Managerial discretion or economic conditions? Examining the determinants of goodwill impairments in Finnish listed companies

Jill Winter

Department of Accounting and Commercial Law
Hanken School of Economics
Helsinki
2017
**Title of thesis:** Managerial discretion or economic conditions? Examining the determinants of goodwill impairments in Finnish listed companies

**Abstract:**

This thesis examines the determinants of IAS 36 goodwill impairments in Finnish listed companies. The revision of the accounting standards regarding acquired goodwill in the beginning of the 21st century signified a remarkable change in the prevailing accounting practices in several countries. While the new approach to goodwill accounting was intended to improve the representational faithfulness of earnings and increase the transparency of accounting, the standards have also received much criticism in the accounting literature. Due to the unverifiable discretion inherent in the accounting standards, the outcome of the impairment test might be subject to managerial opportunism and bias.

This thesis aims to investigate whether goodwill impairments recognised by Finnish listed companies are driven by managerial reporting incentives or actual economic conditions, as intended by the standard setting authorities. Although data on Finnish companies have been included in previous studies, there exists only one paper in which these firms are separately studied. This thesis builds on that paper, providing new evidence on goodwill impairment accounting in the Finnish reporting environment. The research sample comprises 609 firm-year observations of 98 OMXH listed non-financial companies from the period 2010-2016. Using logistic and multiple linear regression, this study separately examines the decision to impair and the size of the reported impairment loss. To test the research hypotheses, the two dependent variables are regressed on proxies for managerial reporting incentives, economic factors and control variables for firm size and industry membership.

The research findings are in line with prior Finnish and international research. Having controlled for economic conditions, the combined results provide evidence on the notion that Finnish managers use their discretion in goodwill impairment accounting. More specifically, managerial reporting incentives appear to influence decisions relating to both the timing and the magnitude of reported impairment losses. The results reveal a significant positive association between recognised impairments and recent, year $t$, CEO changes, which suggests that tenured managers are more reluctant to impair goodwill than their newly appointed counterparts. The empirical results also provide evidence on big bath accounting behaviour among Finnish managers: impairments are both more frequent and larger in size when the firms' pre-impairment earnings would have been negative in the observation year. In addition, although leverage does not appear to influence the impairment decision as such, the reported impairment losses are found to be significantly smaller for more indebted companies. These results are believed to relate to managers' debt contracting concerns.

Finally, the analysis also indicates that the reported goodwill impairments are associated with actual economic factors. The incidence of impairment seems to be reflected in the market valuation of the firm and it appears as if it is the small and, in particular, the goodwill-intensive companies, that are most exposed to goodwill impairment.

**Keywords:** Big bath, Goodwill, IAS 36, IFRS 3, Impairment, Intangible Assets, US GAAP
## CONTENTS

1 INTRODUCTION .......................................................................................................................... 1  
1.1 Problem background ..................................................................................................................... 1  
1.2 Purpose and motivations ............................................................................................................... 2  
1.3 Structure .................................................................................................................................. 3  

2 GOODWILL AS AN ASSET ............................................................................................................. 4  
2.1 The concept of goodwill .............................................................................................................. 4  
2.2 Acquired goodwill ......................................................................................................................... 5  

3 ACCOUNTING FOR GOODWILL .................................................................................................... 8  
3.1 The accumulation of goodwill ...................................................................................................... 8  
3.2 Testing goodwill for impairment .................................................................................................. 10  
3.3 Accounting for goodwill under US GAAP ................................................................................... 14  
3.4 Criticism towards the current impairment approach ..................................................................... 15  

4 A REVIEW OF THE GOODWILL LITERATURE ........................................................................... 17  
4.1 The information content of goodwill and goodwill impairments .............................................. 17  
4.1.1 The value relevance of goodwill and goodwill impairments .................................................. 18  
4.1.2 The timeliness of goodwill impairments ............................................................................... 20  
4.2 The determinants of goodwill impairments ................................................................................ 24  
4.2.1 Managerial reporting incentives .............................................................................................. 25  
4.2.2 Economic impairment and the provision of private information ............................................ 30  

5 HYPOTHESIS DEVELOPMENT ................................................................................................... 34  
5.1 Changes in senior management .................................................................................................. 34  
5.2 Taking a bath ............................................................................................................................. 35  
5.3 Debt contracting ......................................................................................................................... 36  

6 RESEARCH DESIGN ..................................................................................................................... 38  
6.1 Data and sample selection ........................................................................................................... 38  
6.2 Research methods ....................................................................................................................... 39  
6.3 Variables .................................................................................................................................. 40  
6.3.1 Dependent variables .................................................................................................................. 41  
6.3.2 Managerial reporting incentives .............................................................................................. 41  
6.3.3 Economic factors of impairment ............................................................................................. 42  
6.3.4 Control variables for size and industry membership ............................................................... 43  
6.4 Regression models ...................................................................................................................... 44
7 RESULTS AND FINDINGS

7.1 Descriptive statistics .......................................................... 47
7.2 Comparison between impairers and non-impairers .................... 49
7.3 Correlations between individual variables ................................ 51
7.4 Regression analyses .............................................................. 53
  7.4.1 The goodwill impairment decision ....................................... 53
  7.4.2 The size of the goodwill impairment loss ............................... 55

8 DISCUSSION AND ANALYSIS ...................................................... 58

8.1 Results discussion .................................................................. 58
8.2 Reliability and validity ............................................................ 63

9 CONCLUDING REMARKS ......................................................... 65

9.1 Conclusions ............................................................................. 65
9.2 Limitations .............................................................................. 66
9.3 Contribution and suggestions for further research ..................... 67

APPENDICES

Appendix 1 PEARSON CORRELATIONS ........................................... 69
Appendix 2 SVENSK SAMMANFATTNING ....................................... 70

TABLES

Table 1 Sample selection ............................................................. 38
Table 2 Definitions of variables .................................................... 46
Table 3 Observations with goodwill and goodwill impairment ........ 47
Table 4 Descriptive statistics for the full research sample .................. 48
Table 5 Mean goodwill to total assets by industry ............................ 49
Table 6 Comparison between impairment and non-impairment observations ...................... 50
Table 7 Pearson correlations ......................................................... 52
Table 8 Logistic regression output .................................................. 54
Table 9 Multiple linear regression output ....................................... 56
Table 10 Hypotheses H1a and H1b regarding changes in senior management ................. 58
Table 11 Hypotheses H2a and H2b regarding earnings baths .................. 60
Table 12 Hypotheses H3a and H3b regarding incentives related to debt contracting .... 61
FIGURES

Figure 1  The components of goodwill (according to Johnson and Petrone, 1998) .......... 6

ACRONYMS

CEO         Chief Executive Officer
EFRAG       European Financial Reporting Advisory Group
EU          European Union
FASB        Financial Accounting Standards Board
GAAP        Generally Accepted Accounting Principles
IAS         International Accounting Standards
IASB        International Accounting Standards Board
ICB         Industry Classification Benchmark
IFRIC       International Financial Reporting Interpretations Committee
IFRS        International Financial Reporting Standards
OMXH        Nasdaq OMX Helsinki
P&L         Profit and Loss Statement
SFAS        Statement of Financial Accounting Standards
US GAAP     United States Generally Accepted Accounting Principles
VIF         Variance Inflation Factor
1 INTRODUCTION

In March 2004, the International Accounting Standards Board (IASB) issued IFRS 3 Business Combinations and the revised version of IAS 36 Impairment of Assets. These new accounting standards abolished the pooling of interest method of accounting and replaced the long-accepted systematic amortisation of acquired goodwill with regular impairment reviews. The increasing economic importance of intangible assets had led the Financial Accounting Standards Board (FASB) in the United States to introduce comparable standards – SFAS 141 and SFAS 142 – already in 2001. With the enforcement of Regulation (EC) No 1606/2002, this new approach to goodwill accounting came to alter the prevailing accounting practices in several European countries. From January 1, 2005 onwards, all EU-listed companies have been required to prepare their financial statements in conformity with IFRS.

1.1 Problem background

Goodwill is an intangible asset that represents “the future economic benefits arising from other assets acquired in a business combination that are not individually identified and separately recognised” (IFRS 3). Instead of being amortised, goodwill is to be tested for impairment on an annual basis and whenever there are indications of impairment, by using estimates of its current fair value (IAS 36). Along with extensive disclosure, these regular impairment tests were expected to improve the representational faithfulness of earnings, increase the transparency of accounting and provide the users of financial statements with more relevant and meaningful information (Chalmers, Godfrey and Webster, 2011; Massoud and Raiborn, 2003). At the same time, this fair value-based approach provides managers with considerable discretion as to determine whether goodwill has declined in value, how large the potential impairment loss is and when the loss is to be recognised in the financial statements (Lhaopadchan, 2010; Qasim, Haddad and AbuGhazaleh, 2013; Troberg, 2013). Since both the estimates used in the impairment test as well as the valuation based on them are extremely hard for external parties to validate, managers might be incentivised to use their afforded discretion for opportunistic purposes (Watts, 2003).

While there are some studies that support the standard setters’ view on the advantages of the impairment approach (e.g. Chalmers et al., 2011; Jarva, 2009) and show that goodwill impairments are more likely driven by economic factors of impairment (AbuGhazaleh, Al-
Hares and Roberts, 2011; Iatridis and Senftlechner, 2014), the new approach to goodwill accounting has also endured much criticism in the accounting literature. The impairment approach has been perceived as too intricate and too dependent on the reasonableness of the unverifiable assumptions managers make when determining the fair value of the goodwill asset (Ji, 2013). In fact, prior empirical research indicates that reported goodwill impairments lag behind the economic impairment of goodwill by one to two years (Amiraslani, Iatridis and Pope, 2012; Jarva, 2009; Li and Sloan, 2009; Ojala, 2007), and that the discretion inherent in the accounting standards allows managers – depending on their reporting incentives – to either avoid or accelerate the recognition of goodwill impairment losses (e.g. Masters-Stout, Costigan and Lovata, 2008; Ramanna and Watts, 2012; Storå, 2013). Some studies have also found notable deficiencies in the selection of appropriate discount rates, the definition of cash-generating units, and the compliance with the disclosure requirements – all of which are critical elements of the impairment test (see e.g. Carlin and Finch, 2009; ESMA, 2013).

In the light of these contradicting studies, it is unclear how managers use their afforded discretion and whether the accounting standards have fulfilled their intended purpose in providing financial statement users with more relevant and timely information. Given the increasing economic significance of the goodwill asset, the practical application of the accounting standards is a matter that should be of great interest to standard setters, auditors, investors and financial statement users alike.

1.2 Purpose and motivations

The purpose of this thesis is to examine the determinants of goodwill impairments in Finnish listed companies. Examining both the decision to impair and the magnitude of the reported impairment loss, this study aims to explore whether goodwill impairments are driven by managerial reporting incentives or economic conditions, as intended by the standard setting authorities. Investigating goodwill is motivated for several reasons. Acquired goodwill accounts for a considerable amount of listed companies’ balance sheets and constitutes an increasingly important asset for many entities.1 Due to how it is valued, acquired goodwill is

---

1 In 2008, as much as 53% of the purchase price in Finnish business combinations was assigned to goodwill (Finnish Financial Supervisory Authority, 2009). In 2015, the median goodwill to equity for European and U.S. companies was approximately 31% and the median goodwill to total assets 13% (André et al., 2016).
also particularly vulnerable to adverse changes in the firm’s economic environment and, according to Filip, Jeanjean and Paugam (2015), the most sensitive asset to declines in firm value. (Filip et al., 2015)

This thesis differs from existing goodwill literature in the sense that it examines goodwill impairment accounting in the Finnish reporting environment. Although data on Finnish firms have been included in previous studies (e.g. Amiraslani et al., 2012), there exist only one comparable paper (Saastamoinen and Pajunen, 2016) in which these companies are separately studied. As also Saastamoinen and Pajunen (2016) note, most prior studies have been carried out in the US GAAP environment or in countries with greater capital markets. Finnish firms, however, operate in a rather different institutional setting. Also, in contrast to firms in the Anglo-Saxon regime, companies in Finland are much less familiar with fair value accounting. (Lhaopadchan, 2010; Troberg, 2013:15-18). This thesis further differs from existing research in the sense that it examines goodwill impairment accounting in the post-financial crisis period (i.e. 2010 onwards). According to the European Securities Market Association (ESMA), the financial and economic crisis in 2008-2009 not only caused a significant downturn in the European merger and acquisition activities, it also eminently changed the return expectations of capitalised goodwill (ESMA, 2013). Having “mired in recession” for multiple years, Finland now appears to be recovering (Milne, 2017). In part due to these interesting macroeconomic conditions, in part due to the time that has passed since the initial adoption of the new accounting standards, Saastamoinen and Pajunen (2016) also suggest a study similar to theirs to be conducted on more recent data.

1.3 Structure

The remainder of this paper is structured as follows. The goodwill asset and its current accounting treatment under IFRS are presented in chapters two and three. The literature review in chapter four then provides an insight into existing goodwill research. Chapters five and six provide the research hypotheses, describe the data selection process and outline the research methodology. The results of the empirical tests are presented in chapter seven, where after, in chapter eight, the results are discussed in the light of the research hypotheses and existing literature. Chapter nine summarises the research findings, concludes the paper and provides suggestions for further research.
GOODWILL AS AN ASSET

Over the years, the accounting treatment of goodwill has created great dissent between both scholars and practitioners as well as standard setters and financial statement preparers. In the accounting literature, the most enduring debates have regarded whether goodwill is an asset that can be recognised on the balance sheet, and when recognised, how it should be accounted for (Bugeja and Gallery, 2006; Qasim et al., 2013). Whereas some opponents argue that goodwill should not be recognised as an asset (see e.g. Gore and Zimmerman, 2010), both the IASB and the FASB have decided that acquired goodwill, i.e. goodwill generated in a business combination, meets the definitions of an asset. In order to understand the current accounting treatment of acquired goodwill – and by that the issues related to it – one must be familiar with the reasoning behind this decision and with the overall concept of goodwill.

2.1 The concept of goodwill

Storå (2013) defines goodwill as “the difference between the value of a firm’s assets in entity-specific use and the value of its assets in general use”. When the entity-specific value exceeds the general use value – i.e. when the firm’s market value as a going concern is higher than the sum of the fair values of its individual assets – the firm has goodwill. This means, that the firm is able to create more value from using its assembled assets than from selling its assets individually. (Storå, 2013) According to Scott (2008:249), goodwill exists whenever an entity is able to earn something in excess of its cost of capital on its net assets.

Storå (2013) states that there are numerous factors that enable an entity to earn an excess return on its net assets, and that thereby contribute to goodwill. The author mentions factors such as benefits from advertising, research activities and customer service, all of which create expectations of future abnormal earnings for the entity. The value attributed to reputation, good stakeholder relations and a well-trained workforce is also often described as goodwill (Seetharaman, Sreenivasan, Sudha and Yee, 2005). In the accounting standards, this value is referred to as internally generated goodwill (IFRS 38.49). Since internally generated goodwill is not an identifiable resource controlled by the entity that can be reliably measured at cost, it is explicitly prohibited to be recognised as an asset (IFRS 38.49). The costs that contribute to goodwill are, instead, expensed as incurred. Although internally generated goodwill is not measurable and cannot be acquired or sold as a separate item, it
can be transferred together with other assets in a business combination. In an acquisition, the purchase price provides a measure of the cost of the acquiree’s internally generated goodwill, and as follows, goodwill can be capitalised. (Scott, 2008:252; Storå, 2013) This thesis examines the accounting treatment of such acquired goodwill.

2.2 Acquired goodwill

Goodwill, as a balance sheet item, is created in business combinations. When the transferred consideration, i.e. the purchase price, exceeds the fair value of the acquiree’s identified net assets, goodwill equalling to that difference arises on the consolidated balance sheet (IFRS 3.32). Under the current accounting standards, goodwill is interpreted as an intangible asset that represents the future economic benefits arising from other assets acquired in a business combination that are not individually identified and separately recognised (IFRS 3). Such economic benefits can either arise from synergies between the acquired identifiable assets or from assets that individually do not qualify for recognition in the financial statements (IAS 38.11). The standards setters have striven to retain the term goodwill as clean as possible, meaning that the goodwill asset should comprise nothing more than the going-concern element of the acquiree’s existing business and potential benefits from the synergies of the business combination (Troberg, 2013:88). The current view on goodwill and its accounting treatment is based on a concept of “core goodwill”, developed by Johnson and Petrone in the late 1990’s.

Johnson and Petrone (1998) present two alternative approaches to defining acquired goodwill. According to the authors, goodwill can either be viewed from a “top-down” perspective or from a “bottom-up” perspective. While goodwill under the top-down perspective is seen as a component integral to a larger asset, the bottom-up perspective views goodwill in terms of the different components it consists of. This latter perspective builds on the assumption that if an acquirer, in exchange for the acquiree’s net identifiable assets, is willing to pay a consideration that exceeds the fair value of those assets, the acquisition must also comprise other resources that are of value to the acquirer. There must in other words exists “something additional” outside the acquiree’s financial statements to explain the higher purchase price (Gore and Zimmerman, 2010). Johnson and Petrone (1998) attempt to explain this difference by identifying six components that might be included in the goodwill asset. According to the authors, the goodwill asset might comprise (1) the excess of the fair values over the book values of the acquiree’s recognised net assets;
(2) the fair values of other net assets not recognised by the acquiree; (3) the fair value of the going concern element of the acquiree’s existing business; (4) the fair value of synergies from combining the acquirer’s and the acquiree’s businesses; (5) overvaluation of the consideration paid by the acquirer; and (6) overpayment by the acquirer. Figure 1 below illustrates the six components of goodwill.

Although components 1 and 2 are sometimes included in goodwill, the authors do not consider them to conceptually be a part of the goodwill asset. Component 1 reflects such gains on the acquiree’s recognised net assets that have not been recognised by the acquiree, and should therefore be a part of those assets rather than a part of goodwill. Component 2 reflects assets that have not previously been recognised by the acquiree. Such assets might comprise various intangibles (e.g. brands and benefits from patents) that have not met the recognition criteria but could in fact be identified as separate assets (Troberg, 2013:87). Unlike components 1 and 2, components 5 and 6 are not considered as assets themselves. (Johnson and Petrone, 1998)

According to Johnson and Petrone (1998), only components 3 and 4 are conceptually a part of the goodwill asset. The authors therefore term these two components core goodwill. Component 3 reflects the going concern element of the acquiree’s existing business. The
going-concern goodwill is a pre-existing goodwill that represents the acquiree’s ability to, as an established business, earn a higher return on its assembled net assets than would be expected if those assets had to be acquired separately. This value is determined by the acquiree’s market value as a stand-alone business. Whereas component 3 existed prior to the business combination, component 4 did not. Component 4 represents the fair value of the synergies from combining the acquirer’s and the acquiree’s businesses and net assets. Such synergies might e.g. involve an increased market share, higher future sales, lower cost of capital, or cost savings from economies of scale (Gore and Zimmerman, 2010; Troberg, 2013:88). The value of this combination goodwill is based on the excess paid for the acquiree over its market value, and is always unique to the business combination in question. (Johnson and Petrone, 1998)

Core goodwill cannot be recognised as an asset on the consolidated balance sheet, unless it meets the general criteria that characterise an asset: (1) an asset embodies future economic benefits; (2) those benefits are controlled by an entity; and (3) the control over the future economic benefits results from a past transaction or event. To qualify for recognition, goodwill must also be relevant, reliable and measurable. Having considered goodwill in the light of these criteria, the FASB concluded that core goodwill meets the asset definition. (Johnson and Petrone, 1998; see also EFRAG, 2014)
3 ACCOUNTING FOR GOODWILL

This chapter provides an overview of the current accounting treatment of acquired goodwill. In 3.1, the accumulation of goodwill under IFRS 3 is presented. In 3.2, the goodwill impairment test under IAS 36 is reviewed. Subsection 3.3 highlights the most notable differences between the IFRS and US GAAP frameworks with respect to goodwill accounting. In 3.4, some of the frequent criticism expressed towards the current impairment approach is briefly discussed.

