TAXATION, ACCOUNTING, AND FINANCE
# TAF WORKING PAPER

**Under the Radar?
Discretionary Impairments of Definite
and Indefinite Intangible Assets**

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## Discretionary Impairments of Definite and Indefinite Intangible Assets

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February 19, 2024

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## Abstract

We examine (a) how reporting incentives and business indicators impact impairment differently for definite and indefinite intangible assets, (b) the moderating role of internal and external monitoring on impairment recognition, and (c) how the coverage of impairment of intangibles varies in media and by analysts based on the type of intangible asset. Our findings reveal disparities in impairment indicators across different types of intangibles and a significant impact of reporting incentives on the impairment decision, particularly for acquired intangibles. These findings highlight the necessity of separately analyzing the impairment of definite and indefinite intangibles and goodwill. Second, internal monitoring strongly moderates the likelihood of impairments for indefinite intangibles and goodwill for firms that face high impairment pressure, indicating the role of strong corporate governance in enhancing the reporting quality of intangibles. Third, we find that even sophisticated external monitors, i.e., the media and analysts during conference calls, do not pay sufficient attention to the impairment decisions of definite and indefinite intangibles, allowing firms to exploit the discretion in intangible impairment that remains under the radar. Overall, our study contributes to the scarce literature on indicators of impairment of non-goodwill intangibles by providing empirical evidence that impairment indicators differ between definite and indefinite intangibles and how media coverage and analyst's questions on conference calls differ for impairments of definite and indefinite intangibles and goodwill. Given the growing importance of intangibles, our findings are relevant to accounting regulators, analysts, auditors, and investors in assessing the risk of impairment of intangibles.

**1. Introduction**

Intangible assets, especially those that are acquired, are important drivers of firm performance and value (Crouzet and Eberly 2023; Peters and Taylor 2017). [1] Thus, the measurement, reporting, and recognition of potential impairment of intangible assets are important issues for managers and standard setters. We contribute to this discussion by separately focusing on the determinants and consequences of impairments of intangibles with definite and indefinite lives and comparing them with the better understood determinants of goodwill identified in prior research (see Amel-Zadeh, Glaum, and Sellhorn 2021 for a review). [2] These comparisons contribute to our understanding of how and why managers use discretion in their impairment decisions for intangibles other than goodwill. More importantly, by separately examining the definite and indefinite intangibles, our findings shed light on the trade-offs between the two approaches used in accounting for intangible assets: the "impairment only" approach used for indefinite intangibles and the combination of amortizations and impairments approach used for definite intangibles.

Specifically, our study has three objectives. First, to examine the relations between the impairment of definite and indefinite intangible assets and the firm's reporting quality and its business characteristics. Second, to examine whether internal monitoring moderates the link between impairment pressure (as indicated by the book-to-market ratio) and intangible asset impairments. Third, to examine the extent to which information on an impairment of intangibles with definite and indefinite lives are featured in conference calls and the media coverage as

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[1] In 2018, the intangible value of all companies on the S&P 500 Index was $21.03 trillion. During the same year, the value of tangible assets of the same companies was only $4 trillion.

[2] Definite intangibles mainly cover acquired technology and patents, customer relationships- and lists, contract-related intangibles such as franchises or land- or water rights, definite trademarks, and non-compete agreements. They are amortized over the respective lifetime. Indefinite intangibles, on the other hand, mainly consist of indefinite trademarks and brands, (FCC) licenses, and in-process R&D. They are subject to an annual impairment test.

prominent external monitoring devices. Such coverage affects both the costs and benefits of the use of discretion and are likely to influence manager's impairment decisions.

There are several reasons to expect differences in firms' impairment decisions across the different types of intangibles and goodwill. First, impairment test procedures differ among different assets. While goodwill impairment tests are carried out on the level of the reporting unit, non-goodwill intangible assets are tested directly on the asset or asset group level. Therefore, managers can exercise more discretion in estimating the future cash flows for the goodwill position than for other intangible assets. Second, acquiring firms already use discretion in the allocation of the purchase price after the acquisition (Koonce, Toynbee, and White 2021; Shalev, Zhang, and Zhang 2013). This could, in turn, influence the impairment pressure of intangibles if some assets have more valuation slack than others. Third, goodwill is harder to audit than non-goodwill intangibles (Ayres, Neal, Reid, and Shipman 2019), resulting in fewer impairment of non-goodwill intangibles. Fourth, the personal consequences of impairments to the firm's managers might vary by the type of intangible asset. We expect managers to evaluate the relative costs of recognizing an impairment versus delaying the impairment. If some impairments receive more investor attention than others, managers might prioritize these impairments of some assets over others.

To examine our research questions, we use a hand-collected U.S. sample of acquired intangible assets for 7,090 firm-years between 2002 and 2020. In particular, this sample allows us to separate acquired intangible assets from goodwill and disaggregate the carrying values and the impairments of acquired intangible assets into different economic lifetimes. In particular, impairments of both definite and indefinite intangible assets appear almost as likely as goodwill impairments do.

We document several key findings. First, with regard to the determinants of impairments of acquired intangible assets, we find that the indicators of impairment vary by the type of

intangible asset. We find a strong association between impairment and reporting quality variables for the indefinite intangible assets and goodwill, but not for the definite intangible assets. Next, we find a weaker association of many business characteristics with impairments for both definite and indefinite intangible assets relative to goodwill. In contrast, indefinite intangible assets seem to be impaired earlier than goodwill because we find a higher probability of impairments for this type of intangibles in years directly after a merger or an acquisition. Our results suggest that the impairment tests for non-goodwill intangible assets are at least as affected by managerial discretion and susceptible to reporting opportunism as is the impairment of goodwill, yet firms apply discretion differently than for goodwill.

Second, we find that the association between recognizing intangible asset impairments and the impairment pressure is increasing in stronger internal monitoring mechanisms. Using book-to-market ratios as our measure of impairment pressure, we find increasing effects in a higher share of accounting experts on the non-executive board and CEO turnovers, and decreasing effects in the busyness of board members and executives' variable compensation. Overall, these results support the notion that internal monitoring moderates managerial discretion in impairment decisions.

Third, we find that intangible asset impairments receive less attention than goodwill impairments in the Q&A section of earnings conference calls and are not associated with negative tone in earnings news' coverage by the media. Moreover, we find that media tone of earnings news coverage is more negative for goodwill impairments than for impairments of definite intangibles; results for impairment of indefinite intangibles are weak or insignificant. These results are consistent with the notion that acquired intangible assets receive less attention from external monitors, which suggests that managers are willing to impair these assets earlier than goodwill.

We make several contributions to the literature. First, we contribute to the growing literature on the measurement and reporting of acquired intangible assets. While there is a large literature on

the effects of internally generated intangible capital such as R&D or advertising expenditures (Roychowdhury 2006; Dechow and Sloan 1991; Bushee 1998; Crouzet and Eberly 2023; Peters and Taylor 2017), less is known about acquired intangible assets, mostly due to data unavailability (Vitorino 2014). Yet, the accounting for acquired intangible assets is widely debated among standard setters since the introduction of SFAS 141/142 in 2001. While several papers investigate benefits of capitalizing intangible assets on the balance sheet (Wyatt 2005; Landsman, Liss, and Sievers 2021; King, Linsmeier, and Wangerin 2023; McInnis and Monsen 2021), little is known on the subsequent measurement of intangible assets and the discretion within those estimates. Our findings inform regulators by providing first evidence on the determinants and consequences of acquired intangible impairments. The setting of acquired intangible assets allows us to directly compare the impairment only approach used for indefinite intangible assets and the combination of amortizations and impairments used for definite intangible assets. Thus, we document the costs and benefits of both measurement approaches: the impairments of definite intangibles are less affected by managerial discretion. However, these impairments show only a low association with the business characteristics, a finding that holds even for firms with strong governance. Thus, the annual amortization reduces the information content of the impairment charges for investors. Our findings are relevant to standard setters in evaluating the trade-off among the different alternatives to accounting for intangibles.

Second, we contribute to a large literature in impairments of non-financial assets. While the literature only investigates (the impairment of) the loosly-related goodwill impairments (Glaum, Landsman, and Wyrwa 2018; Li and Sloan 2017; Kim 2023; Ramanna and Watts 2012), we are the first to study acquired intangible asset impairments with detail. A separate examination of the impairments of acquired intangibles is important because the impairment procedures and tests of intangible asset impairments substantially differ from those of goodwill. In line with these

differences, Landsman et al. (2021) document differences in the value relevance of different types of intangibles. The closest study to ours is Riedl (2004). While Riedl (2004) investigates the determinants of asset impairments, which includes definite intangible asset impairments, we are the first to investigate intangible asset impairments in detail for a larger sample of firms based on recent data. Further, we provide large sample evidence on differing motives between intangible asset impairments and goodwill.

Third, we contribute to the nascent literature on how analysts and media perceive impairments by providing evidence that impairments of non-goodwill intangible assets receive less attention from analysts compared to goodwill impairments. Similarly, we find that the media tone of earnings news coverage is less negative for an impairment of indefinite intangibles compared to an impairment of goodwill. This is in contrast to our finding that internal monitoring mechanisms work similarly for indefinite intangibles and goodwill.

## 2. Institutional background and accounting for acquired intangible assets

Intangible assets are non- financial assets that lack physical substance (ASC 350). Both ASC 805 (SFAS 141) and ASC 350 (SFAS 142) address the accounting for acquired intangible assets like customer lists and relationships, developed technologies, software, trademarks and tradenames, and similar assets. In particular, the standards mandate the capitalization of intangible assets if they are acquired in a business combination or as a separate acquisition. This is in contrast to internally generated intangible assets which are expensed when incurred. [3] The Financial Accounting Standards Board (FASB) and the International Accounting Standards Board (IASB) continue to debate on whether the accounting for acquired intangibles should be updated given their rising importance to firms' balance sheets as well the ongoing criticism by many practitioners

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[3] One exception is internally generated software that can be capitalized under certain conditions. However, we do not include these capitalized costs in our variables.

and academics (Landsman et al. 2021). Among the topics debated is the subsequent measurement of intangible assets, including the impairment of acquired intangible assets.

The subsequent measurement of intangible assets depends on their expected useful life. Indefinite acquired intangible assets can either have an indefinite economic lifetime or a clearly determined, definite economic lifetime. The economic lifetime can be assessed through their legal, regulatory, or contractual duration, or their expected uses (ASC 350-30-35-3). Acquired intangible assets with a definite useful life are amortized over their remaining lifetime (for a more detailed description, see Reilly and Schweihs 2014). Only in the case of unforeseen events or circumstances (e.g., a significant decrease in market value or negative cash flows from the underlying intangible asset), definite intangibles are also tested for impairment when an impairment may be probable (ASC-360-10-35-21). Acquired intangible assets with indefinite useful life are not amortized but are subject to annual impairment testing (ASC 350-30), following the subsequent measurement method of goodwill.

The economic lifetime is also crucial for the determination of the procedure and order of the impairment test. According to the guidance laid out in ASC-350-20-35-31 and ASC 360-10-35-27, firms have to evaluate their assets for impairment in the following order:

- First, an entity should test all *individual assets* for impairment. Indefinite intangible assets fall under this category, as well as inventory and financial instruments (ASC 360).
- Second, an entity should test *asset groups* for impairment (ASC 360). Definite intangible assets like customer lists and developed technology fall under this definition.
- Third, goodwill is tested for impairment on the *reporting unit* level (ASC 350).

In the impairment test for indefinite acquired intangibles with an undetermined economic lifetime, the fair value of the underlying intangible asset is compared with the carrying amount. Firms have to recognize an impairment loss when (1) the carrying amount of an acquired indefinite

intangible asset is not recoverable and (2) the carrying amount of an indefinite acquired intangible asset exceeds its fair value. The unit of accounting is usually the individual indefinite intangible asset. Therefore, indefinite intangible assets are among the first assets being evaluated for impairment. Because intangibles typically lack market benchmarks, the impairment test of their carrying amounts involves managerial discretion and a substantial amount of judgement.

For acquired intangible assets with definite useful life, the impairment steps follow the provision of ASC 360 "*Accounting for the Impairment of Long-Lived Assets and for Long-Lived Assets to Be Disposed of*". One key distinction from indefinite intangible assets is that the reassessment of the carrying amount occurs only following certain events. In contrast to the impairment test for indefinite intangible assets, testing for impairments for definite intangibles is carried out at the asset group level. That means that this procedure appears after testing indefinite intangibles but before the goodwill impairment.

Both impairment test procedures substantially differ from the goodwill impairment test, which is carried out on the reporting unit level. Unlike an individual asset or an asset group, a reporting unit must be a business with discrete financial information available that engages in business activities from which it recognizes revenues and expenses. Since 2012, entities have the possibility to do first a qualitative approach to see whether goodwill impairments are needed to reduce the costs of expensive and time-consuming quantitative goodwill impairment tests. Before the revision of the goodwill impairment standard in 2017 (ASU 2017-04), testing for a goodwill impairment has been carried out in a two-step procedure. In 2017, the FASB eliminated the second step simplifying the accounting for the goodwill.

Over our sample period, acquired intangible asset impairments occur frequently. Impairment of indefinite intangibles are recognized in 18.4 percent of all firm-years, whereas impairments of definite intangibles are recognized in about 8 percent of all firm-years. In

comparison, goodwill is impaired in about 19 percent of our firm-years. Thus, impairments of acquired intangibles appear almost as frequently as goodwill impairments do.

