

Synthetic Earnouts

Determinants of an Unexplored M&A Contract Structure

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Abstract

A well-studied method for M&A buyers to address the risks of overpaying for targets, and of failing to retain and motivate target managers, is to make part of the consideration contingent through an earnout. Drawing on interviews with M&A practitioners, we examine the use of an alternative contract structure that is used in practice but lacks previous scholarly attention. We define this alternative structure as a *synthetic earnout*, given that it mimics the economic logic of a traditional earnout but through a different contractual design. Analysing a hand-collected sample of 818 M&A control transactions by publicly listed acquirers in the UK and Sweden between 2015 and 2024, we document the recurring use of synthetic earnouts. Examining the determinants of this structure, we find support for the view that synthetic earnouts are used predominantly to incentivise the retention and post-acquisition motivation of target managers. We also find partial but inconclusive support that synthetic earnouts are used to mitigate valuation uncertainty. Finally, comparing the use of synthetic earnouts with traditional earnouts, we find evidence consistent with the interpretation that synthetic earnouts more effectively align the post-acquisition interests of the buyers and target managers.

Key words: M&A, Contingent consideration, Earnout, Moral hazard, Valuation uncertainty

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1. Introduction

Mergers & acquisitions (M&A) constitute major and defining landmarks in firms' development. Pursuing acquisitions often involves large amounts of capital and human resources, and may have a significant effect on a company's trajectory. Therefore, the decision to engage in M&A transactions is among the most significant strategic decisions firms make. Despite this fact, previous research shows that a large portion of M&A transactions are unsuccessful, meaning that they destroy shareholder value for the acquirer (see for instance Agrawal et al., 1992; Malmendier et al., 2018 and Moeller et al., 2005).

M&A transactions can fail for several different reasons. First, acquisitions may destroy shareholder value if the acquirer pays a price that exceeds the quality of the target. Previous research shows that high-premium acquisitions, often influenced by valuation uncertainty or managerial biases, are associated with negative abnormal returns for acquiring shareholders (de Bodt et al., 2018; Malmendier & Tate, 2008; Roll, 1986). Second, M&A transactions can fail if the target underperforms after the deal. A central challenge in maximising the post-acquisition performance relates to the retention and continued motivation of key target managers. Prior research shows that target management often holds firm-specific knowledge that is critical for realising the expected benefits of the acquisition, and that the loss of this knowledge can undermine post-acquisition performance (Bergh, 2001; Cannella & Hambrick, 1993).

One way to address the risks of overpaying for targets and failing to retain and motivate managers is to incorporate contingent consideration structures in the acquisition agreement. Commonly referred to as earnouts, these contractual designs consist of one upfront consideration, and a second payment that is contingent on the target's post-acquisition performance. Earnouts can mitigate valuation uncertainty and the risk of overpayment by letting the acquirer pay a lower price upfront, and an additional payment only if the target's performance measures are met. Indeed, extant literature shows that M&A settings characterised by high valuation uncertainty are positively associated with the use of earnouts (see for instance Datar et al., 2001; Kohers & Ang, 2000; Ragozzino & Reuer, 2009). In addition, scholars have argued that these structures also can be used to retain and motivate managers in the post-acquisition period. Since the variable portion of the consideration is contingent on the future performance of the targets, selling managers have the incentive to remain in the firm and maximise performance (Cain et al., 2011). Nevertheless, due to methodological challenges related to measuring this motivation, the empirical evidence for earnouts as an incentive tool remains limited.

While earnouts represent one contractual response to these M&A challenges, another structure that has not received previous scholarly attention is also used in practice. Exploratory interviews with M&A professionals revealed the recurring use of a contract structure that can achieve similar outcomes as an earnout, but through an alternative form. Under this alternative acquisition arrangement, the buyer initially acquires a majority but less than 100 per cent of

the target's equity, combined with an obligation to purchase the remaining equity at a later point for a price determined by target's post-acquisition performance. Since this contract type makes a part of the consideration paid contingent on post-acquisition performance, it mimics the payoff structure of a traditional earnout. For this reason, this study defines this contractual arrangement as a *synthetic earnout*.

The lack of previous research on this empirical phenomenon makes it an interesting subject for examination. To provide a foundation for future research, this study first develops a theoretical definition of the term *synthetic earnout*. To establish an understanding of why this contract structure is used, we then aim to answer what determinants that drive the adoption of synthetic earnouts in M&A transactions. Put differently, the study addresses the following research question:

‘What factors explain the use of synthetic earnouts in M&A transactions?’

