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# The market reaction to goodwill impairment announcements

*Do investors value information content, tone and opportunistic managerial behavior?*

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## ABSTRACT

What make goodwill impairment announcements especially noteworthy for investors is that fair-value measurements require managers to make unverifiable estimations due to the absence of quoted market prices, meaning that choices whether goodwill is impaired or not could be subject to biased decisions. This study examines the stock market reaction of goodwill write-offs in respect to the *information content* (the provided reason for the write-down decision) and *tone* (the sentiment used by managers to explain the write-down decision) of the announcements. In addition, this study investigates if stock market investors evaluate signals of *managerial opportunistic behavior* (CEO transitions and executive compensation) and adjust their expectations accordingly. By using a sample of 155 goodwill impairment announcements published by Nordic listed companies during the time period 2005 - 2019, this study does not find significant differences between external and internal write-down reasons. However, the findings suggest that the market reaction is in fact associated with the tone of the goodwill impairment announcement. Investors respond less negatively when the language used in the press release is more positive, and they react more negatively when the message is more superfluous. The results also indicate that investors do evaluate signals of managerial opportunistic behavior by reacting less negatively to goodwill impairment announcements in case of CEO transitions. Still, this study does not find that the market reaction differs between firms having executive compensation tied to either earnings or equity, comparing to companies that do not offer the CEO performance-based compensation.

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# 1. Introduction

Even tough prior studies have shown that the market reaction to goodwill impairment announcements is in fact negative, the purpose with this thesis is to examining three different factors (that either have not been studied, or have not been conclusive from prior research) that make the market reaction more (or less) negative. Therefore, this study firstly investigate the stock market reaction of goodwill write-offs in respect to the information content of the announcement, referring to the provided reason for the write-down decision. Secondly, this study examine if the tone and sentiment (the communicated actions by executives) used in the goodwill impairment announcement impact how stock market investors react. Thirdly, this study examine if the stock market evaluates the possibility of opportunistic managerial discretion in firms (CEO transitions and executive compensation tied to earnings or equity), and take that into consideration by adjusting their expectations accordingly.

At its broadest, goodwill can be interpreted as the "purchase premium" in acquisitions, referring to the difference between the purchase price and the estimated fair value of the acquired entity's assets (Johnson & Petrone, 1998). Today's accounting rules for goodwill, both under US Generally Accepted Accounting Principles (US GAAP) and International Financial Reporting Standards (IFRS), require companies to review goodwill for impairment at least annually and to recognize a loss in the income statement if goodwill is impaired (IASB, 2004; FASB, 2001). SFAS No. 142 *Goodwill and Other Intangible Assets* and IAS 36 *Impairment of Assets* represent the current standards and replaced the long-accepted practice of systematic amortization of goodwill acquired in business combinations. The shift from amortization to the impairment-only approach represent a significant transition, since it relies solely on managerial estimations of goodwill's current fair value (Henning, Shaw & Stock, 2004). In more detail, the current fair value of goodwill can be viewed as a function of the firm's future activities, such as managers' perception and implementation of firm strategy that should generate future cash flows (Ramanna & Watts, 2012). Accordingly, the subjective judgment inherent in assessing goodwill's current fair value makes it difficult to verify and audit. This because the reliability of fair-value accounting greatly is reduced in cases where assets are rarely traded or too complex and problematic to identify separately, which clearly relates to the situation of post-acquisition goodwill (Lhaopadchan, 2010). As a result, the impairment test carried out to determine if the value of the acquired goodwill has declined, leaves managers with a high degree of opportunistic discretion

over both the amount and the timing to recognize (or not recognize) impairment losses (Beatty & Weber, 2006).

After the changeover from amortization to impairment testing, considerable literature on goodwill write-offs have emerged. Prior studies show that both investors and financial analysts revise their future expectations downwards based on the announcement of goodwill impairment losses (Li, Shroff, Venkataraman & Zhang, 2011). These results relate to findings showing a negative capital market reaction with regard to the announcement of goodwill write-off charges (Knauer & Wöhrmann, 2016; Bens, Heltzer & Segal, 2011). In fact, the market tends to underreact to the initial economic importance of goodwill write-downs, as a material decline in the stock price continues subsequent to the announcement date (Hirschey & Richardson, 2003). This because not all of the negative effects tied to goodwill impairment announcements are realized on the announcement date. On account of this, a revaluation decision of goodwill represents an important change in the company's future earnings potential and can be interpreted as a negative signal since it may establish that the acquisition which gave rise to the goodwill was ill-conceived (Henning et al., 2004). At the same time, a goodwill impairment announcement can also represent a positive signal in the case of a CEO transition (Masters-Stout, Costigan & Lovata, 2008). Fundamentally, a new CEO may have lower expectations or may interpret the current fair value of goodwill more objectively and is less reluctant to book a write-off comparing to the CEO who acquired the goodwill. Cheng, Peterson & Sherrill (2017) examined the long-term impact of goodwill impairment losses using post-SFAS 141 and 142 data and found that the long-run impact of goodwill write-downs on stock returns are positive and economically significant. It follows that, if a firm uses the opportunity to perform a "big bath" and take all foreseeable write-offs at one time, causing a more negative impact to earnings in the short term, it eliminates potential negative earnings surprises in the future. All in all, this illustrates that goodwill impairment write-downs represent important economic events for investors.

Fair-value measurement in general, and IAS 36 in particular, requires managers to make unverifiable estimations due to the absence of quoted market prices, meaning that choices whether goodwill is impaired or not could be subject to managers biased decisions (Lhaopadchan, 2010). Due to this, prior studies have attempted to investigate the stock market reaction of goodwill write-offs in relation to the information content in the announcement. Knauer & Wöhrmann (2016) found that the market reaction is associated with the official write-

down reason provided by managers. In fact, investors react less negatively when a verifiable external explanation (e.g., change in market interest rates) is given in the announcement, in contrast to an internal unverifiable explanation (e.g., reconstructuring). Hirschey & Richardson (2003) classify goodwill impairment announcements as either "simple" and hence free from other corporate information, or "messy" by including other important corporate information. On average, the stock price reaction to simple and plain goodwill write-off announcements were somewhat smaller in comparison to messy announcements, which illustrates that the information content is crucial for investors. As a result, Knauer & Wöhrmann (2016) stress the need of additional research that investigates the market reaction of goodwill impairment announcements in relation to how managers disclose the circumstances which give rise to the recognition of a material goodwill impairment loss. One way of doing so is to perform textual analysis of earnings press releases, in which prior research shows that management teams who use a more positive sentiment in their earnings announcements experience a more positive reaction from the stock market (Lou & Zhou, 2017; Demers & Vega 2008). This study contributes to the field of disclosure information and disclosure tone but differs in relation to relevant prior research since it examines the sentiment used by managers in goodwill impairment announcements, which are negative earnings announcement by its very nature.

In addition to the disclosure content in goodwill write-down announcements, prior studies have examined if managers use the accounting discretion inherent in fair-value estimates opportunistically, by strategically choosing the timing and the presentation of expense recognition (impairment loss) on the income statement. Beatty & Weber (2006) found that the probability of taking a goodwill write-off is smaller for firms that have earnings-based bonus plans that do not exclude the effect of special times, which suggests that managers do not believe that their bonus will be shielded from reductions in income caused by below-the-line accounting changes. Likewise, Darrough, Guler & Wang (2014) found that there is a significant reduction in cash- and option-based CEO compensation as firms recognize goodwill write-offs. This study contributes to the controversy surrounding the use of unverifiable fair values but differs in relation to relevant prior research since it examines whether stock market investors evaluate signals of managerial opportunistic behavior (CEO transitions and executive compensation) and adjust their expectations accordingly.

Even though prior studies on goodwill impairment announcements have shown that the information value in the announcement impact the stock market reaction and that managers will

use discretion in situations where agency-based motives exists. Liberatore & Mazzi (2010) highlights the need to further examine if the write-off announcement has a milder effect for companies with a higher quality set of information about the process of the goodwill impairment test, and if the market behavior depends on endogenous factors like replacements in the top management. In addition, Ramanna & Watts (2012) have expressed a need to investigate goodwill write-offs over a more recent sample period, including the financial crisis and beyond since the capital market has altered dramatically with higher premiums over book value since then. On the ground of this, the following research question has been formulated: *Do the information content, disclosure tone and likelihood of opportunistic managerial discretion impact equity investors reaction to goodwill impairment announcements?* By examining the disclosure content in combination with the disclosure tone and incentives of opportunistic managerial discretion, this study will contribute with a more holistic explanation of how stock market investors react in case of goodwill impairment announcements. This will be done by using a sample of 155 goodwill impairment announcements made by publicly traded Nordic companies complying with IFRS during the time period 2005 - 2019. Firstly, this study predicts that equity investors will respond more negative to a goodwill impairment announcement that discloses less verifiable information for the write-down decision as supported by Knauer & Wöhrmann (2016). Secondly, this study expect that managers will describe their firm's performance in a favorable light and as supported by prior research (Lou & Zhou, 2017; Demers & Vega 2008), equity investors will react less negative to an announcement that discloses a more positive tone. Thirdly, this study predicts that managers will use discretion in situations where agency-based motives exists (Beatty & Weber, 2006; Darrough, Guler & Wang, 2014), and that investors will adjust their expectations accordingly by reacting more negative towards goodwill impairment losses in cases where the executives have motives to act opportunistically.

The empirical findings of this study do not show significant differences between external and internal write-down reasons. However, the findings suggest that the market reaction is in fact associated with the tone of the goodwill impairment announcement. Investors respond less negatively when the language used in the press release is more positive, and they react more negatively when the message is more superfluous. The results also indicate that investors do evaluate signals of managerial opportunistic behavior by reacting less negatively towards goodwill impairment losses in case of CEO transitions, although, the study does not find that the market reaction differs between firms having executive compensation tied to either earnings or equity. With attention to the heated debate on how to account for acquired goodwill, this study

contributes to the goodwill accounting literature in several ways. By providing evidence showing that the disclosure tone is crucial for investors, this study differentiate to prior research by being the first to link goodwill impairment announcements (which are negative earnings announcement by its very nature), to be influenced by a more positive and superfluous tone. Based on the findings showing that investors are reacting less negatively towards goodwill impairment losses in case of a newly appointed CEO, this study contributes to the literature regarding the measurement and timing of asset impairment and their impact on market participants.

