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**DETERMINANTS OF GOODWILL IMPAIRMENTS UNDER IAS 36 – EXAMINATION OF
FINNISH LISTED COMPANIES**

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Abstract			
<p>One of the most significant development in the International Financial Reporting Standards (IFRS) has been the increased use of fair values as the most commonly used asset valuation approach. According to standard setters, the use of fair value estimates in valuing assets provides users of financial information more timely, accurate and transparent information of the underlying economic condition of companies that apply IFRS standards in their financial statements. This in turn improves the decision usefulness of financial information reported in these financial statements. Nevertheless, valuing assets at their fair values can be a complex task which requires a number of managers' assumptions and estimations for the valuation of assets that are not actively traded in markets. Further, assets that are valued at their fair values can be opportunistically overstated or understated when such managements' unverifiable estimates are used in valuing assets.</p> <p>The issue with unverifiable estimates is especially problematic with goodwill, which is recognized in a business combination as the excess of the purchase price and the fair value of net assets received in the acquisition. The current IFRS standards require companies to carry out an annual impairment test for goodwill instead of straight-line amortization. According to the International Accounting Standard (IAS) 36 <i>Impairment of Assets</i>, companies that apply IFRS standards in their financial reporting must apply fair value estimates to determine goodwill impairments. That is, a company must record a goodwill impairment loss if the fair value of a cash-generating unit to which goodwill has been allocated is less than its carrying amount. The IAS 36 standard itself does not give specific guidelines on how the goodwill impairment test should be executed. Thus, the standard may provide managers incentives to opportunistically manipulate the outcomes of goodwill impairment tests in order to overstate or understate earnings.</p> <p>The purpose of the thesis is to examine the determinants of goodwill impairment losses in Finnish listed companies. The determinants examined in the thesis are divided into three categories: the economic or actual indications of goodwill impairments, managerial discretion and corporate governance mechanisms. Firstly, the thesis examines the actual economic occurrences that impact on goodwill impairment losses in Finnish listed companies. Secondly, the thesis studies the extent to which managers of Finnish listed companies utilize discretion in goodwill impairment decisions. Finally, the effect of corporate governance mechanisms on goodwill impairment losses is investigated to determine whether the managers of Finnish listed companies are opportunistically manipulating goodwill impairment tests or if indications of opportunistic behavior are in fact due to managers' attempts to convey their private information on the underlying economic condition of the company.</p> <p>The findings of the thesis indicate that the leading economic factors affecting goodwill impairment losses are a company's book-to-market ratio and the amount of goodwill to total assets. The results show that the higher a company's book-to-market ratio the more likely the company is to report a goodwill impairment loss. Likewise, the higher the amount of goodwill is to total assets the more likely a company is to impair goodwill. These results are consistent with a number of prior research on the subject. Furthermore, as predicted, the results disclose that Finnish listed companies that have experienced a recent change in CEO are more likely to impair goodwill. Newly appointed CEOs may be more inclined to impair goodwill in order to blame the impairments on the previous CEO. On the other hand, new CEOs may impair goodwill as they try to help a troubled company by restructuring a company's assets. Finally, the results show a significant relationship between big bath behavior and goodwill impairment losses: companies that have abnormally low earnings are more likely to report goodwill impairment losses during in order to report higher future earnings. However, the results show no significant relationship between goodwill impairment losses and corporate governance mechanisms. This could mean that the managers of Finnish listed companies may be to some extent manipulating the outcomes goodwill impairment tests.</p> <p>The results of the thesis should be of standard setter's interest. In order to assess if IAS 36 serves its purpose to provide users of financial information more timely and decision usefulness information on the fair values of a company's assets and value, the standard setters should evaluate the findings of studies on goodwill impairment losses and the determinants that explain them. Additionally, the results of the thesis can be used in order to identify the circumstances in which managers may have incentives to opportunistically manipulate outcomes of goodwill impairment tests.</p>			
Keywords IFRS, IAS 36, Goodwill accounting, Managerial discretion			
Additional information			

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1 INTRODUCTION

1.1 Background to the Topic

The International Financial Reporting Standards (IFRS) have been developing rapidly during the last couple of decades. One of the most significant changes in international accounting has been the increased use of reporting assets at their fair values instead of using the traditional historic cost approach. According to the International Accounting Standards Board (IASB) and other advocates of fair value approach to valuing assets, the use of fair values provides users of financial statements more accurate, timely, and transparent information on the current fair value of a company and its underlying economics. Nevertheless, valuing assets that are not actively traded in markets is a complex task that requires a number of managements' assumptions when market prices are not readily available. This is especially the case with goodwill, which is recognized in a business combination as the excess of the purchase price and the fair value of net assets received in the acquisition. (Lhaopadchan, 2010.)

Currently, the IFRS standards require an annual impairment test for goodwill instead of straight-line amortization. Under the International Accounting Standard (IAS) 36 *Impairment of Assets* issued in 2004, firms that apply IFRS standards in their financial reporting must use fair value estimates to determine goodwill impairments. Thus, a firm must record a goodwill impairment loss when the fair value of a cash-generating unit to which goodwill has been allocated is less than its carrying amount. In order to determine if there has been a decline in the value of goodwill, managers must observe economic indications that may signal an impairment in goodwill. (IASB, 2004.)

The shift from the amortization of goodwill to the contemporary impairment approach reflects the IASB's intention to enhance the decision usefulness of financial information (Hitz, 2007). Nevertheless, the IAS 36 standard itself does not give precise guidelines on how the goodwill impairment test should be carried out. Therefore, companies have been found to have issues in executing the impairment

tests in compliance with the core principles of IAS 36 (Petersen & Plenborg, 2009; Carlin & Finch, 2011). Furthermore, goodwill impairment tests under IAS 36 are subject to managers' discretion in the valuation of goodwill due to the numerous assumptions required in order to evaluate the recoverable amount of the unit to which goodwill has been allocated. These assumptions may be difficult to verify and, therefore, these unverifiable managements' estimates in goodwill impairment tests can corrode the information content of goodwill and financial statements (Watts, 2003). Moreover, IAS 36 provides managers with possibilities to opportunistically exploit goodwill impairment tests for agency-based motives: because the standard allows multiple possibilities to define the fair value of goodwill, there is a broad set of techniques to bias the impairment test (Wines, Dagwell and Windsor, 2007). Consequently, if managers use their discretion to manipulate outcomes of goodwill impairment tests for their own favor, the IAS 36 standard fails to fulfill its purpose to improve the value relevance of financial statements. Indeed, instead of arbitrary impairments based on opportunistic motives, goodwill impairment losses under IAS 36 should be followed by real economic or actual declines in the value of goodwill (Lhaopadchan, 2010).

There is a growing body of evidence on circumstances where managers' may have incentives to manipulate the outcomes of goodwill impairment tests. Firstly, managers may have incentives to understate goodwill impairment losses to attain earnings targets if their bonus schemes are linked to earnings. Secondly, managers may be willing to overstate earnings and total assets by delaying goodwill impairment losses, especially when they face a threat of violating debt covenants when such contract violation causes drastic financial costs. (Beatty & Weber, 2006.)

On the other hand, in some cases managers may have incentives to report abnormally high goodwill impairment losses. For instance, if a company's earnings are abnormally high or low, managers may be inclined to overstate goodwill impairment losses. The rationale behind reporting higher goodwill impairment losses in such cases is that managers may try to follow an equilibrium earnings reporting strategy by smoothing reported earnings with goodwill impairment losses in order to increase prospective earnings (AbuGhazaleh, Al-Hares & Roberts, 2011). On contradiction,

abnormally low earnings may provide managers an incentive to engage in big bath behavior in which goodwill impairment losses are intentionally reported with low operational earnings to increase future earnings (Saastamoinen & Pajunen, 2012). Newly appointed CEOs may also be motivated to report opportunistic goodwill impairment losses shortly after appointment so that reported impairment losses could be blamed on the previous CEO or in order to increase future performance of the company (Masters-Stout, Costigan & Lovata, 2008).

Despite numerous findings of managers' opportunistic behavior inherent in the current goodwill impairment testing approach under IAS 36, some studies argue that instead of behaving opportunistically, managers are in fact more likely to convey their private information on the current economic condition of the company through goodwill impairment tests. For example, AbuGhazaleh et al. (2011) find significant relationships between efficient corporate governance mechanisms and goodwill impairment losses which, according to the authors, indicates that managers are more likely to follow the objectives of IAS 36 than opportunistically overstate or understate goodwill impairment losses. Further, Jarva (2009) finds that goodwill impairment losses have a significant predictive power on future cash flows in a sample of US listed companies. These mixed and contradicting results reflect the ongoing dispute on whether goodwill impairment tests under IAS 36 provides more timely information on the underlying economics of a company or are more likely to be opportunistically exploited by managers due to agency-based motives.

The Finnish listed companies have been applying IFRS reporting standards in their financial statements since 2004 and applied goodwill impairment tests in their financial statements for the first time in the preparation of financial statements in 2005. The shift from the traditional Finnish accounting standards to the IFRS reporting framework caused a major change in the accounting treatment for goodwill and is therefore of high interest as a research subject. Further, there is no clear consensus in Finland on whether the IAS 36 standard serves its purpose to increase the information content of the underlying economic value of goodwill carried in a firm's balance sheet or if it allows managers to opportunistically report goodwill impairment losses as they wish. Given the conflicting opinions on IAS 36 among

Finnish academics and practitioners, Finnish listed companies provide an interesting ground for a study on the determinants of goodwill impairments. (Pajunen & Saastamoinen, 2013.)

1.2 Purpose of the Study

Motivated by the discussion above, the purpose of the study is to examine determinants of goodwill impairment losses in Finnish listed companies. The study focuses on three categories of determinants of goodwill impairment losses outlined in prior research:

- The economic indications of goodwill impairments;
- Managerial discretion in goodwill impairment decisions
- The effect of corporate governance quality on goodwill impairment decisions.

The economic or actual indications of goodwill impairments are factors that signal a decline in the carrying value of goodwill and, hence, should lead to managers' decision to impair goodwill. The core purpose of IAS 36, as mentioned above, is to provide timely and reliable information on the actual value of goodwill that a firm possesses and, therefore, any indications that signal an impairment in goodwill should lead to goodwill impairments. Nevertheless, in some instances managers' may avoid goodwill impairments by utilizing their discretion in the goodwill impairment test. They may simply avoid impairing goodwill due to agency-based motives. Given that goodwill under the impairment approach requires managers' unverifiable estimates, the information content of goodwill declines when managers opportunistically manipulate the outcome of the impairment test. Managers' discretion inherent in the goodwill impairment process is the core issue of IAS 36 and other accounting standards that require impairment tests for goodwill, such as Statement of Accounting Standards (SFAS) 142, *Goodwill and Other Intangible Assets*. On the other hand, the problems of possible opportunistic agency-based activities in goodwill impairment tests may be alleviated with effective corporate governance mechanisms: when managers are properly monitored and incentivized,

they may be less inclined to opportunistically manipulate unverifiable estimates required in the goodwill impairment test.

Consequently, the study examines the key economic indications that lead to managers to report goodwill impairment losses. Secondly, the extent to which managers use discretion in goodwill impairment decisions to opportunistically overstate or understate goodwill impairment losses is studied in detail. Thirdly, the study aims to shed light on the relationship between corporate governance mechanisms and goodwill impairment losses to find out whether any indications of opportunistic behavior in goodwill impairment tests are due to managers discretion or managers' attempts to convey their private information on the underlying economics of the firm through goodwill impairment tests.

