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Identifying Intangible Assets in a Business Combination – Accounting Choices and the Development of Accounting Practice

A Swedish study of IFRS 3 – Business Combinations

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Abstract

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Background and problem discussion: According to IFRS 3 – Business Combinations, companies are required to identify and recognize intangible assets not previously reported in the acquired company separately from goodwill when possible. However, it is up to the company to interpret and assess how the transaction is best reported in the financial statements since the regulations issued by the International Accounting Standards Board (IASB) are principle based. This will enable an opportunistic behavior when selecting accounting methods since the company can decide whether the non-reported intangible assets (NRIA) acquired in the business combination should be reported as identified intangible assets or goodwill, according to their personal interests. Previous research has showed that companies have an opportunistic behavior and are affected by different factors when selecting accounting methods. Another aspect of principle based regulations is that, since they require interpretation and assessments, companies might not yet possess the knowledge of how to apply the new standards when they are first implemented. Previous research suggests that new standards are implemented with a delay and that a learning curve might exist. The knowledge of how to identify intangible assets in a business combination according to IFRS 3 may increase in the future and the accounting practice might therefore develop over time.

Purpose: The purpose of this thesis is to examine accounting choices related to IFRS 3 and how different incentives may affect the companies in the selection of accounting methods. Furthermore, we want to establish whether the accounting practice has evolved since IFRS 3 became mandatory in 2005.

Methodology: This thesis is a quantitative study of the business combinations carried out by Swedish companies listed on NASDAQ OMX Stockholm. The data is collected from the annual reports and the 564 business combinations included in the study were carried out during the years 2005 – 2011.

Analysis and conclusion: The results of this study show that large companies compared to small companies do in fact allocate a larger proportion of the NRIA to identified intangible assets, which is in line with previous research. Hence, large companies are affected by political costs when accounting for business combinations. However, the statistical tests regarding the indebtedness of companies proved to be inconsistent with previous research. This study was not able to conclude that companies with high indebtedness compared to companies with low indebtedness allocate a larger proportion of the NRIA to identified intangible assets, i.e. the companies in this study are not affected by contract costs. Finally, previous research has indicated that a learning curve exists regarding the implementation of new standards. However, this study could not identify a development of accounting practice regarding the knowledge of identifying intangible assets according to IFRS 3.

Keywords: accounting choice, accounting practice, acquisition, business combination, contract costs, goodwill, IFRS 3, indebtedness, intangible assets, learning curve, leverage, political costs

Preface

This Master Thesis, with a focus on Financial Accounting, was conducted during the spring of 2013 within the Business and Economics programme at the University of Gothenburg, School of Business, Economics and Law in Sweden.

We want to thank our tutors Jan Marton and Pernilla Rehnberg for their support and guidance during the process of writing this thesis. We are especially grateful for Jan Marton´s opinions and ideas for the statistical tests and for the contribution of the collected data for the years 2005 – 2007 provided by Pernilla Rehnberg. We also want to thank our opponents for their comments on our work.

Finally, a special thanks to Björn Gauffin and Sven-Arne Nilsson for contributing to this thesis by providing access to the data of their studies and the information of which companies have carried out business combinations during the years 2008 – 2011, which greatly simplified the data collection.

Gothenburg, May 2013

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Abbreviations and concepts

FVA	Fair Value Adjustments
IAS	International Accounting Standards
IASB	International Accounting Standards Board
IFRS	International Financial Reporting Standards
IPO	Initial Public Offering
NRIA	Non-reported intangible assets
PAT	Positive Accounting Theory
RR	Redovisningsrådets rekommendationer
SDB	Swedish Depository Receipts (Svenskt Depåbevis)

Company

Refers to the consolidated group.

Business combination

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

Intangible asset

"An identifiable non-monetary asset without physical substance." (IFRS 3 Appendix A)

Goodwill

"An asset representing the future economic benefits arising from other assets acquired in a business combination that are not individually identified and separately recognized." (IFRS 3 Appendix A)

Fair Value

"The amount for which an asset could be exchanged, or liability settled, between knowledgeable, willing parties in an arm´s length transaction." (IFRS 3 Appendix A)

Fair value adjustments (FVA)

The difference between the carrying value and the fair value, of assets and liabilities, in the acquired company.

Identified intangible assets

Intangible assets identified and reported separately from goodwill by the acquirers, which were not previously reported in the acquired company. Hence, the difference between the fair value of intangible assets and the carrying value of intangible assets.

Non-reported intangible assets (NRIA)

Intangible assets acquired in the business combination not previously reported in the acquired company. The NRIA could consist of either identified intangible assets or goodwill or a combination of the two. Hence, the difference between the fair value of net tangible assets and the consideration transferred.

Consideration transferred

$$Fair\ value\ of\ net\ assets\ acquired + Goodwill$$

Equity ratio

$$\frac{Total\ Shareholders´equity}{Total\ assets}$$

Proportion of intangible assets

$$\frac{Identified\ intangible\ assets}{NRIA}$$

Return on equity (ROE)

$$\frac{Income\ before\ taxes}{Total\ shareholders´equity}$$

Return on total assets (ROA)

$$\frac{(Income\ before\ taxes + Financial\ expenses)}{Total\ assets}$$

Table of contents

1. Introduction

This chapter provides a background to the problems arising when applying IFRS 3 – Business Combinations, a new principle based regulation. The chapter continues with the research questions, the purpose of the thesis, contributions to the literature and delimitations of the study.

1.1 Background and problem discussion

Financial reporting in an environment of incentives may not always result in financial information that is of high quality. An opportunistic behavior is enabled when selecting accounting methods since the regulations issued by the International Accounting Standards Board (IASB) are principle based. When accounting for business combinations, according IFRS 3 – Business Combinations, an allocation of the consideration transferred that reflects the true substance of the business combination might not always be the result. The allocation could be affected by incentives of the companies since they are able to select different accounting methods, within the standard, that are in accordance with their own interest. If the allocation has not been made correctly, this will affect the financial statements both in the year of the business combination as well as in the future, due to depreciations and potential impairments.

Ever since the International Financial Reporting Standards (IFRS) became mandatory in 2005, studies of how Swedish companies listed on NASDAQ OMX Stockholm account for their business combinations, according to IFRS 3, have been conducted by Gauffin and Nilsson (2006; 2007; 2008; 2009; 2011a; 2011b; 2012). The focus of these studies has been how the acquirers have allocated the consideration transferred among net tangible assets (i.e. tangible assets and financial assets minus all the liabilities and contingent liabilities), intangible assets and goodwill. The study of the business combinations carried out during 2005 showed that approximately half of the consideration transferred was reported as goodwill and 20 percent of the acquirers did not identify any intangible assets apart from goodwill (Gauffin & Nilsson 2006). Specialists in valuation of business combinations argued that the consideration transferred allocated to identified intangible assets separately from goodwill would probably increase in the future (Ekengren et al. 2007). This would be due to the acquirers´ increased knowledge in identification and valuation of intangible assets. Furthermore, Rehnberg (2012) suggested that, even though no development of accounting practice was found in her study, time could increase the knowledge in how to apply IFRS 3. Hence, that some sort of learning curve on how to identify intangible assets would exist. Despite this, the latest study of all the business combinations carried out during 2011 showed that goodwill continues to represent more than half of the consideration transferred (Gauffin & Nilsson 2012). Furthermore, a quarter of the acquirers only reported goodwill and did not identify any intangible assets at all in the acquisition. The study also came to the conclusion that no learning curve seemed to exist, in contrast to the prior discussion by Ekengren et al. (2007).

The fact that it is of value to identify and separate intangible assets instead of allocating it to goodwill has been argued by Forbes (2007). Oswald and Zarowin (2007) confirm this by showing that capitalizing research and development (R&D) is of value for the users since it communicates more information about future economic benefits compared to expensing R&D. However, regarding identifying and separating intangible assets from goodwill, Forbes (2007) also concludes that difficulties of defining intangible assets as well as the lack of an active market for them complicates the procedure and will raise accounting questions.

Since it is up to the company to identify intangible assets separately from goodwill in a business combination, accounting choices will emerge due to the need for judgments. The more intangible assets that can be identified, the more depreciation, i.e. costs, will be reported. The company might

therefore have incentives to allocate all or none of the non-reported intangible assets (NRIA)[1] to identified intangible assets or goodwill, in order to obtain the desired costs.

Previous research indicates that managers dealing with accounting choices tend to be influenced by financial outcome and personal welfare when selecting accounting methods (Heflin et al. 2002). Both internal and external pressures, such as earnings-based compensation plans, a high debt/equity ratio and political forces, may influence the company to select accounting methods that will yield the desired result (Watts & Zimmerman 1986). This can be interpreted as the company acting opportunistically when faced with accounting choices. Hence, principle based regulations, such as those issued by IASB, enables an opportunity for the company to select accounting methods according to its own interests.

Acquirers have been shown to be strategic when allocating the consideration transferred between intangible assets that are subject to impairment tests (i.e. goodwill and intangible assets with indefinite useful life) and those which are depreciated (i.e. intangible assets with finite useful life) (Shalev 2007). According to Shalev (2007), the effect on earnings per share (EPS) is particularly important since intangible assets that are subject to impairment tests do not reduce EPS and investors are more sensitive to depreciation than impairment of intangible assets. The acquirer will therefore consider investors´ fixation on EPS when accounting for business combinations and this may influence them to report intangible assets that are subject to impairment tests, such as goodwill, instead of identified intangible assets that are depreciated.

Factors influencing the accounting choices regarding the allocation of the NRIA in a business combination have also been identified in a recent dissertation conducted by Rehnberg (2012). The study showed that the acquirer is affected by its size, i.e. political costs, and how indebted they are, i.e. contract costs, when allocating the NRIA. The study was based on business combinations carried out by Swedish companies listed on NASDAQ OMX Stockholm during the years 2005 – 2007, i.e. the three years that followed the implementation of mandatory IFRS in 2005. The possibility that the factors behind the allocation of the NRIA have changed therefore exists.

Based on the aforementioned, it would be highly relevant and interesting to include data for the years following 2007 and study whether political costs and contract costs affect how the NRIA is allocated among identified intangible assets and goodwill during the years 2005 – 2011. It would also be interesting to test whether the accounting practice regarding how to identify intangible assets separately from goodwill according to IFRS 3 has developed, i.e. if a learning curve exists.

1.2 Research questions

Out of the background and problem discussion, two research questions have evolved:

1. *How do political costs and contract costs affect the allocation of the NRIA among identified intangible assets and goodwill when accounting for a business combination?*
2. *In what way has time affected the allocation of the NRIA among identified intangible assets and goodwill?*

1.3 Purpose

The purpose of this thesis is to examine accounting choices related to IFRS 3 and how different incentives may affect the companies in the selection of accounting methods. Furthermore, we want to establish whether the accounting practice has evolved since IFRS 3 became mandatory in 2005.

1.4 Contribution

Four more years, 2008 – 2011, have passed since the data of Rehnberg´s (2012) study was gathered, and seven years since it became mandatory for all companies listed on regulated stock exchanges to

[1] See *Abbreviations and concepts* for further explanation of the concept NRIA.

report their consolidated financial statements according to IFRS. By applying similar theories as Rehnberg (2012), this thesis will contribute with more empirical findings about the factors behind the allocation of the NRIA in a business combination according to IFRS 3.

When conducting the statistical tests, both Pernilla Rehnberg´s data for the years 2005 – 2007 and our data for the years 2008 – 2011 will be included. Hence, the study in this thesis will extend over the entire time period after IFRS became mandatory. This will enable more reliable results of the empirical findings. Furthermore, a greater understanding about the problems of accounting choices related to business combinations will be achieved.

Since this study includes data for all seven years since IFRS became mandatory, it will be possible to examine if a learning curve regarding IFRS 3 has been present. That is, if the accounting practice regarding the knowledge in identification and valuation of intangible assets in business combinations has developed during the years 2005 – 2011.

In summary, this thesis will contribute to the literature of accounting choices and the implementation of new standards.

1.5 Delimitation

This study will be delimitated to annual reports for the past seven years, 2005 – 2011. Even though it would have been in our interest to include the annual reports for 2012, these were not published in time for this study.

This study is based on the information gathered from annual reports of all Swedish companies listed on NASDAQ OMX Stockholm, a Swedish stock exchange. This stock exchange is further divided into three different segments, Large Cap, Mid Cap and Small Cap (NASDAQ OMX Nordic 2013a). All companies listed on either one of these three segments have been included in this study, with some deviations stated in the methodology section. The reason for delimiting the study to companies listed on NASDAQ OMX Stockholm is that they are more publicly known, characterized by a long history and have been present on the stock exchange for a long time. Furthermore, NASDAQ OMX Stockholm is the leading stock exchange in Sweden and has existed for 150 years (NASDAQ OMX Nordic 2013b; Nationalencyklopedin 2013).

In a comparison between the companies included in the study made by Rehnberg (2012) for the years 2005 – 2007 and the companies included for the years 2008 – 2011, there are some differences. This is due to the fact that new companies have been introduced on NASDAQ OMX Stockholm while others have withdrawn and some companies have been subject to mergers, acquisitions or bankruptcy. Our judgment is that this will not affect the outcome of the statistical tests where both Pernilla Rehnberg´s data for the years 2005 – 2007 and our data for the years 2008 – 2011 are included.[2]

Finally, previous research has shown that country-specific institutional influences affect the financial reports (Ball et al. 2000; Ball et al. 2003; Holthausen 2003). By delimiting the study to Swedish listed companies, this study will have excluded the impact of cultural differences and the possibility of various interpretations of IFRS. Furthermore, the impact of earlier national regulations and practices will not need to be taken into consideration. Swedish listed companies are also relatively few compared to listed companies in other countries. This has enabled a comprehensive study of all the business combinations that have been carried out during the chosen time period, hence, achieve a greater understanding about the problem. This will also improve the reliability and generalizability of the study.

[2] See section *3.2-3.3* for more information about the data for the study.

2. Literature review and hypothesis development

This chapter provides a theoretical framework for the research questions of this study which will result in three hypotheses. The first sections explain the contexts of IFRS 3 and different incentives that may influence the selection of accounting methods. In the last section, the effect of time and how the accounting practice develops when implementing a new standard will be discussed.

2.1 Background to IFRS 3

A business combination according to IFRS 3 is defined as a transaction in which the acquirer obtains control of another business (IFRS 3 Appendix A). IFRS 3 states that companies need to, among other things, provide certain information about how they recognize and measure identifiable assets in their financial statement when carrying out a business combination (§1). Furthermore, IFRS 3 specifies that a company is required to identify and recognize intangible assets not previously reported in the acquired company apart from goodwill when possible (§B31). The aforementioned is thus in line with RR 1:00 (§§4; 31; 41-42; 46-47), the Swedish standard regarding consolidated financial statements, which was applied by Swedish listed companies before IFRS became mandatory.

When acquiring a company, an acquisition computation is needed where the acquirer recognizes and measures the identified assets acquired, the liabilities assumed, the non-controlling interests in the acquiree and goodwill (IFRS 3 §§4-5)[3]. The consideration transferred consists of the fair value of net assets acquired in the business combination on the date of the acquisition (IFRS 3 §37). As stated earlier, intangible assets should be identified and recognized separately from goodwill where possible. Thereafter, the difference between the consideration transferred and the fair value of identified net assets will be reported as goodwill, i.e. goodwill will be measured as a residual (IFRS 3 §32).

The regulations issued by IASB are principle based. It is therefore up to the company to interpret and assess how the transaction is best reported in the financial statements. As discussed by Falkman (2004), this is a major advantage with principle based regulations and will lead to a fair representation of the transaction. This may, however, cause similar transactions to be reported differently since there will never exist only one alternative, as it would with rule based regulations. Furthermore, the article by Schipper (2005) describes possible effects associated with the implementation of mandatory IFRS where especially two predictions are considered. First, the demand for implementation guidance would increase and second, the demand for an accounting enforcement body would increase. Hence, the author predicted that uncertainty on how to implement and apply the principle based regulations would exist.

Another implication of IFRS being principle based is that the interpretations of the standards might be influenced by earlier domestic standards and institutions. Previous research has shown that country-specific institutional influences have an effect on the financial reports (Ball et al. 2000; Ball et al. 2003; Holthausen 2003). Lai and Stacchezzini (2009) did in fact identify differences between countries regarding how they apply IFRS 3. They found that the allocation of the consideration transferred differed between insurance companies in Italy and the United Kingdom even though both countries apply IFRS 3.

All standards published by IASB are principle based and require interpretations. Even so, accounting for intangible assets is far more complicated than for tangible assets. Unlike tangible assets that you can see, touch and weigh, intangible assets do not possess these qualities and are relatively difficult to measure, identify and account for (Blair & Wallman 2003 pp. 449-468). Accounting for intangible assets will therefore require more subjective judgments.