## 2. Background

### 2.1 Regulatory Setting

#### 2.1.1 Acquisition Accounting

In practice, a general distinction is traditionally drawn between internally generated and purchased goodwill, where the former should not be brought to account because it is impossible to do so within the acceptable rules of double entry bookkeeping (Bloom, 2009). On the contrary, there is no difficulty in bringing purchased goodwill to account, but controversy has always existed how to treat the amount once recognized. The standard in focus when accounting for business combinations is IFRS 3 *Business Combinations,* issued in January 2008 by IASB (IASB, 2008). In more detail, the standard regulates situations in which both a legal entity acquires another entity, and mergers between two entities. The required method to utilize when accounting for a business combination under IFRS 3 is the acquisition method, but this has not always been the case. The issuance of SFAS No. 141 in 2001 meant that the acquirer was required to use the purchase method (later referred to as the acquisition method) when accounting for business combinations, which ended the use of the pooling of interest method (Kimbrough, 2007). In more detail, the purchase method involves the recognition of the fair values of the individual assets and liabilities acquired, thereafter the residual between the purchase price and the fair value of the identified assets and liabilities should be allocated and recognized as goodwill. Under the pooling of interest approach, the acquirer does not recognize goodwill and therefore no amortization expense of goodwill was made pre-SFAS 141 (Paugam, Astolfi & Ramond, 2015). Due to this, many firms preferred the pooling of interest method because of its favorable effect on future earnings compared to the purchase method. The mandatory application of the acquisition method, and the abandonment of the pooling of interest method, is argued to improve the comparability of the information provided regarding business combinations (FASB, 2007). In 2004, three years after the publishing of SFAS No. 141, International Accounting Standard Board (IASB) also converged towards the preference of

recognizing goodwill separately from other intangible assets through the issuance of IFRS 3 (IASB, 2008).

### 2.1.2 Impairment of Goodwill

The standard in focus when accounting for goodwill impairment is IAS 36 *Impairment of assets,* issued initially in July 1998 by IASB (IASB, 2008). IAS 36 defines specific requirements for accounting for acquired goodwill and how the recognition of goodwill affects the allocation of impairment losses across the assets of cash-generating unit. There has been ongoing development of IAS 36, were the most significant changes occurred in March 2004 and January 2008. Before 2004, companies were enforced to amortize goodwill yearly. However, in 2004 the re-issued standard was introduced that instead of yearly amortization, enforced companies to do at least yearly impairment tests of the goodwill, meaning that they should at least on a yearly basis evaluate if the acquired goodwill's ability to generate future economic benefits has changed. If a company has lowered its expectations, the goodwill should be impaired. However, if the outlook of the acquired goodwill's ability to generate future economic benefits is more positive, no revised impairment could be performed. Consequently, the value of goodwill can only be written down, with the assumption that no additional acquisitions are made and hence no new goodwill is acquired.

There are still prevailing debates regarding which of the ex-ante or post standard that best reflect the value of goodwill in respect to faithful representation and relevance. Advocates of yearly impairment argue that the fair-value method requires companies to disclose better information regarding future cash flows and earnings in comparison with systematic amortization of goodwill, which in turn generate more relevant and transparent information for stakeholders (Hitz, 2007). Proponents argue that yearly impairment as stated in IAS 36 help investors to revise their expectations, since the impairment test allows managers to convey private information to financial markets. Contrariwise, the negative aspects of the impairment-only approach are not only that the test is considerable costly and complex to carry out in comparison to systematic amortization, but also that the standard involves substantial subjective judgement (Schatt, Doukakis, Bessieux-Ollier & Walliser, 2016). The level of judgement inherent in IAS 36 increases the risk of providing unreliable measurement of the actual recoverable amount of goodwill. This means that managers potentially could use latitude when estimating growth of future cash flows and discount rate, which represent inputs in the discounted cash flow method (Beatty & Weber, 2006). However, the adoption of IAS 36 and the shift towards yearly goodwill impairment test

should reflect a compromise with the objective to get rid of the problems concerning the pooling of interest method (Kimbrough, 2007).

**2.1.3 The Fair-value Accounting Debate**

IASB introduced IFRS 13 *Fair Value Measurement* in 2011, the standard was mainly based on FASB's standards, and represented a step towards a more harmonized view on fair-value accounting between US GAAP and IFRS (IASB, 2011). IFRS 13 requires that fair value, first and foremost, should be estimated by analyzing market prices for identical assets and/or liabilities (Level 1 input). However, this assume that the asset is traded on an active, liquid market. If no market prices for the asset or liability is available, similar assets should be used as basis for the valuation (Level 2 input). If no market prices are available for identical or comparable assets, IFRS 13 state that the fair value should be estimated by using valuation models, for instance, by determining the present value of future cash flows (Level 3 input). In summary, paragraph 67 in IFRS 13 states the general principles that valuation techniques used to measure an assets fair value should maximize the use of relevant observable inputs and minimize the use of unobservable inputs. Therefore, fair-value accounting is highly restricted to firms' holdings of "available-for-sale" and "trading" securities, meaning that the use of fair value is reduced in situations where assets have low accessibility and observability of current market prices, which represent the situation of post-acquisition goodwill (Lhaopadchan, 2010).

There is still an ongoing debate considering if fair value measurements in financial statements in general are appropriate, and when accounting for goodwill in particular. Opponents of fair-value accounting favors historical cost accounting and argue that allowing unverifiable estimates into accounting numbers can damage their usefulness and increase the probability of opportunistic disclosure to beat personal managerial targets or firm-level thresholds (Jarva, 2009). As an illustration, firms in Europe in general seem to be reluctant to do impairments of assets that leads to increased volatility in earnings (Ball, Kothari & Robin, 2000). Therefore, the shortcoming with fair-value accounting lies in the implementation and valuation process when a firm holds assets whose values come from the execution of a business plan, and not from fluctuations in market prices (Marra, 2016; Dichev, 2008). Proponents of fair-value accounting argue that the approach increases the relevance, and also the predictability of future earnings, since it includes information of the assets ability to generate future cash flows (Hitz, 2007). In fact, Kolev (2019) show that even valuations based on Level 3 inputs that are based on valuation models are providing useful information for investors.

## 2.2 Literature Review

### 2.2.1 The Stock Market Reaction of Goodwill Write-offs

Prior research examining stock price behavior around announcements of write-offs show coherent results, which suggests that impairments cause investors to downgrade their expectations leading to a negative share price development following the write-down announcement (Bartov, Lindahl & Ricks 1998; Cheng et. al 2017). As an illustration, Hirschey and Richardson (2003) study stock price behavior during pre- and post-announcement periods spanning long windows and conclude that investors underreact to the economic importance of goodwill write-offs. In more detail, the study shows that goodwill write-offs led to -2.94 to -3.52 percent adverse stock price reactions during the announcement period (day -1, day 0). More noticeable, additional roughly -11.02 percent was realized by the end of a one-year post-announcement period, indicating that goodwill write-off announcements are associated with a further fundamental decline in the market value of the company during a subsequent year-long period. However, studies also indicate that goodwill write-downs could have a positive effect on the share price. Henning et al. (2004) found that management who follow a big bath strategy and take goodwill write-downs, experience a positive stock market reaction post the write-down.

Additional studies examining the future profitability of the firm after the announcements of goodwill write-offs shows that goodwill impairment serves as a leading indicator of a decline in future profitability (Li et al., 2011), where further analysis shows that the impairment write-offs are negatively correlated with the average growth in operating profits and sales the following years. The evidence also suggests that the price impact (while significant) is lower in the post-SFAS 142 period relative to the pre-SFAS 142 and the changeover periods, which seems to be explained by the smaller magnitude of post-period write-offs. Supplementary studies with regard to information content and goodwill impairments under SFAS 142 have been performed with regard to expected impairments by utilizing a model to estimate write-off surprises (Bens et al., 2011). The study documented a negative and statistically significant market reaction to unexpected goodwill impairment losses, and on a cross-sectional basis using high analysts' followings as a proxy for low information asymmetry, the market reaction seems to weaken. The same results hold for firms that perceive it too costly and complex to perform impairment test, where the proxy used was the inverse of the corporations' size. Moreover, the negative reaction of high information asymmetry and larger firms weakens following the implementation of SFAS 142.

### 2.2.2 Disclosure Content

Li et al. (2011) investigate the causes and consequences of goodwill impairment losses by examining the nature of the information conveyed by the loss. Fundamentally, goodwill write-offs are estimated based on management's projections of future cash flows. Accordingly, it is reasonable that the impairment conveys some private information of executives to investors. However, the impairment loss cannot convey new information, if the economic loss in the value of goodwill occurred in prior periods and was incorporated in the market price before its actual recognition in the income statement. Equally important, the subjectivity inherent in estimating the impairment loss using unverifiable fair values could reduce the information content of the impairment loss. Knauer & Wöhrmann (2016) investigate whether the informational value in goodwill impairment announcements depend on the verifiability of the news. In more detail, paragraph 12 in IAS 36 *Impairment of Assets*[1] is used as the foundation for estimating the degree of verifiability of the goodwill impairment announcements. The authors predict that investors react more negative when an internal reason for the impairment is given, this because internal indicators are less confirmable by investors and therefore signal a higher likelihood of opportunistic behavior. The authors argue that if an external reason is provided for the write-off, the market reaction is less negative since an external indicator is verifiable by investors, meaning that managers have less ability to act opportunistically. As an illustration, if a firm announce a write-down caused by increasing interest rates the explanation is verifiable. However, if the reason is internal restructuring investors usually cannot verify the explanation.