The study attempts to contribute to recent literature on goodwill impairment decisions and extend the study of Saastamoinen and Pajunen (2012) who studied managerial discretion in goodwill impairment decisions among Finnish listed companies between 2005 and 2009. The study includes non-financial proxies for corporate governance quality as suggested by Saastamoinen and Pajunen (2012) and Wines et al. (2007). Further, the study applies approaches similar to AbuGhazaleh et al. (2011) in their study on managers' discretion in goodwill impairment decisions among UK listed companies.

1.3 Research Method

The empirical research on determinants of goodwill impairment losses in Finnish listed companies is carried out by applying a pooled regression model on a panel data. Research data used in the study is constructed of Finnish companies listed in Nasdaq OMX Helsinki between 2010 and 2014. The data is gathered from these companies' financial statements, annual reports and statements of corporate governance.

The study focuses on goodwill impairment tests under IAS 36. However, findings of prior research on goodwill impairment tests under SFAS 142 are being discussed and

reflected to studies on companies applying IAS 36 because of the similarities between the two standards. The study uses quantitative approaches to study the determinants of goodwill impairment losses. However, qualitative descriptions are used in defining goodwill and the historical and present trend of goodwill accounting.

1.4 Organization of the Study

Chapter one provided a brief introduction into the research topic and described the ongoing debate on the accounting treatment for goodwill and the issue of unverifiable estimates applied in the valuation process of goodwill. The rest of the paper is organized as follows: the historical and present trend of international accounting for goodwill is introduced in chapter two. The ongoing debate on what goodwill actually is and how it should be treated in the books is introduced in section 2.1. Furthermore, the section describes the development of international accounting standards for goodwill. Section 2.2 outlines the process of recognizing goodwill in business combinations under IFRS 3. In addition, the issue of internally generated goodwill as well as the concept of negative goodwill are introduced. Finally, the current accounting treatment for goodwill under IAS 36 is explained in detail in section 2.3.

Chapter three discusses prior research on the determinants of goodwill impairment losses by first looking on the economic indications of goodwill impairments suggested by IAS 36 and academic research in section 3.1. Literature on managerial discretion in goodwill impairment decisions is reviewed in section 3.2. The intertwined nature of the quality of a firm's corporate governance mechanisms and managers' goodwill impairment decisions is discussed in section 3.3. In addition to the literature review provided in chapter three, research hypotheses for the empirical study are introduced after each section.

The empirical part of the study is explained in chapter four. The basis for the empirical research is explained in section 4.1 in which the process of sample selection and data source is described. Additionally, the proxies for economic

indications, managerial discretion and corporate governance quality are defined in section 4.1. The regression model applied in the regression analysis of the determinants of goodwill impairment losses is introduced in sub section 4.1.3. The descriptive statistics for the determinants of goodwill impairment losses tested in the regression analysis are presented in section 4.2. To test the hypotheses presented in chapter three, the results of the regression model are presented in section 4.3. Interpretations of the results are also provided in section 4.3. Additional analyses on regression results and robustness tests are also carried out in section 4.4. Finally, the purpose of the study and its findings are summarized in chapter five. Avenues for future research and notions of the limitations and caveats of the current study are also provided in the final chapter.

2 ACCOUNTING FOR GOODWILL

2.1 History of Goodwill Accounting

2.1.1 Definition of Goodwill

The earliest attempts to define goodwill can be traced back to late 19th and early 20th centuries. One of the first attempts to define goodwill can be found in Bitchell's *A Counting House Dictionary* of 1882, in which goodwill is characterized as "a willingness of an owner of a business to relinquish the expectation of the business by transferring it for a consideration to someone else, which is known as 'selling the goodwill of that business'" (Bitchell, 1882). Yang (1927), on the other hand, articulates that goodwill must be generated as a result of a business acquisition and must be accurately measurable. Furthermore, Yang (1927) notes that goodwill must be persistent and of definite duration.

In addition to the business acquisition approach to defining goodwill as presented by Yang (1927), goodwill has been defined in terms of the excess profit approach in the past literature. For example, Spacek (1964) defines goodwill as the present value of forecasted future earnings in excess of a reasonable return on assets. Similarly to Spacek (1964), Ma and Hopkins (1988) conceptualized goodwill as "the capitalized value of the future stream of superior earnings of the business acquired". Nevertheless, determining goodwill through the excess profit approach as described above is perceived uncongenial task since future earnings are difficult to predict reliably (Seetharaman, Balachandran & Saravanan, 2004).

Johnson and Petrone (1998) provide two alternative approaches to defining goodwill. According to the authors, goodwill can be viewed from a top-down or a bottom-up perspective. Under a top-down perspective, goodwill is perceived as an integrated component of a larger entity. In other words, goodwill can be viewed as a component of the acquirer's investment in the business being acquired, which is based on the acquirer's anticipations of future earnings from the acquired business. In this perspective, the acquirer's investment is decomposed into its constituent parts and

after the identifiable assets comprising the investment are identified and recorded the remainder is assigned to goodwill. Thus, goodwill is what is “left over” after the investment is broken down into its constituent components. The top-down perspective as described by Johnson and Petrone (1998) is the current basis for how goodwill is determined and recorded in a business combination under IFRS reporting framework (IFRS 3.32). (Johnson & Petrone, 1998.)

A bottom-up perspective is the opposite of a top-down approach. Under a bottom-up perspective, goodwill can be viewed in terms of the components that generate it. According to a bottom-up perspective, if the price by the acquirer is larger than the fair value of the net identifiable assets of the business being acquired, it can be expected that some other valuable resources were acquired in addition to the identifiable assets. Johnson and Petrone (1998) present six possible component parts that might represent goodwill under a bottom-up perspective. Firstly, goodwill can represent the excess of the fair values over the book values of the acquiree’s identified net assets. Alternatively, goodwill can represent the fair values of other net assets not identified by the acquiree. Secondly, goodwill may arise from a possible overvaluation of the acquired business due to the errors in valuing the acquiree’s assets or, on the other hand, it may be a result of an overpayment by the acquirer which may occur if the purchase price increases because of adverse bidding for the acquiree. Thirdly, goodwill can represent a “going concern” element of the acquiree’s business or synergies that arise from combining the acquirer’s and acquiree’s businesses and assets. The “going concern” element represents the ability of the acquiree to earn a higher rate of return on an organized combination of assets than would be expected if those assets were acquired separately. (Johnson & Petrone, 1998.)

Johnson and Petrone (1998) note that, under a bottom-up perspective, only synergy and “going concern” components can be conceptually perceived as constituents of goodwill out of the six components presented above, and are therefore termed as “core goodwill”. According to Johnson and Petrone (1998), “going concern” component can be interpreted as pre-existing, internally generated goodwill or goodwill that has been accumulated from previous business combinations by the

acquiree. On the contrary, the synergy component of goodwill does not exist before that acquisition: it is a result from the combination and can be therefore labeled as “combination goodwill”. (Johnson & Petrone, 1998.)

Given the discussion above, goodwill is intangible, immeasurable and cannot be separated from assets or an entity that makes it up without acquiring the whole company or a significant portion of it (Seetharaman, Sreenivasan, Sudha & Yee, 2006). It is usually defined as the value assigned to intangible assets such as reputation, competitive employees, good contacts within the industry, favorable business locations, and other particular features of the company for which another company is willing to pay excess of the value of acquiree’s net assets (Seetharaman et al., 2006). The discussion illustrates the ongoing dispute on the definition of goodwill.

2.1.2 Accounting Treatment of Goodwill

Due to the lack of agreement on how goodwill should be defined, there has not been a clear consensus in the past literature on how goodwill should be treated in the financial accounts after it has been recorded as an acquisition cost (Lee, 1971). Early proposals on the accounting treatment for goodwill suggested that the valuation of goodwill should be based on valuing a stream of forecasted future income, or, on capitalizing surplus profits after interest. Nevertheless, due to the arbitrary nature of such valuation processes, there has been a growing body of alternative proposals on goodwill accounting treatment. (Seetharaman et al., 2004.)

Seetharaman et al. (2004) divide the accounting treatment for goodwill into three schools of thought that represent different approaches to goodwill accounting. Firstly, goodwill should be written off wholly from the books immediately after it has been purchased. The proponents of this view argue that goodwill should be written off against retained earnings instead of capitalization and arbitrary amortization that understate future earnings (Spacek, 1964). Another reason given for the immediate write-off is that any goodwill related to the business at the time of an acquisition eventually fades as the products or services related to the business

decline in their importance and, hence, goodwill related to the business could be well written off. Finally, the proponents of this view argue that goodwill should not be carried in the accounts for it provides very little information for the users of the financial statements because it poses a number of measurement and valuation issues and cannot be sold separately. (Seetharaman et al., 2004.)

Contrary to the immediate write-off viewpoint, the second school of thought suggests that goodwill should not be written off unless there is convincing evidence supporting write-offs. According to the advocates of this view, it is over-conservative to write off goodwill as suggested by the proponents of immediate write-off approach if there has been no indications that the value of goodwill has been depreciated. Furthermore, the proponents of this viewpoint emphasize that the magnitude to which the goodwill has depreciated is difficult to measure reliably and, therefore, goodwill should not be amortized or written off before there is enough evidence suggesting that goodwill has depreciated. (Seetharaman et al., 2004.)

Finally, the third school of thought states that goodwill should be amortized systematically over a reasonable period of time. This view is mainly supported by the primary function of accounting to match cost and income. The proponents of the third school of thought argue that systematic amortization of goodwill can be used as a means of matching the cost of securing the income generated by the previous acquisition. (Seetharaman et al., 2004.)

2.1.3 Development of International Accounting for Goodwill

Founded in 1973, the IASB has been fostering the improvement and global harmonization of accounting regulation and standards. Its first recommendation for the accounting treatment of goodwill, Exposure Draft (ED) 22 *Accounting for Business Combinations* in 1981, stated that goodwill arising in acquisition, determined as the excess of the purchase price over the assigned values of the net identifiable assets acquired, should be subject to amortization to income on a systematic basis over its useful life. The IASB revised ED 22 by issuing IAS 22 *Accounting for Business Combinations* in 1983. The IAS 22 allowed any exceeding

amount between the acquisition cost and the fair value of net identifiable assets acquired to be either recognized as goodwill and amortized systematically over its useful life or, immediately written off against shareholders' reserves. (Seetharaman et al. 2004.)

Because of the inevitable disharmony caused by IAS 22, the IASB issued IFRS 3 *Business Combinations*, on March 2004. The new IFRS 3 standard revised business combinations accounting by eliminating the use of pooling of interests method and forbade the amortization of goodwill. Instead of amortizing goodwill over a certain useful lifetime, the IASB stipulated companies applying IFRS reporting framework to test goodwill for impairment in accordance with IAS 36. Under the revised standards, goodwill acquired in a business combination is allocated to acquirer's cash-generating units, or groups of cash-generating units, that are expected to benefit from the synergies of the combination. These units are tested for an impairment annually and whenever there are indications that the value of goodwill has impaired and their recoverable amounts are compared to their book values. If the carrying amount of a unit exceeds its recoverable amount, an entity must recognize an impairment loss. (IASB, 2004.)

In its reasoning for fair value accounting for goodwill, the IASB concludes that the impairment approach results in higher information content of goodwill and more reflective goodwill impairments when managers use their private information on an entity's underlying economics. Furthermore, the IASB articulates that the traditional straight-line amortization of goodwill over arbitrary period of time does not provide useful information of the economic value of goodwill and, therefore, should be replaced with the impairment test approach. (IASB, 2004.)

2.1.4 Accounting for Goodwill in Finland

Prior to the introduction of IFRS standards in Finland in 2005, Finnish listed companies were required to treat goodwill in accordance with the Finnish Accounting Act of 1997. Pursuant to Section 9 of Chapter 5 of the Finnish Accounting Act of 1997, goodwill arising from a business combination was subject

to a systematic amortization to income over five years. However, the former accounting act also allowed a systematic amortization over a time span of up to twenty years if an entity could prove that the goodwill acquired in a business combination had a useful life of more than five years (Finnish Accounting Act 5:9 §).