## 3. Research questions

Given the exploratory nature of our study, we seek to answer three research questions concerning the impairment of intangible assets. Our research questions focus on the determinants of impairment, the role of internal and external monitoring in moderating impairment, and the perception and the coverage of impairments by the media and analysts. We examine these questions separately for intangibles with indefinite lives, definite lives, and goodwill. We discuss our research questions below.

***RQ1:*** ***What are the determinants of recognition of impairments of intangibles with definite lives, indefinite lives, and goodwill?***

The nature and procedures of the impairment tests suggest two broad categories of determinants for intangible asset impairments. The first set of determinants are reporting (accounting) quality variables. If managers use discretion to opportunistically time the impairments, we expect an association between impairments and reporting quality. The second set of determinants comprises variables that represent the business characteristics of a firm. If business characteristics deteriorate, there should be a higher likelihood of an impairment of an asset. Yet, while disaggregated estimates of the recoverable amounts for each individual acquired intangible asset is not publicly available, their aggregated amounts should still correlate with firm-level metrics of performance and risk (Crouzet, Eberly, Eisfeldt, and Papanikolaou 2022; Crouzet and Eberly 2023).

Prior research on impairments of intangible assets focuses predominantly on goodwill impairments (Glaum et al. 2018; Kim 2023; Li and Sloan 2017). We are not aware of any research that investigates firms' impairment decisions of definite and/or indefinite intangible assets but there are good reasons to expect substantial differences in the impairments of definite and/or indefinite

intangible assets compared to goodwill. Managers have substantial discretion in testing intangible assets for impairment (see Section 2). This is because these assets are normally not traded on active markets, so that managers have to estimate future expected cash flows. If managers make use of this discretion to opportunistically time the impairments, we expect an association between impairments and financial reporting quality. We have no expectation for which type of intangible assets the association will be strongest. On the one hand, definite intangibles by construction have a shorter useful life than indefinite intangibles (and goodwill), so the discretion is smaller because the internal valuation model has a shorter time horizon. Moreover, a shorter useful life does not allow large variation in the timing of impairments. Finally, these intangibles are amortized, resulting in a steady decrease of the book value independent of any impairments and Li and Sloan (2017) document that goodwill impairments became more discretionary after the introduction of the impairment only approach. On the other hand, definite intangibles are tested for impairment as part of a group of assets, which increases the discretion. We expect that the discretion for both types of acquired intangibles is smaller than for goodwill, which has an indefinite useful life and is tested on the level of the reporting unit. Moreover, any cash flows from (unrecognized) internally generated goodwill will inevitably reduce the impairment pressure for goodwill, whereas it is possible to separate the identifiable intangible assets from the already existing unrecognized goodwill.

While we do not make a prediction for which type of intangibles the use of discretion will be strongest, we expect some use of managerial discretion in the timing of impairment decisions for all types of intangible assets. The literature on goodwill impairments shows an association between impairments and manager incentives, which points towards the use of managerial discretion in the timing of impairment decisions. For example, Beatty and Weber (2006) find a link between impairment decisions and debt covenants, compensation contracts, and CEO tenure.

Similarly, Glaum et al. (2018) document the importance of CEO compensation concerns and preferences for smooth earnings to determine goodwill impairments. Caplan, Dutta, and Liu (2018) finds a higher impairment probability if the acquisition took place in a year with an internal control deficiency. Because intangible asset impairment decisions share similar characteristics with the impairment of goodwill, the empirical evidence from the goodwill impairment can also inform intangible impairment decisions.

Next, we consider the role of firm attributes in recording impairment of intangibles. Firm's business characteristics determine the value of firm's acquired intellectual capital (Crouzet et al. 2022) and, in the absence of managerial discretion, should explain impairment incidences. That is, losses, low revenue growth, or a low book-to-market ratio should be associated with impairment incidences. However, we expect substantial variation in which business characteristics are associated with impairments across the types of intangibles. For example, the definite intangible assets, such as patents on the current products, closely relate to current sales growth whereas the value of indefinite intangible assets, such as in-process R&D, better relates to long-term growth opportunities that is captured by the firm's market value.

### RQ2: Do internal monitoring mechanisms moderate the recognition of impairments of intangibles?

To further explore the link between managerial discretion and intangible impairments, our second research question deals with the role of internal monitoring. The objective of a firm's monitoring system is to align the incentives of the shareholders, the board, and the management (Armstrong, Guay, and Weber 2010). Stronger corporate governance disciplines managers in engaging in less opportunistic accounting practices (e.g., Bushman, Chen, Engel, and Smith 2004; García Lara, García Osma, and Penalva 2009) and lead to more frequent and timely intangible asset impairments (Li and Sloan 2017; Kim 2023). Therefore, we expect that firms with better governance will react more strongly to impairment indicators like a high book-to-market ratio,

whereas firms with weak monitoring can evade impairments. In contrast, if firms do not use discretion to opportunistically time the impairments, we do not expect a moderating effect of monitoring.

For goodwill, there is strong evidence for a moderating effect for internal monitoring with impairment pressure on goodwill impairment. For example, there is evidence that auditors (Carcello, Neal, Reid, and Shipman 2020; Lobo, Paugam, Zhang, and Casta 2017; Favere-Marchesi and Emby 2018; Stein 2019) and the board composition (Shepardson 2019) affect the probability to record a goodwill impairment. We are not aware of any research that investigates whether firms' governance system affects non-goodwill intangible assets but expect that intangible impairment decisions involve at least some degree of managerial discretion. Consequently, we expect that the literature on monitoring in the context of goodwill impairments also informs the impairments of intangible assets.

### RQ3: *How are impairment events perceived by analysts and the media?*

Our third research question deals with the firms' incentives to recognize or forgo an impairment for acquired intangible assets stemming from external monitoring. If capital markets and other stakeholders perceive an impairment as bad news, managers benefit from delaying the impairment because it reduces capital market pressure. At the same time, using discretion creates costs for the managers, even if it does not cross the threshold to fraud (Dechow, Ge, and Schrand 2010). Accordingly, managers will evaluate the costs and benefits in deciding whether to use discretion in an impairment decision.

Prior research documents how external monitoring affects the probability to recognize impairment losses for goodwill. For example, there is evidence that analysts (Ayres et al. 2019), institutional shareholders (Cheng et al. 2010), the strength of a countries enforcement system (Glaum et al. 2018), PCAOB inspections (Kim 2023) and the use of external valuation experts

(Gietzmann and Wang 2020) affect the impairment probability. We focus in our third research question on analysts and the media because we can directly observe how these external monitors cover the impairments of intangible assets.

The business press is an important information intermediary that disseminates information and creates new information over and above accounting information (Bushee, Core, Guay, and Hamm 2010; Guest 2021; Hope, Li, Liu, and Wu 2021; Bushman and Pinto 2023). Similarly, analyst participation in conference calls increases the informativeness of financial information, particularly when the firm's performance is poor (Matsumoto, Pronk, and Roelofsen 2011). If impairments are perceived as bad news and covered by the business press and/or in conference calls, the costs of those impairments for the manager are relatively high and also the incentives to delay impairments are high. In contrast, if the impairments do not attract coverage, managers have only low incentives to delay impairments.

At the same time, media and conference call coverages not only disseminate information, but also act as a watchdog for accounting fraud (Miller 2006; Dyck, Volchkova, and Zingales 2008). If journalists and analysts realize that the asset value decreased already in previous periods, but the manager used discretion to delay an impairment, the coverage of the actual impairment will be particularly negative, and the costs of the impairment will be relatively high. Thus, if discretionary reporting decisions are actively discussed and questioned during a conference call, we expect managers to use managerial discretion in a less opportunistic way. Similarly, if discretionary impairments heavily trigger negative media coverage, we also expect a less opportunistic use of managerial discretion. Consequently, we are interested in how the impairment decision of intangible assets changes the attention on intangible assets during conference calls and how it affects the media tone of earnings-related news.

Goodwill impairments are well known for their presence in conference calls and in earnings news. Prior literature shows negative stock market reactions (Bens, Heltzer, and Segal 2011; Knauer and Wöhrmann 2016; Li, Shroff, Venkataraman, and Zhang 2011), downward revisions of analyst forecasts (Li et al. 2011) and a higher likelihood of CEO turnover (Cowan, Jeffrey, and Wang 2023) following goodwill impairments. We are not aware of similar analyses for non-goodwill intangibles. However, analysts and journalists are, akin all market participants, attention and capacity constraint (Blankespoor, deHaan, and Marinovic 2020). They cannot focus on all relevant factors during conference call questions or in their news article, but they have to focus on a few factors that are relevant to their work, e.g. making better analyst forecasts (Barron, Byard, Kile, and Riedl 2002) or writing more interesting news articles for their readers (Gentzkow and Shapiro 2010).

Because analysts frequently exclude extraordinary items and special asset impairments, such as the impairments of acquired intangible assets, from their forecasted earnings "street" (Brown, Call, Clement, and Sharp 2015), we expect that analysts focus on other aspects with a more direct influence on their earnings forecast (Brown et al. 2015) if they ask a question during a conference call. Similar to analysts, we expect that also the media coverage of earnings news picks-up the information from the impairments of acquired intangible assets less prominently and thereby allow managers to use managerial discretion without intensive public discussions. Although the media might serve as a watchdog (Miller 2006), most immediate earnings news coverage is done by computer algorithms that reiterate firms disclosures (Blankespoor, deHaan, and Zhu 2018). Additional background articles that are provided by journalists rely on the journalist's attention and experiences in discovering special topics in firms' financial statements that attract sufficient attention from their readers. Because journalists are highly attention and capacity constraint, they might focus on topics that were attention grabbing in the past, such as the more heavily debated

goodwill impairments, but neglect more detailed impairments, such as those of acquired intangible assets.

## 4. Research design

**Determinants analysis**

To investigate the determinants of the impairments of intangible assets, we estimate a linear probability model, where the *Impair: Indefinite Int* and *Impair: Definite Int* in period t+1 serve as our dependent variables. These variables take the value of one when *indefinite or definite intangible* assets are impaired in the next period, and zero otherwise. The binary specification of our dependent variables closely resembles the main approaches used by Li and Sloan (2017), Glaum et al. (2018), and Kim (2023) on the impairment incidences of the goodwill. We prefer this specification over their alternative continuous specification because there is less cross-sectional variation in the impairment amounts for intangible assets relative to goodwill impairments. For example, the standard deviation of the impairment amounts of definite intangibles is only 70 percent of the standard deviation of the goodwill impairment amounts (see the descriptive statistics in Table 1). For this reason, the decision whether to impair or not is arguably the more relevant decision. However, we find that our results are qualitatively unchanged if we use the impairment amounts (see Table C5 in Appendix C). To benchmark our findings, we also investigate the occurrence of goodwill impairments. Therefore, we define *Impair: Goodwill* as a binary variable taking the value of one when goodwill is impaired, zero otherwise.

We estimate a linear probability model in our main specifications and report probit models only in the appendix because probit and logit models can face the incidental parameter problem when using large numbers of fixed effects (deHaan, Moon, Shipman, Swanquist, and Whited 2023;

Greene 2019) and they do not allow to compare coefficients between our different impairment specifications and with interaction terms easily (Kuha and Mills 2020).[4]

We include several explanatory variables that we expect to be associated with future impairments of definite and indefinite intangible assets. Our first set of impairment determinants are variables that measure the firm's reporting quality and reporting incentives. If firms use discretion in their impairment decisions, we expect an association with those proxies. We construct five measures for reporting quality of firms: the financial statement divergence score, *Amiram MAD* (Amiram, Bozanic, and Rouen 2015), the existence of an internal control weakness, *WEAK 404* (Costello and Wittenberg-Moerman 2011; Caplan et al. 2018), and an audit opinion that is anything else than a standard unqualified opinion, *Audit Opinion* (Hribar, Kravet, and Wilson 2014). To avoid any mechanical reverse effects from the impairment on the three reporting quality measures *(Amiram MAD, WEAK 404, Audit Opinion)*, we measure these variables in period t to explain the impairment incidences of acquired intangibles in period t+1. Lastly, we capture earnings management incentives from well-known discontinuities within the earnings distribution for earnings smoothing (*Smooth*) and big bath accounting (*Earns Bath*) following Riedl (2004) and Glaum et al. (2018). Because the earnings management incentives directly apply to the impairment period and are not mechanically affected by the impairments, we measure these variables in period t+1.

Our second set of impairment determinants are variables that capture the firm's business characteristics. In the absence of managerial discretion, these characteristics indicate impairment pressure. We include variables for merger or acquisition incidences in period t *(M&A)*, the book-to-market ratio (*BTM*), the firm's current profitability (*RoA before Impairm.*), firm size using the

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[4] Our inferences remain unchanged if we use a probit model instead of a linear probability model (see Table C2 in the Appendix C).

logarithm of total sales (*Size*)[5], growth in sales (*Sales Growth*), leverage (*Leverage)*, the number of business segments as a measure of complexity (*# Business Segments)*, the research and development spending (*R&D Spending)*, inventory and receivables (*Inventory & Receivables),* and default risk using the *Altman's Z* score (*Altman Z*). We also control for the net amounts of indefinite and definite intangible assets (*Indefinite Int, Definite Int*) and the net amounts of goodwill (*Goodwill)*. To avoid mechanical correlations between the different financial reporting variables and the impairment incidences of acquired intangibles, we measure control variables in period t, but look at the impairment incidences one year later, i.e., in period t+1. We use the market assessment of the firm (*BTM*) and the firm's current profitability (*RoA before Impairm.*) from the same period as the impairment, i.e., period t+1, because concerns about mechanical correlations do not apply here. All variable definitions can be found in Appendix A of the paper.

