Cross-Country Accounting Comparability in Times of Mandatory IFRS Adoption

Do diverging accounting traditions prevail over time?

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Abstract

Historically, one important source of disparity harming comparability of accounting information across countries has been the principle of accounting conservatism. One of the main aims of the EU with the mandatory adoption of IFRS in 2005 was to increase the comparability of financial statement information across its membership countries. However, previous research has not found this increase in comparability, but rather that the diverging pre-existing national accounting practices persist, not least when it comes to the degree of accounting conservatism inherent in financial statement information.

The purpose of this thesis is to capture the comparability effect of IFRS adoption from an accounting conservatism perspective over time. By studying a longer time period than previous research, this thesis opens up for the possibility that it takes some time for an increase in comparability to occur. We perform a qualitative comparison of IFRS, Swedish GAAP, and U.K. GAAP and execute panel data regressions for Sweden and the U.K., two EU countries with different accounting traditions historically. Our total dataset includes 382 observations over 8 years and 48 companies. These analyses show that cross-country comparability diminished and that Swedish and British accounting became less and less comparable over time after the IFRS adoption, suggesting that an increase in comparability has not taken place across the EU member countries as was the aim with the adoption.

Our contributions to literature are threefold. First of all, our findings indicate that institutional factors still create demands that lead accountants across countries to apply the principle of conservatism differently, and that accountants might be able to satisfy these demands better under IFRS than was possible under national GAAP. Secondly, we find that the effect on comparability might be spread over a lengthy period after IFRS adoption. Finally, we argue that the accounting choices within IFRS permit the divergence in the degree of accounting conservatism inherent in financial statements across borders.

Key words: cross-country comparability, accounting conservatism, IFRS adoption, accounting traditions Tutor: Walter Schuster Date: 14th May 2018

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1 Introduction

1.1 Background and research question

S ince 2005, all publicly listed companies within the European Union (EU) have had to follow the same set of accounting standards, namely International Financial Reporting Standards (IFRS)¹. With one set of standards in place within the whole region, analysts will benefit since they do not need to comprehend how specific national Generally Accepted Accounting Principles (GAAPs) work to fully understand the financial statements of a company in a specific country. Rather, it will be sufficient to know one set of standards in order to analyze accounting information from any publicly listed company within the EU. With this, one would also expect that financial information within the EU has gotten more comparable since the companies follow the same accounting rules. This initial expectation will further be strengthened by the fact that, together with an increase in transparency, the main aim with the mandatory adoption of IFRS as stated by the EU itself in Regulation No. 1606/2002, was an increase in comparability (European Communities (EC), 2002).

However, several researchers claim that the adoption of IFRS has not led to the expected increase in comparability as was the aim of the EU (EC, 2002), but that companies instead have found ways to keep exercising their pre-existing national accounting practices (e.g. Cascino & Gassen, 2015; Liao et al., 2012; Kvaal & Nobes, 2010). Similar results have been found when studying the effects of the implementation of earlier harmonization directives in Europe (Joos & Lang, 1994). Naturally, this would have the potential to mislead analysts and investors, who will be under the impression that accounting information across countries actually has become more comparable, especially as it was the aim of the EU.

An important reason as to why there has been disparity in financial statements across European countries before the adoption of IFRS, is the principle of accounting conservatism (Garcia Lara & Mora, 2004). In some countries, especially countries in which debtholders have been the main capital providers, conservatism has been an emphasized feature of accounting as debtholders require a high degree of certainty and limited risk when they take investment decisions (Mueller et al., 1991). In other countries, on the contrary, equity capital has been a more important source of financing, and accounting information has in those countries been

¹ This thesis uses the abbreviation IFRS for the set of standards, including both the IFRS and older IAS (International Accounting Standards). We only use IAS when referring to a specific standard.

fulfilling a need of transparency and a fair view of the financial performance has been emphasized (Mueller et al., 1991). Thus, conservatism has not been as demanded there. Right before the mandatory adoption of IFRS, countries in the EU had both these mentioned accounting traditions in place (Hellman et al., 2015; Garcia Lara & Mora, 2004) and, as stated above, there is research providing evidence that even after the adoption of IFRS, companies have continued with their pre-existing accounting practices, not least when it comes to the usage of conservatism (e.g. Cascino & Gassen, 2015; Liao et al., 2012; Kvaal & Nobes, 2010).

Turning to the view on conservatism of the standard setter (International Accounting Standards Board (IASB)), in a discussion paper jointly published by the IASB and the American standard setter shortly after the mandatory adoption of IFRS, it is stated that neutrality is an essential component of faithful representation while prudence is an appropriate response to uncertainty (IASB, 2008, BC 2.20). Yet, it is further argued that the prudence is not allowed to lead to a deliberate understatement of assets or overstatement of liabilities. Their final conclusion on the topic of prudence and conservatism is clear, and it can be seen from the following quote:

"However, the boards concluded that describing prudence or conservatism as a qualitative characteristic or a desirable response to uncertainty would conflict with the quality of neutrality because, even with the proscriptions of deliberate misstatement that appear in the existing frameworks, an admonition to be prudent is likely to lead to a bias in the reported financial position and financial performance." (IASB, 2008, BC 2.21, p. 49)

Accordingly, it is explicitly concluded that prudence or conservatism do not count among the desirable qualities of financial reporting information (IASB, 2008, BC 2.21), a view similar to the view of countries with equity holders as main capital providers. Yet, as stated above, a main aim of the mandatory adoption of IFRS was to increase comparability (EC, 2002). Thus, for this aim to have been fulfilled, the traditional focus on conservatism as a principle in the countries with debtholders in focus, must have disappeared or at least decreased considerably, and these countries should have started to prioritize neutrality as a principle over conservatism.

As can be seen, there is clearly a contrast between the aim of the EU (EC, 2002), and what previous research argue has actually happened. However, some potential reasons can be

identified as to why previous research would not have been able to identify potential increases in comparability. To start with, the relaxations in the retrospective application of IFRS provided by IFRS 1 will mean that it took some time for items recorded with the old national GAAP to disappear completely from the financial statements of the adopters (Hellman et al., 2015). It might also be that companies do need time to learn how to apply the new set of standards in a certain way (Kvaal & Nobes, 2012). Previous research on the topic has only made observations from a limited number of years after the adoption, for example Liao et al. (2012) who study the three years after the adoption of IFRS, or Cascino and Gassen (2015), who look at the four years after the adoption but do aggregate these years together into one measure. Thus, these studies have limited possibilities of capturing changes in comparability since those changes are not certain to be effective immediately after the adoption. In contrast, we will study the comparability effect with a longer time-frame, i.e. the six years following the adoption, and will analyze the trend during these years. This leads us to our research question.

Research question. Did the mandatory adoption of IFRS in the EU lead to an increase in cross-country comparability of accounting information between 2005-2010?

We execute our study by looking at the period from 2003 to 2010 and by examining the cases of Sweden, where conservatism as a principle has historically been important (Mueller et al., 1991; Nobes, 1983), and the United Kingdom (the U.K.), where conservatism has been less demanded (Joos & Lang, 1994; Mueller et al., 1991; Nobes 1983). Thus, these two countries are suitable representatives of EU countries with two different accounting traditions in place before the mandatory adoption of IFRS. If the increase in cross-country comparability has been achieved as was the aim of the EU (EC, 2002), the levels of conservatism in Sweden should have adjusted towards those in the U.K., given the IASB's point of view on conservatism.

The study will be conducted as follows. In a first step, we will establish the levels of accounting conservatism in the two countries before the mandatory adoption of IFRS. As will be further explained in Section 1.3, we will not do this with our quantitative method. Rather, we will turn to previous literature as well as make a qualitative comparison of the national GAAPs previously used in the two countries. In a second step, we will study the changes in the level of accounting conservatism with our quantitative method and answer the following sub-question.

Sub-question. What changes could be observed in the levels of conservatism in Swedish and British accounting after the mandatory adoption of IFRS, both at an overall level as well as on a line item basis?

Based on the determined levels of accounting conservatism (qualitative comparison) and the changes therein (sub-question), we will be able to draw conclusions on what happened to comparability in the accounting among the mandatory adopters of IFRS in the EU. In this way, we will determine whether or not cross-country comparability has increased as was the aim with the mandatory adoption of IFRS.

Furthermore, with our chosen method, we will be able to study cross-country comparability not only at an overall level, but also on a line item basis. Potentially, changes in the degree of accounting conservatism, and in turn in comparability, cannot be found at an overall level but by looking at a line item basis (Aisbitt, 2006). Regardless if we do find an increase in accounting comparability or not, studying the treatment of individual line items will provide new insights into similarities and differences in how countries adopted IFRS.

1.2 Definitions

1.2.1 Definition of comparability

This study will look at comparability in terms of accounting conservatism. Thus, two financial statements are comparable if they report equal levels of accounting conservatism as defined below. As we will investigate the success of the aim of increased comparability with the mandatory adoption of IFRS as stated by the EU (EC, 2002), we will refer to cross-country comparability as accounting comparability among the mandatory adopters within the EU.

1.2.2 Definition of conservatism

This study will define accounting conservatism as choosing accounting methods that keep the value of net assets (total asset subtracted with total liabilities) low, in a manner similar to Penman and Zhang (2002). Thus, conservatism is defined as the deliberate understatement of net assets, and we thereby take a balance sheet approach to measuring conservatism. In doing this, we will be able to follow the method developed by Runsten (1998), when calculating accounting measurement biases from which we can derive conservative biases (see Chapter 4 *Method* for further explanation).

1.3 Boundary conditions

The purpose of this thesis is to capture the comparability effect of the IFRS adoption in terms of accounting conservatism over a longer time frame than previous research. Based on this purpose, we have set some important boundaries that are described in the following.

First of all, our study is based on a two-step analysis. We will first determine the absolute levels of conservatism based on a qualitative comparison of the sets of standards as well as previous literature, and then analyze the changes therein based on our quantitative method. This implies that we will not attempt to compare the absolute levels of accounting conservatism calculated with our quantitative method for the two countries of the study to each other. The reason for this is the difficulty of performing such a comparison since our measure of accounting measurement bias is affected by multiple factors other than conservatism. With our statistical models, we will capture many of the effects these different factors contribute with to the movements of our calculated accounting measurement bias and we will thereby be able to isolate these movements from the changes in accounting conservatism. Yet, given the difficulty of constructing statistical models in a way so that one with reasonable certainty can draw the conclusion that one has captured these other effects in a similar way for both models (i.e. for both countries), we will solely use our statistical models to analyze changes individually for the countries.

Moreover, we do not aim to establish a complete measure of accounting conservatism, but rather a measure of accounting conservatism that includes those balance sheet items that were expected to be treated differently when recorded with IFRS as compared to with previously used national GAAP. Thus, we only look at those balance sheet items that the treatment of was affected by the transition from national GAAP to IFRS. The accounting conservatism inherent in items that were supposed to be treated identically with both national GAAP and with IFRS is thus not intended to be measured in this study. In Section 3.2, we identify several line items where there was a difference in the treatment according to IFRS compared to one or both of Swedish GAAP and U.K. GAAP. Two of these items were goodwill and financial instruments. However, due to reasons of scope, we do not recalculate these two items to their current values. The reason why they were not prioritized is that the existence of accounting choices was not as clear in the standards treating these items. With goodwill, there was a choice of the discount rate when performing impairment tests with IFRS. However, compared to fixed assets where there with IFRS and U.K. GAAP was a choice between fair

value and historical cost, to deferred taxes where there with U.K. GAAP was a choice concerning whether or not to discount, as well as to development costs where with U.K. GAAP there was a choice whether or not to capitalize, the choice of discount rate for goodwill impairment test is not as clear and easy to evaluate. The same is valid for financial instruments, where the choice was not as clear in any of the sets of standards as with the aforementioned line items. Thus, for the line items that we finally recalculate to current value, there was a clear accounting choice in one or several of the sets of standards and it gets interesting to look at what happened to the levels of conservatism coming from these items when the adoption of IFRS took place. As mentioned in Chapter 4 *Method*, it is not possible with our chosen method to recalculate retirement obligations to current value, and that is the reason why this line item is omitted from our calculations.

Further boundaries are set with respect to the time perspective adopted by this study, as well as to the number of countries chosen. More specifically, this thesis looks at the trend development from 2003 to 2010. Although this thesis was written in the spring of 2018, and financial statement information was available until at least the financial year of 2016 for the companies in our sample, we deliberately chose to not study all the years until 2016. As the recalculation of balance sheet items takes a considerable time, focusing on an even longer time perspective would have meant that we would have needed to reduce our sample size. Yet, by studying six years after the adoption of IFRS, we do adopt a longer time perspective than other studies on cross-country comparability under IFRS and we deem this period to be sufficient to capture changes in cross-country comparability over time. However, we will naturally not be able to draw conclusions on cross-country comparability today. In addition, for our qualitative comparison we only look at the differences that existed between the national GAAPs and the IFRS at the time of the IFRS adoption. This means that we do not analyze any change in the IFRS between 2005 and 2010. Similar to our choice of a six-year time frame, this was done out of time and scope issues, as a comprehensive analysis of all changes in the IFRS between 2005 and 2010 would most likely constitute an own thesis topic.

In addition, the mandatory adoption of IFRS in the EU has affected all publicly listed companies. However, we do only consider the largest companies within each country's stock market, meaning that our conclusions will only be valid for large companies. Naturally, the results of studies focusing on small and medium-sized listed companies might look slightly different, but to include all publicly listed companies would not have been feasible. Furthermore, we study the mandatory adoption of IFRS in the EU, but chose to only focus our study on two countries, namely Sweden and the U.K. As will be elaborated in more detail in Chapter 2 *Theory* and Chapter 3 *Comparison of standards and development of hypothesis*, these two countries are good representatives for the two accounting traditions and have traditionally, as well as right before the IFRS adoption, had diverging views on the usage of the principle of accounting conservatism. Thus, our results will give indications on what happened to comparability among companies in countries in the EU with different accounting traditions.

2 Theory

This chapter will provide a tailored overview of the previous literature on the topic of international financial statement comparability and accounting conservatism across borders. We will need to understand the differences between national accounting traditions, their potential survival under a common set of standards, and the impact of the aforementioned on the comparability of financial statements across borders. Thus, we will initially turn to literature on international accounting traditions before the adoption of IFRS (Section 2.1) and subsequently dig deeper into the effects of the international adoption of a common set of standards on cross-country comparability and post-adoption accounting practices, not least in terms of accounting conservatism (Section 2.2). Our review of previous literature will be summarized in Section 2.3.

2.1 Accounting traditions and cross-country differences before the IFRS adoption2.1.1 International accounting traditions and the impact of institutional forces

Traditionally, research on differences in international accounting has focused on understanding different accounting practices based on the institutional factors that are imposed by, above all, countries' legal, economic, and political systems. These institutional factors vary considerably among countries and their interaction impacts the information needs of different stakeholders. Thus, they lead to the development of different national accounting systems. Thereby, these different national accounting systems fulfil different purposes and tend to diverge in their features. This is not necessarily something negative, rather it is the natural outcome of accounting systems being shaped to fulfil the needs of their users. Or as Mueller et al. (1991) states:

"One should not say that the accounting in one country is of better quality than accounting in another country. Accounting exists because it fulfills a need, and as a long as accounting satisfies the needs of its user groups, it is doing what it is supposed to do. Accounting develops in and is nurtured by its environment." (Mueller et al., 1991, page 19)

Against this background, Mueller et al. (1991) distinguished two of the primary accounting philosophies as the Anglo-Saxon and the Continental European accounting tradition, a classification that has repeatedly been taken up by other academics (e.g. Haller & Wehrfritz, 2013; Choi & Meek, 2011; Garcia Lara & Mora, 2004; Joos & Lang, 1994). In countries with the Anglo-Saxon tradition, these academics state, the primary source of

financing is the equity market, meaning that financial information is primarily oriented on shareholders' needs. Additionally, there is a clear separation between financial accounting and tax accounting, as well as an orientation towards transparency and the fair presentation of financial statement information. Conservative accounting has, from this point of view, been criticized for reducing the value relevance of accounting information for the main recipients, the shareholders (Hendriksen, 1977), and there has thus been a low demand for conservatism in the accounting.

The Continental European accounting tradition, in contrast, is generally focusing on debtholders as the main provider of financing and, thus, as the main recipients of the accounting information. On the one hand, accounting standards focus on the protection of these debtholders and the accounting is thereby strongly conservative (Mueller et al., 1991). On the other hand, debtholders' information demands are often met with private communication, which lowers the demand for transparent, publicly disclosed financial information (Choi & Meek, 2011). Moreover, tax accounting and financial accounting are closely aligned in these countries, something that gives managers incentives to be conservative when determining accounting numbers (Haller & Wehrfritz, 2013). Thus, the demand for relatively high levels of conservatism in accounting has been strong in these countries.

For our research, the most important learning point from the paragraphs above is that the studies find that the degree of accounting conservatism varies among countries with different accounting traditions due to the various demands for conservatism created by these countries' different institutional environments, with Continental European countries being more conservative than Anglo-Saxon countries (Garcia Lara & Mora, 2004; Mueller et al., 1991). This variation has naturally had a negative impact on the comparability between accounting information from the countries with the different traditions in place. Table 1 below further illustrates some of the characteristics of the two predominant accounting traditions.

Institutional factor	Impact on accounting conservatism	Anglo- Saxon	Cont. European	Studies
Main capital providers	Accounting satisfies capital providers' information needs (Strong focus on shareholders leads to more information asymmetry and more demand for transparent public disclosure)	Focus on shareholders	Focus on debtholders, banks	Nobes, 1983; Joos & Lang, 1994; Garcia Lara & Mora, 2004
Legal system	Accounting systems differ between common law and code law countries, as there is a different extent of legal influences (rules vs. principles) on accounting.	Common law or principle- based legislation	Code law or rule-based legislation	Joos & Lang, 1994; La Porta et al., 1998; Bushman & Piotroski, 2006
Link between tax accounting and financial accounting	Strong link of tax reporting and financial reporting leads to more conservative accounting (incentives for managers to report low book values)	Independent	Closely linked	Joos & Lang, 1994; Bushman & Piotroski, 2006
Security laws	Degree of private and public enforcement of debtholder protection (Low degree of enforcement of debtholder protection leads to higher levels of conservatism)	High*	Low*	Bushman & Piotroski, 2006
Government ownership	Involvement of state-owned enterprises and risk expropriation by the state (High degree of state involvement leads to higher levels of conservatism)	Low*	High*	Bushman & Piotroski, 2006; Cascino & Gassen, 2015
Demand for accounting conservatism		Low	High	

Table 1: Institutional factors

*Based on country-specific classification in Bushman & Piotroski, 2006 (for the U.K. and Sweden)

2.1.2 Significant cross-country differences right before the adoption of IFRS

The previous section discussed the considerable variation in the features of accounting systems across borders. While these differences have been existing for decades, it is most important for our research to see whether these accounting traditions, and their impact on accounting conservatism, were still relevant right before the mandatory adoption of IFRS in 2005. Thus, we turn to more recent studies that have looked at the differences among cross-country accounting practices by looking at the reconciliation year in 2004, when adopters of IFRS needed to report both according to the previously applied national GAAP and reconcile this financial information according to IFRS (Hellman et al. 2015; Fifield et al., 2011; Aisbitt, 2006).

In an empirical analysis of the transition year changes in accounting conservatism, Hellman et al. (2015) point to the existence of significant cross-country differences in reported book values that persisted right before the IFRS adoption despite previous efforts for harmonization and the fact that countries, among others Sweden (Hellman, 2011), decided to gradually converge their national GAAP to IFRS. The researchers find that for countries with an Anglo-Saxon accounting tradition, a common law system, and strong equity financing, book values decreased when IFRS were adopted, i.e. that the accounting conservatism inherent in the financial statements increased. However, for companies from other traditions (the Nordic and the More Developed Latin), in countries with code law and weak equity financing, accounting conservatism decreased with the adoption of the new set of standards. Hence, their results highlight that there were still considerable differences in the degree of accounting conservatism among different countries and international accounting traditions right before the adoption of IFRS.

