a higher proportion of index items than a country with a more secretive tradition. Thus, we expect Germany to have the lowest average disclosure score and UK to have the highest, with Sweden being an intermediate case. If this reasoning is to hold, the coefficients for both UK and Sweden variables have to take on a positive value, with the magnitude of the UK coefficient being larger than that of Sweden. However, in line with the reasoning regarding measurement, the expectations about Sweden are not clear-cut since its accounting tradition seems to have changed over time.

With regards to the coefficient for the size variable, we expect it to obtain a positive sign, in line with the previous reasoning. Finally, there are no specific expectations about the signs for the industry coefficients. It may be suggested that greater industry-specific reporting requirements would translate into a higher disclosure score for that sector, for example for Industry 8 *Finance, Insurance and Real Estate*.

5. Results

In order to find answers to our previously specified hypotheses the above described data has been analyzed with the results being presented in this section. To provide an overview of the data used, we begin by presenting a descriptive summary of our statistics. Thereafter, we will present the results of the performed statistical analyses aimed at testing the said hypotheses. Each sub-section handles the accounting values of measurement and disclosure separately.

5.1. Descriptive statistics

5.1.1. Number of and distribution of observations

The data collection resulted in 160 observations for the three investigated countries. Tables 2 and 3 report the distribution of our sample across size categories and industries.

	All countries	Percentage of observations	UK	Germany	Sweden
Small	50	31%	20	5	25
Medium	57	36%	20	17	20
Large	53	33%	26	17	10
All companies	160	100%	66	39	55

Table 2: Sample distribution across countries and size categories

As for the size aspect, the companies are divided into three groups based on their opening market capitalization for the investigated year. From Table 2 above, the importance of controlling for size differences in the statistical analysis can be observed; company size varies greatly across countries for the sample. For example, Germany has disproportionately more large companies than both UK and Sweden, something that has the potential of distorting the results if not controlled for.

Further, it is important to note the distribution across industries within the sample as the 160 observations represent sectors with differing characteristics, when it comes to for example capital intensity, reporting requirements and asset classes. As can be seen from Table 3 below, Manufacturing and Services are the two most common industries in the sample, together representing 65 percent of the total number of observations. Additionally, the industry distribution varies across countries; around half of the investigated German and Swedish companies operate within Manufacturing, whereas the Services industry is more common in UK. It should also be noted that all of the nine observations from the Mining sector are British companies and that there is only one German company operating within

the Finance, Insurance and Real Estate industry. These examples highlight the importance of also controlling for industry belonging when analyzing the obtained data.

	All countries	Percentage of observations	UK	Germany	Sweden
Agriculture, Forestry & Fishing	0	0%	0	0	0
Mining	9	6%	9	0	0
Construction	5	3%	2	2	1
Manufacturing	62	39%	15	19	28
Transportation, Communications, Electric, Gas & Sanitary Services	14	9%	6	5	3
Wholesale Trade	4	3%	1	2	1
Retail Trade	6	4%	3	1	2
Finance, Insurance & Real Estate	18	11%	9	1	8
Services	42	26%	21	9	12
Public Administration	0	0%	0	0	0
All industries	160	100%	66	39	55

Table 3: Sample distribution across countries and industries

5.1.2. Measurement

5.1.2.1. Allocation of purchase price

IFRS 3 requires acquirers to recognize all identifiable assets and liabilities of the target companies at fair value, and the difference between the paid consideration and the net assets as goodwill. In our sample, net tangible assets account on average for 10.5 percent of total enterprise value, identified intangible assets represent 34.3 percent, whereas goodwill makes up as much as 55.2 percent. This allocation however varies greatly across countries, size categories and industries, as can be seen from Tables 4, 5 and 6 below. The proportion allocated to net tangible assets can take on a negative value when the fair value of tangible assets is lower than for tangible liabilities, which is true for the industry categories Retail Trade, Services as well as Finance, Insurance and Real Estate.

By simply looking at the mean percentages in the allocation of total enterprise value into asset categories, differences across the three investigated countries can be readily observed. British companies allocate on average the lowest proportion to net tangible assets, only 4.3

percent, compared to 18.8 percent for German companies. However, this proportion is much dependent on industry belonging of the investigated companies, which can be seen from Table 6. Net tangible asset levels varies between -11.7 and 47.3 percent for the different industries. As for the intangible asset proportion of enterprise value, this share is around 39 percent for UK and Germany, while Swedish companies report only 25.9 percent. The remaining goodwill proportions follow from this; the highest percentage can be observed for Sweden, followed by UK and the lowest for Germany.

To be able to compare allocations across countries without the distortion of how much capital is tied up in the respective companies, intangible assets and goodwill in relation to total intangible value is investigated. This results in even larger differences in mean percentages for the three countries. German companies allocate on average the highest proportion to intangible assets, 47.9 percent, whereas the corresponding number for UK and Sweden is 39.2 percent and 28.4 percent respectively. These results will be tested statistically for significance in the Statistical Analysis section.

When it comes to differences across size categories, it can be observed that small acquiring companies allocate less of both enterprise value and intangible value to intangible assets than larger companies. Small companies on average allocate 30.1 percent of intangible value to intangible assets, compared to 42.3 percent for large companies. In fact, the larger the acquirer, the larger the proportion of intangible assets, based on size category. This may partly explain the low levels of intangible assets in Swedish companies, as the sample for Sweden proportionally contains more small companies than Germany and UK. The levels of intangible assets across industries vary greatly, from 17.1 percent up to above 43 percent for different industries. These observations again highlight the importance of controlling for both industry and size when analyzing these results statistically.

Acquirer country	Number of observations	Percentage of observations	Mean percentage Net tangible assets / Enterprise Value	Mean percentage Intangible assets / Enterprise Value	Mean percentage Goodwill / Enterprise Value	Total Enterprise Value	Mean percentage Intangible assets / Intangible Value	Mean percentage Goodwill / Intangible Value
All countries	160	100%	10.5%	34.3%	55.2%	100%	37.6%	62.4%
UK	66	41%	4.3%	38.9%	56.8%	100%	39.2%	60.8%
Germany	39	24%	18.8%	38.6%	42.6%	100%	47.9%	52.1%
Sweden	55	34%	11.9%	25.9%	62.3%	100%	28.4%	71.6%

Table 4: Allocations of purchase price to different asset classes per country

Acquirer size	Number of observations	Percentage of observations	Mean percentage Net tangible assets / Enterprise Value	Mean percentage Intangible assets / Enterprise Value	Mean percentage Goodwill / Enterprise Value	Total Enterprise Value	Mean percentage Intangible assets / Intangible Value	Mean percentage Goodwill / Intangible Value
All companies	160	100%	10.5%	34.3%	55.2%	100%	37.6%	62.4%
Small	50	31%	7.0%	29.9%	63.1%	100%	30.1%	69.9%
Medium	57	36%	10.6%	35.3%	54.1%	100%	39.8%	60.2%
Large	53	33%	13.6%	37.5%	48.9%	100%	42.3%	57.7%

Table 5: Allocations of purchase price to different asset classes per size category

Acquirer industry	Number of observations	Percentage of observations	Mean percentage Net tangible assets / Enterprise Value	Mean percentage Intangible assets / Enterprise Value	Mean percentage Goodwill / Enterprise Value	Total Enterprise Value	Mean percentage Intangible assets / Intangible Value	Mean percentage Goodwill / Intangible Value
All industries	160	100%	10.5%	34.3%	55.2%	100%	37.6%	62.4%
Agriculture, Forestry & Fishing	0	0%	n/a	n/a	n/a	n/a	n/a	n/a
Mining	9	6%	47.3%	31.3%	21.3%	100%	43.5%	56.5%
Construction	5	3%	30.3%	15.5%	54.3%	100%	17.1%	82.9%
Manufacturing	62	39%	19.9%	36.6%	43.5%	100%	43.4%	56.6%
Transportation, Communications, Electric, Gas & Sanitary Services	14	9%	10.0%	36.3%	53.7%	100%	38.4%	61.6%
Wholesale Trade	4	3%	24.8%	19.0%	56.2%	100%	39.2%	60.8%
Retail Trade	6	4%	-0.1%	29.2%	70.9%	100%	29.7%	70.3%
Finance, Insurance & Real Estate	18	11%	-11.7%	34.1%	77.6%	100%	29.5%	70.5%
Services	42	26%	-4.0%	35.5%	68.5%	100%	34.4%	65.6%
Public Administration	0	0%	n/a	n/a	n/a	n/a	n/a	n/a

Table 6: Allocations of purchase price to different asset classes per industry

5.1.2.2. Intangible asset categories and useful life

Table 7 reports statistics on categories of identifiable intangible assets reported by the acquirers and the corresponding useful lives in aggregate for the three countries (for country-specific figures, see Appendix E-G). We distinguish between six categories of intangible assets, out of which the most commonly reported is Customer contracts, relationships and bases (identified in 33 percent of the observations), followed by Technology and software (15 percent) and Trademarks, trade names and brands (15 percent). These are also the most commonly identified intangible asset types in each of the three countries, except for in the German sample, where Other intangible assets is the second most common category. Capitalized development costs is the most seldom reported category, for all of the three countries. Other intangible assets is however the category that in aggregation makes up the largest part of enterprise value, intangible value as well as total intangible assets, followed by Customer contracts, relationships and bases and Trademarks, trade names and brands. This is common for each of the three countries.

The useful life assigned to these intangible assets varies greatly across categories and countries, both in means and ranges of finite useful life. The asset categories with the longest useful lives are Patents, copyrights and licenses with a mean of 12.55 years and Trademarks, trade names and brands with 10.77 years. These categories, together with customer-related intangibles, are also those with the widest ranges of finite useful life, up to 30 to 40 years. Almost all assets identified as having an indefinite life are within the Trademarks, trade names and brands category. The shortest finite useful lives are found for the Capitalized development costs as well as the Other intangible assets categories, with means just above six years each and ranges up to 16 and 20 years. As for observable differences on country level, the means of finite useful lives are somewhat higher for German companies than for Sweden and UK.

Class of intangible assets	Number of observations	Percentage of observations	Mean percentage of Enterprise value	Mean percentage of Intangible Value	Mean percentage of total intangible assets	Mean of finite useful life	Range of finite useful life	No of acquisitions with indefinite life
Patents, copyrights and licenses	11	7%	2.5%	3.0%	7.1%	12.55	1 - 30 yrs	0
Customer contracts, relationships and bases	52	33%	10.8%	10.8%	25.9%	8.14	0 - 33 yrs	1
Technology and software	24	15%	1.6%	1.3%	3.1%	6.96	0 - 25 yrs	0
Trademarks, trade names and brands	24	15%	5.8%	9.7%	23.1%	10.77	0 - 40 yrs	16
Capitalized development costs	6	4%	0.4%	0.4%	0.8%	6.58	2 - 16 yrs	0
Other intangible assets	20	13%	13.2%	16.7%	40.0%	6.46	1 - 20 yrs	1

Table 7: Intangible asset classes and useful life for all transactions

5.1.3. Disclosure

IFRS 3 and IAS 38 require acquirers to disclose certain types of information related to the purchase price allocation and the identified intangible assets. To gauge the level of disclosure in our sample, a disclosure index based on 18 index items is constructed, as described in section 4.3.2.1. Tables 8 to 10 report statistics on overall disclosure levels as well as on individual index items for the different countries, size categories and industries. The parameter that is most often disclosed among all companies is Disclosure 7, requiring companies to show the acquisition-date fair value of the total consideration transferred, disclosed by 99.4 percent of all investigated companies. The most seldom reported parameter is Disclosure 10, requiring companies to disclose the total amount of goodwill that is expected to be deductible for tax purposes, which is reported by as little as 40.6 percent of the companies.