To sum up, we estimate the following equation for determining intangible asset impairments:

$$Impair_{t+1} = \sum_{k=1}^{K=5} \beta_k \, ReportingQuality_{i,t}^{k} + \sum_{l=1}^{L=13} \beta_{l+5} \, BusinessCharacteristic_{i,t}^{k} + Industry \times Time \, FE + \varepsilon_{t+1} \quad\quad (1)$$

Where *Impair* is either *Impair: Indefinite Int, Impair: Definite Int*, or *Impair: Goodwill*. We follow Kim (2023) and include industry-by-time fixed effects to alleviate potential differences in the time trends between industries. To account for dependencies of the standard errors within the panel, we cluster heteroscedasticity-robust standard errors on the firm level.

**Analysis of internal monitoring**

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[5] We diverge from prior research and do not model firm size with the logarithm of total assets, because acquired intangibles and goodwill are part of total assets, which would introduce potential multicollinearity problems (Liss et al. 2023). We do pairwise correlations of different size proxies with acquired intangible assets and goodwill and find that total sales alleviate this concern.

In our second model, we investigate how firm's internal corporate governance moderates the influence of impairment pressure on impairment incidence. We follow prior studies and use the firm's book-to-market ratio as our main variable for measuring impairment pressure (Li and Sloan 2017; Kim 2023; Ramanna and Watts 2012). A higher book-to-market ratio indicates that the market value approaches the reported book value and that a firm might have to impair assets within the next period. We interact our impairment pressure variable with a broad set of different corporate governance variables used in prior literature to investigate whether stronger corporate governance can mitigate opportunistic impairment decisions. Therefore, we re-estimate our model of equation (1) and include the interaction effect on the book-to-market ratio with one of five measures for the strength of corporate governance at time t. Specifically, we estimate the following regression model:

$$
\begin{aligned}
Impair: Indefinite\ Int_{t+1} 
&= \beta_1 BTM_{t+1} + \beta_2 Governance_{t+1} + \beta_3 BTM_{t+1} \times Governance_{t+1} \\
&+ Reporting\ Quality\ Variables + Business\ Characteristics + Industry \\
&\times Time\ FE + \varepsilon_{t+1} \qquad\qquad (2)
\end{aligned}
$$

Where the reporting quality variables and business characteristics are the same as in model (1). For the governance variables, we use: the share of non-executive board members that are accounting experts (*NED: Accounting Experts*) (Chychyla, Leone, and Minutti-Meza 2019; Krishnan and Visvanathan 2008), the non-executive members' busyness (*NED: Distraction*) and the executive directors' busyness (*ED: Distraction*) (Fich and Shivdasani 2006), top executive turnovers (*CEO Turnover*) (Francis, Hanna, and Vincent 1996; Riedl 2004),[6] and the share of the variable payments in managerial compensation contracts[7] *(Variable Compensation)* (Glaum et al. 2018; Beatty and Weber 2006; Ramanna and Watts 2012).

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[6] Results are unchanged in we use CFO turnover instead of CEO turnover.

[7] We focus on the bonus share for the interaction with the market impairment pressure but, in contrast to Glaum et al. (2018), refrain from incorporating the stock- and option-based compensation. The stock- and option-based compensation show mechanical correlations with this impairment pressure indicator which would contaminate the interaction term with multicollinearity.

We expect the interaction term of *BTM* × Governance to be positive for *NED: Accounting Experts* and *CEO Turnover* while negative for *NED: Distraction, ED: Distraction, and Variable Compensation*. A more detailed definition of our governance variables can be found in Appendix A.

**Perception of intangible impairments in conference calls and media coverage**

Lastly, we investigate a potential mechanism for the extensive use of managerial discretion in the impairment decisions of acquired intangible assets: weaker reactions to intangible asset impairments by analysts and the media. To investigate this potential mechanism, we investigate whether analyst's ask questions about intangibles and whether the probability of asking about intangibles increases if there is an impairment of an acquired intangible in that period. We focus in our analysis on the Q&A part of the conference call because we are interested whether analysts actively demand information about the intangible assets and related impairments. Thereby, we provide first empirical evidence on the information demand by analysts about intangibles if they are impaired.

In our linear model, our main variables of interest are the binary variables *Impair: Indefinite Int* and *Impair: Definite Int* that take the value of one when *indefinite or definite intangible* assets are impaired in the next period, and zero otherwise (similar to Li and Sloan 2017; Glaum et al. 2018; Kim 2023). To benchmark our results, we also include a binary variable for the impairment of goodwill.

Our control variables and the industry-by-time FEs are similar to those used in equation (1), with some notable differences. First, we use all control variables from the same period because reverse causality is no concern because the conference calls happen after the financial statement gets published. Second, we control for the bottom-line RoA instead of the RoA after impairments

to capture any incremental effect of the intangible impairments that come in addition to their mechanical effects on the bottom-line net income. Third, we also control for the impairment amounts of indefinite and definite intangibles to make sure that it is the impairment incidence and not the impairment amount that drives the conference call sentiment. Therefore, we estimate the following linear regression model:

$$
\begin{aligned}
Mentions\ Intangibles_t \\
&= \beta_1 Impair: Indefinite_t + \beta_2 Impair: Definite_t + \beta_3 Impair: Goodwill_t \\
&+ \beta_4 Impair\ Share: Indefinite_t + \beta_5 Impair\ Share: Definite_t \\
&+ \beta_6 Impair\ Share: Goodwill_t + Controls + Industry \times time\ FE + \varepsilon_t
\end{aligned}
\tag{3}
$$

Second, we compare the sentiment in the conference calls' Q&A sections between years with and without an acquired intangible asset impairment. Our dependent variable is the average sentiment in the Q&A sections of the firm's analyst conference calls that we obtain using the pre-trained machine learning model for sentiment analysis of financial data, called FinBert (Huang, Wang, and Yang 2023). FinBert provides a validated, objective, and subject-specific way to extract sentiment from conference call data (Huang et al. 2023), which makes FinBert our approach of choice.[8] From FinBert, we obtain sentiment information, which is coded as one, if it has a positive sentiment, zero for a neutral sentiment and minus one, if the sentiment is negative.

$$
\begin{aligned}
NegativeTone_t \\
&= \beta_1 Mentioning\ Intangible_t + \beta_2 Mentioning\ Goodwill_t \\
&+ \beta_3 Impair: Indefinite_t + \beta_4 Impair: Definite_t + \beta_5 Impair: Goodwill_t \\
&+ \beta_6 Impair\ Share: Indefinite_t + \beta_7 Impair\ Share: Definite_t \\
&+ \beta_8 Impair\ Share: Goodwill_t + Controls + Industry \times time\ FE + \varepsilon_t
\end{aligned}
\tag{4}
$$

Third, we investigate how intangible impairments affect the media tone of earnings news. We use Ravenpack's BEE score (*BEE*) (Bushman, Williams, and Wittenberg-Moerman 2017; Mohrmann and Riepe 2023; Holzman, Miller, and Twedt 2023) as our first dependent variable. It measures the average news sentiment for each firm in a given year. A higher BEE score implies

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[8] Our inferences are unchanged if we use the bag-of-words approach by Loughran and McDonald (2011).

that firms are covered more positively by news articles. We predict that intangible asset impairments impact news coverage less than goodwill impairments. To disentangle differing effects of impairments on positive and negative news content, we also investigate negative news sentiment as a binary variable (*Negative Sentiment*). Intangible asset impairments might have a greater effect on negative sentiment of the business press. All control variables and fixed-effects are the same as in our analysis of the conference call sentiment (see equation 3).

## 5. Sample and descriptive statistics

To investigate our research questions, we use data from several data sources. First, we construct our sample by obtaining accounting and auditing data from *Compustat* and *Audit Analytics* for the period from 2002 to 2021. Our sample begins in 2002, as SFAS 141/142 became effective that year. We require firms to have non-missing equity book values, total assets, and net income. In addition, we exclude firms with market values of less than USD one million. Additionally, we restrict our sample to nonfinancial firms because the accounting and auditing of intangible assets in banks differs significantly (Hribar et al. 2014; Ettredge, Xu, and Yi 2014). For our analyses of the effect of corporate governance and media on intangible asset impairments, we merge our dataset with data from *BoardEx* and *Ravenpack*.

Second, we combine these data sources with a hand-collected database on acquired intangible assets (Landsman et al. 2021; Liss, Riepe, and Sievers 2023). This database contains the net amounts of acquired intangible assets, broken down into definite and indefinite intangibles, from the notes of annual financial statements obtained from the SEC Edgar webpage.

In addition to the net amount of acquired intangible assets, we extend this database significantly by hand collecting the amounts of intangible asset impairments from the note sections of financial statements. We key search each financial statement for words like "impairment", "intangible asset impairment", and "intangibles impaired" to identify the relevant sections within

each 10-K. Then, we collect the occurrence and particular amounts of different intangible asset impairments, which allows us to investigate definite and indefinite intangible impairments separately and in comparison, to a goodwill impairment. Goodwill impairments are collected from *Compustat*. Appendix B provides an example of Chico's Fas Inc. (2015) providing detailed disclosures about acquired net amounts of intangibles as well as information about intangible asset impairments. Our sample comprises firms with the largest market capitalizations in each of the Fama-French 12 industries. Our main sample contains 7,107 firm-year observations of 1,049 firms. We are unaware of any paper that has collected information on impairments about intangible assets of this magnitude.

Table 1 reports descriptive statistics on both dependent and independent variables used in our study. On the one hand, indefinite intangible impairments appear in one out of five cases, when firms have indefinite intangible assets on the balance sheet. Definite intangible assets, on the other hand, only appear in about ten percent of firm years. Our variables are largely in line with previous research on goodwill impairments (e.g. Li and Sloan, 2017; Glaum et al. 2018).

**[Insert Table 1 about here]**

**6. Results**

**Determinants of impairments**

We begin with univariate analyses of the impairments of intangibles with indefinite and definite useful life. Thereby, we are not only interested in the share of firm-years with impairments, but also in the share of impairments conditional on a goodwill impairment. This provides initial evidence on whether impairments of intangibles are isolated events or occur jointly with goodwill impairments.

In Panel A of Table 2 we report the number of firm-years with and without an impairment of indefinite intangible assets. In total, there are 1,302 firm-years with an impairment, a share of

18.36 percent. Next, we look at the share of impairments conditionally on whether the firm records a goodwill impairment in the same year. If there is a goodwill impairment, the share of an impairment of indefinite intangibles increases to 61.67 percent. In contrast, the share is only 8.14 percent for firm-years without goodwill impairments. That is, in several cases firms record both goodwill and an indefinite intangible impairment in the same year. However, there are still many cases where only one asset type is impaired, but not both. We interpret this finding as early evidence that the determinants of impairments are different. Next, we look at impairments of indefinite intangibles conditionally on impairments of definite intangibles. The number of instances where both types of intangibles are impaired simultaneously is notably smaller. Only 43.22 percent of the firm-years with impaired definite intangibles also record an impairment of indefinite intangibles.

**[Insert Table 2 about here]**

In Panel B of Table 2, we report the number of impairments of definite intangible assets. The results are strikingly different. First, the unconditional mean is much lower at 8.22 percent. Second, the existence of goodwill impairment only increases this share to 18.91 percent. That is, the relation between the two types of impairments is much lower than between indefinite intangibles and goodwill.

After having established a significant but far from perfect correlation between impairments of indefinite intangibles and goodwill and a much lower relation between definite intangibles and goodwill, we turn to investigating the determinants of such impairments in a multivariate setting. We report the regression results in Table 3. In Column 1 (column 2) we investigate the determinants of impairments of indefinite (definite) intangible assets. In Column 3 we repeat the analysis with goodwill impairments as a benchmark. We begin with a set of reporting quality variables. These variables are expected to be significant if managers use discretion in their impairment decisions. We find that the lower reporting quality as approximated by the Amiram et al. (2015) MAD

measure is associated with fewer impairments in the subsequent period. In contrast, adverse audit opinions on the internal control system or a non-standard audit opinion for the financial statements increases the likelihood of subsequent impairments, indicating an impairment backlog that has to be corrected to remedy the auditor's concerns. Finally, we find a positive association with indicators for big bath accounting and earnings smoothing. For the impairments of definite intangibles in Column 2 the results are much weaker, both in statistical significance and in the size of the coefficients. Only the Amiram MAD measure and the big bath indicator turn significant on the 0.05 level and the smoothing indicator is marginally significant. When comparing our results with goodwill impairments, we find very similar results to the indefinite intangibles regression. The only statistically significant difference is for the big bath indicator (see column 4). In contrast, the difference between definite intangibles and goodwill is significant for all variables except the Amiram MAD. We interpret these findings as evidence that managers use similar amounts of discretion in their impairment decisions for indefinite intangibles and goodwill impairments. In contrast and in line with our expectations, there is less evidence for discretion in impairments of definite intangibles, whose book values decrease due to the amortization charges anyway.