Similar studies of the reconciliated financial statements do also find that there are significant changes in the book values of countries adopting IFRS (Fifield et al., 2011; Aisbitt, 2006), confirming the view that differences among national accounting traditions persisted right before the adoption of IFRS. Intriguingly, the findings for individual countries' decreases or increases in accounting conservatism vary though. Filfield et al. (2011) find that the adoption of IFRS led to an increase in the total equity of British countries, something that would imply a decrease in accounting conservatism in the U.K. due to IFRS. Hence, their findings for the U.K. specifically differ from Hellman et al.'s (2015) results that the British companies reported decreased overall equity values, or an increase in accounting conservatism. In yet another study, Aisbitt (2006) does not find a significant effect on overall equity of British companies, but only on individual balance sheet items with substantial differences in the adjustments made for among others retirement benefit obligations, PPE, and deferred tax assets.

The above should thus raise one's awareness that even though these reconciliated statements provide a unique research opportunity as companies were required to directly provide the same financial information according to two different sets of standards, researchers are only able to look at the one reconciliation year, namely 2004. As discussed by Hellman et al. (2015), it might take very long time before balance sheet items are accounted for in the same way even with the adoption of IFRS. This is the case as the standard concerning first-time adoption (IFRS 1) allowed for more initial flexibility (Hellman et al., 2015), and some old accounting treatments were thus allowed to be taken over to the first IFRS financial statements. Companies across countries might choose to reconcile their financial statements differently, taking more or less advantage of the first-time adoption options that IFRS 1 is providing. This means that it will take some time before the effect of the adoption of IFRS on cross-country comparability is truly visible, and implies that there is a need for an analysis over a longer period after the adoption of IFRS.

The research above finds that there were still considerable cross-country differences in the degree of conservatism used in the accounting right before the adoption of IFRS, i.e. that accountants in different countries were affected by their countries' institutional environments in ways that led them to use the principle of conservatism differently. There is no research indicating that these institutional incentives did change to any larger extent after the adoption of IFRS. As pointed out by Ball (2016), the incentives of the actors who have an influence on the accounting practices did remain local after the adoption of IFRS. The law system, for example, code or common, will not change due to the adoption of a new set of accounting standards. Another example is that, even if IFRS have the potential to lead to an increase in global investments, the main capital providers, i.e. debtholders or equity holders, will stay the same within a country. Thus, companies will in many ways be affected by the same incentives after the implementation of IFRS as they were before.

2.1.3 Accounting traditions in Sweden and the U.K.

To understand the various demands for conservatism that actors in Sweden and the U.K. were affected by, we now specifically look at their accounting traditions in the two countries. This is a starting point for determining the levels of conservatism in the countries before the mandatory IFRS adoption, and is linked to one of our boundary conditions with which we have stated that we do not make an attempt to determine the absolute levels of conservatism before the IFRS adoption with our quantitative method (see Section 1.3).

To start with, previous research has traditionally classified Sweden as a country belonging to the Continental European tradition, due to, among other reasons, the close alignment between taxation and accounting and its high government involvement. These reasons have led to a focus on conservatism in the accounting (Mueller et al., 1991; Nobes, 1983). The U.K., however, has been classified as belonging to the cluster of countries with the Anglo-Saxon accounting tradition (e.g. Joos & Lang, 1994; Mueller et al., 1991; Nobes 1983). Furthermore, Bushman and Piotroski (2006) do classify Sweden as a code law country while the U.K. is classified as country with common law. This would, once again, indicate that Sweden belongs to the Continental European accounting tradition and the U.K. to the Anglo-Saxon. Yet, La Porta et al. (1998) similarly state that the U.K. is a country with a common law system, while Sweden is placed somewhere in between, as it is said to have features from both law systems. Similarly, in a more recent study, d'Arcy (2001) placed Sweden somewhere in between the Continental European and what she calls the Anglo-American cluster, as, she states, Sweden had moved some steps towards the capital market based approach. Hence, it did not belong to the cluster where the U.K. belonged, but neither did it belong to the Continental European cluster.

Thus, while older literature firmly classified Sweden as a country with a Continental European accounting tradition, some more recent research has given indications that Sweden had in some areas moved away from this cluster. There is, however, no research stating that Sweden, right before the mandatory adoption of IFRS in 2005 should be classified as an Anglo-Saxon country. The U.K., though, was still classified as a country with an Anglo-Saxon accounting tradition in place. This indicates that the accountants in the two countries were affected by demands from their institutional environments that led British companies to report less conservative book values than Swedish companies did. Yet, with some previous research arguing that Sweden might have moved away from the Continental European tradition in the years before the mandatory adoption of IFRS, we do not want to determine the absolute levels of conservatism in the two countries solely based on these classifications. Instead, to draw a more certain conclusion regarding the levels of accounting conservatism in Sweden before 2005 as compared to in the U.K., we will in Chapter 3 *Comparison of standards and development of hypothesis* make a comparison of the national GAAPs used in the two countries right before the mandatory adoption of IFRS.

2.2 IFRS adoption and cross-country comparability

As stated in Chapter 1 *Introduction*, a main aim of the adoption of the IFRS was to increase comparability (EC, 2002). Would this aim have been fulfilled, pre-existing accounting traditions such as the Anglo-Saxon and the Continental European one should now have converged and their differences should no longer be reflected in the accounting properties of the countries where these cultures used to dominate. The alternative would be that pre-existing differences in accounting traditions still have an impact on the financial information and that, thereby, financial statements in different countries are not directly comparable even though they are accounted for with the same set of standards. Naturally, researchers have investigated whether or not the international adoption of IFRS has actually led to more comparability across countries in practice.

2.2.1 Cross-country comparability under a common set of standards

Some research has shown that a set of international accounting standards can lead to an increase in comparability of accounting information across borders. Yip and Young (2012) study the information comparability among 17 EU countries after the mandatory IFRS adoption and suggest that this adoption improves cross-country comparability by *"making similar things look more alike without making different things look less different"* (Yip & Young, 2012, p. 1767). Their results suggest that the IFRS have been successful in providing uniform measurements for transactions that are like while not overemphasizing this uniformity, and in the meantime allowing accounting choices² that enable firms to treat unlike transactions differently. However, they argue that the improvement in comparability is more likely to take place among companies operating within similar institutional environments, which they define as the companies being based in a code law or common law country. Bradshaw and Miller (2008), in their study do find similar evidence suggesting that a global set of accounting standards might increase comparability among international firms affected by different institutional factors. It should be noted, though, that their study was on voluntary adopters and the standards in question were the U.S. GAAP.

In contrast, Cascino and Gassen (2015) find only limited evidence of an overall increase in comparability after the mandatory IFRS adoption, but rather a large variety in the

 $^{^{2}}$ In this thesis, the term "accounting choice" comprises both overt and covert options, as defined by Nobes (2013). He defines overt options, as accounting options that are explicitly stated within the set of standards, while covert options according to Nobes' (2013) definition emerge when a degree of judgement is allowing scope for firms to apply the standards according to their preferences.

comparability effect. More specifically, they argue that an increase in cross-country comparability after the adoption of IFRS is contingent on compliance incentives of individual firms and that IFRS compliance varies systematically with country-, region- and firm-level incentives. Thus, the stronger the incentives are for firms to comply with IFRS, the higher the increase in comparability after the mandatory adoption. Interestingly, these findings about incentives seem to point to what Yip and Young (2012) in their study refer to as similar institutional environments, in which an increase in comparability is more likely to take place. In addition, it is likely that research on voluntary adopters of a common set of standards (Bradshaw & Miller, 2008) is looking at firms that have strong incentives to comply with the standards, as they voluntarily chose to adopt them. Yet, Cascino and Gassen (2015) point to not only country-specific factors, but also to influences on a regional and firm-specific level that will impede comparability. As our study is focusing on cross-country comparability, we will in the following only focus specifically on the country-specific institutional incentives (see Section 2.1) that affect comparability during IFRS adoption.

2.2.2 Survival of pre-existing national practices under IFRS

Studies on cross-country comparability of IFRS practices find that there is little or no evidence that an international set of accounting standards does lead to an increase in comparability, but rather that pre-existing accounting practices survive in countries that have adopted IFRS (Nobes, 2013; Liao et al., 2012; Kvaal & Nobes, 2010). These researchers examine what issues can lead to international differences in IFRS practices.

It has been argued that even when a firm does comply with IFRS as issued by the IASB, interpreted appropriately in the national language, and enforced correctly, the standards themselves leave scope for diverging national practices (Nobes, 2013; Liao et al., 2012; Kvaal & Nobes, 2010). This is due to that the IFRS offer more accounting choices than other standards (Nobes, 2013; Camfferman & Zeff, 2007). When arguing for this, Nobes (2013) looked at the existence of both overt and covert options³, thus including both explicitly stated overt options and the high amount of judgment IFRS necessarily have as principle-based set of standards.

³ In his paper, Nobes (2013) provides examples of both covert and overt accounting options under IFRS. Some of his examples for overt options are the cost or fair value measurement choice for classes of property, plant and equipment (IAS 16), the option to designate certain financial assets and liabilities at fair value through profit or loss (IFRS 9) or the fact that entities "may also consider" the rules of certain other standard setters when developing an accounting policy (IAS 8, paragraph 12). His examples for covert options include among others the capitalization of development costs when all criteria are met (IAS 38) or the identification of an indication of an impairment (IAS 36).

He argues that even though the IASB had been removing accounting options over time to improve comparability, there are still various accounting options available under IFRS, with even some new accounting options added.⁴ Furthermore, Nobes (2013) states that a company's accounting policy choices can be explained by its accounting policies used before adopting IFRS. This means that even though one single set of standards is used across countries, cross-country comparability with IFRS is difficult to achieve in practice, as national accounting policies tend to persist wherever the IFRS leave room for judgment and choice.

In addition, both Haller and Wehrfritz (2013) and Kvaal and Nobes (2010) find that companies actively choose accounting policies that were previously required by national rules (or the ones most similar to the previous practices) when confronted with an accounting option in IFRS. These studies, similarly to Nobes (2013), conclude that IFRS in practice is subject to considerable differences across countries, and that pre-existing national traditions seem to explain big parts of the cross-country variations.

Furthermore, Kvaal and Nobes (2012) find that it takes time for companies from some countries to learn how accounting options in IFRS work, i.e. they observe specific patterns of learning over time for companies from countries with the Continental European tradition (France and Spain). The authors argue that, as the accounting in France and Spain was previously furthest away from IFRS, it took time for the accountants in these countries to learn how to apply the standards and to fully understand the accounting treatments that were new to them.

To summarize, several researchers have found evidence on that national practices persist under IFRS, and that companies move to pre-existing national practices whenever the IFRS allow for accounting choices. In addition, there might be a possibility that it took some time for accountants from countries whose national accounting tradition was further away from IFRS to learn how to use IFRS in a way that best satisfies the needs of their users.

2.2.3 Cross-country comparability in terms of accounting conservatism

While the research mentioned above has studied the effects of the adoption of IFRS on comparability with a variety of research designs, another stream of literature has focused more

⁴ With IFRS 3, effective for business combinations with acquisition date from 1st July 2009, the IASB provided for example the accounting option of measuring the non-controlling interests either at fair value or as the share of the acquiree's identifiable net assets (IASB, 2016, in IFRS 3).

specifically on cross-country comparability in terms of accounting conservatism before, during, and after the adoption of a common set of international standards.⁵ As findings on the degree of accounting conservatism across countries with their own national GAAP are straightforward and go in line with expectations towards the respective accounting traditions (see 2.1), the question of whether these differences in the degree of conservatism persist with the adoption of a common set of standards has raised interest of researchers. Particular focus is given to whether IFRS are actually used similarly in countries that, traditionally, have had different opinions on the importance of conservatism, or whether accounting conservatism based on national traditions and institutional influences whenever it is possible. Several researchers have looked at how accounting conservatism is affected by diverse harmonization efforts, for instance the introduction of early harmonization directives in the EU (Joos and Lang, 1994), as well as the adoption of international sets of standards such as IFRS (Liao et al., 2012) or U.S. GAAP (Bradshaw & Miller, 2008). Similar to our study, conclusions on the effect on comparability across borders are drawn based on the researchers' findings on changes in accounting conservatism.

In their study on the effect of previous accounting harmonization directives in the EU in the 1980s⁶, Joos and Lang (1994) find that there are substantial differences in the book values of firms in Germany and the U.K. both before and after the implementation of the directives, i.e. German companies remained more conservative than the British companies. They suggest that the attempt to harmonize accounting did little to reduce differences in country-specific accounting practices when it came to accounting conservatism, and that there was thus no increase in comparability across borders due to the implementation of the EU directives. Ultimately, they conclude that, despite the harmonization directives, institutional factors (tax, law, and capital providers) creating a demand for different degrees of conservative accounting still played an important role, due to the many remaining choices of accounting policies that leave flexibility for managers. Interestingly, Joos and Lang (1994) already highlight that for an

⁵ This research has in recent years taken on both a balance sheet as well as an income statement perspective. While we do acknowledge the recent contributions focusing on income statement conservatism (Garcia Lara & Mora, 2004; Giner & Rees, 2001; Ball et al., 2000; Basu, 1997) and the interaction between balance sheet and income statement conservatism (Beaver & Ryan, 2005; Pope & Walker, 2003), we do not discuss these in detail as conservatism in our study is defined as balance sheet conservatism (see Chapter 1, *Introduction*).

⁶ The EU directives studied by Joos and Lang (1994) are the Fourth Company Law Directive, which was most importantly specifying the true and fair view (TFV) as an overriding principle for accounting, and the Seventh Directive, which was intended to harmonize consolidation, with other European countries intended to move towards a U.K. perspective on consolidation.

increase in comparability to take place, the development of an integrated set of standards will need to reduce accounting choices.

In a study focused on the effects on comparability in France and Germany after the mandatory IFRS adoption, Liao et al. (2012) suggest that institutional differences create incentives for managers to apply IFRS differently over time. This means that accountants still consider the demands created by their institutional environment when making accounting choices. In their study, which comprises the years 2006 to 2008, the book values of companies in France and Germany were more comparable in the year right after the IFRS adoption, where net assets were similarly restated. Yet over time (in 2007 and 2008), cross-country comparability diminished when German companies once again report more conservative book values as compared to the French companies. Thus, even though both countries were accounting according to IFRS, their accounting treatments were over time more and more influenced by the countries' traditional views on accounting conservatism, something that led to a decrease in comparability over time.

To conclude, the studies that measure comparability in terms of accounting conservatism suggest that efforts to harmonize did little to reduce the differences in country-specific accounting as diverging incentives and institutional environments persist under IFRS. This is similar to the results of studies on cross-country comparability of financial information based on measures other than accounting conservatism (see Sections 2.2.1 and 2.2.2).

2.3 Concluding remarks on the effect of IFRS adoption on cross-country comparability

As shown above, there is a stream of literature that has found some increase in international comparability following the adoption of an international set of standards. However, these studies indicate that an increase in comparability is more likely to take place for firms that operate in similar institutional environments and that have strong incentives to apply the set of standards appropriately. Most research has a more negative point of view, stating that pre-existing national practices survive under IFRS and thus highlighting the difficulty of achieving cross-country comparability.

These findings are overall counterintuitive to the main aim of the EU regarding an increase in comparability (EC, 2002), especially as the findings show that despite the adoption of IFRS in 2005, there were still persisting and systematic differences across national borders afterwards. Moreover, Ball (2006) emphasizes the danger in that this superficial uniformity

might be misleading for investors as in comparison to obviously different national GAAPs, uniform accounting statements will bury the accounting differences at a less transparent level. These non-transparent differences will indeed make it more difficult to come to well-balanced investment decisions.

However, previous researchers' conclusions are based on only limited time periods and studies have seldom included a period with both pre- and post-adoption years. Yet, our review of previous literature has pointed to different reasons for why these studies might not have been able to capture increases in comparability completely, most importantly due to potential learning effects for accountants and relaxations in first-time adoption standards (IFRS 1). Thus, this thesis aims to contribute to previous literature by analyzing changes in cross-country comparability in terms of accounting conservatism over a longer time period in order to determine whether the EU's aim of increased comparability had been fulfilled by the end of 2010.

3 Comparison of standards and development of hypothesis

In this chapter will follow a qualitative comparison of the three sets of accounting standards important for this thesis: Swedish GAAP, U.K. GAAP, as well as IFRS. The purpose of this is twofold. First of all, we do this comparison in order to determine the absolute levels of conservatism in the two countries before the adoption of IFRS in 2005 and thereby complement Section 2.1.3. Secondly, we want to see which changes IFRS meant for accountants in Sweden and the U.K. by understanding the differences between the two national GAAPs and IFRS. In this spirit, we dedicate Sections 3.1 and 3.2 to the qualitative comparison, starting with some introductory observations about differences and similarities of the national GAAPs to IFRS, before moving on to an analysis of specific standards. This will enable us to ascertain the conclusions from previous literature as well as to facilitate the development of our hypothesis in Section 3.3.

3.1 The previous national standards in Sweden and the U.K.

3.1.1 Swedish GAAP used before 2005

Interestingly, Swedish GAAP had from 1991 to 2004 been developed with the IFRS as a basis, so that at the end of 2004 only three old standards⁷, as well as the newly developed standards effective from the 1st of January 2005⁸, were to be adopted in full (Hellman, 2011). On the first glance, this might make it doubtful whether the mandatory adoption of IFRS led to any considerable changes in the level of accounting conservatism in Sweden. Yet, one needs to consider that before the mandatory adoption in Sweden, IFRS were adopted selectively and carved out in a way so that the Swedish traditional accounting practices, with a focus on conservatism, could be preserved. The standards not adopted by the Swedish standard setter at the end of 2004 would effectively have led to an increase in fair value measurements in financial statements, something that went against the Swedish tradition of debtholder protection. Other standards were carved out considerably, like the Swedish standard concerning property, plant, and equipment discussed in Section 3.2.1, a standard that did not include the revaluation option that the original IAS 16 did include. Thus, even though Sweden used the IFRS as a basis for their own standard setting process, Swedish GAAP deviated from the IFRS

⁷ These three standards were: IAS 39 Financial Instruments: Recognition and Measurement, IAS 40 Investment Property and IAS 41 Agriculture.

⁸ The newly issued standards effective from 1st of January that had not been adopted earlier via the Swedish standard setter were: IFRS 2 Share-based Payments, IFRS 3 Business Combinations, IFRS 4 Insurance Contracts and IFRS 5 Non-current Assets Held for Sale and Discontinued Operations.

as issued by the IASB whenever traditional national accounting practices emphasized accounting conservatism (Hellman, 2011).

The reasoning above indicates that there should still have been considerable differences between the Swedish GAAP used before the mandatory adoption and the IFRS as mandated by the EU from 2005, especially in areas where the national accounting tradition, based on a more conservative view on accounting as compared to the Anglo-Saxon tradition, was threatened. We will, with specific examples, dig deeper into these deviations in Section 3.2.

3.1.2 U.K. GAAP used before 2005

Previous literature has argued that the international accounting standards set by the IASB are strongly influenced by the Anglo-Saxon accounting tradition (Hung & Subramanyam, 2007; Camfferman & Zeff, 2007; Aisbitt, 2006) and that consequently, IFRS are very closely aligned with U.K. GAAP (Fifield et al., 2011; Cairns, 2006). This is strengthened by the fact that the British accounting standard setter was pushing for convergence of the remaining differing British standards towards IFRS (PwC, 2005), something that highlights the importance of the alignment between the two sets of standards. Both focused on fair presentation and transparency for shareholders, with a strong emphasis on fair value measurements (Cairns, 2006; Aisbitt, 2006; PwC, 2005), which can for example be seen in the usage of an option for revaluation of property, plant, and equipment as well as the usage of fair values at initial measurement for some assets and liabilities in both sets of standards.

In concert with this previous literature, we see the similarities between U.K. GAAP and IFRS as an indication of a close alignment of these two sets of standards. Interestingly, Aisbitt (2006), however, argues that there is a greater usage of fair value under IFRS compared to under U.K. GAAP, something that might be an indication that the IFRS were even less conservative than the U.K. GAAP, and that IFRS might have opened up new opportunities for British accountants in reporting even less conservative book values. We will in the following section elaborate on the differences on a line item basis.