Our analysis consists of two parts. First, we examine the overall motives for including synthetic earnouts in acquisition agreements by comparing them to non-earnout transactions. Building on contracting theory, explorative interviews with M&A practitioners, and the literature on traditional earnouts, we hypothesise that their use is driven by the intention to mitigate valuation uncertainty and to incentivise the retention and post-acquisition effort of target managers. Such findings would support the notion that these structures are used to mitigate problems of both adverse selection and moral hazard. Second, we also explore if these factors influence the choice between synthetic and traditional earnouts. Based on their differing characteristics, we further hypothesise that synthetic earnouts better align the incentives of buyers and target management.

To test if the two contracting theory channels explain the adoption of synthetic earnouts, we hand-collected a dataset of 818 acquisitions completed by publicly listed companies in Sweden and the UK between 2015 and 2024, and classify whether each transaction includes a synthetic earnout, a traditional earnout, or no earnout structure. To examine whether the use of synthetic earnouts is explained by the intention to mitigate potential problems of moral hazard, we recognise that for earnout structures to incentivise target managers, they must be among the sellers and remain in the company after the transaction. If these conditions do not hold, earnout structures do not provide a link between the managers' economic payoffs and their post-acquisition effort. Utilising this fact, we test if synthetic earnouts are positively associated with transactions where target managers are among the sellers and remain in the firm in the post-acquisition period. A positive association would be consistent with the view that synthetic earnouts are used as an incentive alignment tool. To examine if the adverse selection channel explains synthetic earnout use, we construct proxies capturing valuation uncertainty in connection to the acquisition. Specifically, we examine whether synthetic earnouts are more common in acquisitions of risky, high-growth, and intangible-intensive targets, as well as in cross-border and cross-industry transactions. Since such transactions are generally associated with higher information asymmetry, a positive association would support the view that higher valuation uncertainty drives synthetic earnout use.

Comparing synthetic earnouts with non-earnout transactions, we find that they are significantly associated with cases in which selling managers hold equity prior to the transaction and remain operational in the firm, suggesting that synthetic earnouts function as a managerial motivation tool. Evidence regarding valuation uncertainty is less conclusive. Cross-border transactions show a significant association, consistent with the argument that higher valuation uncertainty increase the use of synthetic earnouts. However, the other valuation uncertainty proxies show weaker or no effects. When comparing synthetic earnouts with traditional earnouts, we find that synthetic earnouts are more strongly associated with cases in which selling managers hold pre-transaction equity and remain with the firm, indicating that synthetic earnouts may be more effective in aligning managerial incentives than traditional earnouts. Overall, these findings are consistent with the view that synthetic earnouts are predominantly used to incentivise the retention and post-acquisition effort of target managers.

This paper makes several contributions. First, it introduces and defines synthetic earnouts, an empirical phenomenon observed in practice, but which has not received scholarly attention. Examining a hand-collected dataset of 818 control acquisitions, this study further provides a first documentation and reference point of synthetic earnout use. Second, we extend the empirical evidence on established contracting theories by testing their explanatory power on a previously unstudied phenomenon. Third, the study contributes to traditional earnout literature by providing evidence on alternative contractual structures and their use relative to traditional earnouts. Fourth, the paper makes methodological contributions, both by using a manual data collection process to provide a more comprehensive representation of traditional earnout use, and by developing a new method aimed to capture if moral hazard considerations explain the use of different earnout structures. Finally, the findings have a high economic relevance for M&A practitioners by providing insights into contracting tools that can retain key managers and mitigate moral hazard, potentially enabling a more effective post-transaction performance and value creation.

The remainder of this study is organised as follows. Section 2 provides a frame of reference for synthetic earnouts. Section 3 provides a theoretical background to the use of earnout contracts, and provides a summary of previous research on the use of traditional earnouts. Section 4 develops hypotheses. Section 5 describes the research design, the model specification, the sample selection and the data collection process. Section 6 presents the results. Section 7 discusses the results, provides additional analyses and robustness tests, and recognises the main limitations of this study. Lastly, Section 8 provides conclusions and suggestions for future research.