**[Insert Table 3 about here]**

Our next set of variables of the firms' business characteristics should explain impairments in the absence of managerial discretion. We find some notable differences between indefinite intangibles and goodwill. Prior literature used primarily the book-to-market ratio and the return on asset as economic indicators for an impairment (e.g., Li and Sloan 2017; Kim 2023). While we find a significant association of impairments with both indefinite and definite intangibles, the coefficients are significantly smaller than for goodwill. That is, impairments of intangibles react less to business characteristics than goodwill impairments. At the same time, we find a significant association with the M&A indicator, which is insignificant for goodwill. That is, firms are more

likely to impair indefinite intangibles – but not goodwill or definite intangibles – in the year after a merger or acquisition. This implies that managers use their discretion differently, i.e., rather than delaying impairments like for goodwill, managers impair indefinite intangibles early. Because goodwill is tested for impairment on the reporting unit level, an intangible impairment reduces the goodwill's impairment pressure in that reporting unit. We will return to the question of why managers follow this strategy when we investigate the reactions of stakeholders like analysts and the media in our third research question. For the remaining variables, we find no notable differences between intangibles and goodwill.

**The role of internal monitoring**

In our next set of analyses, we investigate whether better corporate governance can increase the association between economic indications for impairments and the actual recognition of an impairment. We would expect such an effect if (1) firms use discretion in their impairment decisions and (2) better monitoring through governance mechanisms can moderate managerial discretion. In our main analysis, we conduct these tests for the impairment of intangible assets with indefinite useful life because we expect only limited managerial discretion for definite intangible assets due to the amortization. However, we also test for the effect of better monitoring of impairments of definite intangibles and goodwill in additional analyses reported in section 7. For our tests we follow Kim (2023) and use the book-to-market ratio as our economic indicator for an impairment.

First, we use two variables related to the firms' non-executive directors. We find that firms with a higher share of accounting experts among their non-executive directors have a higher association between BTM and impairments (column 1), whereas the busyness of the non-executive directors reduce the association between MTB and impairments (column 2). Second, we use characteristics of the executive directors and find that their number of board appointments in other

firms result in a negative interaction effect (column 3). In contrast, newly appointed CEOs that are not responsible for the acquisition of the intangibles increase the association between MTB and impairments (column 4). Interestingly, our results show that the main effect of CEO turnover is negative and marginal significant, so that big bath accounting seems unlikely. Finally, the importance of managers' variable compensation relative to the base salary decreases the association between MTB and impairments (column 5).

**[Insert Table 4 about here]**

In summary, for all of our five governance variables we find a significant interaction effect with the expected sign. This strengthens our interpretation of the reporting quality variables from Table 3 as evidence for discretionary choices in the impairment decisions of indefinite intangible assets. At the same time, it shows that better monitoring is successful in reducing the use of managerial discretion.

**Conference Call and Media Sentiment**

To answer our third research question, we estimate models (3) and (4) and investigate the perception of participants in conference calls and the media to impairments of intangibles and goodwill. We start by analyzing how often the word "intangible" is used in the Q&A part of the conference call. This is arguably more important than the presentation part because it shows whether analysts actively request information about the impairments. Only the impairment of goodwill significantly increases the use of the word "intangible", but not the impairment of indefinite or definite intangibles. That is, it seems that impairments of intangibles do not generate the same level of scrutiny by analysts as goodwill impairments. We report the regression results in Table 5 and illustrate the different effects of intangible impairments and goodwill impairments in Figure 1.

**[Insert Table 5 & Figure 1 about here]**

Next, we analyze the overall tone of the conference call using a tone measure that relies on the FinBert machine learning algorithm by Huang et al. (2023). We again focus on the Q&A part of the conference call because the managers' incentives to avoid impairments are larger if they negatively affect the analysts' perception. We report in column 2 that neither mentioning the term "intangibles", the presence of an intangible impairment, nor the size of the intangible impairment significantly affect the tone of the conference call. In contrast, mentioning the term "goodwill" results in a more negative tone and the tone becomes further negative if the size of the goodwill impairment is larger.

Next, we use a similar analysis but use the sentiment in firms' media coverage as dependent variable. In column 3 we use *Ravenpack*'s standardized BEE index and find no significant effect of impairments of intangibles. In contrast, a goodwill impairment is associated with a more negative media sentiment. In Column 4, we investigate whether an impairment increases the likelihood that the sentiment is negative (i.e., that the standardized BEE is below zero). We find a positive association with the size of indefinite intangible impairments, whereas goodwill impairments are associated with a negative sentiment independent from their size. Importantly, the effect for goodwill is much larger than for intangibles. While a goodwill impairment increases the probability of a negative sentiment by around 7 percent, even the extreme case of a total impairment of all indefinite intangible assets would increase the probability by only 3.2 percent.

In summary, we find that impairments of intangibles create less scrutiny in conference calls and affect the tone in these calls less negatively than impairments of goodwill. The same holds for the sentiment of the media coverage. This implies that impairments of intangibles are less costly for the managers and can explain why they seem to impair intangibles earlier than goodwill.

**7. Robustness checks and additional analyses**

In our main tests for the determinants of impairments we use OLS regressions to avoid the incidental parameter problem that can occur in logit or probit regressions with a large number of fixed effects. In Table C2 in Appendix C we replicate Table 3 but use probit regressions instead. We find that all inferences are qualitatively unchanged from the OLS results.

In Table C3 Panel A in Appendix C, we rerun our monitoring analyses for intangibles with definite useful life. We find that only one out of five governance variables has a significant interaction effect with BTM. That is, in contrast to indefinite intangible assets, better monitoring does not improve the association between the book-to-market ration as an economic indicator of impairments and actual impairments. This implies that the low association between BTM and impairments in Table 3 for definite intangibles is most likely not the result of the use of managerial discretion. This is in line with the mostly insignificant reporting quality indicators in Table 3 and our theoretical reasoning in Section 3: due to the annual amortization charges the definite intangible assets are not overvalued and therefore no impairments are necessary even if the book-to-market ratio is high. In Table C3 Panel B in Appendix C, we replicate the analyses for goodwill impairments. For four of the five monitoring proxies we find significant interaction effects, so that our findings are in line with prior research.

In Table C4 in Appendix C we replicate Table 4 but use analyst related variables to approximate the strength of the governance system. Specifically, we use the number of analysts following *(# Analyst Coverage)*, an indicator variable that takes the value one if the analyst following is above the median (*Above Median Analyst*) (Yu 2008), and a variable that indicates beating analyst EPS[9] (*Benchmark Beating*). Moreover, we use the auditor industry specialization as another common external monitoring variable (Reichelt and Wang 2010). In line with our

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[9] Investor attention and market monitoring shows strong discontinuities around these benchmarks although the occurrence of benchmark beating incentives also link to reporting quality.

detailed analysis of the content of the analyst calls, these variables are only weakly associated with impairments of indefinite intangibles when interacted with the book-to-market ratio. In contrast, the interaction effects are strongly associated with goodwill impairments.

In Table C5 in Appendix C, we use the continuous impairment amounts of the different types of intangible assets and goodwill as our dependent variable. In Panel A we rerun the determinants analysis and find similar results to our main analysis. However, while we continue to find evidence for managerial discretion for indefinite intangibles and goodwill, there is evidence that the internal control weaknesses and adverse audit opinions are significantly smaller for indefinite intangibles than for goodwill. This is in line with our interpretation that firms impair indefinite intangibles before goodwill, so that there is a smaller impairment backlog for intangibles. In Panel B, we rerun the monitoring analysis and continue to find significant interaction effects with the majority of our monitoring proxies.

## 8. Conclusion

In this study we investigate firms' impairment strategies for intangible assets. Intangible assets are a major asset class whose importance increased in the last year and is expected to become even more important in the future. Our results imply that firms use discretion in their impairment decisions for intangibles with indefinite useful life just as in the case of goodwill impairments. Interestingly, they use their discretion in a different way than for goodwill. While impairments of goodwill are delayed as shown in previous research, we find early impairments for intangibles with indefinite useful life. In contrast, we find no evidence for discretion in the impairments of definite intangible assets. These assets are amortized and, hence, are less likely to be impaired. In further analyses, we document that better corporate governance can mitigate discretionary choices.

We also document a potential reason for why the strategies are different for intangibles and goodwill. By analyzing conference calls, we find that analysts demand less information about the

impairments of intangibles relative to goodwill impairments. In line with this finding, also the media coverage is less negative after an intangible impairment than after a goodwill impairment. Thus, intangible impairments are under the radar and create less costs for the firms. At the same time, they decrease the impairment pressure for goodwill. For this reason, more vigilant analysts and journalists could lead to more timely impairments of intangibles and goodwill.

We acknowledge that our study is subject to certain limitations. First, our study is exploratory in nature and provides evidence of associations, not causation. We further note that some associations that we document, such as firm attributes, also reflect broader management decisions or management styles. Nevertheless, we argue that the associations are still informative to many stakeholders because they allow outsiders to better assess the quality of a firm's acquired intellectual capital. Furthermore, the balance sheet information on the acquired intangible assets only include the carrying values and the impairments on the assets but does not allow us to assign each asset to a previous takeover transaction (see Ashby, Chyz, Myers, and Whipple (2020) for goodwill).

Accounting for intangible assets is a key topic for both standard setters and academics. Our study is an important first step to understand how and why firms choose to use discretion in their impairment decisions. Our results suggest that it is not the impairment only approach in itself that leads to delayed impairments, but rather the incentives of the management.

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**Figure 1: Conference calls and analysts' attention toward intangibles around impairment**

Figure 1 shows the relative frequencies of mentioning the words "intangible" and "goodwill" during the Q&A session of firm's earnings conference calls and how it is affected by the impairments of intangibles and goodwill.
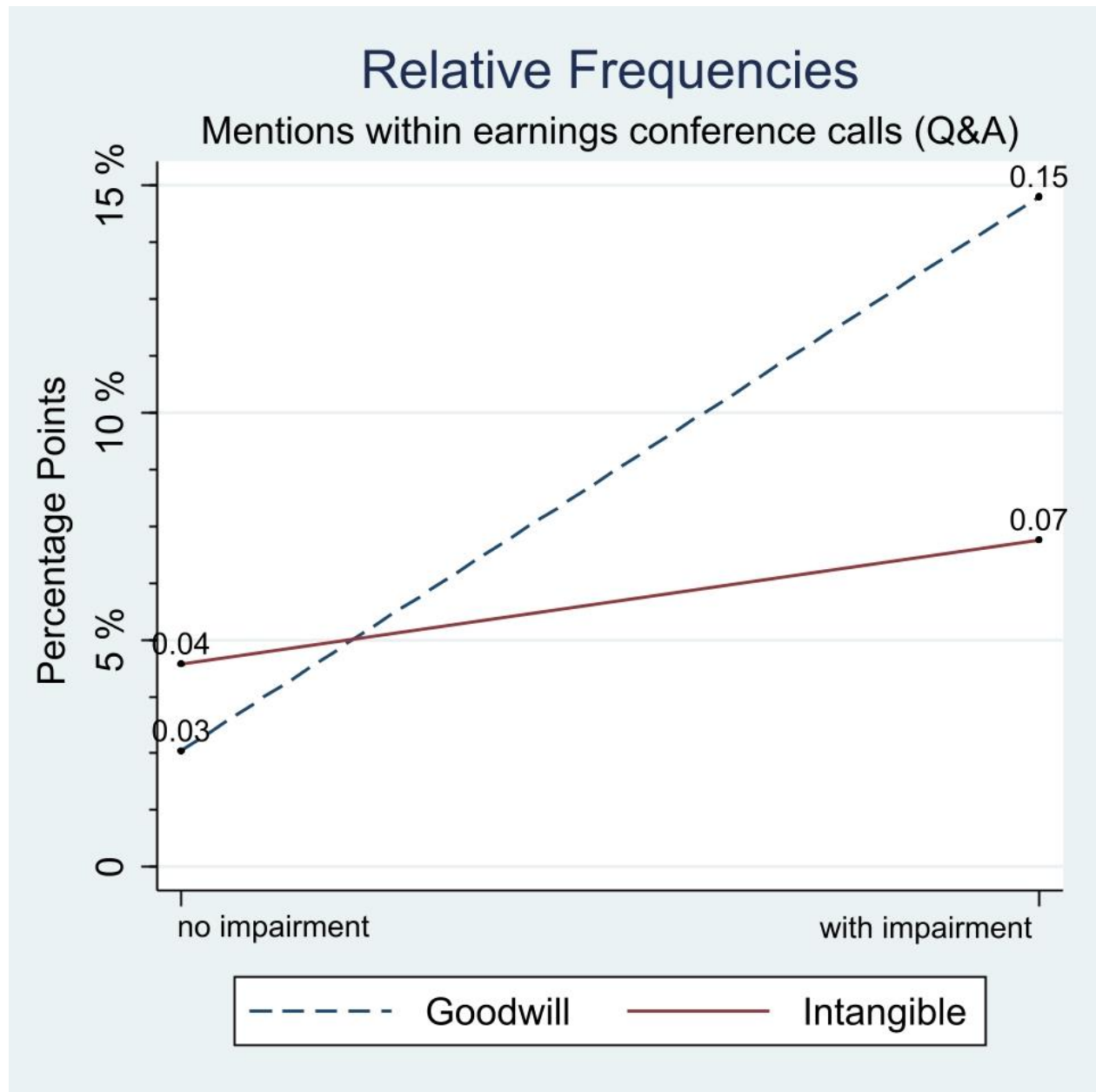
**Table 1: Descriptive statistics**

This table presents the descriptive statistics for the sample. Data are for years 2002 through 2021. See Appendix A for variable definitions.