3.2 Comparison of individual standards in national GAAPs and IFRS

Table 2 below provides an illustration of considerable differences among IFRS and the national GAAP in Sweden and the U.K. prevalent before the time of the mandatory adoption

of IFRS⁹. One should note that we only put our attention to the differences that were in place at the time of the adoption and not to differences that emerged afterwards. The table shows that the Swedish GAAP used before 2005 were considerably more conservative than both IFRS and U.K. GAAP. The usage of a restricted amortization time for goodwill and a historical costs basis for tangible assets, for example, led Swedish accountants to report more conservative book values than their British counterparts. Our table highlights that there were less pronounced differences between U.K. GAAP and IFRS. Once again, this emphasizes the similarity of the two sets of standards. Consequently, it can be expected that IFRS were more complex and controversial to implement in Sweden than in the U.K. This is especially true considering that Sweden had before 2005 only adopted the standards in such a way that the national accounting tradition and its emphasis on accounting conservatism could persist, see Section 3.1.1. In the following, we will dig deeper into the differences for specific line items.

⁹ The standards used in this comparison were chosen based on there being a considerable difference in the accounting treatment among IFRS, Swedish GAAP and U.K. GAAP (or at least for one of the sets of standards). These standards are represented in table 2.

Line item	IFRS	Swedish GAAP	UK GAAP
Intangible assets	IAS 38	RR 15	SSAP 13 + FRS 10
Internally generated	Research costs expensed as incurred.	Research costs expensed as incurred.	Research costs expensed as incurred.
intangible assets	Development costs must be capitalized if stringent criteria are met. No capitalization of other internally generated assets	Development costs must be capitalized if stringent criteria are met. No capitalization of other internally generated assets	Policy choice between capitalization and direct expensing Policy choice to capitalize other internally generated
Goodwill	Goodwill is tested at least annually for impairment, no regular amortization	Goodwill is amortized over 5 years, unless it can be reliably determined that the economic life is longer (up to 20 years)	assets, if a market exists Goodwill is amortized over the economic life, presumed to not exceed 20 years
Tangible assets	IAS 16	RR 12 + ARL 4 kap. 6§	FRS 15 + CA 1985
	Usage of historical cost or revaluation method Regular revaluation based on fair value when	Usage of historical cost Write-ups allowed in specific cases, but must be	Usage of historical cost or revaluation method Regular revaluation based on market value or current
Deferred torres	revaluation is chosen	through new share issues	cost method
Deferreu taxes	Discounting of deferred taxes is prohibited	Discounting of deferred taxes is generally prohibited	Discounting of deferred taxes is allowed
	Temporary-difference approach, i.e. calculate the difference between carrying amounts used in accounting and taxation	Temporary-difference approach, i.e. calculate the difference between carrying amounts used in accounting and taxation	Timing differences, i.e. calculate the difference between accounting and taxable income
Financial instruments	IAS 39	ÅRL	FRS 26
	Measure derivatives and hedging instruments at fair value	Measured at lowest of acquisition cost and fair value	Measure derivatives and hedging instruments at fair value
	All financial instruments on balance sheet	Certain derivatives accounted for "off- balance"	All financial instruments on balance sheet
Retirement obligations	IAS 19	RR 29	-
	Liabilities and expenses are generally recognized in the period in which the employee is earning the benefits	Liabilities and expenses are generally recognized in the period in which the employee is earning the benefits	No standard concerning retirement obligations before 2005.

Table 2: Comparison of IFRS and national GAAPs¹⁰

¹⁰ References based on relevant IAS, old UK GAAP, and Swedish GAAP standards, as well as comparisons in PwC (2005), KPMG (2005), and Axelman et al. (2003).

3.2.1 Tangible assets

Looking at what the standards allowed at the time of mandatory IFRS adoption when it came to fixed assets, one can see that fair value accounting was a more accessible choice in U.K. GAAP and IFRS compared to Swedish GAAP, as with Swedish GAAP it was only possible to do write-ups in some specific cases which then had to take place through an issue of new shares. This difference in the standards shows that, even though IFRS were officially used as a basis to develop the Swedish standards, the Swedish standard setter did not take over the revaluation option of IFRS, as this would go against the Swedish accounting tradition with a stronger focus on conservatism. Furthermore, both the IFRS and the U.K. GAAP required that revaluations were performed on a regular basis when the revaluation method was chosen, which was not the case with the Swedish GAAP and its write-ups. Thus, it can be inferred that companies reporting with IFRS or U.K. GAAP and choosing the revaluation method reported fixed asset with a relatively higher value than companies applying the Swedish GAAP did. Naturally, this should have led to higher accounting conservatism in the financial statements of the Swedish companies and it is therefore likely that the mandatory adoption of IFRS led to a more negative change in the accounting conservatism coming from fixed assets for Swedish companies than for British companies.

However, the effects for Sweden might not be as straightforward as one at a first glance might think, as IFRS did not demand fair value accounting, but rather left a choice between fair value accounting and historical cost accounting for fixed assets. Thus, Swedish companies that had applied historical cost accounting before 2005 were allowed to continue to do so even after the adoption of IFRS. If they preferred to continue reporting fixed assets with a relatively lower value than would have been the case with the revaluation option, they would have been able to do so.

All in all, while the adoption of IFRS did not seem to represent any major changes for companies that used to apply U.K. GAAP until 2005, the changes seem to be more obvious in Sweden even though the effect is not as straightforward as one might think at a first glance.

3.2.2 Internally generated intangible assets

Concerning internally generated intangible assets, we can first of all notice that the treatment of cost for research and development (R&D) was very similar between Swedish GAAP and IFRS. This is due to the fact that the Swedish accounting standard for intangibles

adopted in January 2002 (SFASC 15) was based on the corresponding IFRS standard (Deloitte, 2001). Compared to U.K. GAAP, however, there were some considerable differences, especially concerning the capitalization of development expenses. While IFRS required companies to capitalize development costs when some certain stringent criteria were fulfilled, fulfilling similar criteria according to U.K. GAAP meant that the company may or may not defer the development expense to future periods. Interestingly, by providing companies with this accounting choice between capitalization and direct expensing of development costs, the U.K. GAAP left more room for conservatism than the IFRS. According to Choi and Meek (2011), it was only few British companies that made use of the capitalization option. It might thus be expected that the British companies that directly expensed development costs that fulfilled the capitalization criteria reported less conservative book values of intangible assets after the adoption of IFRS, whose adoption took the aforementioned accounting choice away.

Furthermore, none of the standards allowed the capitalization of research costs. However, these costs are often presented together with development costs and it is thus likely that there will be a change in the level of conservatism that comes from the expensing of R&D in the U.K., a change that will be reflected in the overall level of conservatism.

To conclude, while the Swedish accounting treatment in this case is similar to IFRS, the effect of the IFRS adoption is not straightforward when it comes to the U.K. Following the argumentation that IFRS is less conservative than U.K. GAAP regarding the capitalization of development expenses, we should see changes in the level of conservatism for British companies.

3.2.3 Deferred taxes

As far as the reporting of deferred taxes goes, both Swedish GAAP and IFRS prohibited the discounting of these (see table 2). Interestingly, discounting was allowed for long-term tax balances according to U.K. GAAP, which leads to the expectation that deferred tax liabilities in British companies' financial statements might actually be reported more conservatively when adopting IFRS. However, neither is the effect straightforward here. If some British companies reported net deferred tax assets and discounted these, these would then be reported less conservatively with IFRS.

In addition, there was a difference in the approach that the three sets of standards took towards calculating deferred taxes. While under U.K. GAAP deferred taxes were provided based on differences between accounting and taxable income (timing differences), both IFRS and Swedish GAAP calculated deferred taxes based on differences in the tax and accounting carrying amount of assets and liabilities (temporary difference approach). Obviously, this difference might affect the valuation of deferred taxes reported for the British companies in our sample. In the case of revaluations that go to equity directly, for example revaluations of fixed assets, the temporary difference approach taken by IFRS would lead to higher deferred taxes, as the balance sheet base will be changed but not the taxable accounting income. Generally, IFRS in this way provided for higher deferred taxes than U.K. GAAP did, which means that there should have been an increase in the conservatism connected to deferred taxes when British companies adopted IFRS.

All in all, it appears like the accounting treatment of deferred taxes should change considerably more for British companies than for Swedish companies. If companies have net deferred tax liabilities, we expect IFRS to have led to a more conservative measurement as compared to U.K. GAAP, both due to discounting practices and different calculation approaches. Once again, however, it might not be as straightforward, as for companies with net deferred tax assets, the conservatism might decrease.

3.2.4 Other items affecting reported net assets on transition to IFRS

In addition to the balance sheet items that we specifically considered above as we calculate a partial measure of accounting measurement bias for them (see Chapter 4 *Method*), the mandatory adoption of IFRS will obviously also affect other parts of the balance sheet. Table 2 additionally shows the changes in accounting standards for goodwill, financial instruments and retirement obligations, which we conclude to have had a major effect on accounting conservatism during and after IFRS adoption¹¹.

Firstly, the change from a planned amortization for goodwill over the economic life (both U.K. GAAP and Swedish GAAP) to an annual impairment test according to IFRS, should have resulted in a less conservative treatment of goodwill for both countries (assuming no exceptional impairment). The decrease in accounting conservatism should have been especially high for Sweden where the economic life of goodwill was restricted to five years unless it could

¹¹ Even though we consider these differences to have a major on accounting conservatism, we do not calculate their effects on the accounting conservatism directly. That is due to the fact that we out of reasons of scope chose not to recalculate goodwill and financial instruments to current value, see Section 1.3, as well as that with our chosen method, see Chapter 4 *Method*, it was not possible to recalculate retirement obligations to current value.

be reliably determined that the economic life was longer. Similarly, large differences between Swedish GAAP and IFRS for financial instruments most likely led to more recognition of financial instruments in the balance sheet of Swedish companies. Finally, retirement benefits obligations should have an effect on the reported net assets on transition to IFRS in the U.K. (Swedish GAAP were in this respect equal to IFRS). According to IFRS, a company should recognize the costs for such employee benefits in the period during which the employee is earning it, i.e. the company should fully recognize a liability for future retirement benefits obligations. In contrast, there had never been a British accounting standard covering these benefits specifically¹², which in practice meant that many companies disclosed such liabilities in the notes to the financial statements only. Hence, in 2005, many British companies needed to report retirement obligations on their IFRS balance sheet, thus adopting a more conservative treatment of liability recognition.

3.2.5 Summary

Overall, the comparison of national GAAPs with IFRS demonstrates that there were considerable differences among the sets of standards at the time of the mandatory adoption of IFRS in 2005. Based on the elaborations in Section 3.2, table 3 displays a summary of this comparison of the individual standards.

¹² FRS 17 (Retirement benefits) became effective in January 2005 only, and was thus not used by companies before the transition to IFRS.

Line item	Swedish GAAP vs. IFRS	UK GAAP vs. IFRS
Intangible assets	RR 15	SSAP 13 + FRS 10
Internally generated intangible assets	Similar	UK GAAP more conservative (direct expensing allowed as an option)
Goodwill	Swedish GAAP more conservative	UK GAAP more conservative
Tangible assets	RR 12 + ÅRL 4 kap. 6§	FRS 15 + CA 1985
	Swedish GAAP more conservative (no revaluation option)	Similar
Deferred taxes	RR 9	FRS 19
	Similar	UK GAAP predominantly ¹³ less conservative
Financial Instruments	ÅRL	FRS 26 (equals IAS 39)
	Swedish GAAP more conservative	Similar
Retirement obligations	RR 29	-
	Similar	UK GAAP less conservative

Table 3 Summary of comparison of IFRS and national GAAPs

As indicated above, U.K. GAAP were very similar to IFRS. For some specific standards, we have found differences pointing twice in the direction of IFRS being more conservative, twice in the direction of the opposite being true. At an overall level, this indicates that the two sets of standards prescribe similar levels of conservatism and no considerable changes should be expected for the British accountants with the change of standards. In contrast, while some of the Swedish standards were identical to IFRS, those that were not differed considerably in that they throughout emphasized accounting conservatism much more than IFRS did. This highlights the strong role of the Swedish accounting tradition in previous standard setting, allowing more accounting the two national sets of standards, we find one case only, regarding the capitalization of development costs, where U.K. GAAP were actually more conservative than Swedish GAAP were. However, these costs are normally relatively small in comparison to the value of for example property, plant and equipment, and should thus not have as big of an impact when analyzing the changes in the overall level of conservatism.

¹³ This is based on both the differences in the discounting and approaches to calculating timing differences (see Section 3.2.3) and an assumption that companies have a net deferred tax liability. The effect from discounting, on the one hand, might lead to more (less) conservatism with IFRS if companies have an overall deferred tax liability (asset). The effect from the change in the calculation approach, on the other hand, will lead to companies reporting more deferred tax liabilities according to IFRS.

To conclude, we have observed that IFRS and U.K. GAAP were very close when it came to accounting conservatism, while Swedish GAAP were more conservative than the two other sets of standards. Thus, in combination with the classification of countries in Section 2.1.3, we do conclude that there were higher levels of conservatism in Swedish accounting as compared to British accounting before the mandatory adoption of IFRS in 2005. This difference shows that Sweden and the U.K. were good representatives of the two different accounting traditions prevailing in the EU before the mandatory adoption of IFRS. Furthermore, we have determined that the IFRS adoption in the U.K. should not have led to any major changes in what level of conservatism was permitted by the accounting standards in place. Thus, based on this, we should not see a change in the accounting measurement bias in the U.K. IFRS adoption in Sweden, however, meant that Swedish accountants now had the chance to or had to report relatively less conservative book values. Hence, we should observe a negative change in the accounting measurement bias in Sweden.

3.3 Development of hypotheses

Accordingly, the mandatory adoption of IFRS in 2005 is expected to have led to an adjustment of accounting practices in Sweden towards the accounting treatments in the U.K. (treatments that are said to be close to IFRS). Although the British companies needed to adapt to IFRS as well, we argue that they needed to adapt to a lower extent than the Swedish companies. In that way, accounting conservatism would have been treated similarly in the financial statements of Swedish and British companies, and financial statement comparability would have increased.

The purpose of the hypothesis is to understand whether or not the increase in comparability as was the aim of the EU (EC, 2002) actually has taken place. Thus, our main hypothesis as well as our sub-hypotheses are given the aim of the EU.

3.3.1 Main hypothesis

Hypothesis. We will see a negative change in the levels of accounting conservatism in Sweden, but no change in the U.K.

If our hypothesis is not rejected, it could be suggested that there was an increase in comparability among the adopters as was the aim of the EU (EC, 2002).

If our hypothesis is rejected, it could be suggested that there was no increase in comparability among the adopters.

3.3.2 Sub-hypotheses

The main goal of our analysis is to draw conclusions on cross-country comparability by studying changes in the overall level of accounting conservatism in Sweden and the U.K., thus our main hypothesis above covers all changes in the accounting conservatism. Yet, it might be that both decreases and increases coming from specific line items equal each other out at an overall level. Thus, we will analyze the sources of accounting conservatism on a narrower level, and state our sub-hypotheses based on the differences in the individual standards observed in Section 3.2 as follows¹⁴.

Sub-hypothesis 1 (accounting conservatism from fixed assets). We will see a negative change in the levels of accounting conservatism coming from fixed assets in Sweden, but no change in the U.K.

Sub-hypothesis 2 (accounting conservatism from deferred taxes). We will see a change in the levels of accounting conservatism coming from deferred taxes in the U.K., but no change in Sweden.

¹⁴ We chose our sub-hypotheses based on our assessment of how the treatment of certain balance sheet items changed with the adoption of IFRS. As mentioned in Section 1.3, we do not recalculate the values of goodwill and financial instruments and have thus no hypothesis regarding these line items. Due to our choice of method, we are not able to recalculate the values of retirement obligations. In addition, our sample does not include enough companies that capitalized development expenses to be able to draw conclusions on this specific balance sheet item, see Section 4.4.

4 Method

This chapter will provide an overview of the analytical method employed in this thesis. To start with, the differences between our direct, accounting-based method and the methods used by previous researchers are illustrated, highlighting the benefits and potential contributions of our method (Section 4.1). Subsequently, we will explain our calculations of the accounting measurement bias (Section 4.2) and describe the statistical analysis used to separate the effects of accounting conservatism from this measure (Section 4.3). Finally, our sampling technique will be disclosed (Section 4.4).

4.1 Motivation of our research approach

Previous studies on accounting comparability in terms of balance sheet conservatism have primarily been using indirect measures of conservatism, such as the market-to-book (M/B) ratio (e.g. Liao et al., 2012; Garcia Lara & Mora, 2004; Joos & Lang, 1994). It is argued that conservatism is closely connected to the M/B ratio: Accounting conservatism causes the M/B ratio to exceed 1 and the more undervalued the net assets are, the higher the M/B ratio will be. Thus, a close correspondence between the market value of a firm and its book value is interpreted as a low level of conservatism as the accounting is then more correlated with the firm value. However, the M/B ratio is not only determined by accounting conservatism but also by the market's prediction on future performance of the company, i.e. the predictions on whether the company will pursue projects with positive net present values (Mora & Walker, 2015; Beaver & Ryan, 2000). Hence, to draw conclusions on comparability, it is of utmost importance for previous studies to control for company-specific performance with a complementary sensitivity analysis (Liao et al., 2012; Garcia Lara & Mora, 2004; Joos & Lang, 1994).

In contrast to the studies above, we take an approach that enables us to directly observe accounting conservatism without the need to control for market predictions. To start with, we revalue certain balance sheet items that we deem the accounting for to have been affected by the adoption of IFRS. This is done based on a method to calculate the accounting measurement bias in financial statements developed by Runsten (1998)¹⁵. This accounting measurement bias

¹⁵ This is what Runsten (1998) calls a "permanent measurement bias" and what he uses to estimate the fundamental value of companies and not to further analyze the bias itself. It is important to note that our accounting measurement bias does not capture the bias in all balance sheet items in the same way, but is based on specific line items chosen for this study. It is thus not intended to be used for deriving fundamental firm values. We will refer to our measure as "accounting measurement bias" in the following.

represents the difference between the accounting values as measured in the balance sheet and the presumed economic value of a company's net assets and is thus unaffected by market predictions. Subsequently, by controlling for factors other than accounting conservatism affecting this accounting measurement bias, we are able to separate the accounting conservatism from the accounting measurement bias. Purely accounting-based, this direct measure permits us to study the changes in the level of accounting conservatism and its development over time and across countries, isolated from investors' and analysts' expectations about the future performance of the firm.

With our method we are able to look at a longer trend in the levels of accounting conservatism. Studying a longer trend permits us to draw conclusions on additional issues that might affect the levels of conservatism over time, such as learning processes for accountants adopting a new set of standards (Kvaal & Nobes, 2012), the flexibility allowed for first-time adopters according to IFRS 1 (Hellman et al., 2015) or a potential change in comparability in later years after the adoption. This is in contrast to studies that have been examining the book values of equity reported in the transition year, comparing the values reported with national GAAP and the reconciled IFRS values (Hellman et al., 2015; Fifield et al., 2011; Aisbitt, 2006).

Another benefit with our chosen method is that it permits a detailed analysis of the accounting conservatism inherent in individual items, as the method developed by Runsten (1998) means that one calculates the accounting measurement bias inherent in different line items individually, and then adds these different parts of the bias together to an aggregated overall measure. We are thus not only able to separate out accounting conservatism on an overall basis, but also for specific line items of interest for this study. This is important, as it might be that differences in conservatism can be found on a line item basis even if no significant differences can be found when analyzing the overall level of conservatism (Aisbitt, 2006).

To summarize, our method is different from previous research in that it enables us to separate the accounting conservatism from the calculations of accounting measurement biases, and is thereby providing us with a measure that is independent from market predictions. To our knowledge, no previous study has been using a direct measure of accounting conservatism to study the level of accounting conservatism across countries over a longer time period. In addition, our method permits us to examine both the changes in the overall level of accounting conservatism and the changes on a line item basis. In this way, our study will lead the way to
new insights into the effects of the mandatory adoption of IFRS in the EU on cross-country comparability over time and on a deeper level.

4.2 The calculation of accounting measurement bias

In the following section, we will outline the calculations we do to derive the accounting measurement bias based on Runsten's (1998) method. This accounting measurement bias AMB_t inherent in different balance sheet items is calculated as the difference between the current value of the respective asset class and its reported book value, thereby representing the absolute over- or undervaluation of the specific item in the books. The current value calculations explained below are considered representative for the economic value. To get a relative measure, *relative* AMB_t , which enables us to more easily analyze the changes across companies, the AMB_t is divided by the total value of the reported net assets.