Hirschey & Richardson (2003) describe that firms typically make other important corporate announcements at the same time that information regarding goodwill impairment losses are released. Due to this, they investigate the information content by using a sample of 80 goodwill impairment announcements and by classifying the goodwill impairment announcements as either "simple", hence free from other corporate announcements, or "messy" by including other important information. Their findings show that the stock price reaction associated with goodwill impairment losses was affected by the informative nature of the announcement. In more detail, the findings show that, on average, the stock price reaction to simple goodwill write-off announcements was somewhat smaller in comparison to messy announcements. Prior studies

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[1] Paragraph 12 in IAS 36 *Impairment of Assets* assess internal and external indicators that a firm may consider while carrying out impairment tests (IASB, 2004). The external sources of information represent a) declining market values, b) negative changes in technology, markets, economy or laws, c) changes in market interest rates and d) firm's stock price is below the book value. Internal sources of information refer to e) obsolescence and/or physical damage, f) reconstructing or disposal and g) worse economic performance than expected.

looking at the actual information content in the disclosed goodwill impairment announcement argue that if a firm does not provide a reason for the goodwill impairment, investors have no clear indication whether management had high or low discretion when calculating the write-off, hence react more negative (Knauer & Wöhrmann, 2016). At the same time, if a firm provides a reason, the explanation can indicate more or less discretion inherent in the goodwill impairment, depending on the explanations informativeness. Despite the "messiness" of the announcements, investors interpret important corporate announcement within the context of other company information (Hirschey & Richardson 2003).

### 2.2.3 Disclosure Tone

The technological development concerning textual analysis has made it possible to look at the tone and sentiment of financial documents, which refers to the words and the language selected by managers to describe firm performance and the actions taken by executives (Hope & Wang, 2018). Linguistic analysis can be considered as a subset of qualitative analysis which captures the readability (the readers ability to understand the intended message) of a text, which in turn represent a reference point of quantity and quality of disclosed information (Loughran & McDonald, 2016). When researchers measure the tone or sentiment of a financial document, they usually use text analysis techniques which count the number of words associated with a particular sentiment word list, scaled by the number of words in the document. As an illustration, higher proportions of negative words in a financial document indicate that the publication has a more pessimistic tone. Even if this approach does not take into account the contextual meaning of the words, the advantages with tone analysis is that the subjectivity is removed by relying on well-established dictionaries and it is easy to understand, implement and replicate (Hope & Wang, 2018). Amernic, Craig & Tourish (2010) uses DICTION's five Master Variables[2] to measure the tone in CEO letters, with the purpose to assess the sentiment at the top management. To exemplify their findings, the CEO letters published by Enron had DICTION indicators which were particularly strong for hubris (over-optimism) before the company collapsed. In a broader perspective, their findings suggest that textual analysis techniques that captures tone can be of value for auditors and investors, since it contributes with insights regarding the intentions of top executives.

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[2] DICTION uses 31 dictionaries (word-lists) to search a text and to also estimate five Master Variables: activity, optimism, certainty, realism and commonality (Hart & Carroll, 2013).

Brochet, Naranjo & Yu (2016) examine how language barriers affect the capital market reaction to information disclosures by using transcripts of English conference calls for non-US firms. Their findings show that for countries with greater language barriers, the likelihood to use non-plain English[3], more superfluous[4] words and erroneous expression increases, which in turn impacts the market reaction due to the decreasing readability. In more detail, calls with greater use of non-plain English, more superfluous words and erroneous expressions show lower intraday price movement and trading volume. This because the opacity and lack of transparency impacts the readability of the disclosed information, which in turn lowers investors degree of confidence when interpreting the publicly reported message. By using a sample of SEC filings over 1994-2009 Loughran & McDonald (2014) examined the SEC's plain English rule introduced in October 1998, which requires firms to use plain English in their prospectus filings. The purpose with the study was to investigate if the SEC rule significantly impacted managers' disclosure style, and when focusing on 10-K filings their findings suggest that firms were more likely to improve the stylistic components of their filings after the rule was implemented in 1998. Demeres & Vega (2008) use several textual analysis programs in order to extract dimensions of managerial net optimism in a sample of 20,000 earnings announcements published over the period 1998 to 2006. The purpose with the study was to examine under what conditions "soft" disclosures (referring to qualitative and subjective information) is incrementally informative comparing to "hard" disclosures (referring to detailed, precise and verifiable information). The findings from the study indicate that the tone of managerial language influences stock price dynamics, since greater net optimism in managers' language affects announcement period abnormal returns and predicts post-earnings announcement drift. In more detail, the findings suggest that there is greater price responsiveness to soft information in settings where the hard information provide a noisier measure for valuations. To put it differently, the net optimism is priced higher for firms where the historical earnings realization is less informative for stock valuations, e.g., tech firms, firms with high PE ratios and firms with high R&D expenses.

Prior research relating to disclosure tone argue that managers frequently use discretion to describe their firm's performance in a favorable light (Rogers, Van Buskirk & Zechman, 2011; Henry, 2008; Lou & Zhou 2017). Rogers et al. (2011) investigate a potential relationship between disclosure tone and shareholder litigation, with the aim to determine whether managers' use of

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[3] The plain English rule requires that issuers must substantially comply with the following plain English principles; (1) short sentences, (2) definite, concrete everyday language, (3) active voice, (4) tabular presentation of complex information, (5) no legal jargon and (6) no multiple negatives (Loughran & McDonald, 2014).

[4] The use of superfluous words e.g., however, wheresoever and whilst decreases the level of plain English (Loughran & McDonald, 2014)

optimistic language increases litigation risk. Their findings indicate that sued firms' disclosures are consistently more optimistic than those of non-sued firm in similar circumstances. Henry (2008) study the stock market reaction towards earnings press releases and question whether investors are influenced by how earnings press releases are written. The results suggest that tone influence investors reaction, and that the abnormal market returns are higher as the tone of the press releases become more positive. These results are strengthened in a study by Luo & Zhou (2017), who investigated how the tone of earnings announcements affected investors' valuation of securities. They found evidence suggesting that management teams who use a more positive tone in their announcements, experience a more positive reaction from the stock market. This could be explained in reference to prospect theory, that predicts that framing financial performance in a positive tone makes investors to interpret the results in terms of increases relative to reference points.

### 2.2.4 Managerial Discretion

A common point of departure for studies regarding earnings management and opportunistic managerial discretion is Jensen & Meckling's (1976) principal-agency theory. The theory explains a relationship in which one party (the agent) is able to make decisions and undertake actions that affect the other party (the principal). Central in the theory is moral hazard, which describes a situation in which a conflict in interests between the principal and the agent exist, and the agent eventually acts in a way that gives him or her the most favorable outcome, at the expense of the principal's interests. The separation of control is common in corporate settings, where the management and the owners (shareholders) are different persons. A common solution to the principal-agent problem, between the owners and the management, is to construct a performance-based compensation plan, meaning that a part of the management's compensation is related to certain performance measures, such as stock performance and earnings (Goergen & Renneboog, 2011). Even so, performance-based compensation plans create another dilemma, since it induces an opportunity for managerial manipulation of earnings, in order to reach predetermined targets.

Francis, Hanna & Vincent (1996) were among the first to examine whether downward asset revaluations are driven by managers' incentives to manipulate earnings or by changing economic circumstances of the company. Their findings show that both factors; asset impairment (poor past stock performance) and managerial incentives (management changes) are important causes of asset write-offs. Moreover, Detzen & Zulch (2012) examine the relation between CEOs'

bonuses and the recognition of goodwill in European IFRS mergers. They find that if the CEOs' cash compensation relies more on cash bonuses, the amount of goodwill recognized in the acquisition increases. The given explanation for these results is that managers take discretionary accounting choice opportunistically to exploit the fact that their compensation packages depend on companies' accounting results. Accordingly, Beatty & Weber (2006) found that managers with earnings-based bonus plans are more likely to recognize income increasing rather than income decreasing voluntary accounting changes, which is consistent with prior studies showing a significant relationship between short-term performance-based compensation plans and earnings management (Duru, Mansi, & Reeb, 2005; Cohen, Dey, Lys, & Sunder, 2007). In complement, Baber, Chen & Kang (2006) studied the stock market reaction of quarterly earnings announcements and found that indications of earnings management related to bonus compensation plans is causing investors to react negatively, leading to declining share prices. These results suggest that investors in general are aware of earnings management, and in case of earnings announcement adjust their expectations accordingly.

Furthermore, Beatty and Weber (2006) found that managers in firms with a lower level of performance-based compensation and shorter CEO tenure, were more likely to write down goodwill compared to other firms. This because, CEOs with longer tenure are presumably reluctant to impair goodwill, as any impairment can be interpreted as an admission that they overpaid for the associated business acquisition (Li & Solan, 2017). In other words, managers with less incentive to keep overvalued amounts of goodwill on the balance sheet have a greater willingness to recognize goodwill impairments and thereby have less incentives to perform discretional accounting choices. Cheng et al. (2017) explains that a new CEO may have lower expectations or may interpret the current fair value of goodwill more objectively, therefore investors' perception of a new CEO taking a "big bath" can be interpreted as a positive event in the long term. This because a big bath in which the firm takes a greater goodwill write-off that incorporates all potentially negative news, indicative that subsequent performance of the firm will be positive since all foreseeable nonrecurring costs have already been absorbed. Likewise, AbuGhazaleh, Al-Hares & Roberts (2011) study executives' use of discretion when recognizing goodwill impairment losses following the adoption of IFRS 3. Their findings show that goodwill write-offs are more likely to be associated with recent CEO changes, income smoothing and "big bath" reporting behaviors. The positive association between goodwill impairments and changes in management or short-tenured CEOs can reflect true economic changes as opposed to

managerial opportunism, this because new management may exercise greater review over existing assets or change the firm's strategic focus, resulting in impairment losses.

# 3. Hypotheses Development

## 3.1 Disclosure Content and Disclosure Tone

Paragraph 12 in IAS 36 *Impairment of Assets* is the reference point when determining the reason behind the goodwill write-down decision. This paragraph presents indicators of when an asset should be tested for impairment, and it separate between external and internal reasons (IASB, 2004). In more detail, external indicators represent a) declining market values, b) negative changes in technology, markets, economy or laws, c) changes in market interest rates and d) firm's stock price being below the book value. Internal indicators refer to e) obsolescence and physical damage, f) reconstructing or disposal and g) worse economic performance than expected. Knauer & Wöhrmann (2016) argue that if an external reason is provided for the write-off decision, the market reaction should be less negative since external indicators are more verifiable by investors, meaning that managers have less room to act opportunistically. In order to test if the market reacts differently depending on the presented reason of the goodwill impairment loss, the following hypothesis has been formulated:

$H1_a$: Goodwill impairment announcements referring to non-verifiable (internal) information, will lead to more negative abnormal returns.

