Routledge
Taylor & Francis Group

Accounting in Europe

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/raie20

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To cite this article: Peter Frii & Mattias Hamberg (2021) What motives shape the initial accounting for goodwill under IFRS 3 in a setting dominated by controlling owners?, Accounting in Europe, 18:2, 218-248, DOI: 10.1080/17449480.2021.1912369

To link to this article: https://doi.org/10.1080/17449480.2021.1912369

Published online: 21 May 2021.

Accounting in Europe, 2021
Vol. 18, No. 2, 218–248, https://doi.org/10.1080/17449480.2021.1912369

What motives shape the initial accounting for goodwill under IFRS 3 in a setting dominated by controlling owners?

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ABSTRACT We investigate how different motives shape the initial accounting for goodwill in a setting dominated by controlling owners, using data from 1112 acquisition analyses reported by Swedish listed acquiring firms. In contrast to prior studies, we find no evidence that earnings-based compensation affects the proportion of the purchased price accounted for as goodwill. Instead, we find that when a family-owned firm is the acquirer, a larger proportion of the purchase price is accounted for as goodwill than as specific assets and liabilities. These two findings indicate that controlling owners may curb managerial motives, while controlling family owners apply the discretion of IFRS 3 according to their motives. We also find in this setting that acquisition-related motives have a significant impact on the proportion of the purchased price accounted for as goodwill. Overall, our analyses indicate that the motives shaping goodwill accounting choices depend on the institutional setting.

Keywords: goodwill; IFRS 3; business combinations; ownership; family firms

1. Introduction

The accounting for goodwill has attracted research interest because significant professional judgment is prevalent both at the initial and subsequent stages of determining its value. While there is a vivid ongoing debate about whether the subsequent accounting for goodwill (i.e. annual impairment tests) provides useful information in a European setting (e.g. Schatt et al., 2016), there has been much less focus on the initial accounting. Because the subsequent impairment tests can be endogenously determined by the initial accounting (Zhang & Zhang, 2017), it is also important to explore whether goodwill is affected by different motives at the time of the acquisition analysis. Previous studies have mainly explored how managerial motives, such as bonus incentives, influence the proportion of the purchase price initially accounted for as goodwill (Detzen & Zülch, 2012; Shalev et al., 2013). In this study, however, we intend to investigate motives that may shape the initial accounting for goodwill in a setting dominated by controlling owners, where managerial motives are arguably less influential. To do so, we make use of the disclosure

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requirements of the International Financial Reporting Standard (IFRS) 3 *Business Combinations*.[1,2] After screening more than 2000 annual reports, our dataset contains 1112 acquisition analyses reported by 205 unique Swedish publicly listed firms from 2005 to 2013.

According to IFRS 3, goodwill can only arise after the acquirer has recognized the sum of the fair values of assets given, liabilities assumed and any non-controlling interest in the acquiree (IFRS 3.10). The process starts by classifying/designating the identifiable acquired assets and assumed liabilities (IFRS 3.15) to arrive at the fair value of net identifiable assets in the acquiree. The difference between the price paid and the acquirer's ownership in the fair value of the acquiree's net identifiable assets is reported as goodwill (IFRS 3.32). Although IFRS 3 provides guidance to the process of identifying and determining the fair value of acquired assets, significant professional judgment is still required. Goodwill and other acquired assets with an indefinite useful life should, according to the International Accounting Standard (IAS) 36, subsequently be tested for impairment, which also demands professional judgment. This has caused some researchers to voice concerns about the usefulness of goodwill, arguing that it may be tempting to make choices at the initial stage that resuts in goodwill balances that exceed the economic value (e.g. Detzen & Zülch, 2012; Li & Sloan, 2017; Ramanna & Watts, 2012). The reason why critics contend that goodwill is likely to exceed its economic value is because this, in combination with required subsequent professional judgments, enables the acquirer to manage future earnings upward (e.g. Detzen & Zülch, 2012). It is even suggested that the required professional judgments of the impairment-only approach to goodwill has led to overpayments for acquirees (e.g. Bartov et al., 2021).[3]

Research on the initial accounting for goodwill has mainly explored how managerial motives shape the outcome of the professional judgments. Shalev et al. (2013) find that a larger proportion of the purchase price is accounted for as goodwill when CEOs of U.S. acquirers obtain considerable earnings-based compensation. Detzen and Zülch (2012) find similar results for a sample of large publicly listed European firms. Thus, they argue that managers use the professional judgment given to them at the acquisition date, by reporting a larger proportion of the purchase price as goodwill, to increase future earnings and bonuses.

In this study, we explore several motives that may affect the proportion of the purchase price that is accounted for as goodwill. In particular, we conjecture that the importance of managerial motives identified in prior research (e.g. Detzen & Zülch, 2012; Shalev et al., 2013) is contextual and curbed by owners when they have sufficient power to do so. But as predicted by agency theory (e.g. Anderson & Reeb, 2003; Shleifer & Vishny, 1997), controlling owners may also have their own motives that shape the initial accounting for goodwill. For instance, a family owner with disproportionately low cash flow rights may participate in value-destructive acquisitions for control reasons (Claessens et al., 2000; Dyck & Zingales, 2004). While family owners may have a dampening effect on managerial actions, they may also be tempted to structure the outcome of the acquisition analysis to produce more opaque accounting and to manage future earnings by reporting goodwill that exceeds its economic value (cf. Bartov et al., 2021). Thus, we further the understanding of the initial accounting for goodwill in a setting where different types of owners typically have more power than managers. Family ownership is of particularly interest because it is the most common type worldwide (e.g. Aminadav & Papaioannou, 2020).

Our sample of 1112 acquisition analyses is larger than most previous studies of the initial accounting for goodwill, and it includes acquisitions of both public and private acquirees. We believe that our sample better resembles the typical setting in which IFRS 3 is applied as it also includes smaller acquirers and acquirees, which differs from prior research focus of only including large acquisitions. Further, the Swedish setting offers unique opportunities to explore how ownership affects the outcome of an acquisition analysis as the ownership structure

varies considerably and is often distinctively different from an Anglo-Saxon setting.[4] The use of control-enhancing mechanisms, such as dual classes of shares, is extensive in Sweden (Faccio & Lang, 2002; Institutional Shareholder Services, 2007) , which further enhances the influence of controlling owners. Swedish law also forbids dual responsibilities as CEO and chairman of the board (Aktiebolagslagen, 2005, p. 551, Ch.8, §49), and the Swedish Corporate Governance Code (SCGC) does not permit that more than one manager sits on the board (SCGC, 2016, Ch.4, §3). Thus, the CEOs in publicly listed Swedish firms will have a relatively weaker influence than that of the CEOs in large widely held Anglo-Saxon firms when making acquisitions and accounting for them.

The empirical analysis does not show that the acquirer reports a larger proportion of the purchase price as goodwill when the CEO obtains more earnings-based compensation. This implies that the documented importance of managerial motives is curbed in a setting where owners are in control of important firm decisions. Instead, we find that family-controlled firms report a larger proportion of the purchase price as goodwill. The agency conflict between owner and management is thus curbed, but the agency conflict between controlling and non-controlling owners appears more relevant in the Swedish setting. Regardless of whether this finding is due to a strategy of concealing ill-executed acquisitions by reporting it as goodwill (cf. Bartov et al., 2021), or a desire to control acquisition-related expenses for contracting reasons (Ramanna & Watts, 2012; Watts, 2003), it indicates that motives related to family ownership shape the initial accounting for goodwill. These results remain robust to a number of alternative variable definitions, subsamples and additional controls.

We also find that a number of additional motives shape the initial accounting for goodwill. Specifically, the proportion of the purchase price accounted for as goodwill increases when (i) the acquirer pays more than the industry-average for the book value of the target firm's pre-acquisition net assets, and (ii) the uncertainty is more pronounced due to foreign acquirees. These findings could potentially be related to the difficulty of fully attributing the payment to specific assets when uncertainty prevails, but it could also be because goodwill is used to conceal overpayments (cf. Bartov et al., 2021; de Bodt et al., 2018). Moreover, we find that frequent acquirers have a dampening effect on the proportion of the purchase price accounted for as goodwill. This indicates that serial-acquirers may learn how to better attribute the purchase price to specific assets and liabilities, making goodwill potentially more reliable and useful to investors.

The study contributes to the accounting literature by showing that the institutional context is important to understand accounting choices, such as the initial accounting for goodwill. Researchers studying subsequent goodwill accounting decisions, such as impairments, should be aware of the varying motives that shape the initial accounting for goodwill. We also contribute to the literature on agency conflicts. In particular, we show that the discretion of fair-value measurements may not just reflect managers' personal motives, but also owners' motives. In a broad sense, the case of goodwill accounting shows how fair-value estimates based on unobservable Level 3 inputs are affected by the institutional setting. Our study should be of interest for international standard setters as it provides evidence that family ownership plays a role in the initial accounting for goodwill. It is, therefore, wise for standard setters to improve their understanding of how owners' motives shape goodwill accounting choices given that goodwill is a very large item in many firms' balance sheets, and because family ownership is large and frequent around the world. It is particularly important for standard setting in Europe because families own or control 70–80% of all European firms (Alderson, 2011).

The rest of the paper is organized as follows. We present prior research and our hypotheses in Section 2, describe our setting and empirical models in Section 3, present results and analyses in Section 4, and conclude in Section 5.

2. Literature Review and Hypotheses

2.1. The Accounting for Business Combinations Under IFRS 3

To internationally harmonize – and presumably improve – the accounting, the Financial Accounting Standards Board (FASB) and the International Accounting Standards Board (IASB) initiated a joint project on the accounting for business combinations. At that time, both standard-setting bodies allowed firms to use either the acquisition or the pooling method to account for a business combination. Only the acquisition method permitted goodwill, and goodwill was usually amortized over the asset's useful life, which at the time was 20 years according to the IASB and 40 years according to the FASB. In their joint project, the IASB and the FASB decided that only the acquisition method should be permitted and that goodwill should only be subject to impairment tests. The FASB's standards SFAS 141 (Business Combinations) and SFAS 142 (Goodwill and other intangible assets) was enacted in the United States as of 2001. The IASB introduced IFRS 3 in 2004, and as of January 2005, the European Union made it mandatory for all publicly listed firms of its member countries to comply with IFRS as issued by the IASB; and thereby, requiring the application of IFRS 3 for business combinations.

The accounting for business combinations has varied over time and between standard setting bodies (Ding et al., 2008). One of the most recently debated matters is whether goodwill is an asset, and what components it should consist of. In this respect, Johnson and Petrone (1998) distinguishes between six possible components of goodwill: (1) the fair-value revaluation of the acquiree's assets; (2) the fair value of identified assets not recognized by the acquiree prior to the acquisition; (3) the fair value of the 'going concern element' that comes from the synergies of combining the acquiree's assets prior to the acquisition, which could be internally generated or acquired previously by the acquiree; (4) the synergies that come from combining the acquirer's and the acquiree's assets and businesses that would not be possible if the firms were stand-alone entities; (5) an overvaluation of the consideration paid, such as the acquirer's own stock in an all-stock transaction; and (6) an overpayment for the acquiree. In line with Johnson and Petrone (1998), the IASB and the FASB agreed that goodwill meets the definition of an asset as long as acquired assets and liabilities can be correctly identified and valued before recognizing goodwill , meaning that goodwill should mainly consist of Components 3 and 4 in the Johnson and Petrone (1998) framework.