| Variables | N | Mean | SD | p5 | p25 | p50 | p75 | p95 |
|---|---|---|---|---|---|---|---|---|
| ***Intangible Assets and Goodwill*** | | | | | | | | |
| Impair: Indefinite Int. $_{(t+1)}$ | 7,090 | 0.1836 | 0.3872 | 0 | 0 | 0 | 0 | 1 |
| Impair: Definite Int. $_{(t+1)}$ | 7,090 | 0.0822 | 0.2747 | 0 | 0 | 0 | 0 | 1 |
| Impair: Goodwill $_{(t+1)}$ | 7,090 | 0.1910 | 0.3931 | 0 | 0 | 0 | 0 | 1 |
| Impair Share: Indefinite Int. | 7,090 | 0.0275 | 0.1011 | 0 | 0 | 0 | 0 | 0.1875 |
| Impair Share: Definite Int. | 7,090 | 0.0083 | 0.0451 | 0 | 0 | 0 | 0 | 0.0231 |
| Impair Share: Goodwill | 7,090 | 0.0406 | 0.1531 | 0 | 0 | 0 | 0 | 0.2880 |
| Indefinite Int | 7,090 | 0.0718 | 0.1169 | 0.0010 | 0.0071 | 0.0253 | 0.0826 | 0.2987 |
| Definite Int | 7,090 | 0.0555 | 0.0685 | 0 | 0.0062 | 0.0295 | 0.0788 | 0.2031 |
| Goodwill | 7,090 | 0.1871 | 0.1480 | 0 | 0.0622 | 0.1608 | 0.2871 | 0.4753 |
| ***Reporting Quality Indicators*** | | | | | | | | |
| Amiram MAD | 7,090 | 0.0227 | 0.0066 | 0.0128 | 0.0178 | 0.0220 | 0.0269 | 0.0347 |
| WEAK 404 | 7,090 | 0.0450 | 0.2073 | 0 | 0 | 0 | 0 | 0 |
| Audit Opinion | 7,090 | 0.3111 | 0.4630 | 0 | 0 | 0 | 1 | 1 |
| Earns Bath. $_{(t+1)}$ | 7,090 | 0.0415 | 0.1994 | 0 | 0 | 0 | 0 | 0 |
| SMOOTH. $_{(t+1)}$ | 7,090 | 0.2030 | 0.4022 | 0 | 0 | 0 | 0 | 1 |
| ***Business Model Indicators*** | | | | | | | | |
| M&A | 7,090 | 0.4111 | 0.4921 | 0 | 0 | 0 | 1 | 1 |
| BTM $_{(t+1)}$ | 7,090 | 0.4683 | 0.5030 | -0.0357 | 0.2123 | 0.3908 | 0.6524 | 1.3175 |
| ROA before Impair. $_{(t+1)}$ | 7,090 | 0.1164 | 0.1412 | -0.0606 | 0.0429 | 0.0911 | 0.1669 | 0.3629 |
| Size | 7,090 | 7.4903 | 1.6153 | 4.7709 | 6.4223 | 7.5224 | 8.5849 | 10.1325 |
| Sales Growth | 7,090 | 0.0632 | 0.1663 | -0.1877 | -0.0179 | 0.0489 | 0.1304 | 0.3713 |
| Leverage | 7,090 | 0.4770 | 0.2238 | 0.1397 | 0.3217 | 0.4582 | 0.5993 | 0.8836 |
| Business Segment | 7,090 | 6.8986 | 5.0993 | 1 | 3 | 6 | 11 | 16 |
| R&D Spending | 7,090 | 0.0224 | 0.0444 | 0.0000 | 0.0000 | 0.0000 | 0.0230 | 0.1159 |
| Altman's Z | 7,090 | 1.9532 | 0.9466 | 0.6871 | 1.2893 | 1.8170 | 2.4684 | 3.7363 |
| Inventory & Receivables | 7,090 | 0.2414 | 0.1596 | 0.0324 | 0.1103 | 0.2198 | 0.3389 | 0.5416 |
| ***Governance Variables*** | | | | | | | | |
| NED: Accounting Experts | 6,180 | 0.1412 | 0.1404 | 0.0000 | 0.0000 | 0.1250 | 0.2222 | 0.4000 |
| NED: Distraction | 6,179 | 3.4293 | 1.4060 | 1.4286 | 2.3846 | 3.2308 | 4.2857 | 6.1538 |
| ED: Distraction (# Boards) | 6,050 | 2.2232 | 1.4832 | 1 | 1 | 2 | 3 | 5 |
| CEO Turnover | 5,285 | 0.0047 | 0.0686 | 0 | 0 | 0 | 0 | 0 |
| Variable Compensation | 5,307 | 0.0787 | 0.1426 | 0 | 0 | 0 | 0.0973 | 0.4276 |
| # Analyst Coverage | 7,090 | 9.1158 | 8.7422 | 0 | 1 | 7 | 15 | 26 |
| Above Median Analyst Coverage | 7,090 | 0.5179 | 0.4997 | 0 | 0 | 1 | 1 | 1 |
| Benchmark Beating | 5,474 | 0.0216 | 0.1452 | 0 | 0 | 0 | 0 | 0 |
| Auditor Industry Leader | 7,090 | 0.3240 | 0.4680 | 0 | 0 | 0 | 1 | 1 |

**Table 1: Descriptive statistics (continued)**

| Variables | N | Mean | SD | p5 | p25 | p50 | p75 | p95 |
|---|---|---|---|---|---|---|---|---|
| *Media Tone* | | | | | | | | |
| Mentioning "Intangible": Q&A | 5,441 | 0.0506 | 0.2891 | | | | | |
| Mentioning: "Goodwill": Q&A | 5,441 | 0.0467 | 0.3160 | | | | | |
| FinBert Negative Tone: Present. | 5,407 | 0.2156 | 0.1380 | 0.0372 | 0.1079 | 0.1919 | 0.2962 | 0.4794 |
| FinBert Negative Tone: Q&A | 5,407 | 0.0911 | 0.0524 | 0.0293 | 0.0530 | 0.0799 | 0.1158 | 0.1923 |
| BEE | 5,239 | 0.0000 | 1.0008 | -1.8179 | -0.3914 | 0.2363 | 0.2363 | 1.4757 |
| Negative Sentiment | 7,090 | 0.3030 | 0.4596 | 0 | 0 | 0 | 1 | 1 |
| LM Negative Tone: Present. | 5,361 | 0.3668 | 0.0877 | 0.2027 | 0.3209 | 0.3790 | 0.4271 | 0.4851 |
| LM Negative Tone: Q&A | 5,361 | 0.2955 | 0.0843 | 0.1179 | 0.2526 | 0.3083 | 0.3523 | 0.4085 |

## Table 2: Impairment incidences of Goodwill and Indefinite acquired intangible assets by Firm-Year

This table presents the mean values of the impairment incidences of indefinite intangibles, definite intangibles and goodwill.

*Panel A: Indefinite intangible assets*

| **Indefinite Intangible Assets** Impair: Indefinite Int. (t+1) | Total | | Impair: Goodwill (t+1) No (=0) | | Yes (=1) | | Impair: Definite Int. (t+1) No (=0) | | Yes (=1) | |
|---|---|---|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | % | N | % | N | % |
| No (=0) | 5,788 | **81.64** | 5,269 | **91.86** | 519 | **38.33** | 5,457 | **83.86** | 331 | **56.78** |
| Yes (=1) | 1,302 | **18.36** | 467 | **8.14** | 835 | **61.67** | 1,050 | **16.14** | 252 | **43.22** |
| N | 7,090 | | 5,736 | | 1,354 | | 6,507 | | 583 | |

*Panel B: Definite intangible assets*

| **Definite Intangibles Assets** Impair: Definite Int. (t+1) | Total | | Impair: Goodwill (t+1) No (=0) | | Yes (=1) | |
|---|---|---|---|---|---|---|
| | N | % | % | % | N | % |
| No (=0) | 6,507 | **91.18** | 5,409 | **94.30** | 1,098 | **81.09** |
| Yes (=1) | 583 | **8.22** | 327 | **5.70** | 256 | **18.91** |
| N | 7,090 | | 5,736 | | 1,354 | |

**Table 3: Indicators of Impairment of Acquired Intangible Assets and Goodwill**

This table presents the results of a linear probability model of the determinants of impairment of indefinite intangibles (column 1), definite intangibles (column 2), and goodwill (column 3). Columns (4) and (5) report Wald-test results on differences in the coefficients between the indicators for acquired intangible assets with indefinite (definite) useful economic lifetimes and Goodwill. Control variables capture portfolio-level indicators, impairment indicators from firms' business models, and impairment indicators that refer to firms' reporting quality and reporting incentives. Industry and time trends are captured in all specifications by including industry-by-time fixed effects. Constant term is not reported to enhance the readability of the table. Robust standard errors are clustered on the firm level. Robust t-statistics are reported in round brackets. Prob > chi2 is displayed in squared brackets. ***, **, and * indicate, respectively, significance levels at the 0.01, 0.05, and 0.10 levels. See Appendix A for variable definitions.

| Dep. Var.: Impair: | (1) Indefinite Int. (t+1) | (2) Definite Int. (t+1) | (3) Goodwill (t+1) | (4) (1) vs. (3) | (5) (2) vs. (3) |
|---|---|---|---|---|---|
| *Reporting Quality Indicators* | | | | | |
| Amiram MAD | -1.8137** | -1.0526** | -1.5975** | -0.2163 | 0.5448 |
| | (-2.3765) | (-2.0378) | (-2.1071) | [0.7572] | [0.5225] |
| WEAK 404 | 0.0949*** | 0.0246 | 0.1251*** | -0.0302 | -0.1006 *** |
| | (3.2090) | (1.3782) | (4.4124) | [0.2224] | [0.0008] |
| Audit Opinion | 0.0279*** | 0.0025 | 0.0342*** | -0.0062 | -0.0317 *** |
| | (2.7130) | (0.3136) | (3.2183) | [0.5387] | [0.0064] |
| Earns Bath. (t+1) | 0.1136*** | 0.0635** | 0.1827*** | -0.0691 ** | -0.1191 *** |
| | (3.5430) | (2.4416) | (5.5802) | [0.0385] | [0.0026] |
| SMOOTH. (t+1) | 0.0496*** | 0.0160* | 0.0512*** | -0.0016 | -0.0352 *** |
| | (3.7892) | (1.8086) | (4.1265) | [0.8842] | [0.0081] |
| *Business characteristics* | | | | | |
| M&A | 0.0300** | 0.0031 | 0.0066 | 0.0233 ** | -0.0035 |
| | (2.3997) | (0.3834) | (0.5684) | [0.0272] | [0.7863] |
| BTM (t+1) | 0.0365** | 0.0216** | 0.0904*** | -0.0539 *** | -0.0688 *** |
| | (2.3896) | (2.1326) | (5.4547) | [0.0000] | [0.0000] |
| ROA before Impair. (t+1) | -0.3641*** | -0.2537*** | -0.4981*** | 0.1339 * | 0.2444 ** |
| | (-4.0237) | (-4.3560) | (-5.6841) | [0.0923] | [0.0116] |
| Size | 0.0235*** | 0.0173*** | 0.0234*** | 0.0001 | -0.0061 |
| | (4.4733) | (4.6102) | (5.3916) | [0.9836] | [0.2261] |
| Sales Growth | -0.0907*** | -0.0167 | -0.0791*** | -0.0116 | 0.0624 * |
| | (-3.0029) | (-0.8321) | (-2.7300) | [0.6787] | [0.0543] |
| Leverage | -0.0066 | 0.0320 | 0.0398 | -0.0464 * | -0.0078 |
| | (-0.1967) | (1.3368) | (1.2246) | [0.0809] | [0.8305] |
| Business Segment | 0.0005 | -0.0004 | 0.0024 | -0.0019 | -0.0028 * |
| | (0.3312) | (-0.3688) | (1.6345) | [0.1185] | [0.0843] |
| R&D Spending | 0.2084 | 0.3715** | -0.4458*** | 0.6542 *** | 0.8173 *** |
| | (1.1577) | (2.3427) | (-2.7145) | [0.0000] | [0.0002] |
| Altman's Z | -0.0047 | 0.0042 | 0.0012 | -0.0059 | 0.0030 |
| | (-0.4376) | (0.6330) | (0.1152) | [0.4650] | [0.7872] |
| Inventory & Receivables | 0.0599 | -0.0457 | 0.1353* | -0.0754 | -0.1810 ** |
| | (0.9314) | (-1.0902) | (1.9514) | [0.1575] | [0.0156] |
| Indefinite Int | 0.8235*** | 0.2843*** | 0.8191*** | 0.0044 | -0.5348 *** |
| | (6.8518) | (4.2493) | (6.8045) | [0.9628] | [0.0000] |
| Definite Int | 0.1836 | 0.6248*** | 0.0006 | 0.1830 | 0.6241 *** |
| | (1.4843) | (5.5915) | (0.0054) | [0.1136] | [0.0000] |
| Goodwill | 0.0958 | -0.0039 | 0.1975*** | -0.1017 ** | -0.2015 *** |
| | (1.5456) | (-0.1077) | (3.3728) | [0.0353] | [0.0015] |
| Industry×Year FEs | Yes | Yes | Yes | | |
| Observations | 7,090 | 7,090 | 7,090 | | |
| R-squared | 0.0808 | 0.0794 | 0.0986 | | |

**Table 4: Impairment Pressure, Governance and the Impairments of Indefinite Acquired Intangibles**

This table shows regression results from a linear probability model, where Impair: Indefinite Int. (t+1) serves as our dependent variable. Our main variable of interest is the interaction term of BTM, which serves as a market indicator for impairment pressure, and different governance variables that are displayed above each column. Additional control variables as in Table 3 are included in all specifications but are not displayed to ease the reading of the table. Industry and time trends are captured in all specifications by including industry-by-time fixed effects. Robust standard errors are clustered on the firm level. Robust t-statistics are reported in round brackets. ***, **, and * indicate, respectively, significance levels at the 0.01, 0.05, and 0.10 levels. See Appendix A for variable definitions.