2.2 Accumulation of Goodwill

2.2.1 Acquisition Method under IFRS 3

Under the contemporary international financial reporting standards, the only type of goodwill recognized as an asset is goodwill generated in a business combination. This treatment of generated goodwill is derived from residuum approach under which goodwill is determined as the difference between the purchase price and the fair market value of an acquired company's asset. Under the residuum approach, goodwill is a left over amount that cannot be reliably identified as any other intangible or tangible asset. (Seetharaman et al., 2004.)

The accounting treatment of business combinations is defined in the international financial reporting standard IFRS 3, *Business Combinations*. According to IFRS 3, an entity must account for each business combination by applying the acquisition method which requires:

- a) Identifying the acquirer;
 - b) Determining the date of acquisition;
 - c) Recognizing and measuring the identifiable assets acquired, the liabilities assumed and any non-controlling interest in the acquiree; and
 - d) Recognizing and measuring goodwill or a gain from a bargain purchase.
- (IFRS 3.4, 3.5.)

Under the acquisition method, the acquirer recognizes, separately from goodwill, the identifiable assets acquired, the liabilities assumed and any non-controlling interest in the acquiree. The acquirer must measure the identifiable assets acquired and the liabilities assumed at their fair values at their acquisition date determined as the date

on which the acquirer obtains control of the acquiree. In addition, the acquirer must measure the consideration transferred in a business combination at fair value (IFRS 3.8, 3.10, 3.18, 3.37.)

After the investigation of identifiable assets, liabilities and non-controlling interest in the acquiree, and the determination of the consideration transferred at the business combination, the acquirer shall recognize goodwill as of the excess of a) and b) below:

- a) the aggregate of
 - i. The consideration transferred measured, which generally requires acquisition-date fair value;
 - ii. The amount of any non-controlling interest in the acquiree; and
 - iii. In a business combination achieved in stages, the acquisition-date fair value of the acquirer's previously held equity interest in the acquiree.
- b) The net of the acquisition date amounts of the identifiable assets acquired and the liabilities assumed. (IFRS 3.32.)

2.2.2 Internally Generated Goodwill

Generally, as defined above, goodwill is acknowledged only when it is acquired as part of a business combination. However, virtually all businesses generate internal goodwill as they develop their business operations and products, and expand over time. Consequently, the acquired goodwill in the financial statements might not represent the full goodwill that a firm actually possesses. (Seetharaman et al., 2004.)

Nevertheless, accountants have been reluctant to account for anything else than acquired goodwill due to the difficulties and complexities involved in the valuation of internally generated goodwill. Firstly, a firm might well record a fictitious internally generated goodwill into its accounts in order to improve its financial position by overstating its assets. Secondly, internally generated goodwill cannot be measured as verifiably and objectively as purchased goodwill. Additionally, there is generally no historic cost available for valuing internally generated goodwill.

Thirdly, valuing internally generated goodwill requires a number of assumptions including estimations of future profits and reasonable rates of returns. These assumptions are more or less difficult to verify and, thus, annual revaluing of goodwill could be remarkably difficult. Finally, it is difficult to determine the specific operational costs that contribute to the value of internally generated goodwill. (Lee, 1971.)

The IFRS standards prohibit recording internally generated goodwill into a firm's balance sheet. According to IAS 38 *Intangible Assets*, internally generated goodwill shall not be recognized as an intangible asset because it is not a separable resource controlled by an entity and it cannot be measured reliably at cost. In addition, IAS 38 forbids recognizing differences between the fair value of an entity and its identifiable net assets as goodwill. (IAS 38.48, 38.49, 38.50.)

2.2.3 Negative Goodwill

In some instances, an acquirer of a business makes a bargain purchase in which the value of acquired net assets exceeds the purchase price. This acquisition-price bargain purchase has been generally labeled as negative goodwill. The concept of negative goodwill has been widely debated and the recognition of negative goodwill has been objected by many academics (Comiskey, Clarke & Mulford, 2010). For example, DeMerville and Petrie (1989) state that the term goodwill is itself confusing because a firm either has goodwill or does not have goodwill: it cannot have negative or "minus" goodwill. Further, negative goodwill does not make sense conceptually because bargain purchases are rare in efficient markets. Further, the values of acquired assets may be overstated in a bargain purchase: if the assets were worth more individually, the acquiree would have been better off to liquidate the company by selling its assets individually rather than selling the whole business. Another argument against recognizing negative goodwill is that a bargain purchase could stem from prospected future losses or possible inevitable expenditures that may arise from bringing an acquired business to perform profitably in the future (Comiskey & et al., 2010).

Similarly to internally generated goodwill, the IFRS standards do not recognize negative goodwill. Instead, under IFRS 3, if the fair value of net assets of a business exceeds its purchase price, the acquirer of the business must recognize the exceeding amount as a gain. However, prior to recognizing the gain on the resulting bargain purchase, the acquirer must reassess the possibility that not all the assets and liabilities of an acquired business are correctly identified and valued. The purpose of the reassessment is to make sure that the measurements and evaluations appropriately reflect consideration of all information available on the acquisition date. (IFRS 3.34, 3.36.)

2.3 Goodwill Impairment Test under IAS 36

2.3.1 Basis for Goodwill Impairment Testing

Under IFRS framework, goodwill is subject to impairment tests in accordance with IAS 36 *Impairment of Assets*. The purpose of IAS 36 is to prescribe the procedures that an entity must apply to ensure that its assets are carried at no more than their recoverable amount: if an entity carries an asset that has a carrying amount higher than its recoverable amount measured through use or sale of the asset, the entity must record an impairment loss. (IAS 36.1, 36.8.)

The IAS 36 standard stipulates that an entity must assess at the end of each reporting period if there are any indications that an asset may be impaired. If such indications emerge, the entity shall estimate the recoverable amount of the asset. Additionally, the entity must test goodwill acquired in a business combination for impairment annually irrespective of whether there is any indication of impairment. (IAS 36.9, IAS 36.10.)

2.3.2 Allocating Goodwill to Cash-generating Units

In order to carry out the goodwill impairment test, IAS 36.80 prescribes that goodwill acquired in a business combinations must be allocated from the acquisition date to each of the acquirer's cash-generating units or groups of cash generating units

that is expected to benefit from the synergies of the combination irrespective of whether other assets or liabilities of the acquiree are assigned to those units or groups of units. A unit or group of units to which the goodwill is so allocated shall represent the lowest level within the entity at which the goodwill is monitored for internal management purposes. Nevertheless, a unit or group of units to which the goodwill is allocated as described above shall not be larger than an operating segment that engages in business activities, whose operating results are regularly reviewed by management and which produces discrete financial information. (IAS 36.80; IFRS 8.5.)

Because goodwill is an asset representing the future economic benefits that arise from other assets acquired in a business combination that are individually identified and separately recognized, it does not generate cash flows independently of other assets or groups. Therefore, goodwill must be allocated to cash-generating units or groups of cash-generating units. Oftentimes goodwill cannot be allocated to a single cash-generating unit but to a group of cash-generating units. As a result, the lowest level within the entity at which the goodwill is monitored for internal management purposes sometimes comprises a number of cash-generating units to which the goodwill relates but to which it cannot be allocated. (IAS 36.81.)

2.3.3 Timing of Goodwill Impairment Tests

The goodwill impairment test for a cash-generating unit or a group of cash-generating units to which goodwill has been allocated must be performed annually. This means that the goodwill impairment test may be performed at any time during an annual period, provided the test is performed coherently at the same time every year. In addition to this, different cash-generating units may be tested for impairment at different times independently of each other. Nevertheless, if goodwill allocated to a cash-generating unit was acquired in a business combination during the current annual period, that unit shall be tested for impairment before the end of the current annual period. (IAS 36.96.)

In addition to the annual goodwill impairment test, an entity must test a cash-generating unit to which goodwill has been allocated for impairment whenever there is an indication that the unit may be impaired. These indications include internal and external information sources that must be taken into account to determine whether is an impairment in some of the cash-generating units or a group of cash-generating units. Examples of external information sources indicating an impairment include adverse changes in market conditions, unfavorable legal changes and a decline in an asset's market value. Internal information sources that might signal an impairment in a cash-generating unit containing goodwill include, for instance, a physical damage in some of the assets comprising the unit to which goodwill has been allocated or a decline in a unit's operating performance. (IAS 36.90, 36.12.)

If the assets constituting the cash-generating unit to which goodwill has been allocated are tested for impairment at the same time as the unit containing the goodwill, they must be tested for impairment before the unit that contains the goodwill. Correspondingly, if the cash-generating units constituting a group of cash-generating units to which goodwill has been allocated are tested for impairment at the same time as the group of units containing the goodwill, the individual units shall be tested for impairment before the group of units containing the goodwill. In some instances there may also be indications of an impairment in some of the assets that contribute to the cash-generating unit to which goodwill has been allocated. Similarly, there may be indications of an impairment in a cash-generating unit making up a group of cash-generating units to which goodwill has been allocated. In such instances, an entity must test the asset or a group of assets and recognize any impairment loss before testing for impairment the cash-generating unit or units containing the goodwill. (IAS 36.97, 36.98.)

2.3.4 Measuring Recoverable Amount of a Cash-generating Unit

To assess whether the value of goodwill has impaired, an entity must estimate the recoverable amount of the cash-generating unit or groups of cash-generating units to which goodwill has been allocated and compare its carrying amount with its recoverable amount. The recoverable amount of a cash-generating unit or a group of

cash-generating units is defined as the higher of an asset's or cash-generating unit's fair value less costs of disposal and its value in use. An entity must not necessarily determine both an asset's fair value less costs of disposal and its value in use in order to carry out a goodwill impairment test if either of these amounts exceeds the asset's carrying amount. (IAS 36.9, 36.18, 36.19.)

The fair value less costs of disposal is determined as an asset's or a cash-generating unit's fair price in an active markets less costs that would incur if the asset or a cash-generating unit is disposed. However, it may be possible to measure fair value less costs of disposal even if there is not a quoted price in an active market for a similar asset if a reliable estimate is available. Fair value less costs of disposal is most commonly used for an estimate for the recoverable amount for assets or cash-generating units that are held for disposal. (IAS 36.20, IAS 36.21.)

Usually, it is not possible to measure fair value less costs of disposal because there is no plausible estimate of the price at which an orderly transaction to sell the asset would take place between market participants at the measurement date under current market conditions. In such cases, an entity may use the asset's value in use as its recoverable amount. The following elements shall be reflected in the calculation of an asset's value in use:

- a) An estimate of the future cash flows the entity expects to generate from the asset;
 - b) Expectations of possible fluctuations in the amount or timing of those future cash flows;
 - c) The time value of money represented by the current market risk-free rate of interest;
 - d) The price for bearing the uncertainty inherent in the asset; and
 - e) Other factors, such as liquidity, that market participants would reflect in pricing the future cash flows the entity expects to derived from the asset.
- (IAS 36.20, IAS 36.30.)

Estimating the value in use of an asset or a cash-generating unit can be divided into two separate steps. Firstly, an entity must estimate the future cash inflows and outflows to be derived from continuing use of the asset and from its ultimate disposal. Secondly, the entity must apply the appropriate discount rate to those future cash flows. (IAS 36.31.)