3.1 The accumulation of goodwill

Under IFRS, the accounting for business combinations is regulated by IFRS 3 Business Combinations. The standard provides detailed guidance on the accounting and reporting requirements following business combinations. The International Accounting Standards Board (IASB) issued the standard on March 31, 2004, thereby superseding IAS 22 Business Combinations. A revised version of the standard was issued four years later, on January 10, 2008. The revised standard applies to business combinations for which the agreement date is on or after July 1, 2009. (EFRAG, 2014)

IFRS 3 requires entities to account for all business combinations by applying the acquisition method (IFRS 3.4). The pooling of interest method, under which the balance sheets of the combining entities were merely consolidated into one, was prohibited with the issuance of IFRS 3. When applying the pooling of interest method of accounting, the acquirer was not required to recognise the difference between the purchase price and the book value of the acquiree’s assets. This meant, that no goodwill was created in business combinations in which the pooling method was applied. (Scott, 2008)

The acquisition method comprises the following four steps:

1. identifying the acquirer;
2. determining the acquisition date;
3. recognising and measuring the identifiable assets acquired, the liabilities assumed, and any non-controlling interest in the acquiree; and
4. recognising and measuring goodwill or a gain from a bargain purchase. (IFRS 3.5)
The acquisition method is only applied by the acquiring entity. Using the guidance in IFRS 10 *Consolidated Financial Statements*, one of the combining entities must therefore be identified as the acquirer (IFRS 3.6). The acquirer is the entity that obtains control over the acquiree (IFRS 3.7). The circumstances under which an investor or acquirer is considered to have control over the investee or acquiree, are more precisely defined in the standard. The date on which the acquiring entity obtains control over the investee or acquiree is called the acquisition date. The acquisition date is generally the specified closing date, i.e. the date on which the acquirer legally transfers the consideration, acquires the assets and assumes the liabilities of the acquiree. (IFRS 3.8-9)

When applying the acquisition method, the acquiring entity must – as of the acquisition date and separately from goodwill – recognise the identifiable assets acquired, the liabilities assumed and any non-controlling interest in the acquiree (IFRS 3.10). The identified assets acquired and liabilities assumed must meet the recognition criteria in IFRS 3 at the acquisition date to qualify for recognition. Thus, only assets and liabilities that meet the definitions of assets and liabilities in the IFRS Conceptual Framework may be recognised as a part of applying the acquisition method (IFRS 3.11). It should be noted that these assets and liabilities are not the same as those recognised in the acquiree’s own financial statements. In addition, the assets and liabilities must be a part of what the acquirer and acquiree exchanged in the actual business combination (IFRS 3.12) and the consideration should only comprise amounts that the acquiree transferred in exchange for the acquiree (IFRS 3.51). The consideration transferred does not include elements such as transaction costs and should in other words not be confused with the contractual purchase price or the cost of investment (Grant Thornton International, 2011).

The accounting treatment of intangible assets acquired in a business combination is prescribed in more detail in IAS 38 *Intangible Assets*. For an intangible asset to be separable from goodwill and to individually qualify for recognition, it must be identifiable (IAS 38.11). An intangible asset is identifiable if it is either (a) separable or transferable from the acquiree or from other rights and obligations, or (b) arises from contractual or legal rights (IAS 38.12; IFRS 3.B32). When applying these recognition principles, the acquirer might end up recognising assets that the acquiree itself had not previously recognised in its financial statements. Such assets are, for instance, patents and brand name and other internally developed intangible assets that had previously been expensed by the acquiree (IFRS 3.13).
Further, IFRS 3.18 requires the acquirer to measure the identifiable assets acquired and the liabilities assumed at their acquisition date fair values. IFRS 13 *Fair Value Measurement* defines fair value as “the price that would be received to sell an asset or transfer a liability in an orderly market transaction between market participants at the measurement date”. When quoted market prices are not available for identical or similar assets and liabilities, fair value must be estimated using other valuation techniques, on which closer guidance can be found in IFRS 13.

The final step in accounting for a business combination involves the determination of either goodwill or a gain from a bargain purchase. In accordance with IFRS 3.32, the acquirer must recognise goodwill as of the acquisition date measured as follows:

(a) the aggregated amounts of:
   (i) the consideration transferred, generally measured at fair value;
   (ii) the amount of any non-controlling interest in the acquiree; and
   (iii) the fair value of the acquirers’ previously held equity interest in the acquiree

less (b) the net of the acquisition date amounts of the identifiable assets acquired and the liabilities assumed.

Goodwill arises on the consolidated balance sheet if the aggregated amounts of (i) the transferred consideration; (ii) the non-controlling interest in the acquiree; and (iii) the acquirer’s previously held equity interest in the acquiree exceed (b) the net of the identifiable assets acquired and the liabilities assumed. If (b) the net of the identifiable assets acquired and the liabilities assumed exceed the aggregated amounts in (a), the acquirer has made a bargain purchase. The gain resulting from the bargain purchase – sometimes referred to as “negative goodwill” – is not capitalised, but attributed to the acquirer and immediately recognised in profit and loss (IFRS 3.34). Any acquisition-related costs, such as advisory, legal and valuation fees, must be expensed in the period in which the costs have incurred (IFRS 3.53).

### 3.2 Testing goodwill for impairment

Acquired goodwill is regularly tested for impairment in accordance with IAS 36 *Impairment of Assets*. The standard prescribes the procedures that an entity must apply to ensure that its assets are carried at no more than their recoverable amounts (IAS 36.1). The revised
The IAS 36 impairment test comprises the following four steps:

1. identifying the cash-generating units;
2. allocating all identifiable assets, including goodwill, to the cash-generating units;
3. determining the carrying (book value) and the recoverable amounts (value in use) of the cash-generating units and testing goodwill for impairment by comparing the carrying amounts to the recoverable amounts; and
4. if impairment is at hand, recognising an impairment loss. (Troberg, 2013:98)

Goodwill is an asset that does not generate cash flows independently of other assets or groups of assets. Instead, representing the future economic benefits arising from other assets, it contributes to the cash flows of individual or multiple cash-generating units. (IAS 36.81; Grant Thornton, 2014) For the purpose of impairment testing, goodwill acquired in a business combination must be allocated to each of the acquirer’s individual cash-generating units, or groups of cash-generating units, that are expected to benefit from the synergies of the combination (IAS 36.80). IAS 36.6 defines a cash-generating unit as the smallest identifiable group of assets that generates cash inflows that are largely independent of the cash inflows from other assets or groups of assets. Depending on the operational structure of the entity, a cash-generating unit could for instance be a division, a geographic location, a product line or a legal entity (IAS 36.69; Grant Thornton, 2014). Further, the cash-generating units must represent the lowest level within the entity at which goodwill can be monitored for internal management purposes, and must not be larger than an operating segment (IAS 36.80).

Entities are under IAS 36 required to perform regular impairment tests on all of the cash-generating units, or groups of cash-generating units, to which goodwill has been allocated. A cash-generating unit is tested for impairment by comparing the carrying amount of the unit, including the goodwill, to its recoverable amount (IAS 36.90). The annual impairment test can be performed at any chosen time during the annual period, provided that the test is performed consistently at the same time every year. Different cash-generating units may also be tested at different times independently of each other. However, the cash-generating...
unit must be tested for impairment before the end of the current annual period when some or all of the goodwill allocated to it has been acquired in a business combination during the current period (IAS 36.96). In addition to the annual impairment test, a cash-generating unit containing goodwill must be tested for impairment whenever there is an indication that the unit might be impaired. IAS 36.12 provides a non-exhaustive list of external and internal information sources that the entity, at a minimum, should consider when assessing indications of impairment. Such information sources could e.g. reveal that an asset’s economic performance is worse than expected, that significant negative changes have taken place in the entity’s technological legal environment, or that market interest rates or rates of returns on investments have increased. Another indication of impairment is that the carrying amount of the entity’s net assets is higher than its market capitalisation (IAS 36.12d).

In order to determine whether a cash-generating unit is impaired, the recoverable amount of that unit must be established. The recoverable amount of a cash-generating unit is defined as the higher of (a) its fair value less cost to sell, and (b) its value in use. Value in use represents the present value of the expected future cash flows of the cash-generating unit. (IAS 36.6) Since there most often are no active markets for cash-generating units, based on which a reliable estimate of the unit’s fair value less cost to sell could be made, entities often use the unit’s value in use as its recoverable amount (Troberg, 2013:96) Estimating the value in use of a cash-generating unit involves (a) estimating the future cash in- and outflows to be derived from continuing use of the asset and from its ultimate disposal; and (b) applying an appropriate discount rate to these cash flows. (IAS 36.31) As a measure, value in use differs from the market-based fair value in the sense that it reflects the particular entity’s intentions as to how the asset or assets in question will be used (Grant Thornton, 2014).

The cash flow estimates that the entity uses when measuring value in use should be based on “reasonable and supportable assumptions that represent management’s best estimates of the range of economic conditions that will exist over the remaining useful life of the asset” (IAS 36.33). These future cash flows must then be discounted using a pre-tax discount rate that reflects the current market assessments of both the time value of money and the risks specific to the asset (IAS 36.55). In practice, the discount rate is oftentimes determined as the asset’s or the unit’s weighted average cost of capital (Saastamoinen and Pajunen, 2016). Since determining the recoverable amount of each cash-generating unit can be both time-
consuming and complicated, entities are under certain circumstances allowed to use the most recent detailed recoverable amount calculations made in a preceding period when testing a unit to which goodwill has been allocated for impairment (IAS 36.99).

If the estimated recoverable amount of the tested cash-generating unit or group of cash-generating units exceeds its carrying amount, no impairment is at hand. If, and only if, the carrying amount of the cash-generating unit or group of cash-generating units exceeds its recoverable amount, an impairment loss equal to that difference must be recognised for the unit or group of units in question. (IAS 36.104)

The impairment loss is first allocated to reduce the book value of the goodwill allocated to the cash-generating unit or group of cash-generating units. Then, if the impairment loss is greater than the total amount of allocated goodwill, the remaining loss is allocated to reduce the book values of the other assets of the unit or group of units on a pro rata basis. (IAS 36.104) In order to prevent a loss assigned to a particular asset from being excessive or disproportionate, IAS 36.106 specifically states that when allocating the impairment loss, the carrying amount of an asset must not be reduced below the highest of (a) its fair value less cost to sell; (b) its value in use; and (c) zero (Haaramo, 2012:292). The reductions made in the assets’ carrying amounts must be treated as impairment losses on individual assets and immediately recognised as losses in the income statement (IAS 36.104; 60).

Although IAS 36 requires impairment losses of assets other than goodwill to be reversed if the recoverable amount of these assets has increased, an impairment loss recognised for goodwill is always irreversible. It is not, in other words, under any circumstances possible to reverse a goodwill impairment loss in a subsequent period (IAS 36.124). Reversing an impairment loss recognised in a previous interim period is also prohibited (IFRIC 10.8). A subsequent increase in the recoverable amount of goodwill is considered to be an increase in internally generated goodwill, which, as discussed above, does not meet the recognition criteria in IAS 38 and must therefore not be recognised as an asset (IFRS 36.125).

Since the outcome of the impairment test to a great extent relies on projections made by the management, the IASB has also included rather extensive disclosure requirements in the standard regarding the impairment test. Such extensive disclosure is expected to improve the transparency and reliability of the impairment test, to decrease the scope of misleading
information and alleviate possible problems associated with information asymmetry (IASB, 2008; Iatridis and Senftlechner, 2013; Saastamoinen and Pajunen, 2016).

### 3.3 Accounting for goodwill under US GAAP

The two standards that regulate the accounting for goodwill under US GAAP are SFAS 141 *Business Combinations* and SFAS 142 *Goodwill and Other Intangible Assets*. As has been implied, their IFRS equivalents, IFRS 3 and IAS 36, are based on these two standards. While the two frameworks are close to identical with respect to both business combinations and asset impairments, there still are some differences between the two that the boards have not yet to this date been able to eliminate. (IASB, 2008b)

Business combinations are under SFAS 141 accounted for using the acquisition method of accounting, and the goodwill asset is created as under IFRS 3. The main difference between these two standards lies in the valuation of the non-controlling interest in the acquiree.²

Under SFAS 142 *Goodwill and Other Intangible Assets*, acquired goodwill is tested for impairment on an annual basis and whenever there is an indication of impairment (SFAS 142.28). The impairment test is conducted on a reporting unit level (SFAS 142.18, 34). A reporting unit is defined as an operating segment or component one level below an operating segment, which is regularly reviewed by the management and for which financial information is available (SFAS 142.30). These reporting units are, at least on a conceptual level, larger than cash-generating units. When conducted on a larger unit, the impairment test could potentially lead to a lower incidence of impairment. (André et al., 2016)

The third and most notable difference between the two frameworks lies in the impairment test itself. SFAS 142 provides a two-step procedure for measuring goodwill impairment.³ While the first step is used to identify a potential impairment, the second step measures the amount of the impairment, if any. The SFAS 142 impairment test is applied as follows:

² While SFAS 141 requires the acquirer to recognise any non-controlling interest in the acquiree at its acquisition-date fair value (i.e. using the full goodwill approach), IFRS 3 provides the option to measure the non-controlling interest in the acquiree as the non-controlling interest’s proportionate share of the acquiree’s identifiable net assets (i.e. using the partial goodwill approach). Under the latter approach, the amount of recognised goodwill is smaller than under the former approach. (André et al., 2016; Troberg, 2013:93)

³ The IASB initially considered adopting the two-step impairment test. It however concluded that “the complexity and cost of applying the ‘two-step’ goodwill impairment test [...] would outweigh the benefits of that approach”. (IASB, 2004a)
(1) the fair value of the reporting unit is compared with its book value. If the fair value of the reporting unit exceeds its carrying amount, no impairment is at hand. If the carrying amount of the unit exceeds its fair value, the second step will be needed to determine the amount of the potential goodwill impairment.

(2) in order to determine the amount of the potential impairment loss, the implied fair value of the reporting unit goodwill is compared with its book value. Only if the carrying amount of the goodwill asset exceeds its implied fair value, an impairment loss equal to that excess is recognised. The impairment loss cannot be greater than the book value of the tested goodwill. (SFAS 142.19-20)

Compared to IAS 36, the impairment loss is under SFAS 142 deducted in a more precise manner from the asset that de facto has declined in value. This means, that the asset that is written down following an SFAS 142 impairment test might not necessarily be the goodwill asset. (Troberg, 2013:98)

3.4 Criticism towards the current impairment approach

Ever since its introduction, the current approach to goodwill accounting has endured a great amount of criticism in the accounting literature. In addition to academics, also other non-preparers, such as auditors (see e.g. Pajunen and Saastamoinen, 2013), regulatory oversight bodies and even members4 of the standard setters themselves, have expressed their concerns towards the intricacy and costliness of the impairment test – and in particular, towards the subsequent credibility and reliability of accounting information. (Qasim et al., 2013)

Unconvinced about the argued advantages of the current impairment approach, some academics (e.g. Saastamoinen and Pajunen, 2016; Storå, 2013; Troberg, 2013:101) have even suggested the reintroduction of systematic amortisation.

One of the issues that arise from the current approach is the post-acquisition blending of internally generated and acquired goodwill. When conducting the impairment test, it is impossible to determine whether the goodwill included in the fair value measurement has been created in a business combination or through internal efforts. When a CGU to which goodwill is allocated generates goodwill internally, this new goodwill might thus compensate

4 See e.g. Hoogervorst (2012). The chairman of the IASB has stated that “most elements of goodwill are highly uncertain and subjective and they often turn out to be illusory” and that due to its subjective nature, “the treatment of goodwill is vulnerable to manipulation of the balance sheet and the P&L.” (Hoogervorst, 2012)
for value decreases in the old goodwill asset – meaning that goodwill impairments remain unrecognised and that internally generated goodwill is indirectly recognised as an asset (Troberg, 2013:99-101) Seetharaman et al. (2004) further argue that the inconsistencies in the accounting treatment of internally generated and acquired goodwill is likely to reduce the overall comparability between the financial statements of companies that have grown organically and companies that have grown through mergers and acquisitions.

Another more fundamental point of criticism concerns the way in which goodwill is valued. Even though fair value accounting may in many aspects be seen to have advantages over the historical cost alternative, the increasing emphasis on relevance has been argued to create tensions with respect to the reliability of accounting information (Bens et al., 2011). According to Lhaopadchan (2010), the benefits of fair value measurements are particularly reduced in situations where assets are not actively traded or when they are hard to separately identify. As Lhaopadchan (2010) adds, this clearly is the case with acquired goodwill. What further complicates the accurate valuation of the goodwill asset is the vagueness of the accounting standards: according to IAS 36.33, the cash flow estimates used in the valuation should be based on “reasonable and supportable assumptions” representing “management’s best estimates” of future economic conditions. When then conducting the impairment test, the management is required to make a number of choices, many of which are not only decisive for current but also for future impairments. Watts (2003:217) even argues that “because those future cash flows are unlikely to be verifiable and contractible, they, and valuation based on them, are likely to be manipulated.” As will be seen in the following chapter, this concern has been validated in a number of empirical studies.
4 A REVIEW OF THE GOODWILL LITERATURE

The existing literature on goodwill is both extensive and diverse. In this chapter, a selected part of that literature will be reviewed. The studies that are closest to this thesis can be grouped into two main categories: (1) those examining the information content of goodwill and goodwill impairment, and (2) those examining the determinants of reported goodwill impairment losses.

4.1 The information content of goodwill and goodwill impairments

Accounting information is value relevant if it is “capable of making a difference in the decisions made by users in their capacity as capital providers” (IASB, 2008a). When accounting information is “available to decision makers before it loses its capacity to influence decisions”, it can be considered timely (IASB, 2008a). The sooner an economic event – such as a change in the economic value of an asset – is recognised in the financial statements and the sooner an impairment loss is reflected in earnings, the timelier the accounting information is (Van Hulzen, Alfonso, Georgakopoulos and Sotiropoulos, 2011; Amiraslani et al., 2012). Whereas value relevance and faithful representation are the fundamental qualitative characteristics that make financial information useful, timeliness is an enhancing qualitative characteristic that helps distinguishing more useful information from less useful information. A lack of timeliness will thus erode the decision usefulness of financial information. (IASB, 2008a)

The non-amortisation of goodwill was expected to increase the representational faithfulness and transparency of financial information and result in the “most useful financial information within the constraints of the current accounting model and available valuation techniques” (SFAS 142.B99). Provided that managers are able to make unbiased forecasts about future cash flows and incorporate these forecasts into their impairment estimates on time, Li and Sloan (2009) believe that the intended improvements in accounting quality can be achieved. The issues and controversies related to the accounting treatment of acquired goodwill – and in particular, its post-acquisition treatment – have raised the question of whether the standards have actually improved the information available to financial statement users (Lhaopadchan, 2010). While some academics have focused on examining the value relevance of goodwill and goodwill impairments (see subsection 4.1.1), others have studied the timeliness of goodwill impairment recognition (4.1.2).
4.1.1 The value relevance of goodwill and goodwill impairments

The value relevance of goodwill and goodwill impairments has generally been studied by examining the extent to which accounting information is incorporated in stock prices. Prior studies suggest that investors do perceive goodwill as a value relevant asset, and indicate that goodwill write-offs have a tendency to induce significant negative market reactions. However, it also appears as if the value relevance of goodwill impairments has significantly changed with the adoption of the impairment-only approach.

Hirschey and Richardson (2003) examine the stock market reactions to discretionary goodwill write-off announcements made during the five-year period 1995-1999 to investigate the information contents of goodwill. The study is an event study and comprises 80 listed U.S. companies. The results provide evidence to support the notion that goodwill write-off announcements do convey meaningful information about the deteriorating future performance of the company. The authors find an immediate negative stock market reaction to goodwill write-off announcements that amounts 2.94-3.52 % of the company’s stock price. Moreover, in the one-year period preceding the write-off announcement the average abnormal return for all companies is -41.77 %. This indicates that investors are to some extent able to anticipate forthcoming goodwill write-offs. Investors also appear to initially underreact to write-off announcements. Since no significant association between the stock returns and the size of the write-offs can be found, Hirschey and Richardson (2003) conclude that it is the incident of a write-off itself that is important from an investor’s perspective.

Bens et al. (2011) analyse the information content of goodwill impairments before and after the adoption of SFAS 142 in a sample of companies belonging to the business services industry. Their research period covers the combined financial years 1996-2001 and 2003-2006. The authors seek to determine whether the value relevance of goodwill impairments varies with respect to three different firm characteristics: the structural complexity of the firm, the firm’s ability to conduct efficient impairment tests (measured as firm size), and the level of existing information asymmetries between the firm and the market. The results show that, on average, the markets do react negatively to goodwill impairments. However, over the full observation period, the market reaction appears to be less significant for smaller companies and for companies with low information asymmetry, i.e. companies with higher analyst following. Bens et al. (2011) further note that in the post-142 period, the market
reactions to goodwill impairments are weaker also for larger companies and for firms with low analyst following. The authors thus conclude that the information content of goodwill impairments has weakened with the adoption of SFAS 142. Bens et al. (2011) hypothesise this to be due to the complexity of the impairment test and the higher noise levels inherent in post-142 goodwill impairments.