The items are chosen as the accounting treatment of these has been demonstrated to change considerably with the adoption of IFRS (see Section 3.2). However, as explained in Section 1.3, we have decided not to pursue recalculations for goodwill and financial instruments. Furthermore, with Runsten's (1998) method, it is not possible to recalculate the value of retirement obligations. Thus, our ultimate choice of items is fixed assets, expensed R&D, capitalized development costs, and deferred taxes.

4.2.1 Fixed assets (Buildings & Land and Machinery & Equipment)

Due to differences in the economic life of different fixed assets as well as in annual value changes between these different assets, we calculate one current value for a firm's buildings and land another for its machinery and equipment based on the formulae below. Observe that the current value of both fixed asset classes $CV(FA)_t$ is a function of the yearly investment in the assets, the value changes, the assets' average economic life, and a linear depreciation scheme.

$$CV(FA)_t = \sum_{i=s}^t I(FA)_i \times IF_i \times \frac{rL_i}{tL}$$

with the summation starting from s, the first year of the investment series, to t, the year for which the relative AMB is calculated

 $I(FA)_i$ = yearly investment in the fixed asset type at time i = accumulated acquisition costs_i - accumulated acquisition costs_{i-1} + disposals_i $IF_i = inflation factor for time i, the year in which the investment was done$ $<math>IF_i = \prod_{j=i}^{t} (1 + annual value change)_j$ with the product starting from i, when yearly investment is done, to t, the year for which the relative AMB is calculated

> rL_i = remaining economic life for the asset at time i tL = total economic life for the asset

First of all, the yearly investment is computed as the sum of the change in the accumulated acquisition costs during the year and the amount of the disposals within the year. With this calculation we reconstruct the investment pattern of the company during the previous years, going back in time until the sum of our calculated yearly investments equals the accumulated acquisitions costs reported by the company¹⁶. Additionally, an assumption we make is that when firms dispose their assets, they always dispose the oldest ones.

Secondly, we consider it appropriate to approximate value changes by changes in housing prices for buildings and land (data obtained from Land Registry U.K., 2018 and Statistiska Centralbyrån, 2018), as well as by the annual inflation for machinery and equipment (data obtained from the World Bank database (World Bank, 2018)).

Thirdly, we perform calculations of the average total economic life for a firm's buildings and land as well as for its machinery and equipment. Observe that, even though land is generally not depreciated, we do depreciate not only buildings but also land in our current value calculations. The reason for this is that it is not always possible to separate land from buildings, so for our method to work we need to make this simplicity assumption. This assumption is deemed not to have a considerable impact on our results as when companies did disclose values for buildings and land separately, the value of land was in general relatively low. The historic estimated economic lives of tangible assets have been calculated as the ratio of accumulated acquisition costs at year-end and the yearly annual depreciation amount for every year from 2003 to 2010. For our calculations to be unaffected by large annual fluctuations in estimates of depreciation times, we take the mean of the annual estimates of the economic life in 2003 to

¹⁶ This means that when companies have very old fixed assets, we need to go back many years, sometimes as far back as until the early 1980s. Due to limited data availability, it was not possible to do this so far back for some companies in our sample, so that for very early years we used averages of the investments whenever data was unavailable (see Appendix A).

2010 (excluding outliers with extreme values)¹⁷. Executing this, we assume that all companies depreciate their assets linearly over the total economic life and that investments are done in the beginning of the year. In the few cases where firm's depreciation times seemed unrealistic, we assume an economic life of the company's assets (see Appendix A for further details).

Finally, the current value as calculated above is used to derive the accounting measurement bias *relative AMB* $(FA)_t$ for both the classes of fixed assets, as follows.

relative AMB
$$(FA)_t = \frac{CV (FA)_t - BV (FA)_t}{BV (E)_t}$$

t = year for which the relative accounting measurement bias is calculated $CV(FA)_t = current$ value of the fixed asset type in question $BV(FA)_t = reported$ book value of the fixed asset type in question $BV(E)_t = reported$ book value of the total net assets of the firm

4.2.2 Expensed R&D

We assume that investments in R&D that have been directly expensed by a firm will lead to future economic benefits and we thus believe that they should be capitalized in the balance sheet. With our calculations, we follow Fruhan (1979) assuming a linear depreciation scheme for the capitalized investments and assuming that the value changes of the capitalized assets can be approximated by the annual inflation rate of the respective country (data obtained from World Bank, 2018). The current value of the capitalized R&D expenses $CV (exp. R&D)_t$ is thus, as presented in the formula below, a function of the directly expensed investment, its value change and the assumed economic life for linear depreciation.

$$CV(exp.R\&D)_t = \sum_{i=s}^{t} I(exp.R\&D)_i \times IF_i \times \frac{rL_i}{tL}$$

with the summation starting from s, the first year of the investment series, to t, the year for which the relative AMB is calculated

 $I(exp. R\&D)_i = yearly, directly expensed investment in R&D at time i$

¹⁷ We recognize that our way of calculating the total economic life means that we follow the depreciation policy of the individual companies in our calculations, and that the depreciation patterns might hence be determined based on tax or similarly biased reasons as the underlying rationality. Yet, we consider the companies themselves to have the best information regarding the usage of their assets. Acknowledging this and considering the difficulty to decide on a standardized depreciation time that reflects reality for the different companies in our sample, we argue that following the individual companies' depreciation policies reflects reality in the best possible way for our study.

 $IF_i = inflation factor for time i, the year of the capitalization$ $IF_i = \prod_{j=i}^{t} (1 + annual value change)_j$ with the product starting from i, when yearly investment is done,

to t, the year for which the relative AMB is calculated

 rL_i = remaining economic life for the asset at time i tL = assumed total economic life for the asset

We assume an economic life of 10 years, which we deem to be the average time until these kinds of expenses no longer result in economic benefits. This is similar to Fruhan (1979) who also assumed a ten-year economic life in his study¹⁸.

Finally, our partial accounting measurement bias *relative AMB* $(exp. R\&D)_t$ is derived based on the formula below.

relative AMB
$$(exp. R\&D)_t = \frac{CV (exp. R\&D)_t}{BV (E)_t}$$

t = year for which the relative accounting measurement bias is calculated $<math>CV (exp. R\&D)_t = current value of directly expensed R\&D$ $BV (E)_t = reported book value of the total net assets of the firm$

4.2.3 Capitalized development costs

In addition, we calculate the current value of the existing capitalized development costs in a spirit similar to the tangible assets presented above, as the book value of these might include a conservative bias. When a company stated that they did capitalize some development expenses but these were not distinguishable as a single balance sheet item, we assumed the capitalized expenses to have a negligible effect on the total accounting measurement bias and assumed the bias in those cases to be zero. Observe that, similarly to the calculations for fixed assets, we follow the companies' depreciation patterns for their capitalized development costs¹⁹. See below for the calculations of the partial accounting measurement bias for capitalized development expenses, *relative AMB* (*cap. dev.*)_t.

¹⁸ Even though there is likely to be a wide variety in the actual total economic life across the industries in our sample, we assume a standardized depreciation time. This is due to the difficulty for us to motivate the exact economic life of research and development for the specific companies. Hence, it could potentially be more harmful for our results if we assumed different depreciation times for companies if this was not justified by real economic matters.

¹⁹ Section 4.2.1 on fixed assets explains our motivation to do so.

relative AMB (cap. dev.)_t =
$$\frac{CV (cap. dev.)_t - BV (cap. dev.)_t}{BV (E)_t}$$

t = year for which the relative accounting measurement bias is calculated BV (cap. dev.)_t = reported book value of capitalized development costs BV (E)_t = reported book value of the total net assets of the firm

 $CV (cap. dev.)_t = current value of capitalized development costs, calculated according to the formulae below$

$$CV (cap. dev.)_t = \sum_{i=s}^{c} I(cap. dev)_i \times IF_i \times \frac{rL_i}{tL}$$

with the summation starting from s, the first year of the investment series, to t, the year for which the relative AMB is calculated

 $I(cap. dev)_i = yearly capitalization of development costs at time i$ = accumulated costs_i - accumulated costs_{i-1} + disposals_i

$$IF_i = inflation factor for time i, the year of the capitalization
 $IF_i = \prod_{j=i}^{t} (1 + annual value change)_j$
it the module of article from i, when we relations to denote the second second$$

with the product starting from i, when yearly investment is done, to t, the year for which the relative AMB is calculated

 rL_i = remaining economic life for the asset at time i tL = total economic life for the asset

4.2.4 Deferred taxes

4.2.4.1 Reported deferred taxes

Furthermore, we calculate the current value of the reported deferred tax $CV (DT)_t$ as the discounted value of the expected future taxes spread over an assumed average lifetime of 10 years, as shown below.

$$CV(DT)_{t} = \sum_{i=t}^{n} \frac{BV(DT)/_{tL}}{(1+r_{D})^{i}}$$

with the summation starting from t, the year for which the relative AMB is calculated which is equal to the time when the total assumed economic life has passed r_D = assumed cost of debt tL = total assumed economic life of the deferred taxes

For simplicity, the cost of debt is assumed to be 4% for all companies in both Sweden and the U.K. This is done as we deem it to be most important for all companies to have the same cost of debt when we perform our calculations. As the U.K. GAAP allowed companies to discount their deferred taxes, we do not perform these calculations for those British companies that did discount their deferred taxes in 2003 and 2004 (see Appendix B). Hence, our assumption is that their discount rate is representative for the risk connected to the deferred taxes and reasonably close to our assumption of 4% for all companies. Based on this, we derive the partial accounting measurement bias for deferred taxes, *relative AMB* $(DT)_t$, as presented below.

relative AMB
$$(DT)_t = \frac{CV (DT)_t - BV (DT)_t}{BV (E)_t}$$

 $CV (DT)_t = current value of net deferred taxes$ $BV (DT)_t = reported book value of the net deferred taxes$ $BV (E)_t = reported book value of the total net assets of the firm$

4.2.4.2 Additional deferred taxes

Naturally, the unrealized holding gains on tangible and intangible assets estimated above will lead to additional deferred taxes, as the future tax rate will be applied to the holding gains once these are realized. We argue that the firm realizes these taxes over the remaining economic life of the respective asset class, and assume for the purpose of this calculation that for every asset class half the economic life has on average passed. Thus, the resulting taxes will be spread over the remaining economic life, i.e. the total economic life divided by two. The present value of these taxes is calculated with the assumed cost of debt of 4% as discount rate. The procedure is presented in the formula below.

relative AMB (additional DT)_t =
$$\sum_{i=t}^{n} \frac{P}{(1+r_D)^i}$$

with the summation starting from t, the year for which the relative AMB is calculated to n, which is equal to the time when half the estimated economic life of the asset has passed

 $r_{D} = assumed \ cost \ of \ debt$ $P = estimated \ annual \ tax \ payment$ $= \frac{\{CV \ (A)_{t} - BV \ (A)_{t}\} \times r_{t}}{0.5 \ tL}$ where

 $CV(A)_t - BV(A)_t$

= difference between the current value of the asset type and its reported book value at time t r_t = estimated average effective tax rate tL = total estimated economic life of the asset in question As an approximation of the tax rate, we calculate an effective tax rate for every year of our study and use its mean, similarly to the procedure for the estimation of the average economic life of fixed assets. For some companies, negative tax rates or unreasonably high or low rates for individual years were excluded to get a reasonable estimate for future taxes (see Appendix A). The IFRS (IASB, 2016, in IAS 12) prescribe preparers to calculate their future taxes with a tax rate that will apply when the future economic benefit is realized, so that using the mean of the historic effective tax rate is deemed by us to be reasonable as a forecast of the future tax rate.

4.2.5 Aggregated accounting measurement bias

By performing the calculations above, we are able to derive measures of the accounting measurement bias in specific balance sheet items for every year of our study. We then aggregate these partial accounting measurement biases to a measure of the overall accounting measurement bias, as shown below.

relative $AMB_t = relative AMB$ (Buildings and Land)_t

+ relative AMB (Machinery and Equipment)_t + relative AMB (exp. R&D)_t

+ relative AMB (cap. dev.)_t + relative AMB $(DT)_t$ - relative AMB (add. $DT)_t$

Importantly, our calculated accounting measurement bias is, however, affected by other factors than accounting conservatism. Thus, changes in this measure will not only be due to changes in accounting conservatism, but also due to other changes, such as the ones stemming from changes in companies' asset structure or changes in the denominator of net assets, e.g. companies' yearly net profit or other changes in equity such as transactions with shareholders. To isolate our measure of interest for this study, namely a measure of accounting conservatism, we thus need to control for these other factors in a statistical model. This process will be explained in the following Section 4.3.

4.3 Statistical analysis

The main purpose of our statistical analysis is to separate a measure of accounting conservatism from the calculated accounting measurement bias. This enables us to analyze the changes in the level of accounting conservatism in the two countries and to draw conclusions on what happened to cross-comparability after the mandatory adoption of IFRS. We do this by estimating panel data regressions as specified below:

$$\begin{split} Y_{i,t} &= X_{i,t} \times \beta + C_{i,t} \times \beta_{C} + \alpha_{i} + u_{i,t} \\ & where \\ Y_{i,t} &= calculated aggregated accounting measurement bias for company i at time t \\ X_{i,t} &= explanatory variable for company i at time t \\ \beta &= coefficient, measuring the explanatory variable's (X_{i,t}) impact on Y_{i,t} \\ C_{i,t} &= control variables for company i at time t \\ \beta_{C} &= coefficient, measuring the control variables' (C_{i,t}) impact on Y_{i,t} \\ \alpha_{i} &= time - invariant individual effect for company i \\ u_{i,t} &= standard error term \end{split}$$

In this model, we use the calculated accounting measurement bias as our dependent variable $Y_{i,t}$, and add an explanatory variable $X_{i,t}$ (as specified in the description of the statistical process in Section 4.3.2) as well as various control variables $C_{i,t}$ that we deem to have affected the level of the accounting measurement bias, with fixed effects for firms α_i (see Section 4.3.1). Thus, our explanatory variable $X_{i,t}$ measures changes in the level of accounting conservatism over time. As the standard error term in panel data models can be subject to heteroskedasticity and autocorrelation, we estimate a model with robust standard errors.

4.3.1 Controlling for other factors impacting the accounting measurement bias

As stated above, we control for other factors impacting the accounting measurement bias to ensure that the explanatory variable(s) capture changes in accounting conservatism. We thus add a set of control variables $C_{i,t}$ to the statistical model estimated. More specifically, we add specific variables that have either affected our calculated values of accounting measurement bias or the value of net assets. These variables and their presumed effect on the accounting measurement bias are described in Appendix C.2. By including all statistically significant control variables in the model, we control for the factors that are affecting the accounting measurement bias other than accounting conservatism.

By adding control variables however, we only control for firm-specific characteristics that vary over time. Yet, our regression model is a panel data regression, which means that we include several observations across time for every company (i.e. 8 observations per company, as we study the years 2003 to 2010). Thus, in addition to the above, we need to ensure that our model is not affected by firm-specific characteristics that do not vary over time by adding fixed effects α_i for every firm.

4.3.2 Capturing changes in accounting conservatism

After controlling for other factors that impact our dependent variable, the accounting measurement bias, in a model with reasonably good explanatory power, we can conclude that the coefficient β of the significant explanatory variable(s) $X_{i,t}$ (see Appendix C.1) captures the changes in accounting conservatism over time. Yet, to draw conclusions on whether the changes in the accounting conservatism are due to the adoption of IFRS, a standardized process has been developed. Based on this process, we are able to see whether there are differences in the accounting conservatism between the years where IFRS were applied and the years when the national GAAPs were used. In addition, this analysis enables us to exclude the possibility that the IFRS years are different to previous years due to a general trend of changing levels of conservatism that started before 2005 and continued over the time of our study, the IFRS years will naturally prove to be significantly different. However, that is then not due to the adoption of the standards. We will describe the process employed in the following.

The first step is to see whether the levels of conservatism are different in the years with IFRS compared to the years before. Executing this, we use a dummy variable for the years with IFRS as our main explanatory variable, denoted *IFRS*, and add to our statistical model control variables $C_{i,t}$ which we deem to have affected the levels of accounting measurement bias. Given that *IFRS* proves to be significant in this model, we want to see whether there was a difference in the levels of conservatism due to IFRS in combination with a general trend. That is done by adding a second explanatory variable for all the years in the study, denoted *Year*_{linear}, to the statistical model. This variable approximates the possible trend with a straight-line function.

Furthermore, we examine whether the explanatory variable Year_{linear} becomes significant in a model where it is the only explanatory variable. If Year_{linear} were to prove significant by itself, we continue to look at all the years individually, which gives us the possibility to see how large the change in the level of conservatism was in every year of our study. In this step, we add dummy variables for the single years as explanatory variables to the variables. model. i.e. add 7 explanatory denoted we Year₂₀₀₃, Year₂₀₀₅, Year₂₀₀₆, Year₂₀₀₇, Year₂₀₀₈, Year₂₀₀₉, Year₂₀₁₀. By comparing the years to 2004, the last year before the adoption of IFRS, we exclude that the development of conservatism was identical between 2003 and 2010 to between 2005 and 2010 when IFRS were applied. This gives us more insight into any trend that IFRS application might have caused.

We execute the statistical process explained above, with the overall accounting measurement bias as a dependent variable, separately for Sweden and the U.K. In addition, we analyze the accounting conservatism coming from the treatment of fixed assets as well as of deferred taxes²⁰ by estimating separate statistical models where the accounting measurement bias coming from these respective line items is the dependent variable.

4.4 Sampling

The sampling was done by looking at the companies with the highest market capitalization in February 2018 on the Stockholm Stock Exchange and the London Stock Exchange. This is done as we believe that many investors interested in investing in the U.K. or Sweden today start by looking at the largest companies when considering investment opportunities. Understanding whether the financial statements of these companies become more cross-country comparable with the mandatory adoption of IFRS or whether there were still cross-country differences, will thus be helpful for international investors today. Thus, as an initial pool of companies, the 99 largest British companies (represented in the FTSE 100 index of the London Stock Exchange)²¹ and the 50 largest Swedish companies on the Stockholm Stock Exchange were picked²².

From this initial pool of companies, several companies were excluded. Most importantly, to get reasonable estimates for our current value calculations, financial statement data needed to be available at least as far back as to the financial year 2001. Otherwise, the study would have been affected by too many assumptions about earlier investment patterns. In addition, as we use yearly data for macroeconomic variables, companies' financial year could

²⁰ See Section 4.4 for a motivation of why we did not analyze expensed R&D or capitalized development costs.

²¹ There are actually only 99 companies represented in the British FTSE 100 index, as one company, namely Royal Dutch Shell, is listed with its A and B share.

²² The initial sample was higher in the U.K. as, while most Swedish companies changed from Swedish GAAP, many companies on the London Stock Exchange had reported according to non-U.K. GAAP previously or adopted IFRS early and where thus not eligible for the study.

not be shifted compared to the calendar year by more than 7 months²³, that is, its financial year could start no later than the 1st of August for a company to be eligible for our study.²⁴

Furthermore, as we study the effect of mandatory adoption of IFRS and the transition from Swedish and U.K. GAAP, we included only companies who accounted according to the national GAAP before 2005. Companies that adopted IFRS early were excluded from our sample due to comparability reasons. In addition, as significant mergers or acquisitions during the period of our study would influence the comparability of the data set, such companies were excluded. During relatively large mergers, a company's asset base changes significantly, which would make it difficult for us to determine the remaining economic life for the additional assets. It would be perceived as if the company acquired a considerable amount of new assets in the year of the merger, whereas in reality, these assets have been acquired by the merged company over the course of several years, and should thus have been depreciated to some extent already. Moreover, if we included companies with significant demergers or splits, it would not be reasonable to assume that they dispose their oldest assets (see 4.2 above) when they in their books dispose the assets belonging to the demerged company in the year of the demerger or split.

Some companies with special characteristics were excluded from our sample. More specifically, companies within the financial, oil and gas, and real estate sector were excluded since these companies have a high proportion of certain specific assets, assets that we chose to not recalculate (see 1.3 Boundary Conditions). A list of all excluded companies in the initial pool and the argumentation for their exclusion can be found in Appendix D.