| Governance Variables: | (1) NED: Accounting Expert (%) | (2) NED: Distraction (# Boards) | (3) ED: Distraction (# Boards) | (4) CEO Turnover | (5) Variable Compensation |
|---|---|---|---|---|---|
| **Impairment Pressure Indicators for Impairments** | | | | | |
| BTM $_{(t+1)}$ | 0.0194 | 0.1233*** | 0.0999*** | 0.0435** | 0.0652*** |
| | (0.8740) | (3.3924) | (3.9567) | (2.1261) | (2.9011) |
| **Impairment Pressure Indicators for Impairments** | | | | | |
| GOVERNANCE VARIABLE | -0.0462 | 0.0055 | 0.0082 | -0.1135* | 0.0232 |
| (As indicated by column header) | (-0.6432) | (0.6873) | (1.3297) | (-1.6555) | (0.4354) |
| **Interaction Term: Governance $\times$ Impairment Pressure Indicators for Impairments** | | | | | |
| BTM $_{(t+1)}\times$ | 0.2108** | -0.0238** | -0.0224*** | 0.2435*** | -0.1841** |
| GOVERNANCE VARIABLE | (2.2164) | (-2.1821) | (-2.7605) | (3.2517) | (-2.1154) |
| | | | | | |
| Reporting Quality Indicators | Yes | Yes | Yes | Yes | Yes |
| Business Model Indicators | Yes | Yes | Yes | Yes | Yes |
| Industry×Year FEs | Yes | Yes | Yes | Yes | Yes |
| | | | | | |
| Observations | 6,180 | 6,179 | 6,050 | 5,285 | 5,307 |
| R-squared | 0.0815 | 0.0813 | 0.0787 | 0.0931 | 0.0937 |

**Table 5: Content of Conference Calls, Media Sentiment and Intangible Impairments**

Table 5 shows the results from OLS regressions of Equations 3 and 4. In column 1, the relative frequency of parts in the Q&A part of the conference call that include the word "intangible" to the total number of parts serves as the dependent variable. In column 2, the negative sentiment of the Q&A part of the conference call estimated by FinBert (Huang et al. 2023) is the dependent variable. The dependent variable in column 3 is the standardized BEE score that represents the news sentiment of the given story about earnings evaluations. The raw scores can take values of 0 through 100 indicating negative (0) through positive (100) sentiment, respectively. This sentiment score is based on RavenPack's Traditional Methodology (Bushman et al. 2017). We standardize the BEE score with a mean of zero and a standard deviation of one to ease the interpretation of the coefficients. In column 4, Negative Sentiment is the dependent variable, an indicator variable which takes the value of one if the BEE score is negative, indicating a negative tone in the earnings news coverage, and zero otherwise. The indicator variables for impairments of indefinite and definite acquired intangibles and goodwill as well as all business model control variables and additional reporting quality measures from Table 3 are included in all specifications. Because we are interested in the direct media tone to the reported financial statement information, we only use contemporaneous control variables. In addition, we control for the operating RoA instead of the RoA before impairments because we want to see whether the impairments of acquired intangibles and goodwill correlated with the media tone in addition to its effect on the bottom-line net income. We also include the impairment shares in all even columns to capture any additional effects of the impairment magnitude. Industry and time trends are captured in all specifications by including industry-by-time fixed effects. Robust standard errors are clustered on the firm level. Robust t-statistics are reported in round brackets. We report the Prob > F in squared brackets. ***, **, and * indicate, respectively, significance levels at the 0.01, 0.05, and 0.10 levels. See Appendix A for variable definitions.

|  | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
|  | **Q&A Part of Conference Calls** | | **Media Sentiment** | |
|  | Relative Frequency of Mentioning "Intangible" | FinBert Negative Tone (Huang et al. 2023) | BEE (standardized) | Negative Sentiment |
| Mentioning "Intangible" |  | 0.0001 |  |  |
|  |  | (0.0310) |  |  |
| Mentioning: "Goodwill" |  | 0.0137*** |  |  |
|  |  | (4.3968) |  |  |
| Impair: Indefinite Int. | 0.0182 | 0.0022 | -0.0380 | 0.0163 |
|  | (1.0533) | (0.7778) | (-0.8896) | (0.7557) |
| Impair: Definite Int. | -0.0157 | -0.0029 | -0.0825 | 0.0454 |
|  | (-0.8539) | (-0.7281) | (-1.4884) | (1.5855) |
| Impair: Goodwill | 0.0419** | 0.0015 | -0.1395*** | 0.0736*** |
|  | (2.5670) | (0.5605) | (-2.6789) | (2.9566) |
| Impair Share: Indefinite Int. | -0.0370 | 0.0016 | 0.0073 | 0.0324** |
|  | (-0.7634) | (0.1782) | (0.2549) | (2.3989) |
| Impair Share: Definite Int. | 0.1321 | 0.0093 | 0.0357 | -0.0347*** |
|  | (0.9844) | (0.4277) | (1.4552) | (-3.0532) |
| Impair Share: Goodwill | -0.0094 | 0.0175** | 0.0146 | -0.0111 |
|  | (-0.2638) | (2.2239) | (0.6767) | (-1.0957) |
| Controls | Yes | Yes | Yes | Yes |
| Industry×Year FEs | Yes | Yes | Yes | Yes |
| Observations | 5,427 | 5,407 | 5,243 | 5,243 |
| R-squared | 0.0253 | 0.2317 | 0.2474 | 0.2014 |

## Appendix A. Variable definitions

| Variable | Description | Data source |
|---|---|---|
| **Dependent variables:** | | |
| *Impair: Indefinite Int.* | Indicator variable equal to one if there is an impairment of Indefinite Acquired Intangibles, and zero otherwise | Hand-collected |
| *Impair: Definite Int.* | Indicator variable equal to one if there is an impairment of Definite Acquired Intangibles, and zero otherwise | |
| *Impair: Goodwill* | Indicator variable equal to one if there is an impairment of Goodwill, and zero otherwise | |
| | | |
| **Business Model Indicators** | | |
| *M&A* | Indicator variable equal to one if the firm engaged in an M&A transaction in period t, and zero otherwise | |
| *BTM* | Book value of equity divided by market value of equity. | |
| *ROA before Impairm.* | Operating income before the Impairment of Goodwill and Acquired Intangibles to lagged total assets. | |
| ROA as reported | Operating income as reported to lagged total assets | |
| *Size* | Log of total sales. | Compustat |
| *Sales Growth* | Change in total sales from prior to current period. | |
| *Leverage* | Sum of short-term debt and long-term debt to lagged total assets. | |
| *Business Segment* | Square root of the number of business segments of the firm | |
| *R&D Spending* | Research and development spending (xrd) to lagged total assets. | |
| *Altman's Z* | Altman's (1968) Z Score measures firm default risk: 1.2*(working capital to TA)+1.4*(retained earnings TA)+3.3*(EBIT to TA)+0.6*(MV to TA)+1.0*(Sales to TA) | |
| *Inventory & Receivables* | Inventory and Receivables to lagged total assets. | |
| *Indefinite Int* | Net amount of acquired indefinite intangible assets to lagged total assets. | |
| *Definite Int* | Net amount of acquired definite intangible assets to lagged total assets. | Hand-collected |
| *Goodwill* | Net amount of goodwill to lagged total assets. | |
| | | |
| **Reporting Quality Indicators** | | |
| *Amiram MAD* | Measure on the Mean Absolute Deviation of financial reporting numbers and the theoretical digit distribution following Amiram et al. (2015). Higher values of Amiram MAD correlate with lower reporting quality. | Own Calculation |
| *WEAK 404* | Indicator variable that is equal to one if firm received an internal control weakness by the auditor. | Audit Analytics |
| *Audit Opinion* | Indicator variable equal to one if the firm receives a modified audit opinion and zero otherwise, where a modified opinion is defined as anything other than a standard unqualified audit opinion coded as one by Compustat (Hribar et al. 2014) | Compustat |
| *Earns Bath* | Indicator variable following Riedl (2004) and Glaum et al. (2018). It equals to one if the firm's change in operation RoA is below the average firm observation with a reporting loss in that year, and zero otherwise (Riedl 2004; Glaum et al. 2018) | |
| *SMOOTH* | Indicator variable following Riedl (2004) and Glaum et al. (2018). It equals to one if the firm's change in operation RoA is above the average firm observation with a reporting gain in that year, and zero otherwise. | |

**Corporate Governance Variables**

| | | |
|---|---|---|
| *# Analyst Coverage* | Number of Analysts that have made an EPS forecast on the firm. | |
| *Above Median Analyst Coverage* | Indicator variable which takes the value of one for company-years where the number of analysts that made an EPS forecast on the firm is above the median value for all firms in the sample, and zero otherwise. | IBES |
| *Benchmark Beating* | Indicator variable which takes the value of one for company-years where the reported earnings-per-share exceeds the consensus analyst EPS forecast by only one cent, and zero otherwise (Bhojraj, Hribar, Picconi, and McInnis 2009) | |
| *Auditor Industry Leader* | Indicator variable which takes the value of one for company-years that are audited by the audit firm that is the industry leader in this industry in terms of aggregated audit fees, and zero otherwise. | Audit Analytics |
| *NED: Accounting Experts* | Share of non-executive board members who are accounting experts. | |
| *NED: Distraction* | Average number of other current boards that the non-executive board members are holding while simultaneously supervising the current firm. | BoardEx |
| *ED: Distraction* | Average number of other current boards that the executive board members are holding while simultaneously working in the firm. | |
| *CEO Turnover* | Turnover of the firm's Chief Executive Officer between period t-1 and t | |
| *Variable Compensation* | Variable Compensation measures the average share of bonus scaled by base salary plus bonus of the firm's executives.<br><br>We refrain from incorporating the stock- and option-based compensation because they show mechanical correlations with the market impairment pressure indicator which would contaminate the interaction term with multicollinearity | Execu Comp |

**Media Variables**

| | | |
|---|---|---|
| *BEE* | A score that represents the average news sentiment by firm-year according to RavenPack's BEE classifier, which specializes in news stories about earnings evaluations. The initial scores can take values of 0, 50, or 100 indicating negative, neutral, or positive sentiment, respectively. We standardized the score to have a mean of zero and a standard deviation on one to ease its interpretation | RavenPack |
| *Negative Sentiment* | Indicator variable equal to one if the average BEE score indicates a negative sentiment of the earnings news coverage, and zero otherwise. | |
| *Mentions "Intangible" Presentation Parts* | The number of presentation parts that include the word "intangible" scaled by the total number of presentation parts of the annual (Q4) conference call | |
| *Mentions "Intangible" Q&A Parts* | The number of analysts' Q&A parts that include the word "intangible" scaled by the total number of analysts' Q&A parts of the annual (Q4) conference call | Own Calculation |
| *Conference Call Sentiment: Pres.* | Sentiment indicator estimated by FinBert (Huang et al. 2023) which takes the value of one for a positive sentiment, zero for a neutral sentiment and minus one for a negative sentiment in the presentation part of the annual (Q4) conference call. | |
| *Conference Call Sentiment: QnA.* | Sentiment indicator estimated by FinBert (Huang et al. 2023) which takes the value of one for a positive sentiment, zero for a neutral sentiment and minus one for a negative sentiment in the Q&A part of the annual (Q4) conference call. | |
| *Impair Share: Indefinite Int.* | Impairment scaled by beginning balance of indefinite intangible assets similar to Li and Sloan (2017) | |
| *Impair Share: Definite Int.* | Impairment scaled by beginning balance of definite intangible assets similar to Li and Sloan (2017) | Compustat |
| *Impair Share: Goodwill* | Impairment scaled by beginning balance of goodwill as in Li and Sloan (2017) | |

**Appendix B: Example of How Intangible Impairments are Displayed in Firms' Balance Sheets from Chicos Fas Inc. (2015)**

| | January 30, 2016 | | January 31, 2015 |
|---|---|---|---|
| | (in thousands) | | |
| **Goodwill:** | | | |
| Total Goodwill | $ 96,774 | $ | 145,627 |
| **Indefinite-Lived Intangibles:** | | | |
| WHBM trade name | $ 34,000 | $ | 34,000 |
| Minnesota territorial franchise rights | 4,930 | | 4,930 |
| Boston Proper trade name | — | | 41,700 |
| Total indefinite-lived intangibles | $ 38,930 | $ | 80,630 |
| **Definite-Lived Intangibles:** | | | |
| Boston Proper customer relationships | $ 43,580 | $ | 43,580 |
| Accumulated amortization expense recorded | (16,851) | | (14,672) |
| Impairment expense recorded | (24,166) | | — |
| Sale of Boston Proper customer relationships | (2,563) | | — |
| Total definite-lived intangibles | — | | 28,908 |
| Total other intangible assets, net | $ 38,930 | $ | 109,538 |

"…In fiscal 2015, based on market indications of value and a decline in sales, we recorded a pre-tax goodwill impairment charge of $48.9 million related to Boston Proper goodwill, reducing the carrying value of goodwill to zero, pre-tax impairment charges related to the Boston Proper trade name of $39.4 million, reducing the carrying value of the trade name to $2.3 million, and a pre-tax impairment charge related to Boston Proper customer relationships of $24.2 million, reducing the carrying value of the customer relationships to $2.6 million. All impairment charges were recorded within Goodwill and intangible impairment charges in the accompanying consolidated statements of income. There were no changes or cumulative impairment charges for other outstanding goodwill and intangible balances during fiscal 2015." (Chico's Fas Inc, page 47)