Chalmers et al. (2012) examine Australian companies and their accounting treatment of goodwill before and after the adoption of IFRS to investigate whether the new impairment approach reflects the underlying economic value of goodwill better than the old amortisation approach. The research sample comprises 4,310 firm-year observations of Australian listed companies with recognized goodwill on their balance sheets during the period 1999-2008. The observations are divided into those in the pre-IFRS (i.e. AGAAP) regime (1999-2005) and those in the IFRS regime (2006-2008). For the empirical tests, the authors estimate two regression models, in which goodwill reductions are regressed on proxies for earnings, investment opportunities (“IOS”), stock returns, leverage and size. The results show that compared to goodwill amortisations, impairments are more strongly related to the companies’ investment opportunities and accounting based performance. No association is, however, found between goodwill impairments and the current stock market returns. Based on the overall findings Chalmers et al. (2012) conclude that the impairment approach has enhanced the decision-usefulness of financial statements as it enables companies with greater investment opportunities to maintain their goodwill balances and allows firms with less investment opportunities to reduce goodwill accordingly. The authors also expect managers to use the opportunities provided by IFRS to improve the information contents of capitalised goodwill. Results consistent with those of Chalmers et al. (2012) are also reported by Godfrey and Koh (2009), who conduct a similar study on U.S. companies in 2002-2004.

Using value relevance and timeliness as measures for accounting quality, Van Hulzen et al. (2011) investigate whether the change from goodwill amortisation to IFRS 3 goodwill impairment has improved the quality of accounting information in Dutch, German, French and Spanish companies. The research sample comprises 1,289 firm-year observations from the period 2001-2004, and 802 firm-year observations from the period 2005-2010. Prior to 2005 all of the studied companies had amortised goodwill in accordance with their own local GAAP. The results reveal that the amortisation expenses are more value relevant than the impairment losses, indicating that investors find goodwill amortisation more useful when
evaluating share prices and making investment decisions. However, compared to the amortisation method, the impairment method is found to improve the timeliness of accounting information and reduce the gap between the economic impairment of goodwill and its recognition. Van Hulzen et al. (2011) thus conclude that the new accounting standard has only partially met its objectives in improving the quality of accounting information. Investors also appear to have difficulties in assessing the implications of goodwill impairments.

Hamberg and Beisland (2014) provide further evidence on the effects the changes in goodwill accounting have had on the value relevance of accounting information. The authors focus on Swedish listed companies and compare a sample of 899 pre-IFRS firm-year observations with a sample of 1,163 post-IFRS firm-year observations from the periods 2001-2004 and 2005-2010, respectively. Under the Swedish GAAP, according to which all sample companies reported during 2001-2004, goodwill reductions could consist of both amortisations and impairments. Although the regression results reveal that goodwill amortisations were not value relevant in the pre-IFRS period, the impairments reported in addition to these are found to be value relevant. The association between goodwill impairments and stock returns is, however, much weaker after the adoption of IFRS, indicating that the impairments lost their value relevance in the change from Swedish GAAP to IFRS. Still, the goodwill balance has according to the authors remained as an equally significant determinant of value under both regimes. When making additional robustness checks Hamberg and Beisland (2014) find some significant associations between stock returns and prices and one- and two-year-ahead IFRS impairments. The authors hence consider it possible that the value relevance of goodwill impairments has diminished due to untimeliness.

4.1.2 **The timeliness of goodwill impairments**

The timeliness of goodwill impairments has in empirical research been studied by examining the associations between recognised impairment losses and the stock returns in the year of impairment. This method builds on the assumption that the stock markets are efficient and that all relevant information is already incorporated in the share prices (Ojala, 2007; Van Hulzen et al., 2011). In contrast to the standard setters’ intentions, several studies have noted that the recognition of goodwill impairment losses lags behind the economic
impairment of goodwill. Research has also found jurisdictional differences in the timeliness, or untimeliness, of goodwill impairments.

Hayn and Hughes (2006) study acquisitions made in the U.S. in 1988-1998 to examine whether auditors and investors are able to predict goodwill impairments based on the disclosure on the acquired entities’ performance. In addition to finding that the information communicated through the disclosure is insufficient for this purpose, the authors note that goodwill write-offs lag behind the economic impairment of goodwill by approximately 3-4 years. In a third of the sample companies, this time lag extends up to 6-10 years. A similar time lag, albeit shorter, is also found by Chen, Kohlbeck and Warfield (2008). The authors examine a sample of U.S. companies that reported goodwill at the end of 2001, to examine whether the new accounting standards influenced the timeliness of accounting information. Even though the impairments are found to lag behind prior to SFAS 142, the impairment losses appear to be recognised on a timelier basis in the post-142 period.

Ojala (2007) studies the timeliness of goodwill impairments under SFAS 142. The author uses a reverse regression model, in which recognised goodwill impairments are regressed on market adjusted contemporaneous share returns and annual lagged returns. The research sample comprises 605 firm-year observations of U.S. companies from the time period 2001-2006. Ojala (2007) is unable to find an association between contemporaneous share returns and reported goodwill impairments. Instead, the empirical results reveal significant associations between goodwill impairments and annual lagged returns, indicating that the recognition of impairment losses lags behind the economic impairment of goodwill by an average of one to two years. Ojala (2007) assumes that the untimeliness of SFAS 142 goodwill impairments to some extent reflects managerial overconfidence and opportunistic behaviour.

Li and Sloan (2009) investigate the impact of SFAS 142 on goodwill accounting and valuation. The authors examine both the correlations between goodwill impairments and pre-goodwill impairment operating margins, as well as the market responses goodwill impairment announcements generate. Their research sample consists of 23,334 firm-year observations of both impairing and non-impairing U.S. companies from the period 2000-2007. The results suggest that the recognition of goodwill impairment losses lags behind the economic impairment of goodwill – i.e. deteriorating operating performance and stock returns – by at least two years. The authors also find goodwill impairments to be higher
when pre-goodwill impairment operating margins are low, indicating that impairment losses are not recognised until it becomes obvious that the value of goodwill has been exhausted. Li and Sloan (2009:19) thus argue that “goodwill impairments reflect a lagged indicator of goodwill expiration rather than a leading indicator of expected future cash flows.” Moreover, the negative abnormal stock returns suggest that investors are not able to fully anticipate predictable goodwill overstatements. The authors conclude that managers do exploit the discretion inherent in SFAS 142 to overstate goodwill, current earnings and share prices.

Glaum, Landsman and Wyrwa (2015) study the determinants of goodwill impairment decisions under IFRS. The authors are interested in whether impairment decisions can be explained through managerial incentives or actual declines in the economic value of goodwill. Glaum et al. (2015) also examine the timeliness of goodwill impairments and explore cross-country differences in impairment decisions. The research sample comprises 8,110 non-financial and 1,358 financial firm-year observations from 21 IFRS-applying countries – including Finland – for the period 2005-2011. The regression analysis reveals that the goodwill impairment incidence is negatively associated with market and accounting-based measures of performance, but also shows a statistically significant relationship between goodwill impairments and proxies for managerial incentives, such as CEO tenure, income smoothing and a greater number of operating segments.

Consistent with prior U.S.-based studies, Glaum et al. (2015) find evidence to support the notion that the recognition of goodwill impairments lags behind the economic impairment of goodwill. The authors further investigate this untimeliness with respect to the strength of the national auditing and accounting enforcement, by dividing the sample companies into high- and low-enforcement groups based on country level enforcement indexes. The results reveal that whereas the impairments in high-enforcement countries are more strongly related with contemporaneous stock market returns than lagged returns, the impairments in low-enforcement countries are more likely to be delayed. The authors thus stress that a strong national auditing and accounting enforcement is a critical determinant in the timeliness of IFRS goodwill impairments.

5 The countries with the highest national accounting and auditing enforcement indexes in 2005 and 2008, respectively, are the U.K., Australia and Denmark. Amongst others Finland, Germany, Ireland, New Zealand and Sweden are classified as low-enforcement countries. (Glaum et al., 2015)
Amiraslani et al. (2012) investigate the timeliness of asset impairments – including goodwill impairments – in a sample of 4,474 European companies during the years 2010 and 2011. The authors also assess the degree of compliance with IFRS by analysing the impairment-related disclosure of 324 companies. In order to examine the variation in IFRS compliance across Europe, the authors group companies into three institutional clusters depending on the predicted stock market development and ownership structure, and on the level of investor protection and enforcement in their countries of domicile. The authors use a reverse regression model similar to that applied by Ojala (2007) to measure the association between stock market returns and asset impairments. The overall findings indicate that the quality of impairment reporting varies considerably across European countries and the timeliness of asset impairments seems to be dependent on the quality of the companies’ institutional environment. Timeliness is particularly pronounced in countries characterised as outsider economies with strong outsider protection and enforcement, such as Ireland and the U.K., and significantly weaker in Southern European and Eastern European countries.

André et al. (2016) provide further evidence on international differences in the accounting treatment of goodwill. The authors compare a sample of 18,538 European firm-year observations with a sample of 16,525 U.S firm-year observations from the period 2006-2015 to investigate differences in the frequency and magnitude of goodwill impairments under IFRS and US GAAP, with respect to indications of goodwill impairment. André et al. (2016) measure economic impairment with three separate metrics: market-to-book value less than one, negative EBITDA, and equity market value minus equity book value less than one. Although the median and mean levels of goodwill to both total assets and equity are similar in Europe and the U.S., the empirical results reveal significant differences in the frequencies and magnitudes of reported impairments.

Whereas the median impairment in the U.S. sample is 33 % of the beginning of year goodwill balance, the median impairment in European companies is 5 %. The differences are particularly pronounced during the early financial crisis. In years 2008 and 2009 U.S. firms impaired 62,6 % and 40,2 % of their goodwill, whereas the same amounts in Europe were 6,6 % and 6 %. U.S. firms recognise larger impairment losses than European companies, but impair their goodwill on a less frequent basis. However, the cumulative impairments in

---

6 In the study, Finland is classified as a country with less developed stock markets, concentrated ownership, weaker investor protection and strong enforcement. (Amiraslani et al., 2012)
Europe do not come near the levels of those in the U.S. Moreover, indications of economic impairment lead more often to a recognition of an impairment loss in the U.S. than in Europe, suggesting greater conditional conservatism⁷ and thus greater timeliness among U.S. companies. André et al. (2016) suggest that the greater impairment incidence in Europe could be explained by the differences between the IFRS and US GAAP frameworks and the weaker timeliness by the lower conditional conservatism associated with code law counties.

### 4.2 The determinants of goodwill impairments

Requiring managers to conduct regular impairment tests, the accounting standards provide managers with considerable discretion as to determine whether goodwill has declined in value and whether an impairment loss is to be recognised in the financial statements. It has been argued, that the discretion inherent in the accounting standards could influence the quality of financial reporting in two ways. On one hand, managers could use their discretion as predicted by the standard setters to convey private information about future cash flows to the markets, thereby providing investors with more useful and value relevant information. On the other hand, managers might be incentivised to exploit their unverifiable discretion in an opportunistic⁸ manner, thereby causing the financial statements to be less accurate and less reflective of the underlying economics of the business. (AbuGhazaleh et al., 2011; Ramanna and Watts, 2012; Saastamoinen and Pajunen, 2016). When accounting standards rely on managerial estimates that are hard for external parties to validate, they might also provide for managerial opportunism and earnings management⁹ (Healy and Wahlen, 1999).

The earnings management literature has identified several managerial incentives that might have an influence on the reporting decisions managers make (see e.g. Healy and Wahlen, 1999). In the context of goodwill impairment accounting, incentives relating to managerial compensation and reputation, and managers’ debt contracting and market valuation

---

⁷ Conditional conservatism is a qualitative characteristic of financial reporting that refers to a timelier recognition of economic losses than economic gains (André et al., 2016).

⁸ Agency theory deals with the conflicts that arise between the agent (management) and the principals (shareholders) when there is a divergence between the interests of the agent and those of the principals. The theory predicts that the agent will act against the best interests of the principals in order to maximise his or her own welfare. (Jensen and Meckling, 1976)

⁹ Earnings management is defined by Healy and Wahlen (1999:368) as something that occurs “when managers use judgement in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers.”
concerns, have been particularly highlighted. The accounting literature has also presented two earnings management patterns that have been associated with discretionary accruals in general and goodwill impairments in particular: *big bath accounting* and *income smoothing*. Whereas big bath accounting involves the one-time overstatement of losses in periods of negative or below average earnings, income smoothing entails the overstatement of losses in periods when earnings are abnormally high (Scott, 2008:405).

Motivated by the critique expressed towards the accounting treatment of acquired goodwill, several studies have examined the determinants of goodwill impairments from an earnings management perspective. Although the results of these studies are highly heterogeneous, the overall empirical evidence supports the notion that managers use their discretion in goodwill impairment accounting to pursue opportunistic motives (subsection 4.1.1). In more recent literature, scholars have exhibited a growing interest in the measures needed to constrain managerial opportunism in goodwill impairment accounting. The results suggest that managers might, under sufficient monitoring and enforcement, be more inclined to use their afforded discretion to improve the information content of the financial statements (4.2.2).

### 4.2.1 Managerial reporting incentives

In the U.S., the determinants of asset write-offs have interested academics long before the introduction of SFAS 142. Managers’ decisions to recognise discretionary asset write-offs have in the earliest studies been associated with amongst others managerial changes (Strong and Meyer, 1987) and earnings management incentives (Riedl, 2004; Zucca and Campbell, 1999). Francis, Hanna and Vincent (1996) argue, that asset write-offs are more often driven by managerial reporting incentives when the level of managerial discretion in determining the value of the asset in question is greater.

A considerable part of the existing goodwill literature focuses on goodwill impairment accounting in U.S. companies following the initial adoption of SFAS 142 in 2002. In the adoption year, the accounting standard allowed transitional goodwill impairment losses to be reported as cumulative effects of a change in accounting principles. As these transitional impairment losses did not affect operating income, the standard is thought to have provided an incentive for managers to overstate impairment losses in the adoption year. (Storà, 2013) Amongst others Jordan and Clark (2004) and Sevin and Schroeder (2005) investigate the implications of these accounting practises, and find evidence of big bath earnings
management in the adoption year. Beatty and Weber (2006) argue that some managers avoided the recognition of transitional goodwill impairment losses due to incentives related to CEO tenure and compensation, debt contracting and share price sensitivity. Zang (2008) finds transitional goodwill impairment losses to be significantly greater for companies that have undergone a recent management change, and significantly smaller for companies with higher levels of leverage. While the results of these transitional studies might not be generalisable to subsequent periods, indications of similar managerial opportunism have also been found in post-adoption year studies.

Ramanna and Watts (2012) investigate goodwill non-impairments under SFAS 142. The authors are interested in whether the decision not to impair goodwill is associated with private information on positive cash flows or with proxies for managerial opportunism. The authors also examine whether certain firm characteristics, such as the number and size of reporting units and the proportion of a firm’s unverifiable net assets, can explain the observed non-impairments. Their research sample consists of 124 firm-year observations from the period 2003-2006 of companies with market indications of goodwill impairment, i.e. book-to-market ratios exceeding one for two successive years. Ramanna and Watts (2012) find no evidence to support the assumption that goodwill non-impairments would reflect managers’ private information on future cash flows. Instead, the authors find significant associations between goodwill non-impairments and debt covenant violation concerns, CEO cash compensation and CEO tenure. They thus conclude that managers, when having agency-based motives to do so, avoid the timely recognition of SFAS 142 goodwill impairment losses.

Jahmani, Dowling and Torres (2010) is one of the few studies that investigate goodwill impairment explicitly in the context of income smoothing. The authors inspect the annual reports of 177 randomly selected SFAS 142 applying companies with goodwill on their balance sheets in 2003-2005, to determine whether managers select the timing of goodwill impairment recognition in an opportunistic manner. According to Jahmani et al. (2010), companies that incur losses or experience low return on assets (ROA 2% or less) for three consecutive years should recognise a goodwill impairment loss. However, since the recognition of goodwill impairments causes volatility in earnings and exacerbates current losses, the authors expect such companies to postpone impairments to later years when returns are high enough to withstand these reductions. When comparing the impairment
frequencies, the authors find that a mere 31.1% of the companies posting losses and 22.2% of the companies earning low returns for at least one year recognised impairment losses during the three-year period. The results support the authors’ assumption that goodwill impairments are avoided in periods of financial distress.

Using a sample of 38,667 firm-year observations from the period 2003-2011, Filip et al. (2015) investigate how companies succeed in avoiding the recognition of SFAS 142 goodwill impairment losses. As the impairment test requires managers to estimate future cash flows, and as higher current cash flows make higher future cash flows seem more reasonable, Filip et al. (2015) expect managers to manipulate current cash flows upward to justify their non-impairment decisions. The authors match impairers with comparable non-impairers based on industry, year and lagged market-to-book ratio to identify companies postponing necessary goodwill impairments. Using three different proxies to measure cash flow management, the authors find compelling evidence that companies postponing goodwill impairments manage their current cash flows upward. Compared to the control sample, the non-impairers show significantly higher discretionary cash flows. According to Filip et al. (2015), this finding is consistent with the real earnings management theory. The authors also find indications of big bath earnings management in connection with the recognition of impairment losses.

Due to the critical role of the senior management – and in particular, the CEO – in the impairment testing process, scholars have also been concerned with how the characteristics of the CEO influence goodwill impairment decisions. Masters-Stout et al. (2008) examine the 500 largest U.S. companies during the period 2003-2005 to investigate the association between CEO tenure and the amount of recognised goodwill impairment losses. Given that the commitments, perspectives and incentives of CEOs have been shown to change over the time of their tenure, the authors expect new CEOs to report more impairments than their senior counterparts. The authors estimate a regression model, in which the reported goodwill impairment losses are regressed on measures for net income and CEO tenure. In the study, a CEO is considered new if he or she has been appointed within the last two years. Masters-Stout et al. (2008) find strong evidence to support the notion that newer CEOs do impair more goodwill than their more tenured counterparts. The results also reveal a negative association between net income and all CEOs, indicating that goodwill impairments are used during years of low profitability to create earnings baths.
Continuing this line of research, Darrough, Guler and Wang (2014) examine a sample of 3,543 U.S. firm-year observations from the period 2002-2009 to investigate the association between CEO compensation and reported goodwill impairment losses. The authors also examine how the compensation change varies with respect to factors specific to the firm, to the acquisitions, and to the CEO. Given that impairment losses could reflect poor management and suboptimal acquisitions, the authors consider it possible that compensation committees link CEO compensation to goodwill impairments. Darrough et al. (2014) estimate separate regression models for cash-based, option-based and restricted stock compensation. The results reveal a significant reduction in cash- and option-based compensations following goodwill impairments. The CEOs’ cash compensation is more strongly affected in companies that have paid more for their targets and in companies with a less tenured CEO. However, CEOs in their first year of tenure as well as CEOs who are also chairmen of the board appear to be shielded from the adverse effect of goodwill impairments. The CEOs’ option-based compensation, in turn, is shielded in more R&D intensive companies. The overall results thus suggest that compensation committees do, on average, reduce the compensation of CEOs who report impairment losses – presumably to realign the risk-taking incentives of the CEOs.

Muller, Neamtiu and Riedl (2012) examine a sample of 653 firms listed on AMEX, NASDAQ and NYSE in 2002-2007 to investigate whether managers use their private information regarding forthcoming goodwill impairments to strategically trade their own company’s stock prior to the recognition of impairment losses. Muller et al. (2012) expect managers to have incentives to sell their stock holdings prior to making impairment announcements in situations where the economic impairment of goodwill is not reflected in the share prices. However, due to litigation concerns, insiders are expected to distance their abnormal trading activities farther away from the actual recognition date. The authors thus examine insider trading activities during the two years preceding each impairment announcement. The results show that corporate insiders of companies recognising goodwill impairment losses sell their shares more frequently than their counterparts in non-impairment companies. The abnormal selling activities are pronounced 24 to 6 months prior to the goodwill impairment announcement. The results also reveal a negative association between insider selling and subsequent abnormal returns. Muller et al. (2012) argue that the overall findings thus indicate that managers benefit from delayed goodwill impairments and provide
evidence on the information asymmetries that exist between managers and investors regarding goodwill impairments.

Goodwill impairment accounting has also been studied in the IFRS context. Storå (2013) focuses on different earnings target-related incentives as he studies whether companies with different levels of pre-impairment earnings engage in earnings management through IFRS goodwill impairment accounting. The author uses regression analysis to examine both upwards and downwards earnings management. The research sample comprises 19,846 firm-year observations from the period 2005-2010 of companies from 40 jurisdictions facing a goodwill impairment test in the observation year. According to the empirical results, companies tend to avoid recognising such impairment losses that would prevent them from reaching certain earnings targets. The results also indicate that impairments are, instead, recognised when pre-impairment earnings either clearly exceed or fall short of targets. Storå (2013) thus concludes that managers to some extent do use the discretion inherent in IFRS to manage earnings.