When a business combination is completed, an entity shall account for each business combination by applying the acquisition method (IFRS 3.4), in which the acquirer and acquisition date are determined. The standard mandates the acquirer to recognize the sum of the fair values of assets given, liabilities assumed and any non-controlling interest in the acquiree (IFRS 3.10). The acquirer shall also classify or designate the identifiable acquired assets and assumed liabilities (IFRS 3.15) to arrive at the fair value of net identifiable assets in the acquiree. Goodwill is a residual coming from the difference between the consideration transferred for the acquiree and the acquirer's interest in the fair value of the net identifiable assets in the acquiree (IFRS 3.32). Because goodwill is a residual, it does not by itself produce a valuation problem, but at the time of the initial recognition, problems arise indirectly from the fair value assessment of specific acquired assets and liabilities (i.e. Components 1 and 2 in the Johnson and Petrone (1998) framework). For the acquirer to determine the fair value of net identifiable assets, it is necessary to employ significant professional judgment in the recognition and measurement process.

In the accounting literature, there is substantial skepticism towards the adoption of the impairment-only approach to goodwill and other assets with an indefinite useful life (e.g. Li & Sloan, 2017; Ramanna & Watts, 2012; Watts, 2003; Zhang & Zhang, 2017). The main argument for such skepticism is that managers will let their professional judgments at the acquisition date be affected by personal motives; and as a consequence, they may compromise future economic

impairments. Such a behavior would be consistent with including the first two components of the Johnson and Petrone (1998) framework to goodwill. For example, Shalev et al. (2013) argue that managers with earnings-based compensation align their professional judgment with their personal motives to maximize future earnings and bonuses. There are also concerns that the combination of professional judgment in the process of initially determining goodwill and the subsequent impairment-only tests can lead to overpayments for an acquiree. Bartov et al. (2021) find that goodwill under the impairment-only approach likely is used to conceal overpayments. Thus, goodwill may, according to critics, also contain component 6 in the Johnson and Petrone (1998) framework.

Empirical accounting research also suggests that goodwill to a large extent reflect the motives of the acquirer, rather than the underlying economics (e.g. Beatty & Weber, 2006; Detzen & Zülch, 2012; Hamberg & Beisland, 2014; Li & Sloan, 2017; Ramanna & Watts, 2012; Shalev et al., 2013; Yehuda et al., 2019). For example, Ramanna and Watts (2012) document that acquirers that capitalize proportionately more goodwill report higher post-acquisition earnings, and that the likelihood of reporting goodwill impairment decreases with accounting discretion. The consequences are inflated goodwill balances, untimely impairments and investors who do not seem to fully anticipate the untimely nature of goodwill impairments (Li & Sloan, 2017). While most research has been conducted on SFAS 141 and the U.S. institutional context, there is evidence of substantial problems also with IFRS 3 (Bugeja & Loyeung, 2015; Detzen & Zülch, 2012; Hamberg & Beisland, 2014). In a comparative study of the two settings, André et al. (2016) find that problems are, at least, as severe under IFRS 3 as under SFAS 141.

2.2. *Motives Shaping the Initial Accounting for Goodwill*

As discussed in the previous section, the accounting for business combinations requires significant professional judgment, which often leads to subjective accounting choices. Research shows that in settings where most acquiring firms are widely held without a controlling owner, managers often report a large proportion of the purchase price as goodwill if they can benefit from it. For example, Shalev et al. (2013) find, using a sample of 320 U.S. acquisitions, that the proportion of the purchase price reported as goodwill increases when managers of acquiring firms receive substantial earnings-based compensation. In a study of 123 large European acquisitions, Detzen and Zülch (2012) find a similar positive relation between earnings-based compensation and the proportion of the purchase price reported as goodwill.

Prior to the impairment-only approach, goodwill was also subject to impairment tests, but only as a complement to annual amortizations. Studies comparing the initial accounting for goodwill in the periods before and after the implementation of the impairment-only approach, find that managerial motives only play a significant role in the latter period. Zhang and Zhang (2017) show that the association between earnings-based compensation and a large proportion of the purchase price accounted for as goodwill is, in the U.S. setting, only prevalent under the impairment-only approach. Similarly, Bugeja and Loyeung (2015) show that the proportion of the purchase price accounted for as goodwill increased when Australian firms transitioned to the impairment-only approach under IFRS 3 and IAS 36.

Most prior studies have been conducted in Anglo-Saxon institutional settings. Thus, we expect that the institutional context may explain the established association between earnings-based compensation and the proportion of the purchase price reported as goodwill. We stress two important differences between the previously studied Anglo-Saxon context and our Swedish context. First, the average firm in the Anglo-Saxon institutional context tends to have a much more dispersed ownership. Aminadav and Papaioannou (2020) document that the largest owner in an average U.S. firm holds 13.0% of the voting rights, and in the UK, it is 17.3%,

which can be compared to a world average of 31.5%. In Sweden, the average largest owner possesses 31.9% of the voting rights (Aminadav & Papaioannou, 2020). Second, ownership is also considerably more dispersed in large firms, and previous research (Detzen & Zülch, 2012; Shalev et al., 2013; Zhang & Zhang, 2017) has only targeted large acquirers' acquisitions of other large publicly listed firms.

Another reason for expecting that the association between earnings-based compensation and the proportion of the purchase price reported as goodwill is contextual, is the relative power of management. In the U.S., managers often occupy a number of seats on the board of directors. Adams et al. (2010) survey several studies and report that almost half of the board members consist of managers or affiliated directors. In addition, there is often a CEO and chairman duality role in the U.S. For instance, Adams et al. (2010) suggest that 80% of the CEOs also act as the chairman. In a more recent study, Tinaikar (2017) reports that 68% of the CEOs in his sample of large U.S. firms are also the chairman. This puts a CEO in a relatively more powerful position and likely increases the agency conflict between owners and management (Jensen & Meckling, 1976). In other settings, managers are less powerful. For instance, Swedish law prohibits the CEO to also be the chairman.

Thus, the documented association between managerial motives and the initial accounting for goodwill could be an effect of studying an institutional setting in which CEOs are relatively more powerful (c.f. Detzen & Zülch, 2012; Shalev et al., 2013; Zhang & Zhang, 2017). Earnings-based compensation is a strong personal motive for a CEO in any institutional setting, but the association between earnings-based compensation and the proportion of the purchase price allocated to goodwill is perhaps not significant in settings where most firms have controlling owners and the CEO cannot be the chairman of the board. While it is an empirical question whether the CEO's earnings-based compensation will shape the initial accounting for goodwill in such a setting, we conjecture that CEO motives in general are curbed when firms are less widely held and controlling ownership is common. In other words, we expect in contrast to findings from previous research that earnings-based compensation will *not* have an effect on the initial accounting for goodwill when managers are relatively less powerful. For this reason, we formulate the following first hypothesis:

> **H1:** The proportion of the purchase price accounted for as goodwill is not associated with the CEO's level of earnings-based compensation in a setting dominated by controlling owners.

As discussed, ownership worldwide is more concentrated than in the typical Anglo-Saxon setting (Aminadav & Papaioannou, 2020). But another distinct difference between the Anglo-Saxon setting and other settings is the extent to which publicly listed firms are owned and controlled by a family.[1] It is widely known that families constitute the most common owner type among publicly listed firms worldwide (Alderson, 2011; Claessens et al., 2000; Dyck & Zingales, 2004; Faccio & Lang, 2002; La Porta et al., 1999). However, family ownership of publicly listed firms is less pronounced in the U.S. and the UK relative to Continental Europe (e.g. Alderson, 2011; Faccio & Lang, 2002). For instance, La Porta et al. (1999) show that only 20% of large U.S. firms were family-controlled, which can be compared to about 45% in the Swedish setting.

It is often claimed that family owners want to not only maximize shareholder value, but also make decisions that maintains family control over the business (e.g. Bertrand & Schoar, 2006). There is an ongoing and unresolved debate as to whether family ownership benefits corporate performance. On the one hand, a family owner often knows the organization better and is better able to supervise and motivate employees (Bertrand & Schoar, 2006). These advantages also give the family owner outstanding monitoring abilities (Demsetz & Lehn, 1985). But on the other hand, the family owner is

sub-optimally diversified and desires less firm-specific risk. As a consequence, family firms often reduce its operating risks, avoid destabilizing acquisitions and prefer equity-financing of projects (e.g. Miller et al., 2009; Miller & LeBreton-Miller, 2005). While some have claimed that controlling family owners destroy shareholder value (Cronqvist & Nilsson, 2003; Goa & Kling, 2008), most research seems to agree that the benefits of family ownership exceed the drawbacks (e.g. Anderson & Reeb, 2003; Barontini & Caprio, 2006; Faccio & Lang, 2002; Maury, 2006; Villalonga & Amit, 2006). However, research also shows that that family owners may influence the firm's acquisition policy in order for them to indirectly diversify their private portfolio (e.g. Miller et al., 2010). Moreover, it has been found that family firms may under such conditions destroy value when undertaking acquisitions (Bauguess & Stegemoller, 2008).

It is likely that the financial reporting of a family-controlled firm will have several distinct features. Vural (2018) investigates disclosure practices in Swedish firms' annual reports using a disclosure index. She documents that family firms disclose less information than non-family firms. This finding is , in large, supported by studies from other settings (e.g. Ali et al., 2007; Chen et al., 2008; Yang, 2010). There are two reasons as to why family firms can be expected to disclose less information. First, the family owner has access to other information channels; and given that accounting information is costly, it appears unnecessary to produce more information than the minimum requirements. Second, better disclosure practices will reduce the controlling owner's information advantage and allow non-controlling owners to better monitor the firm's practices. When the controlling owner is a family that wants to maintain corporate control, fully transparent disclosures may shed a light on the decisions that the family owner wishes not to reveal. This could, for example, be because the family owner wants to conceal that the firm's investment policy, through acquisitions, in reality is motivated by a need for diversification in the family's private portfolio, and not optimal investments (c.f. Bauguess & Stegemoller, 2008).

When it comes to corporate acquisitions, family-controlled firms are not only likely to make fewer acquisitions, but also to make accounting choices that reveal less detailed acquisition information. A such opaque reporting practice will reduce the probability of being criticized by external stakeholders, including non-controlling owners. Because the controlling family owner perceives no significant information gain from identifying specific assets and liabilities in a detailed acquisition analysis (rather the opposite), the firm is more likely to increase the proportion of the purchase price accounted for as goodwill. By reporting a larger proportion of the purchase price as goodwill, the family owner also obtains better control over future earnings. In sum, goodwill can due to family ownership contain components 1 and 2 as well as 6 in the Johnson and Petrone (1998) framework. For these reasons, we formulate the following second hypothesis:

> **H2**: The proportion of the purchase price accounted for as goodwill increases with family ownership.