The remaining 27 British and 22 Swedish companies (see Appendix E) were grouped into industries according to the FTSE Russell Industry Classification Benchmark, an overview of the industries can be found in Appendix F. Based on this, we argue that our sample is suitable

²³ The initial idea was to include companies where the financial year overlapped the first calendar year that it broke with at least 6 months. Due to data availability we had to stretch this restriction somewhat and thus included two companies whose financial year overlapped the first calendar year with only 5 months. However, we do not believe this to have affected our calculations to any higher degree, as all the companies still have an overlap of at least 5 months.

²⁴ For the companies whose financial year does not equal the calendar year, but includes 5 or more months of the calendar year, we assume for the purpose of our calculations that their financial year equals the calendar year. This means that for a company whose financial year ends on the 31th of March, we assume that the financial year ending on the 31th of March 2004 equals the calendar year 2003, as it contains 9 months in 2003. This allows us to use the same macro-economic data for all companies.

to represent large companies in the U.K. and Sweden as the samples in both countries have similar distributions of companies from different industries. The two final samples also include companies from a wide range of industries and they do not have any overemphasis on specific industries²⁵.

Finally, after performing the calculations explained in Section 4.2, we exclude some extreme observations of accounting measurement biases (see Appendix G), so that our aggregated dataset for the panel data regression contains 382 observations, over 8 years and 48 companies²⁶. Thereof, 207 observations are from the U.K. and 175 from Sweden. This sample thus allows us to draw reasonably certain conclusions on the changes in the level of accounting conservatism in both the U.K. and Sweden. For the analyses on a line item basis for capitalized development costs and expensed R&D, however, our dataset would decrease considerably, since it is only a limited amount of the companies in our sample that do pursue research and development activities. Thus, we focus our analysis on a line item basis on the accounting conservatism stemming from fixed assets and deferred taxes.

²⁵ Although we excluded some companies, the distribution across industries of our sample quite closely follows the distribution within the FTSE 100 for the U.K. and is similar to which industries the 50 largest Swedish companies come from (see Appendix F for a more detailed comparison).

²⁶ One company, BT Group, was excluded due to observations over all 8 years with only extreme values.

5 Results

n this chapter we present our quantitative results. We start with introductory evidence on what happened to the levels of accounting measurement biases in the two countries after the adoption of IFRS (Section 5.1). From that, we continue to direct observations of the accounting conservatism in the two countries by showing the outcome of our panel data regressions, both at an overall level (Section 5.2) as well as on a line item basis (Section 5.3). Finally, we provide a summary of our results in Section 5.4.

5.1 Introductory results based on accounting measurement bias

The following analysis presents the relative changes in the level of accounting measurement biases in Sweden and the U.K. These changes serve as a first impression on what happened to the level of conservatism in the two countries after the adoption of IFRS. We provide descriptive evidence based on the development of the accounting measurement bias, both the overall changes and the changes on a line item basis using an index of the relative changes compared to the levels in 2004, the last year before the IFRS adoption. One should bear in mind that this analysis does not control for factors other than changing levels of conservatism that affect the calculated values of our accounting measurement bias or the net assets directly (as compared to our panel data regression, where we specifically take these other factors into consideration). Thus, these results should be evaluated carefully and only serve as an initial indication of what happened to the levels of conservatism after the mandatory adoption of IFRS.



Figure 1: Relative changes in the aggregated accounting Figure 2: Relative changes in the aggregated accounting measurement bias for Sweden, index based on 2004, as well as linear trend index.

measurement bias for the U.K., index based on 2004, as well as linear trend index.

Starting at an overall level, we observe that, while there seem to be unpredictable changes in the level of accounting measurement bias for Sweden, the index for the U.K. exhibits a clear negative trend. This can be seen in figure 1 and 2, where the indices indicate how much the overall level of accounting measurement bias changed over time compared to 2004. Surprisingly, we can thus provide a first indication of a decrease in conservatism for the U.K., but nothing similar for Sweden.



bias coming from "buildings and land" for Sweden, index based on 2004, as well as linear trend index

Figure 3: Relative changes in the accounting measurement Figure 4: Relative changes in the accounting measurement bias coming from "buildings and land" for the U.K., index based on 2004, as well as linear trend index



Figure 5: Relative changes in the accounting measurement Figure 6: Relative changes in the accounting measurement bias coming from "machinery and equipment" for Sweden, bias coming from "machinery and equipment" for the U.K., index based on 2004, as well as linear trend index index based on 2004, as well as linear trend index

When looking at the two classes of fixed assets in figure 3 and 5, we notice opposite trends for Sweden, with the accounting measurement bias coming from buildings and land increasing and the one coming from machinery and equipment decreasing. For the U.K., both fixed asset classes exhibit a clear decreasing trend (see figure 4 and 6). While these findings should solely be seen as a first indication as it still might be that this trend is just a general trend and not due to IFRS adoption and that other factors than conservatism have an impact, they are surprising as we found U.K. GAAP and IFRS to have been similar in terms of the treatment of fixed assets.



Figure 7: Relative changes in the accounting measurement Figure 8: Relative changes in the accounting measurement bias coming from "deferred taxes" for Sweden, index based bias coming from "deferred taxes" for the U.K., index based on 2004, as well as linear trend index based on 2004, as well as linear trend index

Moreover, in line with our conclusions in Chapter 3 *Comparison of standards and development of hypothesis* of U.K. GAAP being less conservative than IFRS when it came to the treatment of deferred taxes, we find an indication of an increasing trend within the accounting measurement bias coming from this line item for the U.K. (see figure 8). Our first results do not show any specific trend for Sweden (see figure 7), something that is in line with our conclusions about the similarity of IFRS and Swedish GAAP when it comes to the treatment of deferred taxes.

Overall, although indicative, these first findings provide some interesting insights into the levels of conservatism in the U.K. and Sweden. Further investigation will be needed to see if, whether by controlling for other factors affecting our measure of accounting measurement bias, there is a decrease in conservatism as hypothesized for Sweden after the adoption of IFRS. Moreover, it will be interesting to see whether the decreasing trend for the U.K. will be proven to include statistically significant changes in the level of conservatism and whether it is due to the adoption of IFRS. In the following, we thus turn to the results of our statistical analysis.

5.2 Overall results of the panel data regressions

5.2.1 Accounting conservatism in the U.K.

As a start, it has been observed that the levels of conservatism in the U.K. were significantly lower in the years when IFRS were applied compared to the years before (see Appendix H.2, Overall analysis). Controlling for solidity, buildings and land as well as machinery and equipment in relation to total assets, how much the companies spend on R&D, whether the companies capitalize development expenses, accumulated other changes in equity, and changes in housing prices, we find that applying IFRS led to a decrease in conservatism,

with the coefficient being -0.35. This means that IFRS application on average led to a decrease in the level of accounting measurement bias with 36%, compared to the levels in 2003 and 2004. The model itself has an explanatory power (R^2) of 51.4%.

Our results are further strengthened by an analysis with the years as dummy variables (see Appendix H.2, Overall analysis). With an explanatory power of 45.2%, this model does give significant evidence of lower coefficients in the years of 2007 to 2010. The years 2005 and 2006 do not provide significant results, but the coefficients for both years are lower compared to before the IFRS adoption. Ultimately, even though not significant, it can be observed that the conservatism was lower in 2003 than in 2004, contradicting a general trend of declining levels of conservatism. **Figure 9** presents a graphical depiction of this year-based analysis, where, similarly to the analysis in Section 5.1, the coefficients have been displayed as an index with 2004 as the base year. Hence, the statistical analysis does not only provide significant evidence of a decreasing change in conservatism due to the IFRS adoption, but also shows even more pronounced changes compared to our initial indications in Section 5.1. Interestingly, our analysis shows that the levels of conservatism were decreasing not only directly after the adoption of IFRS, but decreased more and more over time.



Figure 9: Statistical analysis of changes in the accounting conservatism for the U.K. on a year-by-year basis. * indicates a statistical significance on a 5%-level

No significant evidence is found of a step change induced by IFRS application in combination with a trend of decreasing conservatism. Even though the statistical model with $Year_{linear}$ as a single explanatory variable for all the years does provide significant evidence for a general trend, such a general trend can be excluded by our analysis of the coefficients of the individual years²⁷.

²⁷ The statistical analysis supporting these findings can be found **in Appendix H.2**, U.K., Overall analysis.

5.2.2 Accounting conservatism in Sweden

At a first glance, it seems like IFRS application can explain at least some of the variation in our measure of conservatism for Sweden. Controlling for changes in solidity and accumulated other changes in equity, as well as whether a firm has capitalized development expenses, we find that the IFRS variable is significant and led to a decrease in conservatism, with the coefficient being -0.09 (see Appendix H.1 Overall Analysis). This represents a decrease of 17% compared to the levels of accounting measurement bias in 2003 and 2004, before the adoption of IFRS. The explanatory power of the model (R²) is 25.8%.

When looking closer, however, $Year_{linear}$ is also significant in a model by itself, suggesting that evidence exists for a general trend of decreasing levels of conservatism. In addition, when including the individual years as dummy variables in the analysis, we even see that the decreasing trend can be observed in all years of the study; not only in the years when IFRS were used, but also compared to 2003 with Swedish GAAP (see figure 10 for a graphical illustration, as well as Appendix H.1 Overall Analysis for the statistical analysis). Thus, it can be excluded that the observed decrease of conservatism over the years is due to IFRS application.²⁸



Figure 10: Statistical analysis of changes in the accounting conservatism for Sweden on a year-by-year basis *indicates a statistical significance on a 5%-level

Hence, this overall analysis suggests that the mandatory adoption of IFRS did not lead to a change in the levels of conservatism for our Swedish dataset. There rather appears to be a general trend over time of decreasing levels of conservatism that is due to factors other than the change in accounting standards.

²⁸ The statistical analysis supporting these findings can be found in Appendix H.1, Sweden, Overall analysis.

5.3 Statistical analysis on a line item basis

Turning to the results based on our two sub-hypotheses, we dig down further into the sources of conservatism in the net assets. Firstly, as we have found in Chapter 3 *Comparison of standards and development of hypothesis* that the difference between IFRS and Swedish GAAP was pronounced for fixed assets, it gets interesting to look at the two classes of fixed assets and the changes there, expecting to see a decrease in Sweden and no change in the U.K after the mandatory adoption of IFRS.

For Sweden, we get similar results as with the overall analysis when looking at the conservatism with origin in the line item of machinery and equipment separately²⁹. On a first glance, it seems like IFRS application had an effect on the level of conservatism. This is in a model where we control for changes in solidity, accumulated other changes in equity, and inflation, a model that explains 24.3% (R^2) of the changes in the level of conservatism. Nevertheless, when adding *Year*_{linear} to the model, *IFRS* gets insignificant and *Year*_{linear} gets significant in a model where it is the only explanatory variable. Thus, there is evidence for a general trend in the conservatism over time. This is supported by the year-by-year analysis, where we see a decrease not only in the years with IFRS, but also in 2004. Considering the level of conservatism with origin in the buildings and land, we could not prove any significant differences in the levels of conservatism due to the application of IFRS or as a general trend³⁰.

Looking at the U.K., we do not find any evidence for that IFRS decreased the levels of conservatism coming from buildings and land³¹. Instead, we do find evidence for a general trend of decreasing levels of conservatism. In addition, and as could also be seen in Section 5.1, the averages in conservatism from machinery and equipment were fluctuating and no significant results due to the application of IFRS could be obtained³².

Overall, our results on a line item basis for fixed assets do partially confirm subhypothesis 1 as we were not able to observe significant changes in Sweden, but could prove that there were no changes due to the adoption of IFRS in the U.K. While our findings for the U.K. do go in line with our conclusions about the similarity of the standards concerning the treatment of fixed assets, the ones for Sweden indicate that Swedish accountants, who under

²⁹ The statistical analysis for machinery and equipment can be found in Appendix H.1, Sweden, Machinery and Equipment.

³⁰ The statistical analysis for buildings and land can be found in Appendix H.1, Sweden, Buildings and Land.

³¹ The statistical analysis can be found in Appendix H.2, U.K., Buildings and Land.

³² The statistical analysis can be found in Appendix H.2, U.K., Machinery and Equipment.

Swedish GAAP accounted for fixed assets using historical cost accounting, did not change their accounting practices.

Secondly, our comparison of GAAPs in Chapter 3 *Comparison of standards and development of hypothesis* made us, in contrast to our main hypothesis, expect an increase in conservatism coming from deferred taxes for the U.K. and no changes for Sweden. However, we do not find any significant changes for any of the countries and can thus not with certainty conclude that IFRS application had a significant impact³³. Yet, despite the lack of significant results, there seems to have been an increase in conservatism inherent in the deferred taxes for the U.K. Similar to what we saw in Section 5.1, we find positive coefficients for the individual years indicating an increase in conservatism. While this would go in line with our findings of differences between U.K. GAAP and IFRS, we cannot prove whether the changes in conservatism coming from deferred taxes in the U.K. were due to the mandatory adoption of IFRS. Thus, we need to reject sub-hypothesis 2.

To summarize, we do only find partial support for our sub-hypotheses based on the more detailed analysis of the sources of conservatism in the net assets. While for parts of the line items this goes in line with our assessment of the differences between IFRS and the national sets of standards, we do find some interesting contradicting observations. Swedish accounting practices for machinery and equipment did, for example, not change with the adoption of IFRS, something that is in line with our findings at an overall level. For the U.K. our findings indicate that there must be other sources than the conservatism coming from the individual line items we analyzed that can explain the changes at an overall level of conservatism.

5.4 Summary of results

Confirming our first indicative results, our regression has given us significant evidence that accounting conservatism decreased in the U.K. due to the application of IFRS. In Sweden, on the other hand, no significant evidence of a change in the level of conservatism due to IFRS application could be found. Rather, we find a general decreasing trend in Sweden, which was proven not to be due to the mandatory IFRS adoption. Thus, our hypothesis that we will see a negative change in Sweden but not in the U.K. can be rejected.

³³ The statistical analyses for both countries can be found in Appendix H.1, Sweden, Deferred taxes and Appendix H.2, U.K., Deferred taxes.

On a line item basis, we could prove that the accounting conservatism coming from machinery and equipment in Sweden did not change due to IFRS, but was exhibiting a significant general trend. For the conservatism coming from the accounting of buildings and land as well as deferred taxes, we do not find any changes over the time of our study. In the U.K., we found a decreasing general trend for the accounting conservatism coming from buildings and land. No changes due to IFRS application or as a general trend could be found for the two other line items, machinery and equipment and deferred taxes. Thus, we conclude that the overall decrease in the U.K. due to IFRS application must have been due to other line items, whose effect we do only indirectly capture with our method.

Based on our conclusions in Chapter 3 *Comparison of standards and development of hypothesis* about the absolute level of conservatism in the U.K. and Sweden before the IFRS adoption, in combination with our findings regarding the relative changes in the level of conservatism within the two countries as summarized above, we can draw the conclusion that comparability between the two countries has suffered. More specifically, we do argue that cross-country comparability diminished after the adoption of IFRS, as the accounting conservatism in the U.K. decreased while it was not affected in Sweden. For an increase in comparability to take place, the Swedish levels of accounting conservatism before the mandatory adoption of IFRS have been concluded to have been higher in Sweden than in the U.K. In addition, since the conservatism in the U.K. decreased over time and the level of accounting conservatism in Sweden did not change with the adoption of IFRS, the step-wise decrease in accounting conservatism in the U.K. led to a widening gap between the conservatism in the two countries and thus to a stepwise decline in cross-country comparability over the time of our study.

6 Discussion of results

The results presented in Chapter 5 *Results* lead us to three important outcomes, which we will in further detail discuss in this chapter. First of all, we argue that institutional factors still played an important role after the IFRS adoption (see Section 6.1.1). As a matter of fact, British accountants were with IFRS able to satisfy the demand that these institutional factors create to a higher degree than was possible with the previously applied U.K. GAAP (Section 6.1.2). Secondly, we discuss the fact that comparability between Sweden and the U.K. was decreasing over time after the adoption of IFRS (Section 6.2). This is an important finding since it demonstrates that one needs to study the adoption of a new set of standards over a longer period to fully understand its effects. Lastly, we argue that the existence of accounting choices permitted the two outcomes above. We will examine this feature of IFRS closer (Section 6.3.1.) and accordingly give a recommendation to standard setters (Section 6.3.2).

6.1 The impact of diverging institutional factors after IFRS adoption6.1.1 Institutional factors still play an important role after IFRS adoption

Our results indicate that both Swedish and British accountants found means to continue practicing accounting in line with the demand for conservatism in the respective country even after the mandatory adoption of IFRS, a view that is strengthened by previous literature on the persisting influence of institutional factors and accounting traditions under a common set of standards (e.g. Cascino & Gassen, 2015; Nobes, 2013; Liao et al., 2012; Joos & Lang, 1994).

To start with, our findings are similar to the ones of Joos and Lang (1994) as well as of Liao et al. (2012). The main outcome of these studies is that institutional factors continuously had an impact on the accounting and the level of conservatism in it, throughout both the implementation of earlier harmonization directives as well as after the adoption of IFRS. Similarly, it can be inferred from our study that persisting and diverging institutional factors led to different incentives for Swedish accountants compared to for British accountants after the adoption of IFRS, incentives that in turn led to divergence in the application of IFRS by the accountants in the two countries. Our classification of the countries in Section 2.1.3 showed that the U.K. was influenced by the Anglo-Saxon accounting tradition where, among others, there is a focus on equity holders as capital providers and on strong security laws. These factors contributed to that companies to a relatively high degree chose accounting methods that led to low levels of conservatism before the adoption of IFRS. Since we have shown that the level of conservatism in the U.K. actually became even lower after the adoption of IFRS, it can be

inferred that these institutional factors³⁴ still played an important role for the accounting in the country. This goes in line with the discussion concluding Section 2.1.2, regarding the fact that there is no research that indicates that institutional factors, which had an impact on the incentives affecting accounting practices, changed with the IFRS adoption.

Similarly, we have shown in Section 2.1.3 that Sweden has traditionally been influenced by the Continental European tradition with relatively high levels of conservatism due to institutional factors, such as debtholders as the main capital providers and a lower protection of security owners. Even though we have shown that some later research has placed Sweden somewhere in between the Anglo-Saxon and Continental European tradition, we can with our results state that Sweden was after the adoption of IFRS affected by the same institutional factors that led to a demand for more conservative accounting before the adoption. We motivate this with the fact that Swedish companies before the IFRS adoption had a relatively high level of accounting conservatism (see our conclusions in Section 2.1.3 and in Chapter 3 *Comparison of standards and development of hypothesis*), and that we have found statistical evidence of that there was no change in this relatively high level. Thus, it can be concluded that there still was a demand for conservative accounting practices in the country after the adoption of IFRS. The purpose of accounting is after all, as stated by Mueller et al. (1991), to respond to the information needs of it users.

Our findings can further be connected to Cascino and Gassen's (2015) related to country-specific factors creating institutional incentives, which determine how likely an increase in comparability is to take place. Our results suggest that the Swedish accountants had less incentives to apply IFRS in a way that was emphasized by the IASB, with prudence and conservatism not desired as qualities in the accounting (IASB, 2008, BC 2.21). Instead, Swedish accountants rather continued with their way of reporting more conservative book values whenever IFRS allowed to do so. This is supported by the fact that the Swedish standard setter before 2005 based its own standards on the standards developed by the IASB, but did it in a way that made it possible to keep the high levels of conservatism and the emphasis on prudence

³⁴ Here, one should note that one factor mentioned in Chapter 2 *Theory* as to why U.K. accounting included relatively less accounting conservatism, was the weak link between taxation and accounting. However, as only the consolidated accounts and not the accounts of the legal entity need to be prepared according to IFRS, the link between accounting and taxation will not have a direct impact on how companies report their consolidated statements, i.e. the statements observed in this study.

as a principle (see Section 3.2.1). British accountants, however, had more incentives to apply IFRS in the way emphasized by the IASB, as there was a demand for low levels of conservatism in the country both before and after the adoption of IFRS. Thus, analyzing from Casino and Gassen's (2015) perspective, an increase in comparability between Sweden and the U.K. was not likely to take place due to the countries' diverging institutional incentives.