Saastamoinen and Pajunen (2016) examine goodwill impairment decisions in Finnish listed companies. The authors examine the financial statements of 116 Finnish non-financial companies over the years 2005-2009 to determine how managerial reporting incentives and the stock markets influence both the likelihood of goodwill impairment recognition as well as the size of the recognised impairment losses. To test their hypotheses, the authors use a logit regression model and an OLS regression model, in which goodwill impairment losses are regressed on proxies for CEO change and compensation, big bath, stock liquidity and impairment propensity. The authors also control for how firm size, leverage and government ownership affect managers’ decisions to impair goodwill. The empirical results reveal a significant positive association between CEO changes and the likelihood of goodwill impairments. Even though the authors fail to find evidence on the notion that negative earnings would increase the likelihood of goodwill impairment, the results suggest that reported impairment losses are significantly greater for companies with negative pre-impairment earnings. The overall results thus indicate that the managers of Finnish companies use their discretion in goodwill impairment accounting to avoid the recognition of impairment losses.

Using a sample of 1,003 firm-year observations from the period 2005-2001, Giner and Pardo (2015) examine the determinants of goodwill impairments in Spanish listed companies.
Given the characteristics of the Spanish reporting environment, the authors expect the managers of Spanish companies to behave in an unethical manner when making decisions on goodwill impairments. Following Saastamoinen and Pajunen (2016), the authors use a logit and an OLS regression model to test their hypotheses. The empirical results indicate that larger companies and companies with lower market-to-book ratios are more likely to recognise impairment losses than other sample companies. The results also reveal significant associations between managers’ impairment decisions and proxies for both earnings bath and income smoothing.

Finally, Carlin and Finch (2009) investigate whether managers use opportunistic discretion in the selection of discount rates for the purpose of impairment testing. Their research sample comprises 105 Australian listed companies that in year 2006 applied the value in use approach to goodwill impairment testing and had defined a single discount rate for the entire business. By using the capital asset pricing model (CAPM), Carlin and Finch (2009) estimate an independent risk-adjusted discount rate for each of the 105 sample companies. The authors then examine the variation between these discount rates and those disclosed and used by the companies in their impairment tests. Due to potential estimation errors, all discount rates falling within +/- 150 basis points of the estimated discount rates are considered to be unbiased. The results show that the discount rate disclosed by 54 % of the sample companies lies more than 150 basis points below the independent risk-adjusted estimate. For 38 % of the companies, the disclosed discount rate lies more than 250 basis points from the estimate. Only 16 % of the total sample disclose discount rates that are substantially higher than the authors’ estimate. These findings suggest that companies are using too low discount rates in the impairment tests, and are thereby able to avoid the recognition of goodwill impairment losses. As Carlin and Finch (2009) also find significant deficiencies in the disclosure compliance and quality, they express serious concern about the appropriateness of the current reporting standards.

4.2.2 Economic impairment and the provision of private information

Whereas a considerable part of the existing literature argues that goodwill impairments are used for opportunistic purposes, there is also a handful of studies that suggest otherwise. What differentiates these studies from the ones reviewed earlier, is that they to a greater extent have taken into consideration factors that could constrain managerial opportunism, such as auditing and effective corporate governance mechanisms.
Focusing on their association with expected future firm-level cash flows, Jarva (2009) studies goodwill impairments under SFAS 142. His research sample consists of 327 firm-year observations of companies listed on NYSE, AMEX and NASDAQ between 2002 and 2006. The regression analysis shows a significant association between reported goodwill impairments and expected one- and two-year-ahead cash flows, indicating that impairments, in fact, are more related to firm-specific economic factors than to managerial opportunism. Nevertheless, the recognised impairments seem to lag behind the economic impairment of goodwill. Jarva (2009) also examines a sample of non-impairment companies with indications of goodwill impairment, to further investigate impairment avoidance. Using the information from the initial impairment sample, he generates artificial impairment losses for each firm in the non-impairment sample. However, the results do not provide evidence to support the assumption that these companies would avoid impairments in an opportunistic manner.

AbuGhazaleh et al. (2011) investigate how managers use their discretion over goodwill impairment losses in a sample of 582 firm-year observations from the top 500 U.K. listed companies in 2005-2006. The authors are interested in whether the accounting discretion afforded by the accounting standards is used opportunistically or to convey private information about future cash flows to the market. They estimate a regression model, in which the reported impairment losses are regressed on proxies for economic impairment, managerial discretion and effective corporate governance mechanisms. The authors expect strong corporate governance mechanisms to constrain managerial opportunism and restrict managers’ ability to report impairment losses that do not coincide with the firm’s underlying economics.

The empirical results reveal a positive association between goodwill impairments and recent CEO changes. AbuGhazaleh et al. (2011) also find indications of income smoothing and big bath accounting behaviour in connection with reported goodwill impairment losses. However, due to the strong association between goodwill impairments and effective corporate governance mechanisms, the authors conclude that managers are more likely to use their accounting discretion to convey private information than to act opportunistically. The positive association found between impairment losses and the firms’ book-to-market ratios nonetheless implies that investors perceive reported goodwill impairments as reliable indicators of economic impairment.
Also Verriest and Gaeremynck (2009) highlight the importance of effective corporate governance mechanisms in ascertaining high quality financial reporting. The authors examine the drivers of goodwill impairment decisions in a sample consisting of 47 European companies in 2005-2006. Based on the difference between their market value and book value, all the studied companies are expected to recognise goodwill impairment losses. The authors interpret untimely goodwill impairments as an indicator of poor reporting quality, and hence predict effective corporate governance mechanisms, measured amongst others by the amount of independent board members, to lead to a larger probability of impairment. The regression analysis confirms this hypothesis. Verriest and Gaeremynck (2009) find better performing companies and companies with stronger corporate governance mechanisms to be more likely than other companies to recognise goodwill impairment losses in a timely manner.

Similar to AbuGhazaleh et al. (2011), Stenheim and Madsen (2016) are also interested in the determinants of IFRS goodwill impairment losses. The authors use two regression models to examine a sample of 1,293 firm-year observations of the 288 largest U.K. listed companies over the years 2005-2009. Stenheim and Madsen (2016) investigate the association between reported goodwill impairment losses and proxies for economic impairment, earnings management and corporate governance mechanisms. The overall empirical results indicate that IFRS goodwill impairment losses are positively associated with actual economic impairment, measured as negative changes in the industry ROA, lower stock market returns and higher book-to-market ratios. Even though the authors also find evidence supporting managerial opportunism, this evidence is somewhat weaker. The insignificant results on most corporate governance proxies lead Stenheim and Madsen (2016) to conclude – in contrast to AbuGhazaleh et al. (2011) and Verriest and Gaeremynck (2009) – that governance mechanisms do not play a significant role in the accounting for goodwill impairment losses.

Iatridis and Senftlechner (2014) investigate whether managerial changes are associated with higher goodwill impairments, as suggested by prior literature. The authors also test for the relationship between goodwill and cost of capital. The research sample comprises all non-financial companies listed on the Vienna Stock Exchange during 2006-2011. Iatridis and Senftlechner (2014) test their hypotheses with three different regression models, in which goodwill and goodwill impairment are regressed on proxies for net income and CEO change,
and WACC-based discount rates and discounted free cash flows. The results reveal no significant differences between tenured CEOs and CEOs in their early tenure, and show no indications of big bath accounting during CEO changes. Iatridis and Senftlechner (2014) thus conclude that Austrian CEOs do not use goodwill impairment accounting in an opportunistic manner. Moreover, the significant positive association found between goodwill and cost of capital in companies with goodwill impairment and the notion that that being audited by a Big 4 auditor tends to lower the cost of capital, does, according to the authors, reflect the assurance auditors provide investors and highlight the importance of detailed disclosure.

Finally, the uncertainty as to whether goodwill impairments are more likely to be driven by managerial opportunism or the provision of private information, is also reflected in the opinion of auditors. Using survey data, Pajunen and Saastamoinen (2013) examine Finnish auditors’ attitudes towards the appropriateness of the current impairment approach. The data used in the study is collected through an electronic questionnaire containing 15 statements about the IFRS treatment of acquired goodwill, which is sent to 523 certified auditors in October 2011. While the overall results indicate that the auditors consider it possible that the current accounting standards increase managers’ opportunities to manipulate earnings, the respondents are not unanimous in their views on how the standards are applied in practice. Some of the responding auditors appear to believe that managers seek to avoid the recognition of goodwill impairment losses and that incentives related to compensation contracts influence their reporting decisions. Other respondents, mainly Big 4 auditors, exhibit a much more favourable attitude towards the IFRS accounting treatment of goodwill.
5 HYPOTHESIS DEVELOPMENT

The purpose of this paper is to examine the determinants of goodwill impairments in Finnish listed companies. While prior research suggests that goodwill impairments can provide investors with value relevant information (e.g. Chalmers et al., 2012), it also suggests that reported goodwill impairments lag behind the economic impairment of goodwill (e.g. Amiraslani et al., 2012; Jarva, 2009; Li and Sloan, 2009; Ojala, 2007), and that the discretion inherent in the accounting standards allows managers to either avoid or accelerate the recognition of goodwill impairment losses (e.g. Masters-Stout et al, 2008; Ramanna and Watts, 2012; Storå, 2013). In the IFRS environment, the aforementioned compliance issues appear to be pronounced in countries with smaller capital markets, weaker external monitoring and less experience in principles based accounting (see e.g. Amiraslani et al., 2012; Giner and Pardo, 2015; Glaum et al., 2015; Hamberg and Beisland, 2011; Saastamoinen and Pajunen, 2016) Based on these studies, one could expect the managers of Finnish listed companies to exercise discretion when making reporting decisions concerning goodwill and this discretion to some extent be driven by managerial opportunism.

Storå (2013) maintains that the reporting decisions referred to above de facto involve two separate accounting choices: (a) deciding on whether to recognise an impairment loss; and (b) deciding on the magnitude of the reported impairment loss, if any. In developing the research hypotheses, both of these reporting choices are addressed.

5.1 Changes in senior management

Being in the position to decide on the measures used in estimating the fair value of goodwill, the senior management has great influence on the outcome of the impairment test. Several studies have examined how various managerial reporting incentives, such as compensation contracts and reputation, and certain managerial characteristics, such as tenure, influence managers’ impairment decisions. Prior studies suggest that recent CEO changes increase the likelihood of goodwill impairment recognition (e.g. Beatty and Weber, 2006; Glaum et al., 2015; Ramanna and Watts, 2012; Saastamoinen and Pajunen, 2016) and provide evidence on the notion that newly appointed CEOs report larger impairment losses than their more tenured counterparts (AbuGhazaleh et al., 2011; Masters-Stout et al., 2008; Zang, 2008).
The results of these studies have on one hand been explained by managerial opportunism, on the other hand by factors relating to actual economic changes. Masters-Stout et al. (2008) hypothesise that due to reputational concerns and cognitive distortion, managers might be reluctant to impair goodwill created in acquisitions made under their leadership. New CEOs may also be inclined to overstate impairment losses, in order to reduce the likelihood of future income decreasing impairment charges, and to make performance advances more easily achievable. (Masters-Stout et al., 2008) An alternative argument posits that due to the lack of cognitive ties to the goodwill asset, the new CEO is able to make a more objective evaluation of its fair value. Changes in strategies and restructuring actions are also likely to trigger the recognition of impairment losses. (AbuGhazaleh et al., 2011; Masters-Stout et al., 2008; Saastamoinen and Pajunen, 2016) Based on these arguments and following prior research, this study expects goodwill impairments to have significant positive associations with recent CEO changes. This leads to the following two hypotheses:

**H1a: Ceteris paribus**, companies that have experienced a recent change in CEO are more likely than others to recognise goodwill impairment losses

**H1b: Ceteris paribus**, among the companies that recognise goodwill impairment losses, the size of the reported impairment loss is greater for companies that have experienced a recent change in CEO.

### 5.2 Taking a bath

Empirical evidence suggests that the goodwill impairment test is susceptible to earnings management. A pattern often associated with goodwill impairments is big bath accounting, which involves both the accumulation and the one-time overstatement of discretionary losses (Scott, 2008:405). Consistent with the big bath theory of earnings management, prior research indicates that managers use their accounting discretion to time the recognition of goodwill impairment losses in a manner which does not coincide with economic reality, thereby causing untimeliness in impairment recognition (e.g. Ojala, 2007; Li and Sloan, 2009; Amiraslani et al., 2012). While evidence implies that impairment losses were overstated in the transition year 2002 (e.g. Jordan and Clark, 2004; Sevin and Schroeder, 2005; Zang, 2008), signs of big bath accounting have also been documented in connection with goodwill impairment tests in more recent periods (e.g. AbuGhazaleh et al., 2011; Filip
From the management’s perspective, “taking a bath” might entail several advantages. In addition to reflecting managerial competences, reported earnings are also used by investors to make inferences about future earnings streams. Kirschenheiter and Melumad (2002) argue that whenever the reporting environment permits discretion, managers will be incentivised to maximise reported earnings in order to convey information about higher long-run earnings streams to the investors. However, when the “news” in a given period are bad, managers will instead understate reported earnings to the greatest extent possible – i.e. take a bath –, to thereby reduce the implied precision of the report and to postpone the discretionary income into future periods. (Kirschenheiter and Melumad, 2002) In addition to reducing earnings volatility and enabling the management to exhibit higher earnings in forthcoming periods, reporting substantial one-time losses could also signal that any problems have efficiently been solved by the management (Zucca and Campbell, 1992). When earnings already are below expectations, additional losses – regardless of their size – will be perceived as less significant by the investors (Jordan and Clark, 2004; Storå, 2013).

Based on these notions and the vast amount of supporting empirical research, this study expects the managers of Finnish companies to use their accounting discretion to on one hand postpone goodwill impairment losses into periods of financial distress, on the other hand to overstate impairment losses in periods of financial distress. The second set of hypotheses is as follows:

**H2a:** *Ceteris paribus*, companies with negative pre-impairment earnings are more likely than others to recognise goodwill impairment losses

**H2b:** *Ceteris paribus*, among the companies that recognise goodwill impairment losses, the size of the reported impairment loss is greater for companies whose pre-impairment earnings are negative.

### 5.3 Debt contracting

Accounting information is frequently used to regulate contractual agreements between companies and their creditors. Given that the violation of debt covenants could lead to increased financing costs and even loan defaults (Saastamoinen and Pajunen, 2016), debt
contracting can have a significant influence on the accounting choices managers make. According to Watts and Zimmerman (1990), managers of highly leveraged companies tend to choose income increasing accounting methods, in order to avoid the costly violation of debt covenants.\textsuperscript{10} Consistent with this argument, prior studies suggest that goodwill non-impairment is related to managers’ debt covenant concerns (Beatty and Weber, 2006; Ramanna and Watts, 2012) and that companies with higher levels of leverage report smaller impairment losses than their less indebted counterparts (Zang, 2008). Another argument regarding the influence of debt posits that highly leveraged companies might be under closer external monitoring from their creditors (Ramanna, 2008). When monitored, managers might be inclined to use their accounting discretion to report impairments that are more reflective of the underlying economics of the firm. (AbuGhazaleh \textit{et al.}, 2011; Ramanna, 2008; Saastamoinen and Pajunen, 2016) One could also assume that increased monitoring would alleviate managerial overconfidence and reduce the inclination to engage in high-risk investments, both of which could lead to a greater incidence of impairment.

Based on these notions, this study expects a negative relationship between the level of debt and goodwill impairments. The third and final set of hypotheses is thus as follows:

\textbf{H3a:} \textit{Ceteris paribus}, companies with higher level of leverage are less likely than others to report goodwill impairment losses

\textbf{H3b:} \textit{Ceteris paribus}, among the companies that recognise goodwill impairment losses, the size of the reported goodwill impairment loss is smaller for companies with higher levels of leverage.

\textsuperscript{10} This argument is based on the \textit{debt/equity hypothesis}. The hypothesis predicts that companies with higher debt/equity ratios are closer to covenant restrictions and thus closer to violating debt covenants. By choosing income increasing accounting methods, managers can reduce the risk of covenant violation. (Watts and Zimmerman, 1990)
6 RESEARCH DESIGN

This chapter outlines the research methodology used in the current study. The first subsection, 6.1, describes the data and the procedures followed in selecting the research sample. In 6.2, the chosen research methods are presented. Following existing research and using the dependent and independent variables described in subsection 6.3, two regression equations are constructed. These two regression equations are provided in subsection 6.4.

6.1 Data and sample selection

The research sample is composed using financial data on companies listed on Nasdaq OMX Helsinki (OMXH). The selected research period covers the financial years 2010-2016. For the construction of variables, financial data have been collected as of year 2009. The length of the observation period exceeds that (2005-2009) of Saastamoinen and Pajunen (2016), and is thus considered appropriate for obtaining a sufficient number of firm-year observations. The firm-specific financial data on most of the variables are retrieved from Bureau van Dijk's Orbis database, complemented by the sample companies' financial statements whenever needed. Data on goodwill impairments and CEO changes are unattainable from the Orbis database, and are therefore hand-collected from the sample companies' annual financial reports and stock exchange releases. All data used in this study are secondary in nature. The sample selection process is illustrated in table 1 below.

<table>
<thead>
<tr>
<th>Firm-year observations</th>
<th>$N$</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Companies listed on OMXH on December 31, 2016</td>
<td>811</td>
<td>100,00</td>
</tr>
<tr>
<td>Observations belonging to the financials industry (ICB 8)</td>
<td>–105</td>
<td>–12,95</td>
</tr>
<tr>
<td>Non-impairment observations with zero goodwill balances</td>
<td>–82</td>
<td>–10,11</td>
</tr>
<tr>
<td>Observations with missing or incomplete data</td>
<td>–15</td>
<td>–1,85</td>
</tr>
<tr>
<td>Final sample</td>
<td><strong>609</strong></td>
<td>75,09</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Individual companies</th>
<th>$N$</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Companies listed on OMXH on December 31, 2016</td>
<td>128</td>
<td>100,00</td>
</tr>
<tr>
<td>Excluded companies</td>
<td>–30</td>
<td>–23,44</td>
</tr>
<tr>
<td>Final sample</td>
<td><strong>98</strong></td>
<td>76,56</td>
</tr>
</tbody>
</table>

On December 31, 2016, there were 128 companies listed on OMXH. For the combined financial years 2010-2016, a total of 811 firm-year observations were available in the Orbis
database. Following prior research (e.g. AbuGhazaleh et al., 2011; Saastamoinen and Pajunen, 2016; Stenheim and Madsen, 2016), all companies classified as financial institutions\footnote{The \textit{Financials} industry in the Industry Classification Benchmark (ICB) includes banks (ICB 8300-8399) and companies in the insurance (ICB 8500-8599), real estate (ICB 8600-8699) and financial services (ICB 8700-8999) sectors.} in the Industry Classification Benchmark (ICB) – which is the classification standard adopted by OMXH – were excluded from the sample. The reporting requirements these companies face are generally considered to reduce their comparability with companies in other industries. This selection criteria reduced the sample with 105 firm-year observations and 18 individual companies. Since the research hypotheses are only applicable to companies facing goodwill impairment tests in the observation year, all non-impairment observations with no positive opening or closing goodwill balances were eliminated from the sample. This procedure further reduced the sample with 82 firm-year observations and 10 individual companies. Finally, 15 observations were excluded due to missing or insufficient data. The final sample thereby consists of unbalanced panel data of 98 non-financial companies that carried positive goodwill on their balance sheets in 2010-2016. The research sample represents approximately 75\% of all available firm-year observations and 77\% of all companies listed on OMXH on December 31, 2016.

### 6.2 Research methods

This research builds on existing literature and is carried out using quantitative research methods. Quantitative methods are suitable when the research problem is of a structured nature, when there are established theories to test, and when relevant numerical data is available. Quantitative methods emphasise testing and verification, allowing the researcher to examine the relationships between different variables and to form generalised interpretations about the data under consideration. (Ghauri and Grønhaug, 2010:104-107)

The main consideration in this research is the regression analysis. In line with prior studies (e.g. Saastamoinen and Pajunen, 2016; Stenheim and Madsen, 2016), the influence of the hypothesised reporting incentives on the sample companies’ impairment decisions is examined using two separate regression models. While the first regression model (\textit{model 1}) is used to examine the likelihood of goodwill impairment recognition, the second regression model (\textit{model 2}) seeks to estimate the factors that determine the size of the reported impairment loss. Since the decision to recognise a goodwill impairment loss is a
dichotomous choice, the likelihood of impairment recognition will be studied using a *logistic regression* model. A logistic regression model is applicable when the dependent variable (here: the impairment decision) is categorical, i.e. can take a limited number of possible values (Pallant, 2010:168). To examine the relationship between the hypothesised reporting incentives and the magnitude of the reported impairment loss, *multiple linear regression* is applied. Multiple linear regression is suitable when the dependent variable (here: the size of the impairment loss) is continual, i.e. can take an infinite number of values, and when multiple hypotheses are being tested simultaneously (Pallant, 2010:148).