In order to measure the future cash flows an entity shall:

- a) Base cash flow forecasts on reasonable and supportable assumptions that represent management's best estimate of the range of economic conditions that will exist over the remaining useful life of the asset. In assessing these conditions, greater weight must be given to external evidence.
- b) Base cash flow projections on the most recent financial budgets or forecasts approved by management, but shall exclude any estimated future cash inflows or outflows expected to arise from future restructurings or from improving or enhancing the asset's performance. Projections based on these budgets or forecasts must cover a maximum period of five years unless a longer period can be reasoned.
- c) Estimate cash flow projections beyond the period covered by the most recent budgets/forecasts by extrapolating the projections based on the budget/forecasts using a steady or declining growth rate for subsequent years, unless an increasing rate can be justified. This growth rate shall not exceed the long-term average growth rate for the products, industries, or country or countries in which the entity operates, or for the market in which the asset is used, unless a higher rate can be justified. (IAS 36.33.)

The management must analyze the causes of variations in past cash flow projections and actual cash flows in order to assess the reasonableness of the assumptions applied in the cash flow forecasts. The cash flow projections must be based on the most recent budgets or forecasts for a maximum of five years because reliable financial budgets or forecasts for periods longer than five years are generally not available. These cash flow projections are generally extrapolated with a declining

growth rate because of, for instance, competitors that may enter the market and restrict an entity's growth. (IAS 36.34, 36.35, 36.37, 36.38.)

Estimates of future cash flows must include:

- a) Projections of cash flows from the continuing use of the asset;
- b) Projections of cash outflows that are inevitably incurred to generate the cash inflows from continuing use of the asset (including cash outflows to prepare the asset for use) and can be directly attributed, or allocated on a reasonable and consistent basis, to the asset; and
- c) Net cash flows, if any, to be received (or paid) for the disposal of the asset at the end of its useful life. (IAS 36.39.)

Estimates of future cash flows and the discount rate must reflect consistent assumptions about price increases attributable to general inflation. The projections of cash outflows must include all operational day-to-day costs as well as the future overheads that can be allocated directly or allocated on a reasonable and coherent basis to the use of the asset. In addition, the cash flows from disposal of an asset or a cash-generating unit must be determined as an amount that an entity expects to obtain from the disposal with an arm's length transaction between willing, knowledgeable parties. The estimates of future cash flows must be based on the asset's or a cash-generating unit's condition at the time when the impairment test is carried out and shall not include future cash outflows of restructuring that has not yet taken place, and any improvements in the asset's or cash-generating unit's performance. Finally, cash inflows and outflows from financing activities and income tax receipts or payments must also be excluded from the projections of future cash flows. (IAS 36.40, 36.41, 36.44, 36.50, 36.52.)

The future cash flows must be discounted with pre-tax rate that reflects market assessments of the time value of money and the risks specific to the asset for which the future cash flow forecasts have not been adjusted. This discount rate is generally calculated as the weighted average cost of capital. On the other hand, if a specific discount rate for an asset or a cash-generating unit is unavailable, an entity can use

surrogates to estimate the discount rate such as the entity's incremental borrowing rate or other market borrowing rates. (IAS 36.55, IAS 36.56, IAS 36.A17.)

2.3.5 Recognition of Goodwill Impairment Loss

An impairment loss must be recognized for a cash-generating unit if, and only if, the recoverable amount (fair value less costs of disposal or value in use) of the cash-generating unit or group of units is less than the carrying amount of the cash-generating unit or group of units. The impairment loss must be allocated to reduce the carrying amount of the assets of the unit to first reduce the carrying amount of any goodwill allocated to the cash generating unit or groups of units and then to the other assets of the unit or group of units pro rate on the basis of the carrying amount of each asset in the unit or group of units. (IAS 36.104.)

In allocating an impairment loss, an entity shall not reduce the carrying amount of an asset or a cash-generating unit below the highest of its fair value less costs of disposal, its value in use and zero. The reductions in carrying amounts must be treated as impairment losses on individual assets and shall be recognized immediately as a loss in the income statement. An impairment loss recognized for goodwill as described above cannot be reversed in a subsequent period. (IAS 36.60, 36.104, 36.105, 36.124.)

3 DETERMINANTS OF GOODWILL IMPAIRMENT LOSSES

3.1 Economic Indications of Goodwill Impairments

According to IAS 36, goodwill impairment is a result of the declined performance of the acquired business unit. In other words, goodwill allocated to a cash-generating unit is identified as potentially impaired when the recoverable amount of the unit is higher than its carrying amount (IAS 36.104). Company executives are expected to follow these guidelines when they detect internal or external indications that the value of a cash-generating unit to which goodwill has been allocated has been impaired. In assessing if there is any indication that goodwill may be impaired, IAS 36 requires that an entity considers the following indications:

External sources of information

- a) There are observable indications that the asset's value has declined during the period significantly more than would be expected as a result of the passage of time or normal use.
- b) Significant changes with an adverse effect on the entity have taken place during the period, or will take place in the near future, in the technological, market, economic or legal environment in which the entity operates or in the market to which an asset is declined.
- c) Market interest rates or other market rates of return on investments have increased during the period, and those increases are likely to affect the discount rate used in calculating an asset's value in use and decrease the asset's recoverable amount materially.
- d) The carrying amount of the net assets of the entity is more than its market capitalization.

Internal sources of information

- e) Evidence is available of obsolescence or physical damage of an asset.

- f) Significant changes with an adverse effect on the entity have taken place during the period, or are expected to take place in the near future, in the extent to which, or manner in which, an asset is used or is expected to be used. These changes include the asset becoming idle, plans to discontinue or restructure the operation to which an asset belongs, plans to dispose of an asset before the previously expected date, and reassessing the useful life of an asset as finite rather than indefinite.
- g) Evidence is available from internal reporting that indicates that the economic performance of an asset is, or will be, worse than expected. (IAS 36.12.)

The external and internal indications of a potential decline in the value of a cash-generating unit that includes goodwill are numerous and vary significantly. Thus, the list of indications presented above is not exhaustive. Company executives may identify other indications that an asset may be impaired. (IAS 36.13.)

Comiskey and Mulford (2010) attempt to explain the triggering events that lead to goodwill write-offs in their study on impairment testing processes in US companies. The information on the reasons behind goodwill impairment decisions disclosed by the companies that reported goodwill write-offs between 2008 and 2009 show a large variety of occurrences that have led to goodwill impairment losses. These occurrences or “triggering events” can be divided in seven categories. According to Comiskey and Mulford (2010), the most common reason behind goodwill write-off decisions are decreases in share prices. The prominence of declines in share values as triggering events for goodwill impairment losses are related to the severity of the declines in share prices as well as the importance of firm valuation in the goodwill impairment testing process. Secondly, a number of companies report increased or unanticipated competition as a triggering event for goodwill write-offs. Increased competition highlights declines in sale prices and volumes as primary reasons for impaired values of cash-generating units that include goodwill. (Comiskey & Mulford, 2010.)

Adverse legal and regulatory changes and unfavorable overall economic conditions also explain managers’ decisions to impair goodwill. Other goodwill impairment

triggering events include company executives' failures to meet expectations and budgetary targets and decisions to a cash-generating unit or a reporting unit that includes goodwill. Finally, Comiskey and Mulford (2010) report industry-related triggering events as the seventh primary theme of events that trigger goodwill impairments. Examples of industry-related goodwill impairment triggering events contain unexpected increases in fuel prices and their adverse effects on airline industry as well as declines in housing starts that may have negative impacts on construction material manufacturers. (Comiskey & Mulford, 2010.)

Consistent with the study conducted by Comiskey and Mulford (2010), various studies emphasize the decline in a company's share price as one of the primary indications of goodwill impairment. In addition to this, impaired performance has also been shown to significantly affect company executives' decisions to write-off goodwill. For instance, AbuGhazaleh et al. (2011) find a significant relationship between goodwill write-offs and book-to-market ratios: the higher the value of a company's equity to market capitalization the more likely the company is to report goodwill impairment losses. AbuGhazaleh et al. (2011) also show that companies that have performed poorly in the past when measured by return on assets (ROA) are more likely to report goodwill impairment losses. Finally, companies that experience declines in operating cash flows are more also likely to impair goodwill from their balance sheets (AbuGhazaleh et al., 2011).

Other economic factors that might indicate that the value of a cash-generating unit carrying goodwill has impaired include the characteristics of goodwill. Zang (2008) reports that companies that have higher amounts of goodwill in their balance sheets are more likely to report goodwill impairment losses due to the large relative amount of goodwill that is exposed to the impairment test. The number of a company's cash-generating units can also have an impact on goodwill write-off decisions. According to Beatty and Weber (2006) companies with only one cash-generating unit are less likely to impair goodwill. On the other hand, companies that have allocated goodwill to more than one cash-generating unit are expected to report goodwill impairment losses more frequently as they carry out more impairment tests; one for each cash-generating unit. The more a company carries out goodwill impairment tests for each

cash-generating units the more exposed a company's overall goodwill is because goodwill impairment losses in one unit cannot be netted against a potential increases in another cash-generating unit. (Beatty & Weber 2006.)

Consequently, there are various economic occurrences that may trigger goodwill impairment losses. In accordance with IAS 36, company executives are expected to detect any internal or external indications that may suggest that the value of a cash-generating unit that includes goodwill has impaired and report a goodwill impairment loss if necessary. The triggering events for goodwill impairment losses range from impaired performance of a cash-generating unit to declines in a company's share value. Other reasons provided by companies for their goodwill write-off decisions include increased competition, adverse changes in regulatory and economic environment and industry-specific occurrences. Given the discussion above, the following hypothesis is constructed added study economic reasons behind goodwill impairment decisions.

***H1:** All else being equal, economic impairment factors are significantly associated with goodwill impairment losses.*

3.2 Managerial Discretion in Goodwill Impairment Tests

3.2.1 Earnings Management

Since the valuation of goodwill under IAS 36 standard is unverifiable and requires managers' estimation, managers may use goodwill impairment tests as earnings management tools. Ramanna (2008) defines two earnings management opportunities that managers can exploit through goodwill impairment testing. Firstly, managers may avoid timely goodwill impairments. This allows managers to overstate earnings and the amount of net assets. Secondly, managers may overstate goodwill impairments which in turn understates earnings and net assets. These earnings management techniques diminish the association between actual goodwill impairments in terms of economic consequences and goodwill impairment decisions. (Ramanna, 2008.)

Jahmani, Dowling and Torres (2010) study indications of earnings management behavior in goodwill impairment decisions in US companies applying SFAS 142 in their financial reporting for goodwill. Their findings indicate that the majority of the companies recording losses for three sequential years and the majority of those companies recording losses for two years did not impair goodwill in their balance sheets. Moreover, the majority of the companies that earned returns on assets of two percent or less for three consecutive years and the majority of companies earning returns on assets of two percent or less for two years did not report goodwill impairment losses. Given these results, Jahmani et al. (2010) conclude that goodwill impairment testing provides managers an opportunity to delay goodwill impairment losses and to manipulate reported earnings for their favor. (Jahmani et al., 2010).

Hamberg, Paananen and Novak (2011) examined the effects of the adoption of IFRS 3 on Swedish companies' reported earnings and how the managers of these companies used their discretion in association with the adoption of impairment testing approach for goodwill. A sample of Swedish listed companies reveal that the amount of capitalized goodwill increased remarkably after the adoption of IFRS 3 in 2005. Additionally, the reported goodwill impairments under IAS 36 were considerably lower than goodwill amortizations and impairments under Swedish GAAP. Thus, the adoption of IFRS 3 increased reported earnings: the companies with substantial amounts of goodwill experienced higher abnormal returns than other companies. Consequently, the findings by Hamberg et al. (2011) suggest that the companies' dependence on managerial discretion in the goodwill impairment process has made financial reporting less informative and useful for investors due to earnings management opportunity provided by the revised IAS 36 standard.

