The Usefulness of Goodwill Information to Financial Analysts: A Qualitative Approach*

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Abstract

This paper investigates how financial analysts use goodwill information in their firm valuation. Analysts are disappointed with goodwill information because it does not seem to fit their valuation purposes. Interestingly, however, although the goodwill asset initially disappoints, it can become a catalytic asset, which helps mediate relations among other assets. Based on our field study findings, we suggest that aided by goodwill impairment testing information, analysts can conduct reflexive modelling to forecast the firm's future and develop an entity perspective on it. In reflexive modelling, analysts check their estimates about the valuation model's outcome against the firm's. As our main contribution, we extend prior literature about the usefulness of goodwill information for analysts by demonstrating how analysts use this information in reflexive modelling for firm valuation. We maintain that contrary to suggestions by scholars, goodwill accounting numbers are not necessarily ignored in firm valuation but can have economic significance for analysts.

Keywords:

goodwill, usefulness, impairment test, analyst, qualitative study

1. Introduction

What do users do with financial accounting information? Users, such as analysts, investors, creditors, employees, and the general public, are typically described as having a significant interest in financial accounting. These types of users are often analysed as an institutional category to justify standard-setting practices (e.g., Durocher et al., 2007; Young, 2006, Durocher & Gendron, 2011) as those whose wants are identified via questionnaires (Gassen & Schwedler, 2010; Cascino et al., 2014), experiments (Anderson et al., 2015), content analysis (Demirakos et al., 2004), and interviews (Imam et al., 2008; Cascino et al., 2021; Durocher & Georgiou, 2021). This research attempts to formulate, in various ways, *what* users want from financial accounting. Financial accounting is often understood as knowledge input to decision-making, as evidenced by International Financial Reporting Standards' (IFRS) key objective of providing investors with reliable and decision-relevant information. Financial accounting must be reliable regarding calculative consistency (stability) and representational relevance (completeness) to be useful (Erb & Pelger, 2015; Power, 2010; Robson, 1992). However, what to "rely on" means is unclear. The values disclosed by financial accounting result from a mechanically objective process, which can account for all the steps that transform many receipts into financial values (Huikku et al., 2017; Porter, 1994; 1995; Power, 1996; 1997; Vollmer, 2007). However, this process is oriented towards producing a sign that the producers tolerate (Pentland, 1993) while saying little about the user *in persona.*

The user is an afterthought, and although it is possible that the user likes the idea of financial accounting being done via a mechanically objective process, this does not explain what users do with or to financial accounting. Users' engagement with financial accounting comes post-production. Thus, it is reasonable to ask the question already posed by experimental and survey-based research about users' feelings about financial accounting more directly, namely, how – rather than whether – they use financial accounting information (Kalthoff, 2005; Knorr-Cetina, 2010). This theme raises a specific concern about the relationship between financial accounting and its users: What happens when users mobilise financial accounting, are mobilised by financial accounting, or both? We investigate this phenomenon in the context of goodwill accounting and pose the research question: *How do financial analysts[1] use goodwill information in firm valuation processes?* In addressing this question, we are specifically interested in the role of valuation models in these processes. Durocher and Georgiou's (2021) study is an exception within this field. They employ framing theory and draw on interviews to analyse how analysts make sense of goodwill accounting information compared to standard setters. However, compared to the work of Durocher and Georgiou (2021), our paper builds a more process-oriented approach and does not ask what analysts want but rather attempts to illustrate how analysts use financial accounting.

In some sectors, goodwill is often the largest item on firms' balance sheets (Cascino et al., 2016) and one of the most difficult assets for analysts to value. As a level three asset, goodwill is calculated by a valuation model based on net present value (Bougen & Young, 2012; Hartmann, 2021). In principle, this model would speak equally to firms and analysts (and, by implication, other stakeholders) who would all, IFRS claims, be interested in such information for decision-making purposes. Goodwill impairment testing (GIT) is potentially valuable for analysts because when all the tested cash-generating units are added up, such can indicate

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[1] In our paper, financial analysts (also referred to as analysts) include sell-side analysts and buy-side analysts (e.g., portfolio managers, fund managers, and other investors).

the discounted cash flow (DCF)-based valuation for the whole firm. Hence, GIT is analogous to a company's DCF valuation – the method financial analysts use most. Nevertheless, Durocher and Georgiou (2021) find that analysts ignore goodwill assets and impairment expenses in their valuation model and rarely use the release of goodwill information to adjust their future cash flow projections. Likewise, Schatt et al.'s (2016) literature review concludes that goodwill impairment information is often disclosed in the notes but does not convey new private information, making it irrelevant in helping analysts revise their cash flow expectations.

Prior quantitative literature has provided partly contradictory findings regarding goodwill impairment information's usefulness (e.g., Hamberg & Beisland, 2014). Cascino et al. (2016, 71) suggest that decision usefulness and representational faithfulness of goodwill information for firm valuation to analysts are considered inferior to other financial accounting information.[2] It remains open to studying the implications of such a view for actors' decision-making activities. This research gap is also documented by the recent comprehensive literature review by Amel-Zahed et al. (2021, 23-24). In our study, we respond to their urge 'to use non-archival data such as case and field studies to enhance our understanding of how goodwill information is processed by analysts, investors and other users'. Our data are primarily based on interviews and discussions with prominent financial analysts in Finland.

For two reasons, analysts may be able to pay at least some attention to goodwill information. First, the information may be incomplete and insufficient and, therefore, difficult to understand. However, because of this trait, it may also become a source of competitive advantage among analysts because it might contain information difficult to decipher. Second, many companies have goodwill values that comprise more than the rest of the asset values on their balance sheet, which may require analysts to at least form a view of the risks associated with goodwill regarding potential impairments. Thus, analysts may be interested in using the goodwill information in some way, but which way(s)?

Our investigation draws on research in the sociology of finance, where attention has been paid to the intensive work that happens when analysts seek to arrive at the price of an asset or liability (Antal, Hutter, & Stark, 2015; Beunza & Stark, 2004; 2012; Jarzabkowski et al., 2015; Knorr-Cetina, 2010; 2011). Research in the sociology of finance embraces the socio-materiality of valuation. It synthesises the calculative activities of the analysts with sociological perspectives (Imam & Spence, 2016) and casts light on the social and cultural constitution of capital markets (Zaloom, 2003). Value is considered an outcome of the interplay between people, text, technology, and other things.

Our analysis mobilises the notion of reflexive modelling (Beunza & Stark, 2012) within the sociology of finance literature and uses it as a method theory to contribute to a domain theory (Lukka & Vinnari, 2014), i.e., the set of knowledge about the use of financial accounting, particularly goodwill information, in analysts' valuation work. Reflexive modelling is a way for analysts to inquire into the validity of their calculating instruments. Following the conception of reflexive modelling, we address the way analysts deploy DCF models to check and compare their estimates about the model's critical components against the firm's. This benchmarking occurs in private dialogues with the firm's managers and considers available public information. An empirical example of the reflexive use of GIT information is an analyst's meeting with

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[2] Similar results can be found in Cascino et al. (2021), who characterise the usefulness of financial accounting information as consisting of relevance and representational faithfulness. Relevance can be defined as the ability of information to influence decision-making, assuming the information is faithfully represented. Information is considered faithfully represented if it is complete, neutral, and error-free (International Accounting Standards Board, 2018).

the company management, where the analyst poses questions inspired by their GIT recalculation and interprets the management's reactions. A dissonance in estimates prompts doubt and stimulates additional searching to evaluate the company's target value. Embedding social cues to traditional financial information seems to be demanding and challenging for financial analysts, but reflexive modelling helps build a competitive edge because of unique target price estimates and the added value provided to their final customers.

As our main contribution, we extend existing literature about the usefulness of goodwill information for analysts. More specifically, we add nuance to the literature by suggesting that – largely contrary to previous suggestions (e.g., Durocher & Georgiou, 2021) – analysts do not necessarily ignore goodwill information in a firm valuation. Goodwill may have economic significance for at least some analysts. When analysts use goodwill information, they understand it is also a challenge the firm poses to the analysts, who must determine what happens in the firm. We identify three different practices of analysts' use of goodwill and GIT information. Two of these practices conduct recalculations of GIT on purpose: One uses a different model; another uses the same model for a firm valuation. The third does not conduct a GIT separately but uses the results of the standard firm valuation calculation to assess goodwill's appropriateness.

We also add to the financial accounting literature by introducing the concept of reflexive modelling (Beunza & Stark, 2012). We demonstrate ways analysts initially use reflexive modelling with their calculations vis-à-vis the information the firms provide and then communicate with the management about the outcome of their recalculations. By reflexive modelling, analysts seek to solve the dissonance between their and the firms' seemingly irreconcilable numbers.

The paper proceeds as follows. In the second section, we review prior literature. In the third section, we describe our empirical research material and setting, and we elaborate on the methods of data collection and analysis. In the fourth section, we analyse our empirical data. In the fifth section, we present the concluding discussion.