In addition to the aforementioned regressions, a number of statistical test are performed to provide a more thorough analysis of the collected data. Similar to AbuGhazaleh *et al.* (2011), this study uses the parametric T-test and the non-parametric Chi-square and Mann-Whitney U-tests to test for significant differences between the impairment and non-impairment observations in the sample. Prior to running the regressions, a Pearson correlation analysis is performed. The Pearson correlation analysis describes the pair-wise correlations between the variables of interest, and is, in contrast to the Spearman correlation, specifically designed for continuous and dichotomous variables (Pallant, 2010:128). Considering the wide acceptance of these four tests, they are also deemed suitable for the purposes of this thesis. Moreover, a number of supplementary test are conducted in conjunction with the regression analyses, to assess amongst others the fitness and significance of the regression models. All statistical tests described in this paper are performed using *IBM SPSS Statistics*.

### 6.3 Variables

In order to test the research hypotheses, this study uses two separate dependent variables. The dependent variables are accompanied by 13 different independent variables, of which three are used as explanatory and ten as control variables. The 13 independent variables include both proxies for managerial reporting incentives (*explanatory variables*) as well as estimates for economic impairment, firm size and industry membership (*control variables*). All variables used in this study are chosen and defined based on existing research. However, in order to avoid mechanical relationships between the variables and to minimise potential proportionality issues in the data set, all continuous variables are here – as in AbuGhazaleh *et al.* (2011) – either defined as lagged measures (i.e. $t-1$), scaled by lagged total assets or adjusted for reported goodwill impairments.
6.3.1 Dependent variables

The dependent variable in the logistic regression model is the impairment decision, $GWI_{i,t}$. It is approximated as a dichotomous variable, that takes the value one if the firm in question ($i$) has recognised an impairment loss in the observation year ($t$), and zero otherwise. The dependent variable in the multiple linear regression model, $GWIL_{i,t}/TA_{i,t-1}$, represents the firm $i$'s reported impairment loss in year $t$. As in prior studies (AbuGhazaleh et al., 2011; Giner and Pardo, 2015; Saastamoinen and Pajunen, 2016), the variable is here defined as the firm $i$'s reported impairment loss in year $t$, divided by its total assets at the end of $t-1$.

6.3.2 Managerial reporting incentives

The first explanatory variable, $CEO_{C,i,t}$, is used to test the relationship between goodwill impairments and recent CEO changes. As in Saastamoinen and Pajunen (2016) and Stenheim and Madsen (2016), the variable is here defined as a dichotomous variable that receives the value one if the firm $i$ has experienced a change in CEO in the observation year, and zero otherwise. Consistent with the predictions in $H1a$ and $H1b$, the correlation coefficient for $CEO_{C}$ is expected to be positive in both regressions.

The second explanatory variable, $BATH_{i,t}$, is used to determine whether companies use goodwill impairments to create earnings baths in times of financial distress, as predicted in $H2a$ and $H2b$. Following Saastamoinen and Pajunen (2016), the variable is here defined as a dichotomous variable that takes the value one if the firm $i$'s pre-tax earnings would have been negative in the absence of an impairment loss, and zero otherwise. As with $CEO_{C}$, the correlation coefficient for $BATH$ is also expected to be positive in both regressions.

The third explanatory variable, $LEV_{i,t}$, measures the amount of leverage on the firm $i$'s consolidated balance sheet. In line with previous studies (e.g. AbuGhazaleh et al., 2011; Beatty and Weber, 2006; Glaum et al., 2015; Verriest and Gaeremynck, 2009), firm leverage is approximated as the firm $i$'s total debt and liabilities, divided by its total assets, both at the end of $t-1$. $H3a$ and $H3b$ both expect the indebtedness of a company to have an adverse effect on goodwill impairments. As follows, the correlation coefficient for $LEV$ is predicted to take a negative sign in both regressions.
6.3.3 Economic factors of impairment

As noted by Hayn and Hughes (2006:229), goodwill impairment is, in essence, “a result of the deteriorating performance of the acquired business”. In line with this, the accounting standards require an impairment loss to be recognised in the financial statements, whenever the recoverable amount of a cash-generating unit to which goodwill is allocated falls below its carrying amount. Assuming that managers adhere to the requirements of the accounting standards, any reported impairment loss should, ceteris paribus, be significantly associated with economic factors of impairment. (AbuGhazaleh et al., 2011) In order to capture the actual economic impairment of goodwill, three firm-specific control variables are included in the regressions equations – $GWA_{i,t-1}$, $MTB_{i,t}$ and $ROA_{i,t-1}$. 12

The first control variable, $GWA_{i,t-1}$, measures the amount of goodwill on the firm $i$’s consolidated balance sheet. Consistent with prior studies (e.g. AbuGhazaleh et al., 2011; Masters-Stout et al., 2008; Giner and Pardo, 2014; Zang, 2008), the variable is here defined as the firm $i$’s goodwill asset as a fraction of its total assets at the time $t-1$. While a large goodwill asset could indicate that impairment losses have been postponed in previous periods (Li and Sloan, 2009), a larger goodwill asset is also more exposed to impairment tests (Zang, 2008). For this reason, it is logical to expect goodwill-intensive companies to be more likely to report impairment losses and any realised impairment losses to be proportionally greater. This study predicts a positive association between the independent variable $GWA$ and both dependent variables.

The second control variable, $ROA_{i,t-1}$, represents the firm $i$’s return on assets. It is used to measure the sample companies’ accounting-based performance. Existing studies have found companies with poorer past performance to report greater impairment losses (e.g. AbuGhazaleh et al., 2011; Chalmers et al., 2011) and suggested that firms with superior earnings are less likely to experience events that initiate goodwill impairment (e.g. Saastamoinen and Pajunen, 2016; Verriest and Gaeremynck, 2009). Higher earnings in previous periods thus appear to uphold return expectations and thereby the value of

---

12 Note that these variables measure firm-level goodwill impairment, i.e. treat the entire corporation as one cash-generating unit. Academics frequently use firm-level measures when examining goodwill impairment accounting due to the fact that (1) managers’ expectations about future cash flows are not observable to the public and as (2) firm-specific financial information is generally not available at the level on which the impairment test is to be performed (see e.g. AbuGhazaleh et al., 2011; Beatty and Weber, 2006; Giner and Pardo, 2014; Saastamoinen and Pajunen, 2016; Zang, 2008).
goodwill. In this study, ROA is calculated as the firm \( i \)'s pre-tax earnings divided by its total assets, both at the end of \( t-1 \). The coefficient for ROA is expected to take a negative sign in both regressions.

The third control variable, \( MTB_{i,t} \), represents the firm \( i \)'s market-to-book ratio. It is used to measure the sample companies' market-based performance. Academics frequently use this ratio to assess firm-level goodwill impairment (e.g. AbuGhazaleh et al., 2011; Filip et al., 2015; Francis et al., 1996; Giner and Pardo, 2016; Ramanna and Watts, 2012; Storå, 2013; Verriest and Gaeremynck, 2009). A market-to-book ratio below one is also one of the external indicators of goodwill impairment explicitly mentioned in IAS 36.12. Beatty and Weber (2006) consider the ratio particularly useful as it can both reveal whether goodwill is overvalued and reflect firm growth options. Here, the variable is calculated as the firm \( i \)'s market value of equity, divided by its book value of equity, both at the end of year \( t \). As in AbuGhazaleh et al. (2011), the measure is adjusted for year \( t \) goodwill impairments. The correlation coefficient for \( MTB \) is predicted to be negative in both regressions.

### 6.3.4 Control variables for size and industry membership

Given that the size of a firm could influence its reporting practices, firm size is an important factor to consider when examining the determinants of goodwill impairments. Compared to larger companies, smaller firms might for instance have more limited resources to complete the intricate impairment testing process (Bens et al., 2011; Chalmers et al., 2011; Jarva, 2009). Larger companies, in turn, are assumed to have experienced more business combinations and hence be more complex in their structure (Storå, 2013). Larger companies also tend to be under closer external monitoring, meaning that firm size might not only proxy for the ability to comply with accounting standards, but also for the political pressure of doing so (Watts and Zimmerman, 1990). While the empirical findings on this matter are inconsistent, this paper predicts goodwill impairments to be both larger in magnitude as well as more frequent for larger companies. Consistent with prior studies (e.g. AbuGhazaleh et al., 2011; Ramanna and Watts, 2012; Storå, 2013), firm size, \( SIZE_{i,t-1} \), is here measured as the natural logarithm of the firm \( i \)'s total assets at the end of year \( t-1 \).

Another factor expected to influence the likelihood of goodwill impairment is industry membership. Given that some industries are more sensitive to business cycles than others, firms belonging to certain industries could also be more exposed to goodwill impairment
(Saastamoinen and Pajunen, 2016). The differences in the competitive environment within industries could also cause differences between companies with respect to their goodwill impairment pattern (Zang, 2008). To control for such industry-effects, six control variables are defined. As in Saastamoinen and Pajunen (2016), the classification of industries is here based on the industry classification on OMXH (i.e. ICB). In addition to the four industries identified by Saastamoinen and Pajunen (2016) – basic materials, industrials, consumer goods and technologies –, in this study, separate control variables are also assigned to the health care and consumer services industries. The aforementioned variables are all dichotomous variables that take the value one if the firm i belongs to the industry in question, and zero otherwise. No particular sign is expected for these variables.

### 6.4 Regression models

Using the variables described above, the following regression equations are constructed:

\[
GW_{i,t} = \alpha_0 + \beta_1 CEOC_{i,t} + \beta_2 BATH_{i,t} + \beta_3 LEV_{i,t-1} + \beta_4 GWA_{i,t-1} + \beta_5 ROA_{i,t-1} + \beta_6 MTB_{i,t} + \beta_7 SIZE_{i,t} + \beta_8 ICB_1 + \beta_9 ICB_2 + \beta_{10} ICB_3 + \beta_{11} ICB_4 + \beta_{12} ICB_5 + \beta_{13} ICB_9 + \epsilon_{i,t}
\]

\[
GW_{IL,TA_{i,t-1}} = \alpha_0 + \beta_1 CEOC_{i,t} + \beta_2 BATH_{i,t} + \beta_3 LEV_{i,t-1} + \beta_4 GWA_{i,t-1} + \beta_5 ROA_{i,t-1} + \beta_6 MTB_{i,t} + \beta_7 SIZE_{i,t-1} + \epsilon_{i,t}
\]

The first regression model (model 1) is used to test the hypotheses \( H1a \), \( H2a \) and \( H3a \). It is run on the full sample of observations \( (n = 609) \). The second regression model (model 2) tests the hypotheses \( H1b \), \( H2b \) and \( H3b \). It only uses observations classified as impairers in the descriptive statistics \( (n = 109) \). The regression equations applied in this thesis are similar to those used by Saastamoinen and Pajunen (2016). Having regard to the delimitations of this study, some modifications have, however, been made to both the equations and to the individual variables.

---

13 Other industries include oil and gas (0001-0999), telecommunications (6000-6999) and utilities (7000-7999). These industries form the reference group in the regression analysis and are not assigned a separate control variable. Companies classified as financial institutions (8000-8999) in the ICB are excluded from the initial sample and cannot hence receive a variable.
Consistent with Saastamoinen and Pajunen (2016), the six time-invariant industry control variables are excluded from the multiple linear regression (*model 2*). Reducing the number of control variables in the second regression is also motivated considering the sample size (*n* = 109). A small sample size imposes restrictions on the number of variables that can be included in a regression equation without compromising the quality of the regression results. Here, a maximum of seven independent variables can be considered appropriate.14 (Pallant, 2010:150)

Table 2 on the following page shows the precise definitions of the variables used in the statistical tests. In the table, the predicted direction of the relationship between each variable and the dependent variables is indicated in brackets, where [+] stands for a positive, and [-] for a negative association.

---

14 Tabachnik and Fidell (cited in Pallant, 2010:150) recommend using the following equation when estimating the appropriate sample size for a multiple regression: \( N > 50 + 8k \) (where \( k \) = the number of independent variables). In a regression with 109 observations the maximum number of independent variables would thus be seven (as 109 = 50 + 8*7,375).
Table 2  Definitions of variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>GWI</td>
<td>a dichotomous variable that takes the value 1 if the firm (i) has recognised a goodwill impairment loss in (t), and 0 otherwise</td>
</tr>
<tr>
<td>GWI/TA</td>
<td>firm (i)'s reported goodwill impairment loss in (t), deflated by total assets at the end of (t-I)</td>
</tr>
</tbody>
</table>
| CEOC     | a dichotomous variable that takes the value 1 if the firm \(i\) experiences a change in CEO in year \(t\), and 0 otherwise [+]
| BATH     | a dichotomous variable that takes the value 1 if the firm \(i\)'s pre-tax earnings in year \(t\) would have been negative in the absence of an impairment loss, and 0 otherwise [+]
| LEV      | firm \(i\)'s total debt and liabilities at the end of \(t-I\), divided by total assets at the end of \(t-I\) [-] |
| GWA      | firm \(i\)'s goodwill balance at the end of \(t-I\), deflated by total assets at the end of \(t-I\) [+]
| ROA      | firm \(i\)'s return on assets at the end of \(t-I\) (measured as pre-tax earnings divided by total assets) [-] |
| MTB      | firm \(i\)'s market value of equity at the end of \(t\), divided by its book value of equity at the end of \(t\) (adjusted for any recognised goodwill impairments) [-] |
| SIZE     | the natural logarithm of firm \(i\)'s total assets at the end of \(t-I\) [+]
| ICB 1    | a dichotomous variable that takes the value 1 if the firm \(i\) belongs to the basic materials industry, and 0 otherwise [+/-] |
| ICB 2    | a dichotomous variable that takes the value 1 if the firm \(i\) belongs to the industrials industry, and 0 otherwise [+/-] |
| ICB 3    | a dichotomous variable that takes the value 1 if the firm \(i\) belongs to the consumer goods industry, and 0 otherwise [+/-] |
| ICB 4    | a dichotomous variable that takes the value 1 if the firm \(i\) belongs to the health care industry, and 0 otherwise [+/-] |
| ICB 5    | a dichotomous variable that takes the value 1 if the firm \(i\) belongs to the consumer services industry, and 0 otherwise [+/-] |
| ICB 9    | a dichotomous variable that takes the value 1 if the firm \(i\) belongs to the technologies industry, and 0 otherwise [+/-] |

Notes: This table provides definitions on the variables used in the statistical tests. The two dependent variables are exhibited upmost in the table. The other variables are used as independent variables in the regression analyses.
7 RESULTS AND FINDINGS

This chapter presents the results of the empirical tests. The chapter begins by providing the descriptive statistics for the full sample of observations. In 6.2, the differences between the impairment and non-impairment observations with respect to the variables of interest are tested. Prior to running the regression models, the pair-wise correlations between the individual variables are studied. The results of the correlation and regression analyses are presented in subsections 6.3 and 6.4, respectively.

7.1 Descriptive statistics

The research sample comprises an unbalanced panel data of 98 OMXH listed companies from the financial years 2010-2016. The number of observations by year (firms with GW) and the number of goodwill impairment observations in absolute (firms with GWI) and relative (GWI %) terms are provided in table 3 below.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Firms with GW</td>
<td>95</td>
<td>90</td>
<td>88</td>
<td>86</td>
<td>84</td>
<td>84</td>
<td>82</td>
<td>609</td>
</tr>
<tr>
<td>Firms with GWI</td>
<td>13</td>
<td>17</td>
<td>19</td>
<td>17</td>
<td>16</td>
<td>13</td>
<td>14</td>
<td>109</td>
</tr>
<tr>
<td>GWI %</td>
<td>13,68 %</td>
<td>18,89 %</td>
<td>21,59 %</td>
<td>19,77 %</td>
<td>19,05 %</td>
<td>15,48 %</td>
<td>17,07 %</td>
<td>17,90 %</td>
</tr>
</tbody>
</table>

The sample consists of 609 firm-year observations, of which 109 are classified as impairment observations. With 109 impairment observations, the impairment frequency for the full sample is 17,90 %. As can be seen from the table, there is a clear variation in the impairment percentages across the observation years, with the impairment frequency ranging from 13,68 % in 2016 to 21,59 % in 2014. A further analysis reveals that the 109 impairment observations are attributable to 56,12 % of the sample companies. This means, that 43,88 % of the firms included in the research sample did not recognise any goodwill impairment losses over the maximum seven-year observation period.

Table 4 shows the descriptive statistics for the variables used in the logistic and multiple linear regressions. The two dependent variables, GWI and GWI/TA, are exhibited upmost in the table. The thirteen independent variables are used as either explanatory or control variables, as has been discussed in 6.3 above.
Table 4  Descriptive statistics for the full research sample

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>N</th>
<th>Min.</th>
<th>Mean</th>
<th>Median</th>
<th>Max.</th>
<th>Std. dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goodwill impairment (GWI)</td>
<td>609</td>
<td>0</td>
<td>0,179</td>
<td>0,000</td>
<td>1</td>
<td>0,384</td>
</tr>
<tr>
<td>Goodwill impairment loss (GWIL/TA)</td>
<td>109</td>
<td>0,000</td>
<td>0,031</td>
<td>0,009</td>
<td>0,317</td>
<td>0,056</td>
</tr>
<tr>
<td>Goodwill impairment loss (1000 €)</td>
<td>109</td>
<td>1,800</td>
<td>50.284</td>
<td>4.500</td>
<td>1.209.000</td>
<td>190.689</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>N</th>
<th>Min.</th>
<th>Mean</th>
<th>Median</th>
<th>Max.</th>
<th>Std. dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEO change (CEOC)</td>
<td>609</td>
<td>0</td>
<td>0,174</td>
<td>0,000</td>
<td>1</td>
<td>0,379</td>
</tr>
<tr>
<td>Earnings bath (BATH)</td>
<td>609</td>
<td>0</td>
<td>0,209</td>
<td>0,000</td>
<td>1</td>
<td>0,407</td>
</tr>
<tr>
<td>Leverage (LEV)</td>
<td>609</td>
<td>0,137</td>
<td>0,586</td>
<td>0,579</td>
<td>3,356</td>
<td>0,211</td>
</tr>
<tr>
<td>Goodwill amount (GWA)</td>
<td>609</td>
<td>0,000</td>
<td>0,173</td>
<td>0,147</td>
<td>0,683</td>
<td>0,148</td>
</tr>
<tr>
<td>Return on assets (ROA)</td>
<td>609</td>
<td>-1,640</td>
<td>0,035</td>
<td>0,045</td>
<td>3,409</td>
<td>0,194</td>
</tr>
<tr>
<td>Market-to-book ratio (MTB)</td>
<td>609</td>
<td>-37,089</td>
<td>1,966</td>
<td>1,604</td>
<td>22,435</td>
<td>2,532</td>
</tr>
<tr>
<td>Firm size (SIZE)</td>
<td>609</td>
<td>15,115</td>
<td>19,73</td>
<td>19,572</td>
<td>24,390</td>
<td>2,004</td>
</tr>
<tr>
<td>Basic materials (ICB 1)</td>
<td>609</td>
<td>0</td>
<td>0,074</td>
<td>0,000</td>
<td>1</td>
<td>0,262</td>
</tr>
<tr>
<td>Industrials (ICB 2)</td>
<td>609</td>
<td>0</td>
<td>0,42</td>
<td>0,000</td>
<td>1</td>
<td>0,494</td>
</tr>
<tr>
<td>Consumer goods (ICB 3)</td>
<td>609</td>
<td>0</td>
<td>0,136</td>
<td>0,000</td>
<td>1</td>
<td>0,343</td>
</tr>
<tr>
<td>Health care (ICB 4)</td>
<td>609</td>
<td>0</td>
<td>0,041</td>
<td>0,000</td>
<td>1</td>
<td>0,199</td>
</tr>
<tr>
<td>Consumer services (ICB 5)</td>
<td>609</td>
<td>0</td>
<td>0,097</td>
<td>0,000</td>
<td>1</td>
<td>0,296</td>
</tr>
<tr>
<td>Technologies (ICB 9)</td>
<td>609</td>
<td>0</td>
<td>0,184</td>
<td>0,000</td>
<td>1</td>
<td>0,388</td>
</tr>
</tbody>
</table>

The mean (median) firm in the sample has 17,30 (14,70) % of its assets in goodwill. For the companies that recognised goodwill impairment losses during the observation period, the average impairment loss represented a mere 3,10 (0,90) % of the firm’s opening total assets. The average annual impairment loss is approximately € 50,28 (4,50) million. The differences between the mean and median values indicate that there is great variance in the reported impairment losses: the minimum and maximum values show that GWIL/TA ranges from 0,0004 % to 31,70 %, and that the absolute impairment losses range from a mere € 1.800,00 to approximately € 1,21 billion.\(^{15}\)

With a leverage ratio of 58,60 (57,90) %, the sample companies hold on average more borrowed capital than equity. The mean return on assets is a rather moderate 3,50 (4,50) % and the average market-to-book ratio 1,97 (1,6). As can be seen from the table, the sample includes observations from both highly profitable as well as heavily indebted companies.