While personal and governance motives are likely to be important (Bugeja & Loyeung, 2015; Detzen & Zülch, 2012; Shalev et al., 2013; Zhang & Zhang, 2017), other factors may also affect the proportion of the purchase price reported as goodwill. Acquisitions tend to create value for society as they help restructure industries and improve efficiency, but they are value-destroying for the owners if the acquirer overpays (Malmendier & Tate, 2008). As argued and shown by Bartov et al. (2021), managers may attempt to conceal overpayments by reporting more goodwill; and consequently, the goodwill balance then consists of component 6 in the Johnson and Petrone (1998) framework. Overpayment is not (necessarily) a conscious act: In the corporate finance literature, hubris is a well-known motivation for corporate acquisitions (Roll, 1986), and it suggests that acquirers are overconfident in their ability to create shareholder value from an acquisition. In particular, such overconfidence may arise in firms with outstanding

track records (Billett & Qian, 2008; Doukas & Petmezas, 2007). Along these lines, Bartov et al. (2021) find that overbidding is more prevalent after the adoption of SFAS 142, arguing that the impairment-only approach enables acquirers to conceal any overpayment by reporting it as goodwill. The consequence of an overpayment is that it is difficult to recognize it as a specific asset and the acquirer will, intentionally or unintentionally, report goodwill that does not reflect its underlying economic value. Along these lines, we formulate the following third hypothesis:

> **H3**: The proportion of the purchase price accounted for as goodwill increases with payments that are significantly higher relative to other similar acquisitions.

Some firms grow rapidly through corporate acquisitions and these firms are likely to accumulate valuable experiences on how to successfully make value-creating acquisitions and how to account for acquired resources. We expect acquisition experience – in the form of acquisition frequency – to benefit the professional judgment of the acquirer and to reduce the proportion of the purchase price reported as goodwill. Research suggests that acquisition experience has a positive impact on acquisition performance. For example, experienced acquirers can become better at estimating potential synergies (Haleblian & Finkelstein, 1999; McDonald et al., 2008). In a similar fashion, accounting skills are likely to develop gradually over time. Any allocation of the purchase price to specific assets comes from an understanding of how to attribute the value of future operations to specific assets of the acquiree. Managers with more acquisition experience may possess better knowledge of how to use their professional judgment to attribute acquired resources to correct assets. Thus, the difference between the purchase price and the fair value net assets will, ceteris paribus, better reflect acquired synergies of components 3 and 4 in the Johnson and Petrone (1998) framework. Based on these two strands of arguments we formulate the following fourth hypothesis:

> **H4**: The proportion of the purchase price accounted for as goodwill decreases with acquirer's past acquisition experience.

Acquisitions are uncertain as information is asymmetrically distributed between the potential acquirer and the owners of the potential acquiree. The level of uncertainty is affected by many factors, including knowledge of the acquiree's valuable resources, its markets and its accounting practices. For example, McNichols and Stubben (2015) find that the quality of the acquiree's accounting information reduces acquisition uncertainty and the risk for the acquirer to overpay. It also seems as if acquirers benefit from reduced information uncertainty by sharing auditors with the acquiree (Cai et al., 2016; Dhaliwal et al., 2016). These findings suggest that acquisitions with more uncertainty are more likely to be associated with overpayments, making goodwill more likely to stem from both Component 6 as well as Components 1 and 2 in the Johnson and Petrone (1998) framework. Based on these arguments, we formulate the following fifth hypothesis:

> **H5**: The proportion of the purchase price accounted for as goodwill increases with acquisition uncertainty.

3. Research Method

3.1. The Swedish Institutional Setting

Before listed firms in Sweden were mandated to comply with IFRS, the Swedish accounting standard RR 1:00 required them to use the purchase method and a two-component approach with

annual amortizations over a maximum period of twenty years; and if necessary, impairments. Most firms were much more conservative and in 2004 the median Swedish listed firm amortized goodwill over a period of seven years (Hamberg et al., 2011). The Stockholm Stock Exchange is a well-functioning liquid equity market with a total of 375 listed firms during the studied period of 2005–2013. Swedish publicly listed firms are known, in general, to provide high-quality accounting numbers (e.g. Leuz et al., 2003) and informative financial reports (La Porta et al., 1999).

The ownership structure among Swedish listed firms is relatively concentrated, and family ownership is common. Aminadav and Papaioannou (2020) suggest that the average largest owner in a Swedish listed firm holds about 31.9% of the voting rights, which is close to the world average of 31.5%. Families control about 45% of the Swedish listed firms, which is higher than the world average of 30% (Barontini & Caprio, 2006; La Porta et al., 1999; Maury, 2006). Sweden also has among the highest ownership concentration and separation of control and cashflow rights in the corporate world (Faccio & Lang, 2002; Institutional Shareholder Services, 2007). La Porta et al. (1999) report that Swedish firms to have the highest frequencies in terms of dual share classes and pyramid ownership structures.

Swedish law prohibits the CEO from taking on dual responsibilities as the chairman of the board (Aktiebolagslagen, 2005, p. 551, Ch.8, §49). It also requires at least three board members (Aktiebolagslagen, 2005, p. 551, Ch.8, §46) and because the Swedish Corporate Governance Code (SCGC) recommends no more than one manager on the board (SCGC, 2016, Ch.4, §3), managers should typically not be able to dominate the board of directors. However, the SCGC does not block the control of the main owner as it only requires two board members to be independent from controlling owners, regardless of the size of the board (SCGC, 2016, Ch.4, §5). Thus, CEOs are, together with other managers, effectively hindered by the combination of the law and the code, as well as large controlling owners, to dominate the board of directors. The composition of the CEOs' compensation packages in Sweden also stands out compared to Anglo-Saxon settings. Fernandes et al. (2013) study cross-country differences in executive compensation and find that for the average Swedish CEO, equity-based pay and bonuses are less than 20% of the total compensation. This can be compared with American CEOs who earn substantially more and the variable components account for more than 60% of the total compensation (Fernandes et al., 2013). In other words, Swedish CEOs are much less powerful compared to U.S. CEOs, and their earnings-based compensation motive to report a larger proportion of the purchase price as goodwill should therefore be dampened.

3.2. Research Model and Empirical Measures

To test the hypotheses, we employ the following pooled OLS regression as Model 1, using acquisition analysis-level data:

$$\begin{aligned} GOODWILL_i = {} & \alpha_0 + \alpha_1 BONUS_i + \alpha_2 FAMILY_i + \alpha_3 EXCESS\_PRICE_i + \alpha_4 EXPERIENCE_i \\ & + \alpha_5 UNCERTAINTY_i + \alpha_6 CFRIGHT + \alpha_7 DUAL\_SHARES + \alpha_8 OPTIONS_i \\ & + \alpha_9 TOTAL\_PAY_i + \alpha_{10} NONCASH_i + \alpha_{11} ACTIVITY_i + \alpha_{12} PAST\_GW_i \\ & + \alpha_{13} ROA_i + \alpha_{14} DEBT_i + \alpha_{15} LIQUIDITY_i + \alpha_{16} TRGT\_INTANGIBLE_i \\ & + \alpha_{17} TRGT\_DEBT_i + \alpha_{18} TRGT\_SIZE_i + e \end{aligned} \tag{1}$$

The dependent variable *GOODWILL* is defined as the reported goodwill at the acquisition date divided by the total purchase price.[5] Because other acquired intangible assets than goodwill are also only subject to yearly impairment tests, we use the alternative dependent variable

INTANGIBLES, which includes reported goodwill and all revaluations of intangible assets, to test the robustness of Model 1.

According to hypothesis *H1*, we expect the proportion of the purchase price accounted for as goodwill to not be related to the CEO's earnings-based compensation (*BONUS*) in a setting dominated by controlling owners. We define *BONUS* as the ratio of variable to fixed compensation for the CEO as disclosed in the annual report for the end of the acquisition year. In the regression model, we expect α_1 not to be statistically significant. To control for inter-firm compensation differences, we include total CEO compensation (*TOTAL_PAY*). According to hypothesis *H2*, we expect the proportion of the purchase price accounted for as goodwill to increase with family ownership (*FAMILY*). We measure *FAMILY* using a dummy variable that takes the value of 1 when the largest ultimate owner at the time of the acquisition is a family (or individual private person) that controls at least 10% of the voting rights.[6] The family owner can be a Swedish or non-Swedish citizen. In the regression model, we expect α_2 to be positive and statistically significant.

According to hypothesis *H3*, we expect the proportion of the purchase price accounted for as goodwill to increase with the level of excess purchase price (*EXCESS_PRICE*). We primarily measure *EXCESS_PRICE* with a dummy taking the value of 1 when the ratio between the purchase price and the acquiree's book value of equity as a stand-alone entity (before any fair-value reassessment) is higher than the average for the acquirer's industry at the year of the acquisition. Alternatively, we measure excess price (*EXCESS_PRICE_2*) simply as the natural logarithm of the difference between the purchase price and the acquiree's book value of equity as a stand-alone entity, before any fair-value reassessment. We expect α3 to be positive and statistically significant. According to hypothesis *H4*, we expect the proportion of the purchase price accounted for as goodwill to decrease with acquisition experience (*EXPERIENCE*). We measure *EXPERIENCE* with a dummy taking the value of 1 when the acquirer made more acquisitions than the average of its industry peers and year. In the regression model, we expect α4 to be negative and statistically significant.

According to hypothesis *H5*, we expect the proportion of the purchase price accounted for as goodwill to increase with acquisition uncertainty (*UNCERTAINTY*). We expect more uncertainty for an acquisition of a foreign firm as cultures, markets and even accounting measures are relatively less known to the acquirer. Thus, *UNCERTAINTY* is a dummy taking the value of 1 when the acquiree is not domiciled in Sweden. In the regression model, we expect α5 to be positive and statistically significant. All data used to construct the test variables and the dependent variables come from the acquirers' annual reports.

We use a number of control variables that relate to the acquirer, the acquiree, and the acquisition itself. In terms of the acquirer, we control for its profitability (*ROA*), its indebtedness (*DEBT*), its liquidity (*LIQUID*), its concentration of power (*OWNCON*) and the existence of dual classes of shares (*DUAL_SHARES*).[7] We include *ROA* to control for differences in the acquirer's capacity to withstand expenses associated with amortizations. We measure *ROA* as the acquirer's net profit divided by its average total assets in the year prior to the acquisition. We include *DEBT* to control for the impact of debt covenants on the initial accounting for goodwill, and measure it as total debt scaled by total assets at the beginning of the acquisition year. We include *LIQUID* to further control for the acquirer's capacity to withstand expenses associated with impairments, and measure it as cash and short-term investments scaled with total assets at the beginning of the acquisition year. We measure the firm's past accounting for goodwill (*PAST_GW*) as goodwill scaled with total assets, at the beginning of the acquisition year. *OWNCON* is measured as the largest owner's percentage of voting rights, at the beginning of the acquisition year. *DUAL_SHARES* is a dummy variable taking the value of 1 for firms with dual-class shares. Data on acquirer-specific characteristics are obtained from either

COMPUSTAT Global or each firm's annual report, and financial market information is collected from Thomson Reuters Eikon.