2. Literature

In this section, we will first review prior literature regarding goodwill as an asset and its value relevance. Then, we present analysts' use of accounting information in their firm valuation work. Finally, we discuss our study's theoretical underpinnings.

2.1. Goodwill information and its value relevance

IFRS intends to promote more useful information to analysts by producing (more) future-oriented values that would be directly relevant to decision-making (Georgiou, 2018; Georgiou et al., 2021). Goodwill is a particular asset in the balance sheet because it is not separate but a leftover from allocating a purchase price to other assets (see in-depth description in Appendix 1). Goodwill emerges in business combinations (e.g., mergers and acquisitions) when an acquirer pays over the value of identifiable net assets of the acquiree. The companies with goodwill must carry out, at least annually, a goodwill impairment test to ensure their goodwill is carried at no more than its recoverable amount. Firms typically use the 'value in use' (i.e., the present value of the future cash flows, DCF) method for this testing. Notably, the impairment testing simultaneously valuates the whole firm when all the tested cash-generating units are added up.

Mainstream quantitative value relevance research has shown that goodwill impairments are associated with market value. Studies in the US SFAS 142 context commonly (but not always) suggest that news about impairments reduces market value (e.g., Hirschey & Richardson, 2002). Hayn and Hughes (2006) also found that although impairment news was informative, managers had delayed reporting write-offs. Also, Bens et al. (2011) found a significant adverse market reaction to unexpected goodwill impairments but suggest this reaction is moderated if the firm has many analysts following it. Jarva (2009) found that Goodwill write-offs are associated with future expected cash flows, but this association appears to be insignificant for firms with contemporaneous restructuring. According to Li et al. (2011), investors and analysts reduce their earnings forecasts in connection with impairment loss announcements. Ayres et al. (2019) found that the likelihood of goodwill impairment more strongly relates to an expected impairment when analyst coverage is higher.

Outside the US, in the IFRS (IAS 36) context, Hamberg and Beisland (2014) found that in Sweden, impairments reported in addition to amortisation were significantly related to stock returns before IFRS 3. However, impairments were no longer connected to stock returns under the impairment-only regime. In Portugal, Oliveira et al. (2010) investigated the value relevance of impairment losses and indicated that IFRS adoption had increased goodwill's value relevance. They suggest this is because the goodwill impairment test is associated more with market prices and is evaluated more realistically by investors. Also, Knauer and Wöhrmann (2016) show that market reactions to goodwill impairments are associated with the level of legal protection. They show that there are greater absolute price reactions in common-law countries where strong protection limits the benefits to managers who exert their discretion opportunistically. Knauer and Wöhrmann (2016) precisely address two dimensions that may determine investors' perceptions of impairments' reliability: the level of investor legal protection and the verifiability of the impairment information. Thus, their findings suggest that an impairment loss can convey valuable information. However, investors' evaluations depend on the reporting environments' characteristics. Based on their archival study, Chalmers et al. (2012) suggest that adopting the IFRS goodwill impairment approach conveys more helpful information to analysts than the former straight-line amortisation approach, improving analysts' forecast accuracy. Furthermore, Amel-Zahed et al. (2021) suggest in their recent literature review that goodwill from acquisitions is consistently reported to be value-relevant and that goodwill impairments are informative and have predictive value to investors (see also d'Arcy & Tarca, 2018), especially where local standards deviated more from IFRS (Aharony et al., 2010).

The researchers generally agree that value relevance is associated with firm- and country-level institutional factors (see d'Arcy & Tarca, 2018; Schatt et al., 2016). Wen and Moehrle (2016) suggest in their literature review that the goodwill impairments also relate to the firms' information environment (i.e., high versus low asymmetry), cost to the firm conducting the impairment test (usually higher for smaller firms), and the firm's prior performance (e.g., returns on assets).

2.2. Analysts' use of accounting information in their valuation work

Mainstream accounting and finance literature reports that analysts and investors find financial reporting information highly useful for valuation purposes (e.g., Asquith et al., 2005; Cascino et al., 2021; Gassen & Schwedler, 2010). Specifically, they prefer information that helps them forecast future cash flows and understand the business (Cascino et al., 2021). Analysts appear

to focus much more on information in the income statement, considering it more relevant than balance sheet items in estimating future cash flows and associated risks (Cascino et al., 2016). Analysts do not just mechanically rely on their models' outputs when giving investment recommendations or making buy/sell decisions (Abhayawansa et al., 2015; Asquith et al., 2005; Brown et al., 2015, 2016).

Analysts and investors commonly employ various earnings-based models, such as price/ earnings (P/E) ratio and EV/EBITDA (Huikku & Pöyhiä, 2020; Imam et al., 2008). Barker (1999) suggests that analysts' tendency to adopt a short forecast horizon (i.e., relative methods) relates to the inherent uncertainty of future outcomes. As well as relying on multiples, investors and analysts use increasingly more DCF models (Abhayawansa et al., 2015; Imam et al., 2013). Demirakos et al. (2004) and Glaum and Friedrich (2006) report that analysts and investors consider DCF more important than multiples in firm valuation, typically using several methods simultaneously (Abhayawansa et al., 2015). In estimating the cash flows and risks, analysts and investors make macroeconomic, industry, and strategic considerations and use their subjective judgment (e.g., Glaum & Friedrich, 2006; Imam et al., 2008).

Prior mainstream studies about analysts have used quantitative data heavily and focused on analysts' outputs, namely, estimates and predictions (Bradshaw, 2011; Ramnath et al., 2008). Specifically, the studies address the accuracy and dispersion of these forecasts. Prior scholars suggest that analysts' forecast accuracy increases with new information (e.g., Bowen et al., 2002). Further, regarding the association of analysts' valuation model choice and their price target accuracy, Gleason et al. (2013) found that accuracy improves when analysts use a residual income valuation over the PE growth approach.

Despite the voluminous studies in the area, Bradshaw (2009, 2011) suggests we still know too little about what analysts do in practice, i.e., how and why they process data to produce their forecasts, derive their target prices, and give their recommendations. Recently, however, scholars have sought to enhance our understanding in this field, opening the 'black box' of analysts' work. Consequently, based on their content analysis of conference calls and analysts' research reports, Bischof et al. (2014) suggest that analysts use calls to request fair value–related information and that their questions are positively associated with the information's impact on accounting metrics. Abhayawansa et al. (2015) suggest that intellectual capital plays a major role in analysts' work, affecting setting price targets, forming a perception of the firm, selecting the valuation model, and supporting analyst-client communication. Yin et al. (2016) further addressed how analysts obtain PE multiples for firm valuation. Brown et al. investigated sell-side (2015) and buy-side analysts' (2016) work using surveys and interviews. Sell-side analysts emphasise private communication with management as a major input in their decision-making. By using information from direct management contacts, analysts can better contextualise and add meaning to accounting data, aligning with Barker et al.'s prior findings (2012; see also Aharoni et al., 2017, and Cascino et al., 2013, 2016, for a review). Brown et al. (2015) also suggest that issuing earnings forecasts and stock recommendations below the consensus can increase analysts' credibility. In their 2016 paper, they found that sell-side analysts add value to buy-side analysts, specifically with their industry knowledge and access to company management.

With regard to the role of goodwill information in analysts' work, a few studies address the users' processing of it. The message of these studies is somewhat contradictory to the value relevance literature presented above. Based on their literature review, Schatt et al. (2016) conclude that goodwill impairment information disclosed in the notes often does not convey new private information. Hence, this information is irrelevant to helping analysts revise their cash flow

expectations. Similarly, based on their survey, Cascino et al. (2016, 71) suggest that decision usefulness and representational faithfulness of goodwill information are considered lower than other financial accounting information by analysts and investors. Cascino et al. (2021) report similar results in their study based on face-to-face interviews with experienced investment professionals. Andreicovici et al. (2020) highlight that the transparency of goodwill testing information matters. They show that when disclosure relating to goodwill impairment tests is more transparent, disagreement among analysts and between analysts and managers is significantly lower. However, they also conclude that the inconsistent application of IAS 36 and the boilerplate nature of the associated disclosure result in varying degrees of disclosure quantity and quality. This can lead to disagreement, creating concerns about the appropriateness of impairment, as opposed to amortisation, on goodwill.

A study by Durocher and Georgiou (2021) appears to be the only qualitative study addressing analysts' use of goodwill information. They use the 'framing' concept as a heuristic to explore how analysts perceive goodwill accounting and how they make sense of its use and usefulness vis-à-vis standard-setters. They find that analysts ignore goodwill information in their firm valuation analysis because the existing goodwill accounting practices do not provide the needed information to assess each acquisition's performance and evaluate whether projected synergies have been realised. According to their study, analysts appear to strip out the goodwill asset and the impairment expense from their analyses to get closer to their own view of economic reality, rarely using the release of goodwill information to adjust their future cash flow projections.[3]

According to IAS-36, firms are mandated to disclose managerial explanations about the recognition of an impairment and information about cash flow forecasting methods, discount rates, and terminal value assumptions. Compliance with these requirements has been reported to differ significantly, affecting analysts' and investors' ability to estimate the amount, timing, and uncertainty of firms' cash flows (e.g., Andreicovici et al., 2020; Baboukardos & Rimmel, 2014; Glaum et al., 2013, 2018).