The first step regarding intangible assets, when accounting for a business combination according to IFRS 3, is to determine if an intangible asset exists or not. To meet the definition of an intangible

[3] See *Table 3.4.1.1* for an example of an acquisition computation.

asset according to IAS 38 – Intangible Assets, the intangible asset has to be identifiable, the company needs to be in control of the resource and future economic benefits can be derived from the resource (§10). If an intangible asset acquired in a business combination meets this definition, it should be reported separately from goodwill (IFRS 3 §10; §B31). If it does not meet this definition, it will be reported as goodwill (IFRS 3 §32; IAS 38 §10).

If the company has determined the existence of an intangible asset, the next step is to determine the value of the intangible asset as well as its useful life. Intangible assets can, according to IAS 38, have either finite or indefinite useful life (§88). If it is the former, the company must assess the lifetime of the asset and it will be depreciated (IAS 38 §89).

According to the previous standard applied by Swedish listed companies, RR 1:00, goodwill was depreciated over its useful life and intangible assets with indefinite useful life did not exist (RR 1:00 §54; RR 15 §69). However, a consequence of IFRS becoming mandatory is that goodwill is now subject to annual impairment tests instead of depreciation (IAS 36 §§ 9-10). Furthermore, intangible assets with indefinite useful life do exist according to IFRS and are also subject to annual impairment tests (IAS 38 §§ 107-108).

The fact that identified intangible assets with a finite useful life are depreciated while goodwill and intangible assets with an indefinite useful life are subject to annual impairment tests makes the allocation of the NRIA among these vital. If the allocation has not been made correctly, this will affect the financial statements due to depreciations and potential impairments. The subjective judgments made by the company will therefore have effects on the financial statements, both in the year of the business combination as well as in the future.

2.2 Agency theory and Positive Accounting Theory

Agency theory describes the situation that emerges when different parties interact and the difficulties of motivating one person (the agent) to act in the interest of another person (the principal) (Jensen & Meckling 1976). The agency theory is based on the assumption that the parties involved are rational and that the decisions are based on their own interests, i.e. that agents will act opportunistic (Jensen & Meckling 1976; Heflin et al. 2002). There is typically a principal who provides capital (like a shareholder) and an agent who represents the principal (such as the manager) (Watts & Zimmerman 1986). The dilemma for the principal is whether or not the agent will take the same actions as the principal would have taken, i.e. to prevent the agent from making decisions that deviate from the principal's interest. Hence, the agent (manager) might take advantage of his position and knowledge of an accounting issue and therefore deviates from the principal´s (shareholder´s) interest. A contract will therefore be needed between the principal and the agent to influence the actions taken by the agent (Watts & Zimmerman 1986).

Derived from agency theory and the paper written by Jensen and Meckling (1976), Watts and Zimmerman developed a framework later named "Positive accounting theory" (PAT) in the 1970s (Deegan & Unerman 2011). Watts and Zimmerman (1978; 1979) aimed to develop a positive theory that would be able to explain the determinants of accounting standards and theories.

The purpose of PAT is to explain and predict which accounting method companies will choose (Watts & Zimmerman 1986). It is the company that will select the accounting method. However, this choice will be influenced by the motives of different parties and by how the selected accounting method will affect their interests and personal agendas. Like agency theory, PAT presumes that managers, just like investors, will be rational and that they will choose the accounting method that best suits their interests, i.e. act opportunistic (Watts & Zimmerman 1986; Scott 1997; Deegan & Unerman 2011).

Watts and Zimmerman (1986) formulated three hypotheses out of the three regularities in accounting choices that were discovered through empirical studies. These were formulated in order to explain the predictions made by PAT:

1. Bonus hypothesis – managers with earnings-based compensation plans are more likely to select accounting methods that will increase current earnings.
2. Debt/equity hypothesis – managers of companies with a high debt/equity ratio are more inclined to select accounting methods that will increase current earnings[4].
3. Size hypothesis – managers of large companies tend to select accounting methods that will decrease current earnings.

These three hypotheses have mostly been interpreted in an opportunistic way, i.e. assuming that managers will select accounting methods that best suit their own interests (Watts & Zimmerman 1990). Various research supports the suggestion that managers tend to select accounting methods that are consistent with their own interests (Watts & Zimmerman 1986; Watts & Zimmerman 1990).

2.3 Accounting choices

Accounting choices have been subject to extensive research since at least the 1960s and the focus has been to examine the accounting choices related to the companies´ financial statements (Fields et al. 2001; Deegan & Unerman 2011). An accounting choice is a decision that intends to affect the financial information in a desirable direction (Fields et al. 2001). Accounting choices is a wide concept since it includes, for example, the selection of a certain accounting method, when to implement new standards and choices made in order to achieve a certain income or financial ratio. The question is whether the incentives behind the accounting choices are to communicate more relevant information to the users or if the managers are affected by their own motives.

Associated with the research about accounting choices and the incentives behind them are the concepts of income smoothing and earnings management. Income smoothing refers to reducing fluctuations in earnings while earnings management refers to maximizing or minimizing earnings (Stolowy & Breton 2004). Related to IFRS 3, a company could allocate all or nothing of the NRIA to goodwill and thus avoid or increase depreciation i.e. costs.

2.4 Factors behind accounting choices

According to agency theory (Watts & Zimmerman 1979) and PAT (Watts & Zimmerman 1986), the financial information of companies is affected by different motives, e.g. the motives of managers and shareholders.

A recent dissertation by Rehnberg (2012) studied, among other things, how the NRIA was allocated in a business combination and the factors behind the selected accounting method. Rehnberg (2012) identified four different factors that could affect the allocation of the NRIA: political costs, contract costs, expertise and information asymmetry. However, political costs and contract costs will be the only possible factors studied in this thesis.

2.4.1 Political costs

Political costs refer to the pressure from a third party, i.e. the public, on a company (Watts & Zimmerman 1978). The public will react if large companies report abnormally high profits, e.g. labor unions could demand higher salaries which will lead to higher costs (i.e. political costs) for the company. Hence, large companies are more sensitive to political pressure compared to small companies which is the assumption that the size hypothesis is based on (Watts & Zimmerman 1986). Large companies will therefore select accounting methods that depress the profits, thus lowering the political costs. The fact that large companies are expected to select accounting procedures reducing earnings has also been identified by Landry and Callimaci (2003). They found that large companies

[4] Watts and Zimmerman (1986) also state that highly indebted companies will select accounting methods that improve their financial position even though the hypothesis states that highly indebted companies will select income increasing accounting methods. Hence, accounting methods that increase earnings, decrease expenses, increase assets and reduce liabilities will be selected.

are less inclined than small companies to capitalize R&D expenses, which has also been shown by Daley and Vigeland (1983), Inoue and Thomas (1996) and Mande et al. (2000).

However, research inconsistent with this theory has been conducted by Daves et al. (2000). According to this research, large companies are riskier than small companies in the post 1980s due to the fact that managers of large companies tolerate relatively more risk than managers of small companies. A possible explanation of large companies becoming more risky is that compensation based on stock performance is more common in large companies in the post 1980s. The value of the stock correlates positively with the risk of the underlying assets, hence, managers holding stocks or stock options are more prone to increase the risk of the company in order to raise their compensation. Thus, managers in large companies select accounting methods that will increase their earnings.

Trombley (1989) on the other hand deems that small companies are riskier than large companies due to less diversification, smaller market shares and greater dependence on bank credits. When it comes to business decisions, managers of small companies seem to be more tolerant of risk and might opt for riskier projects in order to increase earnings. Managers of small companies might therefore be inclined to select income increasing accounting methods. Hence, it is likely that compensation, to a higher extent, will be based on stock performance in order to optimize risk-sharing. Smaller companies are not subject to political costs to the same degree as large companies and income increasing accounting methods will therefore receive less attention than for large companies. This implies that the study of Trombley (1989) is in line with previous research stating that large companies select income decreasing accounting methods while small companies will select income increasing accounting methods.

Rehnberg (2012) confirms the aforementioned by showing that the allocation of the NRIA is affected by the size of the acquirer. Hence, large companies report a larger proportion of identified intangible assets separately from goodwill due to political costs compared to small companies.

According to the theories above, large companies will, in order to decrease earnings by depreciation, allocate a larger proportion of the NRIA to identified intangible assets than small companies. This assumption is defined by the following hypothesis:

H_1*: Large companies allocate a larger proportion of the NRIA to identified intangible assets compared to small companies.*

2.4.2 Contract costs

Debt covenants are a way for creditors to restrict managements´ actions and to ensure that companies will be able to repay their liabilities (Watts & Zimmermann 1986). If debt covenants are violated, creditors will have the right to take the same actions as those related with a failure, i.e. a breach of the debt covenants will be costly for the company. The debt covenants are usually a certain interval of financial ratios that the borrowing company needs to keep within e.g. debt/equity, net tangible assets and earnings (Duke & Hunt 1990). The creditor ensures, by establishing debt covenants, that the company will be motivated to present information in line with the debt covenants. The company will therefore select accounting methods depending on how the debt covenants will be affected (Watts & Zimmerman 1986). In order to reduce the probability of contract violation, which is assumed to increase with the indebtedness of a company, the company will select accounting methods that improve their financial position. Hence, the more indebted a company is (i.e. high debt/equity ratio) the higher contract costs it will have.

Regarding the indebtedness of companies, previous literature argues that the desirable level for the equity ratio is commonly 30 – 40 % (Nilsson et al. 2002; Holmström 2007; Edenhammar et al. 2013). However, Larsson (2008) argues that a normal equity ratio is around 50 %, although it is 30 – 50 % for listed companies. Even so, the desirable level for the equity ratio varies with industry (Hansson et al. 2006; Holmström 2007; Larsson 2008). The fact that approximately 30 % is a desirable level for the

equity ratio is confirmed by Skogsvik (1985) since it was found that non-failing companies had a mean equity ratio of 30 % while failing companies had a significantly lower equity ratio during the five years leading up to the failure.

Daley and Vigeland (1983) have conducted a study about accounting choices for R&D where they came to the conclusion that companies capitalizing R&D were more indebted. The conclusion is supported by several studies (Inoue & Thomas 1996; Mande et al. 2000; Landry & Callimaci 2003). The study made by Jones (2011) also came to a similar conclusion regarding capitalization of intangible assets. The study found that failing companies, compared to non-failing companies, capitalized more intangible assets, especially during the last five years before the failure. Furthermore, the author argued that managers of failing companies might have incentives to capitalize intangible assets in order to avoid violating debt covenants. Related to this thesis, Shalev (2007) showed that the leverage of a company correlates negatively with the portion of the consideration transferred allocated to goodwill (i.e. the higher debt/equity ratio a company has, the less goodwill and the more identified intangible assets are reported).

Creditors are relying on future payments of interests and amortizations of the loan, i.e. creditors are mainly interested in a company's cash flow where depreciations of assets are not included. Previous research argues that goodwill is considered an asset that is doubtful when predicting future benefits while intangibles assets that can be separated from goodwill are considered more useful when making the predictions (Wyatt 2005; Ritter & Wells 2006). Hence, companies with higher debt/equity ratio might be inclined to identify more intangible assets when allocating the consideration transferred in order to satisfy the creditors´ need for cash flow predictive information.

Aside from debt covenants, creditors might also require some sort of collateral when granting a loan. Generally these collaterals are the company´s assets. Shalev (2007) has showed that goodwill might be less suitable as collateral than identified intangible assets. This is due to the fact that goodwill is an unidentifiable intangible asset and is therefore not possible to sell separately from the company, i.e. it can only be acquired through a business combination. Furthermore, goodwill will be measured as the residual of the consideration transferred in a business combination and, unlike identified intangible assets, goodwill will never have a value in case of bankruptcy. Acquirers with a high debt/equity ratio are therefore more likely to prefer assets that can be used as collateral in order to satisfy the creditors, i.e. they would report less goodwill and more identified intangible assets in a business combination. The article by Ekengren et al. (2007) also implies that goodwill is usually considered the most risky assets in a company. Hence, goodwill is less suitable for predicting future cash flows and being used as collateral than identified intangible assets.

Previous research has shown that companies closer to contract violation, i.e. violating the stipulated debt covenants, will select accounting methods that improve their financial position (Watts & Zimmerman 1986). The fact that companies close to violating their debt covenants select accounting methods that improve their position is also supported by DeFond and Jiambalvo (1994). They found that companies close to violating their debt covenants tend to select income increasing accounting methods in order to reduce the probability of contract violation. Furthermore, Landry and Callimaci (2003) show that the decision of capitalizing or expending R&D is made for income smoothing. In this study, it is therefore important to control that the profitability of the companies does not affect the accounting choice when carrying out a business combination[5].

The results of Rehnberg (2012) are in line with previous research, i.e. highly indebted acquirers have a greater propensity to identify more intangible assets apart from goodwill when allocating the NRIA compared to companies with a low indebtedness. A highly indebted company is subject to higher contract costs, hence the company is inclined to report assets that can serve as collateral or be used when predicting future cash flow in order to satisfy the creditors´ needs.

[5] See section *3.4.2* for further explanation regarding the usage of profitability in this study.

Based on the aforementioned literature which states that companies with a high indebtedness are inclined to identify more intangible assets compared to companies with low indebtedness, a second hypothesis has evolved:

H_2: Highly indebted companies allocate a larger proportion of the NRIA to identified intangible assets compared to less indebted companies.

2.5 Learning curve

A recent study by Marton and Runesson (2013) argues that the implementation of new standards will be delayed due to inertia in companies and that learning is a function of time. The study intended to test whether any learning period, i.e. changes in management´s abilities, existed when analyzing principle based disclosures during the years 2005 – 2009. The results of the study showed that a learning effect did exist since the years 2006 – 2009 significantly differed from the base year 2005. However, the years 2007 – 2009 were not significantly different from each other. This implies that the primary learning effect took place during the first years after IFRS became mandatory. The evidence that a learning curve exists regarding the principle based disclosures suggests that there might also be a learning curve regarding the knowledge in identification and valuation of intangible assets in business combinations according to IFRS 3.

The fact that time is expected to have an effect on learning how to implement IFRS 3 regarding the identification and valuation of intangible assets is suggested in the article by Ekengren et al. (2007). It is argued that the proportion of intangible assets identified in a business combination would increase in the future due to the acquiring companies´ increased knowledge of IFRS 3. However, the dissertation by Rehnberg (2012) found no such development of accounting practice and the implementation seemed to occur during 2005. In addition, the latest study by Gauffin and Nilsson (2012) came to the conclusion that no learning effect took place during the years 2005 – 2011 since goodwill continued to represent more than half of the consideration transferred. Other studies that contradict the existence of a learning effect regarding IFRS 3 are Boulerne et al. (2011) and Hamberg et al. (2011). Boulerne et al. (2011) found that the implementation of IFRS 3 and IAS 38 combined have resulted in an increase of goodwill in European companies. Goodwill was also found to increase in the study by Hamberg et al. (2011) when only the effect of the implementation of IFRS 3 was considered. Despite the aforementioned contradicting studies of the existence of a learning effect, Rehnberg (2012) suggests that the development of accounting practice regarding the identification and valuation of intangible assets may take a longer time than the three years studied in the dissertation.

Since it is argued that the implementation of IFRS 3 may take longer time than the period studied in Rehnberg´s (2012) dissertation, a statistical approach regarding the existence of a learning effect where more years are included would be preferable in order to examine the development of accounting practice. Therefore, this study will examine how accounting practice has developed and if the proportion of the NRIA allocated to intangible assets has increased for each year passed since IFRS became mandatory. As a result, a third hypothesis has evolved.

H_3: The proportion of the NRIA allocated to identified intangible assets will increase for the years following the implementation of mandatory IFRS in 2005.

3. Methodology

This chapter describes the methodology used when conducting this study. The research design of the study is presented as well as how the data has been collected and the assessments related to the data collection. Finally, the models in the study are described.

3.1 Research Design

This study intends to examine if political costs and contract costs affect how acquiring companies allocate the NRIA when accounting for business combinations. Furthermore, the study also intends to examine if a learning curve has been present regarding the knowledge of how to identify intangible assets in a business combination according to IFRS 3. When collecting the data for this study the focus has been on the NRIA and the allocation between identified intangible assets and goodwill.

With the aim of answering the research questions, data for all seven years after IFRS became mandatory, 2005 – 2011, will be included in the study. In order to analyze the years 2005 – 2011, Pernilla Rehnberg will contribute to the study by providing access to her manually collected data for the years 2005 – 2007. Thereafter, the annual reports of all the companies which carried out business combinations during the years 2008 – 2011 and were listed on the Swedish stock exchange NASDAQ OMX Stockholm on the 8th of February, the starting date of the data collection, will be manually examined in order to collect the needed data for this study.

In order to conduct this study, a review of how the NRIA is allocated among identified intangible assets and goodwill will be performed. Previous research and theories have been used to formulate three hypotheses with the aim of answering the research questions. To test these hypotheses, the study needs to examine how one dependent variable (the proportion of identified intangible assets related to the NRIA) is affected by an independent variable (i.e. political costs, contract costs and time). In order to achieve this, tests will be conducted using regressions analyses, Mann-Whitney U tests, Kruskal-Wallis tests and Tukey HSD tests.