Additionally, it can be observed from Table 8 below that British companies on average report a higher proportion of the investigated parameters (87.0 percent) than do Swedish (84.3 percent) and German (72.4 percent) ones. What is further noticeable is that small companies overall reports a higher proportion of the 18 index items, compared to medium and large companies. Small companies on average report 88.0 percent of the investigated parameters, while medium and large companies report 82.3 and 77.6 percent respectively. The results above will be tested for significance in the section 5.2.2. Disclosure levels also differ across industries, ranging from a reporting percentage of 68.9 for Industry 3 *Construction* to 88.6 for Industry 8 *Finance, Insurance and Real Estate*.

	All countries	UK	Germany	Sweden
Total Disclosure score	82.5%	87.0%	72.4%	84.3%
Disclosure 1	91.9%	90.9%	87.2%	96.4%
Disclosure 2	88.1%	92.4%	92.3%	80.0%
Disclosure 3	92.5%	92.4%	89.7%	94.5%
Disclosure 4	91.9%	95.5%	84.6%	92.7%
Disclosure 5	87.5%	93.9%	69.2%	92.7%
Disclosure 6	78.1%	83.3%	66.7%	80.0%
Disclosure 7	99.4%	100%	97.4%	100%
Disclosure 8	95.0%	100%	79.5%	100%
Disclosure 9	97.5%	98.5%	92.3%	100%
Disclosure 10	40.6%	47.0%	46.2%	29.1%
Disclosure 11	91.9%	95.5%	92.3%	87.3%
Disclosure 12	87.5%	93.9%	82.1%	83.6%
Disclosure 13	97.5%	97.0%	94.9%	100%
Disclosure 14	63.1%	72.7%	33.3%	72.7%
Disclosure 15	63.1%	69.7%	35.9%	74.5%
Disclosure 16	56.3%	69.7%	23.1%	63.6%
Disclosure 17	93.8%	95.5%	89.7%	94.5%
Disclosure 18	69.4%	77.3%	46.2%	76.4%

Table 8: Disclosure scores per country

	All companies	Small	Medium	Large
Total Disclosure score	82.5%	88.0%	82.3%	77.6%
Disclosure 1	91.9%	98.0%	89.5%	88.7%
Disclosure 2	88.1%	92.0%	89.5%	83.0%
Disclosure 3	92.5%	98.0%	96.5%	83.0%
Disclosure 4	91.9%	96.0%	91.2%	88.7%
Disclosure 5	87.5%	98.0%	84.2%	81.1%
Disclosure 6	78.1%	74.0%	80.7%	79.2%
Disclosure 7	99.4%	100%	100%	98.1%
Disclosure 8	95.0%	98.0%	94.7%	92.5%
Disclosure 9	97.5%	100%	100%	92.5%
Disclosure 10	40.6%	30.0%	49.1%	41.5%
Disclosure 11	91.9%	92.0%	93.0%	90.6%
Disclosure 12	87.5%	88.0%	87.7%	86.8%
Disclosure 13	97.5%	98.0%	98.2%	96.2%
Disclosure 14	63.1%	80.0%	59.6%	50.9%
Disclosure 15	63.1%	84.0%	56.1%	50.9%
Disclosure 16	56.3%	80.0%	45.6%	45.3%
Disclosure 17	93.8%	96.0%	96.5%	88.7%
Disclosure 18	69.4%	82.0%	68.4%	58.5%

Table 9: Disclosure scores per size category

	All industries	Industry 2	Industry 3	Industry 4	Industry 5	Industry 6	Industry 7	Industry 8	Industry 9
Total Disclosure score	82.5%	84.6%	68.9%	82.0%	76.6%	84.7%	75.0%	88.6%	84.7%
Disclosure 1	91.9%	100%	80.0%	98.4%	78.6%	100%	83.3%	94.4%	85.7%
Disclosure 2	88.1%	100%	80.0%	83.9%	92.9%	100%	83.3%	94.4%	88.1%
Disclosure 3	92.5%	100%	80.0%	90.3%	85.7%	100%	100%	100%	92.9%
Disclosure 4	91.9%	100%	80.0%	93.5%	78.6%	100%	83.3%	88.9%	95.2%
Disclosure 5	87.5%	100%	60.0%	82.3%	78.6%	75.0%	100%	100%	92.9%
Disclosure 6	78.1%	66.7%	40.0%	83.9%	71.4%	100%	66.7%	88.9%	73.8%
Disclosure 7	99.4%	100%	100%	100%	92.9%	100%	100%	100%	100%
Disclosure 8	95.0%	100%	60.0%	96.8%	85.7%	100%	100%	100%	95.2%
Disclosure 9	97.5%	100%	80.0%	96.8%	100%	100%	83.3%	100%	100%
Disclosure 10	40.6%	22.2%	0%	41.9%	50.0%	75.0%	16.7%	44.4%	42.9%
Disclosure 11	91.9%	88.9%	100%	90.3%	85.7%	100%	83.3%	94.4%	95.2%
Disclosure 12	87.5%	88.9%	60.0%	87.1%	85.7%	100%	66.7%	88.9%	92.9%
Disclosure 13	97.5%	88.9%	100%	96.8%	100%	100%	100%	100%	97.6%
Disclosure 14	63.1%	77.8%	60.0%	59.7%	50.0%	50.0%	50.0%	77.8%	66.7%
Disclosure 15	63.1%	66.7%	60.0%	59.7%	57.1%	50.0%	50.0%	77.8%	66.7%
Disclosure 16	56.3%	66.7%	40.0%	53.2%	42.9%	25.0%	50.0%	61.1%	66.7%
Disclosure 17	93.8%	88.9%	100%	95.2%	92.9%	75.0%	66.7%	94.4%	97.6%
Disclosure 18	69.4%	66.7%	60.0%	66.1%	50.0%	75.0%	66.7%	88.9%	73.8%

Table 10: Disclosure scores per industry

5.2. Statistical Analysis

5.2.1. Measurement

In testing for differences between countries in the allocation of purchase price, a regression is performed to investigate the impact of the companies' origin on the allocation of total intangible value to intangible assets. Furthermore, a non-statistical test is made for the percentage of amortization for each country in order to approximate the potential income statement effect of the allocation of intangible value.

5.2.1.1. Allocation of Purchase Price

In the regression we estimate Equation 1 for our sample of 160 observations. The aim is to see the impact of the explanatory variables, i.e. the companies' country of origin, on the dependent variable, i.e. the ratio of intangible assets to total intangible value. Industry, market capitalization and disclosure level have been included as control variables. The variables for Germany and Industry 4 *Manufacturing* are used as baseline for the regression. The results are presented in Table 11 below.

Variables	Coefficient	Std. error	t-value	P > t
UK	-0.128	0.06	-2.18	0.031 **
SWE	-0.228	0.06	-3.92	0.000 ***
IND2	-0.012	0.10	-0.12	0.901
IND3	-0.245	0.12	-2.04	0.043 **
IND5	-0.064	0.08	-0.84	0.404
IND6	-0.104	0.13	-0.79	0.430
IND7	-0.102	0.11	-0.93	0.356
IND8	-0.127	0.07	-1.81	0.072 *
IND9	-0.085	0.05	-1.55	0.123
lnMCap	0.014	0.01	1.45	0.148
TDis	0.466	0.14	3.25	0.001 ***
Intercept	0.081	0.15	0.54	0.592
F _{11,148}	3.28 [†]			
R ²	0.20			
No. of obs.	160			
*** = significant at a 1 % level				
** = significant at a 5 % level				
* = significant at a 10 % level				
[†] = F-test significant at a 1 % level				

The table shows the results from an OLS regression, explaining the impact of explanatory country variables and control variables for size, industry and disclosure level on the dependent variable intangible assets to intangible value.

Table 11: Regression A – the effect of country origin on PPA

Looking at the explanatory variables, the coefficient for both UK and Sweden carry a negative sign, and are significant at the five percent and one percent level respectively. This indicates that, *ceteris paribus*, British and Swedish companies allocate less of the total intangible value to identifiable intangible assets than do German companies, which is in line with our previous expectations. However, with the coefficient for Sweden being -0.228 and the one for UK being -0.128, Swedish companies seem to allocate a lower proportion of the total intangible value to identifiable intangible assets. A t-test is performed to test this relationship. It shows that the observed relationship between the coefficients for Sweden and UK is significant at the five percent level ($t_{OBS} = 1.98 > t_{0.05, 149} = 1.645$). This validates the comparison of means in section 5.1.2., but ontradiacts our previous expectations regarding the relation between countries; UK was expected to allocate the least to intangible assets of the three countries. To test the joint significance of the explanatory variables, an F-test is performed, with the null-hypothesis being that $\beta_1 \geq 0$ and $\beta_2 \geq 0$, and the alternative hypothesis being that at least one of the beta values takes on a negative value. The null-hypothesis can be rejected at the one percent level ($F_{0.01,2,148} = 7.74 > F_{0.01,2,inf} = 4.605$).

Continuing with the control variables, we will begin by looking at the industry category variables. The coefficients for two of the nine industries are significant at least at the ten percent level; Industry 3 *Construction* and Industry 8 *Finance, Insurance and Real Estate*. Both carry a negative sign, implying that companies within these industries allocate less to intangible assets compared to companies in Industry 4 *Manufacturing*. Considering the magnitude of the coefficients, the greatest difference can be found between Industry 4 *Manufacturing* and Industry 3 *Construction*. With two out of nine industry coefficients being significant, it seems like industry can only explain a limited extent of the variation in intangible assets. The fact that there are some differences between industry categories is in line with our expectations based on both previous research and the simple means obtained in the descriptive statistics. Secondly, we look at the variable measuring the size of the acquirer, $\ln MCap_i$. The coefficient is positive, as expected, but takes on a low value, indicating a limited explanatory power, and is not significant on any of the three levels. Finally, we look at the level of PPA disclosure, $TDis_i$. The disclosure coefficient carries a positive sign, which is in line with our expectations, but somewhat surprising is the magnitude of the coefficient in comparison to those of the other variables. The coefficient is significant on the one percent level. The R^2 -value for the regression is fairly low (0.20), which indicates a limited explanatory power of the variables included. This could be due to the exclusion of firm-specific variables other than industry and size.

The results above will be further analyzed in the section 6. Discussion.

5.2.1.2. Percentage of Amortization

To be able to approximate the joint income statement effect of allocation to intangible assets and assigned useful life, the constructed *percentage of amortization* ratio is used. In short, it

takes the share of intangible value for each intangible asset category, and divides it by a certain proxy of the category's useful life. This is then aggregated to approximate the total yearly amortization percent of intangible value. The percentage of amortization for each of the three countries can be observed in the Panels B of Tables 12 to 14 below, using the average of the finite useful life per country and category as reported in section 5.1.2.2. What is readily observable is a higher ratio for Germany (6.88 percent) compared to those of UK (4.88 percent) and Sweden (4.27 percent). This would imply that Germany on average has higher amortization charges than Sweden and UK, based on the joint effect of valuation of and assigned useful lives to intangible assets. This is in line with the expectation of the country amortizing more of intangible value than the other two. However, since the ranges of useful life are as wide as depicted in Table 7, there is room for interpretation within these ranges, which may affect the amount of amortization. Therefore, percentages of amortization are approximated also using useful lives based on means of both the minimum as well as the maximum of the useful life ranges. As can be seen from the Panels A and C in Tables 12 to 14, Germany still has the highest percentages of amortization, both based on means of minimum (3.95 percent) and maximum (13.42 percent) useful lives, which strengthens the reasoning above. Sweden has the lowest ratios, when using the means of average or maximum useful life for each category. This contradicts our expectations of UK amortizing the least of intangible value. However, these expectations hold true when using the mean of minimum useful life, where UK has a lower percentage of amortization than does Sweden.