2. Frame of Reference

In this section, we provide a practical and theoretical frame of reference for this synthetic earnouts. In Section 2.1, we summarise findings from exploratory interviews with M&A practitioners, who drew our attention to the empirical phenomenon we define as synthetic

earnouts. In Section 2.2, we establish a theoretical frame of reference by providing a definition of traditional earnouts, and then defining synthetic earnouts. Lastly, we discuss the similarities and differences between the two structures.

2.1. Insights from Exploratory Interviews

To better understand the motives behind using different earnout structures, we conducted five semi-structured exploratory interviews with Swedish M&A professionals who hold influential roles in organisations with high buy-side activity. The interviewees primarily represented companies that operate as serial acquirers, complemented by perspectives from private equity firms and corporate M&A departments. During the initial interviews, which focused on understanding the use of traditional earnouts, several interviewees described what they perceived as a recently emerging contract structure in the market. The empirical phenomenon described was a setup where the acquirer purchases a controlling equity position in the target combined with a commitment to acquire the remaining equity at a later date, where the purchase price for the remaining equity is dependent on the target's future performance. This commitment was often achieved through issuing put and call options on the remaining equity to the buyer and sellers. In the subsequent interviews, the existence and perceived growing adoption of this structure was consistently confirmed and elaborated upon. The interviewees characterised the contract structure to share attributes with traditional earnouts and noted that it was often used either instead of, or in combination with, traditional earnout structures. One interviewee even reported having replaced the use of traditional earnouts with this new contract structure entirely. Given their similarities to traditional earnouts, we will later define this empirical phenomenon as a *synthetic earnout*.

The interviewees further elaborated on how this contractual arrangement, by postponing the purchase of part of the equity in the target, lets the parties agree on a consideration structure even if they have differing views of how the target will perform in the future. Since the price of the sellers' retained minority is not determined at the time of the initial acquisition, the total price of the equity acquired is partially determined after the post-acquisition performance of the target is known. They also noted that allowing target owners, who in their experience were often part of the management team, to retain an equity stake after the acquisition could strengthen both motivation and incentive alignment. Several interviewees further suggested that this mechanism was, in their view, more effective than traditional earnouts in fostering this sustained managerial engagement. These exploratory interviews therefore played a central role in identifying and delineating this empirical phenomenon and in informing the development of the research question, while simultaneously confirming the practical relevance of the chosen research focus.

2.2. Overview of Earnout Structures

2.2.1. Definition of Traditional Earnouts

Since the interviewees described this M&A contract structure to incorporate similar traits as traditional earnout agreements, we in this section provide a point of reference by defining

these agreements. In M&A transactions, an earnout structure refers to transactions consisting of an upfront payment and a contingent consideration. Contingent considerations are defined in IFRS 3 as “*an obligation of the acquirer to transfer additional assets or equity interests to the former owners of an acquiree as part of the exchange for control of the acquiree if specified future events occur or conditions are met*”. Thus, for a deferred payment to constitute contingent consideration, three main criteria must be met: (i) there must be an *obligation* to the acquirer to transfer additional compensation the former owners, (ii) the size of the additional compensation must be *contingent* on future events, and (iii) the additional compensation must be a part of *the exchange for control*, meaning that the payment must constitute a part of the purchase price for the equity acquired.

Although this contractual setup is commonly referred to as an earnout, in this paper we use the term “traditional earnout” to ensure terminological clarity once we later define the concept of a “synthetic earnout”. While previous literature emphasises that the definition of a traditional earnout requires the variable portion of the consideration to be contingent on the post-closing *performance* of the target (see for example Cain et al., 2011; Datar et al., 2001; Jansen, 2020), the term “performance” is often applied broadly in practice (see for example Cain et al., 2011; Allee & Wangerin, 2018). Followingly, we use the term “contingent consideration”, as defined in IFRS 3, and the term “traditional earnout” interchangeably in this report (Cadman et al., 2014).¹

The contractual structure of a traditional earnout can vary substantially across transactions. One of the fundamental dimensions concerns the choice of performance metric, on which the traditional earnout is based. Cain et al. (2011), which is the only paper analysing the design of traditional earnout structures (Dahlen, 2024), provide evidence that the most common performance measurement is different types of accounting profitability metrics (e.g. gross profit, net income, cash flow, pre-tax income etc.). Sales based performance measurements are also commonly applied. Non-financial measurements are observed, albeit not as common, but when used typically comprise of development milestones (e.g. FDA approvals, clinical trials etc.).