We also control for a number of acquiree-specific characteristics: the acquiree's pre-acquisition intangible assets (*TRGT_INTANGIBLE*), pre-acquisition debt (*TRGT_DEBT*), and relative size (*TRGT_SIZE*). We use *TRGT_INTANGIBLE* to control for the possibility that a larger proportion of the purchase price is reported as goodwill when the acquiree is intangible-intensive. It is measured as the acquiree's total intangible assets scaled with total assets at the time of the acquisition. *TRGT_DEBT* controls for the effect of adding the acquiree's debt to the acquirer's balance sheet; measured as the acquiree's total debt scaled with total assets at the time of the acquisition. *TRGT_SIZE* controls for the effect that relatively large acquisitions seem to destroy more value for the acquirer's shareholders (e.g. Grinstein & Hribar, 2004; Harford & Li, 2007; Loderer & Martin, 1990). We measure *TRGT_SIZE* as the purchase price scaled with the market value of the acquirer at the time of the acquisition. Data on acquiree-specific characteristics are manually collected from the acquisition analyses, as reported in the acquirers' annual reports.

Finally, we include two acquisition-specific control variables: the level of trading in the acquiring firm (*ACTIVITY*) and the payment form (*NONCASH*). *ACTIVITY* measures the value of the acquiring firm's traded shares scaled with the average market capitalization during the previous calendar year. The data is obtained from the OMX Nasdaq Stockholm website. *NONCASH* is the proportion of total purchase price that is not paid in cash. Because both the number of acquisitions and the purchase price paid in acquisitions vary considerably between years and industry, we also include untabulated year and industry dummies in all regression analyses together with robust standard errors clustered at the acquirer firm-level.

3.3. Sample Selection and a Description of the Acquisition Analyses

We start by identifying all potential acquirers listed on the Stockholm Stock Exchange (SSE) in the period 2005–2013. Panel A of Table 1 shows that there are 2299 available firm-years during the studied period. We exclude firms not reporting in accordance with IFRS (28 firm-years), and firms that are not domiciled in Sweden (118 firm-years). We then exclude the finance industry, including banks, insurance companies, real estate companies, and investment companies (371 firm-years). Only ten firm-year observations are excluded due to lack of data. In sum, we reduce the initial sample of potential acquirers to 1772 firm-year observations.

We manually search the annual reports of the 1772 firm-year observations to identify acquisitions leading to a stake in the target firm of 100%. As shown in Panel B of Table 1, we identify 1418 acquisition analyses. We remove acquisition analyses when the purchase price is either not specified or reported as zero (in 64 and 9 observations, respectively). We also remove observations where goodwill is not specified or negative (101 and 21 observations, respectively). We exclude another 132 observations with missing information, leading to a final sample of 1112 acquisition analyses. In the final sample, 263 acquisition analyses (23.7%) contain more than one acquiree. In total, 78.4% of all identified acquisition analyses contain sufficient information to be included in our final sample.

Panel A of Table 2 provides more detailed descriptive statistics on the final sample of the 1112 acquisition analyses from 690 annual reports. In other words, there are disclosures about acquisitions in 38.9% (690/1772) of the firm-year observations. The years with the highest and the lowest number of acquisitions are the year before and after the financial crisis; i.e. 2007 and 2009, respectively.

For our final sample, more than a third of the listed firms report an acquisition analysis (690 firm-years), and 72.2% of the acquired firms are foreign. Moreover, 76.4% of the acquisition

Table 1. Sample description.

	2005	2006	2007	2008	2009	2010	2011	2012	2013	Total
Panel A: Sample of Potential Acquirers										
Firms listed on the SSE:	266	268	267	256	251	242	249	249	251	2,299
Non-IFRS reporting firms	*3*	*3*	*4*	*3*	*3*	*3*	*3*	*3*	*3*	*28*
Other foreign firms	*13*	*12*	*13*	*12*	*12*	*13*	*14*	*15*	*14*	*118*
*Financial firms**	*42*	*45*	*46*	*45*	*41*	*38*	*38*	*36*	*40*	*371*
Missing data	*3*	*2*	*2*	*0*	*2*	*0*	*0*	*1*	*0*	*10*
Number of firm-years in the sample	205	206	202	196	193	188	194	194	194	1,772
Panel B: Sample of Acquisition Analyses										
Total sample of acquisition analyses:	160	180	228	192	107	134	154	147	116	1,418
Missing price	*3*	*6*	*4*	*7*	*4*	*11*	*10*	*12*	*7*	*64*
Zero price	*2*	*0*	*0*	*2*	*2*	*0*	*2*	*1*	*0*	*9*
Missing GW (but not price)	*13*	*20*	*15*	*14*	*3*	*7*	*4*	*13*	*12*	*101*
Negative goodwill identified	*4*	*5*	*3*	*2*	*3*	*4*	*0*	*0*	*0*	*21*
Other missing information	*22*	*18*	*22*	*13*	*17*	*14*	*5*	*12*	*9*	*132*
Final sample of acquisition analyses	120	136	187	156	81	102	133	109	88	1,112

Note: Table 1 reports the sample selection of this paper. Panel A reports the initial sample of publicly listed firms available on the Stockholm Stock Exchange (SSE) in the period 2005–2013, and the exclusions of unsuitable firms, leading to the final sample of 1772 firm-years (i.e. annual reports to screen). Panel B reports the total number of acquisition analyses identified after going through the annual reports of the identified 1772 sample firm-years in the period 2005–2013. After the exclusion of acquisition analyses not containing information about price, goodwill and/or other relevant information to conduct the study, our final sample consists of 1112 acquisition analyses.
*Financial firms include banks, insurance companies, real estate companies, and investment companies.

analyses include only one significant acquiree (848 out of 1112 observations). As shown in Panel A, only 24 out of 1112 acquisition analyses include publicly listed acquirees. Untabulated data shows that the purchase price is below USD 1mn in 11.5% of the cases (128 acquisitions).[8,9] This distinguishes our sample from those in previous studies (Detzen & Zülch, 2012; Shalev et al., 2013; Zhang & Zhang, 2017). Shalev et al. (2013) reports purchase prices almost twenty times larger than the average price in our sample. Panel C provides information about the size of the reported goodwill during the studied period. Most goodwill was acquired in 2007 (both in absolute terms and on average), and the least in 2009.

In Table 3 we focus on a subsample with 765 observations (i.e. 68.8% of the final sample of the 1112 acquisition analyses) that contains full information on the pre-acquisition values of assets and liabilities and the revaluations.[10] Table 3 reveals that the average purchase price is SEK 526 mn, with the highest price is paid in 2007 (avg SEK 991 mn), and the lowest in

Table 2. Descriptive statistics for the acquisition analyses – full sample.

	2005	2006	2007	2008	2009	2010	2011	2012	2013	Total
Panel A: Acquisition details										
Acquisition analyses (#)	120	136	187	156	81	102	133	109	88	1112
Acquiring firms (#)	85	88	102	85	57	65	74	73	61	690
Acquiring firms (%)	41.5%	42.7%	50.5%	43.4%	29.5%	34.6%	38.1%	37.6%	31.4%	38.9%
Number of acquisitions (#)	221	244	379	349	155	187	269	237	173	2214
Foreign acquisitions (#)	78	94	125	108	60	68	109	78	75	795
Foreign acquisitions (%)	65.0%	69.1%	66.8%	69.2%	74.1%	66.7%	82.0%	71.6%	85.2%	72.2%
Foreign acquisitions (# firms)	152	153	217	212	98	110	195	158	134	1429
AA of only one acquiree (#)	89	106	148	120	60	81	103	76	65	848
AA of only one acquiree (%)	74.2%	77.9%	79.1%	77.6%	74.1%	79.4%	77.4%	69.7%	73.9%	76.4%
Toehold acquisitions (#)	23	14	19	15	12	12	6	7	3	111
Toehold acquisitions (%)	19.2%	10.3%	10.2%	9.6%	14.8%	11.8%	4.5%	6.4%	3.4%	10.0%
Public acquirees (#)	2	1	8	2	0	1	6	2	2	24
Public acquirees (%)	1.7%	0.7%	4.3%	1.3%	0.0%	1.0%	4.5%	1.8%	2.3%	2.2%
Panel B: Acquisition Values (MSEK)										
Purchase price (total)	51,327	60,191	169,330	41,810	32,207	47,981	60,888	71,005	53,534	588,272
Purchase price (avg)	428	443	906	268	398	470	458	651	608	514
Price to TotA (avg)	19.5%	15.2%	13.5%	6.4%	5.0%	7.6%	6.2%	9.8%	7.7%	10.1%
Panel C: Goodwill (MSEK)										
Goodwill (total)	32,693	21,201	98,205	24,455	14,014	29,194	32,170	30,100	33,500	315,530
Goodwill (avg)	272	156	525	157	173	286	242	276	381	274
Goodwill / Price (avg)	63.7%	35.2%	58.0%	58.5%	43.5%	60.8%	52.8%	42.4%	62.6%	53.1%

Note: Table 2 reports descriptive information from our sample of acquisition analyses, the purchase price (acquisition value), and the amount of purchase price reported as goodwill, in panel A, B, and C, respectively. All items are reported either in total (#), average (avg) or relative (%) terms.

2010 (avg SEK 144 mn). The average acquiree had a pre-acquisition book value of equity of SEK 132 mn, with the highest in 2007 (SEK 263 mn), and the lowest in 2010 (SEK 39 mn). Thus, acquirees were bought at an average market-to-book ratio of 4.0, and the ratio varied from 2.8 (in 2008) to 10.6 (in 2005). The average purchase price in excess of the acquired book value of equity is SEK 395 mn (varying from SEK 728 mn in 2007 to SEK 181 mn in 2008). On average, 27.1% of the excess purchase price is recognized as specific assets and liabilities. The remaining SEK 287 mn (about 72.8%) is reported as goodwill. It is only in 2006 that less than 50% of the purchase price is reported as goodwill. In 2008, when the market-to-book value is at its lowest, reported goodwill is at its highest (93.4%). An untabulated analysis reveals that in 29.1% of the cases (324 of 1112), the entire excess purchase price is reported as goodwill.[11] In contrast, there is no reported goodwill in 11.7% of the observations (130/1112). It appears as if many acquirers routinely report the entire excess payment as goodwill.

4. Empirical Analysis

4.1. Descriptive Statistics

Table 4 presents descriptive statistics for the variables used in the regression analyses of Models 1–5. The dependent variable *GOODWILL* displays an equal-weighted average value of 59.1%, which is fairly close to the value-weighted average shown in Table 2 (53.1%). Thus, for the average acquisition analysis, goodwill represents 59.1% of the purchase price. For a few acquisitions, goodwill is larger than the purchase price, with a maximum value of 212.5%. This occurs when the target firm's book value of equity is negative at the acquisition date. In total, 74.6% of the purchase price is reported as specific and unspecific intangible assets (*INTANGIBLES*).