Prior studies measuring the tone and sentiment of financial disclosures have shown that the use of more superfluous words e.g., "however", "wheresoever" and "whilst" decreases the level of readability and plain English (Loughran & McDonald, 2014). This in turn, impacts the market reaction by increasing the opacity and lowering the transparency of financial information (Brochet et al. 2016). Furthermore, Hirschey & Richardson (2003) outline that goodwill impairment announcements either can be "simple", hence free from other corporate news, or "messy" by including other operating information. Their findings suggest that the stock price reaction of goodwill impairment losses was affected by the informative nature of the announcement. Meaning that, the stock price reaction to "simple" goodwill write-off announcements was somewhat smaller in comparison to "messy" announcements. This study predicts that goodwill impairment announcements with higher proportion of superfluous words will reduce the readability and the plain English, which in turn makes the press release "messier".

In order to test if the market reacts differently depending on the readability of the goodwill impairment announcement, the following hypothesis has been formulated:

$H1_b$: Goodwill impairment announcements with a more superfluous tone will decrease the level of plain English and lead to more negative abnormal returns.

Rogers et al. (2011) argues that managers frequently use discretion to describe their firm's performance in a favorable light. Prior research has found that earnings announcements with a more positive tone lead to more positive stock market reactions (Henry, 2008; Luo & Zhou 2017). This study investigates if managers potentially could affect stock market investors' reaction to goodwill impairment press releases, which are negative earnings announcements in their nature, by using a positive tone. With the purpose to test whether the disclosed tone has any effect on investors' reaction to goodwill impairment announcements the following hypothesis has been formulated:

$H1_c$: Goodwill impairment announcements with a more positive tone lead to more positive abnormal returns.

## 3.2 Opportunistic Managerial Discretion

Detzen & Zulch (2012) findings argue that managers take discretionary accounting choice opportunistically to exploit the fact that their compensation packages depend on companies' accounting results. In more detail, Francis et al. (1996) found that managerial incentives to manipulate earnings is highly related to their reluctance to perform downward asset revaluations. Accordingly, Beatty & Weber (2003) found that managers with earnings-based bonus plans are more likely to recognize income increasing rather than income decreasing voluntary accounting changes, which is consistent with prior studies which are showing a significant relationship between short-term performance-based compensation plans and earnings management (Duru, Mansi & Reeb, 2005; Cohen et al., 2007). This study predicts that firms with compensation tied to earnings or equity will increase the managerial incentives to perform earnings management through discretionary accounting choices, and by that will experience more negative abnormal returns in case of goodwill impairment announcement. With the purpose to test whether a performance-based compensation plan has any effect on investors' reaction to goodwill impairment announcements, the following hypothesis has been formulated:

H2$_a$: Firms in which the CEO has a compensation package tied to either earnings or equity, experience more negative abnormal returns in case of a goodwill impairment announcement.

Prior research argue that newly appointed managers and short-tenured CEOs have less incentives to keep overvalued amounts of goodwill on the balance sheet, while the opposite holds true for long-tenured CEOs (Masters-Stout et al., 2008). CEOs with longer tenure are more reluctant to impair goodwill, as any impairment can be interpreted as an admission that they overpaid for the associated business acquisition (Li & Solan, 2017). In line with that, Cheng et al. (2017) explains that a new CEO may have lower expectations or may interpret the current fair value of goodwill more objectively, which affects investors' perception of a new CEO recognizing a goodwill impairment loss comparing to a long-tenured CEO. In other words, the impairment test carried out to determine if the value of the acquired goodwill has declined, leaves long-tenured CEOs with a higher degree of opportunistic discretion over both the amount and the timing to recognize (or not recognize) impairment losses comparing to short-tenured CEOs. This because a new CEO may exercise greater review over existing assets or change the firm's strategic focus resulting in impairment losses (AbuGhazaleh et al. 2011). Therefore, this study hypothesis that firms in which the CEO tenure is longer, will experience more negative abnormal returns in case of goodwill impairment announcements. While firms with newly appointed CEOs will experience more positive abnormal returns in case of goodwill impairment announcements. In order to test if the CEO tenure and a CEO change has any effect on investors' reaction to goodwill impairment announcements the following hypotheses have been formulated:

H2$_b$: Firms with longer tenured CEOs experience more negative abnormal returns in case of a goodwill impairment announcement.

H2$_c$: Firms with a CEO turnover in the year prior to the announcement experience more positive abnormal returns in case of a goodwill impairment announcement.

# 4. Methodology

## 4.1 Research Design

With the purpose to examine the research question "*Do the information content, disclosure tone and likelihood of opportunistic managerial discretion impact equity investors reaction to goodwill impairment*

*announcements?"* this study deploys an event-study research design and linear ordinary least square (OLS) regressions. Firstly, an event study has been conducted in order to identify if there are abnormal returns related to the goodwill impairment announcements. The event study uses an estimation window of 100 trading days, a gap to the event of 5 trading days, and an event window consisting of the announcement day[5] and the following trading day[6]. The sample is restricted to the Nordic market including Swedish, Danish, Finnish and Norwegian firms complying with IFRS during the period 01.01.2005 - 01.02.2019[7]. Since the market of interest is the Nordics, OMX Nordic 40 has been used as the benchmark index and the market model has been used in order to estimate expected return. The event (the date of which the goodwill impairment announcement was released) have been identified by searching for keywords[8] related to goodwill impairments. Secondly, with the purpose to examine the hypotheses, OLS regressions were performed with the cumulative abnormal return (*CAR*) derived from the event study, as the dependent variable. The regressions have been performed with robust standard errors and variance inflation factor (VIF) tests have been computed to determine if the assumption that no multicollinearity exists between the independent variables holds. The following regression was constructed as a basis for the hypotheses testing:

$$
\begin{aligned}
CAR_i = \ & \alpha_i + \beta_1 REASON_i + \beta_2 LM\_SUPERFLUOUS_i + \beta_3 LM\_POSITIVE_i \\
& + \beta_4 EARNINGSBASED_i + \beta_5 EQUITYBASED_i + \beta_6 CEO\_CHANGE_i \\
& + \beta_7 CEO\_TENURE_i + \beta_8 LOGMARKETCAP_i + \beta_9 LEV_i + \beta_{10} GW\_ASSETS_i \\
& + \beta_{11} IMP\_GW_i + \beta_{12} PB_i + \varepsilon_i
\end{aligned}
$$

To operationalize Hypothesis 1a and test if the information content in the announcement has any effect on investors' reaction, a binary test variable REASON was constructed. The test variable is based on Paragraph 12 in IAS 36, which state that impairment testing should be performed when there are reasons to suspect that the value of an asset has declined. That could either be due to external reasons, such as; a) declining market values, b) negative changes in technology, markets, economy or laws, c) changes in market interest rates and d) firm's stock price is below the book value, or because of internal sources of information such as; e) obsolescence and/or physical damage, f) reconstructing or disposal and g) worse economic

---

[5] If the announcement was published after the stock exchange was closed, the following trading day was assumed to be the announcement day.

[6] The event study methodology is presented in more detail in Appendix A.

[7] The sample is described in more detail in Section 4.2.

[8] Keywords which have been used; "goodwill" and "write-off" or "impairment" or "write-down" or "charge" or "test".

performance than expected. According to Knauer & Wöhrman (2016) investors react more negative when an internal reason for the impairment is given, because internal indicators are less confirmable by investors and therefore signal a higher likelihood of opportunistic behavior. In this study, external reasons are deemed to be easier for investors to verify, while the opposite should hold true for internal reasons. Hypothesis 1a focuses on the reason provided by a firm for recognizing goodwill impairment losses. Accordingly, each goodwill impairment announcement was either classified as external if the given reason for the write-down decision was associated with Paragraph 12a-12d in IAS 36, or as internal if the given reason for the write-down charge was associated with Paragraph 12e-12g in IAS 36. Since the test variable *REASON* has been constructed as a binary variable, a goodwill announcement assigned with the value 1 indicates that an external reason was provided, meanwhile a goodwill announcement assigned with the value 0 indicates that an internal reason for the write-down decision was provided. The binary classification was based on what Loughran & McDonald (2016) would describe as a manually-based textual analysis technique, which refers to a process in which the researcher performs the information content analysis. As for this study, the information in each goodwill impairment announcement was analyzed within the context of the directed hypothesis and therefore based on the researchers individual reasoning. Hence, it is important to underline that with textual analysis, there is a critical transformation that must take place as researchers attempt to move from a collection of characters to extracting the information conveyed by these characters (Eriksson & Kovalainen, 2015). With the purpose to explain the classification process in more detail, the following quote illustrates one observation classified as external due to the disclosed reference to lower interest rates long-term, which is associated with Paragraph 12c in IAS 36 *"The impairments relate to Danske Bank's activities in Finland and Northern Ireland and are made mainly because the assumptions applied for impairment testing include lower interest rates long-term and increased capital allocated to our Finnish and Northern Irish activities"* (Danske Bank, 2015). In contrast, the following quote illustrates one observation classified as internal due to the disclosed reference to reconstructuring and disposal, which is associated with Paragraph 12f in IAS 36 *"Nobia divests its subsidiary Pronorm in Vlotho, Germany, and its 50-per cent holding in Culinoma… The transactions, including repayment of Nobia's loans to Culinoma and Pronorm, will generate a cash inflow of SEK 493 million, and a book loss of SEK 77 million, primarily due to the impairment of goodwill attributable to Pronorm"* (Nobia AB, 2010).