\(^{15}\) The largest goodwill impairment losses – measured in relative and absolute terms – were reported by Trainer’s House in 2011 (31,70 % of opening total assets) and Nokia Oyj in 2014 (€ 1.209.000.000,00).
Some of the sample companies have even exhibited negative shareholders’ equity in one or more observation years. Moreover, the rate of CEO turnover in the sample is 17.30%. This means, that in 17.30% of the observation years, the sample companies have experienced a change in CEO at least once during the financial year. Untabulated data show that a total of 128 CEO changes occurred over the combined observation period 2010-2016.

The sample companies appear to be concentrated in the industrials (ICB 2) and technologies (ICB 9) industries, as observations belonging to these two industries make up 60.40% of the total sample. The other four industries for which a control variable has been denoted, represent 34.80% of all observations. Table 6 provides the absolute amount of firm-year observations and the mean GWA in each of the six industries.

<table>
<thead>
<tr>
<th>Table 5</th>
<th>Mean goodwill to total assets by industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industry</td>
<td>ICB 1</td>
</tr>
<tr>
<td>Observations</td>
<td>45</td>
</tr>
<tr>
<td>Mean GWA</td>
<td>0.113</td>
</tr>
<tr>
<td>Standard deviation</td>
<td>0.108</td>
</tr>
</tbody>
</table>

As can be seen from the table, companies belonging to the technologies industry (ICB 9) have on average 28.80% of their assets in goodwill. This is well above the full sample average of 17.90%. The corresponding percentages for firms in the health care (ICB 4) and consumer services (ICB 5) industries are 18% and 22.80%, respectively.

7.2 Comparison between impairers and non-impairers

The research questions posed in chapter 5 are based on the assumption that there, with respect to certain variables, exists differences between companies that have recognised goodwill impairment losses and those that have not. Hence, in the following, a comparison between the impairment (n = 109) and the non-impairment (n = 500) observations will be provided for all variables of interest. In this exhibition, control variables for industry membership have been excluded. Observations significant at the two-tailed 0.01 and 0.05 levels have been bolded and marked with *** and **, respectively.
Table 6  Comparison between impairment and non-impairment observations

<table>
<thead>
<tr>
<th>Variable</th>
<th>Impairers (n = 109)</th>
<th>Non-impairers (n = 500)</th>
<th>T-test of differences</th>
<th>Mann-Whitney U-test of differences</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Median</td>
<td>Std. dev.</td>
<td>Mean</td>
</tr>
<tr>
<td>GWIL/TA</td>
<td>0.031</td>
<td>0.009</td>
<td>0.056</td>
<td>n.a</td>
</tr>
<tr>
<td>LEV</td>
<td>0.578</td>
<td>0.574</td>
<td>0.144</td>
<td>0.588</td>
</tr>
<tr>
<td>GWA</td>
<td>0.233</td>
<td>0.222</td>
<td>0.161</td>
<td>0.160</td>
</tr>
<tr>
<td>ROA</td>
<td>0.034</td>
<td>0.048</td>
<td>0.124</td>
<td>0.035</td>
</tr>
<tr>
<td>MTB</td>
<td>1.351</td>
<td>1.495</td>
<td>3.971</td>
<td>2.101</td>
</tr>
<tr>
<td>SIZE</td>
<td>20,002</td>
<td>19,952</td>
<td>1,985</td>
<td>19,670</td>
</tr>
</tbody>
</table>

*p-value < 0.10; **p-value < 0.05; ***p-value < 0.01 (two-tailed sig.)

The T-test, Mann-Whitney U-test and Chi-square test are used to control for significant differences between companies that have recognised goodwill impairment losses (impairers) and companies that have not (non-impairers). While the T-test and Mann-Whitney U-test test for mean and median differences in continuous variables, the Chi-square test is used to control for significant differences in dichotomous variables. (AbuGhazaleh et al., 2011) As the table shows, statistically significant differences between the two groups is only found with respect to the means and medians for two continuous and one dichotomous variable – GWA, MTB and CEOC.

As reflected by the significant difference on GWA, goodwill constitutes, on average, a much larger component of the impairers’ total assets than the non-impairers’ (23,30 % compared to 16,00 %). The results of the T-test also reveal that companies recognising goodwill impairment losses have significantly lower market-to-book ratios than their non-impairing counterparts (1,35 compared to 2,10). Consistent with the expectations, they also appear more often than others to have experienced a change in CEO during the financial year (25,70 % compared to 15,60 %).

In contrast to the predictions, no significant differences can be found between the two groups with respect to firm size (SIZE), leverage (LEV), or accounting-based performance
(ROA). Considering the variable *BATH*, there is some weak evidence that impairers more often than non-impairers have reported negative earnings in the observation year (27.50 % compared to 19.40 %). However, with a p-value of 0.059, this finding is not statistically significant at the conventional 0.05 level.

7.3 Correlations between individual variables

Prior to running the regression models, the pair-wise correlations between the individual variables is studied. Examining the pair-wise correlations between individual variables provides valuable information on the linear association between the variables, in terms of the strength and direction of the relationship (Pallant, 2010:128). The correlation analysis also allows one to detect potential multicollinearity problems in the data set.

According to Lind, Marchal and Wathen (2010:527), multicollinearity exists whenever two independent variables correlate with one another. When two variables are highly correlated, their individual contribution to the variance in the dependent variable turns hard to distinguish. Although multicollinearity does not affect the predictive ability of the regression model, its presence can cause severe problems for the estimation of the regression model and the interpretation of the regression results. (Lind et al., 2010:528) While multicollinearity problems are generally observed by examining the pair-wise correlation coefficients, Lind et al. (2010:528) suggest that variance inflation factors, VIFs, provide a more precise test for assessing multicollinearity. A variance inflation factor is the inverse of tolerance, which is a measure used to indicate the proportion of variance in an independent variable that is not associated with other independent variables (Pallant, 2010:158). Correlations exceeding 0.7 and VIF values greater than 10 are generally interpreted as severe signs of multicollinearity (Lind et al., 2010:528; Pallant, 2010:158).

Table 7 provides pair-wise Pearson correlations and variance inflation factors for the variables used in the logistic and multiple linear regressions. Correlations significant at the 0.01 and 0.05 levels are marked with *** and **, respectively. The correlations for the industry control variables have not been included in this exhibition. A correlation matrix including all independent variables can instead be found in Appendix I.
Table 7  Pearson correlations

<table>
<thead>
<tr>
<th>Variable</th>
<th>GWIL/TA</th>
<th>GWI</th>
<th>CEOC</th>
<th>BATH</th>
<th>SIZE</th>
<th>LEV</th>
<th>GWA</th>
<th>ROA</th>
<th>MTB</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>GWIL/TA</td>
<td>1,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GWI</td>
<td>n.a.</td>
<td>1,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CEOC</td>
<td>0,195**</td>
<td>0,102**</td>
<td>1,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BATH</td>
<td>0,421***</td>
<td>0,077*</td>
<td>0,255***</td>
<td>1,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SIZE</td>
<td>-0,384***</td>
<td>0,064</td>
<td></td>
<td>-0,039</td>
<td>-0,187***</td>
<td>1,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LEV</td>
<td>-0,306***</td>
<td>-0,020</td>
<td></td>
<td>0,037</td>
<td>0,149***</td>
<td>-0,091**</td>
<td>1,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GWA</td>
<td>0,371***</td>
<td>0,191***</td>
<td>0,030</td>
<td></td>
<td>-0,038</td>
<td>-0,155***</td>
<td>-0,038</td>
<td>1,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ROA</td>
<td>-0,209**</td>
<td>-0,003</td>
<td></td>
<td>-0,092**</td>
<td>-0,301***</td>
<td>0,157***</td>
<td>-0,456***</td>
<td>-0,064</td>
<td>1,000</td>
<td></td>
</tr>
<tr>
<td>MTB</td>
<td>-0,029</td>
<td>-0,114***</td>
<td>0,015</td>
<td></td>
<td>-0,195***</td>
<td>0,005</td>
<td></td>
<td>-0,085**</td>
<td>-0,025</td>
<td>0,221***</td>
</tr>
</tbody>
</table>

Notes: This table presents Pearson correlations and variance inflation factors for the variables used in the logistic and multiple linear regressions. The full correlation matrix can be found in Appendix 1.

*p-value < 0,1; **p-value < 0,05; ***p-value < 0,01 (two-tailed sig.)

The correlation analysis shows that the greatest pair-wise correlation coefficient is -0,456 and that the highest VIF value is 5,386 (see Appendix I) Since both of these values are well below the threshold values 0,7 and 10, multicollinearity does not appear to be a problem in this study. All independent variables can thus be included in the regressions.

The correlation analysis reveals positive correlations between the dependent variable GWI and the independent variables CEOC (r = 0,102) and GWA (r = 0,191), which are significant at the two-tailed 0,05 and 0,01 levels. These results are consistent with the expectations. As predicted, the correlation coefficient between GWI and MTB (r = -0,114) is negative and strongly significant at the 0,01 level. Overall, these findings are in line with the results reported in table 6 above. In contrast to the predictions, no significant linear associations can be found between the goodwill impairment decision and the variables BATH, SIZE, LEV and ROA. The lack of significant correlations could indicate that the chosen variables are not well suited to estimate the dependent variable.

As can be seen from the table, the independent variables CEOC (r = 0,195), BATH (r = 0,421) and GWA (r = 0,371) are all correlated with GWIL/TA in the predicted direction. Companies that have experienced a change in CEO during the financial year or reported negative pre-impairment earnings, as well as firms with greater goodwill balances, appear to recognise larger impairment losses. The correlations between GWIL/TA and the independent variables LEV (r = -0,306) and ROA (r = -0,209) are negative and statistically significant. It
hence appears as if the recognised impairment losses would decrease with increased levels of leverage and higher profitability. Contrary to the expectations, there is a strong negative correlation between GWIL/TA and SIZE \( (r = -0.384) \) which is significant at the 0.01 level. The insignificant association between GWIL/TA and MTB could, in turn, suggest that it is the decision to impair, rather than the size of the reported impairment loss, that is of relevance to the markets (see Hirschey and Richardson, 2003).

The strongest correlation between two independent variables is that between ROA and LEV \( (r = -0.456) \). Other strong and rather self-explanatory significant correlations can be found e.g. between ICB 9 and GWA \( (r = 0.370) \), MTB and ROA \( (r = 0.221) \), and BATH and ROA \( (r = -0.301) \). The strong positive association between CEOC and BATH \( (r = 0.255) \) is particularly interesting in the light of previous studies (e.g. Masters-Stout et al., 2008; Ramanna and Watts, 2012). While this association could indicate that CEO changes occur more frequently in times of financial distress, it could also be a sign of appointment year opportunism.

It should be noted that while the pair-wise correlations provide information on the bivariate association between variables, they do not reveal whether there exists a causal relationship between the variables nor indicate the strength of this relationship (Lind et al., 2010:462). In order to examine the causal relationship between the dependent and independent variables, and to control for the effects of other independent variables, regression analysis should be performed.

### 7.4 Regression analyses

In the following, the results of the logistic and multiple linear regressions are presented. Since the applied regressions are particularly sensitive to extreme values in the data set (Pallant, 2010:151), prior to running the regressions, the data were winsorised at the 1st and 99th percentiles. Winsorisation is a statistical technique that allows one to minimise the effect of outliers without the need to further reduce the number of firm-year observations.

#### 7.4.1 The goodwill impairment decision

In order to test the hypotheses \( H1a, H2a \) and \( H3a \), a logistic regression is used. The dependent variable in the model, \( GWI \), is a dichotomous variable that receives the value one if the firm \( i \) has recognised a goodwill impairment loss in the observation year, and zero
otherwise. The model is run on the full research sample, comprising 109 impairment and 500 non-impairment firm-year observations.

Table 8 summarises the regression output. The table shows the variables and their predicted signs, the regression coefficients ($\beta$), standard errors, odds ratios ($\exp(\beta)$), and p-values. Observations significant at the two-tailed 0.01 and 0.05 levels are bolded and marked with *** and **, respectively.

### Table 8 Logistic regression output

<table>
<thead>
<tr>
<th>Variable</th>
<th>Prediction</th>
<th>Coefficient ($\beta$)</th>
<th>Std. error</th>
<th>Exp ($\beta$)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td></td>
<td>-3.090</td>
<td>1.752</td>
<td>0.046</td>
<td>0.078</td>
</tr>
<tr>
<td>CEOC</td>
<td>+</td>
<td>0.593</td>
<td>0.276</td>
<td>1.809</td>
<td>0.031</td>
</tr>
<tr>
<td>BATH</td>
<td>+</td>
<td>0.636</td>
<td>0.308</td>
<td>1.888</td>
<td>0.039</td>
</tr>
<tr>
<td>LEV</td>
<td>-</td>
<td>0.239</td>
<td>0.848</td>
<td>1.270</td>
<td>0.778</td>
</tr>
<tr>
<td>GWA</td>
<td>+</td>
<td>3.645</td>
<td>0.809</td>
<td>38.265</td>
<td>***</td>
</tr>
<tr>
<td>ROA</td>
<td>-</td>
<td>2.502</td>
<td>1.396</td>
<td>12.210</td>
<td>0.073</td>
</tr>
<tr>
<td>MTB</td>
<td>-</td>
<td>-0.167</td>
<td>0.086</td>
<td>0.846</td>
<td>0.051</td>
</tr>
<tr>
<td>SIZE</td>
<td>+</td>
<td>0.061</td>
<td>0.072</td>
<td>1.063</td>
<td>0.395</td>
</tr>
<tr>
<td>ICB 1</td>
<td>+/-</td>
<td>-0.084</td>
<td>0.58</td>
<td>0.919</td>
<td>0.885</td>
</tr>
<tr>
<td>ICB 2</td>
<td>+/-</td>
<td>-0.687</td>
<td>0.532</td>
<td>0.503</td>
<td>0.197</td>
</tr>
<tr>
<td>ICB 3</td>
<td>+/-</td>
<td>-0.591</td>
<td>0.593</td>
<td>0.554</td>
<td>0.319</td>
</tr>
<tr>
<td>ICB 4</td>
<td>+/-</td>
<td>-0.16</td>
<td>0.717</td>
<td>0.852</td>
<td>0.824</td>
</tr>
<tr>
<td>ICB 5</td>
<td>+/-</td>
<td>-0.027</td>
<td>0.559</td>
<td>0.974</td>
<td>0.962</td>
</tr>
<tr>
<td>ICB 9</td>
<td>+/-</td>
<td>-0.951</td>
<td>0.593</td>
<td>0.386</td>
<td>0.109</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Observations</th>
<th>Classification</th>
<th>Nagelkerke R$^2$</th>
<th>Omnibus test</th>
<th>Hosmer-Lemeshow test</th>
</tr>
</thead>
<tbody>
<tr>
<td>609</td>
<td>0.829</td>
<td>0.134</td>
<td>51,858 (sig. 0.000)</td>
<td>9,329 (sig. 0.315)</td>
</tr>
</tbody>
</table>

*Notes: This table presents the results of the logistic regression. The regression model uses a sample of 609 firm-year observations. The variable definitions are provided in table 2 above.

*p-value < 0.10; ***p-value < 0.05; ***p-value < 0.01 (two-tailed sig.)

Nagelkerke R$^2$ is used to estimate the explanatory power of the regression model. It indicates the amount of variance in the dependent variable that is explained by the model as a whole. (Pallant, 2010:176) The R$^2$ statistic shown in the table implies that the regression model is able to explain 13.40% of the variance in the goodwill impairment decisions. While low, the
explanatory degree of this regression is, however, in line with that in previous comparable studies (e.g. AbuGhazaleh et al., 2011; Stenheim and Madsen, 2016). As can be seen from the table, the model correctly classified 82.90% of the observations. The results from the Omnibus (sig. 0.000) and Hosmer-Lemeshow (sig. 0.315) tests indicate that the model is statistically significant and thus provides a good fit for the data.

Consistent with the predictions, the regression results show positive associations between the dependent variable GWI and the independent variables CEOC and BATH. As can be seen from the table, the regression coefficient for CEOC is positive and statistically significant at the 0.05 level (β₁ = 0.593; p = 0.031). The regression coefficient for BATH is, in a similar fashion, positive and statistically significant at the 0.05 level (β₂ = 0.636; p = 0.039). These results indicate that the likelihood of goodwill impairment is pronounced for companies that report negative earnings and that experience changes in the senior management during the financial year. In contrast to the predictions, the regression coefficient for LEV is statistically insignificant. The indebtedness of a company does in other words not appear to be a significant factor in explaining goodwill impairments.

As to the variables used to measure factors of economic impairment, the results are more mixed. The regression coefficient for GWA is positive and significant at the 0.01 level (β₄ = 3.645; p = 0.000). In line with the predictions and the results reported in previous sections, this finding provides strong evidence that the likelihood of goodwill impairment increases with a greater goodwill asset. The insignificant coefficient for ROA, suggests that accounting-based performance is not directly reflected in goodwill impairments. Nevertheless, its positive sign is interesting. While the coefficient for MTB carries the predicted sign (β₆ = -0.167), with a p-value of 0.051, it does not quite reach statistical significance at the conventional 0.05 level.

With respect to the control variables for size (SIZE) and industry membership (ICB 1-5, 9), no statistically significant associations can be found. Neither industry membership nor company size do in other words appear to determine the likelihood of goodwill impairment.

### 7.4.2 The size of the goodwill impairment loss

In order to test the hypotheses H₁b, H₂b and H₃b, multiple linear regression is used. The dependent variable in the model, GWIL/TA, is the firm i’s reported impairment loss in the observation year, scaled by its opening total assets. The regression model uses a sample
consisting of 109 impairment observations. In this regression equation, the time-invariant industry variables have been excluded, as was mentioned in 6.4 above.

Table 9 summarises the regression output. The table shows the variables and their predicted signs, the regression coefficients ($\beta$), standard errors, part correlation coefficients, and p-values. Observations significant at the 0,01 and 0,05 levels are bolded and marked with *** and **, respectively.

### Table 9  Multiple linear regression output

<table>
<thead>
<tr>
<th>Variable</th>
<th>Predicted</th>
<th>Coefficient ($\beta$)</th>
<th>Std. error</th>
<th>Part correlation</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>n.a.</td>
<td>0,046</td>
<td>n.a.</td>
<td></td>
<td>0,000 ***</td>
</tr>
<tr>
<td>CEOC</td>
<td>+</td>
<td>0,091</td>
<td>0,010</td>
<td>0,088</td>
<td>0,234</td>
</tr>
<tr>
<td>BATH</td>
<td>+</td>
<td>0,331</td>
<td>0,011</td>
<td>0,273</td>
<td>0,000 ***</td>
</tr>
<tr>
<td>LEV</td>
<td>-</td>
<td>-0,355</td>
<td>0,031</td>
<td>-0,326</td>
<td>0,000 ***</td>
</tr>
<tr>
<td>GWA</td>
<td>+</td>
<td>0,234</td>
<td>0,027</td>
<td>0,223</td>
<td>0,003 ***</td>
</tr>
<tr>
<td>ROA</td>
<td>-</td>
<td>-0,112</td>
<td>0,041</td>
<td>-0,089</td>
<td>0,227</td>
</tr>
<tr>
<td>MTB</td>
<td>-</td>
<td>0,067</td>
<td>0,003</td>
<td>0,056</td>
<td>0,443</td>
</tr>
<tr>
<td>SIZE</td>
<td>+</td>
<td>-0,234</td>
<td>0,002</td>
<td>-0,220</td>
<td>0,003 ***</td>
</tr>
</tbody>
</table>

Observations 109  
Adjusted R-square 0,421  
Anova sig. 0,000  
Durbin-Watson 2,090

**Notes:** This table presents the results of the multiple linear regression. The regression model uses a sample of 109 firm-year observations. The variable definitions are provided in table 2 above. *p-value < 0,10; ***p-value < 0,05; ***p-value < 0,01 (two-tailed sig.)