Furthermore, there can be large variations in terms of how the payoff function is defined. Cain et al. (2011) confirm this by showing that the traditional earnout payment function is subject to substantial variation. Their findings indicate that the most used structures are linear functions based on an indication for the target’s performance (e.g. EBITDA) subject to some maximum, and stepwise functions of the target’s future performance subject to some maximum. They also find other variations, such as concave and convex functions, and linear functions with no maximum payout limit, further underscoring the heterogeneity in how traditional earnout payments are determined.

¹ One type of contract structure that sometimes is used is to make a part of the consideration contingent on the future employment of target managers. Since IFRS 3 does not view this kind of contingent payment to be part of the exchange for control, it is rather viewed as an employment bonus to target managers. Followingly, these types of agreements do not meet the definition of a contingent consideration.

Another central element in the design of traditional earnout contracts is the temporal dimension. A key characteristic of a traditional earnout is that the earnout period is fixed, implying that the measurement period for the metrics determining the traditional earnout amount is specified at closing. Apart from this common denominator, the traditional earnout period design is subject to large heterogeneity. Cain et al. (2011) find that the traditional earnout is usually measured over a period from one to three years but can be as long as twenty years. They also argue that the traditional earnout period should reflect the period over which the uncertainty is likely to be revealed, and that the traditional earnout periods, all else equal, are longer if the uncertainty is revealed over a longer period and vice versa.

2.2.2. Definition of Synthetic Earnouts

One key takeaway from the exploratory interviews was that M&A practitioners sometimes adopt a contract structure in acquisition agreements that is intended to achieve the same outcomes as a traditional earnout, but through an alternative form. According to the interviewees, this structure entails that the targets sellers retain a minority stake in the firm after the acquisition, which at a later point is acquired by the buyers for a consideration that is contingent on the target's post-acquisition performance. To our knowledge, this structure has not previously been examined in academic research, which motivates our decision to make it the focus of this study.

The empirical examination of this phenomenon requires that it is clearly defined. Since this structure has not received previous attention in research, it currently lacks a definition. For this reason, we provide a theoretical definition, that aligns with the descriptions from the exploratory interviews. Accordingly, we define a synthetic earnout as a: *“contractual arrangement in a control acquisition of less than 100 per cent of the target, under which the acquirer has a future obligation to transfer additional assets or equity interests to the target's remaining owners as part of the exchange for the remaining minority interest, if specified future events occur or conditions are met.* Thus, for a contractual arrangement to meet the definition of a synthetic earnout, four conditions must be satisfied: (i) there must be an initial acquisition where the buyer acquires a controlling interest, resulting in ownership of *more than 50 per cent but less than 100 per cent of the target's equity*, (ii) there must exist a future *obligation* to the buyer to transfer additional consideration to the former owners, (iii) the size of the obligation must be contingent on *future events*, and (iv) the consideration must be a part of the exchange for the *remaining equity interest in the target*, meaning that they are paid to acquire the portion of the target that was not included in the initial acquisition.

Conceptually, this definition captures a contract structure that mirrors the economic logic of a traditional earnout, but does so through an alternative arrangement. The underlying rationale of a synthetic earnout is similar in the sense that a portion of the consideration paid for the total equity acquired in the target is contingent on the target's post-acquisition performance. The seller correspondingly holds the right to receive a performance-dependent payment from the buyer, which establishes a link between the transaction value and the target's post-acquisition performance. For this reason, we have decided to define this empirical phenomenon

as synthetic earnout (see Section 2.2.3 for further technical and conceptual discussion of the term “synthetic earnout”).

The definition of a synthetic earnout stipulates that there must be a future obligation for the buyer to acquire the remaining equity in the target. In practice, there are many different ways in which the acquisition of the sellers’ retained minority can be structured. Interviewees indicated that the use of mutually enforceable put/call options on the remaining shares is likely the most common structure, whereby both parties can exercise the transaction for the remaining shares, but other variations also exist. To provide a theoretical constraint on which structures that qualify for a synthetic earnout, we have chosen to only include those that constitute an obligation to the buyers since these most closely imitate the logic of a traditional earnout. Under a traditional earnout agreement, the buyers are required to pay a contingent consideration to the sellers based on how well the target performs in the post-acquisition period. For synthetic earnouts, we therefore only include structures where the sellers, in a similar way, can require additional consideration from the buyer, based on how well the target performs after the initial transaction. Accordingly, straight seller put options and buyer commitments to acquire the remaining shares meet the obligation criteria of a synthetic earnout. By contrast, a straight call option for the buyer without a corresponding put option for the seller does not.²

The synthetic earnout definition implies that the consideration for the seller’s retained minority equity is contingent on future performance. Similar to traditional earnouts, the measure on which the price of the remaining shares is based can be linked to various operational or financial metrics of performance. The practitioners we interviewed indicated that they predominantly use financial earnings metrics.