Among the test variables, *BONUS* is on average 33.1% (median: 24.4%), indicating that variable compensation is a relatively small part of the CEO's total compensation. Fernandes et al. (2013) show that in large Anglo-Saxon firms considerably more than 50% of compensation is variable. The test variable *FAMILY* captures family ownership and we find that families control more than the majority of the acquirers (74.9%). *EXCESS_PRICE_2* has a mean value of 0.748, suggesting that 25.2% of the excess purchase price in a typical acquisition reflects the acquired firm's pre-acquisition book value of equity. A minimum value of −11.5 and a maximum value of 12.3, as well as a standard deviation of 0.866, indicates that the excess purchase price is often considerably different from the pre-acquisition book value of equity. The variable *EXCESS_PRICE* shows that 20.4% of the acquisitions are made at a higher than year-industry average. This clearly shows that a few acquisitions are made at very steep prices. *EXPERIENCE* captures the acquirers involved in above-average number of acquisitions within its industry-year, and we find that only 21.9% of the acquirers are involved in serial-acquisitions over the years. We also find that *UNCERTAINTY* is high for 62.2% of the takeovers, meaning that more than half of the acquisitions are made outside of Sweden.[12]

For the control variables, we note that three variables are connected to ownership. *CFRIGHT* displays the ultimate owner's cash flow rights; on average 22.7%. This is considerably lower than the average voting rights (*OWNCON*) with a mean of 33.4%. Because of multiple classes of shares, the largest owner holds more voting than cash flow rights. In the sample, 58.6% of the observations are firms that employ dual classes of shares (*DUAL_SHARES*). Furthermore, we observe that stock options (*OPTIONS*) are fairly uncommon (19.0%), that acquisitions are usually made by profitable firms (*ROA)* and most acquisitions (90.7%) are paid directly in

Table 3. Descriptive statistics for the acquisition analyses – subsample.

	2005	2006	2007	2008	2009	2010	2011	2012	2013	Total
Revaluations of acquired assets	95	112	163	131	71	53	64	44	32	765
Purchase price (avg)	510	430	991	281	436	144	376	480	744	526
Acquired BVE (avg)	48	90	263	100	99	39	62	162	310	132
Market-to-Book (avg)	10.6	4.8	3.8	2.8	4.4	3.7	6.1	3.0	2.4	4.0
Excess purchase price (avg)	462	341	728	181	337	105	314	318	434	395
Revalued (avg)	133	195	146	12	149	27	80	108	10	107
Classified as goodwill (avg)	329	146	582	169	188	78	234	210	424	287
Goodwill_%	**71.2%**	**42.7%**	**79.9%**	**93.4%**	**55.7%**	**74.6%**	**74.5%**	**65.9%**	**97.7%**	**72.8%**

Note: Table 3 reports descriptive statistics for the sample of the acquisition analyses containing full information on the historical values and the revaluations of the target firm's important accounting items, including assets, liabilities, equity and goodwill. *Acquired BVE (avg)* is average target firm's book equity (i.e, the value of equity) at the acquisition date. *Market-to-Book (avg)* is the average book value of equity to the purchase price paid. *Excess purchase price* is the part of the purchase price paid over the book value of target firm's equity. *Revalued (avg)* is the part of the excess purchase price recognized as other accounting items than goodwill (i.e. *Classified as goodwill (avg)*), which takes the residual value of excess purchase price after revaluation. *Goodwill _%* is the average percent of excess purchase price reported as goodwill.

Table 4. Descriptive statistics – variables.

	Mean	*Median*	*Std. Dev.*	*Min.*	*Max.*	*N*
Dependent variables						
GOODWILL	0.591	0.596	0.392	0.000	2.125	1,112
INTANGIBLES	0.746	0.775	0.368	0.000	2.750	1,112
Test variables						
BONUS	0.331	0.244	0.450	0.000	5.000	1,112
FAMILY	0.749	1.000	0.434	0.000	1.000	1,112
EXCESS_PRICE	0.204	0.601	0.403	0.000	1.000	1,112
EXCESS_PRICE_2	0.748	0.601	0.867	−11.500	12.300	1,112
EXPERIENCE	0.219	0.000	0.414	0.000	1.000	1,112
UNCERTAINTY	0.622	1.000	0.485	0.000	1.000	1,112
Control variables						
CFRIGHT	0.227	0.141	0.147	0.000	0.699	1,112
OWNCON	0.334	0.297	0.177	0.051	0.893	1,112
DUAL_SHARES	0.586	1.000	0.492	0.000	1.000	1,112
OPTIONS	0.190	0.000	0.392	0.000	1.000	1,112
TOTAL_PAY	1.870	1.766	0.837	0.239	3.681	1,112
NONCASH	0.093	0.000	0.232	0.000	1.000	1,112
ACTIVITY	0.835	0.576	0.848	0.000	7.835	1,112
PAST_GW	0.218	0.191	0.178	0.000	1.000	1,112
ROA	0.063	0.066	0.111	−0.740	1.179	1,112
DEBT	0.562	0.592	0.163	0.048	1.252	1,112
LIQUIDITY	0.101	0.074	0.112	0.000	0.943	1,112
TRGT_INTANGIBLES	0.288	0.230	0.278	0.000	1.000	1,112
TRGT_DEBT	0.563	0.394	2.258	−4.207	67.000	1,112
TRGT_SIZE	0.074	0.021	0.157	0.000	2.377	1,112

Note: Table 4 reports the mean, median, standard deviation and the minimum and maximum value of the dependent and independent variables of model 1. The dependent variable *GOODWILL* is reported goodwill divided by the purchase price. The alternative dependent variable *INTANGIBLES* is the value of goodwill and the revaluation of intangible assets, divided by the purchase price. *BONUS* is the ratio of variable to fixed compensation for the CEO as disclosed in the annual report for the end of the acquisition year; *FAMILY* is a dummy variable taking the value of 1 when the acquirer's largest ultimate owner is a family; *EXCESS_PRICE* is a dummy taking the value of 1 when the ratio of purchase price to the target firm's book value of equity is higher than the average for the industry in the acquisition year; *EXPERIENCE* is a dummy variable taking the value of 1 when the acquiring firm is involved in more acquisitions than its industry average; *UNCERTAINTY* is a dummy variable taking the value of 1 when the acquiree is not domiciled in Sweden. For *EXCESS_PRICE*, we also report the ratio of purchase price to the target firm's book value of equity (*EXCESS_PRICE_2*).
CFRIGHT is the percentage of cash flow rights owned by the largest ultimate owner; *OWNCON* is the percentage of voting rights owned by the largest ultimate owner; *DUAL_SHARES* is a dummy variable taking the value of 1 when the acquirer has dual classes of shares; *OPTIONS* is a dummy variable taking the value of 1 when the CEO own stock options; *TOTAL_PAY* is the CEO's total compensation in the year of the acquisition (here expressed in MSEK, but log is used in regressions); *PAST_GW* is the acquirer's book value of goodwill divided by its total assets at the beginning of the acquisition year; *ROA* is the acquirer's net profit divided by its average total assets in the year prior to the acquisition; *DEBT* is the acquirer's total debt divided by total assets at the beginning of the acquisition year; *LIQUIDITY* is the acquirer's cash and short-term investments divided by total assets at the beginning of the acquisition year; *TRGT_INTANGIBLE* is the target firm's intangible assets scaled by the total assets of the target firm at the time of the acquisition; *TRGT_DEBT* is the target firm's debt scaled by its total assets at the time of the acquisition; *TRGT_SIZE* is the price paid for the target firm divided by the market value of the acquiring firm at the beginning of the acquisition year; *NONCASH* is the proportion of purchase price that is not paid in cash; *ACTIVITY* is the ratio between the value of the acquirer's traded shares and its average market value of equity in the year of the acquisition. We employ eleven industry categories (e.g. industrial manufacturing, consumer manufacturing, industrial trade, consulting services, biotech- and pharmaceutical,).

cash which is consistent with prior studies on family firm's (e.g. Caprio et al., 2011; Martin, 1996). As expected from a sample of mainly privately held acquirees, targets are often small (*TRGT_SIZE* is on average 7.4%).

Table 5. Pairwise correlation matrix.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
BONUS (1)										
FAMILY (2)	−0.138***									
	0.000									
EXCESS_PRICE (3)	0.174***	−0.077***								
	0.000	0.010								
EXPERIENCE (4)	0.021	−0.039	0.082***							
	0.479	0.194	0.006							
UNCERTAINTY (5)	0.016	0.080***	0.049*	−0.179***						
	0.604	0.008	0.100	0.000						
OWNCON (6)	0.042	0.157***	−0.034	0.000	0.017					
	0.166	0.000	0.255	0.989	0.568					
CFRIGHT (7)	−0.010	−0.070**	−0.071**	−0.053*	−0.117***	0.707***				
	0.748	0.019	0.018	0.080	0.000	0.000				
DUAL_SHARES (8)	−0.016	0.369***	0.027	0.084***	0.095***	0.370***	−0.177***			
	0.586	0.000	0.373	0.005	0.002	0.000	0.000			
OPTIONS (9)	0.027	−0.000	0.102***	0.054*	0.036	0.036	−0.082***	0.118***		
	0.368	0.992	0.000	0.073	0.225	0.226	0.006	0.000		
TOTPAY (10)	0.362***	−0.076**	0.244***	0.071**	0.303***	0.055*	−0.210***	0.199***	0.170***	
	0.000	0.011	0.000	0.018	0.000	0.067	0.000	0.000	0.000	
NONCASH (11)	−0.060**	−0.010	0.041	−0.050*	−0.197***	−0.119***	0.006	−0.141***	−0.021	−0.264***
	0.045	0.737	0.172	0.095	0.000	0.000	0.856	0.000	0.480	0.000
ACTIVITY (12)	0.049	−0.082***	0.100***	0.010	0.127***	−0.230***	−0.336***	0.013	0.011	0.333***
	0.104	0.006	0.000	0.745	0.000	0.000	0.000	0.659	0.720	0.000
PAST_GW (13)	−0.007	0.100***	0.025	−0.006	0.120***	−0.144***	−0.214***	−0.027	−0.058*	0.120***
	0.814	0.000	0.402	0.835	0.000	0.000	0.000	0.372	0.053	0.000
ROA (14)	0.260***	−0.002	0.128***	0.066**	−0.020	0.071**	−0.009	0.129***	0.006	0.076**
	0.000	0.937	0.000	0.027	0.496	0.017	0.774	0.000	0.835	0.011
DEBT (15)	−0.044	0.125***	−0.029	0.018	0.137***	−0.056*	−0.250***	0.125***	0.020	0.310***
	0.139	0.000	0.338	0.554	0.000	0.062	0.000	0.000	0.505	0.000
LIQUID (16)	−0.023	−0.105***	−0.012	−0.045	−0.015	−0.116***	−0.070**	−0.039	0.034	−0.123***
	0.450	0.000	0.698	0.133	0.616	0.000	0.021	0.192	0.252	0.000
TRGT_INTANGIBLE (17)	0.110***	0.020	0.105***	−0.069**	0.090***	−0.102***	−0.098***	0.037	0.021	0.169***
	0.000	0.499	0.000	0.022	0.003	0.000	0.001	0.223	0.495	0.000
TRGT_DEBT (18)	−0.039	0.041	−0.033	−0.041	−0.039	−0.0102	0.010	0.046	−0.034	−0.051*
	0.192	0.170	0.265	0.177	0.200	0.735	0.734	0.126	0.257	0.093