Adjusted $R^2$ is used to measure the explanatory power of the regression model. It provides an indication on the amount of variance in the dependent variable that is explained by the model as a whole. (Pallant, 2010:160) The $R^2$ statistic provided in the lower panel of the table suggests that the linear regression model is able to explain up to 42,10 % of the variance in the impairment losses over the combined 2010-2016 period. The $R^2$ statistic here is considerably higher than in the logistic regression (0,421 vs. 0,134), but at the same time in line with that in other comparable studies. Since the data include a time dimension, a Durbin-Watson test is performed to control for potential autocorrelation in the residuals of the linear regression. The Durbin-Watson statistic can take a value between zero and four. A value of two indicates that no autocorrelation is present. (Lind et al., 2010:623) With a
value of 2,090, autocorrelation is not expected to be a problem in this study. The ANOVA report (sig. 0,000) further shows that the model is statistically significant.

As can be seen from the table, statistically significant results are found with respect to two of the three explanatory variables: BATH and LEV. Consistent with the predictions, the regression coefficient for BATH is positive and significant at the 0,01 level ($\beta_2 = 0,331; p = 0,000$). Companies whose pre-impairment earnings are negative in the observation year report significantly larger impairment losses than companies whose earnings would have been positive in the absence of an impairment loss. As can further be seen from the table, the estimated coefficient on LEV is negative and strongly significant ($\beta_3 = -0,355; p = 0,000$). This is in also line with the predictions. Companies with higher levels of leverage appear to report significantly smaller impairment losses than their less leveraged peers. Moreover, while the correlation analysis supports the assumption of a positive relationship between CEOC and GWIL/TA, this assumption is not sustained by the regression results.

As can further be seen from the table, two control variables, GWA and SIZE, are statistically significant at the 0,01 level. The variable GWA continues to show a positive association with the dependent variable ($\beta_4 = 0,234; p = 0,003$) thus suggesting that the reported impairment losses increase with the proportion of assets in goodwill. Interestingly, the correlation coefficient for SIZE is negative and statistically significant ($\beta_7 = -0,234; p = 0,003$). This implies that smaller companies record larger goodwill impairment losses. In contrast to the predictions, the regression results reveal no significant associations between the size of the impairment loss and the measures for market- and accounting-based performance. The estimated coefficients for MTB and ROA are both highly insignificant.
8 DISCUSSION AND ANALYSIS

In this chapter, the empirical findings are discussed in the light of existing literature. Based on the combined test results the six research hypotheses are either accepted or rejected in subsection 8.1. Limitations relating to the reliability and to the internal and external validity of this study are then briefly assessed in subsection 8.2.

8.1 Results discussion

This study used three sets of research hypotheses to examine the determinants of goodwill impairments. The tested hypotheses are summarised in tables 10, 11 and 12 below. The tick marks (√) in the right-hand side panel of each table indicate that the hypotheses in question are supported by the empirical results of this study.

Based on the findings in prior literature, \( H_1a \) and \( H_1b \) predicted a positive association between goodwill impairments and recent CEO changes. The empirical tests performed in chapter seven can confirm one of these two hypotheses. Although a recent change in CEO is not found to be significantly related to the size of the reported impairment loss, the results from the logistic regression reveal a significant positive relationship between the decision to impair and recent, year \( t \), CEO changes. This finding is also supported in the Chi-square test, the results of which indicate that impairers significantly more often than non-impairers have experienced recent changes in the chief executive position (25.70 % vs 15.60 %). As follows, \( H_1a \) is accepted and \( H_1b \) is rejected.

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>( H_1a )</td>
<td>Companies that have experienced a recent change in CEO are more likely than others to recognise goodwill impairment losses</td>
</tr>
<tr>
<td>( H_1b )</td>
<td>Among the companies that recognise goodwill impairment losses, the size of the reported impairment loss is greater for companies that have also experienced a recent change in CEO</td>
</tr>
</tbody>
</table>

The results regarding \( H_1a \) are in line with several prior studies, including Saastamoinen and Pajunen (2016), Ramanna and Watts (2012) and Glaum et al. (2015). In contrast to the expectations and to the empirical findings presented by amongst others AbuGhazaleh et al. (2011) and Master-Stout et al. (2008), the size of the impairment loss is not significantly
affected by reporting year changes in CEO. These results on $H1b$ are, however, consistent with both Iatridis and Senftlechner (2014) and Saastamoinen and Pajunen (2016), who are unable to find any significant associations between CEO changes and the size of the reported impairment losses in Austrian and Finnish companies.

The overall results indicate that tenured managers are more reluctant to impair goodwill than their newly appointed counterparts. One explanation for the increased amount of impairments following CEO changes is that the new CEO takes an earnings bath, to report higher earnings in forthcoming periods or to show superior managerial competences as opposed to the outgoing CEO (Masters-Stout et al., 2008). An alternative explanation, also suggested by Masters-Stout et al. (2008), would be that the new CEO is more realistic in his or her valuation of the asset or undertakes restructuring actions to improve the financial performance of the firm. Rather than an indication of big bath policies, the impairment losses reported in the appointment year might thus be losses that the outgoing management had been postponing. Considering that the initial impairment losses are more frequent but not larger in size, this alternative interpretation appears more plausible. It would also be in line with Iatridis and Senftlechner (2014) and Saastamoinen and Pajunen (2016). It might be that compared to the U.S., CEOs in Europe are not faced with similar reputational or compensational incentives to take an earnings bath in their appointment year. Although these findings do not allow one to make inferences about the reasons behind these reporting decisions, they do imply that there exists untimeliness in goodwill impairment accounting and that this untimeliness to some extent is attributable to the outgoing management.

Drawing from the earnings management literature, the second set of hypotheses – $H2a$ and $H2b$ – expected managers to use goodwill impairments to create earnings baths in periods of financial distress. The results from the statistical tests confirm these hypotheses. While the Chi-square test only provides weak ($p = 0.059$) evidence of differences between impairers and non-impairers with respect to the $BATH$ variable, the results from the logistic regression exhibit a significant positive association between the decision to impair and big bath behaviour. The multiple linear regression shows similar results. Firms with negative pre-impairment earnings are not only more likely to impair goodwill, but also report larger impairment losses than companies with zero or positive pre-impairment earnings. Both $H2a$ and $H2b$ can thus be accepted.
Table 11   Hypotheses H2a and H2b regarding earnings baths

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>H2a</strong> Companies with negative pre-impairment earnings are more likely than others to recognise goodwill impairment losses</td>
<td>✓</td>
</tr>
<tr>
<td>Among the companies that recognise goodwill impairment losses, the size of the reported impairment loss is greater for companies whose pre-impairment earnings are negative</td>
<td>✓</td>
</tr>
</tbody>
</table>

The results on **H2a** and **H2b** are congruent with a vast amount of existing studies and consistent with the theories presented by Kirschenheiter and Melumad (2002). Unlike Saastamoinen and Pajunen (2016), who only find big bath behaviour to influence the size of the reported impairment losses, this study is also able to confirm the positive relationship between negative pre-impairment earnings and impairment likelihood.

The above results indicate that Finnish managers use goodwill impairments for earnings management purposes. The observed positive relationship between impairments and big bath variables could also suggest that managers are reacting to adverse changes in the firm’s economic environment, consistent with the objectives of the accounting standards. However, Jordan and Clark (2004) argue that goodwill impairment is not something that occurs within just one period. Instead, it is more likely a result of deteriorating performance over multiple periods. If earnings are depressed in the year goodwill is written down but not in the year preceding the impairment (i.e. year t-1), the write down is more likely to be due to managerial opportunism than actual economic impairment (Jordan and Clark, 2004). As could be seen earlier, neither the regression analysis nor the T-test (see table 6) yielded significant results on ROA, which is used to measure year t-1 accounting-based performance. Hence, one could assume that the observed impairment losses were recognised because earnings were negative in the current period and because the timing therefore was perceived convenient – in support of the big bath theory.

In addition to earnings bath, there is also another earnings management pattern that has been associated with goodwill impairments in prior literature, namely, income smoothing. The positive, albeit only marginally significant ($p = 0.073$) association between ROA and goodwill impairments in the logistic regression implies that it is the well-performing firms
that impair goodwill. This could cautiously be interpreted as a sign of such smoothing behaviour. As Jahmani et al. (2010) and Storå (2013) suggest, impairment losses might be postponed to periods when earnings are higher than average, i.e. to periods when firms can afford the reductions in earnings that the impairment charges cause. Even though income smoothing is left beyond the scope of this thesis, this nevertheless is an interesting finding that could merit some further research.

Hypotheses $H_3a$ and $H_3b$ predicted goodwill impairments to be both smaller in size and less frequent for highly leveraged companies. The combined test results confirm only one of these two hypotheses. While leverage does not appear to significantly influence the likelihood of impairment recognition, the multiple linear regression reveals a strongly significant and negative association between firm leverage and the size of the reported impairment losses. Highly indebted companies appear to recognise smaller impairment losses than their less leveraged peers. As follows, $H_3a$ is rejected and $H_3b$ accepted.

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>$H_3a$</td>
<td></td>
</tr>
<tr>
<td>Companies with higher levels of leverage are less likely than others to recognise goodwill impairment losses</td>
<td></td>
</tr>
<tr>
<td>$H_3b$</td>
<td>✓</td>
</tr>
<tr>
<td>Among the companies that recognise goodwill impairment losses, the size of the reported goodwill impairment loss is smaller for companies with higher levels of leverage</td>
<td></td>
</tr>
</tbody>
</table>

The results on $H_3a$ are in line with recent IFRS-based studies (AbuGhazaleh et al., 2011; Chalmers et al., 2011; Saastamoinen and Pajunen, 2016). However, they are inconsistent with the predictions and at odds with Ramanna and Watts (2012) and Beatty and Weber (2006), who find debt covenant concerns to influence SFAS 142 goodwill impairment decisions. Although the results regarding $H_3b$ are consistent with Zang (2008), they are conflicting with Saastamoinen and Pajunen (2016) and Stenheim and Madsen (2016) who cannot find any associations between firm indebtedness and the size of the reported impairment losses. The combined test results are interesting in the light of prior research.

The results indicate that the managers of Finnish companies use their discretion when determining the size of the reported impairment loss. The decision to impair, as such, is not
influenced by the indebtedness of the firm. The information asymmetries that are assumed to exist between the market and the management regarding the valuation of goodwill could provide an explanation to these findings. As long as the market is provided with sufficient information, it should be able to anticipate an impairment loss – which could, in turn, create an external pressure to impair goodwill. However, without the detailed information that the management possesses, the market is most likely unable to accurately determine the correct magnitude of the loss. The decision regarding the size of the loss is in other words one in which the management can exercise more discretion. Thus, if the managers were in line with the debt/equity-hypothesis (Watts and Zimmerman, 1990) incentivised to understate losses, they would presumably do so by minimising the reported impairment, rather than avoiding impairments altogether.

It should be noted that while the leverage ratio is often used to measure debt covenant incentives and closeness to debt covenant violations, it has also been criticised as it does not actually provide information on the terms of the lending contracts (Dichev and Skinner, 2002). Nevertheless, since impairment charges reduce both earnings and shareholders’ equity, goodwill impairments can drastically change the capital structure of the firm. As this might be associated with increased financing costs, higher risk and thereby higher return expectations from the investors, it seems logical that managers of highly leveraged firms may wish to avoid the recognition of large impairment losses – as has also been suggested by Watts and Zimmerman (1990).

**Economic conditions as determinants of goodwill impairments**

The empirical results in chapter seven also indicate that the impairment decisions to some extent are driven by actual economic conditions. Of the variables used to control for economic factors of impairment, the relative amount of goodwill on the firm’s balance sheet (GWA) appears to have the strongest predictive ability on goodwill impairment decisions in Finnish listed companies. In line with the predictions and consistent with prior research (e.g. Giner and Pardo, 2014), companies with a greater proportion of their assets in goodwill are found to report greater and more frequent impairment losses. Goodwill also constitutes, on average, a significantly larger component of the impairers’ total assets than the non-impairers’ (23.30 % compared to 16 %). Since companies with greater goodwill assets often conduct more impairment tests, the goodwill on their balance sheets is also more exposed to impairments. The empirical results further suggest that share prices to some extent reflect
the incidence of goodwill impairment in advance and that managers use market valuation as an indicator of impairment – as recommended in IAS 36. While the variable $MTB$ is not strongly significant in either regression, it is materially significant in the logistic regression ($p = 0.051$). Also, the results from the T-test show that companies reporting impairment losses have significantly lower market-to-book ratios than their non-impairing counterparts (1.35 compared to 2.10). These findings are similar to those reported by amongst others AbuGhazaleh et al. (2011) and Saastamoinen and Pajunen (2016).

Some interesting results are also obtained regarding the control variables for firm size and industry membership. Whereas some prior studies have found positive associations between firm size and impairment decisions (e.g. Saastamoinen and Pajunen, 2016; Stenheim and Madsen, 2016), some other, older studies, suggest that the relationship between firm size and discretionary write downs is negative (e.g. Sevin and Schroeder, 2005). In line with the former ones, this study expected larger companies to report larger and more frequent impairments. The empirical results are inconsistent with any such predictions. While firm size does not appear to influence the likelihood of impairment, the multiple linear regression reveals a negative and strongly significant association between firm size and the size of the reported impairment losses. It in other words seems that it is the small firms in the sample that have reported the largest impairment losses. One explanation to these findings could be that the small firms have been more severely affected by adverse changes in their economic environment (Sevin and Schroeder, 2005). In addition, given that the asset structure and operating environment of firms in different industries can greatly differ, the data were also controlled for industry effects. Although the descriptive statistics initially suggested there to be some industry-related differences, the control variables did not turn significant in the statistical test. However, the technologies industry, which also carries the highest average goodwill balance (28.8 %), had a negative coefficient and a p-value much lower than the other industries in the logistic regression ($p = 0.109$). Notably, Saastamoinen and Pajunen (2016) find firms in the technologies industry to be less likely than others to impair goodwill.

8.2 Reliability and validity

Reliability in research refers to the consistency of the measure and to the replicability of the research results. Validity, in turn, determines whether a chosen measure is accurate and whether it actually measures what it is intended to measure (Ghauri and Grønhaug, 2010:78-84). As both reliability and validity are essential for any empirical research, prior
to making any final conclusions about the research results, these must briefly be assessed.

Most financial data used in the analysis are collected from the Orbis database, which contains financial information from the sample companies’ audited financial statements. Data on goodwill impairments and CEO changes are hand-collected from these firms’ annual financial reports. While the collected data set thus can be considered reliable, manual processing inevitably makes the data susceptible to human error. Moreover, the selected research methods and the variables used in the statistical tests are all based on previous comparable goodwill impairment studies (AbuGhazaleh et al., 2011; Saastamoinen and Pajunen, 2016) and the logistic and multiple linear regressions, the Pearson correlation analysis and the T-test, Chi-square-test and Mann-Whitney U-test are all frequently applied and widely accepted methods within quantitative research (Pallant, 2010). One could therefore consider the variables and the research methods both reliable and valid. However, as has been implied above, using firm-level measures as proxies for economic impairment and leverage ratio as a measure for debt covenant concerns might cause limitations to the internal validity of this study. Thus, while the reliability and validity of the conducted study can be considered good, there are some limitations to the internal validity that should be kept in mind when interpreting the research results.
9 CONCLUDING REMARKS

This final chapter summarises the most important empirical findings presented in this paper. It also discusses the limitations of the conducted study, highlights its international and academic relevance and provides suggestions for further research.

9.1 Conclusions

This thesis examines the determinants of goodwill impairments in Finnish listed companies. The revision of the accounting standards regarding goodwill and the transition to a fair value-based set of accounting standards in the beginning of the 21st century signified a remarkable change in the prevailing accounting practices in several countries. While the new approach to goodwill accounting was intended to increase the transparency of accounting and improve the relevance and representational faithfulness of earnings (Massoud and Raiborn, 2003), the standards have also received much criticism due to the unverifiable discretion they entail. Although some studies support the standard setters’ view on the advantages of the impairment approach (e.g. Chalmers et al., 2011) and find goodwill impairments to more likely be driven by economic conditions (e.g. AbuGhazaleh et al., 2011; Iatridis and Senftlechner, 2014; Jarva, 2009), prior research also indicates that reported goodwill impairments lag behind the economic impairment of goodwill (Amiraslani et al., 2012; Jarva, 2009; Li and Sloan, 2009; Ojala, 2007), and that the discretion inherent in the accounting standards allows managers – depending on their incentives – to either avoid or accelerate the recognition of goodwill impairment losses (e.g. Masters-Stout et al, 2008; Ramanna and Watts, 2012; Storâ, 2013). Consequently, this thesis aims to investigate whether goodwill impairments reported by Finnish companies are driven by managerial reporting incentives or actual economic conditions, as initially intended by the standard setting authorities.

Using logistic and multiple linear regression, this study separately examines the decision to impair and the size of the reported impairment loss. To test the research hypotheses, the dependent variables in the models are regressed on proxies for managerial reporting incentives, economic factors and control variables for firm size and industry membership. The research sample comprises 609 firm-year observations of 98 OMXH listed companies from the period 2010-2016.
The combined results provide evidence on the notion that the managers of Finnish listed companies use their discretion in goodwill impairment accounting. More specifically, managerial reporting incentives appear to influence decisions relating to both the timing and the magnitude of the reported impairments losses. The results reveal a positive association between recognised goodwill impairments and recent, year $t$, CEO changes, which suggests that more tenured managers are more reluctant to impair goodwill than their newly appointed counterparts. Moreover, the empirical results provide evidence on big bath accounting behaviour among Finnish managers. Companies with negative pre-impairment earnings are found to be more likely to recognise impairments than other companies. These firms also report significantly larger impairment charges than firms with zero or positive pre-impairment earnings. While leverage does not appear to influence the impairment decision itself, the results show that the reported impairment losses are smaller in size for highly indebted companies. Managers in other words appear to avoid large write-downs, when these could have negative implications from a debt contracting perspective.

Nevertheless, the analysis also indicates that the goodwill impairments reported by Finnish companies are associated with actual economic factors. First, the incidence of impairment seems to be reflected in the market valuation of the firm. Second, firms with greater goodwill balances are found to be more exposed to goodwill impairments. Third, it appears as if it is particularly the smaller companies that are more vulnerable to negative changes in their economic environment and thus more exposed to larger impairment losses.