Contrary to the findings listed above, Jarva (2009) finds evidence that the goodwill impairments under SFAS 142 are associated with future expected cash flows. That is, SFAS 142 goodwill impairments are, on average, more closely related to economic factors rather than opportunistic reporting behavior. On the other hand, the findings by Jarva (2009) suggest that the goodwill impairments lag behind the actual economic impairment of goodwill. In addition to this, Jarva (2009) points out that the relationship between goodwill impairments and future cash flows is not significant

for firms with “contemporaneous restructuring”. According to Jarva (2009), this may be due to opportunistic motives since the restructuring of operations may provide managers an opportunity to engage in earnings management through big bath behavior.

To summarize, goodwill impairment tests can be used as means of an equilibrium earnings reporting strategy. According to the equilibrium earnings reporting strategy, managers aim to report higher earnings in order to signal higher long-run returns. On the other hand, if the news is especially good, they will try to report smaller earnings surprises to raise the inferred precision of their earnings report. In other words, managers may try to smooth earnings. Accordingly, if the news is bad, managers may wish to report lower earnings by the largest amount possible. Managers may do this by taking a “big bath” in the reporting period, enabling them to shift the discretionary income into forthcoming reporting periods. (Kirschenheiter & Melumad, 2002.)

The notion of big bath behavior in goodwill impairment tests has also been reported by Saastamoinen and Pajunen (2012) in their study of Finnish listed companies. Therefore, it is expected that the same phenomenon may appear in the empirical part of the study. As stated above, managers may also have an incentive to smooth earnings when the returns are unexpectedly high. The discussion leads to the following hypothesis concerning managers’ earnings management techniques in goodwill impairment tests:

***H2a:** All else being equal, companies with unusually high and abnormally low earnings before depreciation and amortization report higher goodwill impairment losses.*

3.2.2 Leverage and Debt Contracting

Debt contracting and the magnitude of interest bearing debt may have significant effects on a company’s accounting decisions and methods. According to the debt/equity hypothesis, companies with higher debt/equity ratios are more prone to

apply accounting methods that increase income. The more a company has debt against equity, the closer the company is to the constraints in the debt covenants. The tighter the covenant constraints the higher the probability of a covenant violation. If the company violates its debt covenants, it may face increased financial costs or even a loan default. Given this, the higher the company's debt/equity ratio, the more inclined managers may be to use income increasing accounting methods. (Watts & Zimmerman, 1990.)

Based on the discussion by Watts and Zimmerman (1990), companies that have higher amounts of debt to equity may be less likely to report goodwill impairment losses to avoid violations of debt covenants. That is, the risk of violating debt covenants may give managers incentives to report higher earnings by using their discretion in goodwill impairment testing. Zang (2008) finds evidence that highly leveraged companies report lower amounts of goodwill impairment losses. Consistent with the debt/equity hypothesis and findings of Zang (2008), Beatty and Weber (2006) argue that companies' debt contracting affect managers decisions to accelerate or delay the decision to impair goodwill. Ramanna and Watts (2012) report comparable findings arguing that debt covenants based on net worth and net income are likely to influence managements' decisions to delay goodwill impairment losses.

Contrary to the arguments presented by Watts and Zimmerman (1990), highly levered companies may be more closely monitored by lenders. More frequent and closer monitoring of a company's management could decrease managers' possibilities to use discretion in accounting methods which in turn leaves less room for earnings management (Strong & Meyer, 1987). For example, Saastamoinen and Pajunen (2012) state that companies under increased monitoring by investors and securities analysts report goodwill write-offs that better reflect the underlying economic impairment of goodwill. Thus, an increased monitoring by debt holders could decrease managers' discretion in the goodwill impairment process which in turn improves the information content of goodwill impairment decisions.

The discussion above illustrates the mixed arguments on the relationship between debt contracts and goodwill impairment decisions. On one hand, companies that carry higher amounts of debt to equity may be inclined to report lower goodwill impairment losses to avoid violating debt covenants. On the other hand, companies with more debt may be under closer monitoring which decreases managerial discretion in goodwill impairment decisions. This discussion results in the following sub hypothesis:

***H2b:** All else being equal, companies with higher levels of leverage report lower goodwill impairment losses.*

3.2.3 CEO Tenure

The effect of CEO tenure on accounting practices has been of interest in prior research due to the shrinking of CEO tenures and increased number of CEO changes during the last 20 years. (Masters-Stout, et al., 2008; Glover & van Zwanenberg, 2003). Thus, there is a growing body of research on the relationship between CEO changes and earning management. For example, Strong and Meyer (1987) examined CEO changes and asset write-offs. Their findings indicate that a change in senior management is a key variable in explaining the tendency to report asset impairment. Additionally, if the new executive came from outside the company, the effect on write-off decisions was more significant which suggests that incoming CEOs have an incentive to “take a bath” in the year of executive change.

This could also indicate that newer CEOs may be more inclined to impair goodwill than their senior counterparts. New CEOs may be opportunistically impair goodwill in order to set benchmarks lower and increase future performance of the company by taking a bath during their first years of tenure. Moreover, the reported low earnings because of the bath can be blamed on the previous management for their poor investment decisions. However, goodwill impairment losses that follow a recent CEO change could also indicate that the new CEO is restructuring a company’s operations and assets to help the troubled company to perform better. (Masters-Stout et al., 2008.)

A number of studies have reported a positive association between recent CEO changes and reported goodwill impairment losses. Masters-Stout et al. (2008) report that new CEOs impair more goodwill than CEOs with longer tenure, suggesting that goodwill impairment testing under IAS 36 and SFAS 142 provides opportunities for new CEOs to manipulate earnings in their favor through impairment testing. Similar findings have been reported by studies of Zang (2008), Beatty and Weber (2006), and Saastamoinen and Pajunen (2012) who report new CEOs taking on big bath behavior following their appointment. Contrary to the results provided by the studies listed above, findings by Abuaddous, Hanefah and Laili (2014) in their study of Malaysian companies' goodwill accounting practices suggest that new CEOs were more conservative and less likely to write off goodwill than CEOs with longer tenure.

Based on the evidence presented on above, it can be expected that companies that have experienced a recent change in CEO are more likely to report goodwill impairment losses. Prior research shows that new CEOs may be prone to take a big bath when at the beginning of their tenure or alternatively restructure the assets of a troubled company in order to improve the company's future performance. The following sub hypothesis is added to test managerial discretion with in goodwill impairment tests with regards to CEO changes:

H2c: All else being equal, there is a significant association between CEO change and goodwill impairment losses.

3.3 Corporate Governance and Goodwill Impairment Tests

Provided the discussion above, company managers have a number of incentives to opportunistically exploit their discretion in the goodwill impairment testing process. However, effective corporate governance mechanisms may alleviate these problems and, in turn, managers may become less inclined to engage in opportunistic activities when they are properly incentivized and monitored. Efficient corporate governance quality could in fact encourage managers to use their private information in the

goodwill impairment process to better reflect the firm's actual underlying economic condition. (AbuGhazaleh et al. 2011.)

Verriest and Gaeremynck (2009) study the extent to which effective corporate governance mechanisms impacts on managers' decisions to impair goodwill in European listed companies. Their findings indicate that the level of a firm's corporate governance mechanisms measured as the number of independent members in the board of directors have significant positive influence on the firm's decision to impair goodwill. Furthermore, Verriest and Gaeremynck (2009) report that outside investor rights are positively associated with the likelihood that a firm impairs its goodwill. They conclude that the IAS 36 serves its desired outcome to better reflect the underlying economics of goodwill and the firm itself when managers are incentivized to apply the standards to provide more useful information for the users of financial information.

AbuGhazaleh et al. (2011) further highlight the connection between strong corporate governance mechanisms and goodwill impairment losses. In a study of UK listed companies, AbuGhazaleh et al. (2011) find that although goodwill impairment decisions are associated with discretionary behavior, their results also indicate that goodwill impairments are significantly associated with strong corporate governance mechanism which in turn suggests that managers are in fact applying their discretion in the goodwill impairment process to convey their private information on the underlying performance. The findings by AbuGhazaleh et al. (2011) reveal that the extent of the board of directors' independence, board activity measured as the amount of meetings during a financial year, the proportion of executive and non-executive ownership as well as the amount of common shares held by major block holders all have significant positive associations with goodwill impairment losses.

Finally, Saastamoinen and Pajunen (2012) find evidence on the relationship between a firm's outstanding shares' trading volume and goodwill impairments in their study of Finnish listed companies. Their findings indicate that more actively traded companies are more likely to impair goodwill. The authors conclude that their finding suggests that companies with high trading volume are more closely

monitored by investors and security analysts which improves the accounting quality of goodwill impairment testing. The findings emphasize the importance of monitoring for more informative goodwill impairment testing. (Saastamoinen & Pajunen, 2012.)

Motivated by the discussion above, the study aims to examine the relationship between goodwill impairments and corporate governance mechanisms in Finnish listed companies. Due to the wide range of findings indicating that managers are likely to utilize their discretion in goodwill impairment tests under IAS 36, it is reasonable to study whether the managers are in fact applying their discretion to better reflect the underlying economic condition of the company. Therefore, the following hypothesis is added to the empirical research:

***H3:** All else being equal, companies with stronger corporate governance mechanisms report less opportunistic goodwill write-offs.*

4 EMPIRICAL RESEARCH ON GOODWILL IMPAIRMENT LOSSES

4.1 Research Design and Sample Selection

4.1.1 Data Source and Sample Selection Process

The research sample is constructed by using information on companies listed in OMX Helsinki between the 2010 and 2014. On December 31, 2014, there were 118 companies listed in Nasdaq OMX Helsinki. Out of the companies listed in Nasdaq OMX Helsinki, 14 were financials and are excluded from the data due to their financial reporting processes that tend to conform to other industries (AbuGhazaleh et al., 2011).

Financial data for the companies selected into the research sample was derived from WorldScope database for the financial years between 2009 and 2014 in order to calculate the variables for every observation. Financial data derived from WorldScope includes information on companies' total assets, total shareholders' equity, amount of interest bearing debt, revenue, EBITDA, pretax income, cash flows from business combinations, and total market capitalization. Data for companies' carrying amounts of goodwill, magnitudes of goodwill impairment losses, acquisition activities, and corporate governance mechanisms were manually gathered from companies' annual reports and financial statements as well as from statements of corporate governance available on their web sites. Any financial information unattainable from World Scope database was manually included from companies' financial statements.

Table 1 illustrates the sample selection process. The number of companies that carried goodwill in their balance sheet between 2009 and 2014 was 97. 8 companies that had no positive goodwill balances between 2009 and 2014 were excluded from the sample. Using the financial information available for the companies that carried positive goodwill values in their financial statements at least during one full financial year between 2009 and 2014, the final sample comprises of an unbalanced panel data of 453 observations belonging to financial years between 2009 and 2014. Two

observations were classified with insufficient data due to merger activities that corroded the comparability of the financial years prior and after the mergers and, therefore, were excluded from the observations in the final sample.

Table 1. Sample Selection Process

Companies listed in Nasdaq Helsinki, December 31, 2014					119
Companies belonging to the Financials industry					-14
Companies with no goodwill in their balance sheet between 2009 and 2014					-8
Number of non-financial companies that carried goodwill between 2009 and 2014					97
Observations between 2009 and 2014	Impairers	Non-impairers	All	% of impairers	
Year 2010	16	72	88	18,2 %	
Year 2011	15	74	89	16,9 %	
Year 2012	23	68	91	25,6 %	
Year 2013	17	74	91	18,7 %	
Year 2014	16	78	94	17,0 %	
Observations in the Final Sample	87	366	453	19,2 %	

As shown in table 1, the observations belonging to each financial years range between 88 and 94 observations of which the number of companies that reported goodwill impairment losses vary between 15 and 23. The overall number of goodwill impairers in the final sample is 87, meaning that in 19,2% of sample observations belong to impairment observations. The overall percentage of goodwill impairers is similar to the impairment rate of 20,6% observed by AbuGhazaleh et al. (2011) in their study of UK listed companies. Nevertheless, the percentage of observations that reported goodwill impairment losses is 3,5 percentage points higher than reported by Saastamoinen and Pajunen (2012) in their study of Finnish listed companies between 2005 and 2009, indicating that the amount of goodwill impairments has increased after the financial crisis of 2008. Interestingly, 25,6% of observations belonging to year 2012 impaired goodwill whereas only 16,9% of the observations belonging to year 2011 reported goodwill impairment losses which is 8,7 percentage points less than the year after. The reason behind the drastic difference between the impairment loss rates may be due to overall market conditions in Finland during 2012 when the OMX Helsinki Index was in its 5 year lowest.