TRGT_SIZE (19)	−0.056*	−0.008	0.281***	−0.027	−0.073**	−0.074**	0.012	−0.106***	−0.012	−0.211***
	0.061	0.796	0.000	0.373	0.0149	0.014	0.685	0.000	0.688	0.000
GOODWILL (20)	−0.011	0.070**	0.080***	−0.096***	0.106***	−0.076**	−0.123***	0.008	−0.061**	0.066**
	0.717	0.019	0.008	0.001	0.000	0.011	0.000	0.785	0.042	0.027

Variables	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
BONUS (1)									
FAMILY (2)									
EXCESS_PRICE (3)									
EXPERIENCE (4)									
UNCERTAINTY (5)									
OWNCON (6)									
CFRIGHT (7)									
DUAL_SHARES (8)									
OPTIONS (9)									
TOTPAY (10)									
NONCASH (11)									
ACTIVITY (12)	−0.061**								
	0.041								
PAST_GW (13)	−0.025	0.141***							
	0.407	0.000							

ROA (14)	−0.087***	0.031	−0.054*						
	0.004	0.300	0.073						
DEBT (15)	−0.135***	0.156***	0.066**	−0.013					
	0.000	0.000	0.027	0.662					
LIQUID (16)	0.118***	−0.016	−0.220***	−0.089***	−0.368***				
	0.000	0.585	0.000	0.003	0.000				
TRGT_INTANGIBLE (17)	−0.033	0.115***	0.084***	0.059**	0.007	0.086***			
	0.267	0.000	0.005	0.049	0.829	0.004			
TRGT_DEBT (18)	0.105***	−0.006	0.010	−0.003	−0.019	−0.024	−0.071**		
	0.000	0.850	0.741	0.918	0.536	0.428	0.017		
TRGT_SIZE (19)	0.249***	0.007	−0.029	−0.054*	−0.080***	0.054*	0.043	−0.030	
	0.000	0.811	0.332	0.071	0.007	0.073	0.149	0.317	
GOODWILL (20)	0.060**	0.083***	0.196***	0.029	0.026	−0.039	−0.083***	0.187***	−0.007
	0.046	0.006	0.000	0.332	0.395	0.189	0.006	0.000	0.808

Note: Table 5 reports the pairwise correlations for the main dependent and all independent variables. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively. All variables are defined in Section 3.2 Research Design and Variable Definitions, and summarized in Tables 4 and 6.

Table 5 presents pairwise correlations for the variables used in the regression analyses. In Column 1, the CEO's variable compensation (*BONUS*) is negatively correlated with family ownership (*FAMILY*), non-cash payments (*NONCASH*) and the size of the acquiree (*TRGT_SIZE*). *BONUS* is also positively correlated with excess purchase price (*EXCESS_PRICE*), the CEO's total salary (*TOTPAY*), the profitability of the acquirer (*ROA*) and the acquiree's pre-acquisition level of intangibles (*TRGT_INTANGIBLE*). Overall, these correlations suggest that CEOs with more variable compensation are more prone to include noncash components in the payment.

In Column 2, family firms (*FAMILY*) are positively correlated with acquisitions of foreign targets (*UNCERTAINTY*), ownership concentration (*OWNCON*), differentiated voting rights (*DUAL_SHARES*), past experience with goodwill (*PAST_GW*) and indebtedness (*DEBT*). *FAMILY* is also negatively correlated with excess purchase price (*EXCESS_PRICE*), cash flow rights (*CFRIGHT*), the CEO's total salary (*TOTPAY*), the market activity of the acquirer (*ACTIVITY*), and pre-acquisition liquidity level (*LIQUID*). Hence, family firms have more concentrated ownership through control enhancing mechanisms, and may therefore have limited incentives to align their strategic decisions with non-controlling owners. Family firms are also more prone to report goodwill, and provide lower levels of CEO compensation. Interestingly, family acquirers are more successful in completing acquisitions of non-Swedish acquirees.

In Column 3, we find that excess purchase price (*EXCESS_PRICE*) is positively correlated with above average past experience with acquisitions (*EXPERIENCE*), foreign acquisitions (*UNCERTAINTY*), options (*OPTIONS*), the CEO's total salary (*TOTPAY*), the market activity of the acquirer (*ACTIVITY*), the acquirer's return on assets (*ROA*), the acquiree's book value of intangibles (*TRGT_INTANGIBLE*) and the acquiree's relative size (*TRGT_SIZE*). *EXCESS_PRICE* is also negatively correlated with cash flow rights (*CFRIGHT*). These correlations indicate that the acquirer pays above the industry average for an acquiree when the acquirer is relatively more experienced than its industry peers, when the acquiree is domiciled outside of Sweden, when its CEO's total salary is relatively high, when the acquirer is profitable, and when the acquiree prior to acquisition holds more intangible assets on its balance sheet.

Column 4, displays that acquirers with above-average acquisition experience within its industry (*EXPERIENCE*) are positively correlated with differentiated voting rights (*DUAL_SHARES*), options (*OPTIONS*), the CEO's total salary (*TOTPAY*), and return on assets (*ROA*). *EXPERIENCE* is also negatively correlated foreign targets (*UNCERTAINTY*), with cash flow rights (*CF_RIGHTS*), non-cash payment (*NONCASH*) and the acquirees' level of book value intangibles (*TRGT_INTANGIB*). Thus, experienced acquirers seem to be more conservative as they are focusing on acquiring domestic firms using cash payments.

Finally, in Column 5, we find that more uncertain acquisitions (*UNCERTAINTY*) are positively correlated with (*DUAL_SHARES*), the CEO's total salary (*TOTPAY*), the market activity of the acquirer (*ACTIVITY*), the acquirer's past experience with goodwill (*PAST_GW*), the acquirer's indebtedness (*DEBT*) and the acquiree's book value of intangibles (*TRGT_INTANGIB*). *UNCERTAINTY* is also negatively correlated with cash flow rights (*CF_RIGHTS*), non-cash payments (*NONCASH*) and the acquirees' relative size (*TRGT_SIZE*). Overall, these correlations indicate that firms with a past record of reporting goodwill are also more prone to acquire smaller foreign firms, and the payment is more likely to be non-cash.

4.2. Motives Shaping the Initial Accounting for Goodwill

Table 6 presents the results from the main analyses of the proportion of the purchase price accounted for as goodwill in a business combination. Specifically, we present results from univariate regressions (see column Univariate in Table 6), and five different multivariate regressions (see Models 1–5 in Table 6). Model 1 is our main model, and Models 2 and 3 come with minor

Table 6. Determinants of the initial accounting for goodwill.

	Univariate	Model 1	Model 2	Model 3	Model 4	Model 5
BONUS	−0.095	−0.00893	−0.00962	−0.00127	−0.0147	−0.0139
	(0.0261)	(0.0310)	(0.0309)	(0.0278)	(0.0261)	(0.0212)
FAMILY	0.064**	0.0778***	0.112**	0.0590**	0.0713***	0.0798**
	(0.0270)	(0.0254)	(0.0434)	(0.0239)	(0.0224)	(0.0332)
EXCESS_PRICE	0.0777***	0.171***	0.171***	0.174***		0.0559**
	(.0291)	(0.0258)	(0.0258)	(0.0244)		(0.0228)
EXCESS_PRICE_2					0.225***	
					(0.0444)	
EXPERIENCE	−0.091***	−0.099***	−0.097***	−0.099***	−0.057***	−0.077***
	(0.0283)	(0.0240)	(0.0239)	(0.0237)	(0.0197)	(0.0228)
UNCERTAINTY	0.085***	0.0433*	0.0436*	0.0520**	0.0287	0.0332
	(0.0241)	(0.0246)	(0.0246)	(0.0244)	(0.0216)	(0.0244)
OWNCON	−0.167**		0.0323			
	(0.0661)		(0.120)			
CFRIGHT	−0.342***	−0.143*	−0.0888		−0.167**	−0.231**
	(0.0828)	(0.0786)	(0.165)		(0.0720)	(0.0944)
DUAL_SHARES	0.006	−0.069***	−0.079**		−0.057***	−0.071***
	(0.0238)	(0.0246)	(0.0306)		(0.0221)	(0.0241)
OPTIONS	−0.061**	−0.0325	−0.0317	−0.0388	−0.0165	−0.0546**
	(0.0299)	(0.0290)	(0.0284)	(0.0287)	(0.0249)	(0.0278)
TOTPAY	0.030**	0.00823	0.00511		0.0244	0.0126
	(0.0140)	(0.0186)	(0.0190)		(0.0156)	(0.0179)
NONCASH	0.101**	0.0596	0.0603	0.0762	0.0627	0.0806*
	(0.0504)	(0.0524)	(0.0526)	(0.0509)	(0.0410)	(0.0484)
ACTIVITY	0.038***	0.0151	0.0152	0.0282**	0.0144	0.0136
	(0.0138)	(0.0141)	(0.0141)	(0.0133)	(0.0120)	(0.0145)
PAST_GW	0.064***	0.201***	0.197***		0.148**	0.102
	(0.0092)	(0.0721)	(0.0719)		(0.0593)	(0.0745)
ROA	0.102	0.0535	0.0577	−0.0208	0.264**	0.0745
	(0.1051)	(0.106)	(0.106)	(0.106)	(0.102)	(0.105)
DEBT	0.061	−0.0588	−0.0481	−0.0535	−0.0634	0.0270
	(0.0722)	(0.0749)	(0.0769)	(0.0725)	(0.0679)	(0.0744)
LIQUID	−0.168	−0.0563	−0.0488	−0.126	−0.0317	0.0583
	(0.1052)	(0.104)	(0.104)	(0.0992)	(0.0891)	(0.104)
TRGT_INTANGIBLE	−0.117***	−0.252***	−0.250***	−0.243***	−0.279***	0.374***

	(0.0421)	(0.0459)	(0.0461)	(0.0456)	(0.0412)	(0.0464)
TRGT_DEBT	0.032***	0.0277	0.0279	0.0267	0.00925	0.0163
	(0.0051)	(0.0183)	(0.0183)	(0.0184)	(0.00966)	(0.0103)
TRGT_SIZE	−0.018	−0.136*	−0.138*	−0.139*	0.0129	−0.161**
	(0.0751)	(0.0809)	(0.0804)	(0.0776)	(0.0516)	(0.0698)
Constant	–	0.749***	0.730***	0.757***	0.557***	0.599***
		(0.0875)	(0.0918)	(0.0739)	(0.0879)	(0.0805)
Observations	1 112	1 112	1 112	1 112	1 112	1 112
Adj. R-square	–	0.150	0.152	0.135	0.372	0.214
Industry Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year Controls	Yes	Yes	Yes	Yes	Yes	Yes