3.2 Rehnberg´s data for the years 2005 – 2007

As stated above in section 3.1, Pernilla Rehnberg contributed to this study by providing access to her manually collected data for the years 2005 – 2007. The companies included in the study by Rehnberg (2012) are all companies listed on NASDAQ OMX Stockholm on November 1st 2007 that carried out business combinations during the years 2005 – 2007[6].

The data in Rehnberg´s (2012) study was gathered per business combination, i.e. if a company carried out three business combinations in 2005 it was considered as three different business combinations. The data for 2008 – 2011 was gathered per company and per year, i.e. if a company carried out three business combinations in 2008 it would be studied as one business combination[7]. Due to this, some of the business combinations from Pernilla Rehnberg´s data have been merged in order to make the entire data, 2005 – 2011, per company and per year.

When collecting data for a quantitative study from a large number of annual reports, assessments are required. The assessments made by Rehnberg (2012) for the data of the years 2005 – 2007 will not be further explained. Our judgment is that the assessments made for the data collection of the years 2008 – 2011 will, for the most part, be consistent with those made by Rehnberg (2012) since many of the assessments have been decided by consulting with our tutor Pernilla Rehnberg.

[6] See section *1.1* in *Appendix 1* for information of which companies carried out business combinations during the years 2005 – 2007.

[7] See section *3.3.2* for information about why the business combinations have been gathered per company and per year.

3.3 Data for the years 2008 – 2011[8]

The data for the years 2008 – 2011 is manually collected from the annual reports of Swedish companies listed on NASDAQ OMX Stockholm on the 8th of February 2013 (NASDAQ OMX Nordic 2013a), which carried out business combinations during these four years[9]. Most of the annual reports for 2008 – 2011 were gathered from the website www.bolagsfakta.se (2013), except those that could not be found which were gathered directly from the companies´ websites. All the companies that were listed on the 8th of February 2013 will be included in the study. Therefore, a number of companies that were listed at some point during the years 2008 – 2011 will be excluded from the study as they were not listed on the sample date of the data collection. Since the data for this study was gathered during two different time periods, 2005 – 2007 and 2008 – 2011, the companies in the two populations are not identical. This is due to the fact that companies have been introduced on or withdrawn from NASDAQ OMX Stockholm between the two sample dates. Hence, if a company was listed during 2005 – 2007, but was withdrawn from NASDAQ OMX Stockholm during 2008 – 2011, this will cause the company to only be included for the years 2005 – 2007 since they were not listed on the 8th of February 2013. Even though the two populations are not identical, our judgment is that this will not affect the results of the study since both of the populations include all companies listed on NASDAQ OMX Stockholm at a specific date and there is therefore no problem in merging the data.

The information needed about the business combinations for this study is: the consideration transferred, carrying value of net assets for the acquired company and, most importantly, goodwill and the fair value adjustments (FVA) of intangible assets. When gathering the information for the study, focus has been on reading the consolidated financial statement, consolidated statement of financial position, consolidated cash flow statement, as well as notes for: business combinations/acquisitions, cash flow, tangible assets, intangible assets, goodwill and deferred tax liabilities.

In order to easily identify which companies have carried out business combinations during the years 2008 – 2011, Björn Gauffin and Sven-Arne Nilsson were contacted since they have already identified these companies in their studies. They contributed to this thesis by providing access to their manually collected data of business combinations carried out during the years 2008 – 2011. Through their contribution, the identification of the companies that have carried out business combinations was greatly simplified.

The studies conducted by Gauffin and Nilsson (2009; 2011a; 2011b; 2012) have been published in the Swedish journal Balans. Even though Balans is published by a subsidiary to FAR, which is the professional institute for the accountancy sector in Sweden, it is important to bear in mind that it is a paper for free debate about accounting and auditing (FAR 2013; FAR Akademi 2013). The articles are therefore not any scientific articles.

The information Björn Gauffin and Sven-Arne Nilsson have gathered regarding the business combinations from the annual reports are not identical with the information needed for this study. They have focused on how the entire consideration transferred is allocated in a business combination rather than the NRIA. All the annual reports for companies that have carried out business combinations were therefore reviewed and the information needed for this study was gathered. To ensure that the correct information has been gathered, a comparison between the data collected for this study and the data collected by Björn Gauffin and Sven-Arne Nilsson has been done where it was possible. Even though some minor deviations have been found, the data in this study have been consistent with the data gathered by Björn Gauffin and Sven-Arne Nilsson.

[8] See *Table 4.1.1* and *Table 4.1.2* for further information about the population.

[9] See section *1.2* in *Appendix 1* for information of which companies carried out business combinations during the years 2008 – 2011.

When studying the annual reports of companies that have carried out business combinations, it was controlled if any business combinations had been carried out the previous year to ensure that sampling errors did not exist. If a business combination had been carried out the previous year, it was checked whether Björn Gauffin and Sven-Arne Nilsson had included that business combination. In a few annual reports, business combinations for previous years that had not been included in the studies made by Gauffin and Nilsson (2009; 2011a; 2011b; 2012) were found. However, these business combinations were subject to assessments on whether or not it actually was a business combination, hence if it should be included in the study or not. In this study, some companies that were included in the studies by Gauffin and Nilsson (2009; 2011a; 2011b; 2012) were excluded and vice versa. Furthermore, since Gauffin and Nilsson (2009; 2011a; 2011b; 2012) have made their study annually, some of the companies included in their study will not be included in this study as they were not listed on the 8th of February 2013.

Due to the needed assessments and the fact that the data is consistent with Björn Gauffin and Sven-Arne Nilsson´s, our judgment is that the companies included in the studies by Gauffin and Nilsson (2009; 2011a; 2011b; 2012) are accurate and that no major samples errors exist. In addition, both Björn Gauffin and Sven-Arne Nilsson have great experience in accounting which improves the reliability even more.

3.3.1 Assessments for the data collection

By choosing the companies listed on NASDAQ OMX Stockholm on the 8th of February 2013, one result of the data collection is that, in some cases, all four annual reports for some companies (i.e. 2008 – 2011) will not be included since the companies were not listed during all years being studied. In those cases, the company´s acquisitions will be analyzed starting the year they were introduced on NASDAQ OMX Stockholm (i.e. if a company were introduced on the stock exchange in 2010 the annual reports for the years 2010 and 2011 will be analyzed).

Some companies do not have calendar year as their fiscal year. For these companies the annual report for, for example 2008/2009 will be used as the findings for 2008. The annual report for 2007/2008 has already been studied by Rehnberg (2012) and is therefore included in the study.

Companies in the industries real estate, banking, insurance and credit markets will be excluded. Our judgment is that these companies might interfere with the empirical findings. The reason for real estate companies being excluded is due to the fact that the difference between the carrying value of net assets acquired and the consideration transferred is almost always allocated to the fair value of the real estates in the acquired company. When it comes to banking, insurance and credit market industries, they are excluded since the acquisition computation might be of another kind due to the nature of their business. For example, the assets of the companies in these industries differ from the assets of other industries on NASDAQ OMX Stockholm. In addition, investment companies which do not consolidate total investments will be excluded.

Companies using other generally accepted accounting principles than those issued by IASB for their consolidated financial statement will be excluded from the study since the focus of this thesis is IFRS 3. Furthermore, some companies were listed on NASDAQ OMX Stockholm as a SDB (Swedish Depository Receipts) during the years 2008 – 2011, these companies will therefore be excluded for the years being listed as a SDB.

During the studied period some companies have changed names due to rebranding or mergers. In this study, the company listed on the 8th of February 2013 will be included both before and after the rebranding or merger. Hence, these companies will be included for the entire four year period even though they have not been listed under the same name during these four years.

3.3.2 Assessments for the information in the annual reports

According to IFRS 3, when a company acquires the remaining shares of a consolidated subsidiary, i.e. the acquirers already have controlling interest of the acquired company, this is not considered to be

a business combination. These business combinations have therefore not been included in this study. However, in some cases, the acquirers have carried out more than one business combination during the fiscal year and have not reported these separately, hence making it impossible to exclude the acquisitions of minority shares. In these cases, the acquisitions of minority shares will also be included in the study.

As mentioned in section 3.2, the information about the business combinations has been gathered per company and per year. The study could have been conducted per business combination. However, many companies did not provide separate information regarding each business combination during the years 2008 – 2011 since each business combination was not considered to be significant. Furthermore, if the data would have been gathered per business combination, the companies that have carried out several acquisitions during the same year would be included several times in the tests. This approach might therefore affect the results since the hypotheses intend to compare companies, not business combinations. Therefore, our judgment is that it is more suitable to study the business combinations as one acquisition per company and per year.

Most companies provided the information needed for this study in their annual reports for the years 2008 and 2009. However, in 2010 and 2011 many companies changed the appearance of how the acquisition computation was disclosed in the annual report[10]. For these two years, many companies only reported the fair value of the acquired net assets and did not report its adjustments from carrying value to fair value. Without knowledge about the existence of the fair value adjustments (FVA), the allocation of the NRIA among identified intangible assets and goodwill cannot be completely determined. However, acquirers that have not reported any intangible assets in the acquisition computation will be considered as companies which have reported FVA. This is due to the fact that no part of the NRIA could be assigned to identified intangible assets anyway. If the companies that did not report FVA were not included in this study, too many companies would have been excluded for us to be able to come to a statistical conclusion in the study. Instead, the assumption that all the intangible assets have been identified in the business combination was made (i.e. all the intangible assets are considered to be a part of the NRIA). The assumption is plausible since most of the companies that did report FVA in their acquisitions had none or a small amount of intangible assets previously reported in the acquired company. However, the possibility that some of the intangible assets were already accounted for in the acquired company´s balance sheet exists. As a result, tests of the hypotheses with only the companies that have reported FVA, referred to as the FVA companies, will be conducted to examine whether or not the findings will deviate from each other. Therefore, these tests will not be the primary tests when deciding whether or not the hypotheses are supported[11].

Companies using a different currency than SEK (Swedish krona) in their annual reports will get their financial information converted to SEK according to the exchange rate on the last day of the year, i.e. December 31st 2008 – 2011. This exchange rate will be used for all the information gathered from the annual report. This was done in order to ease the comparability among companies. The exchange rates were retrieved from the website www.xe.com (2013).

Many companies have reported deferred tax liabilities when adjusting acquired assets to fair value. If the companies have reported deferred tax liabilities, it has been divided proportionally between the assets adjusted to fair value. However, if no deferred tax liabilities have been reported in the acquisition computation, this study assumes the companies to have reported the net value of the FVA.

Finally, some additional sampling error will occur which is due to the fact that the information needed for the dependent variable is incomplete (i.e. the information about an acquisition is incomplete).

[10] See *Table 4.1.2* for more information.
[11] See *Appendix 2* for the results of the tests regarding the FVA companies.

3.4 Models

To be able to analyze whether any correlation between the dependent variable and the independent variables exists, regression analyses will be used. The regression analyses shows whether or not the independent variable has any significant effect on the dependent variable (Jaggia & Kelly 2013). If the hypotheses are found to be true, the regression analyses will show that the proportion of intangible assets will increase with the size, indebtedness and time.

Tests will also be conducted by dividing the independent variables into groups in order to determine if any differences exists between the groups, e.g. between large and small companies. These tests will be carried out by Mann-Whitney U tests and Kruskal-Wallis tests depending on how many groups the independent variable has been divided into. The Mann-Whitney U test and the Kruskal-Wallis test are both non parametric statistical tests that intend to test whether any differences exist between independent samples (Jaggia & Kelly 2013). The Mann-Whitney U test will be used when comparing two populations of independent observations (e.g. large and small companies) in order to determine if any of the two populations identifies a larger proportion of intangible assets related to the NRIA. The Kruskal-Wallis test will be used when comparing more than two populations of independent observations. This will enable an understanding of whether any differences exist between the populations (i.e. if any group identifies a larger proportion of intangible assets than the other groups).

Furthermore, when dividing the data into groups, cluster analyses will be conducted for some of the independent variables. Cluster analysis is a method to assess if the data can be naturally divided into homogenous groups (clusters) which are dissimilar from each other, e.g. large and small companies (Everitt et al. 2001).

The Tukey HSD (Honestly Significant Differences) test is a multiple comparison method used to test whether or not population means are significantly different from each other (Jaggia & Kelly 2013). The Tukey HSD test will be used when comparing the means of the proportion of identified intangible assets for the different years. When conducting the Tukey HSD test it will be possible to understand if the accounting practice has developed regarding how to identify intangible assets separately from goodwill in a business combination.

All the tests have been conducted using a significance level of 5 %, i.e. in order to support the hypotheses a significance level of less than 5 % is required.

3.4.1 Dependent variable

Since this study intends to provide a deeper understanding of the allocation of the NRIA among identified intangible assets and goodwill in a business combination, the dependent variable will be defined as: *Identified intangible assets related to the NRIA.* The dependent variable is calculated and defined as the following.

Table 3.4.1.1: Example of an acquisition computation (TSEK)

	Carrying values pre acquisition	Fair value adjustments	Fair value post acquisition
Intangible assets	100 000	278 000	378 000
Property, plant and equipment	600 000	139 000	739 000
Other assets	100 000	-	100 000
Cash and cash equivalents	200 000	-	200 000
Interest-bearing loans and borrowings	-400 000	-	-400 000
Other liabilities	-200 000	-	-200 000
Deferred tax liability	-	-117 000[12]	-117 000
Net assets	**400 000**	**300 000**	**700 000**
Goodwill	-	-	300 000
Consideration transferred			**1 000 000**

Table 3.4.1.2: Calculation of the dependent variable

	TSEK
Consideration transferred	1 000 000
Acquired net assets	-400 000
Fair value adjustments of tangible assets and liabilities (Net after taxes)	-100 000[13]
Fair value adjustments of intangible assets (Net after taxes)	-200 000[14]
Goodwill	-300 000

Table 3.4.1.3: Definition of the dependent variable

Variable (abbreviation)	**Variable**	**Definition**
IntA	Proportion of identified intangible assets	"Identified intangible assets" divided by "NRIA"

According to the calculation and definition, the dependent variable would in this example be 0,4 $(200\ 000/(200\ 000 + 300\ 000))$, i.e. 40 % of the NRIA is allocated to identified intangible assets and 60 % is allocated to goodwill.

3.4.2 Independent variables

Through previous research and theories, three hypotheses evolved. The hypotheses intend to test if the proportion of identified intangible assets (IntA) in a business combination is affected by the size, indebtedness and time.

In order to test the first hypothesis, if companies are affected by their size, i.e. political costs, the independent variable segments on NASDAQ OMX Stockholm will be used as a proxy variable for size. Furthermore, the independent variable has been divided into groups in order to test if there is a significant difference between large and small companies when it comes to identifying intangible assets in a business combination. In this study, companies listed on Large Cap (market value

[12] A tax rate of 28 % have been used when calculating the deferred tax liability in this example, (278 000+139 000)*0,28=117 000
[13] 139 000*0,72=100 000
[14] 278 000*0,72=200 000

exceeding 1 billion EUR) are considered to be large companies while companies listed on Mid Cap (market value between 150 million EUR and 1 billion EUR) and Small Cap (market value below 150 million EUR) are considered to be small companies (NASDAQ OMX Nordic 2013a). When dividing the companies into groups, the segment they were listed on in December each year has been used. The information of the three different segments on NASDAQ OMX Stockholm´s webpage for December 2005 – 2011 has therefore been reviewed to enable this classification of companies (NASDAQ OMX 2013). However, the classification of companies according to Large Cap, Mid Cap and Small Cap started in 2006 (Hård 2005). For 2005, the market value of the companies listed on NASDAQ OMX Stockholm was therefore collected from the Swedish financial newspaper Dagens Industri´s last published issue of the year (December 30, pp. 24-25, 2005) and the market value was converted from SEK to EUR according to the exchange rate on 2005-12-31 (XE 2013). Thereafter, the companies for 2005 were classified into Large Cap, Mid Cap and Small Cap according to the market value bounds of NASDAQ OMX Stockholm. These groups will be analyzed by Mann-Whitney U tests in order to test the hypotheses.