As in the regression above, these results could potentially be biased from the size and the industry categories of the different companies, as the three different countries have different compositions with regards to both of these variables. The regression above shows a limited importance of both size and industry in this context. It is nonetheless important to bear in mind when interpreting the percentage of amortization scores.

Class of intangible assets	Percentage of Intangible value	Panel A		Panel B		Panel C	
		Mean of <i>minimum</i> useful life	Percentage of amortization	Mean of <i>average</i> useful life	Percentage of amortization	Mean of <i>maximum</i> useful life	Percentage of amortization
Patents, copyrights and licenses	1.81%	7.67	0.24%	9.17	0.20%	10.67	0.17%
Customer contracts, relationships and bases	12.58%	4.76	2.64%	8.37	1.50%	12.14	1.04%
Technology and software	0.95%	3.80	0.25%	6.55	0.15%	9.64	0.10%
Trademarks, trade names and brands	19.11%	9.77	1.96%	11.54	1.66%	14.13	1.35%
Capitalized development costs	0.63%	10.00	0.06%	10.00	0.06%	10.00	0.06%
Other intangible assets	7.93%	4.75	1.67%	6.03	1.32%	7.30	1.09%
Total Percentage of amortization			6.82%		4.88%		3.81%

Table 12: Percentage of amortization for UK

Class of intangible assets	Percentage of Intangible value	Panel A		Panel B		Panel C	
		Mean of <i>minimum</i> useful life	Percentage of amortization	Mean of <i>average</i> useful life	Percentage of amortization	Mean of <i>maximum</i> useful life	Percentage of amortization
Patents, copyrights and licenses	3.30%	8.00	0.41%	15.00	0.22%	22.00	0.15%
Customer contracts, relationships and bases	10.47%	4.75	2.21%	10.06	1.04%	15.38	0.68%
Technology and software	1.65%	4.25	0.39%	5.38	0.31%	6.50	0.25%
Trademarks, trade names and brands	3.33%	8.50	0.39%	12.75	0.26%	17.00	0.20%
Capitalized development costs	0.23%	2.00	0.11%	9.00	0.03%	16.00	0.01%
Other intangible assets	24.76%	2.50	9.90%	5.92	4.18%	9.33	2.65%
Total Percentage of amortization			13.42%		6.04%		3.95%

Table 13: Percentage of amortization for Germany

Class of intangible assets	Percentage of Intangible value	Panel A		Panel B		Panel C	
		Mean of <i>minimum</i> useful life	Percentage of amortization	Mean of <i>average</i> useful life	Percentage of amortization	Mean of <i>maximum</i> useful life	Percentage of amortization
Patents, copyrights and licenses	4.29%	7.80	0.55%	13.10	0.33%	18.40	0.23%
Customer contracts, relationships and bases	8.33%	5.47	1.52%	6.80	1.23%	8.13	1.03%
Technology and software	1.09%	6.22	0.17%	8.17	0.13%	10.11	0.11%
Trademarks, trade names and brands	5.87%	5.25	1.12%	8.63	0.68%	12.00	0.49%
Capitalized development costs	0.11%	4.00	0.03%	5.13	0.02%	6.25	0.02%
Other intangible assets	15.76%	3.00	5.25%	8.38	1.88%	13.75	1.15%
Total Percentage of amortization			8.65%			4.27%	3.02%

Table 14: Percentage of amortization for Sweden

5.2.2. Disclosure

In testing for differences between countries in the level of disclosure, both z-tests and a regression are performed. Firstly, in the z-tests, simple means for both the total disclosure scores and the individual index items are tested across countries and size. Secondly, the regression, as specified by Equation 3, is performed to further investigate the impact of country origin on the total disclosure score, while controlling for size and industry.

5.2.2.1. Z-tests

First, z-tests comparing the simple means across countries, without any regards to differences in size or industry are performed. Looking at the total disclosure score in Panel A and C in Table 15, it can be established that when comparing German companies with Swedish and British ones, the null-hypotheses can be rejected on the ten percent and the five percent significance level respectively. In essence, this means that the average total disclosure score is lower for German companies than for British and Swedish companies, in line with previous expectations. The differences in how German companies versus British and Swedish report are the greatest for four out of the five index items pertaining to the IAS 38 *Intangible Assets* standard (Disclosures 14, 15, 16 and 18). These differences are significant at the one percent level. When comparing Sweden and UK, the corresponding null-hypothesis cannot be rejected, implying that our previous expectations of UK reporting a higher level of disclosure cannot be confirmed. Comparing the individual index items of UK and Germany, it can be concluded that for 11 out of 18 items the corresponding null-hypotheses can be rejected on at least the ten percent significance level, with six out of these being rejected on the one percent level. When comparing Sweden to UK and Germany, the differences vary more. Between UK and Sweden, few of the differences in parameters are significant and some are even negative, contradicting the expected results, yet confirming what the test of total disclosure score showed. When testing Sweden against Germany on the 18 different index items, in ten of the cases the null-hypotheses can be rejected on at least a ten percent significance level, with six being on the one percent level.

Since the first z-tests do not control for differences in size, the sample has been divided into size categories, irrespective of country, and z-tests have been performed between these groups. The results are found in Table 16. Contradicting our previous expectations, the z-tests shows that smaller companies in general are better at disclosing information concerning the PPA than larger companies; in Panel A, the total disclosure score as well as 12 out of the 18 individual index items are significant but the difference is negative, implying a reverse relationship between size and disclosures compared to the one expected. Between large and medium companies, the differences are small and few show a significant result. However, most of the differences between them are negative, again suggesting a negative correlation between size and disclosure level in the area of PPAs. The same pattern can be made out in the relation between small and medium companies. As for the differences between size groups in general, the greatest differences are again to be found in the disclosures relating to IAS 38 *Intangible Assets*.

	Panel A				Panel B				Panel C				
	$\hat{p}_{UK}$	$\hat{p}_{DE}$	z_{obs}	p-value	$\hat{p}_{UK}$	$\hat{p}_{SWE}$	z_{obs}	p-value		$\hat{p}_{SWE}$	$\hat{p}_{DE}$	z_{obs}	p-value
Total													
Disclosure score	87.0%	72.4%	1.86	0.031 **	87.0%	84.3%	0.41	0.341		84.3%	72.4%	1.41	0.079 *
Disclosure 1	90.9%	87.2%	0.60	0.274	90.9%	96.4%	-1.20	0.115	(neg.)	96.4%	87.2%	1.67	0.048 **
Disclosure 2	92.4%	92.3%	0.02	0.492	92.4%	80.0%	2.01	0.022 **		80.0%	92.3%	-1.65	0.050 ** (neg.)
Disclosure 3	92.4%	89.7%	0.47	0.319	92.4%	94.5%	-0.47	0.319	(neg.)	94.5%	89.7%	0.87	0.192
Disclosure 4	95.5%	84.6%	1.92	0.027 **	95.5%	92.7%	0.64	0.261		92.7%	84.6%	1.26	0.104
Disclosure 5	93.9%	69.2%	3.40	0.000 ***	93.9%	92.7%	0.27	0.394		92.7%	69.2%	2.99	0.001 ***
Disclosure 6	83.3%	66.7%	1.97	0.024 **	83.3%	80.0%	0.47	0.319		80.0%	66.7%	1.46	0.072
Disclosure 7	100%	97.4%	1.31	0.095 *	100%	100%	n/a	n/a		100%	97.4%	1.19	0.117
Disclosure 8	100%	79.5%	3.83	0.000 ***	100%	100%	n/a	n/a		100%	79.5%	3.51	0.000 ***
Disclosure 9	98.5%	92.3%	1.60	0.049 *	98.5%	100%	-0.92	0.179	(neg.)	100%	92.3%	2.09	0.018 **
Disclosure 10	47.0%	46.2%	0.08	0.468	47.0%	29.1%	2.01	0.022 **		29.1%	46.2%	-1.70	0.045 ** (neg.)
Disclosure 11	95.5%	92.3%	0.67	0.251	95.5%	87.3%	1.63	0.052 **		87.3%	92.3%	-0.78	0.218 (neg.)
Disclosure 12	93.9%	82.1%	1.92	0.027 **	93.9%	83.6%	1.82	0.034 **		83.6%	82.1%	0.20	0.421
Disclosure 13	97.0%	94.9%	0.54	0.295	97.0%	100%	-1.30	0.097 *	(neg.)	100%	94.9%	1.70	0.045 **
Disclosure 14	72.7%	33.3%	3.95	0.000 ***	72.7%	72.7%	n/a	n/a		72.7%	33.3%	3.79	0.000 ***
Disclosure 15	69.7%	35.9%	3.38	0.000 ***	69.7%	74.5%	-0.59	0.278		74.5%	35.9%	3.75	0.000 ***
Disclosure 16	69.7%	23.1%	4.62	0.000 ***	69.7%	63.6%	0.71	0.239		63.6%	23.1%	3.88	0.000 ***
Disclosure 17	95.5%	89.7%	1.13	0.129	95.5%	94.5%	0.23	0.409		94.5%	89.7%	0.87	0.192
Disclosure 18	77.3%	46.2%	3.25	0.001 ***	77.3%	76.4%	0.12	0.452		76.4%	46.2%	3.00	0.001 ***
	$H_0: P_{UK} - P_{DE} \leq 0$ $H_1: P_{UK} - P_{DE} > 0$ $n_{UK} \quad 66$ $n_{DE} \quad 39$				$H_0: P_{UK} - P_{SWE} \leq 0$ $H_1: P_{UK} - P_{SWE} > 0$ $n_{UK} \quad 66$ $n_{SWE} \quad 55$				$H_0: P_{SWE} - P_{DE} \leq 0$ $H_1: P_{SWE} - P_{DE} > 0$ $n_{SWE} \quad 55$ $n_{DE} \quad 39$				