All in all, based on our findings, we suggest that institutional factors still play an important role when countries from different accounting traditions adopt a common set of standards, a suggestion that is strengthened by previous literature (e.g. Cascino & Gassen, 2015; Nobes, 2013; Liao et al., 2012; Joos & Lang, 1994). In Sweden, there had traditionally been a demand for a high level of conservatism in the accounting, a demand that did not cease to exist with the adoption of a new set of standards. In the U.K., on the other hand, there was still a high demand for less conservative accounting, and the accountants actually reported even less conservative book values to satisfy these demands after the IFRS adoption. This suggestion intensifies the view that IFRS application in practice is subject to differences across countries. Thus, even with the new set of standards in place, international investors and analysts will still find it difficult to understand differences in international financial statements. For them to fully comprehend the accounting information of a company, they need to understand which institutional factors the company in question is affected by.

6.1.2 British accountants found new ways to satisfy institutional incentives

As shown in Chapter 5 *Results*, we have found that there was a significant decrease in the accounting conservatism in the U.K. due to the mandatory adoption of IFRS. This demonstrates that British accountants did not only find ways to keep the already low previous levels of conservatism low, but that they with IFRS found ways to further decrease these levels. In this spirit, we add to Haller and Wehrfritz (2013) as well as to Kvaal and Nobes (2010), who argue that companies tend to choose pre-existing practices whenever the standards leave scope to do so. With our results, we suggest that companies do not necessarily always return to pre-existing practices if possible, but that it might also be that they find new ways of accounting that fit even better with the institutional incentives these companies are affected by. Thus, we argue that it is not necessarily the choice of pre-existing practices that harms comparability across countries applying IFRS. Rather, what does the harm is that companies choose practices, be it pre-existing or new ones, that best fit with the institutional incentives that each country is affected by.

The natural question following the line of argumentation above is how the accountants in the U.K. managed to report even less conservative book values than with U.K. GAAP. Our study did not find any significant changes in the level of conservatism coming from buildings and land or machinery and equipment due to IFRS application in the U.K., a result that is not surprising given the similarities between U.K. GAAP and IFRS on the treatment of fixed assets, as shown in Chapter 3 Comparison of standards and development of hypothesis. Similarly, we did not find any significant changes coming from the second line item we analyzed in detail, namely deferred taxes. Thus, our method did not allow us to point out from which line item the decrease in conservatism came. However, in Chapter 3 Comparison of standards and development of hypothesis we did discuss one line item, which the treatment of could potentially become less conservative when applying IFRS instead of U.K. GAAP, namely goodwill³⁵. When accountants decide on discount rates for goodwill impairment tests, there is necessarily a degree of subjectivity. Since we did conclude in Section 6.1.1 that the British accountants were still affected by a demand for lower levels of conservatism, it is plausible that this could be reflected in the choice of discount rates for the impairment tests. This could lead to a higher value for goodwill and the item will thus stay longer in the balance sheet with IFRS than was possible with U.K. GAAP. As stated in Section 1.3, we decided to not include goodwill in our calculations due to reasons of scope. Yet, since the accounting for this item has an impact on the book value of net assets, we still capture changes in the treatment of it with our method and thus in the analysis of the overall levels of conservatism, even if we have not been able to show that it was goodwill in particular that led to the decreases in conservatism in the U.K. Thus, although in this study we could not point out the sources of the change in the levels of conservatism in the U.K., we suggest that it is likely that one of these sources was the treatment of goodwill.

6.2 Decreasing cross-country comparability over time

We have suggested above that British accountants found ways of reporting even less conservative book values to satisfy the demand for relatively less conservatism created in their institutional environment. Yet, we have not only seen that the levels of accounting conservatism decreased in the U.K. compared to the years before the adoption, but also that during the years

³⁵ One should also note that another line item that we found the treatment of became less conservative with IFRS compared to with U.K. GAAP was capitalized development expenses. Due to a limited sample size, we could not statistically analyze the changes in the level of conservatism coming from this item. However, we observed that the absolute levels of conservatism in this item were very small, and we deem it unlikely that any changes in the treatment of it would have a major impact on the overall level of conservatism.

with IFRS, British accounting became less and less conservative and reached its lowest levels between 2008 and 2010. Thus, we do find that cross-country comparability diminished more and more over time after the adoption. We do see two reasons for these findings.

First of all, our results might be due to the fading out of temporary differences in IFRS application allowed for first-time adopters. More specifically, with IFRS 1 and its several relaxations of the requirements for first-time adopters, companies had the option to record some certain items in their IFRS statements with the previously used national GAAP. This will have meant that it took some time for items recorded with the national GAAP to disappear from the financial statements, as is stated by Hellman et al. (2015). Take for example the treatment of financial instruments, where IFRS 1 allowed companies to only retrospectively change the accounting for transactions entered into after the 1st of January 2004. If this simplified retrospective approach is chosen, all transactions entered before this date will still exist in the IFRS balance sheets, but will be recorded with the national GAAP. Naturally, it takes time until the effects from these earlier transactions fully disappear from the balance sheets.

Secondly, our findings might also be due to a learning process, similar to what Kvaal and Nobes (2012) observed in their study. This would mean that it takes some time for accountants to get used to a new set of standards and to apply it in a way that best fits with the information needs of users. Kvaal and Nobes (2012) observe such a learning process after the adoption of IFRS in France and Spain, where the previously applied accounting practices used to be very different compared to accounting practices with IFRS. Accountants in these countries had a strong learning curve, during which they could see how the standards were applied internationally and could adjust their own practices accordingly over time. In our case, we have observed patterns that point to such a learning process for the British accountants. However, the learning was rather about how to best satisfy the demand for relatively low levels of conservatism in new ways that became possible with the new set of standards. Given that the British accountants found new accounting practices under IFRS, see Section 6.1.2, it is plausible that it took some time for them to fully understand how to use these practices to satisfy this demand in the best way possible.

Overall, both reasons mentioned above are likely to be able to explain the changes in the level of conservatism in the U.K. following the adoption of IFRS that, in combination with unchanged levels of conservatism in Sweden, led to a stepwise decrease in cross-country comparability. Our findings, although similar to Liao et al.'s (2012) that comparability decreased over time after the adoption of IFRS, are unique in the sense that we observed the comparability effect over a longer period and found evidence that comparability was still suffering in the later years of our study. This result suggests that the effect of IFRS adoption on comparability is not necessarily only immediate, but might instead be spread over a lengthy period after the adoption of IFRS.

6.3. The problem with accounting choices under IFRS and subsequent recommendation6.3.1 A reason for decreased comparability: The existence of accounting choices

Above (see Section 6.1.1), we have argued that institutional factors still played an important role after the adoption of IFRS in 2005 and state that this was a reason for the decrease in comparability. Yet, assuming that companies do legally comply with the adopted set of standards, it must be that the standards themselves leave room for these institutional incentives to lead to different impacts on accounting practices internationally. Previous research states that companies move to pre-existing practices whenever the standards leave scope to do so (Nobes, 2013; Haller & Wehrfritz, 2013; Kvaal & Nobes, 2010). Adding to this and based on our reasoning in Section 6.1, we suggest that because the standards have left scope to do so, it is possible for companies to move to the practices that best fit with the demand they are affected by. In the following, we will demonstrate this with the case of Sweden and the accounting for fixed assets, the line item in which we found most differences in the treatment of when we compared IFRS to Swedish GAAP.

It is interesting that no changes in the conservatism coming from fixed assets due to the adoption of IFRS in Sweden could be observed, since our comparison of Swedish GAAP and IFRS yielded strong differences in the accounting for these items (see Section 3.2.1). Based on this comparison and given the EU's aim of an increase in comparability due to the adoption of IFRS (EC, 2002), we hypothesized to see a change on a line item basis for fixed assets (see Section 3.3.2). As this sub-hypothesis could be rejected, we argue that Swedish accountants found ways of continuing with their more conservative accounting practices. More specifically, this argumentation is based on the existence of the accounting to IAS 16. Even if IFRS gave the Swedish accountants the choice to record fixed assets at fair value, they still had the alternative to continue recording them at historical cost, the accounting treatment they had been applying previously under Swedish GAAP and that was most suitable for satisfying an unchanged demand for relatively high levels of conservatism. Based on our analysis in Section

6.1.1 that the institutional incentives did not change just because the standards did, the Swedish accountants simply had no reason to start recording their tangible assets in other ways than with historical cost as that was the most conservative choice. This finding suggests that when accounting standards provide accounting options with choices leading to different levels of conservatism, companies from countries with diverging demands for conservatism will inevitably make different choices. Hence, the more accounting options with such choices a set of standards provide, the more likely it is that no increase in cross-country comparability takes place.

Overall, based on the suggestion that companies move towards the practices that best satisfy the demand that they are affected by, our results highlight the difficulty of achieving cross-country comparability when an internationally used set of standards leaves room for many accounting options with different choices and we argue thus that having such diverging accounting choices under the roof of one common set of standards impedes cross-country comparability.

6.3.2 Recommendation to standard setters

The findings above have important implications for users of financial statement information, and should be taken into consideration in future efforts of standard setters. Investors who presume that financial statement information will be comparable across countries with the adoption of IFRS will be misled. Similar to Kvaal and Nobes (2010), we want to point out that an alert analyst could potentially be able spot the differences, e.g. in accounting conservatism, and take them into consideration when analyzing a company's financial position. Many others, however, might just rely on the fact that an internationally used set of standards will yield comparable financial statement information across borders, especially as this was a main aim of the EU with the IFRS adoption (EC, 2002). Thus, it needs to be emphasized, arguably by the EU and the IASB, that the mandatory adoption of IFRS in the EU might not have led to more cross-country accounting comparability but that comparability rather, as our results show, decreased.

In the same spirit, we do express our concerns about the aim to increase comparability and to thus enable investors to make better economic decisions. Given our suggestion that the mandatory adoption of IFRS did not lead to more comparability between Sweden and the U.K., not even when looking at a longer time period, we do believe this aim to have been rather unrealistic with the version of IFRS that was adopted in 2005. Hence, we propose that standard setters in the future reduce accounting options provided in a common set of standards if this very set of standards is intended to lead to more comparability. We argue that the more accounting options (especially accounting options with choices that lead to different levels of accounting conservatism, as in IAS 16 (see Section 6.3.1)) standards allow, the more difficult it gets to achieve comparability across countries. Thus, as the internationally different institutional incentives do not change just because the standards do, reducing the remaining accounting options in IFRS would have the potential to lead to a more consistent application of the standards across countries.

We recognize that this recommendation is not easily done for an international standard setter such as the IASB and that the IASB has previously tried to reduce accounting options³⁶. The diversity in accounting treatments allowed in the IFRS is demanded by the manifold countries that have adopted IFRS. Naturally, every country wants to get the benefits connected to the adoption of IFRS, but still also wants to make it possible for national companies to continue with their pre-existing practices whenever possible. Thus, there is a high number of actors demanding numerous accounting choices in the standards. However, our results indicate that increased comparability as was a main aim of the EU is only realistic to be fulfilled with less accounting options, as this might help to prevent the existence of diverging national practices under IFRS and thereby avert a lack of comparability.

6.4 Limitations

To complement the above discussion of our results, we will in the following turn to a discussion on the limitations of our study, based on the concepts of validity (internal validity as well as generalizability) and reliability.

This study is investigating the effect the mandatory adoption of IFRS had on comparability of accounting information, by studying changes in accounting conservatism. To do so, we rely on the chosen control variables to capture other changes in the dependent variable when we separate the accounting conservatism from the accounting measurement bias. Our statistical models explain variations in our measure to a considerable extent (for the overall analysis, the models have explanatory powers of around 51% for the U.K. and around 26% for Sweden), but they are of course not perfect. Thus, there were other factors than accounting

³⁶ See Section 2.2.2 for a more detailed elaboration on the fact that even though accounting choices have been reduced, there are still many overt and covert options within the statements. In addition, new standards included new available accounting options, despite the proclaimed reduction in accounting choices.

conservatism that we were not able to capture with the chosen control variables. However, we are confident in our careful selection of control variables and that we thereby have eliminated the variables other than conservatism that have a considerable impact on the movements of accounting measurement bias. Thus, we have a valid measure of accounting conservatism.

Furthermore, due to reasons concerning data availability, we have only been able to study the levels of accounting conservatism two years before the mandatory adoption of IFRS. Based on these two years, we are able to draw conclusion on what changes there were between pre-IFRS adoption and post-IFRS adoption. However, we do acknowledge that the validity of our study could have been improved by studying a longer time period before the IFRS adoption in order to get an increased understanding of the general trends in accounting conservatism.

The generalizability of our findings is restricted by the limitations imposed by our sample as we have not randomly selected this very sample. Our sample selection was restricted by data availability issues, especially in the U.K., as data from annual reports for the companies in the sample had to be available at least as far back as the financial year 2001 to recalculate companies' book values without relying on an excessive number of assumptions. Furthermore, due to restrictions imposed by our chosen method and the fact that companies in the financial, oil and gas, and real estate sector do have a high proportion of certain specific assets in their balance sheets, we needed to exclude companies from these sectors, as calculations of the current value of these companies' assets would not be accurate with our method. Accordingly, we are not able to draw conclusions on what happened to comparability within these sectors. It might be that companies within these sectors do exhibit considerably different changes in accounting conservatism, and that comparability between the two countries for the mentioned sectors will exhibit a different pattern. Yet, while we consider the above limitations imposed by our sample to restrict the generalizability outside our sample, they do not impose any restrictions to the conclusions we draw for the sample itself.

To assess the reliability of our study, we need to consider the accuracy with which we measure the constructs of our study. The main measure that we consider in order to derive conclusions on accounting conservatism is the accounting measurement bias (as discussed in Section 4.1, this bias represents the relative difference between a recalculated current value and the reported book value of a company's assets). The calculations of the current value of the balance sheet items are based on a number of important assumptions. For example, we follow

the depreciation time used by the companies themselves when recalculating the current value (see Section 4.2, for further assumptions). Even though our calculations are influenced by these assumptions, we have argued in Section 4.2 for why we do consider them reasonable and why they enable us to derive a reliable current value. Moreover, we rely on the fact that the macro-economic variables (annual inflation and housing price indices) we use to model the value changes are representative and adequate for the respective assets. In line with that, we consider our results to be trustworthy in the sense that other researchers would arrive at the same results when using a similar approach and making similar assumptions.

As a final remark on the limitations of this study, we refer to the discussion in Section 6.3.2 where we suggest that accounting options should be limited if comparability is to be achieved. However, we have not investigated what potential impacts (economic or other) that would mean for the countries with different accounting traditions. It might be that institutional factors and incentives need to converge in order to reach full comparability. Naturally, that could be a difficult task.

7 Concluding remarks

This thesis has looked at the effects of the mandatory adoption of IFRS in the EU on accounting comparability across borders by studying the levels of conservatism in British and Swedish accounting over a uniquely long time period, i.e. from 2003 to 2010. Given that the aim of the EU with the mandatory adoption of IFRS was to increase comparability (EC, 2002) and that IFRS in this thesis were shown to be closer to U.K. GAAP than to Swedish GAAP, it was hypothesized that the relatively high levels of conservatism in Swedish accounting would adjust towards the relatively lower levels in the U.K. right before the adoption of IFRS. However, this hypothesis could be rejected and our results suggest that the IFRS adoption has decreased comparability among the mandatory adopters within the EU.

The result above leads to three important outcomes. To begin with, we have argued that comparability suffers because institutional factors keep having an impact on accounting properties even after IFRS were adopted. We find evidence for that these circumstances can even lead to accountants applying the principle of conservatism with IFRS in a way that goes even more in line with the accounting tradition in the country than was possible with the national GAAP. Secondly, we have shown that the decrease in cross-country comparability is not effective in full in the early years after the adoption. Rather, comparability keeps decreasing over the years of this study. Finally, we argue that the existence of accounting figures in line with the local demand for accounting information that they are affected by.

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Anglo American 1999-2010 BAE Systems 2001-2010

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BT Group 1996-2010

Centrica 1997-2010

DS Smith 1998-2010

GKN 2000-2010

GlaxoSmithKline 2000-2010

Halma 1999-2010

J Sainsbury 1990-2010

Johnson Matthey 1997-2010

Kingfisher 1998-2010

Marks & Spencer 1999-2010

National Grid 2001-2010

Next 2000-2010

RELX 2000-2010

Rio Tinto 1999-2010

Rolls-Royce 1999-2010

Severn Trent 1995-2010

Smiths Group 1997, 1999-2010

SSE 2001-2010

Tesco 1999-2010

Unilever 1997-2010

Vodafone Group 1996-2010

Whitbread 2000-2006, 2008-2010

Wolseley 1997-2000, 2002-2010

WPP 1992-2010

Appendix A Company-specific assumptions

A.1 Sweden

Assa Abloy

- **Research and development, expensed** The cost in 1994 is an average from 1995 and 1996.
- Effective tax rate The calculated tax rate in 2003 was excluded from the calculation of the average tax rate.

Atlas Copco

- **Buildings and land** The annual cost in 1994-1997 is based on an average from 1998-2001.
- Machinery The annual cost in 1995-1997 is based on an average from 1998-2001.
- Research and development, expensed The annual cost in 1994-1997 is based on an average from 1998-2001.

Axfood

• Buildings and land

The calculated depreciation time for buildings and land is deemed to be unreasonable. 50 years is used as economic life.

There is only information available until 2001. The average does not seem representative, so the cost is spread over 10 years.

• Machinery

The annual cost in 1997-2000 is based on an average from 2001-2003.

Billerud (Korsnäs)

• Buildings and land

There is only information available until 2001. The average does not seem representative, so the cost is spread over 20 years.

- Machinery The annual cost in 1984-2000 is based on an average from 2001-2003.
- **Research and development, expensed** The annual cost in 1994-1999 is based on an average from 2000-2003.
- **Research and development, capitalized** They only capitalize R&D from 2009. Due to the limited data, the economic life is

assumed to be 5 years.

• Effective tax rate

The calculated tax rates in 2005 and 2008 were excluded from the calculation of the average tax rate.

Boliden

• Buildings and land

There is only information available until 2001. The average does not seem representative, so the cost is spread over 10 years.

• Machinery

There is only information available until 2001. The average does not seem representative, so the cost is spread over 10 years.

• Research and development, expensed The annual cost in 1994-2000 is based on an average from 2001-2003.

• Effective tax rate

The calculated tax rate in 2003 was excluded from the calculation of the average tax rate.

Electrolux

- Buildings and land Disposals in 1994-1996 is based on an average from 1997-2003.
- Machinery Disposals in 1994-1996 is based on an average from 1997-2003.

Elekta

• Machinery

The annual cost in 1988-1997 is based on an average from 1998-2003.

• **Research and development, expensed** The annual cost in 1994-1996 is based on an average from 1997-2003.

Ericsson

• Effective tax rate

The calculated tax rate in 2003 was excluded from the calculation of the average tax rate.

Getinge

Research and development, expensed

The annual cost in 1994-1996 is based on an average from 1997-2003.

Hexagon

• Buildings and land

The cost in 1996 is based on an average from 1997-2003.

• **Research and development, expensed** The annual cost in 1994-1996 is based on an average from 1997-2003.

- **Buildings and land** The annual cost in 1989-1998 is based on an average from 2000-2003.
- Machinery and equipment The annual cost in 1991-1998 is based on an average from 2000-2003.
- **Research and development, expensed** The annual cost in 1994-2001 is based on an average from 2002-2003.

MTG

• Machinery and equipment The annual cost in 1996-1999 is based on an average from 2000-2003.

NIBE Industrier

- **Buildings and land** The annual cost in 1993-1996 is based on an average from 1997-2003.
- **Research and development, expensed** The annual cost in 1994-2002 is based on an average from 2003-2004.

Sandvik

- Buildings and land Disposals in 1993-1996 is based on an average from 1997-2003.
- Machinery and equipment Disposals in 1992-1996 is based on an average from 1997-2003.

SCA

• Buildings and land

The annual cost in 1992-1995 is based on an average from 1996-2003. Information about disposals in 2005-2010 is presented net. Disposals in 2005-2010 are based on an average from 2004-1997.