In addition, these tests will also be ensured by using the independent variables total assets and revenue transformed into their natural logarithms (Ln_TotA and Ln_Rev) as proxy variables for size. The reason for transforming the variables into their natural logarithms is to avoid excluding extreme values that might complicate the tests since it will transform the variables into more normally distributed variables (Little 2004 pp. 583-585). This is a common approach when dealing with variables like total assets and revenue and has been used in previous research (Trombley 1989; Wyatt 2005; Hamberg et al. 2011; Marton & Runesson 2013). Furthermore, the independent variables Ln_TotA and Ln_Rev will be subject to a cluster analysis as well as divided into two equally large groups in order to test if any differences exist between the groups. These variables will be tested by simple regression analyses and Mann-Whitney U tests in order to understand if the proportion of identified intangible assets is affected by the size of the company. The models and definitions for the independent variables regarding the political costs hypothesis are the following:

Table 3.4.2.1: Definition of the independent variables (Political costs)

Variable (abbreviation)	**Variable**	**Definition**
Seg	Segment	The segment where the acquiring company is listed on NASDAQ OMX Stockholm the year of the business combination.
Ln_TotA	The natural logarithm of total assets	The natural logarithm of total assets for the acquiring company the year of the business combination.
Ln_Rev	The natural logarithm of revenue	The natural logarithm of revenue for the acquiring company the year of the business combination.

$$IntA = \beta_0 + \beta_1 Seg + \varepsilon$$

$$IntA = \beta_0 + \beta_1 Ln\_TotA + \varepsilon$$

$$IntA = \beta_0 + \beta_1 Ln\_Rev + \varepsilon$$

The second hypothesis assumes that companies are affected by their indebtedness when allocating the NRIA among identified intangible assets and goodwill. To test if the dependent variable is affected by the indebtedness of the companies, the independent variable equity ratio will be used as a proxy variable for indebtedness. Furthermore, the independent variable equity ratio will also be subject to a cluster analysis as well as divided into two equally large groups to test whether any differences exist between the groups (i.e. high and low equity ratio). Tests will also be conducted

using return on assets (ROA) and return on equity (ROE) as proxy variables for profitability in order to enhance the reliability of the findings and to ensure that the selection of accounting method is due to contract costs and not for income increasing reasons. Hence, it will be tested if companies with low profitability identify a higher proportion of intangible assets in order to avoid violating debt covenants and to satisfy the creditors´ need for collateral and cash flow predictive assets. If companies, on the other hand, select accounting method due to income increasing reasons, the test will show that companies with low profitability allocate a larger proportion of the NRIA to goodwill in order to reduce depreciation. These tests will be carried out by simple regression analyses, Mann-Whitney U tests and Kruskal-Wallis tests. The models and definitions for the independent variables regarding the contract costs hypothesis are the following:

Table 3.4.2.2: Definition of the independent variables (Contract costs)

Variable (abbreviation)	**Variable**	**Definition**
EqRat	Equity ratio	Total shareholders´ equity/Total assets for the acquiring company the year of the business combination.
ROE	Return on equity	Income before taxes/Total shareholders´ equity for the acquiring company the year of the business combination.
ROA	Return on total assets	(Income before taxes + Financial expenses)/Total assets for the acquiring company the year of the business combination.

$$IntA = \beta_0 + \beta_1 EqRat + \varepsilon$$

$$IntA = \beta_0 + \beta_1 ROE + \varepsilon$$

$$IntA = \beta_0 + \beta_1 ROA + \varepsilon$$

The third hypothesis in the thesis assumes that accounting practice will develop over the years, i.e. that a learning curve regarding the identification and valuation of intangible assets exists. It is hypothesized that business combinations in the later years after IFRS became mandatory, i.e. 2006 – 2011, will identify a larger proportion of intangible assets. Therefore, 2005 will be considered as the base year since this was the first year of mandatory IFRS. To test whether this is true or not the independent variable Year will be used as a proxy variable for the development of accounting practice since it is assumed that the knowledge of how to identify and value intangible assets will increase each year. The hypothesis will be tested by conducting simple and multiple regression analyses, Kruskal-Wallis tests and Tukey HSD tests. When carrying out the Kruskal-Wallis tests, the independent variable Year will be divided into seven groups depending on the year of the business combination. The models and definitions for the independent variables regarding the learning curve hypothesis are the following:

Table 3.4.2.3: Definition of the independent variable (Learning curve)

Variable (abbreviation)	**Variable**	**Definition**
Year	Year	The year of the business combination.
du_Year	Dummy Year	Each year transformed into a dummy variable where, for example, 2006 = 1 and 2007 – 2011 = 0. 2005 will be the constant in the multiple regression analysis.

$$IntA = a + \beta_1 Year + \varepsilon$$

$$IntA = a + \beta_1 du\_2006 + \beta_2 du\_2007 + \beta_3 du\_2008 + \beta_4 du\_2009 + \beta_5 du\_2010 + \beta_6 du\_2011 + \varepsilon$$

4. Empirical findings

This chapter starts with a presentation of the empirical background for the study, i.e. the business combinations included, as well as a description of the data. This will be followed by the statistical results of the hypothesis testing and decisions on whether the hypotheses are supported or rejected.

4.1 Empirical background

According to Rehnberg (2012), there were 277 companies listed on NASDAQ OMX Stockholm on November 1st 2007. Out of the 277 listed companies, the companies that carried out any business combination during the years 2005 – 2007 were included in the study and the data regarding the business combinations were collected by Pernilla Rehnberg. However, as explained in section 3.3.1, companies that were listed during 2008 – 2011 will only have their annual reports for the year of their initial public offering (IPO) and the following years included in the study. For this criterion to be true for the entire period studied, i.e. 2005 – 2011, three business combinations carried out during 2006 that were included in Rehnberg´s (2012) dissertation were excluded from this study. After these exclusions, a total number of 245 business combinations during the years 2005 – 2007 will be included in the study. Since the data for 2005 – 2007 was gathered by Pernilla Rehnberg no further explanation of how the population of 245 business combinations was reached will be given.

On February 8th 2013 there were 253 companies listed on NASDAQ OMX Stockholm. However, five of these companies were introduced on the stock exchange later than 2011 and were therefore completely excluded from the study. With 248 companies and four annual reports per company (2008 – 2011) this added up to a total of 992 annual reports. As stated earlier in section 3.3.1, companies that were introduced on the stock exchange during any of the four studied years (2008 – 2011) will only have their annual reports for the year of their IPO and the following years included in the study. The number of companies introduced on the stock exchange during 2008 – 2011, a total of 27 companies, is shown in the table as well as the number of annual report excluded for the years previous to their IPO, 62 in total. After excluding these annual reports, 930 remained.

Table 4.1.1 Annual reports 2008 – 2011

	Large Cap	Mid Cap	Small Cap	Total
Total number of listed companies on the 8th of February 2013	61	67	125	253
Companies completely excluded since introduced on NASDAQ OMX Stockholm later than 2011	0	0	5	5
Total number of companies included in the study	**61**	**67**	**120**	**248**
Total number of annual reports (4 per company)	**244**	**268**	**480**	**992**
IPOs during the studied period				
IPOs in 2008	0	0	0	0
IPOs in 2009	0	0	2	2
IPOs in 2010	0	3	11	14
IPOs in 2011	1	2	8	11

Table 4.1.1 Annual reports 2008 – 2011 cont.

	Large Cap	Mid Cap	Small Cap	Total
Number of annual reports excluded for IPOs during the studied period				
IPOs in 2008	0	0	0	0
IPOs in 2009	0	0	2	2
IPOs in 2010	0	6	21[15]	27
IPOs in 2011	3	6	24	33
Total number of annual reports excluded	**3**	**12**	**47**	**62**
Total number of annual reports	**241**	**256**	**433**	**930**

As explained in section 3.3.1, companies in the industries banking, real estate, insurance and credit markets were excluded from the study as well as those investment companies which do not consolidate total investments. Furthermore, companies listed as a SDB during any of the years 2008 – 2011 and companies using other generally accepted accounting principles than those issued by IASB for their consolidated financial reports were also excluded. The annual reports excluded for these companies were in total 141, leaving 789 annual reports.

Through the contribution by Björn Gauffin and Sven-Arne Nilsson regarding which companies carried out business combination and after the review of these annual reports, 333 annual reports with business combinations were identified. However, 14 annual reports did not provide sufficient information regarding their business combination and had to be excluded. This resulted in 319 business combinations that will be included in this study.

The most essential information needed about the business combinations for this study is how the NRIA is allocated among identified intangible assets and goodwill, i.e. the FVA for intangible assets. As the last section of table 4.1.2 shows, approximately a third of the companies did not report any FVA for the business combinations carried out during the years 2010 and 2011 which might interfere with the findings in this study.

Table 4.1.2 Number of business combinations carried out during the years 2008 – 2011 included in the study

	2008	2009	2010	2011	Total
Total number of annual reports	221	224	237	248	930
Annual reports excluded from the study					
Banking, real estate, insurance, credit market and investment companies	22	22	22	22	88
SDB (Swedish Depository Receipts)	11	10	10	10	41
Other generally accepted accounting principles	3	3	3	3	12
Total number of annual reports analyzed	**185**	**189**	**202**	**213**	**789**

[15] MQ was introduced on NASDAQ OMX Stockholm during 2010. However, their fiscal year extends over 2 years and the annual report for 2009/2010 is therefore included in the study since they were introduced before the end of that fiscal year.

Table 4.1.2 Number of business combinations carried out during the years 2008 – 2011 included in the study cont.

	2008	2009	2010	2011	Total
No business combinations	98	120	114	124	456
Business combinations with incomplete data for the study	2	2	5	5	14
Business combinations	**85**	**67**	**83**	**84**	**319**
Business combinations with fair value adjustments	81	61	58	52	252
Business combinations with no fair value adjustments	4	6	25	32	67

Table 4.1.3 illustrates the total number of business combinations during the years 2005 – 2011 included in this study. With 245 business combinations during the years 2005 – 2007 and 319 business combinations during the years 2008 – 2011, the final population for this study is 564 business combinations.

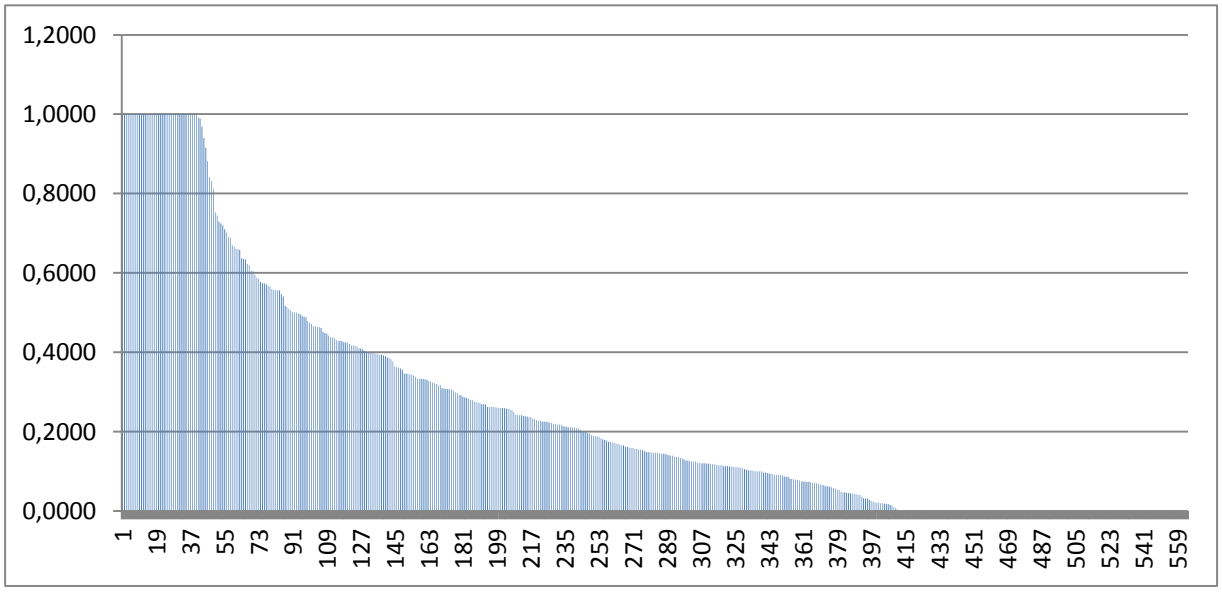
Table 4.1.3 Total number of business combinations carried out during the years 2005 – 2011

	2005	2006	2007	2008	2009	2010	2011	Total
Business Combinations	65	77	103	85	67	83	84	564

4.2 Fundamental empirical findings

To analyze the data, the proportion of identified intangible assets related to the NRIA was used. Chart 4.2.1 illustrates how the NRIA, for all the 564 business combination included in this study, was allocated among identified intangible assets and goodwill. The Y-axis of the chart represents the proportion of identified intangible assets related to the NRIA, i.e. 1,0 represents business combinations where the entire NRIA is allocated to identified intangible assets and 0,0 represents a business combination where the entire NRIA is allocated to goodwill. The number of business combinations is shown on the X-axis.

Chart 4.2.1: Proportion of identified intangible assets related to the NRIA



The proportion of identified intangible assets related to the NRIA illustrated in chart 4.2.1 is also presented in numbers in table 4.2.1. The entire NRIA for 40 business combinations was allocated to

identified intangible assets while 152 of the business combinations allocated the entire NRIA to goodwill.

Table 4.2.1: Proportion of identified intangible assets related to the NRIA (%)

Proportion of identified intangible assets in %	Number of business combinations
0	152
1-20	168
21-40	115
41-60	59
61-80	21
81-99	9
100	40

As stated in section 3.3.2 and in table 4.1.2, a large number of companies did not provide the information needed for this study regarding the FVA during the years 2008 – 2011. The following two charts illustrate the proportion of identified intangible assets related to the NRIA for the acquirers that did provide information of the FVA and those which did not.

Chart 4.2.2 illustrates the proportion of identified intangible assets related to the NRIA for all the 497 companies where it was possible to identify the FVA. As stated in section 3.3.2, acquirers that have not reported any intangible assets in the acquisition computation will be considered as companies which have reported FVA. These companies represent many of the companies with a 0,0 on the chart.

Chart 4.2.2: Business combinations with fair value adjustments

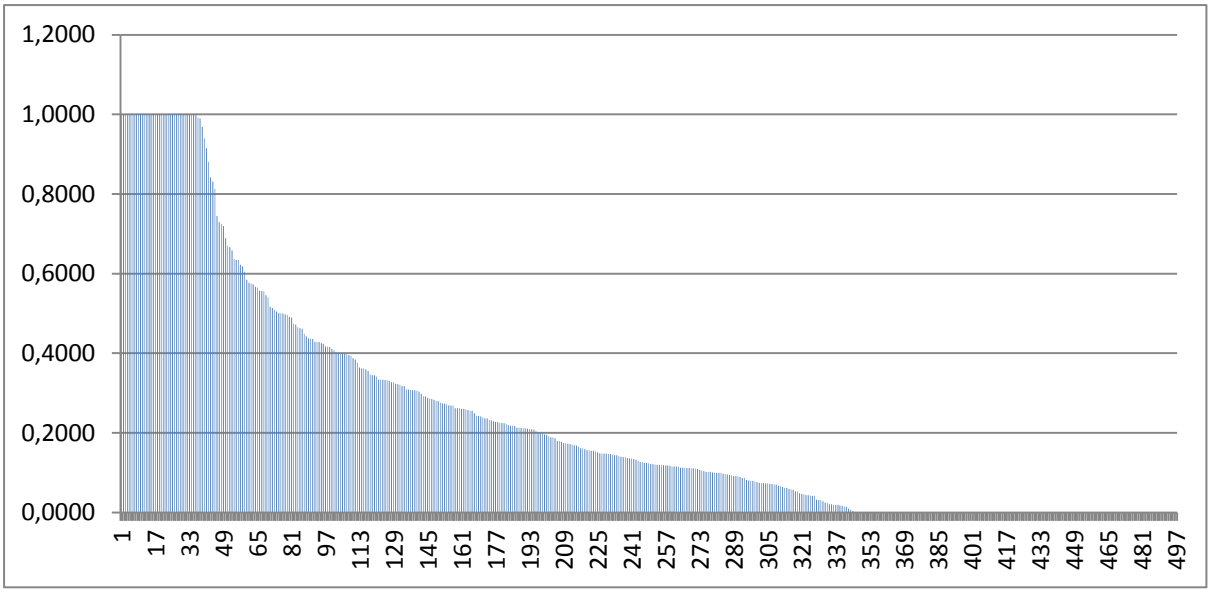
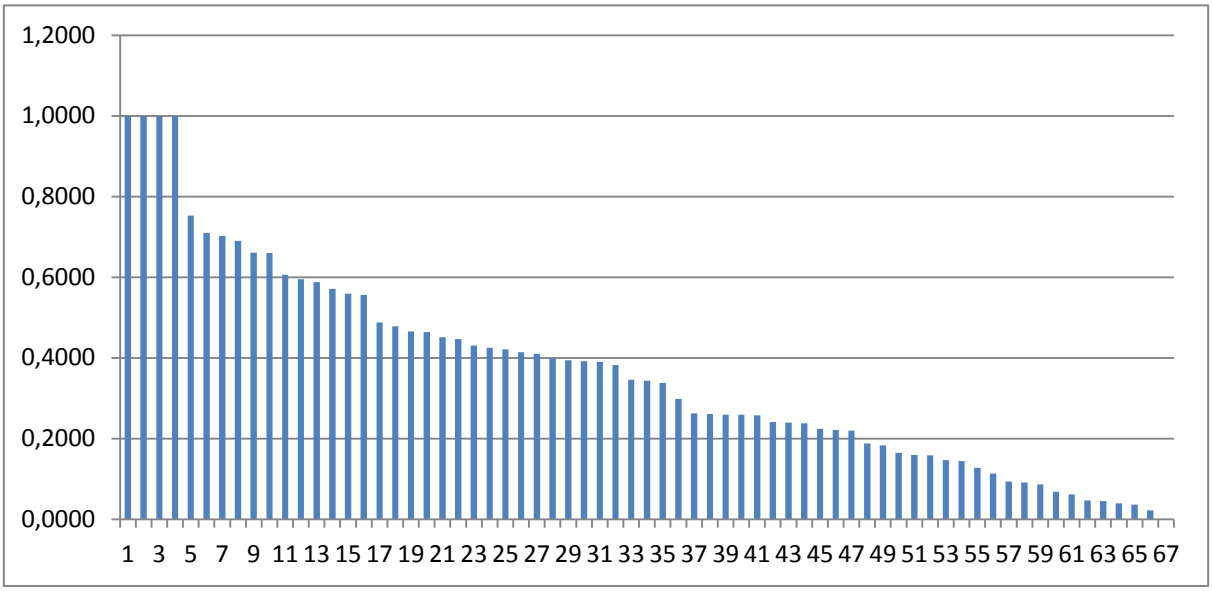


Chart 4.2.3 illustrates the proportion of identified intangible assets related to the NRIA for all the 67 companies where it was not possible to identify the FVA of the acquired assets during the years 2008 – 2011. As the chart illustrates, all companies have identified intangible assets in the business combination. However, this is expected since all the business combinations where no intangible assets were acquired at all are considered to have reported FVA and are therefore included in chart 4.2.2. Furthermore, the assumption that all the intangible assets reported in the acquisition

computation had been identified is unlikely, although the assumption is plausible as argued in section 3.3.2. The chart might therefore be biased towards a higher proportion of identified intangible assets.