*** = significant at a 1 % level

** = significant at a 5 % level

* = significant at a 10 % level

Table 15: Results from pair-wise Z-tests across countries on disclosure scores

Panel A							Panel B					Panel C				
	$\hat{p}_{\text{large}}$	$\hat{p}_{\text{small}}$	z_{obs}	p-value			$\hat{p}_{\text{large}}$	$\hat{p}_{\text{medium}}$	z_{obs}	p-value		$\hat{p}_{\text{medium}}$	$\hat{p}_{\text{small}}$	z_{obs}	p-value	
Total																
Disclosure score	78%	88%	-1.40	0.081	*	(neg.)	78%	82%	-0.61	0.271	(neg.)	82%	88%	-0.83	0.203	(neg.)
Disclosure 1	89%	98%	-1.88	0.030	**	(neg.)	89%	89%	-0.13	0.448	(neg.)	89%	98%	-1.78	0.038	** (neg.)
Disclosure 2	83%	92%	-1.37	0.085	*	(neg.)	83%	89%	-0.99	0.161	(neg.)	89%	92%	-0.45	0.326	(neg.)
Disclosure 3	83%	98%	-2.57	0.005	***	(neg.)	83%	96%	-2.35	0.009	*** (neg.)	96%	98%	-0.47	0.319	(neg.)
Disclosure 4	89%	96%	-1.39	0.082	*	(neg.)	89%	91%	-0.45	0.326	(neg.)	91%	96%	-1.00	0.159	(neg.)
Disclosure 5	81%	98%	-2.77	0.003	***	(neg.)	81%	84%	-0.43	0.334	(neg.)	84%	98%	-2.44	0.007	*** (neg.)
Disclosure 6	79%	74%	0.63	0.264			79%	81%	-0.19	0.425	(neg.)	81%	74%	0.83	0.203	
Disclosure 7	98%	100%	-0.98	0.164		(neg.)	98%	100%	-1.04	0.149	(neg.)	100%	100%	n/a	n/a	
Disclosure 8	92%	98%	-1.31	0.095	*	(neg.)	92%	95%	-0.49	0.312	(neg.)	95%	98%	-0.89	0.187	
Disclosure 9	92%	100%	-1.98	0.024	**	(neg.)	92%	100%	-2.11	0.017	** (neg.)	100%	100%	n/a	n/a	
Disclosure 10	42%	30%	1.22	0.111			42%	49%	-0.80	0.212	(neg.)	49%	30%	2.01	0.022	**
Disclosure 11	91%	92%	-0.26	0.397		(neg.)	91%	93%	-0.46	0.323	(neg.)	93%	92%	0.19	0.425	
Disclosure 12	87%	88%	-0.18	0.429		(neg.)	87%	88%	-0.15	0.440	(neg.)	88%	88%	-0.04	0.484	(neg.)
Disclosure 13	96%	98%	-0.53	0.298		(neg.)	96%	98%	-0.65	0.258	(neg.)	98%	98%	0.09	0.464	
Disclosure 14	51%	80%	-3.09	0.001	***	(neg.)	51%	60%	-0.92	0.179	(neg.)	60%	80%	-2.27	0.012	** (neg.)
Disclosure 15	51%	84%	-3.57	0.000	***	(neg.)	51%	56%	-0.55	0.291	(neg.)	56%	84%	-3.11	0.001	*** (neg.)
Disclosure 16	45%	80%	-3.63	0.000	***	(neg.)	45%	46%	-0.03	0.488	(neg.)	46%	80%	-3.65	0.000	*** (neg.)
Disclosure 17	89%	96%	-1.39	0.082	*	(neg.)	89%	96%	-1.58	0.06	* (neg.)	96%	96%	0.13	0.448	
Disclosure 18	58%	82%	-2.60	0.005	***	(neg.)	58%	68%	-1.08	0.14	(neg.)	68%	82%	-1.61	0.054	* (neg.)
	$H_0: P_{\text{large}} - P_{\text{small}} \leq 0$ $H_1: P_{\text{large}} - P_{\text{small}} > 0$ $n_{\text{large}} \quad 53$ $n_{\text{small}} \quad 50$						$H_0: P_{\text{large}} - P_{\text{medium}} \leq 0$ $H_1: P_{\text{large}} - P_{\text{medium}} > 0$ $n_{\text{large}} \quad 53$ $n_{\text{medium}} \quad 57$					$H_0: P_{\text{medium}} - P_{\text{small}} \leq 0$ $H_1: P_{\text{medium}} - P_{\text{small}} > 0$ $n_{\text{medium}} \quad 57$ $n_{\text{small}} \quad 50$				

*** = significant at a 1 % level

** = significant at a 5 % level

* = significant at a 10 % level

Table 16: Results from pair-wise Z-tests across size categories on disclosure scores

Finally, in an attempt to quantify the combined effect of country of origin and size, size groups within each country sample are compared against each other (see Appendix F). However, since these groups contain only between five and 25 observations each, a normal distribution cannot be assumed and the results of the z-tests can merely be regarded as indicative. For small and medium companies, the results vary considerably, which may be due to the small sample sizes, and no general pattern can be traced. When comparing large companies in Germany and UK, the overall disclosure score and ten out of the 18 index items are significant on at least the ten percent significance level, and the differences are as expected; disclosure levels are higher for British companies. Similar results are obtained when comparing large companies in Sweden and Germany; 11 out of the 18 index items are significant on at least the ten percent significance level. The results for large companies in Sweden compared to those in UK are not significant on any level, but the differences are negative, suggesting a potentially higher proportion for Sweden.

5.2.2.2. The regression

To further test the results obtained from the z-tests, the regression specified in Equation 3 is performed. In this regression (see Table 17), only the total disclosure score (TDis_i) is used as a dependent variable, so the results will not say anything about how the different countries score on each individual index item but rather test the overall disclosure level.

Variables	Coefficient	Std. error	t-value	P > t
UK	0.137	0.03	4.36	0.000 ***
SWE	0.091	0.03	2.82	0.005 ***
IND2	-0.041	0.06	-0.74	0.460
IND3	-0.125	0.07	-1.84	0.068 *
IND5	-0.050	0.04	-1.15	0.251
IND6	0.048	0.08	0.64	0.521
IND7	-0.091	0.06	-1.46	0.146
IND8	0.021	0.04	0.53	0.596
IND9	-0.012	0.03	-0.40	0.690
lnMCap	-0.012	0.01	-2.15	0.033 **
Intercept	0.832	0.05	15.78	0.000 ***
F _{10,149}			4.01 [†]	
R ²			0.21	
No. of obs.			160	
*** = significant at a 1 % level				
** = significant at a 5 % level				
* = significant at a 10 % level				
[†] = F-test significant at a 1 % level				
<i>The table shows the results from an OLS regression, explaining the impact of explanatory country variables and control variables for size and industry on the dependent variable total disclosure score.</i>				

Table 17: Regression B – the effect of country origin on PPA disclosure

The coefficients of the explanatory variables denoting companies' country of origin are positive for both UK and Sweden, indicating that, *ceteris paribus*, British and Swedish companies in general report a higher proportion of the items in the disclosure index than do German companies, as expected. Both of the coefficients are significant at the one percent level. In line with our predictions, the coefficient is larger for UK than for Sweden (0.137 compared to 0.091), implying that British companies report an even higher proportion of the index items than do Swedish companies, which places Sweden in between UK and Germany with respect to PPA disclosures. A t-test is performed to test this relationship. It shows that the observed relationship between the coefficients for Sweden and UK is significant at the ten percent level ($t_{\text{OBS}} = 1.60 > t_{0.10, 150} = 1.282$). To test the joint significance of the explanatory variables, an F-test is performed, with the null-hypothesis being that $\beta_1 \leq 0$ and $\beta_2 \leq 0$, and the alternative hypothesis being that at least one of the beta values takes on a positive value. The null-hypothesis can be rejected at the one percent level ($F_{0.01, 2, 149} = 9.54 > F_{0.01, 2, \text{inf}} = 4.605$). The coefficient for the control variable for size, $\ln\text{MCap}_i$, carries a negative sign, which contradicts our expectations, but is in line with both the comparison of simple means and the results from the z-tests. The coefficient is significant at the five percent level. Only one of the industry coefficients is significant on the ten percent level (Industry 3 *Construction*). Thus, it seems like industry belonging does not affect the disclosure level with regards to PPA in a significant manner. Therefore, the results pertaining to the z-tests can be regarded as valid. The R^2 -value of the regression is relatively low (0.21), indicating a limited explanatory power of the included variables. This could be due to other firm-specific variables affecting the disclosure level, in addition to the country-level variables investigated here. The results from the z-tests and the regression will be further analyzed in section 6. Discussion below.

5.2.3. Summary of Results

Firstly, the measurement aspect of PPA was investigated and it was established that companies from UK and Sweden allocate less of the total intangible value to intangible assets than do companies from Germany. Further, when approximating the joint effect of the allocation to intangible assets and the assigned useful lives on the income statement, it was found that German companies seem to amortize more of the intangible value than Swedish and British companies. With regards to the relation between Sweden and UK, the results indicate that Swedish companies allocate the least to intangible assets.

Secondly, the disclosure aspect of PPA was investigated and it was established that German companies report a lower proportion of the investigated index items than do Swedish and British companies. The largest differences relate to the disclosures pertaining to intangible assets. The relation between Sweden and UK was unclear; the z-tests on individual index items show varying results whereas the overall regression indicates that British companies disclose a higher proportion of the index items.

6. Discussion

With a starting point in the results obtained, we intend to further interpret and discuss our findings in the following section. Firstly, we explain our results with the help of conservatism and transparency. Thereafter follows a more general discussion of differences in implementation of IFRS standards across countries, where the role of previous accounting tradition is further analyzed. Finally, we recognize the limitations of this study in terms of reliability and validity.

6.1. Discussion of results

The purpose of our study was to investigate differences across countries in the reporting practice with regards to business combinations, with the overall intention being to see whether potential differences in the PPA can be partly attributable to the acquirer's country of origin. In line with the framework proposed by Gray (1988), the study has focused on two main areas: measurement and disclosure. The accounting values corresponding to these two dimensions are the level of conservatism and the level of transparency respectively. We firstly hypothesized that companies from countries with a conservative accounting tradition are more conservative also in conducting the PPA, whereas companies with origin in a country characterized by an optimistic accounting tradition are less conservative. Secondly, we hypothesized that companies from countries with a transparent accounting tradition are more transparent also when it comes to PPA, as opposed to companies from countries with a secretive accounting tradition.

Beginning by accepting the premise that our obtained results in fact indicate differing degrees of conservatism and transparency in the PPA context (see section 2.3.), these can be further analyzed. It was expected that German companies would be more conservative than British, given how the country has traditionally been classified (see e.g. Gray, 1988; Nobes 1998; Joos & Lang, 1994). Similarly, British companies were expected to be more transparent than German companies. Based on our interpretations, the obtained results of this study seem to provide support for these notions when it comes to the reporting of business combinations. In line with the income statement approach to conservatism, German companies allocated the most to intangible assets and presented the highest percentages of amortization. This suggests that an acquisition performed by a German company would affect the income statement more negatively than would an acquisition performed by a British company, all else equal. Furthermore, British companies reported a higher proportion of the investigated disclosure index items than did German companies, indicating a higher level of transparency. This suggests that an acquisition performed by a British company will be reported on more extensively than an acquisition performed by a German company, all else equal. In sum, these findings provide support for our hypotheses; differences in measurement and disclosure of business combinations are in line with previous accounting tradition, regarding UK and Germany as extreme cases of contrasting accounting traditions.

When it comes to Sweden, the previous expectations were less clear-cut. In accordance with the Gray framework, it was expected to be an intermediate country with regards to both the accounting values of measurement and disclosure. However, more recent literature argues that Sweden has moved towards a more optimistic and transparent accounting practice. Our findings are in line with this suggestion. As for the measurement aspect, Swedish companies allocated, *ceteris paribus*, an even lower proportion of intangible value to intangible assets than did British companies, suggesting an even more optimistic reporting of PPA. Concerning PPA disclosure, the positioning of Swedish companies is as expected; they were more transparent than German companies, but less transparent than British, all else equal. Thus, the findings for Sweden provide support for the hypothesis relating to transparency, positioning Sweden in between Germany and UK, in line with its intermediate accounting tradition. For the hypothesis relating to measurement, the support is weaker, as the positioning of Sweden is not in line with its expected intermediate accounting tradition.