4.1.2 Variable Descriptions

In order to examine the determinants of goodwill impairment losses introduced above in chapter three, the equation presented below is applied for the analysis of economic goodwill impairment factors, managerial discretion, and corporate governance and their effects on goodwill impairment losses. The equation is similar to the regression model applied by AbuGhazaleh et al. (2011) in their study of determinants of goodwill impairment losses in companies listed in the UK. All of the determinants excluding proxies for corporate governance and binary variables are deflated with total assets to minimize possible proportionality and heteroscedasticity issues in the regression analysis.

$$\begin{aligned}
 GIL = & \beta_0 + \beta_1 BM + \beta_2 GWV + \beta_3 \Delta REVENUE + \beta_4 \Delta OCF + \beta_5 ROA + \beta_6 LEVERAGE \\
 & + \beta_7 \Delta CEO + \beta_8 BATH + \beta_9 SMOOTH + \beta_{10} BACTIVITY + \beta_{11} BINDEP \\
 & + \beta_{12} EBOWN + \beta_{13} SIZE + \beta_{14} ADD + \varepsilon.
 \end{aligned}$$

GIL, is firm *i*'s reported goodwill impairment loss divided by total assets at the beginning of the financial year *t*. This goodwill impairment loss is reported as a positive value and it takes on values between 0 and 1. If a firm reports no goodwill impairment loss during an observation period, the company will be classified as a non-impaired in descriptive statistics. A company that reports an impairment loss in goodwill is classified as a goodwill impairer.

The first five explaining variables *BM*, *GWV*, *ΔREVENUE*, *ΔOCF*, and *ROA* are proxies for economic indications of goodwill impairment and are applied to test the hypothesis *H₁*. *BM* is firm *i*'s book value of equity plus reported goodwill impairment divided by market capitalization at *t + 1*. The study expects that firms with higher *BM* ratios are expected to report higher goodwill impairment losses due to the fact that the relationship between the book value of equity and its market value should provide managers with clear indications that the recoverable amount of goodwill has impaired (Bloom, 2009). *GWV*, is firm *i*'s opening carrying value of goodwill divided by total assets at *t*. Companies with higher amounts of goodwill are expected to report higher goodwill impairment losses (Zang, 2008). *ΔREVENUE* is

measured as firm i 's change in revenue during the financial year deflated by total assets at t . The study expects a negative association between the change in revenue and goodwill impairment loss. Similarly, ΔOCF , measured as firm i 's change in operating cash flows divided by total assets at t is expected to have a negative relationship between firm i 's reported goodwill impairment loss. Firm i 's ROA is intended to reflect the firm's prior performance and is calculated by dividing pre-tax profit by total assets at t . ROA is expected to have an inverse relationship with reported goodwill impairments.

Regressors $LEVERAGE$, ΔCEO , $BATH$, and $SMOOTH$ measure managerial discretion and economic incentives in the goodwill impairment process and are applied to test hypotheses H_{2a} , H_{2b} , and H_{2c} . $LEVERAGE$ is measured as firm i 's total debt divided by total assets at t . The study does not predict the relationship between the extent of debt and goodwill impairment losses because prior evidence is mixed (e.g. Beatty & Weber 2006; AbuGhazaleh et al. 2011). Change in CEO, ΔCEO , is a dichotomous variable equaling to 1 if firm i 's has had a change in CEO during the financial year or the year before the observation period and 0 if otherwise. As hypothesis H_{2c} predicts, there is expected to be a positive association between CEO changes and reported goodwill impairment losses. $BATH$ is a dichotomous variable taking on value 1 when the change in firm i 's EBITDA during the financial year deflated by total assets at t is below the median of non-zero negative values of the variable in the sample. Similarly to $BATH$, variable $SMOOTH$ takes on value 1 if the change in firm i 's EBITDA during the financial year divided by total assets at t is above the median of non-zero positive values of the variable. Based on prior research by AbuGhazaleh et al. (2011), $BATH$ is expected to have a negative relationship between reported goodwill impairment losses, whereas $SMOOTH$ is expected to have a positive association between goodwill impairment losses.

The three proxies for corporate governance mechanisms are marked as $BACTIVITY$, $BINDEP$, and $EBOWN$. They are included in the regression model to test the hypothesis H_3 . $BACTIVITY$ is the number of the board meetings during the financial year. $BINDEP$ is the number of independent board members divided by total number of the board members as reported by the companies at the end of the financial year.

EBOWN is the number of shares held by executives and the board members divided by total number of shares at the $t + 1$. The variable is generally measured as reported by the companies in their notes to the financial statements. Similarly to AbuGhazaleh et al. (2011), corporate governance variables are expected to have positive associations with goodwill impairment losses: if managerial discretion variables and corporate governance variables are both significantly associated with goodwill impairment losses, the results may indicate that managers are conveying their private information on the underlying economics of the company instead of behaving opportunistically with regards to goodwill impairment testing-

Finally, variables *SIZE* and *ADD* are included in the equation as control variables. *SIZE* is measured as the natural logarithm of firm i 's total assets at t . Similarly to AbuGhazaleh et al. (2011), the study does not predict the association between the company size and reported goodwill impairment losses although prior research has shown that goodwill impairments are more likely to occur in larger companies (Beatty & Weber; Zang, 2008; Saastamoinen & Pajunen, 2012).. *ADD* is a binary variable which measures company i 's acquisition activities during the financial year. The variable takes on value 1 if firm i has acquired a business during the financial year and accumulated goodwill in its balance sheet and 0 if otherwise. Reflecting the studies by Beatty and Weber (2006), AbuGhazaleh et al. (2011) and Zang (2008), the study expects a positive association between business acquisitions and reported goodwill impairment losses: companies that have had recent merger and acquisition activities may be more prone to impair goodwill accumulated from prior unprofitable acquisitions as the decrease in the carrying value of goodwill will be offset by the new additions to goodwill during the financial year. In addition to this, managers of companies that have had recent additions to goodwill may be inclined to impair goodwill immediately after the acquisition to write off possible overpayments of acquisitions that occur during the financial year (AbuGhazaleh et al., 2011).

Consequently, the study makes a number of expectations for proxies applied in the examination of the determinants of goodwill impairment losses in Finnish listed companies. The expected relationships between each determinant of goodwill impairments and reported goodwill impairment losses are summarized in table 2. The

study does not make a prediction for the relationship between the relative amount of interest bearing debt and goodwill impairments due to the mixed prior research evidence. Additionally, the study does not expect a certain outcome for the relationship between firm i 's size measured as the natural logarithm of total assets and the relative amount of reported goodwill impairment loss.

Table 2. Summary of Predicted Signs for Variables in the Regression

Economic Impairment Factors		Economic Incentives	
<i>BM</i>	+	<i>LEVERAGE</i>	+/-
<i>GWV</i>	+	<i>ACEO</i>	+
<i>ΔREVENUE</i>	-	<i>BATH</i>	-
<i>ΔOCF</i>	-	<i>SMOOTH</i>	+
<i>ROA</i>	-		
Corporate Governance		Control Variables	
<i>BACTIVITY</i>	+	<i>SIZE</i>	+/-
<i>BINDEP</i>	+	<i>ADD</i>	+
<i>EBOWN</i>	+		

4.1.3 Regression Model

The regression model presented above is a pooled regression estimated with ordinary least squares. As in the study of Saastamoinen and Pajunen (2012) the data is not a random sample for it only covers non-financial companies listed in Nasdaq OMX Helsinki. In such instances fixed effects estimation is supported when a panel data is being applied. Nevertheless, since the research data consists of an unbalanced panel data, fixed effects estimation is not available.

Taking into account the limitation of regression method and the data, the results derived from the regression analysis must be interpreted with caution. The relationships between the dependent variable *GIL* and explanatory variables are considered significant if the p-value of a variable is less than 0,05. Moreover, marginally significant variables that take on p-values between 0.05 and 0.1 are also

reported and analyzed. The p-values of statistically significant variables are bolded in the summary of regression results.

4.2 Descriptive Statistics

Table 3 below shows descriptive statistics for continuous variables applied in the regression model. The table presents the results of two-tailed *t*-tests of differences in means and two-tailed Mann-Whitney *U*-tests of differences in median between observations belonging to impairers and observations belonging to non-impairers. As illustrated in table 3, the mean goodwill impairment loss for the total sample is 11,467 million euros. The mean goodwill impairment loss for impairment observations is 59,707 million euros which represents 3,5% of total assets at the beginning of the financial year. The median value for goodwill impairment observations is 4,521 million euros which represents 0,9% of total assets at the beginning of the financial year.

As predicted, the *t*-tests of differences in means show that goodwill impairers tend to have more goodwill in their balance sheets than non-impairers and they perform worse than their non-impairer counterparts when compared with the change in revenue. Contrary to the expectations, *t*-tests of differences for variable *BM* is not significantly different between impairers and non-impairers. The *t*-tests of differences support the expectation that impairers have more active boards than non-impairers but does not show significant differences between *EROWN* and *BINDEP*. Consistent with the expectations, the Mann-Whitney *U*-test of differences in median provides evidence that impairers have significantly lower book-to-market ratios and perform worse than non-impairers when measured by the change in revenue. In addition, impairers have relatively more goodwill in their balance sheets than their non-impairer counterparts. As in the *t*-test of differences the median test shows that impairers have more active boards of directors.

Contrary to the predictions, the differences of ΔOCF , *ROA*, *LEVERAGE*, *BINDEP* and *EROWN* are insignificant between goodwill impairers and non-impairers. Furthermore, the tests of differences do not show any significance between the

variable *SIZE*, conflicting with the prior research findings (Beatty & Weber; Zang, 2008; Saastamoinen & Pajunen, 2012). Finally, out of the three corporate governance variables included in the regression only *BACTIVITY* is significantly different between impairers and non-impairers.