Chart 4.2.3: Business combinations with no fair value adjustments



4.2.1 Other findings

When analyzing the annual reports for the companies which have carried out acquisitions during the years 2008 – 2011 some companies were found to have allocated a part or the entire NRIA to goodwill even though they specified what the goodwill was attributable to. The companies stated that the goodwill consisted of for example customer relations, customer lists and supplier relations. Hence, the companies could have allocated at least some of the goodwill to identified intangible assets since they were able to specify what the goodwill was attributable to. Furthermore, it was found that a considerably large amount of the business combinations were not considered to be significant acquisitions according the acquirers.

4.2.2 Descriptive data of the population

Table 4.2.2.1 shows descriptive data for the dependent variable as well as for the different independent variables used in this study[16].

Table 4.2.2.1: Descriptive data for the variables

	N	Minimum	Maximum	Mean	Median	Std. Deviation
Dependent variable						
IntA	564	,0000	1,0000	,250932	,146992	,2914198
Independent variable						
Year	564	2005	2011			
TotA	564	42459	377173440	22344225,75	2487546,96	52495438,560
Ln_TotA	564	10,66	19,75	15,1233	14,7268	1,94219
Rev	564	13200	310367000	18229017,05	2654821,00	38956164,010
Ln_Rev	564	9,49	19,55	15,0869	14,7919	1,89314

[16] See *Appendix 2 - Table 2.0.1* for the descriptive data of the FVA companies.

Table 4.2.2.1: Descriptive data for the variables cont.

	N	Minimum	Maximum	Mean	Median	Std. Deviation
Independent variable						
EqRat	564	,0334	,9495	,458993	,438865	,1706503
ROE	564	-2,8253	3,6768	,152856	,191996	,3785589
ROA	564	-1,2215	,4137	,074280	,091541	,1427294

4.3 Hypothesis testing

4.3.1 Political costs

The first hypothesis intends to test if: *Large companies allocate a larger proportion of the NRIA to identified intangible assets compared to small companies*. The following statistical tests were therefore conducted.

In order to test the hypothesis, the data was first divided into two groups according to which segment on NASDAQ OMX Stockholm the companies were listed on the year of the business combination. When comparing these two groups, the Mann-Whitney U test, table 4.3.1.1, showed that large companies allocate a larger proportion of the NRIA to identified intangible assets compared to small companies at a significance level of 2,2 %. However, when conducting the same test for the FVA companies (Appendix 2 – Table 2.1.1) it was not possible to find any difference between large and small companies. The reason why these results differ is probably due to the fact that a larger proportion of the large companies were excluded compared to the small companies (39 out of the 173 large companies and 28 out of the 391 small companies). Since all of the excluded companies are assumed to have identified intangible assets, the result for the FVA companies might not be accurate as many large companies were excluded.

Table 4.3.1.1: Mann-Whitney U test based on the independent variable Seg

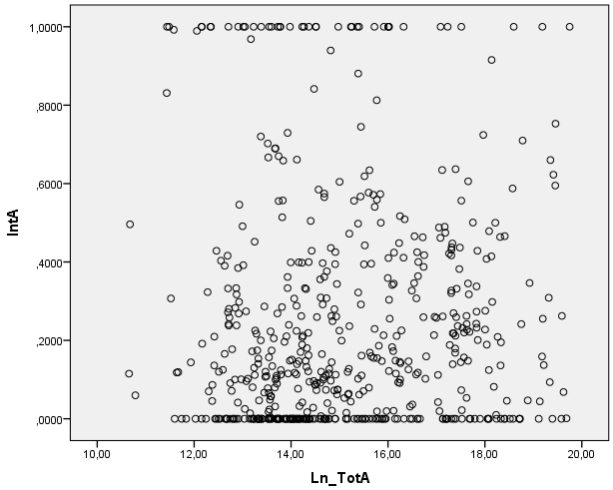
Segment	**N**	**Mean Rank**	**Sum of Ranks**		**IntA**
Large companies (Large Cap)	173	305,87	52916,00	Mann-Whitney U	29778,000
Small Companies (Mid & Small Cap)	391	272,16	106414,00	Wilcoxon W	106414,00
Total no. of business combinations	564			Z	-2,289
				Asymp. Sig. (2-tailed)	,022

In order to ensure that large companies allocate a larger proportion of the NRIA to identified intangible assets compared to small companies, tests with the independent variables Ln_TotA and Ln_Rev were conducted. However, the results from the tests of the two independent variables proved to be almost identical. As a consequence, the tests regarding Ln_TotA will be ones presented in the thesis[17]. The only test that did not show the same result was for the FVA companies when the independent variable Ln_Rev was divided into two equally large groups. This test with Ln_TotA showed a significant difference between the groups while the test with Ln_Rev could not identify a significant difference.

Graph 4.3.1.1 illustrates a scatter plot with the dependent variable IntA on the Y-axis and the independent variable Ln_TotA on the X-axis. As can be seen, no correlation between the variables seems to exist in the graph and no natural groups can be identified. A similar scatter plot was found for the FVA companies (Appendix 2 – Graph 2.1.1).

[17] See *Appendix 3* for the results of the tests regarding the independent variable Ln_Rev.

Graph 4.3.1.1: Scatter plot of the dependent variable IntA and the independent variable Ln_TotA



To test if total assets have any significant effect on the proportion of identified intangible assets, a regression analysis was conducted. This test, table 4.3.1.2, failed to support the hypothesis that total assets have a significant effect and a similar result was found when conducting the same test for the FVA companies (Appendix 2 – Tables 2.1.2). A regression analysis was also conducted where all the companies that had allocated all of the NRIA to either identified intangible assets or goodwill were excluded since these outliers might interfere with the results of the regression analyses. This test, table 4.3.1.3, did show an indication of a correlation between the variables and the correlation is positive, as predicted by the hypothesis. However, the test with the FVA companies failed to support the prediction that total assets have a significant effect on the proportion of identified intangible assets (Appendix 2 – Table 2.1.3). A potential explanation for this is that many large companies were excluded in the test with the FVA companies (42 out of the 67 companies had total assets exceeding five billion SEK, i.e. Ln_TotA equal to 15,42,).

Table 4.3.1.2: Simple linear regression based on the independent variable Ln_TotA

		Unstandardized Coefficients		Standardized Coefficients		
Variable	**Prediction**	**B**	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)		,182	,096		1,884	,060
Ln_TotA	+	,005	,006	,030	,723	,470

Table 4.3.1.3: Simple linear regression based on the independent variable Ln_TotA where all the companies which have only reported goodwill or intangible assets are excluded

		Unstandardized Coefficients		Standardized Coefficients		
Variable	**Prediction**	**B**	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)		,131	,084		1,562	,119
Ln_TotA	+	,009	,005	,088	1,696	,091

To further test the first hypothesis, the independent variable Ln_TotA was divided into groups in order to examine if any differences exist between large and small companies.

The first set of groups tested was when the independent variable Ln_TotA was subject to a cluster analysis where two clusters were identified. The Mann-Whitney U test, table 4.3.1.4, found that large companies allocate a larger proportion of the NRIA to identified intangible assets compared to small

companies at a significance level of 0,1 %. The same result was found when the independent variable Ln_TotA was divided into two equally large groups, table 4.3.1.5. These results were also found when conducting the same tests for the FVA companies (Appendix 2 – Table 2.1.4 and 2.1.5).

Table 4.3.1.4: Mann-Whitney U test based on the clustered independent variable Ln_TotA

Logarithm of total assets (mean)	N	Mean Rank	Sum of Ranks		IntA
Large companies (17,05)	238	308,24	73360,00	Mann-Whitney U	32669,000
Small Companies (13,72)	326	263,71	85970,00	Wilcoxon W	85970,000
Total no. of business combinations	564			Z	-3,237
				Asymp. Sig. (2-tailed)	,001

Table 4.3.1.5: Mann-Whitney U test based on the independent variable Ln_TotA divided into two equally large groups

Logarithm of total assets (median)	N	Mean Rank	Sum of Ranks		IntA
Large companies (> 14,7628)	282	304,49	85866,00	Mann-Whitney U	33561,000
Small companies (< 14,7268)	282	260,51	73464,00	Wilcoxon W	73464,000
Total no. of business combinations	564			Z	-3,237
				Asymp. Sig. (2-tailed)	,001

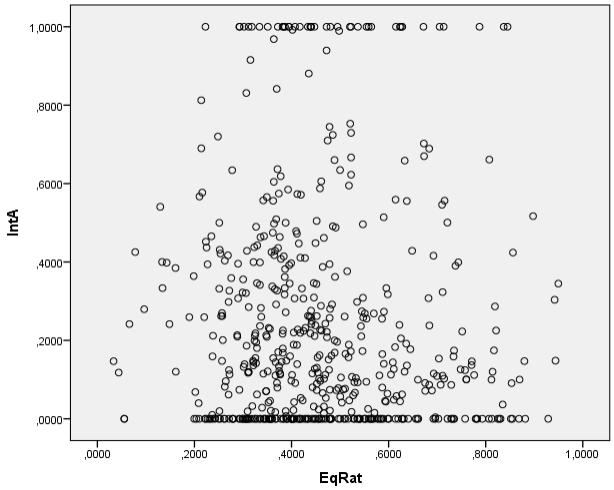
According to the tests and results for the first hypothesis, a significant difference between how large and small companies allocate the NRIA exists. Large companies do allocate a larger proportion of the NRIA to identified intangible assets compared to small companies. Even though the first regression analysis failed to support the hypothesis, the second regression analysis were significant at the 10 % level and all other tests were significant at the 5 % level. Hence, a significant difference between large and small companies can be statistically confirmed when dividing the companies into groups. The first hypothesis is therefore strongly supported and cannot be rejected.

4.3.2 Contract costs

The second hypothesis intends to test if: *Highly indebted companies allocate a larger proportion of the NRIA to identified intangible assets compared to less indebted companies.* The following statistical tests were therefore conducted.

Graph 4.3.2.1 illustrates a scatter plot with the dependent variable IntA on the Y-axis and the independent variable EqRat on the X-axis. As can be seen, no correlation seems to exist and no natural groups can be identified in the scatter plot. A similar scatter plot was found for the FVA companies (Appendix 2 – Graph 2.2.1).

Graph 4.3.2.1: Scatter plot of the dependent variable IntA and the independent variable EqRat



The simple linear regression, table 4.3.2.1, shows that the independent variable EqRat has no significant effect on how the NRIA is allocated among identified intangible assets and goodwill. The same result was found when testing the FVA companies (Appendix 2 – Table 2.2.1). However, when excluding all companies which have allocated all of the NRIA to either identified intangible assets or goodwill, table 4.3.2.2, EqRat has a significant effect on the dependent variable IntA. This was also found to be true for the FVA companies (Appendix 2 – Table 2.2.2). Hence, the higher equity ratio a company has the less intangible assets are identified in a business combination, as predicted by the hypothesis.

Table 4.3.2.1: Simple linear regression based on the independent variable EqRat

		Unstandardized Coefficients		Standardized Coefficients		
Variable	**Prediction**	**B**	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)		,282	,035		8,007	,000
EqRat	-	-,068	,072	-,040	-,946	,344

Table 4.3.2.2: Simple linear regression based on the independent variable EqRat where all the companies which have only reported goodwill or intangible assets are excluded

		Unstandardized Coefficients		Standardized Coefficients		
Variable	**Prediction**	**B**	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)		,336	,030		11,071	,000
EqRat	-	-,140	,063	-,114	-2,216	,027

In order to further test the second hypothesis, the independent variable EqRat was clustered into two and four groups. The Mann-Whitney U test, table 4.3.2.3, supported the second hypothesis that companies with a low equity ratio identify more intangible assets in a business combination compared to companies with a high equity ratio. However, when the independent variable EqRat was clustered into four groups, no significant difference could be found in the Kruskal-Wallis test, table 4.3.2.4. Regarding the FVA companies, there is only an indication of a difference when the independent variable was clustered into two groups and no significant difference when clustered into four groups (Appendix 2 – Table 2.2.3 and 2.2.4).

Table 4.3.2.3: Mann-Whitney U test based on the clustered independent variable EqRat

Equity ratio (mean)	N	Mean Rank	Sum of Ranks		IntA
High equity ratio (65 %)	189	261,60	49443,00	Mann-Whitney U	31488,000
Low equity ratio (36 %)	375	293,03	109887,00	Wilcoxon W	49443,000
Total no. of business combinations	564			Z	-2,184
				Asymp. Sig. (2-tailed)	,029

Table 4.3.2.4: Kruskal-Wallis test based on the clustered independent variable EqRat

Mean of equity ratio	N	Mean Rank		IntA
77 %	78	265,76	Chi-Square	4,969
57 %	120	260,32	df	3
41 %	229	296,31	Asymp. Sig.	,174
26 %	137	288,37		
Total no. of business combinations	564			

Furthermore, when dividing the independent variable EqRat into two equally large groups, no significant difference existed between companies with high equity ratio and companies with low equity ratio, table 4.3.2.5. Similar results were found for the FVA companies (Appendix 2 – Table 2.2.5).

Table 4.3.2.5: Mann-Whitney U test based on the independent variable EqRat divided into two equally large groups

Equity ratio	N	Mean Rank	Sum of Ranks		IntA
High equity ratio (> 43,89 %)	282	272,72	76908,00	Mann-Whitney U	37005,00
Low equity ratio (< 43,89 %)	282	292,28	82422,00	Wilcoxon W	76908,00
Total no. of business combinations	564			Z	-1,439
				Asymp. Sig. (2-tailed)	,150

As described in section 3.4.2, profitability will be used to ensure that the selected accounting method is due to contract costs and not for income increasing reasons. However, the results of the independent variables ROE and ROA were almost identical and as a consequence the results of ROE will be the only tests presented in the thesis[18]. The regression analysis, table 4.3.2.6, can neither support that the selected accounting method is due to contract cost nor due to income increasing reasons since the significance level is 85 % for the independent variable ROE. The same result was found when excluding the companies which have allocated all or nothing of the NRIA to identified intangible assets, table 4.3.2.7. Similar results were also found for the FVA companies (Appendix 2 – Table 2.2.6 – 2.2.7).

Table 4.3.2.6: Simple linear regression based on the independent variable ROE

		Unstandardized Coefficients		Standardized Coefficients		
Variable	**Prediction**	**B**	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)		,252	,013		19,014	,000
ROE	-	-,006	,032	-,008	-,190	,850

[18] See *Appendix 3* for the results of the tests regarding the independent variable ROA.

Table 4.3.2.7: Simple linear regression based on the independent variable ROE where all the companies which have only reported goodwill or intangible assets are excluded

		Unstandardized Coefficients		Standardized Coefficients		
Variable	**Prediction**	**B**	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)		,276	,012		23,802	,000
ROE	-	-,021	,028	-,040	-,764	,446

As a summary, it can be concluded that the results of the tests are not robust enough to support the second hypothesis. When clustering the independent variable EqRat into two groups, a significant difference between companies with high and low indebtedness was found. Furthermore, the independent variable EqRat has a significant effect on the dependent variable when all the companies which have allocated the entire NRIA to identified intangible assets or goodwill were excluded. Both of these tests are in line with the second hypothesis, i.e. companies with high indebtedness allocate a larger proportion of the NRIA to identified intangible assets. However, when the independent variable EqRat was clustered into four groups and divided into two equally large groups no significant difference could be identified. The other simple linear regression analyses regarding the independent variables EqRat and ROE also failed to support the second hypothesis. Therefore, the results do not provide sufficient evidence to support the second hypothesis and is thus rejected.

4.3.3 Learning curve

The third hypothesis intends to test if: *The proportion of the NRIA allocated to identified intangible assets will increase for the years following the implementation of mandatory IFRS in 2005*. The following statistical tests were therefore conducted.