See Figure 9 for an illustration of expectations and outcomes.

Accounting value	Indicator	Expectations	Outcome
Conservatism	High allocation to intangible assets	Germany	Germany
		Sweden	UK
Optimism	Low allocation to intangible assets	UK	Sweden
Accounting value	Indicator	Expectations	Outcome
Transparency	High level of disclosure	UK	UK
		Sweden	Sweden
Secrecy	Low level of disclosure	Germany	Germany

Figure 9: Expectations and outcome of accounting values and countries

Based on our findings, it can be concluded that there in fact exist differences across countries in the implementation of the standards relating to the reporting of business combinations. These differences can be explained by previous accounting tradition in accordance with Figure 10. In our study, we have estimated the previous accounting tradition through the use of the accounting values *conservatism* and *transparency*. It may be bold to claim these results mainly pertaining to PPA to be generalizable for the entire accounting practice of the studied countries. However, as findings of previous researchers (see e.g. Kvaal & Nobes, 2010) point in the same direction as ours, we will continue by discussing how previous accounting tradition may affect the overall implementation of IFRS.

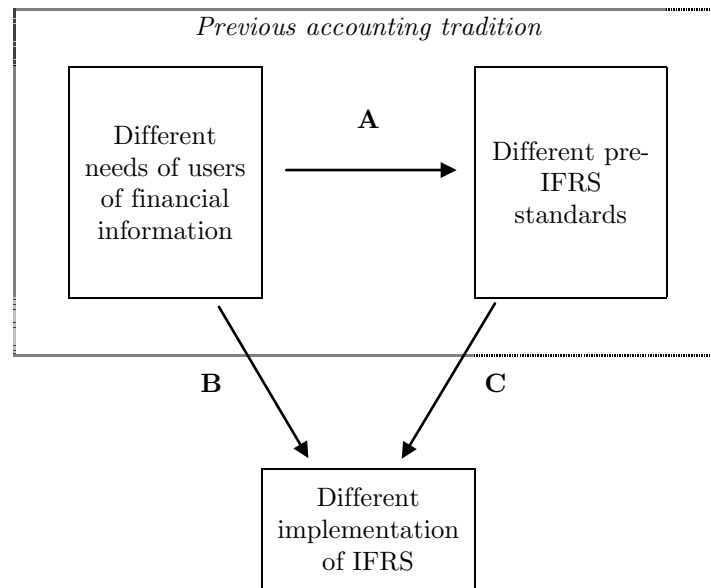


Figure 10: The relation between previous accounting tradition and IFRS implementation

Digging deeper into the concept of previous accounting tradition, we can identify two aspects potentially having an impact on the implementation of IFRS: the different needs of users of the financial information and the different pre-IFRS standards, in each country. This is in line with the reasoning of Nobes (2008), as he suggests that differences in implementation of IFRS standards are associated with both the national pre-IFRS requirements as well as the previous reasons for international differences, relating to financing systems and in extension the intended users of the financial information.

As for the relation between these two aspects (denoted by A in Figure 10), it can be assumed that the needs of the users of financial statements have affected the character and design of the national pre-IFRS GAAPs. Thus, the two aspects seem closely interconnected and it is difficult, and may even appear irrelevant, to distinguish between the different effects from these in

practice. However, we argue that these two aspects influence the implementation in potentially different ways, and therefore merit different treatment if the underlying objective of IFRS is harmonization of accounting standards and enhanced comparability across nations.

The first potential explanation for differences in implementation of standards relates to the different needs of users in respective country (denoted by B). In line with Nobes (1998), the country-level differences could be attributable to the countries' financing systems, i.e. the capital providers who are the main users of financial information. Our results suggest that German companies are more income statement conservative when it comes to reporting of business combinations. This would then imply that Germany still is characterized by a *creditor-dominant system*, meriting a more conservative accounting practice, as outlined in Nobes' (1998) description of Class B accounting systems. Relating the observed income statement conservatism to a creditor-based system is in line with the reasoning of Roychowdhury and Watts (2007), as they argue that a conservative income statement is more informative to users interested in a company's downward risk, such as creditors. Further, the results from this study with regards to Germany, also in relation to the disclosure aspect, are in line with Nobes' theory on Class B accounting systems. This type of accounting system would imply an *insider-dominance*, leading to a lower demand for publicly available, transparent reporting, which was also found to be true for the German companies in our sample. In sum, this suggests that the aspect of German, pre-IFRS accounting tradition relating to the needs of users of financial statements, as it has been defined by literature, still prevails. In contrast, given the results obtained, UK would still be regarded as Class A accounting system, characterized by an *equity-dominant system*, in the sense of taking a less conservative approach to PPA, with an *outsider-dominance*, in the sense of being more transparent in their reporting of PPA. Our findings thus suggest that in this aspect, also British, pre-IFRS accounting tradition relating to the needs of users of financial statements, as it has been defined by literature, still prevails.

The second potential explanation for differences in implementation relates to the different pre-IFRS standards in respective country (denoted by C in Figure 10). Comparing the outcome of our study with the respective previous GAAPs for each country (see section 3.2.), it can be suggested that pre-IFRS national GAAPs are still affecting PPA practice under IFRS. For example, UK GAAP, pre-IFRS, was not strict on the identification of intangible assets and correspondingly British companies in our sample allocate a low proportion of the intangible value to intangible assets. Further, German GAAP, pre-IFRS, treated goodwill as an intangible asset to be amortized over a finite useful life; in our sample, German companies allocate a higher proportion of the intangible value to intangible assets, indicating a previous common practice of allocating value to amortizable assets. Similarly, the German GAAP has less extensive disclosure requirements than has IFRS; accordingly, Germany ranked low with regards to transparency in our study. The finding that the current PPA practice in respective country bear resemblance to that prescribed by their previous GAAPs is in line with that of Kvaal and Nobes (2010). They

find differences in IFRS versions across countries, and prove these to be explained by national pre-IFRS requirements; companies tend to sustain their previous national practices where there is scope within IFRS.

As previously argued, it is difficult, perhaps impossible, to clearly distinguish between the two aspects of previous accounting tradition discussed above. However, the two aspects imply different underlying causes of why dissimilarities in implementation of IFRS standards on business combinations persist. If the aspect of differences in pre-IFRS standards (denoted by C in Figure 10) is the most influential, the dissimilarities in the implementation of the IFRS standards could be explained by either time-lag in adaptation to new standards or the factors mentioned by Nobes (2006), such as inertia or an unwillingness to change or disrupt current practice. In contrast, if the aspect of user needs (denoted by B in Figure 10) was to be found more influential, the underlying cause of persistent dissimilarities could be that companies continue to cater the needs of their different investors, within the degrees of freedom provided by the flexibility inherent in the principles-based framework of IFRS. In this view, German companies continue to protect their creditors, whereas British companies provide their private investors with a true and fair view and transparent reporting as a basis for economic decisions.

As can be observed in this study and is supported by previous research (see e.g. Kvaal & Nobes, 2010), there are differences across countries in how companies implement IFRS, which is not in line with the one of the main objectives of the standards: to harmonize accounting practice and achieve comparability across nations. In order to establish which measures to take to satisfy the objective of IFRS, it has to be established which of the two explanations above are most influential. If the impact of pre-IFRS standards is found to be the most important, the above-mentioned factors of time-lag and inertia need to be considered. If there is a time-lag in companies' adaptation to the new standards, it may be adequate to let the convergence take time, while being aware of the different practices in the meantime. If inertia and unwillingness to change are the main factors, there is a need of taking action to improve company-level adaptation to the standards. Inherent in the problem of time-lags and inertia as well as unwillingness to change, is that there is no consensus on what constitutes the "correct" implementation of IFRS standards. Thus, it may be difficult to conclude when the objective of IFRS is met; in the case of our study, is harmonization achieved when all companies report the exact same percentage of intangible assets to intangible value? And which percentage would that be? Being a principles-based standard, IFRS provides no clear answer.

If instead the impact of users' needs is found to be most important, the objective of harmonization may be challenged. Given that the overriding purpose of IFRS is to ensure decision usefulness for users of financial statements, it could be questioned if harmonization of practice is really desirable if the users differ across countries. The theories of Gray (1988) and Nobes (1998) suggest that the main capital providers, and thus the primary users of financial

reporting, in Germany traditionally have been creditors, whereas it in UK have been private investors. In order to provide information that ensures decision usefulness for each of these stakeholders, companies may find it necessary to create their own version of IFRS. If this would be the case, the flexibility inherent in the principles-based character of IFRS allowing for country-specific adaptation may be desirable in order to ensure decision usefulness for all kinds of primary users. With this reasoning, it may be argued that the harmonization objective should be downplayed and the potential for differing versions under IFRS be explicitly recognized, to really enhance comparability. Otherwise there is a risk of the scenario predicted by Ball (2006) to come true: that a common framework will lead to differences in reporting across countries being “hidden under the rug of seemingly uniform standards” (Ball, 2006, p. 15).

However, it may finally be argued that it is not possible to clearly distinguish between the two potential reasons discussed above to why companies implement IFRS differently across countries. As the linkage depicted by A (see Figure 10) implies, there is a close connection between user needs and pre-IFRS standards; it may be assumed that the pre-IFRS standards were developed in accordance with the needs of the users described by Nobes (1998). With the rapidly increasing globalization of the capital markets during the last decades, it may be questioned whether the national differences in financing systems outlined by Nobes still prevail; can countries still be characterized as having different types of capital providers or have they converged over time? If so, the explanation to the persisting differences across countries may again be explained with time lags, inertia, unwillingness to change or possibly – in line with the reasoning of Gray (1988) – sustained differences in company tradition and attitude, attributable to differing national cultures.

6.2. Limitations

To assess and acknowledge the limitations of our study, we will turn to discussing the concepts of validity and reliability. Validity in general can be said to concern whether a study measures what it intends to measure and its generalizability, whereas reliability relates to the accuracy of the measurement (Bryman, 2011).

With regards to reliability, the subjectivity inherent in the method of collecting data could be questioned, in particular for the disclosure aspect of the study. Subjective judgment on whether a disclosure index item is considered to be reported by a specific company may have affected the results. However, in trying to quantify a qualitative phenomenon, there is no evident way to avoid having to make such judgments. We have tried to limit the bias in the construction of the index, as explained in section 4.3.2.

As for the validity aspect, some of the choices made during the course of our study merit further discussion. Firstly, it may be questioned whether our proxies for conservatism and transparency are valid. With regards to the disclosure aspect, our choice of study method, i.e. the constructed

disclosure index, is as previously mentioned in line with much of the research performed on transparency. Yet, this does not rule out the potential of alternative study methods providing a more comprehensive measure of transparency. For example, Bushman and Smith (2003) construct a transparency index including items of public and private information available through other channels than the annual report. However, as the purpose of our study is to investigate differences across countries applying the IFRS framework, we focus on the information requirements specified by this framework. As for the measurement aspect, the main question is whether the allocation of intangible value to intangible assets can be justified as a proxy for conservatism. As was discussed in section 2.3.1., there are no generally accepted definition of conservatism and no perfect measure has yet been agreed upon in previous literature. Thus, we have followed the lead of other researchers and tried to capture conservatism by focusing on the income statement effect from the allocation decision. In order to take this one step further, we not only focused on the allocation decision but also constructed a ratio capturing the amortization effect, an approach previously not pursued by researchers within the area of PPA. We are aware that the validity of the measurement methods, both with regards to conservatism and transparency, may be questioned and we encourage their further development.