2.3. Analysts' use of valuation models

In our paper, we are interested in how analysts use goodwill information in a firm valuation, and specifically, their use of tools (models) in these processes. Our research approach to analysts' work draws on a great deal of existing research in the sociology of finance that synthesises the calculative activities of the analysts with sociological perspectives (see also Imam and Spence, 2016) and aims to understand how capital markets are socially and culturally constituted (Zaloom, 2003). In this approach, attention is paid to the intensive work that happens when analysts attempt to come up with the price of an asset or liability (Antal et al. 2015; Beunza & Stark, 2004; 2012; Jarzabkowski et al. 2015; Knorr-Cetina, 2010; 2011).

In the sociology of finance, theoretical arguments have been made regarding financial analysts (Preda, 2007). These arguments emphasise the central agential role of economic technologies (i.e., theories, software, hardware) to act as tools of active intervention rather than mere representations in analysts' work (Callon, 1998, 2004; MacKenzie & Millo, 2003; Muniesa et al., 2007). Hence, the social studies of finance embrace the socio-materiality of valuation. Value is an outcome of the interplay between people, text, technology and other things, and the studies

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[3] However, analysts may perceive goodwill information as marginally decision useful for stewardship purposes, i.e., they may use it to adjust their view of management (Durocher and Georgiou, 2021).

often focus on analysts using a model. For example, MacKenzie and Millo (2003) examined the role and performativity of the Merton-Scholes-Black formula for computing the price of derivatives and how this mobilises the expertise of social groups.[4] Hence, in these contexts, analysts want to create knowledge by experimenting with the tools and algorithms. Moreover, Kalthoff (2005, p. 71) shows in his paper how people 'calculate with something, instead of calculating something'.

Prior studies have predominantly addressed how analysts work in their offices or trading rooms (Bruegger & Knorr-Cetina, 2000). This literature suggests that checking only the official public reports is insufficient for an analyst. Rather, an analyst must be out on the streets as a kind of detective, i.e., participating in companies' analyst conferences, being in contact with IR officers, CEOs, and CFOs, and visiting headquarters and production sites (Knorr-Cetina, 2010; Wansleben, 2013). Knorr-Cetina (2011) further suggests that financial analysis is a kind of proxy science that can consist of performance proxies, proxy projections, proxy ethnography, and proxy detection.

The problem is that analysts do not know the value of a share price because they would have to know the future. Given that they do not know the future, they handle tools instead. However, these tools are imperfect renderings of the future. Therefore, using tools is a task or problem more than an outright solution, conveying the concern for making tools while also developing knowledge about an issue that is understood to be imperfectly understood. The tools are media for gaining knowledge and experimenting with developing knowledge (Callon, 1998, 2004). Thus, tools are mechanisms for thought, just as thought triggers changing and developing tools. Hence, in our case, analysts work with the objects (Kalthoff, 2005), leading us to draw further on the notion of reflexive modelling (Beunza & Stark, 2012). Analysts try to complete their work by searching for more material through reflexive modelling. We address the ways analysts search for material for their modelling beyond conventional accounting statements. By moving to reflexive modelling, we focus on the uncertainty and randomness of collating information, which can be difficult to make commensurate from statistical information through rumours and hearsay. This checking occurs in private dialogues between the firm managers and the analysts while considering available public information. In our study, we use Beunza and Stark's (2012) conception of reflexive modelling as our method theory (Lukka and Vinnari, 2014) to study analysts' use of goodwill information. Reflexivity refers to circular and bidirectional relationships between cause and effect, especially as reflexivity is embedded in human belief structures.

Originally, Beunza and Stark (2012) identified a new socio-technical mechanism that results from using financial models. They write that traders '*do not use models only to develop their own estimates of relevant variables. Crucially, they [traders] also deploy models to check their own estimates against those of their rivals. Thus, in place of models versus social cues, we observed traders modelling social cues. We refer to this practice as reflexive modelling* (p. 384).' Beunza and Stark (2012) argue that reflexive modelling offers traders significant benefits by giving them a way to utilise the work of their rivals (p. 385). In our case, the 'rivals' are company management to whom analysts benchmark their own recalculations.

In our investigation of reflexivity in valuation work, we are interested in the ways analysts deploy DCF models to benchmark their estimates with the information the company provides,

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[4] Other studies about how people work with tools/objects exist. These objects can include planning/designing models (Ewenstein & Whyte, 2007, 2009; Öygur, 2018), strategy objects (Kaplan, 2011; Werle & Seidl, 2015), arts markets (Coslor & Spaenjers, 2016), and collaborative objects (Nicolini, 2011; 2012).

and the reflexive nature of goodwill information when analysts define their target share price. Beunza and Stark (2012) suggest that reflexive modelling is largely based on dissonance; the dissonance in estimates between analysts and the firm prompts doubt, stimulating a further search to evaluate the company's target value. In other words, the driving force of this reflexive work is analysts' sense of dissonance based on seemingly irreconcilable numbers (Arjalies & Banzal, 2018). In our study, dissonance arises from an information asymmetry between management and analysts: a company's management publishes limited GIT information in notes of the financial statement, and analysts try to value a company based on this information. Due to the socio-technical character of goodwill impairment testing (Huikku et al., 2017), it could be expected that the goodwill information might mediate the message through the analysts to the financial markets. In goodwill's case, economic cues impact goodwill calculation, affecting the valuation and the stock market's price further. Goodwill can build a feedback loop which, again, impacts economic cues. Thus, goodwill is unstable, and its movement between social relations and technical tools makes it incomplete and doubtful.

To summarise, prior literature has provided partly contradictory findings on the relevance or usefulness of goodwill impairment information. Also, previous literature has drawn on quantitative approaches; the only more in-depth probing qualitative study on users' processing of goodwill information is the one by Durocher and Georgiou (2021). Consequently, we lack an in-depth understanding of analysts' use of goodwill impairment testing information for their firm valuation work. Our study will address this phenomenon by employing the concept of reflexive modelling as our theoretical lens. The need for more qualitative goodwill impairment research to better understand analysts' and investors' perceptions and processing of goodwill-related information is also urged by Schatt et al. (2016) and Amel-Zadeh et al. (2021).

3. Empirical method

Our study addresses analysts' work – specifically, their use of goodwill information in firm valuation. The set of knowledge on this substantive topic area is our domain theory (Lukka & Vinnari, 2014). We use reflexive modelling (Beunza & Stark, 2012) as our method theory to produce a contribution to a domain theory. We mobilise the method theory primarily to illustrate that it will be useful in offering insights as a theoretical lens in a context in which it has not previously been employed (Lukka & Vinnari, 2014).

The data gathering is primarily based on interviews with Finnish analysts. The focus of the interviews was the work in which they were involved: using and analysing financial values of goodwill assets and goodwill impairment tests, i.e., future-oriented IFRS numbers. Finland provides a unique and suitable empirical setting to examine the fundamental change in goodwill accounting because adapting IFRS has significantly changed accounting practices for Finnish firms (i.e., from a rule- to a principle-based system), and Finnish listed companies have commonly high goodwill values on their balance sheet (e.g., KPMG, 2011). During empirical data collection (2010–2019), goodwill impairment testing (IAS 36) was still a relatively new way (implemented in 2005) to accommodate certain types of intangible assets associated with business combinations when businesses are acquired or merged. As the Financial Supervision Authority (FIN-FSA) (2009, 2014) reported, the quality of reported goodwill impairment testing information has improved since IAS 36 was initially introduced in 2005. However, lots of shortcomings and variations in the reported information still exist.

Considering the study's purpose to cast light on analysts' use of goodwill-related accounting information in a firm valuation, we use a cross-sectional field study method, which lies

somewhere between an in-depth case study and a broad-based survey (Lillis & Mundy, 2005). Lillis and Mundy suggest that a cross-sectional field study can be particularly appropriate when doubt exists about the precise specification and measurement of variables, their empirical interpretation, or the relationships among them.

Our data gathering was primarily based on 34 semi-structured interviews that took place between August 2010 and June 2019 (22 interviewees). These interviews resulted in 24 hours of tape-recorded and transcribed data (see the interviewees in Appendix 2). First, we interviewed 12 sell-side analysts, eight buy-side analysts, and two business managers closely involved with goodwill and analyst-related aspects to enhance our understanding of the phenomenon from their perspective.[5] All but two interviews were face-to-face. The themes of these interviews focused on the valuation of intangible assets, analysts' experience and knowledge of goodwill and its impairment testing, and decision usefulness of goodwill information in valuation situations. Specifically, we focused on analysts' use of goodwill information (goodwill assets and goodwill expenses) in their valuation modelling and other valuation work. The generic interview questions for these interviews are in Appendix 3.