9.2 Limitations

The study is subject to a number of limitations, the first of which relate to the generalisability of the research findings. As this study focuses on the Finnish reporting environment and hence only encompasses companies listed on OMXH, it might not provide results that are fully generalisable to companies in other jurisdictions. The study is also limited by its years, as it merely covers the post-financial crisis period (i.e. 2010 onwards). Constrains related to time and, in particular, to the availability of data, impose limitations that might further reduce the generalisability of the research findings. It should also be stressed that the topic under consideration is a highly subjective one and that several simplifications have been made throughout the thesis. There are numerous additional factors that might influence the impairment decisions managers make and not all of these can necessarily be measured using quantitative methods.
9.3 Contribution and suggestions for further research

This thesis contributes to the existing literature by providing new evidence on goodwill impairment accounting in Finland – a country which to its regulatory environment, market structure and accounting traditions greatly differs from the Anglo-Saxon economies that have been most influential in developing the harmonised accounting standards (Troberg, 2013). By examining goodwill impairments in a one-country setting, this thesis, together with prior IFRS-based studies (such as AbuGhazaleh et al., 2011; Giner and Pardo, 2014; Glaum et al., 2015; Iatridis and Senftlechner, 2014; Saastamoinen and Pajunen, 2016), illustrates the influence of institutional factors on the quality of accounting and provides evidence on national differences in the application of international accounting standards. The findings presented in this thesis have implications to both financial statements users as well as standard setting authorities. When using the financial statements as a basis for decision making and when making inferences about firms’ future earnings prospects, investors, auditors and other non-preparers should take into consideration the potential issues related to goodwill impairments that have been discussed above. The results of this thesis may also benefit the standard setters when developing new accounting standards and when revising the current ones.16

Goodwill and its accounting treatment has been the subject of numerous studies, but there are still various interesting and relevant avenues for future research. Since the results obtained in this thesis suggest that managers use their discretion in goodwill impairment accounting to avoid the recognition of goodwill impairment losses, future studies could for instance investigate the timeliness of goodwill impairments in Finland. Given the results of the logistic regression, it would also be interesting to examine whether and to what extent goodwill impairments are used for earnings smoothing purposes. In addition, as one of the limitations of this study relates to the limited sample size, future studies could benefit from a larger research sample, e.g. using also observations from other Nordic countries. This way, additional variables could be incorporated in the analysis. Such variables could in particular include proxies for corporate governance, as these have in prior IFRS-based studies (e.g. AbuGhazaleh et al., 2011; Verriest and Gaeremynck, 2009) been found to have a notable

---

16 The IASB has identified the issues related goodwill impairment accounting and is currently (second half of 2017) exploring ways in which the impairment test could be improved or simplified. The IASB strives to improve both the effectiveness of the IAS 36 impairment test as well as the quality of the information provided to the users of financial statements. (IFRS, 2017)
impact on the quality of goodwill impairments. The following step in goodwill impairment research could thus be to explore manners in which the information content of goodwill impairments and the overall quality of the financial statements could be improved.
<table>
<thead>
<tr>
<th>Variable</th>
<th>GWIL/TA</th>
<th>GWI</th>
<th>CEOC</th>
<th>BATH</th>
<th>SIZE</th>
<th>LEV</th>
<th>GWA</th>
<th>ROA</th>
<th>MTB</th>
<th>ICB 1</th>
<th>ICB 2</th>
<th>ICB 3</th>
<th>ICB 4</th>
<th>ICB 5</th>
<th>ICB 9</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>GWIL/TA</td>
<td>n.a.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GWI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CEOC</td>
<td>0.195***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.145</td>
</tr>
<tr>
<td>BATH</td>
<td>0.421***</td>
<td>0.077*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.529</td>
</tr>
<tr>
<td>SIZE</td>
<td>-0.384***</td>
<td>0.064</td>
<td>-0.039</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.845</td>
</tr>
<tr>
<td>LEV</td>
<td>-0.306***</td>
<td>-0.02</td>
<td>0.037</td>
<td>0.149***</td>
<td>-0.091***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.417</td>
</tr>
<tr>
<td>GWA</td>
<td>0.371***</td>
<td>0.191***</td>
<td>0.03</td>
<td>-0.038</td>
<td>-0.155***</td>
<td>-0.038</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.82</td>
</tr>
<tr>
<td>ROA</td>
<td>-0.209***</td>
<td>-0.003</td>
<td>-0.092***</td>
<td>-0.301***</td>
<td>0.157***</td>
<td>-0.456***</td>
<td>-0.064</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.639</td>
</tr>
<tr>
<td>MTB</td>
<td>-0.029</td>
<td>-0.114***</td>
<td>0.015</td>
<td>-0.195***</td>
<td>0.005</td>
<td>-0.085***</td>
<td>-0.025</td>
<td>0.221***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.228</td>
</tr>
<tr>
<td>ICB 1</td>
<td>-0.122</td>
<td>0.065</td>
<td>0.052</td>
<td>0.087***</td>
<td>0.334***</td>
<td>-0.062</td>
<td>-0.113***</td>
<td>-0.057</td>
<td>-0.114***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2.667</td>
</tr>
<tr>
<td>ICB 2</td>
<td>-0.232***</td>
<td>-0.094***</td>
<td>0.013</td>
<td>0.071**</td>
<td>-0.107***</td>
<td>0.271***</td>
<td>-0.158***</td>
<td>-0.080**</td>
<td>0.049</td>
<td>-0.241***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5.386</td>
</tr>
<tr>
<td>ICB 3</td>
<td>-0.081</td>
<td>-0.048</td>
<td>-0.031</td>
<td>-0.051</td>
<td>0.019</td>
<td>-0.155***</td>
<td>-0.216***</td>
<td>0.032</td>
<td>-0.082***</td>
<td>-0.112***</td>
<td>-0.338***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2.822</td>
</tr>
<tr>
<td>ICB 4</td>
<td>0.220***</td>
<td>0.011</td>
<td>-0.029</td>
<td>-0.086***</td>
<td>-0.052</td>
<td>-0.052</td>
<td>0.011</td>
<td>0.098***</td>
<td>0.173***</td>
<td>-0.058</td>
<td>-0.176***</td>
<td>-0.082**</td>
<td></td>
<td></td>
<td></td>
<td>1.949</td>
</tr>
<tr>
<td>ICB 5</td>
<td>-0.176***</td>
<td>0.122***</td>
<td>-0.033</td>
<td>-0.045</td>
<td>0.069***</td>
<td>-0.034</td>
<td>0.122***</td>
<td>0.03</td>
<td>-0.067</td>
<td>-0.093***</td>
<td>-0.279***</td>
<td>-0.130***</td>
<td>-0.068'</td>
<td></td>
<td></td>
<td>3.295</td>
</tr>
<tr>
<td>ICB 9</td>
<td>0.590***</td>
<td>-0.012</td>
<td>0.05</td>
<td>0.038</td>
<td>-0.327***</td>
<td>-0.104***</td>
<td>0.370***</td>
<td>0.005</td>
<td>0.037</td>
<td>-0.134***</td>
<td>-0.404***</td>
<td>-0.189***</td>
<td>-0.098**</td>
<td>-0.155***</td>
<td></td>
<td>4.186</td>
</tr>
</tbody>
</table>

Notes: This table presents Pearson correlations and variance inflation factors for the variables used in the logistic and multiple linear regressions. *p-value < 0.10; **p-value < 0.05; ***p-value is < 0.01 (two-tailed)

Variable definitions: GWIL/TA: firm i's reported goodwill impairment loss in year t, deflated by total assets at the end of t-1; GWI: a dichotomous variable that takes the value 1 if the firm i has recognised a goodwill impairment loss in year t, and 0 otherwise; CEOC: a dichotomous variable that takes the value 1 if the firm i has experienced a change in CEO in year t, and 0 otherwise; BATH: a dichotomous variable that takes the value 1 if the firm i's earnings would have been negative in the absence of an impairment loss, and 0 otherwise (measured as pre-tax earnings + recognised goodwill impairment loss); SIZE: the natural logarithm of firm i's total assets at the end of t-1; LEV: firm i's total debt and liabilities at the end of t-1, divided by total assets at the end of t-1; GWA: firm i's opening goodwill balance, divided by total assets at the end of t-1; ROA: firm i's return on assets at the end of t-1 (measured as pre-tax earnings divided by total assets); MTB: firm i's market value of equity at the end of year t, divided by book value of equity at the end of year t (adjusted for goodwill impairments); ICB 1-5, 9: dichotomous variables that take the value 1 if the firm i belongs to the respective industries (where: 1 = basic materials, 2 = industrials, 3 = consumer goods, 4 = health care, 5 = consumer services, 9 = technology), and 0 otherwise.
APPENDIX 2  SVENSK SAMMANFATTNING

Introduktion

Förvärvad goodwill är en immateriell tillgång som skapas i samband med rörelseförvärv. Enligt de rådande internationella redovisningsstandarderna (IFRS) skrivs goodwill inte längre av, utan tillgången ska istället regelbundet prövas för nedskrivning. Genom att i början av 2000-talet ersätta de linjära avskrivningarna med regelbundna nedskrivningsprövningar strävade de internationella redovisningsorganisationerna efter förbättrad redovisningskvalitet och en ökad transparens i den finansiella rapporteringen. Genom att ge företagsledningen mer handlingsfrihet i värderingen av goodwill och genom att kräva omfattande upplysningar om de estimat som används i nedskrivningsprövningen, skulle investerarna tillförs med mer relevant information om företagets framtidsutsikter och om dess underliggande ekonomi. (Massoud och Raiborn, 2003)


Känslig för negativa förändringar i företagens ekonomiska omgivning (Filip, Jeanjean och Paugam, 2015), är det viktigt att känna till hur standarderna tillämpas i praktiken och vilka faktorer som påverkar de nedskrivningsbeslut som företagsledningen fattar.

Avhandlingens syfte är att undersöka de faktorer som påverkar de nedskrivningsbeslut som fattas i finska börsbolag. Trots att redovisningsstandarderna förutsätter att nedskrivningar görs då och enbart då det finns verkliga ekonomiska grunder för dem, finns det mot bakgrund av tidigare forskning (bl.a. Pajunen och Saastamoinen, 2013; Saastamoinen och Pajunen, 2016) anledning att anta att nedskrivningsbesluten i viss mån även drivs av ledningens opportunism.


**Redovisning och nedskrivning av goodwill**


Goodwill definieras som en tillgång som "representerar de framtida ekonomiska fördelar som uppkommer från andra tillgångar förvärvade i ett rörelseförvärv som inte är enskilt identifierade och separat redovisade" (IFRS 3). Som nämndes tidigare och som framgår ur definitionen uppstår tillgången goodwill enbart i samband med företagsförvärv. Om den överförda ersättningen överskriver nettot av de identifierbara förvärvade tillgångarna och övertagna skulderna uppstår goodwill på förvärvarens balansräkning (IFRS 3.32).
Goodwill skrivs inte längre av över sin uppskattade nytjandeperiod utan ska regelbundet genomgå en nedskrivningsprövning. Riktlinjer för denna nedskrivningsprövning hittas i IAS 36. I och med att goodwill inte är en tillgång som genererar kassaflöden ensam, ska goodwill från och med förvärvstidpunkten fördelats på alla de kassagenererade enheter som förväntas bli gynnade av förvärvet och som motsvarar den lägsta nivå i företaget som goodwillen i den interna styrningen kan övervakas på (IAS 36.80). Den enhet på vilken goodwill har fördelats ska prövas för nedskrivning förutom årligen även alltid då det finns skäl att anta att enheten har gått ner i värde, genom att den kassagenererande enhetens redovisade värde jämförs med dess återvinningsvärde (IAS 36.90). Eftersom en kassagenererande enhet ytterst sällan har ett marknadsvärde på basen av vilket dess verkliga värde kunde fastställas, estimeras enhetens återvinningsvärde i regel genom att uppskatta nuvärde av dess framtida kassaflöden (Troberg, 2013)

Om enhetens uppskattade återvinningsvärde är högre än dess redovisade värde, föreligger inget nedskrivningsbehov. Om det redovisade värde däremot överstiger enhetens återvinningsvärde ska företaget omedelbart redovisa värdenedgången i form av en nedskrivning (IAS 36.90). Nedskrivningen fördelas på den kassagenererande enhetens tillgångar så, att det redovisade värdet för goodwill först minskas. Om nedskrivningen är större än goodwilltillgången, fördelas den återstående nedskrivningen proportionellt på enhetens övriga tillgångar. (IAS 36.104) En goodwillnedskrivning är alltid slutlig och får därmed inte återföras i en efterföljande period (IAS 36.124).

**Tidigare forskning**

De studier som är mest relevanta för denna avhandling kan grovt fördelas i två grupper: (1) studier som undersöker goodwillnedskrivningarnas värderelavans och aktualitet och (2) studier som undersöker faktorer som påverkar de nedskrivningsbeslut som företagsledningen fattar. I följande avsnitt kommer enbart de mest centrala fynden i dessa studier att presenteras.

Som tidigare nämndes var ett av syftena med införandet av nedskrivningsprövningen att öka på redovisningsinformationens värderelavans. Trots att en del studier kommit fram till att värderelavansen i enlighet med detta syfte ökat efter att avskrivningarna ersattes med regelbundna nedskrivningsprövningar (Chalmers, Godfrey och Webster, 2012; Godfrey och Koh, 2009), finns det även ett flertal undersökningar som visar det motsatta (bl.a. Bens,


**Hypotesformulering**

När företagsledningen utför nedskrivningsprövningen måste de först avgöra om ett nedskrivningsbehov föreligger och därefter, om svaret är jakande, fastställa storleken på den nedskrivning som görs. Vid hypotesformuleringen har båda besluten tagits i beaktande. I övrigt baserar sig hypoteserna på tidigare forskning och utgår från att företagsledningen använder sig av sitt omdöme då de fattar beslut gällande goodwillnedskrivningar och att detta omdöme i viss mån drivs av opportunism.

Den empiriska delen av denna avhandling bygger således på tre hypotespar. Det första hypotesparet, H1a och H1b, undersöker sambandet mellan goodwillnedskrivningar och vd-byten. Hypoteserna antar att nedskrivningar är mer sannolika (H1a) och relativt sett större (H1b) bland företag som genomgått ett vd-byte under samma år. Det andra hypotesparet, H2a och H2b, baserar sig på den ansenliga mängd tidigare forskning som visat att goodwillnedskrivningar kan användas för att manipulera resultatet. Hypoteserna antar att företag vars redovisade resultat redan innan nedskrivningen skulle ha varit negativa skriver ner goodwill mer sannolikt (H2a) och i relativt större poster (H2b) är andra företag. Det tredje och sista hypotesparet, H3a och H3b, undersöker skuldsättningsgradens inverkan på de nedskrivningsbeslut som fattas i företag. Det bakomliggande antagandet är att företag med högre skuldsättningsgrad mer sällan skriver ner goodwill (H3a) och att de nedskrivningar som görs är förhållandevis mindre (H3b) än nedskrivningarna i mindre skuldsatta bolag.

**Data och sampel**

Data för undersökningen insamlas från två huvudsakliga källor. Bokslutsdata hämtas från Bureau van Dijks Orbis-databas. Information om goodwillnedskrivningar och vd-byten insamlas manuellt från företagens årsredovisningar. Undersökningsperioden sträcker sig

**Forskningsmetod**


De tre första oberoende variablerna är förklarande variabler som anknyter till de sex forskningshypoteser som presenterades ovan. Variabeln CEOC testar sambandet mellan vd-byten och nedskrivningar. BATH är en dummyvariabel som antar värde ett om företagets resultat före nedskrivningar och skatter hade varit negativt. Sambandet mellan skuldsättningsgrad och nedskrivningar undersöks med variabeln LEV. För att kontrollera för ekonomiska faktorer, läggs i modellerna till ett antal kontrollvariabler. Dessa variabler mäter mängden goodwill (GWA), avkastning på totalt kapital (ROA), marknadsvärde i förhållande till bokvärde (MTB) och företagsstorlek (SIZE). Den logistiska modellen kompleteras dessutom med sex olika industrivariable (ICB 1–5,9).

I tillägg till dessa två regressioner utförs även en mängd preliminära och stödande test. Bland annat används t-test, Mann-Whitney U-test och chi-två-test för att undersöka signifikanta skillnader mellan observationer som klassificerats som nedskrivare och icke-
nedskrivare i den deskriptiva statistiken. Korrelationer mellan enskilda variabler undersöks med Pearsons korrelationsanalys. Alla test som beskrivs i denna avhandling utförs i statistikprogrammet SPSS Statistics.

Resultat

Den deskriptiva statistiken tillsammans med resultaten från t-testet, Mann-Whitney U-testet och chi-två-testet stöder preliminärt en del av forskningshypoteserna. Den deskriptiva statistiken visar bland annat att goodwill utgör en rätt betydande tillgång för finska företag: sampföretagen har i genomsnitt 17,3 % av sina tillgångar i goodwill. Mängden goodwill varierar dock stort mellan företag i olika branscher och den största genomsnittliga goodwillbalansen, 28,8 %, hittas i teknologiindustrin (ICB 9). Vidare visar den deskriptiva statistiken att nästan hälften av företagen inte redovisade någon nedskrivningsförlust under hela undersökningsperioden. De nedskrivningar som rapporterades var även relativt små, i genomsnitt 3 % av företagens totala tillgångar.

Sampelföretagen har en genomsnittlig skuldsättningsgrad på 58,6 % och en lönsamhet mätt i ROA på 3,5 %. Dessa tal skiljer sig inte signifikant mellan nedskrivare och de observationer som klassats som icke-nedskrivare. Starkt signifikanta skillnader mellan grupperna hittas däremot i fråga om variablerna GWA, MTB och CEOC. Resultaten visar att nedskrivarna i genomsnitt har större goodwillbalanser än icke-nedskrivare (23,3 % vs 16 %), lägre marknadsvärde i förhållande till bokvärde (1,35 vs 2,1) och har mer sannolikt genomgått ett vd-byte under det år nedskrivningen gjordes (25,7 % vs 15,6 %).

Resultaten från den logistiska regressionen stöder hypoteserna H1a och H2b. Resultaten visar att variablerna CEOC och BATH båda har ett positivt och statistiskt signifikant (p <0,05) samband med beslutet att skriva ner goodwill. Resultaten tyder på att såväl företag som genomgått ett vd-byte under året som företag vars resultat redan innan nedskrivningen skulle ha varit negativt skriver mer sannolikt ner goodwill än andra företag. Dessa resultat stämmer väl överens med tidigare forskning. Inget statistiskt signifikant samband hittas däremot mellan den beroende variabeln och den oberoende variabeln LEV. Beslutet att skriva ner goodwill verkar således inte påverkas av företagets skuldsättningsgrad, vilket innebär att hypotes H3a måste förkastas.

Beträffande kontrollvariablerna är enbart en av variablerna, GWA, statistiskt signifikant (p <0,01). Trots att både MTB och ROA har rätt låga p-värden (0,051 och 0,073) i jämförelse
till de övriga sju kontrollvariablerna, uppnår de inte riktigt signifikans på en konventionell 0,05 nivå.


Vidare visar regressionsresultaten att två kontrollvariabler, SIZE och GWA, är statistiskt signifikanta. Trots att variablen SIZE förväntades vara positiv är dess koefficient negativ. En förklaring till detta samband kunde vara att de små företagen kraftigare påverkats av negativa förändringar i deras ekonomiska omgivningar (Sevin och Schroeder, 2005). Här, liksom i de tidigare testen, visar sig också mängden goodwill vara en förklarande faktor. Däremot hittas inga signifikanta samband mellan den beroende variablen GWIL/TA och de oberoende variablerna MTB och ROA.

2011; Filip et al., 2015; Giner och Pardo, 2015; Glaum et al., 2015; Jordan och Clark, 2004; Masters-Stout et al., 2008; Saastamoinen och Pajunen, 2016; Stenheim och Madsen, 2016) som kopplat ihop goodwillnedskrivningar med big bath.

Resultaten ger även belägg för att nedskrivningarna har ett samband med ekonomiska faktorer. Bland annat verkar mindre och mer goodwillintensiva företag vara mer utsatta för nedskrivningar. Också tyder resultaten på att den ekonomiska värdenedgången i viss mån reflekteras i företagets marknadsvärde och att företagsledningen använder sig av denna värdering vid beslutandet av nedskrivningar. Dock verkar det som om marknaden inte kan bestämma storleken på den värdenedgång som identifierats – vilket betyder att företagen har mer handlingsfrihet då de fastställer storleken på den nedskrivningsförlust som rapporteras.

**Konkluderande avslutning**

Resultaten från den empiriska undersökningen överensstämmer med tidigare finsk och internationell forskning och tyder på att de goodwillnedskrivningar som redovisas i finska börsbolag har samband med såväl ekonomiska omständigheter som ledningens opportunitism. Mot bakgrund av de erhållna resultaten verkar det som att företagsledningen främst används sitt fria omdöme vid beslutandet av storleken på nedskrivningsförlusten, vilket kan leda till att nedskrivningsbehovet undervärderas och att nedskrivningarna därmed skjuts upp. Eftersom avhandlingens sammansatta resultat indikerar att de goodwillnedskrivningar som rapporteras inte är rättidiga, kunde det vara intressant att i framtida studier mer specifikt undersöka nedskrivningarnas aktualitet. Alternativt kunde framtida forskning fokusera på de åtgärder, vare sig det är frågan om bolagsstyrningsmekanismer eller ökad marknadsövervakning, som skulle krävas för att åtgärda de problem som diskuterats ovan.

Studien bidrar till den akademiska litteraturen genom att undersöka goodwill och dess redovisning i ett land som på flera sätt skiljer sig från den anglo-saxiska världen. Genom att belysa de problem som förekommer i samband med goodwillnedskrivningar är undersökningen även till nytta för redovisningsorganisationerna vid utvecklandet av de rådande redovisningsstandarderna. Tillsammans med tidigare europeisk forskning understryker studien även vikten av att beakta kulturella och samhälleliga skillnader vid
utformandet av internationella redovisningsstandarder. Också är de resultat som presenterats i denna studie intressanta för bl.a. investerare och revisorer i Finland.

Studien har dock en del begränsningar. Undersökningen omfattar enbart icke-finansiella börsbolag i Finland, vilket innebär att resultaten inte nödvändigtvis kan generaliseras på alla finska företag eller på företag i andra länder. Den kanske viktigaste begränsningen orsakas av den begränsade tillgången till data. Eftersom finansiell information inte finns tillgänglig på den nivå som nedskrivningsprövningen ska utföras, används här, liksom i tidigare forskning, variabler som mäter ekonomisk värdenedgång på koncernnivå. Det bör även konstateras att det forskade ämnet är väldigt subjektivt och att de faktorer som påverkar företagsledningens nedskrivningsbeslut inte nödvändigtvis alla kan observeras med statistiska metoder.
REFERENCES


**Standards and regulations**


All references to internet resources have been verified on December 22, 2017.