## Appendix C: Additional Results

### Table C1: Correlations

This table displays correlation coefficients of the variables used in the analyses. Pearson correlations are below the diagonal and spearman correlations above the diagonal.

| Pearson/Spearman correlations | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) | (17) | (18) | (19) | (20) | (21) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (1) Impair: Indefinite Int. (t+1) | 1.0000 | 0.1922 | 0.5434 | -0.0579 | 0.0552 | 0.0511 | 0.0804 | 0.0170 | 0.0694 | 0.0702 | 0.0199 | -0.0684 | 0.0700 | -0.0654 | 0.0325 | -0.0023 | 0.0237 | -0.0757 | -0.0289 | 0.1764 | 0.0550 |
| (2) Impair: Definite Int. (t+1) | 0.1922 | 1.0000 | 0.1890 | -0.0605 | 0.0242 | 0.0162 | 0.0820 | -0.0094 | 0.0890 | 0.0002 | -0.0808 | -0.0918 | 0.0639 | -0.0039 | 0.0187 | -0.0057 | 0.1090 | -0.0866 | -0.0521 | -0.0138 | 0.1796 |
| (3) Impair: Goodwill. (t+1) | 0.5434 | 0.1890 | 1.0000 | -0.0378 | 0.0763 | 0.0587 | 0.1221 | 0.0020 | 0.0126 | 0.1550 | -0.0460 | -0.0180 | 0.0505 | -0.0911 | 0.0467 | 0.0246 | -0.0815 | -0.0544 | 0.0051 | 0.1170 | 0.0212 |
| (4) Amiram MAD | -0.0580 | -0.0612 | -0.0393 | 1.0000 | 0.0185 | -0.0141 | 0.0541 | -0.0048 | -0.1150 | 0.0565 | -0.0275 | 0.1253 | -0.2310 | 0.0212 | -0.0691 | -0.0492 | -0.1090 | 0.0037 | -0.0271 | 0.0249 | -0.1315 |
| (5) WEAK 404 | 0.0552 | 0.0242 | 0.0763 | 0.0225 | 1.0000 | 0.0364 | 0.0368 | 0.0089 | 0.0440 | 0.0325 | -0.0714 | -0.0382 | -0.0966 | -0.0139 | 0.0344 | 0.0028 | -0.0013 | -0.0770 | -0.0037 | 0.0021 | 0.0555 |
| (6) Audit Opinion | 0.0511 | 0.0162 | 0.0587 | -0.0205 | 0.0364 | 1.0000 | 0.0191 | -0.0028 | -0.0421 | 0.0131 | -0.0026 | 0.0752 | 0.0545 | -0.0324 | 0.0571 | -0.0071 | 0.0306 | -0.0922 | -0.0847 | 0.0182 | 0.0031 |
| (7) Earns Bath. (t+1) | 0.0804 | 0.0820 | 0.1221 | 0.0533 | 0.0368 | 0.0191 | 1.0000 | -0.1050 | -0.0257 | 0.0488 | -0.3328 | 0.0264 | -0.1196 | -0.0587 | -0.0268 | -0.0430 | 0.0316 | -0.0660 | -0.0082 | -0.0514 | -0.0197 |
| (8) SMOOTH. (t+1) | 0.0170 | -0.0094 | 0.0020 | -0.0060 | 0.0089 | -0.0028 | -0.1050 | 1.0000 | -0.0425 | -0.0494 | 0.2484 | 0.0393 | -0.0504 | -0.0491 | 0.0421 | 0.0053 | 0.0250 | -0.0273 | -0.0158 | 0.0385 | -0.0185 |
| (9) Merger | 0.0694 | 0.0890 | 0.0126 | -0.1163 | 0.0440 | -0.0421 | -0.0257 | -0.0425 | 1.0000 | -0.0211 | -0.0661 | -0.9082 | 0.0985 | 0.1682 | 0.0014 | 0.0562 | 0.2175 | -0.2236 | -0.1020 | -0.0089 | 0.3952 |
| (10) BTM (t+1) | 0.0503 | 0.0085 | 0.1268 | 0.0482 | 0.0123 | 0.0053 | 0.0476 | -0.0451 | -0.0183 | 1.0000 | -0.2290 | 0.0183 | -0.1672 | -0.0900 | -0.3411 | 0.0912 | -0.1470 | -0.1372 | 0.1305 | -0.0040 | -0.0517 |
| (11) ROA before Impairm. (t+1) | 0.0257 | -0.0772 | -0.0148 | -0.0097 | -0.0500 | 0.0065 | -0.3594 | 0.2308 | -0.0520 | -0.1031 | 1.0000 | 0.0706 | 0.0868 | 0.0673 | 0.0005 | -0.0472 | -0.1019 | 0.1643 | -0.0932 | 0.5806 | -0.0651 |
| (12) Size | -0.0691 | -0.0915 | -0.0199 | 0.1271 | -0.0398 | 0.0767 | 0.0273 | 0.0388 | -0.8895 | 0.0106 | 0.0568 | 1.0000 | -0.1370 | -0.1329 | -0.0149 | -0.0622 | -0.2157 | 0.2345 | 0.1107 | 0.0020 | -0.4295 |
| (13) Sales Growth | 0.0652 | 0.0634 | 0.0505 | -0.2463 | -0.0970 | 0.0579 | -0.1321 | -0.0432 | 0.1009 | -0.1407 | 0.0431 | -0.1352 | 1.0000 | -0.0349 | 0.3000 | 0.0510 | -0.0139 | 0.1620 | 0.0744 | -0.0796 | 0.0621 |
| (14) Leverage | -0.0405 | 0.0086 | -0.0633 | 0.0189 | 0.0013 | -0.0231 | -0.0357 | -0.0504 | 0.1688 | -0.0509 | 0.0190 | -0.1341 | -0.0318 | 1.0000 | -0.0898 | -0.0040 | 0.0919 | 0.0314 | -0.0311 | -0.0362 | 0.1049 |
| (15) Business Segment | 0.0244 | 0.0152 | 0.0393 | -0.0585 | 0.0327 | 0.0594 | -0.0240 | 0.0507 | -0.0202 | -0.3545 | 0.0855 | 0.0093 | 0.2512 | -0.0858 | 1.0000 | -0.0611 | -0.2063 | 0.0752 | -0.0181 | 0.1201 | 0.0333 |
| (16) R&D Spending | 0.0018 | -0.0020 | 0.0396 | -0.0684 | -0.0041 | -0.0001 | -0.0547 | 0.0047 | 0.0580 | 0.0515 | -0.0248 | -0.0692 | 0.1299 | -0.0132 | -0.0505 | 1.0000 | 0.0723 | -0.0019 | 0.1261 | -0.0555 | 0.1171 |
| (17) Altman's Z | 0.0184 | 0.0884 | -0.0923 | -0.0075 | 0.0018 | 0.0077 | 0.0864 | 0.0107 | 0.1644 | -0.0855 | -0.1706 | -0.1568 | -0.1551 | 0.1606 | -0.2336 | -0.0779 | 1.0000 | -0.1707 | 0.0042 | -0.1676 | 0.3263 |
| (18) Inventory & Receivables | -0.0848 | -0.0839 | -0.0590 | 0.0202 | -0.0720 | -0.0958 | -0.0688 | -0.0282 | -0.2170 | -0.1006 | 0.0620 | 0.2355 | 0.1887 | 0.0065 | 0.1241 | -0.0176 | -0.2040 | 1.0000 | 0.6365 | -0.1473 | -0.3118 |
| (19) Indefinite Int | -0.0337 | -0.0570 | 0.0028 | -0.0026 | -0.0061 | -0.0950 | -0.0004 | -0.0235 | -0.1168 | 0.1294 | -0.1769 | 0.1238 | 0.0568 | -0.0381 | -0.0076 | 0.0925 | -0.1217 | 0.5951 | 1.0000 | -0.1843 | -0.1072 |
| (20) Definite Int | 0.1104 | -0.0224 | 0.0907 | 0.0379 | 0.0163 | 0.0325 | -0.0596 | 0.0485 | -0.0253 | 0.0102 | 0.7758 | 0.0285 | -0.1383 | -0.0213 | 0.1276 | -0.0559 | -0.1184 | -0.2170 | -0.2712 | 1.0000 | 0.0416 |
| (21) Goodwill | 0.0713 | 0.1955 | 0.0140 | -0.0926 | 0.0503 | 0.0162 | 0.0064 | -0.0029 | 0.3464 | -0.0543 | -0.1006 | -0.3556 | 0.0279 | 0.1315 | 0.0214 | 0.0477 | 0.1511 | -0.3316 | -0.2061 | -0.0674 | 1.0000 |

## Table C2: Results from Table 3 using Probit Regressions

Table C2 uses a Probit regression model to show the explanatory power of different indicators on the probability to impair acquired intangible assets with indefinite (column (1)), definite (column (2)) useful economic lifetimes, and the goodwill (column (3)) in the period t+1. Industry and time trends are captured in all specifications by including industry-by-time fixed effects. Standard errors are clustered on the firm level. Robust t-statistics are reported in round brackets. ***, **, and * indicate, respectively, significance levels at the 0.01, 0.05, and 0.10 levels. See Appendix A for variable definitions.

| Dep. Var.: Impair: | (1) Indefinite Int. $_{(t+1)}$ | (2) Definite Int. $_{(t+1)}$ | (3) Goodwill $_{(t+1)}$ |
|---|---|---|---|
| **Reporting Quality Indicators** | | | |
| Amiram MAD | -8.1675** | -9.8135** | -7.2463** |
| | (-2.5139) | (-2.5200) | (-2.3370) |
| WEAK 404 | 0.3452*** | 0.1671 | 0.4161*** |
| | (3.5250) | (1.5787) | (4.6507) |
| Audit Opinion | 0.1163*** | 0.0367 | 0.1382*** |
| | (2.9098) | (0.6721) | (3.4043) |
| Earns Bath. $_{(t+1)}$ | 0.3723*** | 0.2280* | 0.5369*** |
| | (3.5053) | (1.8193) | (5.0222) |
| SMOOTH. $_{(t+1)}$ | 0.2008*** | 0.1049 | 0.2170*** |
| | (3.9375) | (1.6264) | (4.4478) |
| **Business Model Indicators** | | | |
| M&A | 0.1176** | 0.0342 | 0.0261 |
| | (2.3733) | (0.6004) | (0.5553) |
| BTM $_{(t+1)}$ | 0.1358*** | 0.1463** | 0.3028*** |
| | (2.6225) | (2.0050) | (5.6792) |
| ROA before Impairment $_{(t+1)}$ | -1.5254*** | -1.9305*** | -2.2274*** |
| | (-4.0495) | (-4.5783) | (-5.9368) |
| Size | 0.0995*** | 0.1263*** | 0.0987*** |
| | (4.6636) | (5.1345) | (5.3902) |
| Sales Growth | -0.3809*** | -0.1482 | -0.3594*** |
| | (-3.1072) | (-1.1124) | (-2.9997) |
| Leverage | 0.0111 | 0.3158* | 0.1672 |
| | (0.0760) | (1.7369) | (1.1976) |
| Business Segment | 0.0027 | -0.0017 | 0.0108* |
| | (0.4536) | (-0.2645) | (1.9293) |
| R&D Spending | 0.7780 | 2.3351*** | -2.6899*** |
| | (1.1009) | (2.8662) | (-2.8875) |
| Altman's Z | -0.0378 | 0.0286 | -0.0210 |
| | (-0.7903) | (0.5157) | (-0.4856) |
| Inventory & Receivables | 0.3778 | -0.2691 | 0.7589*** |
| | (1.3606) | (-0.7919) | (2.6232) |
| Indefinite Int | 3.3103*** | 2.0639*** | 3.5026*** |
| | (7.0676) | (4.0093) | (7.6128) |
| Definite Int | 0.5776 | 2.9684*** | 0.0559 |
| | (1.3185) | (6.4189) | (0.1224) |
| Goodwill | 0.4434* | 0.0685 | 0.8811*** |
| | (1.7935) | (0.2583) | (3.7780) |
| Industry×Year FEs | Yes | Yes | Yes |
| Observations | 7,075 | 6,868 | 7,080 |

## Table C3: Impairment Pressure, Governance and the Impairments of Definite Acquired Intangibles and Goodwill

This table shows a different version of Table 4 from the main table on regression results from a linear probability model, where Impair: Definite Int. (t+1) in Panel A and Impair: Goodwill in Panel B servs as our dependent variables. Our main variable of interest is the interaction term of BTM, which serves as a market indicator for impairment pressure, and different governance variables that are displayed above each column. Additional control variables as in Table 3 are included in all specifications but are not displayed to ease the reading of the table. Industry and time trends are captured in all specifications by including industry-by-time fixed effects. Robust standard errors are clustered on the firm level. Robust t-statistics are reported in round brackets. ***, **, and * indicate, respectively, significance levels at the 0.01, 0.05, and 0.10 levels. See Appendix A for variable definitions.