Second, we conducted 12 shorter telephone interviews with the analysts who considered GIT information in their valuation work to clarify certain aspects about using goodwill in their valuation work and discuss other interesting aspects that emerged during our data analysis. We found these follow-up interviews an invaluable source of information, further enhancing our understanding of financial data usage. Analysts' answers in the follow-up interviews were congruent with the initial interviews. Particularly, this material makes it possible to show the reflexive use of financial accounting information.

All interviewees are prominent and experienced in their field; one analyst also represents the Finnish Society of Financial Analysts. The major selection criteria for analysts were their knowledge about goodwill and that they follow and valuate the interviewed 12 companies with high goodwill value in their balance sheets. This selection method enabled us to pose deeper probing and company-specific valuation questions about the reflexive use of goodwill information. Some analysts confidentially shared their original data sheets and valuation formulas, explaining the details of their valuation method in-depth. We used financial material the companies and analysts published as our secondary data source. Seeing the confidential goodwill impairment testing material that some interviewees revealed to us was very useful. We also used relevant material from newspapers, magazines, and analysts' blogs. Recent writings in media have used titles such as 'Goodwill became problem waste', 'Company X is the goodwill bomb of the stock exchange', 'Goodwill clatter can diminish dividends', 'Goodwill bombs will start to explode', and 'Goodwill is air for all the money – Watch out for these companies', indicating the topic's relevance within the larger business audience.

Regarding data analysis, we transcribed and preliminarily analysed the interview material without delay. After that, we divided the data according to themes and sub-themes and then selected the most relevant themes for further analysis (Creswell, 2014). During the process, we read and reread the material, compiled and updated various spreadsheet tables and figures describing the findings, and discussed our interpretations with other research group members. Our thematic approach enabled us to analyse within- and cross-case patterns regarding analysts' reflexive modelling.

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[5] As well as these two firm interviews, we interviewed 12 more business managers in ten companies with a lot of goodwill to enhance our understanding of their goodwill reporting. The sell-side analysts interviewed specifically followed these 12 firms. Moreover, we interviewed other actor groups, such as creditors, auditors, financial supervisory authorities, academics, and media, for our other research project about goodwill accounting. Altogether, the interview data consist of 73 semi-structured interviews with 61 interviewees.

4. Use of goodwill information: Empirical evidence

This empirical section consists of three subsections: In Subsection 4.1, we present what companies disclose related to goodwill and also analysts' views of the relevance and sufficiency of this information. In Subsection 4.2, we show that although analysts were disappointed with goodwill data, they understand it may contribute to a company's valuation. Finally, in Section 5.3, we demonstrate analysts' reflexive use of goodwill information for valuation. Our empirical evidence shows that goodwill impairment information generates information asymmetry between a company and the analysts following it, along with tremendous disbelief and feelings of betrayal that this information can ignite interest and experimentation during reflexive modelling. The analysts' ultimate target is to define the target share price based on the DCF. However, they initially find public GIT disclosures unhelpful.

4.1. Disappointment with the published goodwill information

In IFRS, fair value accounting annual impairment tests replace straight-line depreciation for goodwill. In Finland, goodwill largely contributes to listed companies' book values. According to a report by the Financial Supervisory Authority (hereinafter FIN-FSA), in acquisitions made by Finnish listed companies in 2008, up to 53% of the purchase price related to goodwill (FIN-FSA 2009, 31), for example. At the time of the study, the average amount of goodwill in Finnish listed companies was about 20% of their total assets. Goodwill has gained major attention in Finnish media, and its uncertainties are regularly documented with titles such as "The goodwill bomb is ticking in many listed companies" and "*There is a lot of air for sale at the Helsinki Stock Exchange*". Accordingly, goodwill could be expected to have a significant role in financial decision-making, investor relations, and market values.

　　The new goodwill impairment practice challenges many actors, including business managers, auditors, and financial analysts. Analysts would like companies to disclose all the goodwill impairment testing's relevant parameters (e.g., cash flows per CGU, WACC, growth rate, terminal value) to support their firm valuation. However, they do not disclose these parameters comprehensively, as Analyst 8 describes:

> "*What parameters have been used in the test? We have no idea about the details or the assumptions used in the test. We have no clue about them*" (Head of Trading and Capital Markets, Analyst 8).

Is the situation as indefinite as the analysts claim? What can actually be seen from the notes? According to the analysis of GIT disclosures of the large- and mid-cap companies at the Nasdaq OMX Helsinki Stock Exchange in 2010, the Finnish listed companies disclosed insufficient information on GIT in their financial reports. Companies appeared to disclose a wealth of information on the technical issues of the testing process, such as a testing method, growth rate, and discount rate. This information is often relatively standardised in the industry, and all companies follow their industry peers (Huikku et al., 2017). Thus, this information does not

ovide unique information to analysts because companies disclose similar text and figures.[6]

Basically, analysts would like to see more explicit material in companies' disclosures, as Analyst 4 explained:

> *"Analysts begin to ask what kinds of assumptions they [companies] have used. Some of the companies give relatively much information about the parameters behind the calculations. However, I think that reporting should be more transparent. An ideal situation would be that an analyst or investor could himself/herself conduct a simple DCF calculation with those published parameters and verify that same result. If the knowledge [about the assumptions/parameters] is located only at the firm, you have information asymmetry, and this is always a bad thing" (Portfolio Manager, Analyst 4).*

Analysts were acutely aware there would have to be a limit to transparency. However, since linking the scraps of information about goodwill impairment testing and the numbers systematically appearing in the balance sheet was impossible, goodwill numbers were opaque and ambiguous, a constraint that created a key paradox for analysts, as Analyst 2 explained:

> *"I certainly understand that firms cannot publish their estimates of absolute cash flow numbers. These issues are too sensitive, in my opinion. Of course, they can give us WACC figures, but I think they are too superficial and calculated quite haphazardly. If they don't give us [details of] cash flows, it is natural that I won't be quite reassured" (Head of Strategies, Analyst 2).*

Something about the whole institution of IFRS-based financial accounting is not reassuring, namely that it is impossible to do what it claims transparently (Durocher & Georgiou, 2021; Lev, 2018). Analysts would have "their ideal worlds" where they could see cash flow estimates and employed discount rates for each business segment. However, this "ideal" world would quickly be compromised by another supposedly "real world," where it is impossible for "firms to publish their estimation of cash flows". There is a "real world" where firms compete and must hide their knowledge from the capital market. Therefore, IFRS create disappointment, and the goodwill information in notes to the financial statement or via separate press releases in connection with write-downs raises more questions than gives answers, as Investor 2 claimed:

> *"I hope there will be stricter rules about reporting on goodwill impairment testing. Now the problem is that this information just generates questions that remain unanswered. It would be very informative to know more about the testing" (Portfolio Manager, Investor 2).*

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[6] FIN-FSA continuously supervises the goodwill-related enforcement of Finnish companies. In particular, the enforcement work has focused on the basis for values of future cash flows, determination of the discount rate, and the notes to the financial statements. Although IFRS was introduced in 2005, in 2009, FIN-FSA reported that almost 20% of the companies do not disclose information on sensitivity analyses, stating that "the sensitivity analysis data of the impairment tests provided by several companies were not sufficiently informative" (FIN-FSA, 2009, 10–11). Still, in 2014, FIN-FSA reported significant shortcomings in goodwill-related disclosures: "Companies use many standard phrases in the notes to the financial statements. This means that the notes contain boilerplate phrases from IFRS standards or model books but very little company-specific content. FIN-FSA has also noted the scarcity of information in the notes" (FIN-FSA, 2014, 2).

What was hoped to provide transparency about the firms produced scepticism. Since the provided information made analysts clueless, it became a black box that made its operations incomprehensible, as Investor 4 suggests[7].