Table 4 shows the descriptive statistics for binary variables *ADD* and ΔCEO . Coherent with *H2c* expecting companies with recent CEO changes to report more goodwill impairment losses more frequently than companies with no changes in their CEO, the chi-squared tests of differences discloses that companies that recorded goodwill impairment losses have gone through recent CEO changes more frequently than non-impairers: in 41,4% of the impairment observations in the final sample a company has experienced a change in CEO. However, the dichotomous variable *ADD* is not significantly different between impairment observations and non-impairment observations, albeit the percentage of recent additions to goodwill for impairment observations exceeds the corresponding percentage for non-impairment observations by 3,8 percentage points. This is inconsistent with the findings reported

Table 3. Descriptive statistics for continuous variables

Variable	Sample total (n = 453)			Impairment observations (n = 87)			Non-impairment observations (n = 366)			T-test of differences (Impairments vs non- impairments)	Mann-Whitney U-test of differences (Impairments vs non- impairments)
	Mean	Median	SD	Mean	Median	SD	Mean	Median	SD	Mean p-value	Median p-value
Impairment (€1000)	11 466,975	0,000	95 342,461	59 707,350	4 521,000	210 834,880	0,000	0,000	0,000	-	
GIL	0,007	0,000	0,029	0,035	0,009	0,057	0,000	0,000	0,000	0,000	0,000
B/M	0,760	0,624	0,659	0,891	0,747	0,991	0,729	0,614	0,546	0,145	0,020
GWV	0,177	0,150	0,154	0,229	0,192	0,168	0,165	0,144	0,148	0,001	0,000
ΔREVENUE	0,042	0,028	0,250	-0,046	-0,005	0,271	0,063	0,040	0,240	0,001	0,001
ΔOCF	-0,001	-0,002	0,084	-0,009	-0,005	0,080	0,001	-0,002	0,084	0,298	0,396
ROA	0,022	0,036	0,122	0,013	0,034	0,133	0,024	0,036	0,119	0,476	0,966
LEVERAGE	0,273	0,268	0,152	0,283	0,285	0,144	0,271	0,264	0,154	0,494	0,413
BATH	-0,020	0,000	0,055	-0,044	0,000	0,086	-0,014	0,000	0,043	0,002	0,000
SMOOTH	0,032	0,000	0,099	0,030	0,000	0,167	0,033	0,000	0,074	0,901	0,003
BACTIVITY	13,914	13,000	4,898	15,023	14,000	5,215	13,650	13,000	4,782	0,028	0,008
BINDEP	0,758	0,800	0,203	0,773	0,800	0,196	0,754	0,800	0,204	0,417	0,451
EBOWN	0,129	0,042	0,186	0,136	0,042	0,187	0,128	0,041	0,185	0,722	0,885
SIZE	5,547	5,489	0,867	5,672	5,679	0,914	5,517	5,470	0,853	0,155	0,242

by AbuGhazaleh et al. (2011) who find that companies with recent additions to goodwill are more prone to report goodwill impairment losses.

Table 4. Descriptive statistics - Dichotomous variables

Variable (%)	Sample total (n = 453)	Impairment observations (n = 87)	Non- impairment observations (n = 366)	Chi-squared test of differences
Δ CEO	26,71	41,38	23,22	0,000
ADD	29,14	32,18	28,42	0,487

Pearson correlations for variables used in the regression are presented in table 5. As presented in the table of correlations between each of the variables, the correlations for variables *BM*, *GWV*, *AREVENUE*, *ΔOCF*, *ROA*, *ΔCEO*, *BATH*, *SMOOTH*, *BACTIVITY*, and *EROWN* point to the predicted direction and are significantly correlated with *GIL* excluding *SMOOTH* which is not significantly correlated with *GIL* despite matching the prediction. Nevertheless, *LEVERAGE* and *BINDEP* are insignificantly correlated with *GIL* and, further, the correlation of *BINDEP* points to the opposite direction than predicted. Interestingly, control variables *SIZE* and *ADD* have significant negative correlations with *GIL*, indicating that smaller companies in fact report higher amounts of goodwill impairment losses and that recent additions to goodwill decrease the propensity of reported goodwill impairment losses during the financial year in which additions occur.

Most importantly, the Pearson correlations between the variables used in the regression are not remarkably correlated with each other or with the control variables *SIZE* and *ADD*. The highest pair-wise correlation between two explanatory variables is -0,465. Given this, multicollinearity, which could violate the use of the regression model, does not seem to be an issue in this study.

Table 5. Pearson Correlations for Explanatory Variables

Variable	GIL	B/M	GWV	ΔREVENUE	ΔOCF	ROA	LEVERAGE	ΔCEO	BATH	SMOOTH	BACTIVITY	BINDEP	EBOWN	SIZE	ADD
GIL	1														
B/M	0,303***	1													
GWV	0,271***	-0,016	1												
ΔREVENUE	-0,171***	-0,012	-0,006	1											
ΔOCF	-0,080*	-0,085*	-0,004	0,133***	1										
ROA	-0,131***	-0,216***	-0,086*	0,187***	-0,043	1									
LEVERAGE	-0,044	0,077	-0,133***	-0,152***	0,040	-0,429***	1								
ΔCEO	0,159***	0,063	0,086*	-0,142***	0,008	-0,220***	0,074	1							
BATH	-0,439***	-0,099**	-0,099**	0,197***	0,186***	-0,071	0,040	-0,059	1						
SMOOTH	0,063	0,004	0,007	-0,196***	0,131***	-0,388***	0,123***	0,105**	0,117**	1					
BACTIVITY	0,096**	-0,150***	0,049	-0,213***	-0,037	-0,285***	0,238***	0,130***	-0,183***	0,065	1				
BINDEP	-0,077	-0,031	-0,067	0,050	-0,019	0,107**	-0,075	-0,042	0,016	-0,072	-0,097**	1			
EBOWN	0,098**	0,019	0,041	-0,001	-0,028	-0,178***	0,044	0,007	-0,101**	0,179***	0,259***	-0,421***	1		
SIZE	-0,128***	0,077	-0,225***	-0,042	0,010	0,216***	0,052	-0,015	0,199***	-0,191***	-0,289***	0,241***	-0,465***	1	
ADD	-0,095**	-0,131***	0,185***	0,195***	-0,013	0,189***	-0,156***	-0,014	0,087**	-0,061***	-0,036	0,009	-0,121***	0,167***	1

* Significance at < 0,10

** Significance at < 0,05

*** Significance at < 0,01

4.3 Regression Results

The results of the pooled regression are presented below in table 6. The table presents the coefficients between *GIL* and each explanatory variables, as well as standard errors and t-values of each explanatory variables. The bolded p-values in the table indicate significance.

Table 6. Pooled Regression: Determinants of Goodwill Impairment Losses

Variable	Prediction	Coefficient	Std. Error	T-value	p-value
Intercept		-0,0171	0,0118	-1,4546	0,146
BM	+	0,0110	0,0018	6,0301	0,000
GWV	+	0,0433	0,0078	5,5703	0,000
Δ REVENUE	-	-0,0053	0,0050	-1,0520	0,293
Δ OCF	-	0,0033	0,0138	0,2426	0,808
ROA	-	-0,0105	0,0121	-0,8670	0,386
LEVERAGE	-/+	-0,0159	0,0085	-1,8846	0,060
Δ CEO	+	0,0048	0,0026	1,8664	0,063
BATH	-	-0,1986	0,0223	-8,9169	0,000
SMOOTH	+	0,0224	0,0128	1,7438	0,082
BACTIVITY	+	0,0002	0,0002	0,8662	0,387
BINDEP	+	-0,0056	0,0061	-0,9132	0,362
EOWN	+	0,0021	0,0074	0,2810	0,779
ADD	+	-0,0041	0,0016	-0,9472	0,344
SIZE	-/+	0,0015	0,0027	1,5416	0,124
Adjusted R ²	0,338				

With regards to economic factors affecting goodwill impairment decisions, *BM* and *GWV* are positive and significant supporting *H1*. However, *Δ REVENUE*, *Δ OCF* and *ROA* are insignificant and do not support *H1* despite *Δ REVENUE* and *ROA* having coefficients coherent with the prediction. The proxies for managerial discretion in goodwill impairment testing are all significant and have predicted coefficients. That is, the regression results support all hypotheses *H2a*, *H2b*, *H2c*. Contrary to hypothesis *H3*, none of the corporate governance variables show significance. Additionally, *BINDEP* has negative coefficient, which does not meet the predicted sign. Finally, the control variables *ADD* and *SIZE* show no significance in the regression.

The results indicate that the leading economic factors that affect goodwill impairment decisions are a company's book-to-market ratio and the amount of goodwill relative to total assets during the financial year. The finding that an increase

in a company's book-to-market ratio is closely related goodwill impairment losses is consistent with prior research. When a company's book value of equity exceeds its market value of outstanding shares, managers should be aware that there are indications that the value of goodwill may have impaired (Bloom, 2009). The results strongly suggest that the Finnish listed companies use share prices as information sources of the underlying value of goodwill. These results are similar to findings of studies conducted on US listed companies and companies listed in the UK (Comiskey & Mulford, 2010; AbuGhazaleh et al, 2011). Moreover, as expected, Finnish listed companies that carry higher amounts of goodwill to total assets are more vulnerable to goodwill impairment losses. That is, companies that have relatively more goodwill in their balance sheets usually carry out more goodwill impairment tests and, therefore, their carrying amounts of goodwill are under greater exposure to impairment losses. The finding is similar to Zang (2008), although inconsistent with AbuGhazaleh et al. (2011). On the other hand, companies that carry higher amounts of intangible assets such as goodwill in their balance sheets may be under closer monitoring since intangibles are difficult to value (Barth, Beaver & Landsman, 2001). That is, analysts of companies that have higher amounts of goodwill might spend more time to value these companies to gather more information on the intangible assets carried in these companies' balance sheets. With regards to other economic goodwill impairment variables, the study indicates that changes in turnover and operating cash flows as well as prior performance measured with return on assets do not have predictive power for goodwill impairment losses in Finnish listed companies.

As stated above, the results of the regression support all managerial discretion hypotheses *H2a*, *H2b*, *H2c*. Firstly, companies with higher amounts of debt appear to be less likely to report goodwill impairment losses. As suggested by studies of Beatty and Weber (2006) and Watts & Ramanna (2012) this may be due to managers avoiding violation of debt covenants that could have financial cost increasing consequences. In other words, the results of the regression support the equity/debt theory described by Watts and Zimmerman (1990).

Recent change in CEO also has a marginal significant positive relationship with goodwill impairment losses in Finnish listed companies. The finding is consistent

with a number of prior research including the previous study of goodwill impairment decisions in Finnish listed companies by Saastamoinen and Pajunen (2012). One possible explanation for the high amount of goodwill impairment losses occurring shortly after CEO changes may be due to the new CEO taking a big bath in order to report higher returns in the future or, alternatively, due to the new CEO discontinuing operations while restructuring the company's assets in attempt to improve financial performance as suggested by Masters-Stout et al. (2008).

The results derived from the regression also indicate earnings management behavior among the Finnish listed companies that carry goodwill in their balance sheets. Firstly, the results suggest that big bath behavior has a significant positive relationship between goodwill impairment decisions: when a company's earnings would have been negative without a goodwill impairment loss, managers are more likely to impair goodwill in order to take an additional hit on earnings in pursuit for higher earnings in the upcoming years. The result is congruent with the results of Saastamoinen and Pajunen (2012). However, the reason behind the positive relationship between big bath behavior and goodwill impairment losses may be that managers are taking actions to impair goodwill because of the declined operating performance of the company: as Comiskey and Mulford (2010) find in their study on the triggering events of goodwill impairments, companies that report lower than expected operating performance with measures such as EBITDA tend to impair goodwill. Thus, the significant positive relationship between goodwill impairment losses and big bath behavior shown by the regression results could as well indicate managers' reactions to adjust the value of goodwill due to the declined performance of the company. This in turn is consistent with the objectives of IAS 36. However, the results of the regression also indicate that there is a marginally significant positive relationship between smoothing behavior and goodwill impairment losses, meaning that Finnish listed companies may be inclined to report goodwill impairment losses when the operating earnings would have been better than expected.

The study fails to find any significant relationship between corporate governance variables and goodwill impairment losses. This may indicate that managers of Finnish listed companies are, to some extent, manipulating goodwill impairment tests

as described above. The finding highlights the concern raised by many of Finnish auditors that IAS 36 provides opportunities to manipulate goodwill impairment tests (Pajunen & Saastamoinen, 2013). However, the finding contradicts with AbuGhazaleh et al. (2011) who find significant associations between the effectiveness of a firm's corporate governance mechanisms and goodwill impairment losses.

Finally, the size of a company and recent additions to goodwill have no predictive power on goodwill impairment losses as presented by the results of regression. The result concerning a firm's size and its effects on goodwill impairment losses contradicts with prior research on Finnish listed companies that show a significant positive relationship between goodwill impairments and the size of a company (Saastamoinen & Pajunen, 2012). Further, the findings indicate that recent additions to goodwill do not appear to provide managers of Finnish listed companies with incentives to impair goodwill.