Secondly, the limited joint explanatory power of the studied variables is worth mentioning. With R^2 -values around 20 percent for both regressions, it can be concluded that we cannot rule out that other variables, currently excluded from the analysis, would explain a large part of the variation in the independent variables. Such variables would most likely pertain to firm-specific factors and characteristics. For example, Zhang and Zhang (2007) provide a comprehensive analysis of the effects of firm-specific variables on the PPA, and find factors such as acquirer CEO characteristics, incentive systems and earnings management to explain some of the variation. However, the purpose of this study is not to include as many variables as possible in order to fully explain all variation, but rather to focus on the effect of country of origin on the PPA practice.

As for the generalizability of the study, it is restricted by the limitations of the sample and the study object as well as the choices mentioned above. Firstly, due to time and resource restrictions, we were only able to investigate three countries. Two of these, Germany and UK, were chosen deliberately to represent extreme cases, as argued in section 3.2. In addition, Sweden was selected as an intermediate case due to it being of personal interest to the authors. These three countries represent a small proportion of the population of countries applying IFRS, and are not chosen randomly, which is why the results cannot be seen as generalizable for all. Additionally, the results for Sweden highlight the difficulties in establishing relationships between results and previous accounting tradition if the accounting tradition itself is not clear-cut. The extreme cases of Germany and UK facilitate the interpretation of the results, but as soon as a country with a less extreme accounting tradition is investigated, expectations are

difficult to form and outcomes are difficult to interpret and classify. However, UK and Germany are the originators of the two main types of accounting systems and have traditionally influenced large parts of the world (Nobes, 1998), which may imply a somewhat higher degree of generalizability in our results. Secondly, we have chosen to focus on the measurement and disclosure aspects of the PPA process, meaning that all conclusions apply only to this context, which is in line with our original intention. As previously mentioned, it may be bold to generalize our specific results for all financial reporting under IFRS. Nonetheless, as our findings are in line with those of more comprehensive studies previously made on differences in implementation of IFRS, to connect them to such a discussion may still be relevant in trying to understand the underlying mechanisms.

7. Concluding remarks

By studying the reporting of business combinations in 160 companies across three different countries, the intention was to investigate whether or not implementation of the IFRS standards within this area is affected by the national context in which the companies operate. Focus was on the measurement and disclosure aspects of the accounting practice, as they traditionally have been linked to the accounting values of conservatism and transparency. It was found that accounting practice in relation to business combinations differs between the studied countries, and that these differences are in line with what could be expected from their previous accounting tradition in terms of conservatism and transparency. However, the explanatory power of country of origin was limited, suggesting that differences are also attributable to firm-level variables. Thus, we suggest that future research attempts to combine these two aspects in order to gain a more comprehensive view on the differences in the reporting of business combinations.

The implications of our findings have a direct impact on the acquirer's future earnings as well as on its balance sheet; two companies from different European countries with the same cash flows from an acquisition will show different profits as well as different balance sheet valuations. In extension, by generalizing our results to the entire financial reporting practice, this will affect the comparability across companies with different countries of origin under IFRS. Our discussion in section 6.1. shows that this challenges the IFRS objective of international harmonization of accounting practice. We argue that depending on whether the root cause of the differences in implementation is differing user needs or the persisting use of pre-IFRS standards because of time lag or inertia, different measures have to be taken in order to enhance comparability across countries. If companies use the flexibility of IFRS to serve the specific needs of their investors, the notion of harmonization as the overall objective may be challenged. If, on the other hand, the flexibility is used by companies as a loophole to preserve their usual reporting practice, action has to be taken to change the differing practice on a company level. Based on this reasoning, we encourage future case studies to shed light on which of these aspects of previous accounting tradition is more influential for differences in the implementation of IFRS, and which measures to take in order to achieve true comparability of financial information.

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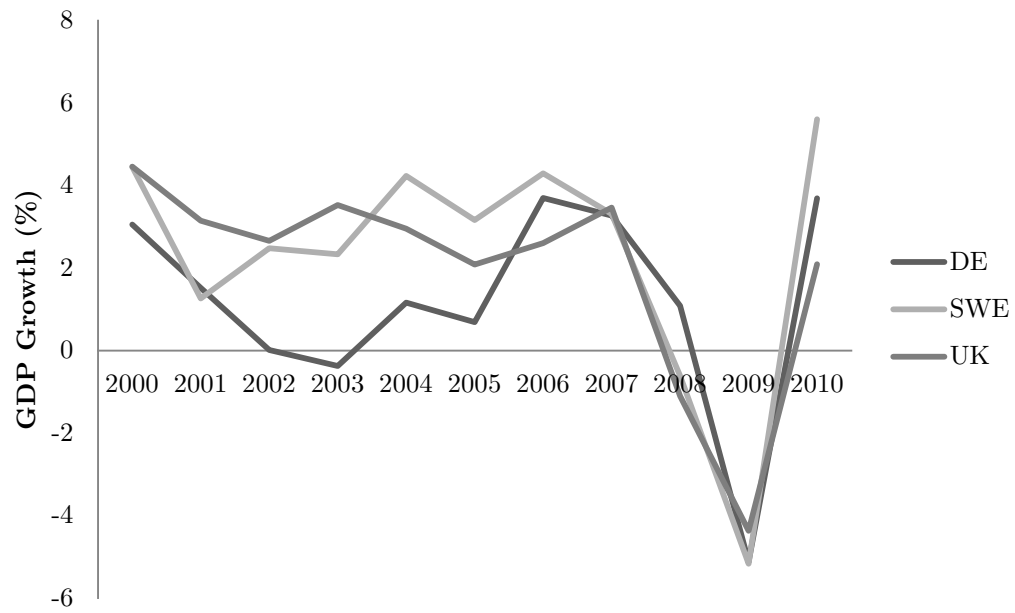
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Appendix

A. Economic growth 2000-2010



(Source: World Bank, GDP Growth annual %)

Appendix A: GDP growth for UK, Germany and Sweden, 2000-2010

B. Example of a PPA note and excel model

Recognised amounts of identifiable assets acquired and liabilities assumed			
	ODIM £m	Other £m	Total £m
Intangible assets – software and other	96	–	96
Property, plant and equipment	24	–	24
Inventories	16	–	16
Trade and other receivables	57	–	57
Cash and cash equivalents	12	–	12
Trade and other payables	(46)	–	(46)
Current tax liabilities	(3)	–	(3)
Borrowings	(1)	–	(1)
Deferred tax liabilities	(32)	–	(32)
Provisions	(2)	–	(2)
Total identifiable assets and liabilities	121	–	121
Goodwill arising	115	3	118
Total consideration	236	3	239
Satisfied by:			
Cash consideration	159	3	162
Existing 33 per cent shareholding	77	–	77
	236	3	239
Net cash outflow arising on acquisition:			
Cash consideration			162
Less: cash and cash equivalents acquired			(12)
Cash outflow per cash flow statement			150
Identifiable intangible assets comprise:			
Technology, patents and licenses			45
Customer relationships			46
Other			5
			96

(Source: Rolls Royce Plc, Annual report 2010, p. 132)

Purchase Price Allocation		£ million	
Consideration		239	
Net debt			
Debt (incl. non-controlling interest)		1	
Cash and cash equivalents		12	
Net debt		-11	
Enterprise Value		228	
Tangible assets			
PPE		24	
Inventory		16	
Other net tangible assets		-26	
Tangible assets		14	
Intangible assets (excl. goodwill)			
Patents, copyrights and licenses		45	Useful life, min
Customer contracts, relationships and bases		46	Useful life, max
Technology, software			
Trademarks, trade names and brands			
Capitalized development costs			
Other		5	
Intangible assets (excl. goodwill)		96	
Goodwill		118	
Enterprise Value		228	
Correct calculation		YES	

Appendix B: Example of a PPA note and the excel model

C. Disclosure index items

No. of disclosure	Standard	Description
1.	IFRS 3 B64	<i>a)</i> the name and a description of the acquiree
2.		<i>b)</i> the acquisition date
3.		<i>c)</i> the percentage of voting equity interests acquired
4.		<i>d1)</i> the primary reasons for the business combination
5.		<i>d2)</i> description of how acquirer obtained control
6.		<i>e)</i> a qualitative description of the factors that make up the goodwill recognised
7.		<i>f1)</i> the acquisition-date fair value of the total consideration transferred
8.		<i>f2)</i> the acquisition-date fair value of each major class of consideration
9.		<i>i)</i> the amounts recognised as of the acquisition date for each major class of assets acquired and liabilities assumed
10.		<i>k)</i> the total amount of goodwill that is expected to be deductible for tax purposes
11.		<i>q1)</i> the amounts of revenue and profit or loss of the acquiree since the acquisition date included in the consolidated statement of comprehensive income for the reporting period, or impracticable
12.		<i>q2)</i> the revenue and profit or loss of the combined entity for the current reporting period as though the acquisition date for all business combinations that occurred during the year had been as of the beginning of the annual reporting period, or impracticable
13.	IFRS 3 B66	<i>d)</i> a reconciliation of the carrying amount of goodwill at the beginning and end of the reporting period, e.g. impairment, new purchases
14.	IAS 38 §118	<i>a1)</i> whether the useful lives are indefinite or finite
15.		<i>a2)</i> if finite, the useful lives or the amortisation rates used
16.	IAS 38 §122	<i>a)</i> if indefinite useful life; the reasons supporting the assessment of an indefinite useful life
17.	IAS 38 §118	<i>b)</i> the amortisation methods used for intangible assets with finite useful lives
18.	IAS 38 §118-119	the different classes of intangible assets recognized

Appendix C: Disclosure index items

D. List of industries and SIC codes

SIC Group	Industry	No. of Obs.	Percentage
01-09	Agriculture, Forestry & Fishing	0	0%
10-14	Mining	9	6%
15-17	Construction	5	3%
20-39	Manufacturing	62	39%
40-49	Transportation, Communications, Electric, Gas & Sanitary Services	14	9%
50-51	Wholesale Trade	4	3%
52-59	Retail Trade	6	4%
60-67	Finance, Insurance & Real Estate	18	11%
70-89	Services	42	26%
91-99	Public Administration	0	0%
Sum		160	100%

Appendix D: List of industries and SIC codes

E – G. Intangible asset classes and useful life per country

Class of intangible assets	Number of acquisitions	Percentage of acquisitions	Mean percentage of total Enterprise Value	Mean percentage of total Intangible Value	Mean percentage of total intangible assets	Mean of finite useful life	Range of finite useful life	No of acquisitions with indefinite life
Patents, copyrights and licenses	3	5%	1.3%	1.8%	4.2%	9.17	1 - 20 yrs	0
Customer contracts, relationships and bases	28	42%	14.0%	12.6%	29.2%	8.37	0 - 33 yrs	0
Technology and software	11	17%	1.9%	1.0%	2.2%	6.55	0 - 20 yrs	0
Trademarks, trade names and brands	12	18%	6.1%	19.1%	44.4%	11.54	0 - 40 yrs	4
Capitalized development costs	1	2%	0.7%	0.6%	1.5%	10.00	10 yrs	0
Other intangible assets	10	15%	15.0%	7.9%	18.4%	6.03	1 - 20 yrs	1