• Machinery

The annual cost in 1993-1995 is based on an average from 1996-2003. Information about disposals in 2005-2010 is presented net. Disposals in 2005-2010 are based on an average from 2004-1997.

• Research and development, capitalized Information about disposals in 2005-2010 is presented net. Disposals in 2005-2010 are based on information about net values.

• Effective tax rate

The calculated tax rate in 2005 was excluded from the calculation of the average tax rate.

Securitas

No special assumptions made.

Skanska

• **Research and development, expensed** The annual cost in 1994-2001 is based on an average from 2002-2003.

SKF

- Buildings and land Disposals in 1990-1996 is based on an average from 1997-2003.
- Machinery and equipment Disposals in 1990-1996 is based on an average from 1997-2003.

SSAB

- **Buildings and land** Disposals in 1984-1994 are based on an average from 2003-1995 and 1980-1983.
- Machinery and equipment Disposals in 1984-1994 are based on an average from 2003-1995 and 1980-1983.
- Research and development, expensed The numbers are not explicitly reported but said to be around 1% of sales. This number is used.

Effective tax rate

• The calculated tax rates in 2009-2010 were excluded from the calculation of the average tax rate.

Swedish Match

• Machinery

The annual cost in 1991-1995 is based on an average from 1996-2003.

Tele2

• Machinery

The annual cost in 1996-1998 is based on an average from 1999-2003.

• Effective tax rate

The calculated tax rates in 2003 and 2007 were excluded from the calculation of the average tax rate.

Volvo

• Buildings and land

The annual cost in 1993-1995 is based on an average from 1996-2003.

• Research and development, expensed

The annual cost in 1994 is based on an average from 1995-2003.

The costs in 1994-1998 are halved compared to the reported figures as they included Volvo Cars' (which was sold in 1999) figures.

A.2 The U.K.

Anglo American

- Buildings and land The annual cost in 1996-1998 is based on an average from 1999-2003.
- Machinery The annual cost in 1997-1998 is based on an average from 1999-2003.
- **Research and development, expensed** The annual cost in 1994-1997 is based on an average from 1998-2003.

BAE Systems

• Buildings and land

The annual cost in 1992-1999 is based on an average from 2000-2003.

- Machinery The annual cost in 1993-1999 is based on an average from 2000-2003.
- Effective tax rate The calculated tax rates in 2004 and 2009 were excluded from the calculation of the average tax rate.

British Airways

• Buildings and land

The annual cost in 1990-1995 is based on an average from 1996-2003.

- Machinery The annual cost in 1992-1995 is based on an average from 1996-2003.
- Effective tax rate The calculated tax rates in 2008 and 2010 were excluded from the calculation of the average tax rate.

BT Group

• Machinery

The annual cost in 1993-1994 is based on an average from 1995-2003.

Research and development, capitalized

The depreciation times are based on the figures from 2008-2010.

• Effective tax rate The calculated tax rate in 2006 was excluded from the calculation of the average tax rate.

Centrica

• Machinery

The annual cost in 1991-1996 is based on an average from 1997-2003.

DS Smith

- **Buildings and land** The annual cost in 1988-1997 is based on an average from 1998-2003.
- Machinery The annual cost in 1991-1997 is based on an average from 1998-2003.
- **Research and development, expensed** The annual cost in 1994-1996 is based on an average from 1997-2003.

GlaxoSmithKline

- **Buildings and land** The annual cost in 1990-1999 is based on an average from 2000-2003.
- Machinery The annual cost in 1993-1999 is based on an average from 2000-2003.
- Research and development, expensed The annual cost in 1994-1997 is based on an average from 1998-2003.

GKN

• Buildings and land

The annual cost in 1987-1999 is based on an average from 2000-2003.

- Machinery The annual cost in 1991-1999 is based on an average from 2000-2003.
- **Research and development, expensed** The annual cost in 1994-1999 is based on an average from 2000-2003.

Halma

- Buildings and land The annual cost in 1992-1998 is based on an average from 1999-2003.
- Machinery The annual cost in 1996-1998 is based on an average from 1999-2003.
- **Research and development, expensed** The annual cost in 1994-1997 is based on an average from 1998-2003.

J Sainsbury

No special assumptions made

Johnson Matthey

- **Buildings and land** The annual cost in 1995-1996 is based on an average from 1997-2003.
- Machinery

The annual cost in 1996 is based on an average from 1997-2003.

Kingfisher

• Buildings and land

The calculated depreciation time for buildings and land is deemed to be unreasonable. 50 years is used as economic life.

• Effective tax rate

The calculated tax rate in 2008 was excluded from the calculation of the average tax rate.

Marks & Spencer

• Buildings and land

There is only information available until 1999. The average does not seem representative, so the cost is spread over 10 years.

The calculated depreciation time for buildings and land is deemed to be unreasonable. 50 years is used as economic life.

• Machinery

The annual cost in 1991-1999 is based on an average from 1999-2003.

National Grid

• Buildings and land

The annual cost in 1999-2000 is based on an average from 2001-2003.

- Machinery The annual cost in 1997 and 1999-2000 is based on an average from 2001-2003.
- **Research and development, expensed** The annual cost in 1994-1996 is based on an average from 1997-2003.

Next

• Buildings and land

There is only information available until 2000. The average does not seem representative, so the cost is spread over 10 years. The calculated depreciation time for buildings and land is deemed to be unreasonable. 50 years is used as economic life.

• Machinery

The annual cost in 1997-1999 is based on an average from 2000-2003.

Reed Elsevier

• Buildings and land

The annual cost in 1997-1999 is based on an average from 2000-2003.

• Machinery

The annual cost in 1997-1999 is based on an average from 2000-2003.

• Effective tax rate

The calculated tax rates in 2009-2010 were excluded from the calculation of the average tax rate.

Rio Tinto

- **Buildings and land** The annual cost in 1996-1998 is based on an average from 1999-2003.
- Machinery The annual cost in 1991-1998 is based on an average from 1999-2003.

Rolls-Royce

- **Buildings and land** The annual cost in 1994-1998 is based on an average from 1999-2003.
- Machinery The annual cost in 1997-1998 is based on an average from 1999-2003.
- Research and development, expensed The annual cost in 1994-1997 is based on an average from 1998-2003.

Severn Trent

- **Buildings and land** The annual cost in 1984-1988 is based on an average from 1989-2003.
- Machinery The annual cost in 1986-1989 is based on an average from 1990-2003.

Smiths Group

• Buildings and land

There is only information available until 1997. The average does not seem representative, so the cost is spread over 5 years.

• Machinery

There is only information available until 1997. The average does not seem representative, so the cost is spread over 5 years.

• **Research and development, expensed** The annual cost in 1994-1995 is based on an average from 1996-2003.

SSE

• Buildings and land

The annual cost in 1986-2000 is based on an average from 2001-2003.

• Machinery

The annual cost in 1989-2000 is based on an average from 2001-2003.

Research and development, expensed

The annual cost in 1994-1999 is based on an average from 2000-2003.

Tesco Group

- **Buildings and land** The annual cost in 1993-1996 is based on an average from 1997-2003.
- Machinery The annual cost in 1995-1996 is based on an average from 1997-2003.

Unilever

• No special assumptions made

Vodafone

Effective tax rate

• The tax rate is set to 30% as the calculation of the effective tax rate leads to unreasonable numbers.

Whitbread

• Buildings and land

There is only information available until 2000. The average does not seem representative, so the cost is spread over 10 years. The calculated depreciation time for buildings and land is deemed to be unreasonable. 50 years is used as economic life.

• Machinery

There is only information available until 2000. The average does not seem representative, so the cost is spread over 5 years.

Wolseley

- **Buildings and land** The annual cost in 1995-1996 is based on an average from 1997-2003.
- Effective tax rate

The calculated tax rates in 2008-2009 were excluded from the calculation of the average tax rate.

WPP

No special assumptions made

Appendix B Companies with discounted deferred taxes

The following companies did discount their deferred taxes in 2003 and 2004 in accordance with U.K. GAAP. Thus, we have not calculated an accounting measurement bias from deferred taxes for these companies in 2003 and 2004.

- Johnson Matthey
- National Grid
- Severn Trent
- SSE

Appendix C Statistical variables

C.1 Explanatory variables

Explanatory variable	Description	Hypothesis
IFRS	Dummy-variable that takes a value of 1 if the year is between 2005 and 2010	Two-sided
Year _{linear}	Each year represented with a number between 1-8. 2003 has a value of 1, 2004 2 etc.	Two-sided
Year ₂₀₀₃	Dummy-variable that takes a value of 1 if the year is 2003	Two-sided
Year ₂₀₀₄	Dummy-variable that takes a value of 1 if the year is 2004	Two-sided
Year ₂₀₀₅	Dummy-variable that takes a value of 1 if the year is 2005	Two-sided
Year ₂₀₀₆	Dummy-variable that takes a value of 1 if the year is 2006	Two-sided
Year ₂₀₀₇	Dummy-variable that takes a value of 1 if the year is 2007	Two-sided
Year ₂₀₀₈	Dummy-variable that takes a value of 1 if the year is 2008	Two-sided
Year ₂₀₀₉	Dummy-variable that takes a value of 1 if the year is 2009	Two-sided
Year ₂₀₁₀	Dummy-variable that takes a value of 1 if the year is 2010	Two-sided

C.2 Control variables

Each control variable was chosen as it was thought to have had an impact on the level of accounting measurement bias observed in this study. Thus, we want to isolate the effect from these items on the accounting measurement bias, to separate the effect IFRS application had on the levels of accounting conservatism.

First of all, we want to control for whether size of a company has an impact on the accounting measurement bias by controlling for companies' revenues and assets. Doing so, we exclude the possibility that two observations of accounting measurement bias are different just because the revenues or assets are. We deem it likely that higher revenues or assets can both have a positive and negative impact and have thus chosen to apply a two-sided hypothesis for these variables.

Secondly, we control for profitability. Our chosen control variable for that is net margin. A higher net margin increases the book value of equity, which leads to a decrease in the accounting measurement bias (one-sided hypothesis).

To continue, differences in accounting measurement biases might also be due to different financing structures. If a company had a relatively high amount of debt, it would have a relatively low amount of equity. This would then increase the accounting measurement bias. We do this control with solidity as our chosen control variable (one-sided hypothesis).

A company's asset structure also has an impact on the accounting measurement bias. As we derive our accounting measurement bias from current values of buildings and land, machinery and assets, as well as capitalized development expenses (deferred taxes have been observed to have a small impact on the overall level of accounting measurement bias and is not controlled for), we do a control for the relative importance of each asset class (one-sided hypothesis). Similarly, the age of the assets has an impact on the accounting measurement bias, the more recently the asset was bought, the lower the bias. Thus, we also control for the remaining life of buildings and land, machinery, and capitalized development expenses (onesided hypotheses).

Whether a company has research and development expenses, and in case it does, what size these expenses then have, has an impact on our accounting measurement bias. Thus, we add two dummy variables for whether or not the company has expensed research and development and if they have capitalized development expenses (one-sided hypotheses), as well as a variable for the size of the research and development expenses in relation to the company's revenues (one-sided hypothesis).

Moreover, we control for changes in equity, both in the form of net profits but also in the form of other changes. If a company has, for example, made a large issue of shares, that increases the equity and decrease the accounting measurement bias. This we want to control for and we do that with one variable for the net profit in relation to equity, one for the accumulated net profit (accumulated over the years of our study) in relation to equity, and two similar variables for other changes in equity (one-sided hypotheses).

Finally, we include our chosen macro-economic variables, namely the annual inflation and the housing price index, as additional control variables. These indices were used to approximate value changes in our calculations of the accounting measurement bias. To ensure that extreme changes in these indices do not bias our measure, we control for them (one-sided hypotheses). See next page for a table summarizing all the control variables.

Type of control	Variable name	Description	Hypothesis
Size	Revenues_SEK	<i>Revenues in SEK. For entities reporting in other currencies, values translated</i>	Two-sided
	Assets_SEK	Assets in SEK. For entities reporting in other currencies, values translated	Two-sided
Profitability	NetMargin	Net profit divided by revenues	One-sided
Financing	Solidity	Equity divided by assets	One-sided
Asset structure	Buildings_LandAssets	The book value of each asset class is divided by the book	One-sided
	Machinery_Assets	value of total assets	One-sided
	RDAssets		One-sided
	RemLife_Buildings	The difference between each asset class' accumulated cost	One-sided
	RemLife_Machinery	and its accumulated depreciation is divided by its accumlated	One-sided
	RemLife_DevCosts	cost. This gives the remaining economic life in percent.	One-sided
Research & Development	RDrev	Expensed R&D divided by revenues	One-sided
	Expensed_RD	Dummy that takes a value of 1 when the company has expensed R&D	One-sided
	Capitalized_RD	Dummy that takes a value of 1 when the company has capitalized R&D	One-sided
Changes in equity	Net_profitequity	Net profit divided by equity	One-sided
	AccNet_profitequity	Accumulated net profit during the years of our study divided by equity	One-sided
	Otherchangeseq	Changes in equity other than net profit divided by equity	One-sided
	Accotherchangeseq	Accumulated changes in equity during the years of our	One-sided
		study other than net profit divided by equity	
Price changes	HousingIndex	Housing Price Index used as an approximation for value changes	One-sided
		in buildings and land	
	Inflation	Inflation used as an approximation for value changes in	One-sided
		other assets	

Appendix D Companies excluded from the final sample

D.1 Sweden

Company name	Reason for exclusion		
AAK	Merger in 2005		
Alfa Laval	Publicly listed since 2002		
Arjo	Publicly listed since 2017		
Astra Zeneca	Report according to UK GAAP before 2005		
Autoliv Inc.	Report according to US GAAP		
Castellum	Investment company		
Com Hem Holding	Publicly listed since 2014		
Dometic Group	Merger in 2005		
Essity	Demerged from SCA		
Fabege	Founded in 2005		
Fast. Balder	Founded in 2005		
Hennes & Mauritz	Financial year (ending 30/11/xxxx)		
HEXPOL	Demerger from Hexagon in 2008		
Hufvudstaden	Data availability		
Husqvarna	Was owned by Electrolux between 1978 and 2006		
ICA Gruppen	Merger / Restructuring in 2005		
Indutrade	Publicly listed since 2005		
Intrum Justitia AB	Publicly listed since 2002 only		
Kindred Group	Early adopters		
L E Lundbergföretagen	Investment company		
Latour	Investment company		
Lifco	Publicly listed since 2014		
Lundin Mining	Data availability		
Lundin Petroleum	Assets primarily consist of only oil and gas.		
Millicom International Cellular	Data availability		
Swedish Orphan Biovitrum	Merger between Biovitrum and Swedish Orphan in 2010		
TeliaSonera	Early adopters		
Trelleborg	Data availability (no disclosure of disposals)		

Company name	Reason for exclusion		
Admiral Group	Investment company		
Antofagasta	Data availability		
Ashtead Group	Large merger in 2006		
Associated British Foods	Financial year (ending 15/09/xxxx)		
AstraZeneca	Large mergers in 2007 and 2008		
Aviva	Insurance company		
Barclays	Bank		
Barratt Developments	Investment company		
Berkeley Group Holdings	Property developer		
Betfair	Irrelevant (do basically not have any assets)		
BHP Billiton	Trading company		
BP	Data availability (no disclosure of land and buildings + machinery)		
British American Tobacco	Data availability		
British Land Company	Investment and property development company		
Bunzl	Data availability		
Burberry Group	Publicly listed since 2002		
Carnival	Report according to US GAAP		
Coca-Cola HBC AG (CDI)	Report according to US GAAP		
Compass Group	Financial year (ending 30/09/xxx)		
CRH	Report according to Irish GAAP		
Croda International	Large acquisitions in 2006		
DCC	Report according to Irish GAAP		
Diageo	Merger in 2002		
Direct Line Insurance Group	Insurance company, basically only financial assets		
easyJet	Financial year (ending 30/09/xxxx)		
Evraz	Data availability		
Experian	Demerger from GUS in 2006		
Fresnillo	Founded in 2008 as a demerger		
G4S	Founded in 2004		
Glencore/Xstrata	Merger in 2013 (did not exist in this form before)		
Hammerson	Only investment property		
Hargreaves Lansdown	Financial services		
HSBC Holdings	Bank		
Imperial Brands	Financial year (ending 30/09/xxxx)		
Informa	Merger in 2004		
InterContinental Hotels Group	Merger of restaurant part in 2003		
Intertek Group	Exclude, net assets low and negative		
ITV	Formed as merger in 2006		
Just Eat	Founded in 2001		

Land Securities Group	Investment and property development company		
Legal & General Group	Financial services		
Lloyds Banking Group	Bank		
London Stock Exchange Group	Financial information company		
Mediclinic International	Merger		
Micro Focus International	Publicly listed since 2005		
Mondi	Demerged from Anglo-American in 2007		
Morrison (Wm) Supermarkets	Data availability		
NMC Health	Data availability		
Old Mutual	Investment and insurance company		
Pearson	Acquisitions		
Persimmon	Data availability		
Prudential	Insurance company		
Randgold Resources Ltd.	Data availability		
Reckitt Benckiser Group	Change of accounting period in 2007		
Rentokil Initial	Acquisitions in 2006 and 2007		
Royal Bank of Scotland Group	Bank		
Royal Dutch Shell	Report according to US GAAP		
RSA Insurance Group	Insurance company		
Sage Group	Financial year (ending 01/10/xxxx)		
Schroders	Asset management company		
Scottish Mortgage Inv Trust	Investment trust		
SEGRO	Investment company		
Shire Plc	Change of reporting currency in 2006		
Sky	Takeover of Armstad in 2007		
Smith & Nephew	Change of reporting currency in 2006		
Smurfit Kappa Group	Publicly listed since 2007		
St James's Place	Investment company		
Standard Chartered	Banking services		
Standard Life Aberdeen	Investment company		
Taylor Wimpey	Merger in 2007		
TUI AG Reg Shs (DI)	Early adopters of IFRS		
United Utilities Group	Data availability		

Appendix E Companies in the final sample

Sweden	The U.K.
Assa Abloy	Anglo American
Atlas Copco	BAE Systems
Axfood	British Airways
Billerud (Korsnäs)	BT Group
Boliden	Centrica
Electrolux	DS Smith
Elekta	GKN
Getinge	GlaxoSmithKline
Hexagon	Halma
Holmen	J Sainsbury
Modern Times Group	Johnson Matthey
NIBE Industrier AB	Kingfisher
Sandvik	Marks & Spencer
Securitas	National Grid
Skanska	Next
SKF	RELX
SSAB	Rio Tinto
Svenska Cellulosa	Rolls-Royce
Swedish Match	Severn Trent
Tele2	Smiths Group
Telefon LM Ericsson	SSE
Volvo	Tesco
	Unilever
	Vodafone Group
	Whitbread
	Wolseley
	WPP

Appendix F Industry distribution of final sample

In this appendix, we present the number of companies within the final sample per industry. Furthermore, we present the share each industry represents within the sample as well as the share each industry has within the 50 companies in Sweden and the 100 companies in the U.K. with the largest market capitalizations (excluding banks, investment companies, as well as companies within the oil and gas sector).

F.1 Sweden

Industry	Nr of companies	Share in sample	Тор 50
Basic Materials	5	23%	19%
Consumer goods	5	23%	21%
Consumer services	2	9%	12%
Health Care	2	9%	12%
Industrials	4	18%	17%
Technology	1	5%	2%
Telecommunication	2	9%	12%
Utilities	1	5%	2%
	22	100%	

F.2 The U.K.

Industry	Nr of companies	Share in sample	Тор 100
Basic Materials	3	11%	11%
Consumer goods	1	4%	13%
Consumer services	9	33%	21%
Healthcare	1	4%	6%
Industrials	6	22%	15%
Technology	1	4%	2%
Telecommunication	2	7%	2%
Utilities	4	15%	5%
	27	100%	

Appendix G Observations excluded due to extreme values

The following observations were excluded due to extreme values of accounting measurement biases.

- BT Group 2003-2010 (The U.K.)
- Next 2007 (The U.K.)
- Swedish Match 2010 (Sweden)

Appendix H Panel data regression

H.1 Sweden,

Overall analysis

The following tables show the results of the regression on an overall level for Sweden, providing evidence of a general trend in the levels of accounting conservatism due to reasons other than the application of IFRS.