> *"Because of this, [goodwill] valuation practice is a black box for the investor. You can never know exactly how they do the testing: what kind of practices they use, what parameters they use… Well, there is no doubt that the critical investor will start to think that there might be a chance that this will have an impact on the [estimated] outcome" (Head of Equities, Direct Equities, Buy-side Analyst 4).*

As well as the incomplete information on GIT, analysts are suspicious about whether companies have conducted GIT with integrity. Analyst 4 says:

> *"It [reported information] is understandable. If it [recognition of impairment] is published, the sentence, "we have recognised a goodwill impairment of this amount", in the report will be understandable. You understand what it means and what the consequences are. However, I come back to that [subjectivity] and start to wonder how they came to that specific amount. Could it be – if they report amortisation of 50 million – could it be 150 million euros? If so, I suspect there may be a need for a larger amortisation than published. It would be useful to get those [detailed] parameters" (Portfolio manager, Analyst 4).*

There was a general and a particular scepticism. The former concerned the institution of IFRS in that the future must be considered, which would be counterintuitive to analysts. The scepticism concerned subjectivity so that managers would be expected to talk for themselves and not the future. Analysts would claim that managers can be opportunistic and create the numbers they prefer. Analysts were unsurprised that earnings management would not only be possible but likely because, as explained, goodwill calculations were based on discounted cash flows, which were notoriously ambiguous, as Analyst 4 explained:

> *"Everyone who has done discounted cash flow calculations knows how to manipulate them to show desired figures. Of course, a qualified checker who knows this game-playing can also see what has been done. If you have the parameters [for the goodwill calculation], you can assess the figures and make your own calculation. However, if you are not given the parameters, it gets difficult. You need a lot of parameters to compare similarly as the company has done" (Portfolio Manager, Analyst 4).*

A dissonant view seems to exist between management and analysts about the correctness of financial estimates, which arises from an information asymmetry because the disclosed infor-

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[7] The usual misunderstanding among users of financial information relates to the buffer of goodwill value. The buffer means that the recoverable value is higher than the carrying value on the balance sheet; thus, there is no need for a goodwill write-off. Financial markets are not typically aware of the buffer's amount (the difference between recoverable value and carrying value). However, these markets can try to estimate this amount if the firm reports very detailed sensitivity analyses. A buffer in goodwill is one reason for the lack of goodwill write-offs during the recession, causing much confusion and mistrust among analysts. The situation looks totally different from the management perspective: Managers may try to avoid writing goodwill off as long as possible because the write-off decision is irreversible. If a company's management hastily writes off goodwill with too many loose arguments (i.e., a short-term change in the business environment, which would be repaired later on), financial markets interpret this behaviour as the management being incapable of managing the firm. Thus, the unnecessary write-off is even worse than the delayed one. Managers will simply lose face if they write off goodwill too hastily.

mation on GIT is inadequate in the financial report and its accompanying notes. Thus, analysts must try to complete the puzzle by putting the pieces of available information together and finding the remaining pieces.

4.2. Reintroducing goodwill by analysts

Even if analysts and investors were disappointed with GIT, they could not quite let it go. Even if they were generally sceptical about IFRS, they endorsed their approach to taking on discounted cash flows, as a portfolio manager (Buy-side Analyst 2) suggested:

> *"With regard to company valuation, we use the discounted cash flow model as the primary method. In this context or methodology, historical costs, such as too-high prices paid for acquisitions, do not have any effect on the net present value of the cash flows and, hence, do not affect the value of the company."*

Goodwill would be a sunk cost. Therefore, cash flows would disregard acquisition costs. However, there would be exceptions since goodwill was part of the balance sheet, impacting financial ratios. The higher the goodwill, the higher the bankruptcy risk. A managing director (Buy-side Analyst 3) explained it this way:

> *"If you have little goodwill, it is not a problem. However, if you have a lot of it, an extreme situation, and a firm in trouble, it will become the biggest issue in the world. Then I would connect it to the risk of bankruptcy."*

When a company had to write off goodwill, ratios related to equity (solidity, profit distribution) and debt contracts (covenant violation), issues about a company's solidity would develop:

> *"Then it [goodwill impairment loss] hits the equity, of course. You make losses and lose your equity, and this may affect your capacity to pay dividends." (Senior Vice President of Finance, the Company 1) and "And regarding this impairment loss, if a company can manage it without a winding-up situation, it has an effect on profit distribution. A company may suffer because it cannot pay dividends" (Executive Vice President & CFO of Company 2).*

So, even if goodwill sank, it would still be on the books and could influence covenants based on a company's profitability or solidity, which could affect the cost of capital. Such an increased cost of capital would decrease the value of discounted cash flows and, thus, the company's value:

> *"Then a company can have a syndicated loan with covenants connected to P&L and a balance sheet. If a company recognises a goodwill impairment loss and decreases the equity accordingly, this may influence key figures and increase an investor's required rate. Hence, the interest rates of a company increase, and the free cash flow will decrease in the discounted cash flow analysis" (Portfolio Manager, Buy-side Analyst 2).*

Thus, goodwill values were not quite sunk non-cash flow items. The goodwill asset and impairment expenses could not just be stripped from the models and analyses and forgotten

since they would still be relevant regarding bankruptcy risk, interest rates, and firm valuation. Likewise, goodwill impairment testing information (and write-offs) might convey new information to markets in certain situations, as Sell-side Analyst 5 (Equity Analyst) explained:

> *"I think the share market reaction, if the markets are efficient and one understands these things, is pretty unfounded. Information has already been conveyed to the markets through quarterly and industrial sector reports. This is just a confirmation. I would say that eight out of ten investors have known it exactly in advance, but two have not, which may give some market reaction."*

Thus, even if goodwill is sunk and unliked, it has an existence that somehow and in some situations might have effects.

4.3. Goodwill information as materials for reflexive modelling

Most of the analysts we interviewed behaved like those Durocher and Georgiou (2021) interviewed. These analysts commonly emphasised that goodwill represents a sunk cost with no cash flow effect, ignoring goodwill and its use in their valuation models, thus excluding goodwill assets and expenses.

Further, Senior Analyst (Sell-side Analyst 3) continued about eliminating the effects of non-recurring items such as goodwill impairment losses in their financial analysis:

> *"If you think, for example, about Nokia's result when the company publishes its report, investors will have a look at the non-IFRS figures. It is quite sure that there are so many substantial items in IFRS reporting that they unsettle the results, which are unexpected. So, investors focus on the non-IFRS world. In that world, goodwill issues are not especially central but quite the opposite: They are cleaned in the figures" Senior Analyst (Sell-side Analyst 3).*

Nevertheless, some analysts paid attention to goodwill information. We identified three ways (levels of reflexivity) in which analysts try to make sense of the appropriateness of companies' reported goodwill. For these purposes, they make their own goodwill calculations and compare the outcome reflexively against the firm's. The following three examples (A, B, and C) illustrate these different approaches (see Appendix 4). A and B conduct separate calculations, specifically intended for goodwill impairment testing purposes. A uses a different model and B the same model for firm valuation. C does not conduct a GIT separately but uses the standard firm valuation calculation's results to assess goodwill's appropriateness. Hence, the enhanced understanding of goodwill in C is a by-product of a normal firm valuation.

For A, B, and C to be merely interested in analysing companies with high goodwill value is common; their motivation for goodwill evaluation is to assess the risk of impairment. However, they ultimately use the crumbs of information about cash flows obtained from GIT for their firm valuation purposes. Namely, to provide competitive advantage and high-quality analysis to their customers, analysts must find information the companies did not disclose to plug into their valuation formula. How much time and effort one wants to invest in searching for hidden information is up to the analyst. Analyst 10 describes their search for competitive advantage:

> *"Some analysts invest a little more time, while some put in less effort. Whoever turns more stones usually wins this game. Meeting with the management is self-evident. All analysts meet with com-*

pany management. The differences come in regarding how much you get to know the competitors. You meet the management of your competitors and other people in the industry. Here are those new sources of information, and they are voluntary. For example, more than a decade ago, we compared the development of Google searches for different phone models of Nokia and Samsung, which gave a good understanding of how many Nokia phones were sold. This comparison had a good correlation and was before everyone did this [analysed Google searches]. That became self-evident, so now everyone does it. Now we build algorithms. One listed company publishes product availability information in its online store. We have built an algorithm that scrolls the inventory balance on a daily basis and can calculate how much stuff goes from there." (Sell-side Analyst 10).

Competition in the analysts' job market is exceptionally high. The digitalisation and internationalisation of financial markets have significantly reduced available jobs during the last decades; the financial crisis made the situation even harder. Searching for unique information and giving plausible target price estimates is essential for an analyst's career to continue.

Practice variation in reflexive modelling: Case A, Case B, and Case C

Case A: Separate GIT recalculation practice (with a different DCF model than for firm valuation)

Analysts can recalculate impairment testing with a different model than they normally use for DCF-valuation, as the Head of Equity Research (Analyst 12) describes:

"We recalculate goodwill with a separate model [not the ordinary DCF as is used for company valuation]. It is an ad hoc exercise in which an analyst thinks about how the calculation [goodwill impairment test] can be done and what are all the aspects that have to be considered. Then the analyst makes some specific assumptions about the calculation. It includes calculation work and reasoning work and maybe a few more 'what if' considerations. What if this or that happens – would it still be reasonable? We do not include these ad hoc calculations in our reports [to our clients] because these calculations are very open to interpretations. Rather, we use these ad hoc calculations in addition to our regular analytical work. We are aware of goodwill impairment testing issues and conscious to react fast if something happens in the company. We also meet companies and talk to shareholders [about our own calculations] if they are interested – and usually, they are" (Head of Equity Research, Analyst 12).

He only focuses on companies with a large amount of goodwill and risk of impairment. Sensitivity analysis with the cash flows and discount rate plays a major role in his analysis. He also explains that his analyst team communicates their findings with the companies and sometimes with the shareholders, adding about the technicalities related to recalculating goodwill:

"So, to start, you have the material the company discloses when closing their account regarding the goodwill impairment testing, typically in the notes, including the assumptions used. Then you start to calculate with your own estimates about the cash flows. If you see, for example, that during the coming ten years, your value of the goodwill is only 30%, you start to ponder how much better the company should do to avoid the impairment. I also simulate with other discount rates."