Appendix E: Intangible asset classes and useful life for UK

Class of intangible assets	Number of acquisitions	Percentage of acquisitions	Mean percentage of total Enterprise Value	Mean percentage of total Intangible Value	Mean percentage of total intangible assets	Mean of finite useful life	Range of finite useful life	No of acquisitions with indefinite life
Patents, copyrights and licenses	3	8%	4.4%	3.3%	7.6%	15.00	2 - 30 yrs	0
Customer contracts, relationships and bases	8	21%	8.4%	10.5%	23.9%	10.06	1 - 30 yrs	1
Technology and software	4	10%	1.2%	1.7%	3.8%	5.38	3 - 10 yrs	0
Trademarks, trade names and brands	4	10%	7.3%	3.3%	7.6%	12.75	2 - 30 yrs	3
Capitalized development costs	1	3%	0.1%	0.2%	0.5%	9.00	2 - 16 yrs	0
Other intangible assets	6	15%	17.2%	24.8%	56.6%	5.92	1 - 16 yrs	0

Appendix F: Intangible asset classes and useful life for Germany

Class of intangible assets	Number of acquisitions	Percentage of acquisitions	Mean percentage of total Enterprise Value	Mean percentage of total Intangible Value	Mean percentage of total intangible assets	Mean of finite useful life	Range of finite useful life	No of acquisitions with indefinite life
Patents, copyrights and licenses	5	9%	2.4%	4.3%	12.1%	13.10	1 - 25 yrs	0
Customer contracts, relationships and bases	16	29%	8.8%	8.3%	23.5%	6.80	2 - 20 yrs	0
Technology and software	9	16%	1.7%	1.1%	3.1%	8.17	1 - 25 yrs	0
Trademarks, trade names and brands	8	15%	4.5%	5.9%	16.6%	8.63	2 - 20 yrs	9
Capitalized development costs	4	7%	0.3%	0.1%	0.3%	5.13	3 - 10 yrs	0
Other intangible assets	4	7%	8.2%	15.8%	44.5%	8.38	1 - 20 yrs	0

Appendix G: Intangible asset classes and useful life for Sweden

H – J. Disclosure scores for each country and size category

	Panel A					Panel B					Panel C			
	$\hat{P}_{UK,large}$	$\hat{P}_{DE,large}$	z_{obs}	p-value		$\hat{P}_{UK,large}$	$\hat{P}_{SWE,large}$	z_{obs}	p-value		$\hat{P}_{SWE,large}$	$\hat{P}_{DE,large}$	z_{obs}	p-value
Total Disclosure score	82.3%	64.7%	1.31	0.095 *		82.3%	87.2%	-0.36	0.359 (neg.)		87.2%	64.7%	1.27	0.102
Disclosure 1	84.6%	94.1%	-0.95	0.171 (neg.)		84.6%	90.0%	-0.42	0.337 (neg.)		90.0%	94.1%	-0.39	0.348 (neg.)
Disclosure 2	80.8%	88.2%	-0.65	0.258 (neg.)		80.8%	80.0%	0.05	0.480		80.0%	88.2%	-0.58	0.281 (neg.)
Disclosure 3	84.6%	76.5%	0.67	0.251		84.6%	90.0%	-0.42	0.337 (neg.)		90.0%	76.5%	0.87	0.192
Disclosure 4	92.3%	82.4%	1.00	0.159		92.3%	90.0%	0.22	0.413		90.0%	82.4%	0.54	0.295
Disclosure 5	88.5%	64.7%	1.87	0.031 **		88.5%	90.0%	-0.13	0.448 (neg.)		90.0%	64.7%	1.45	0.074 *
Disclosure 6	92.3%	52.9%	2.99	0.001 ***		92.3%	90.0%	0.22	0.413		90.0%	52.9%	1.97	0.024 **
Disclosure 7	100%	94.1%	1.25	0.106		100%	100%	n/a	n/a		100%	94.1%	0.78	0.218
Disclosure 8	100%	76.5%	2.60	0.005 ***		100%	100%	n/a	n/a		100%	76.5%	1.66	0.049 **
Disclosure 9	96.2%	82.4%	1.52	0.064 *		96.2%	100%	-0.63	0.264 (neg.)		100%	82.4%	1.41	0.079 *
Disclosure 10	53.8%	23.5%	1.97	0.024 **		53.8%	40.0%	0.74	0.230		40.0%	23.5%	0.91	0.181
Disclosure 11	92.3%	82.4%	1.00	0.159		92.3%	100%	-0.90	0.184 (neg.)		100%	82.4%	1.41	0.079 *
Disclosure 12	92.3%	70.6%	1.89	0.029 **		92.3%	100%	-0.90	0.184 (neg.)		100%	70.6%	1.90	0.029 **
Disclosure 13	96.2%	94.1%	0.31	0.378		96.2%	100%	-0.63	0.264 (neg.)		100%	94.1%	0.78	0.218
Disclosure 14	57.7%	23.5%	2.21	0.014 **		57.7%	80.0%	-1.25	0.106 (neg.)		80.0%	23.5%	2.85	0.002 ***
Disclosure 15	57.7%	23.5%	2.21	0.014 **		57.7%	80.0%	-1.25	0.106 (neg.)		80.0%	23.5%	2.85	0.002 ***
Disclosure 16	57.7%	11.8%	3.01	0.001 ***		57.7%	70.0%	-0.68	0.248 (neg.)		70.0%	11.8%	3.10	0.001 ***
Disclosure 17	88.5%	82.4%	0.57	0.284		88.5%	100%	-1.12	0.13 (neg.)		100%	82.4%	1.41	0.079 *
Disclosure 18	65.4%	41.2%	1.56	0.059 *		65.4%	70.0%	-0.26	0.40 (neg.)		70.0%	41.2%	1.45	0.074 *
	$H_0: P_{UK,large} - P_{DE,large} \leq 0$					$H_0: P_{UK,large} - P_{SWE,large} \leq 0$					$H_0: P_{SWE,large} - P_{DE,large} \leq 0$			
	$H_1: P_{UK,large} - P_{DE,large} > 0$					$H_1: P_{UK,large} - P_{SWE,large} > 0$					$H_1: P_{SWE,large} - P_{DE,large} > 0$			
	$n_{UK,large}$		26			$n_{UK,large}$		26			$n_{SWE,large}$		10	
	$n_{DE,large}$		17			$n_{SWE,large}$		10			$n_{DE,large}$		17	

*** = significant at a 1 % level

** = significant at a 5 % level

* = significant at a 10 % level

Appendix H: Pair-wise Z-tests across countries on disclosure scores for large companies

Panel A					Panel B					Panel C				
	$\hat{P}_{UK,medium}$	$\hat{P}_{DE,medium}$	z_{obs}	p-value		$\hat{P}_{UK,medium}$	$\hat{P}_{SWE,medium}$	z_{obs}	p-value		$\hat{P}_{SWE,medium}$	$\hat{P}_{DE,medium}$	z_{obs}	p-value
Total														
Disclosure score	89.2%	75.5%	1.10	0.136		89.2%	81.1%	0.72	0.236		81.1%	75.5%	0.41	0.341
Disclosure 1	90.0%	82.4%	0.68	0.248		90.0%	95.0%	-0.60	0.274	(neg.)	95.0%	82.4%	1.23	0.109
Disclosure 2	100%	94.1%	1.10	0.136		100%	75.0%	2.39	0.008	***	75.0%	94.1%	-1.57	0.058 *
Disclosure 3	100%	100%	n/a	n/a		100%	90.0%	1.45	0.074		90.0%	100%	-1.34	0.090 * (neg.)
Disclosure 4	95.0%	82.4%	1.23	0.109		95.0%	95.0%	0.00	0.500		95.0%	82.4%	1.23	0.109
Disclosure 5	100%	64.7%	2.90	0.002	***	100%	85.0%	1.80	0.036	**	85.0%	64.7%	1.43	0.076 *
Disclosure 6	85.0%	76.5%	0.66	0.255		85.0%	80.0%	0.42	0.337		80.0%	76.5%	0.26	0.397
Disclosure 7	100%	100%	n/a	n/a		100%	100%	n/a	n/a		100%	100%	n/a	
Disclosure 8	100%	82.4%	1.96	0.025	**	100%	100%	n/a	n/a		100%	82.4%	1.96	0.025 **
Disclosure 9	100%	100%	n/a	n/a		100%	100%	n/a	n/a		100%	100%	n/a	
Disclosure 10	60.0%	64.7%	-0.29	0.386	(neg.)	60.0%	25.0%	2.24	0.013	**	25.0%	64.7%	-2.43	0.008 *** (neg.)
Disclosure 11	95.0%	100%	-0.93	0.176	(neg.)	95.0%	85.0%	1.05	0.147		85.0%	100%	-1.67	0.048 ** (neg.)
Disclosure 12	95.0%	88.2%	0.75	0.227		95.0%	80.0%	1.43	0.076	*	80.0%	88.2%	-0.68	0.248 (neg.)
Disclosure 13	100%	94.1%	1.10	0.136		100%	100%	n/a	n/a		100%	94.1%	1.10	0.136
Disclosure 14	75.0%	35.3%	2.43	0.008	***	75.0%	65.0%	0.69	0.245		65.0%	35.3%	1.80	0.036 **
Disclosure 15	65.0%	35.3%	1.80	0.036	**	65.0%	65.0%	0.00	0.500		65.0%	35.3%	1.80	0.036 **
Disclosure 16	65.0%	23.5%	2.52	0.006	***	65.0%	45.0%	1.27	0.102		45.0%	23.5%	1.36	0.087 *
Disclosure 17	100%	94.1%	1.10	0.136		100%	95.0%	1.01	0.16		95.0%	94.1%	0.12	0.452
Disclosure 18	80.0%	41.2%	2.43	0.008	***	80.0%	80.0%	0.00	0.50		80.0%	41.2%	2.43	0.008 ***
$H_0: P_{UK,medium} - P_{DE,medium} \leq 0$					$H_0: P_{UK,medium} - P_{SWE,medium} \leq 0$					$H_0: P_{SWE,medium} - P_{DE,medium} \leq 0$				
$H_1: P_{UK,medium} - P_{DE,medium} > 0$					$H_1: P_{UK,medium} - P_{SWE,medium} > 0$					$H_1: P_{SWE,medium} - P_{DE,medium} > 0$				
$n_{UK,medium}$			20		$n_{UK,medium}$			20		$n_{SWE,medium}$			20	
$n_{DE,medium}$			17		$n_{SWE,medium}$			20		$n_{DE,medium}$			17	

*** = significant at a 1 % level

** = significant at a 5 % level

* = significant at a 10 % level

Appendix I: Pair-wise Z-tests across countries on disclosure scores for medium companies