In the first simple linear regressions, table 4.3.3.1 and 4.3.3.2, the increase is assumed to be linear for the years following the base year 2005. According to table 4.3.3.1, time has had no significant effect on the knowledge of how to identify intangible assets in a business combination and no development of accounting practice could therefore be identified. Similar results were found for the FVA companies (Appendix 2 – Table 2.3.1). However, when excluding the companies which have allocated all or nothing of the NRIA to identified intangible assets, table 4.3.3.2, the independent variable Year does have a significant effect on the dependent variable IntA and therefore supports the third hypothesis. Regarding the FVA companies, no significant effect could be found in the test (Appendix 2 – Table 2.3.2). The reason for the difference between the tests is probably due to the fact that companies were only excluded for the last four years, 2008 – 2011.

Table 4.3.3.1: Simple linear regression based on the independent variable Year

		Unstandardized Coefficients		Standardized Coefficients		
Variable	**Prediction**	**B**	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)		-10,920	12,626		-,865	,387
Year	+	,006	,006	,037	,885	,377

Table 4.3.3.2: Simple linear regression based on the independent variable Year where all the companies which have only reported goodwill or intangible assets are excluded

		Unstandardized Coefficients		Standardized Coefficients		
Variable	**Prediction**	**B**	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)		-25,388	10,628		-2,389	,017
Year	+	,013	,005	,125	2,415	,016

In order to test whether the years 2006 – 2011 have a significant effect on the proportion of the NRIA allocated to identified intangible assets compared to the base year 2005, a multiple regression analysis was conducted. As table 4.3.3.3 shows, it is only the year 2009 that has a positive significant effect compared to the base year 2005. However, since the years 2010 and 2011 do not have a significant effect compared to the base year 2005, it cannot be concluded that a learning effect took place in 2009. Furthermore, when all the companies that have allocated all or nothing of the NRIA to identified intangible assets were excluded, no year had a significant effect compared to the base year 2005, table 4.3.3.4. Regarding the FVA companies, no year had a significant effect compared to the base year 2005 in neither test (Appendix 2 – Table 2.3.3 and 2.3.4).

Table 4.3.3.3: Multiple regression based on the independent variable Year with 2005 as the base year

		Unstandardized Coefficients		Standardized Coefficients		
Variable	**Prediction**	**B**	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)		,241	,036		6,698	,000
2006	+	,008	,049	,009	,153	,878
2007	+	-,022	,046	-,030	-,483	,629
2008	+	-,018	,048	-,022	-,378	,706
2009	+	,107	,051	,119	2,110	,035
2010	+	,006	,048	,008	,133	,894
2011	+	,012	,048	,014	,242	,809

Table 4.3.3.4: Multiple regression based on the independent variable Year with 2005 as the base year where all the companies which have only reported goodwill or intangible assets are excluded

		Unstandardized Coefficients		Standardized Coefficients		
Variable	**Prediction**	**B**	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)		,272	,031		8,742	,000
2006	+	-,047	,042	-,080	-1,118	,264
2007	+	-,035	,040	-,067	-,889	,375
2008	+	,001	,042	,001	,012	,990
2009	+	,061	,048	,082	1,273	,204
2010	+	,014	,041	,024	,335	,737
2011	+	,044	,041	,079	1,077	,282

To further test if any year was significantly different from the base year 2005, a Tukey HSD test was conducted. This test, table 4.3.3.5, could not find any differences between the base year 2005 and the following years, 2006 – 2011. Nor could any differences be found for the FVA companies (Appendix 2 – Table 2.3.5).

Table 4.3.3.5: Tukey HSD test based on the independent variable Year

(I) Year	(J) Year	Mean Difference (I-J)	Std. Error	Sig.
2005	2006	-,0075048	,0489307	1,000
	2007	,0222315	,0460170	,999
	2008	,0180908	,0478651	1,000
	2009	-,1067329	,0505746	,348
	2010	-,0063989	,0481143	1,000
	2011	-,0116030	,0479884	1,000

Finally, a Kruskal-Wallis test was conducted to examine if any differences exist between the years, table 4.3.3.6. The Kruskal-Wallis test failed to support the idea of a learning curve since no differences between the years seem to exist. Nor could any differences be found for the FVA companies (Appendix 2 – Table 2.3.6).

Table 4.3.3.6: Kruskal-Wallis test based on the independent variable Year

Year	N	Mean Rank		IntA
2005	65	275,33	Chi-Square	3,854
2006	77	288,11	df	6
2007	103	268,28	Asymp. Sig.	,696
2008	85	265,29		
2009	67	302,22		
2010	83	286,11		
2011	84	298,46		
Total no. of business combinations	564			

Regarding the third hypothesis, all tests but one failed to support the existence of a learning curve regarding the knowledge of how to identify intangible assets separately from goodwill in a business combination according to IFRS 3. The only test that supports the hypothesis is the regression analysis for the independent variable Year, when all the companies that allocated the entire NRIA to identified intangible assets or goodwill were excluded. None of the other tests could support an existence of a learning curve, i.e. no development of accounting practice could be identified. The third hypothesis is therefore not supported and is thus rejected.

4.3.4 Robustness check

Due to the fact that the data gathered for the years 2008 – 2011 might be subject to survival bias since a specific sample date was chosen, a robustness check was conducted where the business combinations carried out by companies that were delisted before the 8th of February 2013 were included[19]. In order to identify these business combinations the data gathered by Björn Gauffin and Sven-Arne Nilsson for the years 2008 – 2011 was used. This resulted in an addition of 21 business combinations not previously included in the study. After this review, all business combinations carried out during the years 2008 – 2011 were included in the study, except the companies excluded due to the criteria in section 3.3.1. Hence, the data do not suffer from survival bias after the inclusion of the business combinations carried out by these companies.

[19] See section *1.2.1* in *Appendix 1* for information of which companies carried out business combinations during the years 2008 – 2011 but were delisted before the 8th of February 2013.

Table 4.3.4.1 illustrates the business combinations carried out during the years 2008 – 2011 that were included in the robustness check as well as the number of companies that provided details about the FVA. The total number of business combinations included in the robustness check for the years 2005 – 2011 is provided in table 4.3.4.2.

Table 4.3.4.1 Number of business combinations carried out during the years 2008 – 2011 included in the robustness check of the study

	2008	2009	2010	2011	Total
Business combinations in the original data	85	67	83	84	319
Business combinations included due to survival bias	13	4	3	1	21
Total number of business combinations in the robustness check	**98**	**71**	**86**	**85**	**340**
Business combinations with fair value adjustments	92	65	59	53	269
Business combinations with no fair value adjustments	6	6	27	32	71

Table 4.3.4.2 Total number of business combinations carried out during the years 2005 – 2011 included in the robustness check of the study

	2005	2006	2007	2008	2009	2010	2011	Total
Business Combinations	65	77	103	98	71	86	85	585

The tests conducted regarding the robustness check are exactly the same as the tests presented in the sections 4.3.1 – 4.3.3 and in the appendices 2 and 3. The results of the robustness check proved to be almost identical to the original results in this study and the decisions regarding the hypotheses therefore remain unchanged. Hence, the original results were not affected by survival bias. As a consequence, none of these tests will be presented in the thesis.

5. Analysis

This chapter will analyze the results from the tests of the three hypotheses in numerical order and compare these findings to previous research. At the end of this chapter, further discoveries from the study will be analyzed.

5.1 Political costs

In the tests of the first hypothesis, all but two supported the hypothesis at a significance level of 5 %. The tests that did not support the hypothesis were the regression analyses based on the independent variable Ln_TotA. However, the regression analysis where all companies that had allocated all or nothing of the NRIA to identified intangible assets were excluded did show that the hypothesis might be supported since the significance level was 9.1 %. Hence, only the regression analysis where all companies are included could not provide evidence supporting the first hypothesis. A potential explanation for why the two regression analyses showed different results could be that the companies that have allocated the NRIA to both identified intangible assets and goodwill have other incentives compared to those companies which have allocated all or nothing of the NRIA to identified intangible assets. The companies that have allocated the NRIA to both identified intangible assets and goodwill might consider the implications of the accounting choice even more and therefore spend more time and resources on trying to identify exactly what the NRIA is attributable to. The companies that have allocated all or nothing of the NRIA to identified intangible assets have, of course, spent time and resources on the acquisition as well, especially the companies that did not report any goodwill at all. However, the allocation of the NRIA could have been simplified by allocating all or none of the NRIA to identified intangible assets in order to obtain the desired costs, i.e. depreciation. For example, if the company realized that customer relations were a small (or large) part of the NRIA, the company decided to allocate the entire NRIA to goodwill (or identified intangible assets).

The results show that there is a significant difference between large and small companies in Sweden regardless of how the groups are divided. This implies that when a company reaches a specific size, political costs will have a significant effect on the allocation of the NRIA. Furthermore, when excluding the companies that have allocated all or nothing of the NRIA to identified intangible assets, the independent variable Ln_TotA shows an indication of an effect on how the allocation is made. As a result of the findings and the preceding discussion, the first hypothesis cannot be rejected and is therefore strongly supported.

According to the results of this study, the accounting choice is affected by the size of the company, i.e. political costs, as argued by Watts and Zimmerman (1986) and as supported by previous research (Daley & Vigeland 1983; Inoue & Thomas 1996; Mande et al. 2000; Landry & Callimaci 2003; Rehnberg 2012). Managers will therefore act opportunistic when dealing with accounting choices, as discussed by Jensen and Meckling (1976) and Watts and Zimmermann (1986). Large companies will, in order to reduce political costs, select income decreasing accounting methods while small companies, which are not subject to political costs to the same extent, will select income increasing accounting methods. The findings in this study are consistent with Trombley (1989) since it was found that small companies allocate a larger proportion of the NRIA to goodwill, i.e. small companies select accounting methods that will increase earnings. As a consequence, the findings are inconsistent with Daves et al. (2000) since large companies were found to select income decreasing accounting methods, as predicted by the first hypothesis. The preceding discussion implies that companies in this study are strategic when selecting accounting methods and the strategy is depending on what the company is influenced by, which is also supported by Shalev (2007). Since companies will select accounting methods based on the effect it will have on reported earnings, it could be questioned to what extent the financial information provides reliable and useful information for the users.

The findings in this study show that large companies identify a larger proportion of intangible assets separately from goodwill compared to small companies. However, both large and small companies select accounting methods that are allowed according to IFRS 3, e.g. if the company cannot identify and recognize intangible assets apart from goodwill it will be reported as the latter. Even so, this implies that the financial information of large companies´ acquisitions is more in line with IFRS 3 since it would be strange if the intangible assets acquired by large companies were easier to identify and recognize separately from goodwill. Small companies should therefore be able to identify more intangible assets when applying IFRS 3. Even though it may seem like large companies apply IFRS 3 more consistent with the objective of the standard, it can be questioned whether they do it for the right reason. The findings of this study have found that incentives, i.e. political costs, are needed in order to identify intangible assets separately from goodwill which is not the purpose of the regulations. Therefore, the possibility of opportunistic behavior needs to be reduced in order to achieve more reliable and comparable information regarding business combinations.

The fact that companies are influenced by their size when selecting accounting method will cause companies to apply IFRS 3 differently. The comparability among companies may therefore suffer since companies are influenced by their own motives and have the opportunity to choose whether or not any intangible assets can be identified and recognized separately from goodwill. Since companies will be influenced by their own motives, the financial information might not reflect the true substance of the business combination. Hence, the quality of the financial information could be doubtful. The fact that large and small companies within Sweden apply IFRS 3 differently is a major issue of principle based regulations. When comparing the financial information provided by companies that have carried out business acquisitions, the user therefore have to consider the size of the company and the effect this has had on the selected accounting method. Since the users decisions are based on the financial information, if taken to the extreme, misleading information could result in poor decisions. Furthermore, it has been argued in previous research that identifying and separating intangible assets from goodwill is of value (Forbes 2007). Since large companies identify more intangible assets separately from goodwill compared to small companies, this implies that large companies provide better information and this will benefit their users. However, it can be questioned whether the information provided to the users is reliable since it is affected by incentives.

Finally, if not even the financial information provided by companies within the same country is comparable, it can be questioned how comparable financial information from companies with various nationalities is. Especially since previous research has shown that country-specific institutional influences have an effect on the financial reports (Ball et al. 2000; Ball et al. 2003; Holthausen 2003) and differences between how countries apply IFRS 3 have in fact been identified (Lai & Stacchezzini 2009).

5.2 Contract costs

Regarding the second hypothesis, there were only two tests supporting the hypothesis at a significance level of 5 %. The first test that did support the hypothesis were when a simple linear regression was conducted based on the independent variable EqRat where all the companies which had allocated all or nothing of the NRIA to identified intangible assets were excluded. The reason why this test supported the hypothesis, while the same test where all companies were included did not, follows the same reasoning as for the analysis of the first hypothesis. The companies that have allocated the NRIA to both identified intangible assets and goodwill might consider the implications of the accounting choice even more and have therefore spent more time and resources on the allocation of the NRIA. The second test that supported the hypothesis was when the independent variable EqRat was clustered into two groups. However, no differences could be identified when the same variable was clustered into four groups and neither could it when the variable was divided into two equally large groups. These findings implies that it is only when dividing the companies into groups according to a certain criteria that it can be identified that Swedish companies are subject to contract costs. The findings are therefore not robust enough to support the hypothesis. In addition,

the tests based on the independent variable ROE failed to support that the selected accounting method was due to contract costs and neither could the tests support that it was due to income increasing reasons. The second hypothesis is therefore rejected.

Since the second hypothesis was rejected, the study is inconsistent with the studies by Shalev (2007) and Rehnberg (2012) which showed that highly indebted companies identify a larger proportion of intangible assets separately from goodwill compared to companies with low indebtedness. As a consequence, the study is also inconsistent with previous research and theories which states that companies are affected by their indebtedness when selecting accounting methods (Daley & Vigeland 1983; Watts & Zimmerman 1986; Inoue & Thomas 1996; Mande et al. 2000; Landry & Callimaci 2003). Neither could the study support that the profitability of a company affects the accounting choice, as discussed by previous research (DeFond & Jiambalvo 1994; Landry & Callimaci 2003).

The most remarkable difference when comparing the findings of this study to previous research is that this study is inconsistent with the result of the contract cost hypothesis in the study by Rehnberg (2012) even though the same data for the years 2005 – 2007 is included in both studies. A possible explanation for why the second hypothesis could not be supported in this study is that the data for the years 2008 – 2011 have been gathered per company and per year. As a result, the data gathered by Pernilla Rehnberg was merged in order to make the entire data, 2005 – 2011, per company and per year. Since the findings in this study were inconsistent with the findings in Rehnberg´s (2012) study, some tests were conducted with the merged data, i.e. the data for 2005 – 2007, in order to examine if the contract costs hypothesis maintained supported. These tests showed that contract costs no longer had a significant effect on the proportion of the NRIA allocated to identified intangible assets. Hence, the findings in this study might have supported the contract costs hypothesis if the data would have been gathered per business combination. The reason why the results differ is probably that when a company has carried out several business combinations during one year and when the data is gathered per business combination, this company will be included several times when conducting the tests and therefore might affect the results. For example, if a company have carried out several business combinations, have allocated a large proportion of the NRIA to identified intangible assets and is highly indebted, this will affect the contract costs hypothesis towards a non-rejection of the hypothesis.

In this study, only 84 out of 564 companies had an equity ratio below 30 %. Previous research has argued that the desirable level for the equity ratio is approximately 30 – 40 % which might be the reason why the second hypothesis does not hold in the study (Nilsson et al. 2002; Holmström 2007; Edenhammar et al. 2013). Furthermore, Skogsvik (1985) has found that failing companies had a significantly lower equity ratio than 30 %. There were therefore relatively few companies in this study that were subject to high contract costs since the companies with an equity ratio above 30 % are considered to be non-failing companies according to Skogsvik (1985). The non-failing companies therefore have no incentives to reduce their contract costs by allocating the NRIA to identified intangible assets. This might also be the reason why the study is inconsistent with the study by Jones (2011) where it was found that failing companies have incentives to capitalize intangible assets in order to avoid violating debt covenants. However, Jones (2011) studied companies that had failed while this is not the focus of this study. Finally, it is argued that the desirable level of the equity ratio varies with industry (Hansson et al. 2006; Holmström 2007; Larsson 2008). However, the companies in this study were only divided according to their indebtedness, the industry where they operate were not considered, which may be another reason for why the results could not support the contract costs hypothesis.