In order to operationalize Hypothesis 1b and Hypothesis 1c and test if the tone and sentiment of the announcement have any effect on *CAR*, the text analysis program DICTION was utilized to

construct the test variables *LM_SUPERFLUOUS* and *LM_POSITIVE*. When researcher measure the tone of a financial document, they usually count the number of words which is associated with a particular sentiment word list, that is scaled by the total number of words in the document (Loughran & McDonald, 2016). DICTION is a scientific method for determining the tone of a verbal or textual message by using dictionaries (word lists) to search a text. By using the dictionaries, DICTION process the text by looking for an exact match of the words and estimate master variables based on the frequency and the presence of certain words. The output score can contain fractionated integers or integers of less than 1, meaning that some observations can have a *LM_SUPERFLUOUS* score of 1.75 or a *LM_POSITIVE* score of 0.45. This because DICTION applies the following statistical corrections to the results; (1) a homographic treatment of words, (2) extrapolations to a standard message-size of 500 words and (3) application of the norms built into its database of 50,000 previously processed messages (Hart & Carroll, 2013). When using a text analysis program, the first step in the process is to decide what dictionary should be used to classify the proportion of target attributes. One stream of linguistic analysis is either based on existing dictionaries, or modifications of these dictionaries which also is known as the "bag-of-words" approach (Hope & Wang, 2018). The reference "bag-of-words" stems from the fact that text analysis programs do not take into consideration the contextual meaning of words, but rather has the advantages of being easy to comprehend, implement and reproduce (Loughran & McDonald, 2016). In addition, once the dictionary is selected, researches subjectivity is avoided by using a computer-based language program to perform the analysis instead of manual-based textual analysis. The most commonly used dictionaries within the research field of finance and accounting is Harvard General Inquiry, LIWC, Diction and Loughran & McDonald [2011] (Hope & Wang, 2018). For this study, *Loughran & McDonald [2011] Word Lists* is used. Their word list is based on a large sample of 10-K reports published during the period 1994-2008 and covers an exhaustive part of the most common words used in corporate financial reports (Loughran & McDonald, 2016).

The test variable *LM_SUPERFLUOUS* is a count of 56 words identified as superfluous according to the *Loughran & McDonald [2011] Word Lists* e.g., "furthermore", "howsoever" and "nonetheless". For this study, *LM_SUPERFLUOUS* is intended to capture the readability of the announcement, and whether investors react differently depending on the level of non-plain English. This study predicts that a more superfluous announcement lead to more negative abnormal returns during the event window. *LM_SUPERFLUOUS* is constructed as a continuous variable where higher values indicate a more superfluous tone. The test variable

*LM_POSITIVE* is a count of 354 words identified as positive according to the *Loughran & McDonald [2011] Word Lists* e.g., "accomplishment", "achievement" and "advantage". The intention is to test whether a positive tone generate more positive abnormal returns. *LM_POSITIVE* is a continuous variable based on the frequency of positive words in the announcement or not. Every announcement is assigned a score where 0 is least positive and higher values indicate more positive announcements. This study predicts that a more positive announcement lead to a less negative abnormal return during the event window.

In order to operationalize Hypothesis 2 four different proxies that indicate opportunistic managerial discretion have been constructed. The test variables are based on the discussion regarding managerial discretion outlined in section 3.2. To examine whether signals of managerial discretion affect abnormal returns, the following binary test variables have been constructed; *EQUITYBASED* (indicate if the CEO receives an equity-based compensation such as share-based payment) and *EARNINGSBASED* (indicate if the CEO receives a bonus which is based on any income statement related performance). To determine if the firms have a executive compensation plan, data was collected from Bloomberg and in cases of missing data points the information was manually reviewed from the firms' annual reports. If the firm disclosed information regarding equity-based bonus the test variable *EQUITYBASED* was set to 1. On the contrary, if the firm did not offer equity-based compensation to their executives, the observation was set to 0. If the firm disclosed information regarding an earnings-based related bonus the test variable *EARNINGSBASED* was set to 1. On the contrary, if the firm did not offer earnings-based compensation to their executives the value for the observation was set to 0. With the purpose to examine if the tenure of the CEO had any effect on the market reaction, the test variable *CEOTENURE* was constructed which capture how long the CEO has been in his or her position. The data for the test variable *CEOTENURE* was collected from CapitalIQ and is estimated as a continuous variable that represent the number of years the CEO has been in charge. *CEO_CHANGE* is a binary variable and captures if there has been a CEO turnover within one year prior to the goodwill impairment announcement. If there has been a CEO turnover the observation value was set to 1, if no change occurred during the year prior to the announcement, the observation value was set to 0. The data for the test variable *CEO_CHANGE* was collected from Blomberg, and in cases of missing data points the information was manually reviewed from the firms' annual reports and from CapitalIQ.

The control variables used in the regression are; the logarithm of the market capitalization (*LOGMARKETCAP*), leverage (*LEV*), total goodwill to total assets (*GW_ASSETS*), the size of the goodwill impairment to total goodwill (*IMP_GW*), and the price to book ratio (*PB*). *LOGMARKETCAP* is calculated as the logarithm of the market capitalization on the last day of the estimation window (i.e., 5 trading days before the event) and control for the fact that bigger firms in general disclose information with higher quality compared to smaller firms (Jegadeesh & Wu, 2013). With the purpose to control for financial uncertainty, the variable financial leverage (*LEV*) is used, which is calculated as total debt to total assets at the prior fiscal year-end. *GW_ASSETS* is total goodwill to total assets at the prior fiscal year-end and intend to capture how much of the firm's book value that is made up by goodwill. *IMP_GW* is the communicated impairment size of goodwill in the announcement to total goodwill at the prior fiscal year-end and intend to capture to which extent the expectation of the estimated goodwill's ability to generate future cash flows has changed. *PB* is the price to book ratio, calculated as the stock price on the last day of the estimation window divided by the book value per share for the prior fiscal year, and capture the market's expectations of future firm earnings.

**Table 1.** Definition of variables

| Variable | Description |
| --- | --- |
| *CAR* | Cumulative abnormal return calculated as the sum of abnormal returns during the event window. |
| *AR* | Abnormal return, calculated as the difference between the actual return and the expected return |
| *LOGMARKETCAP* | The natural logarithm of market capitalization at the last trading day of the estimation window. |
| *LEV* | Financial leverage, calculated as total book value of debt to total assets at the prior fiscal year end |
| *GW_ASSETS* | Book value of goodwill to total assets at the prior fiscal year-end. |
| *IMP_GW* | The communicated impairment amount of goodwill in the press release, to total book value of goodwill at the prior fiscal year-end |
| *PB* | The stock price at the last day of the estimation window to the book value at the prior fiscal year-end per share. |
| *REASON* | A binary variable equal 1 if an external reason for the impairment was provided in the announcement. 0 if an internal reason was provided. |
| *EARNINGSBASED* | A binary variable equal 1 if the CEO has an income statement related bonus, 0 if the CEO has no income statement related bonus. |

| | |
|---|---|
| *EQUITYBASED* | A binary variable equal 1 if the CEO has an equity-based bonus, 0 if the CEO has no equity-based bonus. |
| *LM_POSITIVE* | Loughran & McDonald's classification of a positive Tone. A continuous variable, where a higher score indicates a more positive tone |
| *LM_SUPERFLUOUS* | Loughran & McDonald's classification of a superfluous tone. A continuous variable, where a higher score indicates a more superfluous tone. |
| *CEO_CHANGE* | A binary variable equal 1 if the firm has experienced a change of CEO in the year prior to the announcement, 0 if no change of CEO was made during the year prior to the impairment announcement |
| *CEO_TENURE* | Number of years the CEO has been in charge |

## 4.2 Sample Selection Process

The data gathering process started by manual gathering of goodwill impairment announcements made by publicly traded Nordic companies during the time period 01.01.2005 - 01.02.2019, complying with IAS 36. To obtain event dates for goodwill write-off announcements, different press release sources, financial news databases and media archives were used. The announcements used in this event study were collected from Factiva, Nasdaq Nordic and GlobeNewswire. Searches were constructed by using the keywords "goodwill" and "write-off" or "write-down" or "impairment" or "charge" or "test". In order to be included in the sample the common stock of each company had to be publicly traded on a Nordic based stock exchange during the event window (the announcement date and the following trading day) and the estimation window which represent the daily stock return for 100 trading days prior to the gap (5 trading days) left before the event day. With the purpose to avoid survival bias and obtain a greater sample, companies that no longer are listed but were publicly traded during the goodwill announcement period are included in sample. Following the findings reported by Hirschey & Richardson (2003), goodwill impairment disclosures are "messy announcements" in its nature, containing information about reported earnings or losses, and other important favorable or unfavorable operating information. Therefore, the restriction was made to only collect goodwill impairment announcements that was published by the company as a separate press release. That means that no goodwill impairment presented in a financial report was included, nor does the sample contain any financial statement summaries or review of quarterly financial performance. This because that type of disclosure contains other important corporate announcements, meaning that the isolated market reaction of the goodwill write-down is more complex to obtain.

To be classified as a "goodwill announcement", the press release had to describe the reason for the goodwill write-down decision. An additional restriction that was made regarding the goodwill impairment announcement was that the press release needed to be written and published by the company in question and could not represent a re-written version by an analysts or financial journalist. This restriction is associated with the motivation to ensure the novelty and newness of information, which also explain why only the first announcement of a specific goodwill write-down was included in the sample.

The time frame 01.01.2005 - 01.02.2019 allowed consideration of goodwill write-offs following the accounting changes that occurred in 2004 and the sample therefore covers the period from the introduction of the impairment-only approach in Europe. With the purpose to have a homogenous sample, the geographical restriction to publicly traded Nordic firms, were "Nordic" represent Denmark, Finland, Norway and Sweden was made. The need to have a homogenous sample follow the findings presented by Knauer & Wöhrmann (2016), which states that the quality of accounting information across countries differs. In a broader context, this means that even when the standards seem to be nearly identical, the legal settings in different countries can limit managerial discretion to different degrees, thus enhance or diminish the reliability of disclosed information. Therefore, in order to avoid diversity regarding countries enforcement regimes, level of legal investor protection and implementation/interpretation of accounting standards this geographical restriction was constructed.