Note: Table 6 reports the results of the univariate and multivariate regression. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively. Robust standard errors in parentheses. The dependent variable *GOODWILL* is the initially reported goodwill divided by the purchase price. The alternative dependent variable *INTANGIBLES* is the value of the initially reported goodwill and the revaluation of intangible assets, divided by the purchase price. *BONUS* is the ratio of variable to fixed compensation for the CEO as disclosed in the annual report for the end of the acquisition year; *FAMILY* is a dummy variable taking the value of 1 when the acquirer's largest ultimate owner is a family; *EXCESS_PRICE* is a dummy taking the value of 1 when the ratio of purchase price to the target firm's book value of equity is higher than the average for the industry in the acquisition year; *EXPERIENCE* is a dummy variable taking the value of 1 when the acquiring firm is involved in more acquisitions than its industry average; *UNCERTAINTY* is a dummy variable taking the value of 1 when the acquiree is not domiciled in Sweden. For *EXCESS_PRICE*, we also report the ratio of purchase price to the target firm's book value of equity (*EXCESS_PRICE_2 in Model 4*). *CFRIGHT* is the percentage of cash flow rights owned by the largest ultimate owner; *OWNCON* is the percentage of voting rights owned by the largest ultimate owner; *DUAL_SHARES* is a dummy variable taking the value of 1 when the acquirer has dual classes of shares; *OPTIONS* is a dummy variable taking the value of 1 when the CEO own stock options; *TOTAL_PAY* is the CEO's total compensation; *PAST_GW* is the acquirer's book value of goodwill divided by its total assets at the beginning of the acquisition year; *ROA* is the acquirer's net profit divided by its average total assets in the year prior to the acquisition; *DEBT* is the acquirer's total debt divided by total assets at the beginning of the acquisition year; *LIQUIDITY* is the acquirer's cash and short-term investments divided by total assets at the beginning of the acquisition year; *TRGT_INTANGIBLE* is the target firm's intangible assets scaled by the total assets of the target firm at the time of the acquisition; *TRGT_DEBT* is the target firm's debt scaled by its total assets at the time of the acquisition; *TRGT_SIZE* is the price paid for the target firm divided by the market value of the acquiring firm at the beginning of the acquisition year; *NONCASH* is the proportion of purchase price that is not paid in cash; *ACTIVITY* is the ratio between the value of the acquirer's traded shares and its average market value of equity in the year of the acquisition. We employ eleven industry categories (e.g. industrial manufacturing, consumer manufacturing, industrial trade, consulting services, biotech- and pharmaceutical).

variations in the modeling of ownership characteristics. Model 4 is similar to Model 1 with the exception that we change the measure of the independent variable *EXCESS_PRICE* to reflect the absolute value of the difference between the purchase price and the acquiree's book value of equity (i.e. *EXCESS_PRICE_2*). Finally, Model 5 is similar to Model 1 with the exception that we replace the dependent variable *GOODWILL* with *INTANGIBLES*, so that we include the reported goodwill and all adjusted identifiable intangibles (and scale it by the purchase price). All multivariate models are based on robust standard errors, adjusted for year-fixed and industry-fixed effects, and all continuous variables are winsorized at the 1%-level. There seems to be no problems with multicollinearity as all variables have tolerable VIF scores; we find the largest VIF scores for *CF_RIGHTS* (VIF of 2.66), and *OWNCON* (VIF of 2.44).[13,14]

Starting with the managerial motives and the initial accounting for goodwill, we find *BONUS* not to be associated with the proportion of the purchase price accounted for as goodwill. This finding is consistent for all our different model specifications, and in stark contrast with the findings of prior studies (e.g. Detzen & Zülch, 2012; Shalev et al., 2013; Zhang & Zhang, 2017); all of which find that management's personal motives have a positive impact on the proportion of the purchase price reported as goodwill. Thus, we find support for the first hypothesis, suggesting that managers' motives do not impact the proportion of the purchase price reported as goodwill in an institutional setting where controlling ownership is common.

We speculate that the finding is due to several important differences between the Anglo-Saxon and the Swedish institutional settings. First, as previously explained, Swedish law and the SCGC make it impossible for CEOs of Swedish publicly listed firms to take on a leading role on the corporate board where acquisitions are often discussed. Second, the board of directors of Swedish publicly listed firms are dominated by active family owners who potentially discipline CEOs to act in accordance with owner motives rather than their own personal motives. Finally, the CEOs' incentive to manipulate future earnings is dampened when their compensation is less related to corporate performance (Fernandes et al., 2013).

Next, we turn to ownership motives and the initial accounting for goodwill. In support of the second hypothesis, we find that *FAMILY* is positively related to the proportion of the purchase price reported as goodwill for all five models, suggesting that family-owned acquirers report more goodwill. Overall, the family firm effect is robust to a number of controls for ownership structures (compare Model 1 with Models 2 and 3). Regardless of whether we control for ownership concentration (i.e. *OWNCON* and *CF_RIGHTS*) and differentiated voting rights (*DUAL_SHARES*), family firms report a larger proportion of the purchase price as goodwill.

Taken together, the results of H1 and H2 indicate that controlling owners, such as families, eliminate the managerial motive of aligning unverifiable fair-value measures with optimized compensation. Thus, the standard agency conflict between managers and owners that has been central to the previous research on the initial accounting for goodwill is not present in our setting. This result can be context-driven, but it can also relate to the fact that samples containing many small acquirers and small privately held target firms are under-studied. Given that there is support for the second hypothesis, our data suggest that family firms actively choose to report a larger proportion of the purchase price as goodwill.

In support of the third hypothesis, we find that the coefficient for *EXCESS_PRICE* is positively associated with the proportion of the purchase price accounted for as goodwill. When the acquiring firm pays a higher than industry-average excess purchase price for the acquiree, it is more likely to report more as goodwill. Although it is possible that an excess purchase price stems from uncapitalizable assets, it is more likely that the proportion of the purchase price accounted for as goodwill increases if synergies lack economic substance (Bartov et al., 2021; de Bodt et al., 2018). Also, managers that pay excessively for an acquiree but have no personal motives may desire to control future expenses by disguising the overpayment as goodwill (cf. Bartov et al.,

2021). It is possible that by reporting a larger proportion of the excess purchase price as goodwill, acquirers achieve such objectives and also diminish the likelihood of being questioned by outside stakeholders.

We further find support for the fourth hypothesis. The coefficient for *EXPERIENCE* is negative and statistically significant in all five models. This suggests that experienced acquirers learn how to attribute the purchase price to specific assets and liabilities. We note that only 21.9% of the acquirers are experienced acquirers. Untabulated tests show no time-trend in the proportion of the purchase price accounted for as goodwill; meaning that there seems to be no overall learning effect as firms in general become more accustomed to IFRS 3. Perhaps using knowledge from experienced third-parties, including auditing firms and investment banks, could dampen the proportion of the purchase price recognized as goodwill. But while it makes sense, such a plausible expectation is not possible to test given currently available data.

Finally, there is some support of the fifth hypothesis, that the uncertainty of making foreign acquisitions (*UNCERTAINTY*) is positively associated with the proportion of purchase price accounted for as goodwill. This finding suggests that the acquirers counteract the higher level of uncertainty of attributing value to foreign acquisitions by reporting a larger proportion of purchase price as goodwill. The larger proportion of the purchase price accounted for as goodwill may be an option-of-last-resort, but it raises the question of whether acquirers perhaps should improve the due diligence of foreign acquisitions. Similar to the analysis of *EXCESS_PRICE* above, the results indicate that acquirers choose more discretion, which is desirable if the acquiree's future performance turns out to be unexpectedly weak. Yet, we do not find any significant results related to *UNCERTAINTY* when applying Models 4 and 5. Using the alternative definition of *EXCESS_PRICE* (*EXCESS_PRICE_2*) in Model 4, does not change other finding other than *UNCERTAINTY*. As we test for the dependent variable *INTANGIBLES* in Model 5, the coefficient for *UNCERTAINTY* is not statistically significant associated with a dependent variable that includes both reported goodwill and recognized intangibles in the numerator. Because the dependent variable likely includes intangible assets with definite and indefinite useful life, it is not possible to determine whether there is no effect due to the correct application of the standards or whether the inclusion of a coarse measure is producing too much noise to reach sufficient statistical precision.

Among the control variables, we find that *CFRIGHT* and *DUAL_SHARES* consistently have a negative effect on the proportion of the purchase price accounted for as goodwill. A potentially important variable to control for is the previous accounting for goodwill. For this reason, we included the variable *PAST_GW* in the analysis. Coefficients for this variable are statistically significant in all tests but Model 5, which suggests that firms who have reported goodwill in previous acquisitions are more likely to report a larger proportion of the purchase price as goodwill. Finally, we find that the proportion of the purchase price accounted for as goodwill is lower when the acquiree prior to the acquisition has recognized specific intangible assets on its balance sheet (*TRGT_INTANGIBLE*). We attribute this finding to the higher visibility of specific intangibles at the time of the acquisition.

4.3. Robustness Tests

We also perform a number of robustness tests based on Models 1 and 5, as specified for the analyses in Table 6. In Columns 1 and 2 of Table 7, we test whether the findings hold when small acquisitions are excluded. We choose a purchase price cut-off of SEK 8mn (approximately equivalent to the common M&A threshold of USD 1mn). Results remain qualitatively the same as the coefficient for *BONUS* is not statistically significant whereas coefficients for all other test variables remain robust, with the exception for *UNCERTAINTY*.

Table 7. Robustness tests.

	(1) Model 1	(2) Model 5	(3) Model 1	(4) Model 5	(5) Model 1	(6) Model 5
BONUS	−0.015	−0.018	0.0014	0.0095	−0.011	−0.025
	(0.0260)	(0.0210)	(0.0337)	(0.0230)	(0.0288)	(0.0226)
FAMILY	0.103***	0.0875***	0.108**	0.0805**	0.0618**	0.0871**
	(0.0305)	(0.0308)	(0.0438)	(0.0405)	(0.0257)	(0.0370)
EXCESS_PRICE	0.169***	0.133***	0.163***	0.124***	0.194***	0.152***
	(0.0261)	(0.0233)	(0.0309)	(0.0272)	(0.0305)	(0.0273)
EXPERIENCE	−0.0836***	−0.108***	−0.226	−0.177	−0.0990***	−0.123***
	(0.0309)	(0.0263)	(0.161)	(0.189)	(0.0374)	(0.0307)
UNCERTAINTY	0.0315	0.000836	0.0522*	0.0310	0.0568*	0.0401
	(0.0244)	(0.0232)	(0.0308)	(0.0301)	(0.0301)	(0.0287)
Constant	0.528***	0.649***	0.459***	0.364***	0.225**	0.415***
	(0.0794)	(0.0708)	(0.0828)	(0.0817)	(0.0926)	(0.0741)
Observations	984	984	848	848	809	809
Adj. R-square	0.319	0.340	0.176	0.221	0.316	0.344
Acquiring firm controls	Yes	Yes	Yes	Yes	Yes	Yes
Target firm controls	Yes	Yes	Yes	Yes	Yes	Yes
Year Controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry Controls	Yes	Yes	Yes	Yes	Yes	Yes

Note: Table 7 reports the robustness tests for Models 1 and 5, in which we alter the sample size. Variables are identical to those in Table 6, and defined there. In Columns 1 and 2, the sample is reduced to observations where the value of the acquiree is at least SEK 8mn. In Columns 3 and 4, the sample is reduced to observations where the acquisition analyses consisting of only one individual acquiree. In Columns 5 and 6, the sample is reduced to observations where the acquirer has a market value of equity of at least SEK 800mn at the time of the acquisition. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively. Robust standard errors are in parentheses.