The preceding discussion could indicate that the companies, which this study was based on, were not suitable for testing the contract costs hypothesis since relatively few companies would be considered highly indebted. The companies included in this study might not be subject to high contract costs and therefore have no incentives to improve their financial position. Since it is argued that the desirable level of the equity ratio varies with industry, some companies could be subject to high (low) contract

costs even though their equity ratio is above (below) 30 %. The industry where they operate could have a higher (lower) desirable level of equity ratio and the company could therefore be subject to high (low) contract costs even at an equity ratio of, for example, 50 % (20 %). Furthermore, companies could be close to violate their debt covenants even though their equity ratio is acceptable. This could also imply that the indebtedness of a company is a bad proxy for contract costs, at least for this study, since most of the companies were not highly indebted. Since most companies were not highly indebted they might not have the need to identify intangible assets, even though it is argued that identified intangible assets are more suitable as collateral and more useful when predicting future benefits compared to goodwill (Wyatt 2005; Ritter & Wells 2006; Ekengren et al. 2007; Shalev 2007) and that it is of value to identify intangible assets (Forbes 2007; Oswald & Zarowin 2007). These are all potential explanations for why the second hypothesis could not be supported.

Finally, since the second hypothesis was rejected, the results indicate that Swedish listed companies allocate the NRIA in a similar way regardless of their indebtedness. This implies that the comparability among companies will not suffer from the influence of contract costs and the financial information is therefore more reliable.

5.3 Learning curve

In the tests of the third and final hypothesis, all but one failed to support the hypothesis at a significance level of 5 %. The test that was able to identify a learning curve was the simple linear regression when all the companies that have allocated all or nothing of the NRIA to identified intangible assets were excluded. Hence, this test supports the idea of a learning curve since the proportion of identified intangible assets is increasing for each year. A possible explanation for this result follows the same reasoning as for the political costs and contract costs hypotheses. Hence, when only analyzing the companies that have allocated the NRIA to both intangible assets and goodwill, it can be assumed that these companies have spent more time and resources on the allocation of the NRIA. Furthermore, the multiple regression analysis where all companies were included showed that the year 2009 significantly differs from the base year 2005 which indicates that a learning effect took place in 2009. However, the years 2010 and 2011 were not significantly different from the base year 2005 which implies that the increase of identified intangible assets in 2009 was due to other circumstances than the development of accounting practice. A potential cause for this increase might be that the business combinations carried out during 2009 were affected by the financial crisis and the companies were therefore inclined to report assets that are considered to be of more value (Forbes 2007) and more suitable as collateral (Ekengren et al. 2007; Shalev 2007). The reason why this did not occur in 2008 could be due to the fact that the business combinations were carried out before the outbreak of the crisis or that the companies did not have time to adapt to the economic recession. Since only one test implied that the accounting practice in Sweden has developed, there were not sufficient evidence to support the third hypothesis and it is therefore rejected.

According to the results of the third hypothesis no learning curve could be identified for the years 2005 – 2011. Rehnberg (2012) suggests that a development of accounting practice may take longer time than the three years studied in her dissertation, the findings of this study imply that seven years is still not enough. However, it can be discussed if such a development will ever occur. One reason for the absence of a learning curve might be that the previous standard applied by Swedish listed companies, RR 1:00, also required that the acquirer identified and recognized intangible assets not previously reported in the acquired company apart from goodwill when possible. Hence, the accounting practice might already be developed and the companies therefore possess the knowledge on how to identify intangible assets separately from goodwill.

Even though a learning curve regarding principle based disclosures have been identified by Marton and Runesson (2013) and it was argued by Ekengren et al. (2007) that the proportion of identified

intangible assets would increase in the future, a learning curve of the identification of intangible assets according to IFRS 3 cannot be identified in this study. This implies that the conclusion by Gauffin and Nilsson (2012) was correct, i.e. that no learning curve exists. Furthermore, since the proportion of identified intangible assets does not seem to increase over time, this study is in line with the research by Boulerne et al. (2011) and Hamberg et al. (2011).

Another reason for why this study did not find a learning effect regarding how to identify intangible assets according to IFRS 3 could be due to the fact that the business cycles during the studied period varies widely. The state of the economy has suffered from a financial crisis during the studied period which may have affected the accounting choices. This is illustrated in the multiple regression analysis since the year 2009 significantly differs from the base year 2005. Hence, the companies might have been subject to a learning curve although other factors outweighed the learning effect since the companies were subject to extreme fluctuations in the economy.

Finally, a considerably large proportion of the companies included in the study did not classify their acquisitions as significant. A possible reason for why a learning curve could not be identified might be that companies do not want to spend a substantial amount of time and resources on business combinations that are not considered to be significant investments for the companies. Hence, the companies could have learned how to identify intangible assets but do not want to devote a great deal of time and resources to non-significant acquisitions. However, IFRS 3 states that companies are required to identify and recognize intangible assets not previously reported in the acquired company apart from goodwill when possible. The requirement of identification of intangible assets applies to all business combinations, not only to those which are significant. Therefore, regardless of how significant the business combination is, intangible assets should still be reported separately from goodwill when possible.

5.4 Other findings

When collecting the data for this study, some companies were found to have allocated all or parts of the NRIA to goodwill even though they have specified what kind of intangible assets the goodwill was attributable to. Hence, intangible assets were identified although the company chose not to report them separately from goodwill. This definitely implies that at least some companies could allocate a larger proportion of the NRIA to identified intangible assets and that they have an opportunistic behavior. Furthermore, the comparability between companies that do separate identified intangible assets from goodwill and those which do not will also suffer.

As stated in the literature review, identifying and separating intangible assets from goodwill is of value (Forbes 2007). By providing information of what the goodwill is attributable to in the disclosures, the company will convey more useful information. However, by still allocating parts or all of the NRIA to goodwill, the company avoids depreciation of the intangible assets and will therefore report higher earnings.

It has been suggested that the demand for better implementation guidance and enforcement bodies would increase due to the uncertainty about how to apply the principle based regulations issued by IASB (Schipper 2005). This study supports this prediction since it is found that some companies do not allocate a part of the NRIA to identified intangible assets even though they have identified what the goodwill is attributable to. It especially supports the idea of a need for better enforcement bodies since some companies deliberately choose to account for business combinations in a way that is not in line with IFRS 3. The companies´ propensity not to separate intangible assets from goodwill is also something that the auditors and the users of the financial information need to be aware of.

6. Summary

This chapter will start with conclusions of the empirical findings and the analysis. Based on the conclusions, answers to the research questions will be provided. Finally, suggestions for further research will be presented.

6.1 Conclusions

The purpose of this thesis was to examine accounting choices related to IFRS 3 and how different incentives may affect the companies in the selection of accounting methods. Furthermore, we also wanted to establish whether the accounting practice has evolved since IFRS 3 became mandatory in 2005.

The research questions that this study intended to answer were the following:

1. *How do political costs and contract costs affect the allocation of the NRIA among identified intangible assets and goodwill when accounting for a business combination?*
2. *In what way has time affected the allocation of the NRIA among identified intangible assets and goodwill?*

The statistical tests of the first hypothesis did provide evidence supporting that political costs affect large companies to allocate a larger proportion of the NRIA to identified intangible assets compared to small companies in order to reduce earnings. Large companies are therefore affected by political pressure which is an important factor when accounting for business combinations. The results therefore imply that previous research regarding political costs can be applied to Swedish listed companies.

Furthermore, sufficient evidence to support the contract costs hypothesis could not be provided by this study, i.e. the indebtedness of Swedish listed companies does not affect the accounting choice. According to this study, highly indebted companies do not allocate a larger proportion of the NRIA to identified intangible assets compared to companies with low indebtedness. However, previous research suggests that an equity ratio of 30 – 40 % is usually desirable. A reason for why the contract costs hypothesis could not be supported in this study might be due to the fact that only 84 out of the 564 companies included had an equity ratio below 30 %. Furthermore, what is argued to be a desirable level of indebtedness varies across different industries which were something that this study did not consider.

Finally, this study could not prove that time has affected the accounting practice in Sweden and a learning curve on how to identify and separate intangible assets from goodwill when allocating the NRIA could therefore not be found. However, IFRS 3 is in many aspects similar to the standard previously applied by Swedish listed companies, RR 1:00. The requirement to identify and recognize intangible assets not previously reported in the acquired company apart from goodwill when possible was therefore applied prior to IFRS 3 as well. The possibility that companies possessed the knowledge on how to identify and recognize intangible asset separately from goodwill exists and that the accounting practice therefore already was developed.

A surprising discovery when reviewing the annual reports of companies that carried out business combinations was made. Some companies had allocated all or parts of the NRIA to goodwill even though they have specified what kind of intangible assets the goodwill was attributable to. Therefore, a better enforcement body might be needed since companies deliberately choose to account for business combinations in a way that is not in line with IFRS 3. The companies´ propensity not to separate intangible assets from goodwill is also something that the auditors and the users of the financial information need to be aware of.

As a summary of this study answers to the research questions will be provided. First, political costs affect large (small) companies to select income decreasing (increasing) accounting methods by allocating a larger (smaller) proportion of the NRIA to identified intangible assets. Hence, it can be

concluded that political costs affect the accounting choice when carrying out a business combination. Second, contract costs did not prove to affect the companies when allocating the NRIA among identified intangible assets and goodwill. The accounting choice was therefore not influenced by contract costs. Finally, time did not prove to have an impact on the allocation of the NRIA among identified intangible assets and goodwill. Hence, no development of accounting practice regarding the knowledge of how to identify intangible assets in a business combination was found in this study.

6.2 Suggestions for further research

When reviewing the annual reports it was found that a considerably large amount of the companies changed the appearance of how the acquisition computation was disclosed in the annual report during the years 2010 and 2011. For these two years, the companies only reported the fair value of the acquired net assets and did not report its adjustments from carrying value to fair value. Without this information, these companies avoid disclosing what assets and liabilities the acquired company had reported prior to the acquisition and therefore how large part of the purchase price that consisted of assets that the acquirer identified. It was surprising that such a large part of the companies changed the appearance of the disclosures during the same years. A study of the reasons behind this shift would be interesting since it might explain why so many companies have changed the appearance during the same years.

A surprising discovery in this study was that companies that had allocated all or parts of the NRIA to goodwill even though they had specified what kind of intangible assets the goodwill was attributable to were found when reviewing the annual reports. This implies that the companies openly show that they have an opportunistic behavior and that they account for business combinations in a way that is not in line with IFRS 3. A qualitative study of these companies would be relevant since it might explain their behavior and how this way of accounting for business combinations can be allowed.

Since a development of accounting practice could not be identified in this study, this finding suggests that the companies already had the knowledge of how to identify intangible assets acquired in a business combination. RR 1:00 is, in many aspects, similar to IFRS 3 and a study where the two standards are compared regarding the identification of intangible assets would therefore be interesting. Such a study would enable an understanding of whether or not the accounting practice has developed after the implementation of mandatory IFRS.

Finally, it would be interesting to study if the financial crisis has had any effect on the accounting choice since the results of this study indicate that this might be the case. Companies might have been subject to a learning curve although other factors outweighed the learning effect due to extreme fluctuations in the economy during the period studied.

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Appendix 1 – Companies included in the study

1.1 Companies included during the years 2005 – 2007

Companies listed on NASDAQ OMX Stockholm on November 1st 2007 which carried out at least one business combination during 2005 – 2007 and are included in the study. This list of companies is the one specified in the dissertation made by Rehnberg (2012).

AarhusKarlshamn
AcadeMedia
Acando
ACAP
A-Com
AddNode
Addtech
Alfa Laval
Aspiro
ASSA ABLOY
Atlas Copco
Audiodev
Autoliv
Axfood
B&B Tools
Ballingslöv
Beijer Alma
Beijer Electronics
Bilia
Biophausia
Biotage
Bong Ljungdahls
Broström
BTS
Bure
Cardo
Carl Lam
Carnegi
Cherryföretagen
Cision
Consilium
CTT Systems
Cybercom
Daydream
Digital Vision
Duroc
Elanders
Electa
Elektronikgruppen
Eniro
Ericsson
Expanda
Fagerhult
Feelgood
Framfab
Getinge
Gunnebo
Gunnebo Industri
Hagströmer & Qviberg
Hakon Invest
Haldex
Hemtex
Hexagon
HiQ International
HL Display
Human Care
Husqvarna
Industrial & Financial Systems
Indutrade
Intellecta
Intrum Justitia
Jeeves Information Systems
Kappahl
Kinnevik
Know IT
Lagercrantz Group
Latour
LBI International
Ledstiernan
Lindab
Mandator
Meda
Mekonomen
Midelfart
Midway
Mobyson
Modern Times Group
Modul
MSC
Modern Times Group
MultiQ International
Munters
Nederman
Nefab
New Wave
Nibe
NL Gruppen
Nobia
Nocom
Nolato

Nordnet
Note
Observer
Observer/Cicion
OEM International
OMX
One2com
OrcSoft
Orexo
Ortivus
PA Resources
Partner Tech
PEAB
Peab Industri
Phonera
Precise
Prevas
Pricer
Proffice
Reijlerkoncernen
RNB RETAIL AND BRANDS
Rörvik Timber
SAAB
Salus Ansvar
Sandvik
Sardus
SCA
Scania
Securitas
Securitas Systems
Semcon
Sigma
Skanska
SKF
Skistar
SSAB
Stora Enso
Studsvik
Sweco
Swedish Match
Systemair
Tele2
Teleca
Telelogic
TeliaSonera
Teligent
Thalamus
Ticket Travel Group
Trade Doubler
Trelleborg
Tricorna
Wise Group
Vitrolife
WM-data
Volvo
XANO
XPonCard
ÅF

1.2 Companies included during the years 2008 – 2011

Companies listed on NASDAQ OMX Stockholm on February 8th 2013 which carried out at least one business combination during 2008 – 2011 and are included in the study.

AarhusKarlshamn
Acando
ACAP Invest
Addnode Group
Addtech
Alfa Laval
Allenex (former Linkmed)
AllTele
Anoto Group
Aspiro
ASSA ABLOY
AstraZeneca
Atlas Copco
Axfood
B&B TOOLS
BE Group
Beijer Alma
Beijer Electronics
Betsson
Bilia
BillerudKorsnäs
Biotage
Björn Borg
Bong
Bure Equity
Byggmax Group
CDON Group
Cision
Connecta
Consilium
CTT Systems
Cypercom Group
Dedicare
DGS One
DORO
Duroc
Elanders
Electra Gruppen
Electrolux
Elekta
Elos
Eniro
EnQuest PLC
Ericsson
Etrion
Fagerhult
Feelgood
Fenix Outdoor
G&L Beijer
Getinge
Geveko
Global Health Partner
Gunnebo
Hakon Invest
Haldex
Hemtex
Hennes & Mauritz
Hexagon
HEXPOL
HiQ International
Husqvarna
I.A.R Systems Group (former Intoi)
Industrial & Financial Systems
Indutrade
Intellecta
Intrum Justitia
Investor
ITAB Shop Concept
Kinnevik
Know IT
Lagercrantz Group
Lammhults Design Group
Latour
Lindab International
Loomis
Meda
Medivir
Mekonomen
Micronic Mydata
Midsona (former Midelfart)
Midway
Modern Times Group
NCC
Nederman Holding
New Wave
NIBE Industrier
Nobia
Nolato
Nordic Service Partner Holdings
NOTE
NOVOTEK
OEM International
Opcon
Orexo
PEAB
Phonera

Poolia
Prevas
Proact IT Group
Proffice
Ratos
Rederi AB Transatlantic
Rejlerkoncernen
Rezidor Hotel Group
RNB RETAIL AND BRANDS
Rörvik Timber
SAAB
Sandvik
SCA
SCANIA
Securitas
Semcon
Sigma
Skanska
SKF
Softronic
SSAB
StjärnaFyrkant (former Mobyson)
Stora Enso
Studsvik
Svedbergs
SWECO
Swedish Match
Swedish Orphan Biovitrum (former Biovitrum)
Swedol
Systemair
Tele2
TeliaSonera
Tieto Oyi
Traction
Trelleborg
Trigon Agri
Unibet Group
VBG GROUP
Vitec Software Group
Vitrolife
Volvo
XANO Industri
ÅF
Öresund

1.2.1 Companies included in the robustness check during the years 2008 – 2011

Companies not listed on NASDAQ OMX Stockholm on February 8th 2013 which carried out at least one business combination during 2008 – 2011 and are included in the robustness check.