**Table 2.** Sample selection process

|  | Total |
|---|---|
| No. of goodwill impairment announcements found between 2005 and 01.02.2019 | 200 |
| Less: Yearly and quartely earnings announcements | 17 |
| Less: Firms with missing stock data return | 7 |
| Less: Observations from the same firm occuring to close in time* | 13 |
| Less: Firms with missing financial data | 8 |
| Final sample size | 155 |

*a firm announce a goodwill impairment closer than 100 trading days to the previous goodwill impairment announcement

As shown in Table 2 following the gathering of goodwill impairment announcements, the final sample consist of 155 goodwill write-downs for which sufficient data for the empirical test is available. The financial data, compensation/tenure data and the stock return data used in the empirical analysis is collected from Bloomberg and CapitalIQ. For this study, 17 announcements

were discarded because the press release was published as a quarterly earnings announcement, rather than a goodwill impairment announcement. In addition, 7 observations were excluded because of missing stock return data and 8 observations was discarded because of lacking financial data. In addition, 13 observations were excluded since the goodwill impairment announcement was published by the same company and occurred to close in time, which disturbs the estimation of the expected return in the event study.

# 5. Results and Analysis

## 5.1 Descriptive Statistics

Table 3 Panel A illustrates a breakdown of the final sample where the goodwill announcements are divided into the year of publication and country of origin. Sweden and Finland represent the largest portions of the sample, with 65 and 72 announcements respectively which is 88.39% (untabulated) of the total sample. Panel B in Table 3 is presenting the distribution of announcement per firm during the sample period. The sample consists of 100 firms, and 14% of the firms in the sample did 3 or more goodwill impairment announcements during the sample period, 20% of the firms did 2 announcements and 66% published 1 announcement. In total the 155 announcements were published by 100 firms.

**Table 3.** The sample distribution of goodwill impairment announcements per year and No. of impairment announcements per firm

Panel A

| Country | Year | | | | | | | | | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | |
| Sweden | 5 | 3 | 6 | 3 | 7 | 7 | 5 | 4 | 3 | 2 | 4 | 4 | 2 | 8 | 2 | 65 |
| Finland | 2 | 2 | 5 | 7 | 5 | 8 | 4 | 6 | 6 | 2 | 7 | 2 | 5 | 5 | 6 | 72 |
| Norway | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 |
| Denmark | 0 | 0 | 0 | 3 | 2 | 0 | 1 | 0 | 0 | 1 | 3 | 4 | 1 | 1 | 0 | 16 |
| Total | 7 | 5 | 11 | 13 | 14 | 15 | 11 | 10 | 9 | 5 | 14 | 10 | 8 | 14 | 9 | 155 |

Panel B

| No. of impairment announcements per firm | 1 | 2 | ≥3 | Total |
|---|---|---|---|---|
| No. of firms | 66 | 20 | 14 | 100 |

Table 4 is presenting the descriptive statistics for the dependent variable, the test variables and the control variables in the sample. The mean value of goodwill to assets equals 0.227, meaning that the firms in the sample on average holds 22.74% of their total book value tied up in goodwill. The average impairment size of goodwill in relation to total book value of goodwill

equals 42.65%. Furthermore, what is more noticeable, is the broad range of Price to Book (*PB)* values, with a minimum value of 0.01 and a maximum value of 485.439, indicating that investors' expectations of future firm earnings vary to a great extent within the sample. When studying the mean of the test variables *EARNINGSBASED* and *EQUITYBASED*, which both are binary variables, one can conclude that the mean value is above 0.5, indicating that the majority of the firms in the sample have either earnings-based or equity-based bonus plans. *CEO_CHANGE* is a binary variable equal to 1 if the firm has experienced a change of CEO during the year prior to the announcement. Since the mean is below 0.5, the majority of the CEOs in the firms have been in charge for more than one year at the time of the goodwill impairment announcement. Moreover, *CEO_TENURE* is indicating that the average CEO in the sample has held his/her position for 3.82 years (3 years and 10 months approximately), at the time the firm published the impairment announcement.

**Table 4.** Descriptive statistics of continuous test variables and control variables

| Variable | n | Mean | Std. dev. | Min | 0.25 | Median | 0.75 | Max |
|---|---|---|---|---|---|---|---|---|
| CAR | 155 | -0.018 | 0.068 | -0.461 | -0.047 | -0.009 | 0.011 | 0.232 |
| LOGMARKETCAP | 155 | 2.500 | 0.982 | 0.230 | 1.786 | 2.426 | 3.174 | 4.467 |
| LEV | 155 | 0.605 | 0.207 | 0.102 | 0.512 | 0.603 | 0.685 | 1.824 |
| GW_ASSETS | 155 | 0.227 | 0.171 | 0.003 | 0.083 | 0.218 | 0.326 | 0.703 |
| IMP_GW | 155 | 0.426 | 0.156 | 0.026 | 0.058 | 0.143 | 0.488 | 1 |
| PB | 155 | 4.544 | 38.893 | 0.009 | 0.692 | 1.104 | 1.764 | 485.439 |
| REASON | 155 | 0.194 | 0.396 | 0 | 0 | 0 | 0 | 1 |
| LM_SUPERFLUOUS | 155 | 0.073 | 0.375 | 0 | 0 | 0 | 0 | 3.500 |
| LM_POSITIVE | 155 | 4.172 | 3.987 | 0 | 1.120 | 3.01 | 7.020 | 18.170 |
| EARNINGSBASED | 155 | 0.755 | 0.432 | 0 | 0 | 1 | 1 | 1 |
| EQUITYBASED | 155 | 0.755 | 0.432 | 0 | 0 | 1 | 1 | 1 |
| CEO_CHANGE | 155 | 0.290 | 0.455 | 0 | 0 | 0 | 1 | 1 |
| CEO_TENURE | 155 | 3.819 | 4.677 | 0.170 | 1 | 2 | 5 | 33 |

The Pearson correlation matrix (Table 5) indicate that there is correlation, which is statistically significant on a 1%, 5% and 10% level between control variables and the independent test variables. However, in order to test if this might cause problems for the constructed regression, variance inflation factor (VIF) tests were performed[9]. The VIF test generated a VIF mean of 1.41, and no single value was greater than 2.22 for the variables included in the regression, indicating that there is no serious problem with autocorrelation between the independent test variables and control variables. Besides analyzing if there is multicollinearity between the variables, the Pearson correlation matrix also provide a first indication of the regression results by presenting the expected direction of the coefficients. As shown in Table 5,

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[9] Appendix B

*LM_SUPERFLUOUS, REASON, EQUITYBASED, GW_ASSETS, IMP_GW* and *PB* are all negatively correlated with *CAR*, while *LM_POSITIVE, CEO_CHANGE, CEO_TENURE, EARNINGSBASED, LEV* and *LOGMARKETCAP* are all positively correlated with *CAR*. Moreover, Table 4 indicate that there is correlation, which is statistically significant, on a 1% between the independent test variables; *CEO_CHANGE, CEO_TENURE, EQUITYBASED* and *EARNINGSBASED*. To avoid biased estimations, regressions have been constructed in which the correlated variables have been tested separately[10].

**Table 5.** Pearson correlation matrix

| | CAR | LM_SUPERFLUOUS | LM_POSITIVE | REASON | CEO_CHANGE | CEO_TENURE | EQUITYBASED |
|---|---|---|---|---|---|---|---|
| CAR | 1 | | | | | | |
| LM_SUPERFLUOUS | -0.056 | 1 | | | | | |
| LM_POSITIVE | 0.129 | 0.005 | 1 | | | | |
| REASON | -0.161 | -0.096 | 0.029 | 1 | | | |
| CEO_CHANGE | 0.101 | -0.116 | -0.018 | 0.010 | 1 | | |
| CEO_TENURE | 0.031 | -0.020 | -0.007 | 0.021 | -0,425*** | 1 | |
| EQUITYBASED | -0.036 | -0.096 | 0.090 | 0.127 | 0.100 | 0.044 | 1 |
| EARNINGSBASED | 0.155 | -0.037 | 0,135* | 0.014 | -0.065 | 0.106 | 0,407*** |
| LOGMARKETCAP | 0.038 | 0.010 | 0.023 | 0.048 | -0.085 | -0.089 | 0,309*** |
| LEV | 0.178 | 0.041 | -0.059 | -0.031 | -0.026 | 0.012 | 0.037 |
| GW_ASSETS | -0.202 | -0,175** | 0.038 | 0.112 | 0,212*** | -0,181** | 0.059 |
| IMP_GW | -0.037 | 0.124 | 0.062 | -0.014 | -0.030 | 0.026 | -0.072 |
| PB | -0.066 | 0.092 | 0.095 | -0.042 | -0.054 | 0.025 | 0.047 |

| | EARNINGSBASED | LOGMARKETCAP | LEV | GW_ASSETS | IMP_GW | PB |
|---|---|---|---|---|---|---|
| EARNINGSBASED | 1 | | | | | |
| LOGMARKETCAP | 0.132 | 1 | | | | |
| LEV | 0.029 | -0.014 | 1 | | | |
| GW_ASSETS | -0,183** | -0,280*** | -0,152* | 1 | | |
| IMP_GW | 0.015 | -0.110 | 0,137* | -0,279*** | 1 | |
| PB | 0.046 | -0.046 | 0,264*** | -0.100 | 0,684*** | 1 |

*Statistical significance at 10% level

**Statistical significance at 5% level

***Statistical significance at 1% level

## 5.2 Market Reaction to Goodwill Impairment Announcements

Table 6 presents the result from the event study and indicate that the stock market, in line with prior research (Bartov et al. 1998; Li et al. 2011; Bens et al., 2011), on average reacts negatively in case of goodwill impairment announcements. The cumulative average abnormal return (CAAR) during the event window was -1.77% (median -1%), and significantly different from 0 (t-value of 2.79). Even though these results are somewhat lower in comparison to Hirschey & Richardson (2003) which study shows that goodwill write-offs led to -2.94 to -3.52 percent adverse stock price reactions during the announcement period (day -1, day 0). The empirical results still suggest that goodwill impairments cause investors to downgrade their expectations leading to a negative share price development following the write-down announcement. Table 4 shows that the standard deviation of CAR amounts to 6.78%, indicating that there are significant differences

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[10] Presented in section 5.2

between the firms within the sample. Furthermore, not all announcements led to negative stock market reactions which is shown by Table 6, "% of CAR < 0", which indicate that 40.38% (untabulated) of the firms in the sample experienced an abnormal return that was equal to or greater than zero during the event window. Still, the result shows a negative cumulative average abnormal return, meaning that a revaluation decision of goodwill represents an important change in the company's future earnings potential, which causes investors to revise their future expectations downwards.