Columns 3 and 4 of Table 7 are similar to Models 1 and 5 in Table 6, but here we have reduced the sample to acquisition analyses containing only one acquiree. We do so to ensure that the main results are not affected by a non-transparent build-up of multiple minor acquirees in the acquisition analysis. We find that results remain in large consistent. What stands out is that *EXPERIENCE* is not statistically significant for any of the two model specifications when dropping acquisition analyses that contain more than one takeover. This could be because experienced acquirers often include multiple small acquisitions in one acquisition analysis; this subsample contains fewer experienced acquirers. However, the size of each of these acquisitions that are combined in the acquisition analysis are often much larger than what smaller acquirers report as a significant business combination that are deemed to be reported as single takeover in the acquisition analysis. Overall, we conclude that our main results of interest are overall robust and valid.

Columns 5 and 6 of Table 7, are also similar to Models 1 and 5 in Table 6, but here we restrict the sample to acquirers with a market value of equity of at least SEK 800mn at the acquisition date. We do so because some small firms may not fully comply with IFRS. In some cases, the Swedish Inspectorate of Auditors has even issued disciplinary warnings to auditors for failing to acknowledge small listed firms' non-compliance with mandatory IFRS.[15] However, our results remain qualitatively the same as the coefficient for *BONUS* is not statistically significant whereas the coefficients for all other test variables remain robust, with the exception for the coefficient for *UNCERTAINTY* in Column 6.

5. Conclusions

We explore motives that shape the initial accounting for goodwill under the impairment-only approach in Sweden. The final sample includes 1112 acquisition analyses reported by 205 unique acquirers in the period 2005–2013. The study is different from previous studies not only because of its larger size, but primarily because the institutional setting, with many controlling family owners, better resembles most countries around the world. In previous literature, it is shown that management's personal incentives play an important role when they apply professional judgment to the acquisition analysis.

In line with prior studies, our sample reveals that goodwill is by far the largest single accounting item reported in conjunction with an acquisition. As much as three-fourths of the purchase price is reported as acquired goodwill. But in contrast to prior studies, there is no association between the CEO's earnings-based compensation and the proportion of the purchase price accounted for as goodwill. Our interpretation is that CEOs are considerably less powerful in Sweden compared to Anglo-Saxon CEOs in shaping the initial accounting for goodwill because CEOs cannot be the chairman of the board and ownership is more concentrated. Moreover, we investigate how family ownership shapes the initial accounting for goodwill. Across the world, family ownership is predominant and better knowledge of how family ownership influences accounting decisions is of importance for both researchers and standard setters. We show that family owners allocate more of the purchase price to goodwill. The reasons for such a behavior are not explicitly explored in our study, but we suspect that an increased opaqueness strengthens the position of a controlling family owner, relative to external stakeholders, by obscuring information about the acquiree.

The analysis also reveals that other economic motives shape the initial accounting for goodwill. Our findings suggest that the proportion of the purchase price reported as goodwill increases with payments above the industry-average for an acquiree's book value of equity; and to some extent, with the uncertainty that comes with foreign acquisitions. These findings stress the difficulty of using professional judgment in the initial accounting for goodwill, and show systematic

variation in how acquirees are accounted for**.** We also find that acquirers with past above-industry acquisition experience have a damening effect on the proportion of the purchase price reported as goodwill. This association is consistent for all but one alternative test; it becomes insignificant when including only acquisition analyses of one acquiree. This finding indicates that past experience improves the professional judgment of serial-acquirers; and as a consequence, they allocate more of the purchase price to specific assets and liabilities. Although experience matters, there seems to be no time trend in our sample, in the sense that the proportion allocated to goodwill does not decreases with time.

Foremost, the study contributes to the accounting literature by showing that the institutional context is important to understand the initial accounting for goodwill. Researchers studying the subsequent goodwill accounting decisions, such as impairments, should be aware of the varying motives that shape goodwill accounting choices. We also contribute to the literature on agency conflicts. In particular, we show that the discretion of fair-value measurements may not reflect managers' personal motives, but instead ownership motives. In a broad sense, the case of goodwill accounting shows how fair-value estimates based on unobservable Level 3 inputs are affected by the institutional setting.

Our study should be of interest for international standard setters as it provides evidence that family ownership plays a role in the initial accounting for goodwill. It is, therefore, wise for standard setters to improve their understanding of how owners' motives affect goodwill accounting choices given that goodwill is a very large item in many firms' balance sheets, and because family ownership is large and frequent around the world. We encourage more research exploring different motives that shape the initial accounting for goodwill, and how motives in different institutional settings may have different effect on the use of fair-value measures in the accounting for business combinations. Another interesting avenue of future research is to test how decisions in the initial accounting for goodwill affect subsequent goodwill accounting choices. Finally, it is important to further our understanding about what factors incentivize high-quality acquisition analysis to provide investors with a better understanding of payments and the underlying acquired business.

Acknowledgments

We thank Kjell Henry Knivflå, Stefan Sundgren, Dennis Sundvik and seminar participants at the 2016 FIBE Conference, 2017 AAA Annual Meeting in San Diego, 2017 EAA Annual Congress in Valencia, Norwegian School of Economics, Umeå University, for useful comments. Special thanks are due to two anonymous referees for detailed comments and helpful suggestions. Earlier versions of this paper were called 'The Purchase Price Allocation Decision'.

Disclosure Statement

No potential conflict of interest was reported by the author(s).

Notes

[1]The European Union made the International Accounting Standards Board's (IASB) standard IFRS 3 (Business Combinations) (IASB, 2008) mandatory as of January 2005, which altered how most European firms account for business combinations. IFRS 3 originated from a joint project with the Financial Accounting Standards Board (FASB) in the United States, and the FASB introduced SFAS 141 (Business Combinations) (FASB, 2001a) in 2001. The subsequent valuation of goodwill is regulated by SFAS 142 *(Goodwill and Other Intangible Assets*) (FASB, 2001b) in the U.S. and by IAS 36 (*Impairment of Assets*) (IASB, 2004) in Europe. Because the main features are similar, we frequently refer to

them as the impairment-only regime. Most prior research in the area is based on the U.S. adoption of SFAS 141 and 142.

[2]Prior to the adoption of IFRS 3, accounting standards did typically not require substantial disclosures on the acquired firm and the acquisition analysis. Consequently, studies on how acquiring firms valued the acquired entity's assets, liabilities and the goodwill were unfeasible due to lack of data.

[3]We use the terms *acquiree* and *target firm* synonymously throughout the paper.

[4]In the U.S., corporate ownership is more dispersed. Aminadav and Papaioannou (2020) document that the average largest owner of a U.S. firm holds 13.0% of the voting rights as compared to the world average of 31.5%. Family ownership is less pronounced in the U.S. relative to other countries: La Porta et al. (1999) find that 10% of large U.S. and UK firms were family-controlled. In Sweden and the rest of the world, the percentage is much higher. Adams et al. (2010) survey several studies and find that almost half of the board members of U.S. firms are inside or affiliated directors. In more than two thirds of U.S. firms, the CEO also acts as chairman of the board (Tinaikar, 2017).

[5]The purchase price and the goodwill balance do not include any cost related to due diligence, legal fees or other expenses related to the acquisition. We do so to make goodwill comparable overall years as these fees are only reported in detail for the years 2005 to 2009.

[6]Many Swedish firms are controlled by a family that exercises ownership through a publicly listed investment company. Because we study ultimate ownership, we see through such pyramid structures. Data is collected in part from the book series Owners and Power (SIS Förlag 2005–13), and in part manually from each firm's annual reports. We always take dual-classes of shares into consideration. For example, the Wallenberg family owns Electrolux through the publicly listed firm Investor. In 2005, the family owns 46.7% of Investor's voting rights, and Investor owns 26.0% of Electrolux voting rights. In total, the Wallenberg family owns 12.1% of the voting rights (and 1.7% of the cash flow rights). The 12.1% of voting rights still means that the family has more voting rights than the next ten owners combined. Our measures resemble those in e.g. Holmén and Knopf (2004).

[7]A potential issue with our empirical models is that the dependent and some of the control variables (i.e., *PAST_GOODWILL*, *ACQ_ROA*, *ACQ_DEBT*, and *ACQ_LIQUID*) may be correlated with each other. This is because acquired goodwill will be part of future goodwill balances and of total assets. To ensure that no correlations over time between the dependent and independent control variables affect the results we have taken the following measures . First, we test whether multicollinearity is a problem using VIF scores, but no variable has a score higher than 2.66. Second, we test for univariate associations for each independent variable in Table 6 (see Column Univariate), and find that all variables of interest continue to be significant, indicating that no independent variable of interest is inflated by the control variables. Third, we use the Fractional Response Model (see Gallani et al., 2015). Results from these untabulated tests are in all material aspects similar to those reported in Table 6. These three steps suggest that our empirical model is valid.

[8]In the literature, it is common to exclude acquisitions smaller than USD 1mn. This is approximately the same as SEK 8mn in 2013 prices.

[9]The sample also includes 132 acquisitions of acquirees with negative equity at the acquisition date. Thus, *TRGT_DEBT* is sometimes above 1 (i.e., total debt is larger than total assets), and *EXCESS_PRICE_2* is sometimes negative. We exclude acquisitions when there is no purchase price. Results are qualitatively similar when excluding acquisitions of acquirees with negative equity.

[10]The number of complete fair-value reassessment of other assets than goodwill in the acquisition analyses decreases over time, coinciding with the reduced disclosure requirements of the revised IFRS 3(R) in 2010.

[11]A negative revaluation of the acquiree's net assets makes it possible to report more than 100% of the excess purchase price as goodwill (the maximum in the sample is 213%).

[12]This is slightly lower than the reported *Foreign acquisitions* (%) of 65% in Table 2. The difference is caused by different sample restrictions in the main regression analyses where *all* acquisitions have to be confirmed non-Swedish.

[13]All acquired intangibles with indefinite lives are only subject to impairment tests, and ideally, we would like to include all specific intangible assets with indefinite lives in the dependent variable. Many firms, however, do not specify in their acquisition analyses to what extent adjusted specific intangibles have a definite or indefinite life. Model 5 in Tables 6 and 7 test and show that our findings are robust when including all adjusted intangibles as specified in the acquisition analyses. In other words, we added intangibles with both definite and indefinite life to the dependent variable. In addition, we perform untabulated tests where we add to Model 1 a dummy variable taking the value of one when the acquisition analysis includes an observable adjustment for intangibles with indefinite lives, and zero otherwise. None of our main findings are altered from this procedure. We thank an anonymous reviewer for suggesting these additional tests.

[14]For robustness reasons, we re-run some of the tests without the control variables *PAST_GW*, *ROA*, *DEBT* and *LIQUID* because they can, by definition, be associated with the test variables. Untabulated results show that our results are robust to such modeling alterations.

[15]We thank an anonymous reviewer for pointing this out to us.

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