*Panel A: Impairments of definite intangible assets*

| Governance Variables: | (1) NED: Accounting Expert (%) | (2) NED: Distraction (# Boards) | (3) ED: Distraction (# Boards) | (4) CEO Turnover | (5) Variable Compensation |
|---|---|---|---|---|---|
| ***Impairment Pressure Indicators for Impairments*** | | | | | |
| BTM $_{(t+1)}$ | 0.0066 | 0.0560** | 0.0115 | 0.0085 | 0.0231 |
| | (0.4235) | (2.4554) | (0.7112) | (0.5825) | (1.5833) |
| ***Impairment Pressure Indicators for Impairments*** | | | | | |
| GOVERNANCE VARIABLE | 0.0440 | 0.0114* | -0.0001 | 0.0030 | 0.0383 |
| (As indicated by column header) | (0.8447) | (1.8277) | (-0.0290) | (0.0434) | (0.8582) |
| ***Interaction Term: Governance $\times$ Impairment Pressure Indicators for Impairments*** | | | | | |
| BTM $_{(t+1)}\times$ | 0.0494 | -0.0133 | 0.0015 | 0.0678 | -0.1286** |
| GOVERNANCE VARIABLE | (0.6862) | (-1.6254) | (0.2834) | (0.7425) | (-2.0826) |
| | | | | | |
| Reporting Quality Indicators | Yes | Yes | Yes | Yes | Yes |
| Business Model Indicators | Yes | Yes | Yes | Yes | Yes |
| Industry×Year FEs | Yes | Yes | Yes | Yes | Yes |
| | | | | | |
| Observations | 6,180 | 6,179 | 6,050 | 5,285 | 5,307 |
| R-squared | 0.0774 | 0.0772 | 0.0740 | 0.0805 | 0.0813 |

*Panel B: Impairments of goodwill*

| Governance Variables: | (1) *NED: Accounting Expert (%)* | (2) *NED: Distraction (# Boards)* | (3) *ED: Distraction (# Boards)* | (4) *CEO Turnover* | (5) *Variable Compensation* |
|---|---|---|---|---|---|
| **Impairment Pressure Indicators for Impairments** | | | | | |
| BTM $_{(t+1)}$ | 0.0732*** | 0.1417*** | 0.1657*** | 0.1107*** | 0.1434*** |
| | (2.9256) | (3.7792) | (5.4871) | (5.0891) | (6.8802) |
| **Impairment Pressure Indicators for Impairments** | | | | | |
| GOVERNANCE VARIABLE | -0.1015 | 0.0036 | 0.0109 | -0.1915*** | 0.1349** |
| (As indicated by column header) | (-1.3605) | (0.4374) | (1.2974) | (-3.2909) | (2.3138) |
| **Interaction Term: Governance × Impairment Pressure Indicators for Impairments** | | | | | |
| BTM $_{(t+1)}$× | 0.2258** | -0.0114 | -0.0278** | 0.2342*** | -0.2984*** |
| GOVERNANCE VARIABLE | (2.1452) | (-0.9184) | (-2.4451) | (2.8549) | (-3.1745) |
| | | | | | |
| Reporting Quality Indicators | Yes | Yes | Yes | Yes | Yes |
| Business Model Indicators | Yes | Yes | Yes | Yes | Yes |
| Industry×Year FEs | Yes | Yes | Yes | Yes | Yes |
| | | | | | |
| Observations | 6,180 | 6,179 | 6,050 | 5,285 | 5,307 |
| R-squared | 0.1064 | 0.1051 | 0.1079 | 0.1117 | 0.1142 |

## Table C4: The Moderating Role of External Monitoring

This table shows a different version of Table 4 on regression results from a linear probability model using alternative external monitoring variables as the moderating factors. Impair: Indefinite Int. (t+1) serves as our dependent variable. Our main variable of interest is the interaction term of BTM, which serves as a market indicator for impairment pressure, and different governance variables that are displayed above each column. Additional control variables as in Table 3 are included in all specifications but are not displayed to ease the reading of the table. Industry and time trends are captured in all specifications by including industry-by-time fixed effects. Robust standard errors are clustered on the firm level. Robust t-statistics are reported in round brackets. ***, **, and * indicate, respectively, significance levels at the 0.01, 0.05, and 0.10 levels. See Appendix A for variable definitions.

| Governance Variables: | (1) *# Analyst Coverage* | (2) *Above Median Analyst Coverage* | (3) *Benchmark Beating of Analyst Forecasts* | (4) *Auditor Industry Leader* |
|---|---|---|---|---|
| **Impairment Pressure Indicators for Impairments** | | | | |
| $BTM_{(t+1)}$ | 0.0215 | 0.0230 | 0.0618*** | 0.0263 |
| | (1.2588) | (1.4309) | (2.9722) | (1.5598) |
| **Impairment Pressure Indicators for Impairments** | | | | |
| GOVERNANCE VARIABLE | -0.0002 | -0.0123 | -0.0387 | -0.0187 |
| (As indicated by column header) | (-0.1398) | (-0.6659) | (-0.8828) | (-0.8342) |
| **Interaction Term: Governance $\times$ Impairment Pressure Indicators for Impairments** | | | | |
| $BTM_{(t+1)} \times$ | 0.0038* | 0.0543* | -0.1580** | 0.0396 |
| GOVERNANCE VARIABLE | (1.7138) | (1.8904) | (-1.9829) | (1.1944) |
| | | | | |
| Reporting Quality Indicators | Yes | Yes | Yes | Yes |
| Business Model Indicators | Yes | Yes | Yes | Yes |
| Industry×Year FEs | Yes | Yes | Yes | Yes |
| | | | | |
| Observations | 7,090 | 7,090 | 5,474 | 7,090 |
| R-squared | 0.0820 | 0.0819 | 0.0811 | 0.0813 |

**Table C5: Impairment Amounts**

Panel A uses a linear model to show the explanatory power of different indicators on the impairment amounts of acquired intangible assets with indefinite (column (1)) and definite (column (3)) useful economic lifetimes in the period t+1 and reports the same indicators for the impairment amounts of goodwill in the period t+1 in column (3). Columns (4) and (5) report Wald-test results on differences in the coefficients between the indicators for acquired intangible assets with indefinite (definite) useful economic lifetimes and Goodwill. Control variables capture portfolio-level indicators, impairment indicators from firms' business models, and impairment indicators that refer to firms' reporting quality and reporting incentives. Industry and time trends are captured in all specifications by including industry-by-time fixed effects. Constant term is not reported to enhance the readability of the table. Robust standard errors are clustered on the firm level. Robust t-statistics are reported in round brackets. Prob > chi2 is displayed in squared brackets. ***, **, and * indicate, respectively, significance levels at the 0.01, 0.05, and 0.10 levels. See Appendix A for variable definitions.

*Panel A: Indicators of Impairment Amounts*

| Dep. Var.: SHARE OF … | (1)<br>Indefinite Int. (t+1) | (2)<br>Definite Int. (t+1) | (3)<br>Goodwill (t+1) | (4)<br>(1) vs. (3) | (5)<br>(2) vs. (3) |
|---|---|---|---|---|---|
| **Reporting Quality Indicators** | | | | | |
| Amiram MAD | 0.0877 | -0.1794* | 0.0801 | 0.0077 | -0.2595 |
| | (0.4156) | (-1.9060) | (0.2334) | [0.9811] | [0.4257] |
| WEAK 404 | 0.0124* | 0.0034 | 0.0340** | -0.0217* | -0.0306** |
| | (1.6947) | (1.0220) | (2.5247) | [0.0809] | [0.017] |
| Audit Opinion | 0.0090*** | 0.0022 | 0.0251*** | -0.0161*** | -0.023*** |
| | (2.9229) | (1.5493) | (4.7295) | [0.0014] | [0] |
| Earns Bath. (t+1) | 0.0334** | 0.0197*** | 0.1384*** | -0.1051*** | -0.1188*** |
| | (2.3268) | (2.5971) | (4.9820) | [0.0003] | [0] |
| SMOOTH. (t+1) | 0.0132*** | 0.0015 | 0.0163*** | -0.0031 | -0.0148*** |
| | (3.1487) | (1.1399) | (2.8836) | [0.587] | [0.0078] |
| **Business Model Indicators** | | | | | |
| M&A | 0.0031 | -0.0000 | -0.0058 | 0.0089* | 0.0058 |
| | (0.9974) | (-0.0136) | (-1.2908) | [0.0519] | [0.1916] |
| BTM (t+1) | 0.0159*** | 0.0016 | 0.0448*** | -0.0289*** | -0.0433*** |
| | (3.3178) | (0.6510) | (3.7023) | [0.004] | [0.0001] |
| ROA before Impairment (t+1) | -0.0827*** | -0.0316** | -0.0798 | -0.0029 | 0.0482 |
| | (-2.6124) | (-2.1741) | (-1.4016) | [0.9568] | [0.3851] |
| Size | 0.0039*** | 0.0006 | 0.0012 | 0.0027 | -0.0006 |
| | (3.3187) | (1.0627) | (0.6513) | [0.1333] | [0.7261] |
| Sales Growth | -0.0116 | -0.0007 | -0.0212 | 0.0095 | 0.0205 |
| | (-1.2632) | (-0.1743) | (-1.4538) | [0.4853] | [0.1527] |
| Leverage | 0.0005 | 0.0040 | 0.0222 | -0.0217* | -0.0182 |
| | (0.0626) | (1.0580) | (1.6103) | [0.0825] | [0.1625] |
| Business Segment | -0.0000 | 0.0001 | 0.0001 | -0.0002 | 0 |
| | (-0.1213) | (0.6295) | (0.2566) | [0.7158] | [0.9444] |
| R&D Spending | 0.1955*** | 0.0730** | -0.0131 | 0.2087*** | 0.0861 |
| | (2.9986) | (1.9679) | (-0.1856) | [0.0075] | [0.2599] |
| Altman's Z | 0.0027 | 0.0007 | -0.0014 | 0.004 | 0.0021 |
| | (0.8803) | (0.6703) | (-0.3111) | [0.3313] | [0.6283] |
| Inventory & Receivables | 0.0137 | -0.0113 | 0.0528* | -0.039 | -0.0641** |
| | (0.6850) | (-1.4965) | (1.8613) | [0.1493] | [0.0195] |
| Indefinite Int | 0.0997*** | 0.0333** | 0.2030*** | -0.1033* | -0.1697*** |
| | (2.9909) | (2.0434) | (3.0106) | [0.0926] | [0.0088] |
| Definite Int | 0.0582 | -0.0011 | -0.0072 | 0.0655 | 0.0061 |
| | (1.6174) | (-0.0857) | (-0.2113) | [0.1397] | [0.8639] |
| Goodwill | -0.0003 | -0.0060 | 0.0245 | -0.0248 | -0.0305* |
| | (-0.0246) | (-1.1058) | (1.3810) | [0.1744] | [0.0839] |
| | | | | | |
| Industry×Year FEs | Yes | Yes | Yes | | |
| | | | | | |
| Observations | 5,854 | 5,854 | 5,854 | | |
| R-squared | 0.0461 | 0.0333 | 0.0916 | | |

*Panel B: Impairment Pressure, Governance and the Impairment Amounts of Indefinite Acquired Intangibles*

| Governance Variables: | (1) NED: Accounting Expert (%) | (2) NED: Distraction (# Boards) | (3) ED: Distraction (# Boards) | (4) CEO Turnover | (5) Variable Compensation |
|---|---|---|---|---|---|
| **Impairment Pressure Indicators for Impairments** | | | | | |
| BTM $_{(t+1)}$ | 0.0113* | 0.0407*** | 0.0309*** | 0.0159*** | 0.0301*** |
| | (1.6587) | (3.6063) | (3.8699) | (3.3047) | (4.4204) |
| **Impairment Pressure Indicators for Impairments** | | | | | |
| GOVERNANCE VARIABLE | -0.0258 | 0.0033 | 0.0033* | -0.0161** | 0.0404** |
| (As indicated by column header) | (-1.5167) | (1.4824) | (1.8405) | (-2.1059) | (2.2839) |
| **Interaction Term: Governance $\times$ Impairment Pressure Indicators for Impairments** | | | | | |
| BTM $_{(t+1)}\times$ | 0.0670** | -0.0065* | -0.0045** | 0.0034 | -0.1206*** |
| GOVERNANCE VARIABLE | (2.2405) | (-1.7887) | (-1.9685) | (0.4142) | (-3.5196) |
| | | | | | |
| Reporting Quality Indicators | Yes | Yes | Yes | Yes | Yes |
| Business Model Indicators | Yes | Yes | Yes | Yes | Yes |
| Industry$\times$Year FEs | Yes | Yes | Yes | Yes | Yes |
| | | | | | |
| Observations | 5,184 | 5,183 | 5,072 | 5,854 | 4,438 |
| R-squared | 0.0536 | 0.0530 | 0.0510 | 0.0462 | 0.0656 |

**Table C6: Conference Call Sentiment with Bag-of-Words Method**

This table shows the results from an OLS regression where our dependent variable is conference call's negative tone words (Loughran and McDonald 2011, 2016).

| Dep. Var.: | (1)<br>**LM Negative Tone**<br>**(Loughran and McDonald 2011)**<br>Q&A Part |
|---|---|
| Mentioning "Intangible" | 0.0069** |
| | (2.0583) |
| Mentioning: "Goodwill" | 0.0164*** |
| | (5.8525) |
| Impair: Indefinite Int. | 0.0002 |
| | (0.0453) |
| Impair: Definite Int. | 0.0066 |
| | (1.3587) |
| Impair: Goodwill | 0.0057 |
| | (1.3998) |
| Impair Share: Indefinite Int. | 0.0244* |
| | (1.7965) |
| Impair Share: Definite Int. | -0.0328 |
| | (-0.9425) |
| Impair Share: Goodwill | 0.0112 |
| | (0.9155) |
| Controls | Yes |
| Industry×Year FEs | Yes |
| Observations | 5,361 |
| R-squared | 0.1208 |