**Table 6.** Result from the event study

| | CAAR | Median | t-Stat. | % of CAR < 0 | n |
|---|---|---|---|---|---|
| | -1,77% | -0,01 | 2.79*** | 59,62 | 155 |

***Statistical significance at 1% level

**Table 7.** Result from OLS regressions

| | Model 1 Disclosure content and tone | | Model 2 Managerial discretion | | Model 3 Full sample | |
|---|---|---|---|---|---|---|
| | Coeff. | t-Stat. | Coeff. | t-Stat. | Coeff. | t-Stat. |
| LM_SUPERFLUOUS | -0.018 | -2,59** | | | -0.014 | -1,8* |
| LM_POSITIVE | 0.003 | 1,94* | | | 0.003 | 1,94* |
| REASON | -0.026 | -1.55 | | | -0.024 | -1.53 |
| CEO_CHANGE | | | 0.029 | 2,00** | 0.028 | 2,01** |
| CEO_TENURE | | | 0.001 | 1.15 | 0.001 | 1.18 |
| EQUITYBASED | | | -0.021 | -1.28 | -0.020 | -1.26 |
| EARNINGSBASED | | | 0.028 | 1.60 | 0.024 | 1.44 |
| LOGMARKETCAP | -0.002 | -0.33 | 0.001 | 0.23 | 0.002 | 0.28 |
| LEV | 0.064 | 1.65 | 0.061 | 1.39 | 0.065 | 1.55 |
| GW_ASSETS | -0.083 | -1,89* | -0.073 | -1.60 | -0.074 | -1,69* |
| IMP_GW | -0.003 | -0.36 | -0.005 | -0.53 | -0.004 | -0.44 |
| PB | 0.000 | -1.46 | 0.000 | -0.89 | 0.000 | -1.28 |
| _cons | -0.036 | -1.31 | -0.056 | -1,84* | -0.063 | -1,99** |
| *R-squared* | 0.127 | | 0.132 | | 0.180 | |
| *F-value (Prob > F)* | 14.77 | | 19.65 | | 12.79 | |
| *N* | 155 | | 155 | | 155 | |

*Statistical significance at 10% level

**Statistical significance at 5% level

***Statistical significance at 1% level

Model (1) in Table 7 is presenting the result from the OLS regression and includes the independent test variables *REASON, LM_SUPERFLUOUS* and *LM_POSITIVE* which refers to H1a, H1b and H1c. Firstly, hypothesis 1a predicted that external write-off reasons are easier for investors to verify, and therefore should lead to less negative abnormal returns. However, the output shows a negative coefficient of -0.026 for the test variable *REASON*. This indicate that there eventually is a negative stock market reaction if an external reason is provided. Since the t-

value equals to -1.55 and no significance was found on a 10% level, it is not possible to determine a statistically significant relationship between the reason for the goodwill impairment charge and the stock market reaction. The empirical results in this study differs from the findings presented by Knauer & Wöhrmann (2016) and can be explained by several aspects. Firstly, the observations in the sample were classified as internal (and where predicted to be less verifiable) when referring the goodwill write-off decision to reconstruction and disposal, which is associated with Paragraph 12f in IAS 36. However, a disposal of a business division or a divestment in a subsidiary may not be difficult for investors to verify, since it is a concrete reconstructuring decision. Secondly, as described by (Li et al., 2011) impairment losses cannot convey new information in situations where the economic loss in the value of goodwill occurred in prior periods and was incorporated in the market price before its actual recognition in the income statement. In addition, the subjectivity inherent in estimating the impairment loss using unverifiable fair values could reduce the information content of the impairment loss. For this study, the observations were coded as external or internal with reference to Paragraph 12 in IAS 36. This means that an observation which referred the goodwill impairment decision to negative changes in technology was classified as external. In other words, since market participants did not react less negatively to external reasons comparing to internal reasons, it could be as Li et al. (2001) explained, that the external explanation for the write-down decision conveyed new information for investors and was not incorporated in the market price since before.

The test variable *LM_SUPERFLUOUS* is intended to capture the readability of the announcements, and hypothesis 1b predicted that a more superfluous announcement would lower the level of plain English and cause the stock market to react more negatively. This because prior research (Brochet et al., 2016) shows, a lower level of plain English increases the opacity and reduces the transparency of financial information, compared to disclosures free from excessive and unnecessary words. The regression generated a coefficient of -0.018 and a t-value of -2.59, indicating statistical significance on a 5% level for *LM_SUPERFLUOUS*. The empirical result from the regression provide evidence in line with prior research (Loughran & McDonald, 2014), indicating that announcements with more excessive words that does not contribute to an increased understanding, cause investors to react more negatively. In addition, the empirical results in this study add to the findings provided by Hirschey & Richardson (2003), that investors do react more negatively to a "messier" corporate announcement comparing to a "simpler" corporate announcement. Moreover, Table 7 model (1) is presenting the result from the regression including the test variable *LM_POSITIVE*, which is intended to capture the level of

optimism used in the goodwill impairment announcement. Hypothesis 1c predicted that goodwill impairment announcements with a more positive tone lead to more positive abnormal returns. The regression generated a coefficient of 0,003, and a t-value of 1,94 which is statistically significant on a 10% level. This demonstrate a statistically significant relationship between the abnormal returns during the event window and the tone used by management in the press release. In fact, a more positive tone lead to less negative abnormal returns. This is in line with prior research within the field of disclosure tone (Luo & Zhou, 2017), and it confirms that a more positive tone leads to more positive stock market reactions even in case of goodwill impairment announcements, which are negative earnings announcements by their very nature. All in all, the results from model (1) strengthen the findings presented by Henry (2008), that market participants are in fact influenced by how press releases are written and adjust their expectations based on how the financial information is presented.

Model (2) in Table 7 is presenting the result from the regression including the test variables *EARNINGSBASED*, *EQUITYBASED*, *CEO_CHANGE* and *CEO_TENURE*, which refers to H2a, H2b and H2c. The test variables *EARNINGSBASED* and *EQUITYBASED* are intended to capture whether the CEO has a performance-based compensation plan tied to either earnings or equity or not. Prior research shows that managers take discretionary accounting choice opportunistically to exploit the fact that their compensation packages depend on companies' accounting results (Detzen & Zulch, 2012; Francis et al., 1996). Therefore, hypothesis 2a predicted that firms with CEO compensation tied to earnings or equity will increase the incentives to perform earnings management through discretionary accounting choices compared to firms without CEO compensation (Beatty & Weber, 2003). In turn, investors will adjust their expectations accordingly by reacting more negatively to those goodwill impairment announcements comparing to firms without incentives to make discretionary accounting choices. However, the test results indicate that there is no statistical significance for either of the test variables *EARNINGSBASED* (t-value 1.60) and *EQUITYBASED* (t-value 1.28), meaning that there is no difference in investors reaction based on how the CEO's compensation is structured. These results do not support hypothesis 2a, rather the findings suggest that compensation tied to earnings and equity do not represent indications that managers perform discretionary accounting choices (or eat least investors do not react more negatively towards it). These results are contradictory to the findings represent by Baber et al. (2006), which illustrates that indications of earnings management related to bonus compensation plans is causing investors to react negatively, leading to declining share prices. Furthermore, For

*CEO_CHANGE* the regression generated a beta coefficient of 0.0289 and a t-value of 2.00, which implies statistically significance on a 5% level. The result indicate that stock market investors interpret a goodwill impairment announcement less negative if there has been a change of the CEO within one year prior to the announcement date. The results in this study is in line with prior research on asset impairments in connection to CEO and management change (Masters-Stout et al., 2008; Cheng et al., 2017). However, *CEO_TENURE* (t-value of 1,00) is not statistically significant, indicating that the market does not value a goodwill impairment differently depending of the number of years the CEO has been in charge, as long as he or she has held the position for more than one year. These results do not support hypothesis 2b which predicted that firms with long-tenured CEOs would experience more negative abnormal returns in case of goodwill impairment announcement. The explanation for these findings could potentially be that investors are aware that CEOs with longer tenure are more reluctant to impair goodwill, and by that the economic loss in the value of goodwill was incorporated in the market price before its actual recognition

In model (3) Table 7 all test variables and control variables are included in the OLS regression. The reason for performing separate OLS regression for the test variables was to investigate whether the separation of the test variables strengthen or weakened the empirical results. When examining Table 7, what can be concluded is that the test variables *LM_SUPERFLUOUS, LM_POSITIVE* and *CEO_CHANGE* still is statistically significant in all models, meaning that the incorporation of all test variables in model (3) do not cause the test variables to become insignificant. However, the test variable *LM_SUPERFLUOUS* is statistically significant on a 5% level in model (1), but in model (3) the test variable is statistically significant on a 10% level, meaning that the significance level decreases for *LM_SUPERFLUOUS* when adding the test variables associated with H2a, H2b and H2c. For the test variable *LM_POSITIVE,* the coefficient value and the t-value are identical in model (1) and in model (3) and for the test variable *CEO_CHANGE* the coefficient value and t-value is almost identical in model (2) and model (3). In addition, when examining Table 7 the R-square is higher in model (3) where all test variables is included, in comparison to model (1) and model (2). Furthermore, when comparing model (1) and model (2), the results shows that the R-square is higher for model (2) managerial discretion relating to H2a, H2b and H2c than for model (1) disclosure content and tone referring to H1a, H1b and H1c. Moreover, model (3) in Table 7 shows that *GW_ASSETS* has a coefficient of -0.44 and is statistically significant on a 10% level (t-value of 1.69), indicating that a higher ratio of goodwill to total assets lead to more negative abnormal returns in case of

goodwill impairment announcements. The results indicate that if the firm's value is made up of a big portion goodwill, the stock market reaction is more negative when recognizing a impairment loss, comparing to firms with a small portion of the book value made up of goodwill.