AcadeMedia
Cardo
Elektronikgruppen
HL Display
Jeeves Information Systems
LBI International
Morphic Technologies
Munters
Niscayah Group
NovaCast Technologies
Orc Software
PSI Group
Seco Tools
Skanditek Industriförvaltning
Ticket Travel Group
Tricorona

Appendix 2 – Tests conducted with the Fair Value Adjustments companies

Table 2.0.1: Descriptive data for the variables

	N	Minimum	Maximum	Mean	Median	Std. Deviation
Dependent variable						
IntA	497	,0000	1,0000	,235475	,124094	,2928250
Independent variable						
Year	497	2005	2011			
TotA	497	42459	377173440	17657600,59	2243385,00	43954358,093
Ln_TotA	497	10,66	19,75	14,9533	14,6235	1,86248
Rev	497	13200	264749000	15218778,16	2394096,00	33624511,219
Ln_Rev	497	9,49	19,39	14,9473	14,6885	1,83993
EqRat	497	,0334	,9495	,460227	,438918	,1713390
ROE	497	-2,8253	3,6768	,155300	,193301	,3882511
ROA	497	-1,2215	,4137	,074468	,092771	,1414114

2.1 Political costs

Table 2.1.1: Mann-Whitney U test based on the independent variable Seg

Segment	N	Mean Rank	Sum of Ranks		IntA
Large companies (Large Cap)	134	260,65	34927,50	Mann-Whitney U	22759,500
Small Companies (Mid & Small Cap)	363	244,70	88825,50	Wilcoxon W	88825,500
Total no. of business combinations	497			Z	-1,115
				Asymp. Sig. (2-tailed)	,265

Graph 2.1.1: Scatter plot of the dependent variable IntA and the independent variable Ln_TotA

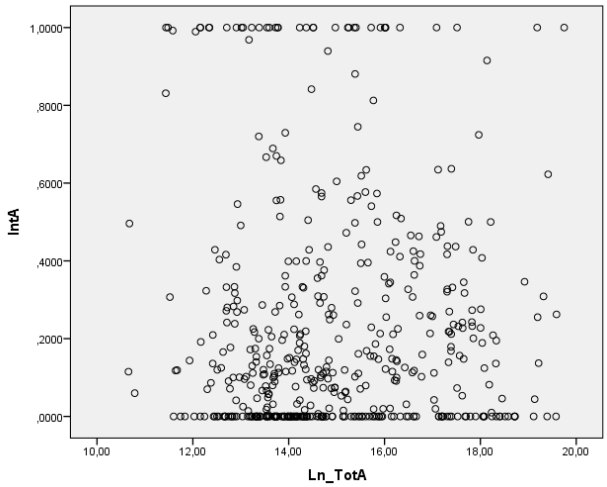

Table 2.1.2: Simple linear regression based on the independent variable Ln_TotA

		Unstandardized Coefficients		Standardized Coefficients		
Variable	**Prediction**	**B**	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)		,255	,106		2,397	,017
Ln_TotA	+	-,001	,007	-,008	-,187	,852

Table 2.1.3: Simple linear regression based on the independent variable Ln_TotA where all the companies which have only reported goodwill or intangible assets are excluded

		Unstandardized Coefficients		Standardized Coefficients		
Variable	**Prediction**	**B**	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)		,168	,096		1,750	,081
Ln_TotA	+	,006	,006	,056	,990	,323

Table 2.1.4: Mann-Whitney U test based on the clustered independent variable Ln_TotA

Logarithm of total assets (mean)	**N**	**Mean Rank**	**Sum of Ranks**		**IntA**
Large companies (16,85)	201	270,97	54465,50	Mann-Whitney U	25331,500
Small Companies (13,66)	296	234,08	69287,50	Wilcoxon W	69287,500
Total no. of business combinations	497			Z	-2,852
				Asymp. Sig. (2-tailed)	,004

Table 2.1.5: Mann-Whitney U test based on the independent variable Ln_TotA divided into two equally large groups

Logarithm of total assets (median)	**N**	**Mean Rank**	**Sum of Ranks**		**IntA**
Large companies (> 14,6235)	248	263,73	65406,00	Mann-Whitney U	27222,000
Small companies (< 14,6235)	249	234,33	58347,00	Wilcoxon W	58347,000
Total no. of business combinations	497			Z	-2,316
				Asymp. Sig. (2-tailed)	,021

2.2 Contract costs

Graph 2.2.1: Scatter plot of the dependent variable IntA and the independent variable EqRat

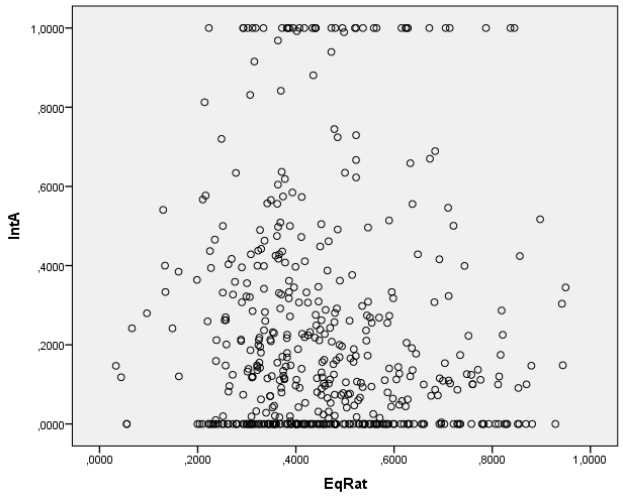

Table 2.2.1: Simple linear regression based on the independent variable EqRat

		Unstandardized Coefficients		Standardized Coefficients		
Variable	**Prediction**	**B**	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)		,268	,038		7,104	,000
EqRat	-	-,070	,077	-,041	-,913	,362

Table 2.2.2: Simple linear regression based on the independent variable EqRat where all the companies which have only reported goodwill or intangible assets are excluded

		Unstandardized Coefficients		Standardized Coefficients		
Variable	**Prediction**	**B**	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)		,339	,033		10,256	,000
EqRat	-	-,171	,069	-,140	-2,485	,013

Table 2.2.3: Mann-Whitney U test based on the clustered independent variable EqRat

Equity ratio (mean)	**N**	**Mean Rank**	**Sum of Ranks**		**IntA**
High equity ratio (61 %)	223	236,25	52684,00	Mann-Whitney U	27708,000
Low equity ratio (34 %)	274	259,38	71069,00	Wilcoxon W	52684,000
Total no. of business combinations	497			Z	-1,812
				Asymp. Sig. (2-tailed)	,070

Table 2.2.4: Kruskal-Wallis test based on the clustered independent variable EqRat

Mean of equity ratio	N	Mean Rank		IntA
76 %	74	231,80	Chi-Square	4,116
52 %	171	238,25	df	3
36 %	191	263,07	Asymp. Sig.	,249
22 %	61	255,95		
Total no. of business combinations	497			

Table 2.2.5: Mann-Whitney U test based on the independent variable EqRat divided into two equally large groups

Equity ratio	N	Mean Rank	Sum of Ranks		IntA
High equity ratio (> 43,90 %)	249	239,01	59512,50	Mann-Whitney U	28387,500
Low equity ratio (< 43,90 %)	248	259,03	64240,50	Wilcoxon W	59512,500
Total no. of business combinations	497			Z	-1,578
				Asymp. Sig. (2-tailed)	,115

Table 2.2.6: Simple linear regression based on the independent variable ROE

		Unstandardized Coefficients		Standardized Coefficients		
Variable	Prediction	B	Std. Error	Beta	t	Sig.
(Constant)		,237	,014		16,760	,000
ROE	-	-,012	,034	-,016	-,355	,723

Table 2.2.7: Simple linear regression based on the independent variable ROE where all the companies which have only reported goodwill or intangible assets are excluded

		Unstandardized Coefficients		Standardized Coefficients		
Variable	Prediction	B	Std. Error	Beta	t	Sig.
(Constant)		,269	,013		21,227	,000
ROE	-	-,037	,029	-,072	-1,270	,205

2.3 Learning curve

Table 2.3.1: Simple linear regression based on the independent variable Year

		Unstandardized Coefficients		Standardized Coefficients		
Variable	Prediction	B	Std. Error	Beta	t	Sig.
(Constant)		7,108	14,152		,502	,616
Year	+	-,003	,007	-,022	-,486	,627

Table 2.3.2: Simple linear regression based on the independent variable Year where all the companies which have only reported goodwill or intangible assets are excluded

		Unstandardized Coefficients		Standardized Coefficients		
Variable	**Prediction**	**B**	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)		-17,483	12,605		-1,387	,166
Year	+	,009	,006	,080	1,408	,160

Table 2.3.3: Multiple regression based on the independent variable Year with 2005 as the base year

		Unstandardized Coefficients		Standardized Coefficients		
Variable	**Prediction**	**B**	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)		,241	,036		6,646	,000
2006	+	,008	,049	,009	,152	,879
2007	+	-,022	,046	-,031	-,479	,632
2008	+	-,017	,049	-,021	-,344	,731
2009	+	,071	,052	,080	1,364	,173
2010	+	-,032	,053	-,035	-,609	,543
2011	+	-,045	,054	-,047	-,819	,413

Table 2.3.4: Multiple regression based on the independent variable Year with 2005 as the base year where all the companies which have only reported goodwill or intangible assets are excluded

		Unstandardized Coefficients		Standardized Coefficients		
Variable	**Prediction**	**B**	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)		,272	,031		8,751	,000
2006	+	-,047	,042	-,087	-1,119	,264
2007	+	-,035	,039	-,072	-,890	,374
2008	+	,006	,042	,012	,152	,879
2009	+	,052	,049	,073	1,049	,295
2010	+	-,025	,047	-,038	-,539	,591
2011	+	,036	,048	,052	,740	,460

Table 2.3.5: Tukey HSD test based on the independent variable Year

(I) Year	**(J) Year**	**Mean Difference (I-J)**	**Std. Error**	**Sig.**
2005	2006	-,0075048	,0493120	1,000
	2007	,0222315	,0463756	,999
	2008	,0167855	,0487514	1,000
	2009	-,0711634	,0521884	,821
	2010	,0321801	,0528801	,997
	2011	,0446188	,0544684	,983

Table 2.3.6: Kruskal-Wallis test based on the independent variable Year

Year	N	Mean Rank		IntA
2005	65	254,58	Chi-Square	3,635
2006	77	266,47	df	6
2007	103	248,95	Asymp. Sig.	,726
2008	81	243,14		
2009	61	261,20		
2010	58	232,00		
2011	52	230,06		
Total no. of business combinations	497			

Appendix 3 – Tests conducted with the independent variables Ln_Rev and ROA

3.1 Tests where all companies are included

Table 3.1.1.: Descriptive data for the variables

	N	Minimum	Maximum	Mean	Median	Std. Deviation
Independent variable						
Rev	564	13200	310367000	18229017,05	2654821,00	38956164,010
Ln_Rev	564	9,49	19,55	15,0869	14,7919	1,89314
ROA	564	-1,2215	,4137	,074280	,091541	,1427294

3.1.1 Political costs (Ln_Rev)

Graph 3.1.1.1: Scatter plot of the dependent variable IntA and the independent variable Ln_Rev

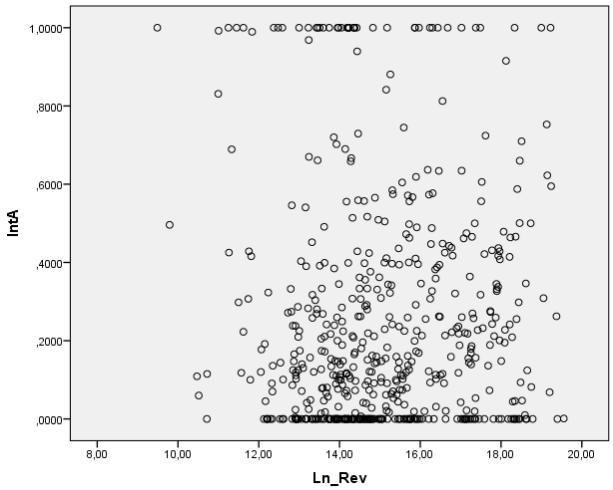

Table 3.1.1.1: Simple linear regression based on the independent variable Ln_Rev

		Unstandardized Coefficients		Standardized Coefficients		
Variable	**Prediction**	**B**	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)		,215	,099		2,175	,030
Ln_Rev	+	,002	,006	,016	,370	,711

Table 3.1.1.2: Simple linear regression based on the independent variable Ln_Rev where all the companies which have only reported goodwill or intangible assets are excluded

		Unstandardized Coefficients		Standardized Coefficients		
Variable	**Prediction**	**B**	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)		,126	,085		1,483	,139
Ln_Rev	+	,010	,006	,090	1,738	,083

Table 3.1.1.3: Mann-Whitney U test based on the clustered independent variable Ln_Rev

Logarithm of revenue (mean)	N	Mean Rank	Sum of Ranks		IntA
Large companies (17,34)	180	316,38	56949,00	Mann-Whitney U	28461,000
Small Companies (14,03)	384	266,62	102381,00	Wilcoxon W	102381,000
Total no. of business combinations	564			Z	-3,415
				Asymp. Sig. (2-tailed)	,001

Table 3.1.1.4: Mann-Whitney U test based on the independent variable Ln_Rev divided into two equally large groups

Logarithm of revenue (median)	N	Mean Rank	Sum of Ranks		IntA
Large companies (> 14,7919)	282	299,68	84510,00	Mann-Whitney U	34917,000
Small companies (< 14,7919)	282	265,32	74820,00	Wilcoxon W	74820,000
Total no. of business combinations	564			Z	-2,529
				Asymp. Sig. (2-tailed)	,011

3.1.2 Contract costs (ROA)

Table 3.1.2.1: Simple linear regression based on the independent variable ROA

		Unstandardized Coefficients		Standardized Coefficients		
Variable	Prediction	B	Std. Error	Beta	t	Sig.
(Constant)		,251	,014		18,146	,000
ROA	-	-,005	,086	-,002	-,056	,956

Table 3.1.2.2: Simple linear regression based on the independent variable ROA where all the companies which have only reported goodwill or intangible assets are excluded

		Unstandardized Coefficients		Standardized Coefficients		
Variable	Prediction	B	Std. Error	Beta	t	Sig.
(Constant)		,276	,012		22,879	,000
ROA	-	-,042	,072	-,030	-,581	,561

3.2 Tests with the FVA companies

Table 3.2.1: Descriptive data for the variables

	N	Minimum	Maximum	Mean	Median	Std. Deviation
Independent variable						
Rev	497	13200	264749000	15218778,16	2394096,00	33624511,219
Ln_Rev	497	9,49	19,39	14,9473	14,6885	1,83993
ROA	497	-1,2215	,4137	,074468	,092771	,1414114

3.2.1 Political costs (Ln_Rev)

Graph 3.2.1.1: Scatter plot of the dependent variable IntA and the independent variable Ln_Rev

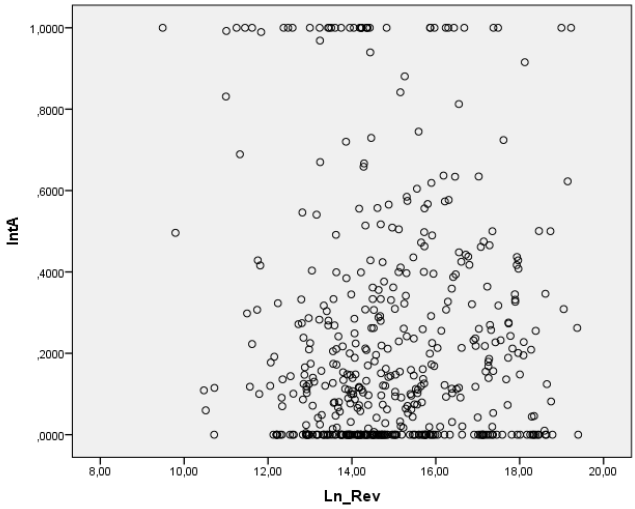

Table 3.2.1.1: Simple linear regression based on the independent variable Ln_Rev

		Unstandardized Coefficients		Standardized Coefficients		
Variable	**Prediction**	**B**	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)		,296	,108		2,744	,006
Ln_Rev	+	-,004	,007	-,025	-,562	,575

Table 3.2.1.2: Simple linear regression based on the independent variable Ln_Rev where all the companies which have only reported goodwill or intangible assets are excluded

		Unstandardized Coefficients		Standardized Coefficients		
Variable	**Prediction**	**B**	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)		,163	,095		1,712	,088
Ln_Rev	+	,007	,006	,060	1,045	,297

Table 3.2.1.3: Mann-Whitney U test based on the clustered independent variable Ln_Rev

Logarithm of revenue (mean)	**N**	**Mean Rank**	**Sum of Ranks**		**IntA**
Large companies (17,22)	148	272,06	40265,50	Mann-Whitney U	22412,500
Small Companies (13,98)	349	239,22	83487,50	Wilcoxon W	83487,500
Total no. of business combinations	497			Z	-2,366
				Asymp. Sig. (2-tailed)	,018

Table 3.2.1.4: Mann-Whitney U test based on the independent variable Ln_Rev divided into two equally large groups

Logarithm of revenue (median)	N	Mean Rank	Sum of Ranks		IntA
Large companies (> 14,6885)	248	257,22	63790,50	Mann-Whitney U	28837,500
Small companies (< 14,6885)	249	240,81	59962,50	Wilcoxon W	59962,500
Total no. of business combinations	497			Z	-1,292
				Asymp. Sig. (2-tailed)	,196

3.2.2 Contract costs (ROA)

Table 3.2.2.1: Simple linear regression based on the independent variable ROA

		Unstandardized Coefficients		Standardized Coefficients		
Variable	**Prediction**	**B**	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)		,238	,015		16,028	,000
ROA	-	-,036	,093	-,018	-,392	,696

Table 3.2.2.2: Simple linear regression based on the independent variable ROA where all the companies which have only reported goodwill or intangible assets are excluded

		Unstandardized Coefficients		Standardized Coefficients		
Variable	**Prediction**	**B**	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)		,271	,013		20,505	,000
ROA	-	-,110	,079	-,079	-1,386	,167