He further describes his reflexive analysis work vis-à-vis the data the companies provide:

> *"The easiest case is when you analyse a company that has acquired a loss-making business. The rationale for the management has been that they can make a turnaround. If you, as an analyst, think there is no way to make the business profitable, then you have a very dissenting opinion. Or sometimes you do not necessarily have a view for that particular goodwill, but you adopt a bigger picture: that there will be radical changes in profitability within this industry, affecting the valuation."*

He typically conducts the recalculations at the group level because data is not necessarily available for more detailed analysis:

> *"Typically, we calculate goodwill impairment tests at the group level, but sometimes companies show, for example, margins and depreciation per segment, so then we can extend our calculations to this level. We may also try to test cash-generating units if we are talking about a major acquisition. In these cases, I need to match my cash flows with the correct unit."*

The main reason for recalculating is to understand the appropriateness of the goodwill values in the books, i.e., whether a risk exists for write-downs:

> *"You cannot figure out the absolute truth with your own goodwill impairment calculations, but you get supporting material for your analysing work. Then, when you have pondered these issues, you are in a much better position to discuss them with the company and ask, 'Hey, what if this and that happens?' They are interesting calculations and ponderings. So, these calculations related to goodwill are something all analysts should work with."*

Head of Equity Research (Analyst 12) described their private meetings with management where they could pose questions about the company's goodwill and its other financial aspects:

> *"We meet company management on a regular basis. The meetings cover exactly the same issues as the company publicly reports. The primary data source for us is what the companies report: out of ten meetings, five times IR director, three times CFO, and two times CEO. Typically, the IR director and CFO are there together. It is good to have the CFO there because we often talk about figures [including goodwill] at a detailed level."*

Case B: Separate GIT recalculation (with the same DCF model as for firm valuation)

Analyst B (Sell-side Analyst 10) also conducts a GIT on purpose. Unlike case A, he uses the same DCF model for this GIT recalculation as he does for a firm valuation, estimating values for all cash-generating units and combining them. He states, "It is a calculation made in a similar way to ordinary DCF but using a different mindset." Now, the focus is not on company value but on checking, per CGU, whether he can feel comfortable with their goodwill values.

He describes the differences between ordinary company valuation and his goodwill impairment recalculation:

"We do our company valuation at the group level by summing up the segments, whereas in a [goodwill] recalculation, we focus on assessing the appropriateness of goodwill values for segments [CGUs]. In this recalculation, I compare the company's goodwill value to my outcome. So, the approach is a bit different, but the model is the same."

He further motivates his recalculation with the riskiness of goodwill values:

"The revaluation of the goodwill impairment test is a 'must do' thing in companies whose balance sheet is goodwill-dominated. … You have to do these calculations because you can always trust balance sheet values less. Intangible assets play along a more significant role in the balance sheet of companies on a global level... We recalculate [impairment testing calculation] because a company can have such awful leeway in the calculations that it can do whatever it wants" (Sell-side Analyst 10).

In his analysis work, he emphasises the opportunity to build a competitive edge as an analyst:

"Our job is to be right. It's very simple. In this field, you have no conditions to exist if you are not right. You need to be right in your analyses and generate added value for investors. This is a brutal industry because more than 60% of workers are useless here as they cannot generate abnormal returns. You have to belong to that 40%. … To belong to this 40%, you have to turn all the stones, you have to be right, and you have to do more work than the others. This goodwill testing is one of those things."

Hence, he wants to make better analyses and more accurate target price estimations than his competitors:

"If the goodwill is small or the goodwill is solid, then we should not take the time to retest the goodwill because there is little risk involved. But if there is a lot of goodwill, or it is not solid, then we will retest for the sake of information. If there is a risk that that goodwill will come down, it [retesting] has enough motivation. Impairment destroys the equity and profits of that year. I rarely remember from my stock market history when the market did not react negatively."

He adds about the goodwill recalculation:

"Recalculation gives confidence in that analysis. You know those companies thoroughly. I have some companies I have been following for over a decade. I know every person from there – I know all their products. Of course, it gives me a home-field advantage. … This is actually a pretty tough area mentally because it is everyday competition, and you must always be right. Those recalculations will help you to be right and increase your self-confidence. Then it is not so mentally heavy to bear that burden."

Recalculating goodwill values became a resource for other, more fundamental insights. It is not only that "goodwill is substantially more subjective in valuation than tangible assets, such as factories. Goodwill is a part of analysing balance sheet risk and influences a company's risk profile above all" (Sell-side Analyst 10).

"First, you have a look at the notes in the closing – the sensitivity analysis there. If you see they use, for example, 12% WACC, and they say there is 5% headroom there, profitability estimates sensible, and growth zero, then you can think this is a solid company. But then you have a company like NN firm. If they show that WACC is 6% then there is 6% growth in Russia. Once you realise the company has fucked with its calculation, you start to take it [the calculation] down and compare each parameter to your evaluation. Roughly, you can evaluate how much room for impairment there is and would still be acceptable with your parameters, which will give you approximate figures" (Sell-side Analyst 10).

Also, regarding calculating cash flows for goodwill impairment testing, he describes a difference between his analyst firm's and the company's approach:

"Companies can manipulate their terminal growth as they wish. They often use, in their calculations, only three years of cash flows and then a terminal value. We use ten years in our modelling and then the terminal value to get the weight of terminal value smaller and a better understanding of it."

Analyst B also emphasises the role of close relations with management to gather and gradually accumulate relevant information in meetings with management – information not readily available in public sources – during which an analyst's reflexive modelling can be mobilised.

"It is self-evident that we must meet the management. Our information is public, but it [usefulness of the meetings] depends on the skills of an analyst and how smartly (s)he can pose questions and interpret management. The better you know them, the better you can read them and interpret their tones. If you have followed the firms for years and met the management tens of times, you have seen them on various occasions in different moods. Then you can see when it is not going right, for example. Sometimes, the management may let something slip – a nugget of information. You gradually accumulate these nuggets.

Case C: Firm valuation DCF also used for GIT

It commonly appears that a firm valuation and GIT are thoroughly intertwined in the analyses of analysts. The exact modelling is used for both purposes; GIT is not a primary purpose of the analysis but a by-product. The results can be compared with the firm market price, while an idea can be obtained whether the goodwill is correct enough.

Analyst 8 describes this process as follows:

"In fact, we do not do goodwill impairment testing as such; we do DCF analysis, which is the same as impairment testing but much more comprehensive. Hence, even though these investors have told you they do not do impairment testing, they evaluate the real value of a company, based on future returns, which is the same as discounted cash flow" (Managing Director, Buy-side Analyst 8).

The recalculation is possible because companies present some information (in fragments) about the goodwill calculation's parameters, which become a small seed for further inquiries:

"When we do a company valuation … we reconstruct their goodwill impairment test. We briefly have a look at the material they give about the tests but then conduct the tests ourselves. The process is almost as important as the outcome [recoverable amount]" (Managing Director, Buy-side Analyst 8).

Goodwill would engage inquiry, and analysts and investors would mobilise their own discounted cash flow model – a device for reflexive experimentation and learning. Goodwill impairment value (analogous to the company's share value) would be an object in that it enabled analysts to move forward and backward in their inquiries:

"Our motive for comprehensive discounted cash flow analysis is … not only the final net present value but the process. When we punch the figures into the model, we ask ourselves, 'Hey, what is this? Why would this be 50 after three years?'" (Buy-side Analyst 8).

The discounted cash flow calculation is a simulation where assumptions were tried, tested, and evaluated. The DCF model is built from several continuously changing components. Thus, analysts must constantly stay prepared to rebuild the DCF to update their views on the share value. This model could help reveal what companies have done regarding possible cash flow projections and possible interest rates. In this sense, the DCF is a reflexive tool (Beunza & Stark, 2012) for considering and comparing all the unknowns – those items not disclosed that would have been too sensitive for publication. The DCF can be a tool in helping one become surprised so that "*when we punch in the figures to the model, we ask ourselves, 'Hey, what is this? Why would this be 50 after three years?'*" (Buy-side Analyst 8).

Analysts let their cash flow models organise their search for more information. Their cash flow models were calculative devices seeking relevant input – unfindable in financial accounting. However, by raising their heads a bit, analysts found other materials in the interim reports via various news channels about not only the firm in question but often about the economy:

"Then, when one or two years have passed, you visit the company, going to analyst meetings. You construct a sort of shelving unit [DCF model], continuously adding crumbs [of information] so that it gets more complete all the time. I think this is a nice stage when you know the firm better than the other analysts. You keep on updating it, completing it according to the signals you receive. If I have, for example, a certain amount in my accounts receivables for the firm or estimated a certain asset item like this, and then I hear that one of their biggest customers went bankrupt, I know there will be bad debt and consider how much goodwill would I write-off (Buy-side Analyst 8).