Panel data regression, step 1	
Country	Sweden
Main explanatory variable	IFRS
Number of observations	175
Number of groups (firms)	22
Overall R ²	0.2578
F _{4,21}	534.22
Prob > F	0.0000

Variables	Coefficient	Standard Error*	t-value	P > I t I	
IFRS	-0.0857	0.0396	-2.17	0.042	
Solidity	-0.0100	0.0041	-2.46	0.001	**
Capitalized_RD	-0.0822	0.0308	-2.67	0.001	**
Accotherchangeseq	-0.0008	0.0001	-14.32	0.000	**
Constant	0.9559	0.1699	5.63	0.000	

*estimated as a robust standard error, adjusted for firm-clusters (fixed effects for firms).

** one-sided hypothesis

Panel data regression, step 2CountrySwedenMain explanatory variablesIFRS, YearNumber of observations175Number of groups (firms)22Overall R^2 0.2559 $F_{6,21}$ 488.97Prob > F0.0000

Variables	Coefficient	Standard Error*	t-value	P > I t I	
IFRS	-0.0005	0.0288	-0.02	0.986	
Year _{linear}	-0.0299	0.0078	-3.84	0.001	
Solidity	-0.0091	0.0035	-2.64	0.001	**
RemLife_Machinery	-0.0096	0.0046	-2.09	0.002	**
Net_profitequity	-0.0030	0.0012	-2.56	0.001	**
Accotherchangeseq	-0.0013	0.0002	-7.43	0.000	**
Constant	1.3234	0.2965	4.46	0.000	

Overall analysis

Panel data regression, step 3			
Country	Sweden		
Main explanatory variable	Year		
Number of observations	175		
Number of groups (firms)	22		
Overall R ²	0.2559		
F _{5,21}	511.43		
Prob > F	0.0000		

Variables	Coefficient	Standard Error*	t-value	P > I t I	
Year _{linear}	-0.0300	0.0084	-3.57	0.002	
Solidity	-0.0091	0.0034	-2.67	0.007	**
RemLife_Machinery	-0.0096	0.0046	-2.08	0.025	**
Net_profitequity	-0.0030	0.0012	-2.59	0.009	**
Accotherchangeseq	-0.0013	0.0002	-7.59	0.000	**
Constant	1.3234	0.2953	4.48	0.000	

*estimated as a robust standard error, adjusted for firm-clusters (fixed effects for firms). ** one-sided hypothesis

Panel data regression, step 4	
Country	Sweden
Main explanatory variables	Year dummies
Number of observations	175
Number of groups (firms)	22
Overall R ²	0.2585
F _{11,21}	1164.65
Prob > F	0.0000

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Variables	Coefficient	Standard Error*	t-value	P > I t I
Year ₂₀₀₃	0.0217	0.0155	1.40	0.176
Year ₂₀₀₅	-0.0400	0.0235	-1.70	0.104
Year ₂₀₀₆	-0.0606	0.0360	-1.68	0.107
Year ₂₀₀₇	-0.0943	0.0418	-2.26	0.035
Year ₂₀₀₈	-0.1106	0.0474	-2.33	0.030
Year ₂₀₀₉	-0.1734	0.0494	-3.51	0.002
Year ₂₀₁₀	-0.1844	0.0482	-3.83	0.001
Solidity	-0.0087	0.0037	-2.34	0.015 **
RemLife_Machinery	-0.0096	0.0046	-2.08	0.025 **
Net_profitequity	-0.0033	0.0013	-2.52	0.010 **
Accotherchangeseq	-0.0013	0.0002	-6.88	0.000 **
Constant	1.2549	0.3017	4.16	0.000

*estimated as a robust standard error, adjusted for firm-clusters (fixed effects for firms).

** one-sided hypothesis

Buildings and land

The following tables show the results of the panel data regression with the accounting measurement bias coming from buildings and land as a dependent variable. This analysis does not allow to draw any statistically significant conclusions about the changes in the level of accounting conservatism.

Panel data regression **Buildings and Land, Step 2**

Main explanatory variable

Number of observations

Number of groups (firms)

Country

Overall R²

Prob > F

 $F_{3,20}$

Panel data regression	
Buildings and Land, Step 1	
Country	Sweden
Main explanatory variable	IFRS
Number of observations	163
Number of groups (firms)	21
Overall R ²	0.4355
F _{4,20}	497.06
Prob > F	0.0000

Variables	Coefficient	Standard Error*	t-value	P > I t I	
IFRS	-0.0013	0.0157	-0.08	0.933	
Solidity	-0.0025	0.0012	-2.16	0.022	**
Accotherchangeseq	-0.0004	0.0000	-23.22	0.000	**
HousingIndex	0.0029	0.0011	2.54	0.010	**
Constant	0.2306	0.0442	5.21	0.000	

Standard Coefficient Variables t-value Error* Yearlinear 0.0036 -0.0052 -1.42 Solidity -2.45 -0.0016 0.0006 Net_profitequity 0.0001 -7.20 -0.0007 0.2014 0.0183 11.02 Constant

*estimated as a robust standard error, adjusted for firm-clusters (fixed effects for firms). ** one-sided hypothesis

*estimated as a robust standard error, adjusted for firm-clusters (fixed effects for firms). ** one-sided hypothesis

Sweden

Year

163

21

0

0.4583

632.5600

P > I t I

0.170

0.012

0.000

0.000 **

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Machinery and Equipment

The following tables show the results of the panel data regression with the accounting measurement bias coming from machinery and equipment as a dependent variable. This provides evidence of a general trend in the levels of accounting conservatism coming from machinery and equipment, a trend that is due to reasons other than the application of IFRS.

Panel data regression

Trachiner ve Dreb 1	Machinerv.	Step	1
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Country	Sweden
Main explanatory variable	IFRS
Number of observations	175
Number of groups (firms)	22
Overall R ²	0.2433
F _{4,21}	368.41
Prob > F	0.0000

Variables	Coefficient	Standard Error*	t-value	P > I t I	
IFRS	-0.0689	0.0189	-3.65	0.001	
Solidity	-0.0048	0.0023	-2.08	0.025	**
Accotherchangeseq	-0.0005	0.0000	-14.41	0.000	**
Inflation	0.0047	0.0021	2.27	0.017	**
Constant	0.4617	0.0897	5.15	0.000	

*estimated as a robust standard error, adjusted for firm-clusters (fixed effects for firms). ** one-sided hypothesis

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Machinery, Step 2	
Country	Sweden
Main explanatory variables	IFRS, Year
Number of observations	175
Number of groups (firms)	22
Overall R ²	0.2503
F _{4,21}	178.62
Prob > F	0.0000

Panel data regression

Variables	Coefficient	Standard Error*	t-value	P > I t I	
IFRS	-0.0069	0.0221	-0.31	0.758	
Year _{linear}	-0.0159	0.0047	-3.38	0.003	
Solidity	-0.0047	0.0021	-2.26	0.018	**
Accotherchangeseq	-0.0005	0.0000	-14.41	0.000	**
Constant	0.4862	0.0813	5.98	0.000	

Machinery and Equipment

Panel data regression	
Machinery, Step 3	
Country	Sweden
Main explanatory variable	Year
Number of observations	175
Number of groups (firms)	22
Overall R ²	0.1541
F _{6,21}	247.6
Prob > F	0.0000

Variables	Coefficient	Standard Error*	t-value	P > I t I	
Year _{linear}	-0.0216	0.0042	-5.12	0.000	
Solidity	-0.0041	0.0015	-2.67	0.007	**
RemLife_Machinery	-0.0050	0.0019	-2.65	0.008	**
Accotherchangeseq	-0.0008	0.0001	-7.13	0.000	**
Net_profitequity	-0.0016	0.0007	-2.36	0.014	**
Inflation	0.0060	0.0026	2.27	0.017	**
Constant	0.6742	0.1036	6.51	0.000	

*estimated as a robust standard error, adjusted for firm-clusters (fixed effects for firms). ** one-sided hypothesis

Panel data regression			
Machinery, Step 4			
Country	Sweden		
Main explanatory variables	Year dummies		
Number of observations	175		
Number of groups (firms)	22		
Overall R ²	0.1541		
F _{11,21}	115.48		
Prob > F	0.0000		

Variables	Coefficient	Standard Error*	t-value	P > I t I
Year ₂₀₀₃	0.0177	0.0144	1.23	0.234
Year ₂₀₀₅	-0.0163	0.0165	-0.99	0.335
Year ₂₀₀₆	-0.0526	0.0217	-2.43	0.024
Year ₂₀₀₇	-0.0800	0.0209	-3.83	0.001
Year ₂₀₀₈	-0.0500	0.0215	-2.32	0.030
Year ₂₀₀₉	-0.1105	0.0279	-3.97	0.001
Year ₂₀₁₀	-0.1438	0.0266	-5.41	0.000
Solidity	-0.0041	0.0015	-2.77	0.006 *
RemLife_Machinery	-0.0051	0.0019	-2.73	0.006 *
Net_profitequity	-0.0011	0.0007	-2.03	0.028 *
Accotherchangeseq	-0.0007	0.0001	-6.64	0.000 *
Constant	0.6412	0.1015	6.32	0.000

*estimated as a robust standard error, adjusted for firm-clusters (fixed effects for firms).

** one-sided hypothesis

Deferred taxes

The following tables show the results of the panel data regression with the accounting measurement bias coming from deferred taxes as a dependent variable. This analysis does not allow to draw any statistically significant conclusions about the changes in the level of accounting conservatism.

Panel data regression Deferred taxes. Step 1

z eien ea tames, step 1	
Country	Sweden
Main explanatory variable	IFRS
Number of observations	175
Number of groups (firms)	22
Overall R ²	0.1013
F _{4,21}	4.61
Prob > F	0.0079

Variables	Coefficient	Standard Error*	t-value	P > I t I	
IFRS	-0.0026	0.0032	-0.82	0.424	
Revenues_SEK***	0.0003	0.0002	2.19	0.040	
Otherchangeseq	-0.0001	0.0000	-2.98	0.007	**
HousingIndex	0.0006	0.0002	2.59	0.017	**
Constant	-0.0155	0.0090	-1.73	0.098	

*estimated as a robust standard error, adjusted for firm-clusters (fixed effects for firms).

** one-sided hypothesis

*** displayed in change per thousand SEK

Panel data regression				
Deferred taxes, Step 2				
Country	Sweden			
Main explanatory variable	Year			
Number of observations	175			
Number of groups (firms)	22			
Overall R ²	0.0999			
F _{4,21}	4.92			
Prob > F	0.0059			

Variables	Coefficient	Standard Error*	t-value	P > I t I	
Year _{linear}	-0.0003	0.0006	-0.45	0.660	
Revenues_SEK***	0.0003	0.0002	2.12	0.047	
Otherchangeseq	-0.0001	0.0000	-2.94	0.004	**
HousingIndex	0.0005	0.0002	3.00	0.004	**
Constant	-0.0147	0.0091	-1.62	0.121	

*estimated as a robust standard error, adjusted for firm-clusters (fixed effects for firms). ** one-sided hypothesis

*** displayed in change per thousand SEK

H.2 The U.K. Overall analysis

The following tables show the results of the regression on an overall level for the U.K., providing evidence for a step-wise decrease in the levels of accounting conservatism due to the application of IFRS.

Panel data regression, Step 1				
Country	U.K.			
Main explanatory variable	IFRS			
Number of observations	207			
Number of groups (firms)	26			
Overall R ²	0.5141			
F _{8,25}	16.65			
Prob > F	0.0000			

Variables	Coefficient	Standard Error*	t-value	P > I t I	
IFRS	-0.3485	0.1649	-2.11	0.045	
Solidity	-0.0378	0.0092	-4.13	0.000	**
Buildings_landAssets	0.0427	0.0094	4.56	0.000	**
RDrev	0.0314	0.0126	2.49	0.010	**
Machinery_Assets	0.0263	0.0135	1.95	0.031	**
Capitalized_RD	0.4420	0.1601	2.76	0.006	**
Accotherchangeseq	-0.0007	0.0002	-3.70	0.001	**
HousingIndex	0.0096	0.0027	3.55	0.001	**
Constant	0.9379	0.2835	3.31	0.003	

*estimated as a robust standard error, adjusted for firm-clusters (fixed effects for firms). ** one-sided hypothesis

Panel data regression, Step 2				
Country	U.K.			
Main explanatory variables	IFRS, Year			
Number of observations	207			
Number of groups (firms)	26			
Overall R ²	0.4694			
F _{8,25}	18.27			
Prob > F	0.0000			

Variables	Coefficient	Standard Error*	t-value	P > I t I	
IFRS	-0.2467	0.1753	-1.41	0.172	
Year _{linear}	-0.0330	0.0122	-2.71	0.012	
Solidity	-0.0362	0.0092	-3.93	0.001	**
Buildings_landAssets	0.0410	0.0088	4.69	0.000	**
Machinery_Assets	0.0240	0.0135	1.78	0.044	**
Capitalized_RD	0.4489	0.1609	2.79	0.005	**
Accotherchangeseq	-0.0008	0.0002	-4.05	0.000	**
HousingIndex	0.0071	0.0022	3.29	0.002	**
Constant	1.0773	0.2539	4.24	0.000	

U.K.	Overall	ana	lvsis
···	0		·

Panel data regression, Step 3				
Country	U.K.			
Main explanatory variables	Year			
Number of observations	207			
Number of groups (firms)	26			
Overall R ²	0.4808			
F _{8,25}	7.72			
Prob > F	0.0000			

Variables	Coefficient	Standard Error*	t-value	P > I t I	
Year _{linear}	-0.0800	0.0265	-3.02	0.006	
Solidity	-0.0336	0.0081	-4.16	0.000	**
Buildings_landAssets	0.0399	0.0073	5.45	0.000	**
Machinery_Assets	0.0206	0.0107	1.92	0.034	**
Capitalized_RD	0.2683	0.0901	2.98	0.003	**
RemLife_Buildings	-0.0263	0.0150	-1.76	0.046	**
Accotherchangeseq	-0.0009	0.0002	-4.25	0.000	**
HousingIndex	0.0056	0.0020	2.78	0.005	**
Constant	3.0976	1.3179	2.35	0.027	

*estimated as a robust standard error, adjusted for firm-clusters (fixed effects for firms).

** one-sided hypothesis

Panel data regression, Step	4
Country	U.K.
Main explanatory variables	Year dummies
Number of observations	207
Number of groups (firms)	26
Overall R ²	0.4519
F _{11,25}	5.93
Prob > F	0.0001

Variables	Coefficient	Standard Error*	t-value	P > I t I
Year ₂₀₀₃	-0.0543	0.0596	-0.91	0.3710
Year ₂₀₀₅	-0.3332	0.1876	-1.78	0.0880
Year ₂₀₀₆	-0.3465	0.1867	-1.86	0.0750
Year ₂₀₀₇	-0.4134	0.1930	-2.14	0.0420
Year ₂₀₀₈	-0.5966	0.2317	-2.58	0.0160
Year ₂₀₀₉	-0.5565	0.2170	-2.56	0.0170
Year ₂₀₁₀	-0.5593	0.1932	-2.89	0.0080
Solidity	-0.0319	0.1022	-3.12	0.0025
Machinery_Assets	0.0358	0.0146	2.45	0.0105
Capitalized_RD	0.4178	0.1773	2.36	0.0135
Accotherchangeseq	-0.0010	0.0003	-2.77	0.0050
Constant	1.4081	0.4336	3.25	0.0030

Buildings and Land

The following tables show the results of the panel data regression with the accounting measurement bias coming from building and land as a dependent variable. This provides evidence of a general trend in the levels of accounting conservatism coming from buildings and land due to other reasons than the application of IFRS.

Buildings and Land, Step 1			
Country	U.K.		
Main explanatory variable	IFRS		
Number of observations	207		
Number of groups (firms)	26		
Overall R ²	0.6058		
F _{4,25}	6.72		
Prob > F	0.0008		

Variables	Coefficient	Standard Error*	t-value	P > I t I	
IFRS	-0.0645	0.0511	-1.26	0.218	
Solidity	-0.0230	0.0085	-2.70	0.006	**
Buildings_landAssets	0.0437	0.0162	2.70	0.006	**
HousingIndex	0.0115	0.0029	4.01	0.000	**
Constant	0.5304	0.2035	2.61	0.015	

*estimated as a robust standard error, adjusted for firm-clusters (fixed effects for firms).

** one-sided hypothesis

Buildings and Land, Step 2			
Country	U.K.		
Main explanatory variable	Year		
Number of observations	207		
Number of groups (firms)	26		
Overall R ²	0.6152		
F _{5,25}	4.3		
Prob > F	0.0058		

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Variables	Coefficient	Standard Error*	t-value	P > I t I	
Year _{linear}	-0.0296	0.0086	-3.44	0.002	
Solidity	-0.0224	0.0082	-2.71	0.006	**
Buildings_landAssets	0.0427	0.0160	2.67	0.007	**
RemLife_Buildings	-0.0063	0.0030	-2.09	0.024	**
HousingIndex	0.0086	0.0027	3.22	0.002	**
Constant	1.0891	0.3262	3.34	0.003	

Machinery and Equipment

The following tables show the results of the panel data regression with the accounting measurement bias coming from machinery and equipment as a dependent variable. This analysis does not allow to draw any statistically significant conclusions about the changes in the level of accounting conservatism.

Panel data regression	
Machinery, Step 1	
Country	U.K.
Main explanatory variable	IFRS
Number of observations	207
Number of groups (firms)	26
Overall R ²	0.0218
F _{3,25}	60.88
Prob > F	0.0000

Variables	Coefficient	Standard Error*	t-value	P > I t I	
IFRS	-0.1678	0.1444	-1.16	0.256	
RemLife_Machinery	-0.0073	0.0035	-2.10	0.023	**
Accotherchangeseq	-0.0011	0.0001	-9.58	0.000	**
Constant	0.7362	0.2284	3.22	0.004	

*estimated as a robust standard error, adjusted for firm-clusters (fixed effects for firms). ** one-sided hypothesis

Panel data regression Machinery, Step 2				
Main explanatory variable	Year			
Number of observations	207			
Number of groups (firms)	26			
Overall R ²	0.0136			
F _{3,25}	67.27			
Prob > F	0.0000			

Variables	Coefficient	Standard Error*	t-value	P > I t I	
Year _{linear}	-0.0294	0.0239	-1.23	0.230	
RemLife_Machinery	-0.0086	0.0041	-2.09	0.024	**
Accotherchangeseq	-0.0011	0.0001	-9.64	0.000	**
Constant	0.7997	0.2640	3.03	0.006	

Deferred Taxes

The following tables show the results of the panel data regression with the accounting measurement bias coming deferred taxes as a dependent variable. This analysis does not allow to draw any statistically significant conclusions about the changes in the level of accounting conservatism.

Panel data regression

Deferred taxes, Step 1				
Country	U.K.			
Main explanatory variable	IFRS			
Number of observations	207			
Number of groups (firms)	26			
Overall R ²	0.0195			
F _{4,25}	4.84			
Prob > F	0.0000			

Variables	Coefficient	Standard Error*	t-value	P > I t I	
IFRS	0.0125	0.0082	1.53	0.140	
RemLife_Machinery	0.0013	0.0005	2.71	0.006	**
RDrev	0.0032	0.0012	2.57	0.008	**
Netmargin	0.0002	0.0001	2.08	0.024	**
Constant	-0.0523	0.0244	-2.14	0.042	

*estimated as a robust standard error, adjusted for firm-clusters (fixed effects for firms). ** one-sided hypothesis

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Deferred taxes, Step 2					
Country	U.K.				
Main explanatory variable	Year				
Number of observations	207				
Number of groups (firms)	26				
Overall R ²	0.0788				
F _{5,25}	5.37				
Prob > F	0.0000				

Danal data regression

Variables	Coefficient	Standard Error*	t-value	P > I t I	
Year _{linear}	0.0036	0.0019	1.93	0.065	
RDrev	0.0032	0.0013	2.53	0.009	**
RemLife_Machinery	0.0017	0.0005	3.71	0.001	**
Netmargin	0.0002	0.0001	2.37	0.013	**
Revenues_SEK	0.0000	0.0000	-1.97	0.060	
Constant	-0.0576	0.0216	-2.67	0.013	