## 5.3 Additional Analysis and Robustness Tests

In order to provide more robust results and validate the empirical results, some additional untabulated tests were performed. Firstly, the event study was modified and performed with the market adjusted model instead of the standard market model with the purpose to challenge CAR. The market adjusted model generated similar results, i.e. negative abnormal returns of -1.467% during the event day and the following trading day, and the results was statistically significant on a 1% level (untabulated). Furthermore, CAR was modified using the standard market model but instead of the chosen event window (day 0, day +1), CAR was estimated for the event window (day -1, day +3). The new CAR generated negative abnormal returns but was statistically significant only on a 5% level. By estimating CAR based on the adjusted market model and with a different event window, the results suggesting that stock market participants react negatively towards goodwill impairment announcements still holds true. However, as for this study CAR becomes less negative as the event window increases, meaning that the stock market reaction is more negative during the event window (day 0, day +1) compared to the event window (day -1, day +3).

Secondly, as additional analysis the study rerun regression model (3) by including an independent test variable that was a count of the total words in each goodwill announcement. The result shows a negative coefficient (-0.0004) and a t-value of -2.42, indicating statistical significance on a 5% level (untabulated), meaning that market participants react more negatively as the total amount of words in the press release increase. This additional analysis strengthens the discussion related to the plain English rule (Loughran & McDonald, 2014), which argue that disclosure styles with shorter sentences and more concrete language improve the readability which in turn increases the quality of financial information. Hence, the results in this study suggests that goodwill impairment announcements with a higher level of superfluous words give rise to a more negative abnormal return, and that goodwill impairment announcements with a greater amount of total words is associated with a more negative stock price reaction. In order to further analyze the stock market reaction depending on the tone of the announcement, the test variable *NET_POSITIVE* was created. The variable was constructed by taking the difference between *LM_POSITIVE* and *LM_NEGATIVE* and was intended to capture the net positive tone of the

goodwill impairment announcement. To test if *NET_POSITIVE* has an effect on the dependent variable *CAR,* the test variable *LM_POSITIVE* was substituted against *NET_POSITIVE* in model (1) Table 7. *NET_POSITIVE* generated a coefficient of 0.003 and a t-value of 1.91 (statistically significant on a 10% level, untabulated), indicating and strengthen the findings that a positive tone leads to less negative abnormal returns in case of goodwill impairment announcements.

Thirdly, for this study the test variable *CEO_TENURE* was estimated based on the number of years that the CEO have held his or hers position and was not significant in model (2) or model (3) in Table 7. With the purpose to further analyze if the stock market reaction depends on the CEO tenure, a new test variable *TENURELONG* was estimated. *TENURELONG* was constructed as a binary variable, in which all observations were set to 1 if the CEO tenure was higher than the annual sample median, and 0 otherwise. The annual sample median amounts to 2 years as shown in Table 4. Thereafter, the test variable *CEO_TENURE* was substituted against *TENURELONG* and the regression in model (1) was rerun. The result still shows an insignificant t-value (untabulated), meaning that no significant results indicate that firms with long-tenured CEOs experience more negative abnormal returns in case of a goodwill impairment announcement. In addition, the two variables *CEO_CHANGE* and *CEO_TENURE* which were correlating on a 1% level, were tested separately. However, *CEO_CHANGE* is still statistically significant (t-value of 1.96), but on a 10% level instead of a 5% level (untabulated).

In addition, a dummy variable labeled *FINANCIAL_CRISIS* was constructed which was set to 1 if the goodwill impairment announcement was published between the year 2007 and 2008. Thereafter, the regression in model (3) Table 7 was rerun. The variable *FINANCIAL_CRISIS* was not statistically significant, and the t-value amounted to -1.50 (untabulated). Also, the test variable *LM_POSITIVE* (t-value of 1.99) and *CEO_CHANGE* (t-value of 1.95) was still statistically significant after including the dummy variable *FINANCIAL_CRISIS*. However, the test variable *LM_SUPERFLUOUS* lost significance (t-value of -1.59).

# 6. Conclusion

This thesis investigates the stock market reaction of goodwill impairment announcements by analyzing whether investors incorporate the disclosed reason for the write-down decision, the tone used by managers in the announcements and the possibility of managerial opportunistic behavior. Based on this purpose, the following research question was formulated; *Do the*

*information content, disclosure tone and likelihood of opportunistic managerial discretion impact equity investors reaction to goodwill impairment announcements?"* In order to answer the research question, an event study was performed, and the cumulative abnormal return was used as dependent variable when performing the hypotheses testing. The result from this study shows that goodwill impairment announcements are important events for investors, and the abnormal return during the announcement day and the following trading day were significantly different from the estimated expected return. As predicted, the empirical results indicate that investors are incorporating other factors than the pure negative impairment charge in the announcement. According to the empirical results, it is not possible to determine statistically that investors do value the reason provided by the firm, meaning that they, eventually, are indifferent to if an internal or external reason for the impairment is provided. Instead, what was shown to have an effect on the stock market reaction was the tone of the announcement. In more detail, if the management uses a more positive tone in the press release the stock market reacts more positively (alternatively less negative) to the news. Furthermore, this study found that a superfluous announcement causes the stock market to react more negatively compared to if the announcement was less superfluous. This indicate that the management in firms, eventually, can milder the negative stock market reaction of goodwill impairment announcements by being aware of the tone and the readability. Additionally, this study also examined if investors do incorporate signals of opportunistic managerial discretion when valuing firms that perform and publish goodwill impairment announcements. This study found that investors do not react differently based on if the CEO has compensation tied to earnings or equity or no performance-based compensation. It was also tested if CEO tenure had any effect on the stock market reaction in case of goodwill impairment announcements. The findings indicate that the stock market reacts more positively to goodwill impairment news from firms which have experienced a CEO turnover during the fiscal year prior to the announcement. However, while short tenure had a positive effect to the stock market reaction, longer tenure was shown to have no effect for investors as long as the CEO has been in charge for more than one year.

## 6.1 Limitations and Suggestions for Future Research

The results in this thesis is subject to some important caveats. Firstly, the sample selection process included eliminations of yearly and quarterly earnings announcements with the purpose to focus on relevant goodwill impairment announcements. The event dates used for the event study was retrieved from the press releases provided by the firms. However, as for event studies in general, it is not possible to completely omit the possibility that other events that potentially

affected the estimated abnormal returns, occurred during the event windows. Another limitation is that the study does not control for all aspects that potentially affect the opportunistic discretion opportunities inherent in goodwill accounting, such as the initial purchase price allocation. Further, the coding of the test variable *REASON* relies on manually-based content analysis regarding the explanation for the goodwill impairment loss. External reasons were deemed to be easier for investors to verify, hence a less negative stock market reaction was expected. However, when the announcements were manually reviewed some reasons, which are classified as internal by IASB, could in fact be argued to be easy for investors to verify. For instance, a disposal of an earlier acquired unit. Arguably, this internal reason could be followed and verified by investors, hence also incorporated in the stock price before (if rumors of the acquisition has been circling) by the stock market. Consequently, future studies could, eventually, focus on the classification of the indicators of impairment presented in IAS 36, and perform the classification differently. Second, it would be scientifically relevant to analyze how the frequency of goodwill impairment announcements from the same firm affect investors on the stock market. Intuitively, if a firm publish regular impairment announcements (e.g., yearly), the stock market should be more prepared for the announcements, hence, incorporate it into the stock price earlier leading to a less negative reaction. Thirdly, it would be interesting to include more countries in the sample, especially US firms complying with US GAAP, and perform a comparison between the stock market reaction in the different regulatory settings in terms of content, tone and likelihood of opportunistic managerial discretion.

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# Appendices

## Appendix A Event Study Methodology

The event study methodology originates from work by Ball and Brown (1968) and Fama, Fischer, Jensen and Roll (1969). The fundamental idea of the event study departs from the efficient market hypothesis (Malkiel & Fama, 1970), and assumes that certain firm-specific, or macro events, will immediately be reflected in firms' share price. However, this study partly aims to test the efficient market hypothesis by analyzing whether the effects of goodwill impairment announcements are incorporated in share prices immediately or not.

Central in an event study is to determine a date of interest (the event), estimate the expected return (based on returns during an estimation window) and compare it to the actual return during the event window (abnormal return). Normally, the expected return is derived from an estimation period, usually between 100-300 days before the event (Armitage, 1995). In addition, the estimation period is constructed with a gap to the event, in order to ensure that no leakage of the announcement is affecting the estimation of expected returns. The expected return should reflect the return a firm would have generated in case of no event, and can be determined in several different ways, but the most commonly employed method as of today, is the market model (MacKinlay, 1997). The model estimates the individual firm's expected return, based on the market return and the individual firm's beta. However, the model has, to some extent, been questioned since it assumes a constant risk-free rate (included in alpha) during the estimation period.

$$ER_{it} = \alpha_i + \beta_i R_{mt} + \epsilon_{it}$$

In order to estimate the abnormal return, the normal return $(R_{it})$ during the event window is compared to the expected return $(E(Rit))$. The Abnormal return is given by the difference between expected and normal return $(AR_{it})$, hence given by the following equation.

$$AR_{it} = R_{it} - (\alpha_i + \beta_i R_{mt} + \epsilon_{it})$$

For this study, daily data over 100 trading days prior to the event has been used to estimate the expected return. The sample period ends 5 trading days before the event window, in order to avoid inclusion of potential run-up effects in the estimated "normal" return. The daily abnormal

returns during the event window are then aggregated in order to perform inferences regarding the effect of the event (MacKinlay, 1997). The cumulative abnormal return is calculated as:

$$CAR_i(\tau_1, \tau_2) = \sum_{\tau=\tau_1}^{\tau_2} AR_{i\tau}$$

## Appendix B Variance Inflation Factor Test

|  | VIF | 1/VIF |
|---|---|---|
| LM_SUPERFLUOUS | 1.07 | 0.936 |
| LM_POSITIVE | 1.04 | 0.959 |
| REASON | 1.05 | 0.956 |
| CEO_CHANGE | 1.33 | 0.754 |
| CEO_TENURE | 1.33 | 0.753 |
| EQUITYBASED | 1.47 | 0.679 |
| EARNINGSBASED | 1.30 | 0.768 |
| LOGMARKETCAP | 1.38 | 0.727 |
| LEV | 1.12 | 0.891 |
| GW_ASSETS | 1.52 | 0.658 |
| IMP_GW | 2.22 | 0.451 |
| PB | 2.12 | 0.471 |
| Mean VIF | 1.41 | |