In the spirit of reflexive modelling, the analysts might even interrogate company management and auditors with their own cash flow productions:

"A good starting point is a situation where we show the calculation to the management and say that the business might develop like this. You can immediately see how they react. You can at least see the worst signs – such as if they cannot grasp the idea. We keep it [calculation] very simple, but if they can't interpret it, it is very concerning to us if the business manager cannot get the idea and big picture" (Buy-side Analyst 8).

In exceptional cases, investors appeared to have contacted the companies' auditors and pressured them to require the companies to lower their cash flow forecasts as one managing director of a private equity firm (Buy-side Analyst 8) explained:

> *"None of us is an industry expert, but now I talk about situations where the auditor has not reacted for four years. The company's cash flow can be 10 million, and its value is one billion. In such a case, there is no doubt the auditor should have industry experience. Fairly speaking, the auditor is terrified. I have really talked to them [auditors] against all hierarchies and said, 'Oh, come to your senses.' I know because we have one company of this sort [in our portfolio]."*

Further, as Buy-side Analyst 8 suggested, investors could also rely on other forecasting institutions:

> *"In addition to the public information, we get many forecasts from [external] analysts. Professional industry analysts in Europe follow our domestic companies. You can get such high-quality information from there that it is even better than the information the companies provide because the world-beater analysts also analyse and meet all competitors. As the big owner, we'll get all these analyses."*

In summary, as is commonly understood, analysts seem to typically ignore goodwill information in their firm valuation work (Durocher & Georgiou, 2021) but not always. As demonstrated, analysts' usage of goodwill information can be much more nuanced. We have shown that Analysts A and B conduct recalculations of GIT on purpose for the companies with considerable goodwill and risk of impairment. A uses a different model, while B uses the same model as for an ordinary firm valuation. Also, C (and some other analysts we interviewed) does not conduct a GIT separately but uses the results of the standard firm valuation calculation for assessing goodwill's appropriateness. A, B, and C first make a reflexive comparison of their calculations with the data a company discloses. The primary source of data for this comparison is the financial statement's notes. Sensitivity analyses with cash flows and discount rates play a major role at this stage. Then, analysts continue their reflexive modelling by socially interacting with the firm's management about the outcome of their recalculations but do not report their outcome to the management (nor to their clients).

5. Concluding discussion

Our study investigates financial analysts' use of goodwill information, specifically information related to goodwill impairment testing via a field study method. Hence, the study responds to Amel-Zahed et al.'s (2021) call to use non-archival data to enhance our understanding of how accounting information users process goodwill data. By drawing on the ideas of reflexive modelling (Beunza & Stark, 2012), we address this phenomenon by answering our research question: 'How do financial analysts use goodwill information in a firm valuation?'

We contribute to prior literature in three main ways. Firstly, we add nuance to Durocher and Georgiou's (2021) study by illustrating that goodwill accounting numbers do not necessarily lack economic significance for analysts and are not always ignored in their valuation work. As prior literature suggests (Durocher & Georgiou, 2021), analysts commonly ignore goodwill information in their firm valuation. Nevertheless, this is not the whole truth. Namely,

some analysts appear to use goodwill (GW) and GIT information, although this information initially disappoints them because it does not seem to fit their valuation purposes. Information's comprehensiveness depends on the time analysts have to handle incompleteness and the calculative resources mobilised to engage in reflexive modelling. Use of goodwill information is differentiated against the concern related to GW and GIT: risk testing of established assets at risk or testing the firm's future and the assumptions concerning it, which may reveal the firm's foundational cash flows, not just the principles of GW and GIT. 'Turning every stone' seems to be a strategy requiring calculative capabilities; the difference in calculative capabilities signifies different ambitions of turning stones and in investing in calculative apparatuses. Analysts are lured into using their DCF models as a reflexive tool that helps them assess what might have been information undisclosed in the financial reports. We found three practices analysts use with GW and GIT information, two of which conduct recalculations of GIT on purpose. One uses a different model, while another uses the same model as that used for a firm valuation. The third analyst uses the standard firm valuation calculation results to assess goodwill's appropriateness.

Secondly, we contribute to the financial accounting literature by bringing the concept of reflexive modelling to it and demonstrating how analysts reflexively use their DCF model to create the target share price. Analysts initially use reflexive modelling with their calculations vis-à-vis the information the firms provide and then communicate with the management about the outcome of their 'recalculations'. Using reflexive modelling, analysts compare their estimates about the model's outcome against the firm's (Beunza & Stark, 2012) and seek to solve the dissonance between theirs and the firms' seemingly irreconcilable numbers. Their analysis considers available public information and that gained in private dialogues with the firm's managers. A dissonance in estimates prompts doubt, stimulating an additional search to evaluate the assumptions and figures. For financial analysts, connecting social cues to traditional financial information seems demanding and challenging. However, in the end, reflexive modelling helps analysts build a competitive edge because of unique target price estimates and the added value provided to their final customers.

We extend the literature about calculating with something, i.e., we show how people use calculative tools in their work. Specifically, we add to Kalthoff (2005), who has shown that users take accounting more at face value, whereas we illustrate a situation where accounting is reconstructed. In Kalthoff's case, the financial data are transferred more straightforwardly to the bank's templates and formats; the financial information is discussed but unchanged. In turn, we show that analysts apply reflexive ways to analyse a specific accounting number: goodwill. Analysts reflect, compare, and benchmark the goodwill information the company disclosed to their own recalculations. In our case, analysts do not take goodwill information at face value but search for new sources of information beyond the officially disclosed company reports. Analysts question the information and search for more unique information sources to reconstruct, build, and test it; the outcome can differ somewhat from the original financial information the company disclosed. The analysts must incorporate more future-oriented information with high uncertainty to reconstruct and test GIT, making the value especially difficult to estimate but providing the potential for competitive advantage in their firm valuation.

Thirdly, we contribute to financial reporting literature by shedding light on the users' information needs. This user is often analysed as an institutional category to justify standard-setting practices (e.g., Durocher et al., 2007; Young 2006, Durocher & Gendron, 2011), or as one whose wants are identified via questionnaires (Gassen & Schwedler, 2010; Cascino et al., 2014),

experiments (Anderson et al., 2015), content analysis (Demirakos et al., 2004), and interviews (Imam, Barker, & Clubb, 2008). Like Durocher and Georgiou (2021), our study follows the ambition to analyse users' wants from financial accounting, but we apply a more process-oriented approach and ask not what users want but focus on how users engage with financial accounting. This ambition starts from the observation that in extant literature, users' involvement in formulating what they want tends to be at a distance and reveals preferences for information. We focus on users' actual and complex strategies to handle financial accounting information and make it more valuable.

We also add nuance to Barker et al. (2012), who show how analysts use publicly available and private data in their analyses and argue that access to company management is essential. We show that in the case of goodwill, it is extremely important for analysts to leave their offices and find new information sources beyond traditional financial figures. When analysts care about finding a firm's value, they curiously search for pieces of information to test the value of the goodwill asset. This activity encourages them to become like detectives or spies to collect 'military intelligence' (Knorr-Cetina, 2011). This intelligence must include unique information reflecting the future and the reliability of the goodwill value, increasing the validity of analysts' estimations in an unstable analysing task. Our case shows that analysts find private management meetings and observations beneficial but officially disclosed goodwill information unhelpful. These unique pieces of information bring input to the DCF model. Because inputs must be constantly updated, the DCF model becomes a reflexive tool (Beunza & Stark, 2012). This model is also reflexive in that it can reveal new things about the economy, such as when analysts find new hidden traces that other analysts and investors cannot. These traces are oriented towards revelation and newness, producing a comparative advantage that is more than an attempt at accurately presenting the future (Knorr-Cetina, 2011).

With regard to implications for standard-setting and enforcement of goodwill reporting, it appears that the low quality of GIT disclosures does not support analysts' work in an optimal way and greatly affects the usefulness of GW information. It is understandable, as such, that companies are reluctant to disclose more information than is required about their goodwill calculations. Nevertheless, it would be worthwhile to develop and clarify the goodwill-related disclosure requirements so that companies would use fewer boilerplate phrases from the standards and provide instead more company-specific content to analysts and other users. In addition, it would be appropriate to make greater efforts to harmonise the strictness of goodwill standard enforcement globally.

This study is not without limitations. Nevertheless, simultaneously these limitations open new avenues for interesting further research. We have used only Finnish data for our study. It would be worthwhile to investigate how analysts in other countries use goodwill information and potentially do reflexive modelling in their valuation work. Our data gathering was primarily based on interviews with many analysts (1–3 interviews per analyst). Hence, we have obtained a big picture, but we do not necessarily know in detail how analysts do their valuations and use goodwill information in them. We suggest that in future studies researchers could identify one or a few analysts who pay a lot of attention to goodwill information and do reflexive modelling in their valuations. Researchers could use these analysts as cases and follow their work intensively by participant observation or multiple interviews, for example. Furthermore, out of many users, we have investigated only financial analysts. It would be fruitful to study how creditors use goodwill information in their lending activities.