4.4 Robustness Tests and Additional Analyses

The regression results illustrated and described above may be driven by industry effects. Thus, the regression was replicated with inclusion of industry variables. Following the study by Saastamoinen and Pajunen (2012), the companies in Nasdaq OMX Helsinki were divided into five sectors: consumer discretionary, information technology, industrials, materials and others. According to Saastamoinen and Pajunen (2012), companies classified as consumer discretionary, industrials, materials and information technology may be more vulnerable to business cycles. Therefore, goodwill impairments may be more probable among these companies.

Table 7 summarizes the descriptive statistics of goodwill relative to total assets among companies in different industries. The table discloses that information technology companies may have more goodwill in their asset composition than companies in other industries. Thus, information technology companies could be more vulnerable to goodwill impairment losses. The average amount of goodwill in information technology companies' balance sheet is 31,07 % whereas companies classified as materials carry goodwill of 7,40 % of total assets on average. Most of

the companies are classified as industrials: 236 observations belong to industrials which represents over 52 % of total number of observations in the research sample.

Table 7. Industry Comparison: Goodwill of Total Assets

Industry	Average	Min	Max	Standard deviation	Number of observations
Consumer Discretionary	22,21 %	0,06 %	57,51 %	19,81 %	45
Industrials	15,33 %	0,26 %	73,67 %	13,22 %	236
Information Technology	31,07 %	4,09 %	69,11 %	15,35 %	75
Materials	7,40 %	0,15 %	22,19 %	6,25 %	59
Others	13,67 %	0,15 %	40,88 %	13,26 %	38

Taking into account the high amount of observations that belong to industrials, the results may be biased because of the high representativeness of companies belonging to this sector. In addition to this, information technology companies generally carry high amounts of goodwill in their balance sheets. These companies may be more exposed to goodwill impairments and, therefore, many of the goodwill impairment losses may be traced to this specific industry. These issues highlight the need for a robustness test for the results presented above in section 4.3.

Table 8. Pooled Regression: Industry Variables Included

Variable	Prediction	Coefficient	Std. Error	T-value	p-value
Intercept		-0,0078	0,0135	-0,5784	0,563
B/M	+	0,0105	0,0019	5,6811	0,000
GWV	+	0,0347	0,0084	4,1379	0,000
ΔREVENUE	-	-0,0067	0,0050	-1,3577	0,175
ΔOCF	-	0,0020	0,0136	0,1448	0,885
ROA	-	-0,0089	0,0123	-0,7269	0,468
LEVERAGE	-/+	-0,0069	0,0087	-0,7881	0,431
ΔCEO	+	0,0049	0,0026	1,9167	0,060
BATH	-	-0,1928	0,0221	-8,7203	0,000
SMOOTH	+	0,0163	0,0123	1,2528	0,211
BACTIVITY	+	0,0001	0,0003	0,2651	0,791
BINDEP	+	-0,0097	0,0062	-1,5629	0,119
EBOWN	+	-0,0005	0,0075	-0,0720	0,943
ADD	+	-0,0033	0,0023	-1,2461	0,213
SIZE	-/+	0,0015	0,0017	0,9205	0,358
CON	-/+	-0,0083	0,0054	-1,5428	0,124
IND	-/+	-0,0067	0,0044	-1,5257	0,128
MAT	-/+	-0,0048	0,0052	-0,9337	0,351
TEC	-/+	0,0058	0,0053	1,1015	0,271
Adjusted R ²		0,355			

Table 8 illustrates the results of the same regression with inclusion of industry variables for consumer discretionary companies (*CON*), industrials (*IND*), materials

(*MAT*) and information technology companies (*TEC*) that are perceived as more exposed to goodwill impairment losses. As seen in table 7, none of the industry variables included in the regression is significant in explaining goodwill impairment losses. On the other hand, the results of the additional regression results reveal that the magnitude of interest bearing debt and earnings smoothing activities are no longer significantly associated with goodwill impairment losses after the inclusion of industry variables. Given this, contrary to findings on US companies by Beatty and Weber (2006), the amount of interest bearing debt does not seem to provide the managers of Finnish listed companies with incentives to manipulate goodwill impairment tests.

Nevertheless, a firm's book-to-market ratio and the relative amount of goodwill impairment in a firm's asset composition are still significantly associated with goodwill impairment losses after the inclusion of industry variables. In addition to this, recent change in a firm's CEO has a significant positive association with goodwill impairment losses after controlling for industry effects. Possible big bath behavior has also a significant negative relationship with goodwill impairment losses, indicating that such behavior cannot be traced to a single sector in Nasdaq OMX Helsinki.

The results concerning corporate governance mechanisms and their relationship between goodwill impairment losses do not appear significantly different compared to the results provided by the original regression model: both of the regression results indicate that none of the corporate governance mechanisms are significantly associated with goodwill impairment losses. After controlling for industry effects, *EBOWN* changes its sign but due to its insignificance with regards to explaining goodwill impairment losses no inferences can be drawn from the minor difference observed.

5 CONCLUSIONS

One of the core objective of IAS 36 is to provide users of financial information timely and fair information on the value of goodwill that a firm possesses. However, due to the vague nature of IAS 36 and lack of clear guidelines on how to conduct the goodwill impairment test, managers may have an opportunity to manipulate the outcomes of the goodwill impairment tests. On the other hand, managers' opportunistic behavior may be mitigated with effective corporate governance mechanisms in order to provide more accurate information to the users of financial information.

The purpose of the study was to examine the determinants of goodwill impairment losses in Finnish listed companies between 2010 and 2014. The study focused on economic indications of goodwill impairments, managerial discretion in goodwill impairment decisions and the effect of corporate governance mechanisms on goodwill impairment decisions. Firstly, the study examined the key economic indications that lead to managers to report goodwill impairment losses. Secondly, the study investigated the extent to which managers use discretion in goodwill impairment decisions to opportunistically overstate or understate goodwill impairment losses. Thirdly, the study sought to shed light on the relationship between corporate governance mechanisms and goodwill impairment losses to find out whether any indications of opportunistic behavior in goodwill impairment tests are due to managers discretion or managers' attempts to convey their private information on the underlying economics of the firm through goodwill impairment tests.

The key findings of the study are related to economic indications of goodwill impairments and managerial discretion. Firstly, the study finds significant positive relationships between a company's book-to-market ratio and goodwill impairment losses as well as a significant positive association between the magnitude of goodwill to total assets and goodwill impairment losses. The findings indicate that Finnish listed companies use book-to-market ratios leading economic signals to determine if there has been a recent impairment in goodwill. As stated by prior research, when the book value of equity exceeds the market value of the company, the recoverable

amount of goodwill may also have impaired. Furthermore, the relative amount of goodwill predicts goodwill impairments since companies that have more goodwill in their balance sheet are more exposed to goodwill impairments. On the other hand, companies that have more goodwill in their balance sheet may be more intangible intensive and, hence, more closely monitored by investors and security analysts. Therefore, managers of these companies may be more motivated to provide timely and accurate information on the underlying economics of the company through the goodwill impairment test.

Nevertheless, the results of the study do not show any significant association between a firm's performance and goodwill impairment losses. The study used changes in operating cash flows and turnover as well as return on assets as a proxies for a firm's performance. The findings on the association between economic indications of goodwill impairments and goodwill impairment losses reveal that the characteristics of goodwill carried in a firm's balance sheet have more predictive power on goodwill impairment losses than do proxies of operating performance. That is, Finnish listed firms may be more inclined to put more weight on the characteristics of goodwill when observing indications of an impairment in goodwill.

With regards to managerial discretion in goodwill impairment losses, the results of the study support the big bath and CEO change hypotheses. The results reveal that goodwill impairments are very common in cases where a firm's operating performance would have been abnormally bad without the reported goodwill impairment loss. By doing this, managers may enhance future performance when the impairment is written off during an abnormally bad financial year. However, the study used abnormal changes in EBITDA to investigate earnings management behavior. Therefore, the finding that big bath behavior is common Finnish listed companies' goodwill impairment reporting may be due to the fact that the companies impairing goodwill during abnormally bad years are simply responding to a decline in the operating performance of a cash-generating unit or the entire company. According to prior research, EBITDA is one of the economic indications of goodwill impairments observed by managers do determine if there has been an impairment in the carrying amount of goodwill. Thus, the finding of big bath behavior may be due to managers taking on actions to signal the deteriorated performance of the business

and its underlying economics. With regards to smoothing and equilibrium earnings reporting strategy incentives, the study fails to find significant association between goodwill impairment losses and smoothing activity. The original regression indicates a positive significant relationship between goodwill impairment losses and smoothing. However, this finding is not robust when controlled for industry effects.

As predicted, recent changes in companies' CEOs are positively associated with goodwill impairment losses. There are two possible explanations for the finding. On one hand, newly appointed CEOs may be inclined to take a big bath through goodwill impairment losses during the first couple of years in order to report higher future earnings. Early goodwill impairments may also provide them an opportunity to blame the reported goodwill impairments on the previous CEO. On the other hand, the new CEO may be helping a troubled company to improve its performance by restructuring its assets which in turn may lead to goodwill impairment losses when the company is closing down its operations.

The original regression model indicates that the amount of interest bearing debt to total assets has an inverse association with goodwill impairment losses: the higher the amount of interest bearing debt relative to total assets the less likely a company is to report a goodwill impairment loss. Nevertheless, the finding is not robust when controlling for industry effects. Thus, the amount of interest bearing debt relative to total assets does not seem to provide managers of Finnish listed companies incentives to opportunistically manipulate goodwill impairment tests.

The study fails to find any association between proxies describing the effectiveness of a firm's corporate governance and goodwill impairment losses. The finding may indicate that managers of Finnish listed companies are exploiting the goodwill impairment test under IAS 36 to opportunistically avoid or overstate goodwill impairment losses. The finding supports prior research on Finnish listed companies that highlight the possibility that there exists opportunistic reporting in terms of goodwill impairments.

The study is subject to a number of limitations. Therefore, the results of the study must be interpreted with caution. The study is conducted using a sample which

comprises of companies from one country and the results may not be generalizable to companies in other countries. Furthermore, under IAS 36, goodwill impairment tests are carried out on the cash-generating unit level. Since the data for companies' performance of their cash-generating units is unattainable, the study focused on potential goodwill impairments on a firm-wide level. This could bias the results to some extent: for instance, companies that have performed well on a firm-wide level may have a single goodwill carrying cash-generating unit which is performing significantly worse than other cash-generating units in the company. In these cases goodwill impairments are likely even if the company's overall performance does not seem to indicate goodwill impairment losses. Finally, as the reasons provided for the decisions to impair goodwill vary immensely, it is worth noting that finding a single linear model to capture all potential determinants of goodwill impairment losses is a very difficult task. The regression model applied in the study is only one of the various models used by prior research to study determinants of goodwill impairment losses.

The results of the study should be of standard setter's interest. As stated above, the intention of IAS 36 is to provide more accurate and timely information on the fair value of a company's assets to users of financial information. According to advocates of fair value approach in valuing assets, this should enhance information usefulness and transparency of financial statements. In order to assess whether IAS 36 actually serves its intended purpose, the IASB should take into account the results provided by studies on what factors impact managers decisions to impair goodwill. Moreover, the results of the study can be used in order to identify the circumstances in which managers may have incentives to opportunistically manipulate outcomes of goodwill impairment tests.

Future studies on determinants of goodwill impairment losses and discretion in goodwill impairments could use a more comprehensive set of corporate governance mechanisms to further study the effect of a firm's corporate governance mechanisms on managers' decisions to impair goodwill. For example, the effect of managements' bonus incentives on goodwill impairment losses could be added under examination in prospective studies. Another possible interest of future study could be the possible effects that a firm's ownership structure could have on goodwill impairment tests.

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