Panel A					Panel B					Panel C				
	$\hat{P}_{UK,small}$	$\hat{P}_{DE,small}$	z_{obs}	p-value		$\hat{P}_{UK,small}$	$\hat{P}_{SWE,small}$	z_{obs}	p-value		$\hat{P}_{SWE,small}$	$\hat{P}_{DE,small}$	z_{obs}	p-value
Total Disclosure score	90.8%	87.8%	0.21	0.417		90.8%	85.8%	0.52	0.302		85.8%	87.8%	-0.12	0.452 (neg.)
Disclosure 1	100%	80.0%	2.04	0.021 **		100%	100%	n/a	n/a		100.0%	80.0%	2.27	0.012 **
Disclosure 2	100%	100%	n/a	n/a		100%	84.0%	1.87	0.031 **		84.0%	100%	-0.96	0.169 (neg.)
Disclosure 3	95.0%	100%	-0.51	0.305 (neg.)		95.0%	100%	-1.13	0.129 (neg.)		100%	100%	n/a	n/a
Disclosure 4	100%	100%	n/a	n/a		100%	92.0%	1.29	0.099 *		92.0%	100%	-0.65	0.258 (neg.)
Disclosure 5	95.0%	100%	-0.51	0.305 (neg.)		95.0%	100%	-1.13	0.129 (neg.)		100%	100%	n/a	n/a
Disclosure 6	70.0%	80.0%	-0.45	0.326 (neg.)		70.0%	76.0%	-0.45	0.326 (neg.)		76.0%	80.0%	-0.19	0.425 (neg.)
Disclosure 7	100%	100%	n/a	n/a		100%	100%	n/a	n/a		100%	100%	n/a	n/a
Disclosure 8	100%	80.0%	2.04	0.021 **		100%	100%	n/a	n/a		100%	80.0%	2.27	0.012 **
Disclosure 9	100%	100%	n/a	n/a		100%	100%	n/a	n/a		100%	100%	n/a	n/a
Disclosure 10	25.0%	60.0%	-1.50	0.067 * (neg.)		25.0%	28.0%	-0.23	0.409 (neg.)		28.0%	60.0%	-1.39	0.082 * (neg.)
Disclosure 11	100%	100%	n/a	n/a		100%	84.0%	1.87	0.031 **		84.0%	100%	-0.96	0.169
Disclosure 12	95.0%	100%	-0.51	0.305 (neg.)		95.0%	80.0%	1.47	0.071 *		80.0%	100%	-1.10	0.136 (neg.)
Disclosure 13	95.0%	100%	-0.51	0.305 (neg.)		95.0%	100%	-1.13	0.13 (neg.)		100%	100%	n/a	n/a
Disclosure 14	90.0%	60.0%	1.64	0.051 *		90.0%	76.0%	1.22	0.111		76.0%	60.0%	0.74	0.230
Disclosure 15	90.0%	80.0%	0.62	0.268		90.0%	80.0%	0.92	0.179		80.0%	80.0%	0.00	n/a
Disclosure 16	90.0%	60.0%	1.64	0.051 *		90.0%	76.0%	1.22	0.111		76.0%	60.0%	0.74	0.230
Disclosure 17	100%	100%	n/a	n/a		100%	92.0%	1.29	0.10 *		92.0%	100%	-0.65	0.258 (neg.)
Disclosure 18	90.0%	80.0%	0.62	0.268		90.0%	76.0%	1.22	0.11		76.0%	80.0%	-0.19	0.425 (neg.)
$H_0: P_{UK,small} - P_{DE,small} \leq 0$					$H_0: P_{UK,small} - P_{SWE,small} \leq 0$					$H_0: P_{SWE,small} - P_{DE,small} \leq 0$				
$H_1: P_{UK,small} - P_{DE,small} > 0$					$H_1: P_{UK,small} - P_{SWE,small} > 0$					$H_1: P_{SWE,small} - P_{DE,small} > 0$				
$n_{UK,small}$			20		$n_{UK,small}$			20		$n_{SWE,small}$			25	
$n_{DE,small}$			5		$n_{SWE,small}$			25		$n_{DE,small}$			5	

*** = significant at a 1 % level

** = significant at a 5 % level

* = significant at a 10 % level

Appendix J: Pair-wise Z-tests across countries on disclosure scores for small companies

K. List of sample companies per country

Transactions: UK

Acquirer	Target	Acquirer	Target
Reckitt Benckiser Group Plc	SSL International Plc	Diageo Plc	Multiple transactions
Man Group Plc	GLG Partners Inc	Xstrata Plc	Sphere Minerals Ltd
Babcock International Group Plc	Multiple transactions	Sabmiller Plc	Multiple transactions
Travis Perkins Plc	BSS Group Plc	Unilever Plc	Sara Lee (Personal care business)
Pace Plc	Multiple transactions	Compass Group Plc	Multiple transactions
Shire Plc	Movetis NV	G4S Plc	Multiple transactions
National Express Group Plc	Vogel Bus Company Inc	Standard Chartered Plc	Multiple transactions
DS Smith Plc	Otor S. A.	RSA Insurance Group Plc	Multiple transactions
WS Atkins Plc	The PBSJ Corporation	Thomas Cook Group Plc	Multiple transactions
Aegis Group Plc	Mitchell Communication Group Ltd	WPP Plc	Multiple transactions
Rolls-Royce Holding Plc	Odin ASA	Bunzl Plc	Multiple transactions
Pearson Plc	Melorio Plc	ENRC Plc	Multiple transactions
EnQuest Plc	Stratic Energy Corporation	Rentokil Initial Plc	Multiple transactions
Kier Group Plc	Pure Recycling Warwick Ltd	Smiths Group Plc	Multiple transactions
Afren Plc	Black Marlin Energy Holdings Ltd	Amec Plc	Multiple transactions
Firestone Diamonds Plc	Kopane Diamond Developments Plc	Petrofac Ltd	Multiple transactions
AEA Technology Group Plc	Eastern Research Group, Inc	Capita Plc	Multiple transactions
Sportech Plc	Scientific Games Racing LLC	Experian Plc	Multiple transactions
Mears Group Plc	Multiple transactions		
Chemring Group Plc	Multiple transactions		
F&C Asset Management Plc	Thames River Capital LLP		
HMV Group Plc	MAMA Group Plc		
Daisy Group Plc	Multiple transactions		
Ebiquity plc	Multiple transactions		
Silence Therapeutics Plc	Intradigm Corp		
Savills Plc	Incoll Group Pty Ltd		
Filtronic Plc	Isotek (Holdings) Ltd		
Green Compliance Plc	Multiple transactions		
Avisen	Xploite		
Ultimate Finance Group plc	Ashley Commercial Finance Ltd		
Baltic Oil Terminals Plc	Petro Broker International B.V.		
Ideal Shopping Direct Plc	Lead The Good Life Ltd		
Jubilee Platinum Plc	Multiple transactions		
Creston Plc	Multiple transactions		
Digital Barriers Plc	Multiple transactions		
TEG Group Plc	Simpro Ltd		
Netcall Plc	Telephonetics Plc		
Omega Diagnostics Group Plc	Allergopharma		
Accumuli Plc	Multiple transactions		
Brooks MacDonald Group Plc	Braemar Group Plc		
TUI Travel Plc	Multiple transactions		
GlaxoSmithKline Plc	Multiple transactions		
Tesco Plc	Multiple transactions		
Prudential Plc	UOB Life Assurance Ltd		
Centrica Plc	Multiple transactions		
Rio Tinto Plc	Oyu Tolgoi LLC		
Balfour Beatty Plc	Multiple transactions		
Aviva Plc	River Road Asset Management		

Acquirer	Target	Acquirer	Target
Merck KGaA	EMD Millipore	Hexagon	Intergraph Corporation
SAP AG	Sybase Inc	HiQ International AB	Frends Technology Oy
Deutsche Bank AG	Multiple transactions	Lindab AB	IVK-Tuote Oy
Bayer AG	Multiple transactions	Investor AB	Multiple transactions
BASF SE	Cognis GmbH	Swedish Orphan Biovitrum AB	Swedish Orphan International AB
Pfeiffer Vacuum Technology AG	Multiple transactions	Ericsson AB	Multiple transactions
Fresenius SE & Co. KGaA	Multiple transactions	Meda AB	Alaven Pharmaceutical LLC
CTS Eventim AG	Multiple transactions	Modern Times Group AB	Multiple transactions
Rheinmetall AG	Multiple transactions	ÅF AB	Multiple transactions
Wacker Chemie AG	Fesil AS	Atlas Copco AB	Multiple transactions
Volkswagen AG	Multiple transactions	Capilon AB	Scanacon AB
Bilfinger Berger SE	Multiple transactions	Orc Group AB	Neonet AB
CompuGroup Medical AG	Multiple transactions	Ratos AB	Multiple transactions
Linde AB	Multiple transactions	Investment AB Oresund	Global Batterier
Hochtief AG	E.E. Cruz and Company Inc	AB Fagerhult	LTS Licht & Leuchten GmbH
Roth & Rau AG	Multiple transactions	Bong AB	Cadix
Stroer Out-of-Home Media AG	Multiple transactions	Alfa Laval AB	Multiple transactions
E.ON	Langerlo-Vilvoorde NV	Tele2 AB	Multiple transactions
Kontron AG	AP Labs Inc	Securitas AB	Multiple transactions
MorphoSys AG	Sloning BioTechnology GmbH	Scania AB	Multiple
Celesio	Multiple transactions	Sandvik AB	Multiple transactions
TUI AG	Multiple transactions	Rejlerkoncernen AB	Råbe Industriksult AB
Symrise AG	The Futura Labs Group	BE Group AB	Lecor Staltechnik AB
itelligence AG	Chelford SAP Solutions Ltd	Investment AB Latour	Multiple transactions
Heidelberger Zement AG	Multiple transactions	Lagercrantz Group AB	Multiple transactions
GEA Group	Multiple transactions	Sigma AB	Cypoint Group AB
Brenntag AG	Multiple transactions	Biotage AB	Caliper Life Sciences
EnBW AG	Kraftwerk Rostock mbH	Nolato AB	Nolato Contour Plastics
ThyssenKrupp AG	Multiple transactions	Bore Technology AB	Multiple transactions
Deutsche Telekom AG	STRATO AG	Elekta AB	Multiple transactions
Wirecard AG	E-Credit Plus Singapore Pte Ltd	Beijer Electronics AB	Multiple transactions
Klöckner & Co SE	Becker Stahl-Service Group	Nordnet AB	Konsumentkredit i Sverige AB
Douglas Holding AG	buch.de internetstores AG	Intrum Justitia AB	Multiple transactions
Axel Springer AG	Multiple transactions	Hexpol AB	Multiple transactions
Prosiebensat1 Media AG	Multiple transactions	Beijer Alma AB	Multiple transactions
Leoni AG	Romack Inc	Nederman Holding AB	Dantherm Filtration Holding A/S
Puma AG	Cobra Golf	Svenska Cellulosa Aktiebolaget SCA	Multiple transactions
Bechtle AG	Multiple transactions	Assa Abloy AB	Multiple transactions
Vossloh AG	Multiple transactions	Catella AB	Catella Brand
		SKF AB	Lincoln Industrial
		PEAB AB	Multiple transactions
		Axfood AB	Multiple transactions
		Gefinge AB	Odelga
		Loomis AB	Multiple transactions
		Indutrade AB	Multiple transactions
		Nibe Industrier AB	Multiple transactions
		Seco Tools AB	Multiple transactions
		Gunnebo AB	API Security Products
		Sweco AB	Multiple transactions
		Addtech AB	Multiple transactions
		Proffice AB	Multiple transactions
		Systemair AB	Multiple transactions
		Mekonomen AB	Multiple transactions
		Bygghem AB	Svea Distribution AB
		Industrial & Financial Systems AB	360 Scheduling Ltd

Appendix K: List of sample companies per country