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Appendix 1. The goodwill asset

IFRS intends to promote more useful information to investors by producing (more) future-oriented values. These values would directly relate to decision-making. Goodwill is a particular asset in the balance sheet because it is not separate but a leftover from the allocation of a purchase price of other assets. Goodwill emerges in business combinations (e.g., mergers and acquisitions) when an acquirer pays more than the value of the acquiree's identifiable net assets. IAS 36 (52.) states that "[g]oodwill acquired in a business combination represents a payment made by the acquirer in anticipation of future economic benefits from assets that are not capable of being individually identified and separately recognized". Accordingly, an item not meeting the definition of an intangible asset (under IAS 38) can be recognised as part of goodwill if the item is acquired in a business combination.

IAS 36 (impairment of assets) stipulates that a company must carry out a goodwill impairment test at least annually to ensure its goodwill is carried out at no more than its recoverable amount. If a goodwill's carrying value exceeds the recoverable value, the carrying value is reduced to the recoverable value. Accordingly, an impairment loss is an amount by which the carrying value exceeds the recoverable value. The impairment loss is an expense in the income statement. Consequently, this loss decreases a company's operating profits and equity. Reversing prior years of impairment for goodwill losses is prohibited. The recoverable value is tested separately in a company's cash-generating units (CGU). A GCU's recoverable amount is higher than its "value in use" and "fair value less costs to sell". In the fair value less costs to sell method, the amount obtainable from selling an asset in an arm's length transaction between knowledgeable and willing parties is calculated. Consequently, the goodwill impairment loss will be recognised if both values are lower than the carrying value.

Typically, firms in the empirical sample to be discussed used the value in use method – the present value of the future cash flows expected to be derived from a CGU using a pre-tax discount rate. Consequently, the value in use method closely relates to the net present value (NPV) method in finance/capital budgeting literature. NPV is commonly advocated as the theoretically recommended approach to maximise shareholders' wealth. The calculation requires an estimation of future cash flows and a discount rate. The estimation of future cash flows can be further divided into two categories: a basic evaluation period representing the coming 3–5 years and the periods beyond. A calculation model for identifying free cash flows to be discounted can include several sub-components to be estimated: earnings before interest, taxes, depreciation, and amortisation (EBITDA); required replacement investments; and changes in networking capital requirements. Terminal value for the free cash flows beyond the basic evaluation period can be calculated for a definitive period (e.g., 15 years); cash flows can also be assumed to grow indefinitely. According to IAS 36.55, a company should use a pre-tax discount rate reflecting current market assessments of the time value of money and the specific risks in measuring value in use. Also, the discount rate can significantly affect the recoverable amount. IAS 36.57 further stipulates that the discount rate would be the entity's WACC, incremental, or market borrowing rate. Estimating WACC requires decisions related to (sub-components of) the cost of equity, debt, and target capital structure.

The largest CGU to which goodwill should be allocated for impairment testing is an operating segment defined by IFRS 8. More specifically, IAS36 stipulates that the impairment testing of goodwill must be conducted within the entity at the level at which the goodwill is monitored for internal management purposes and to which the goodwill relates, meaning testing is

undertaken for the smallest identifiable group of assets generating independent cash inflows. A company may not have to book an impairment loss of a subunit of the CGU if other subunits compensate for its negative recoverable amount.

Appendix 2. Interviews

ACTORS	FIRST ROUND DURATION IN MINUTES	SECOND ROUND DURATION IN MINUTES
Financial analysts:		
1. Senior Equity Analyst, Sell-side analyst 1	57	10*
2. Head of Strategies, Sell-side analyst 2	52	13*
3. Portfolio Manager, Buy-side analyst 1	114	11*
4. Portfolio Manager, Equities, Buy-side analyst 2	40	10*
5. Managing Director, Buy-side analyst 3	34	
6. Senior Analyst, Sell-side analyst 3	61	16*
7. Head of Equities, Direct Equities, Buy-side analyst 4	52	11*
8. Chief Executive Officer, Buy-side analyst 5	35	
9. Deputy Chief Investment Officer, Buy-side analyst 6	44	10*
10. Analyst (Equity Research), Sell-side analyst 4	69	12*
11. Equity Analyst, Sell-side analyst 5	37	
12. Analyst, Sell-side analyst 6	68	
13. Managing Director, Buy-side analyst 7	34	
14. Analyst, Sell-side analyst 7	47	
15. Head of Trading and Capital Markets, Sell-side analyst 8	34	
16. Equity Analyst, Sell-side analyst 9	63	
17. Head of Analysts, Sell-side analyst 10	77	19* + 33*
18. Equity Research Analyst, Sell-side analyst 11	60	
19. Managing Director, Buy-side analyst 8	50	13*
20. Head of Equity Research, Sell-side analyst 12	60	
Companies:		
1. Senior Vice President, Finance, Firm 1	65	14*
2. Executive Vice President, CFO, Firm 2	46	

The interview data consists of 34 interviews (total 24 hours): 22 semi-structured (21 hours) and 12 follow-up (telephone) interviews (3 hours, marked by asterisks).

Appendix 3. Interview questions

Valuation process
– How do you make your valuation (in detail)?
– Description of the process
– How does the calculation look like?
    o Can you show/give us a template?
– How is valuation done under high uncertainty?
– Does your organization have a common procedure for valuation?
– Do you make your sell/buy/hold recommendations independently by yourself or do you need to confirm them with your colleagues or organization first before publishing them out?
– How/where do you get support for your valuation?
– How/when do you update your valuation?

Information for valuation
– What kind of information you need?
– Where/How do you get it?
– How do you meet and talk to managers?
    o E.g., the role of investors' meetings and webinars
– Do you use proxies in valuation? How and why?

Financial accounting (financial statements) information in valuation
– What is the role of this FA information for your valuation?
– What kind of (additional) FA information you would like to get?
– How FA information is uncertain or inadequate?
– What do you do to "mend" it?
– How does FA information create questions?
    o What kinds of questions

Goodwill in valuation
– How do you integrate Goodwill (and its depreciation) in your valuation calculation? Why?
– How do you take goodwill into account otherwise in your analysis/recommendations (sell/buy/hold)? Why?

Goodwill impairment testing
– How do you see the potential role of GIT as a vehicle for company valuation? (sum of the parts (i.e., Cash generating units) corresponds the enterprise value)?
– How do you utilize GIT information?
    o Do you trust in GIT information provided by the company?
    o What would you like to know more?
– How do you see the information value of an announcement of goodwill impairment?
– Do you reconstruct somehow firm's goodwill impairment test by using your own inputs? Why, how?

Appendix 4. Three cases of reflexive modelling with GIT recalculation

	A. SEPARATE GIT RECALCULATION PRACTICE (WITH A DIFFERENT DCF MODEL THAN FOR FIRM VALUATION)	B. SEPARATE GIT RECALCULATION (WITH THE SAME DCF MODEL THAN FOR FIRM VALUATION)	C. FIRM VALUATION DCF USED ALSO FOR GIT
GIT recalculation conducted on purpose	YES	YES	NO Firm valuation is simultaneously also a GIT re-calculation
The same model used as for the firm valuation	NO	YES	YES
Disclose the outcome of recalculation (in writing) to investors or companies	NO	NO	NO
Sensitivity analysing with CF and discount rate plays a major role	YES	YES	YES
Reflexive comparison of recalculation with a data disclosed by company	YES	YES	YES
Reflexive communication with firm managers about the outcome of recalculation	YES	YES	YES
Focus specifically on analysing companies with large GW and risk of impairment	YES	YES	YES (however, standard valuation conducted for all the companies)
Primary source of GW info is notes	YES	YES	YES
Level of GW recalculation	Group (seldom CGU)	CGU	CGU
Main purposes of GIT recalculation	1. reassurance of firm GW riskiness; 2. info for firm valuation through CF analysis	1. reassurance of firm GW riskiness; 2. info for firm valuation through CF analysis	1. info for firm valuation through CF analysis; 2. reassurance of firm GW riskiness
How GW/GIT info become useful 1.	GIT Recalculation enables them to be alert and react fast if something happens related to risks and future cash flows of a firm	Enhancing analyst's competitive edge vis-a-vis competitor analysts by turning every stone. GIT recalculation is one thing to obtain as thorough understanding of the firm as possible	Crumbs of information to be placed in the DCF model that is considered a sort of shelfing unit (GW/GIT info one crumb in the package)
How GW/GIT info become useful 2.	Sensitivity analysis of CFs and WACC for firm valuation	Sensitivity analysis of CFs and WACC for firm valuation. A thorough analysis of terminal value	Sensitivity analysis of CFs and WACC for firm valuation
Others		-Emphasises that GIT recalculation is very similar to firm valuation but done with a different mindset	