Insights from our interviews further suggest that the exercise period of when the purchase of the remaining shares can be initiated can take several forms. It can either be a fixed date, a fixed window, a fixed window that recurs each year, or alternatively have no expiration date at all. According to a recent report about put/call options in M&A (which constitute one form of synthetic earnouts), the most common expiration period is 2-5 years.³

2.2.3. Comparison of Traditional and Synthetic Earnouts

Synthetic earnouts share the economic logic of a traditional earnout. Like traditional earnouts, they allow a part of the purchase price for the total equity acquired in the target to be determined by the target’s post-acquisition performance. Their differences lie in how this economic logic is achieved. While traditional earnouts are realised through deferred contingent payments relating to the equity acquired in the initial transaction, synthetic earnouts embed this

² Some M&A transactions include a call option on the remaining shares in the target without a corresponding put option, meaning that only the acquirer can initiate a purchase of the remaining stake. Economically, this kind of structure gives the buyer flexibility to decide whether to acquire the remaining shares or not. Therefore, this structure generates a real option-like situation rather than a structure that mimics a traditional earnout. Because this contractual setup does not impose an obligation on the buyer to transfer additional consideration, we accordingly exclude it from our definition of a synthetic earnout.

³ From Eversheds Sutherlands report on the use of put and call options in M&A transactions (*To Call or Not to Call*).

contingency into the price paid to acquire the remaining equity in the target, thereby structuring the transaction as staged ownership rather than an explicit contingent consideration.

From an accounting perspective, this structural distinction disqualifies synthetic earnouts to meet the definition of a contingent consideration. As outlined under IFRS 3 Business Combinations (see Section 2.2.1), for the second part of a two-part payment to constitute a contingent consideration, (i) there must be an *obligation* to the acquirer to transfer additional compensation, (ii) the size of the additional compensation must be *contingent* on future events, and (iii) the additional payment must be part of the purchase price for *the control obtained*. While a synthetic earnout meets the two first criteria of the definition, the fact that the contingent part of the payment relates to the remaining shares rather than those initially acquired causes it to fail to meet the third criteria. Instead, the obligation to acquire the remaining shares in a target are viewed as a separate financial liability for the acquirer, measured at the expected present value of the redemption amount. Accordingly, synthetic earnouts and traditional earnouts are treated as different structures for accounting purposes.

Their difference in contractual structure also has legal implications. In a synthetic earnout, less than 100 per cent of the shares are acquired at the initial acquisition date, meaning that some previous owners remain shareholders in the post-acquisition period. The selling shareholders therefore retain an economic exposure in the interim through continued ownership. Unless the share purchase agreement specifies otherwise, this entails that the sellers are entitled to e.g. dividends and a proportional share of the value creation in the target after the acquisition, in the same way as the buyers are. By contrast, under a traditional earnout, the seller's post-acquisition exposure to the target's performance is purely contractual. Traditional earnouts can, however, also be used in partial acquisitions, giving sellers minority ownership and some exposure, but this is not inherent to the traditional earnout structure, nor does it create a formal commitment to acquire the remaining equity at a performance-based price. In synthetic earnouts, the retained seller minority interest is a direct consequence of the arrangement's contractual characteristics, rather than a discretionary design choice.

An additional key distinction between traditional and synthetic earnouts concerns their temporal design. Traditional earnouts are defined by a fixed measurement period, typically ranging from one to three years, during which the contingent payment is determined based on specified performance metrics (Cain et al., 2011). By contrast, insights from our exploratory interviews indicate that the maturity of synthetic earnouts is designed with greater flexibility. The future obligation for the purchase of the remaining equity does not need to have a predetermined end date, which can allow the target minority owners to remain as owners indefinitely. If both the buyers, and the sellers are satisfied with the post-acquisition relationship, none of the parties are required to initiate a transaction of the remaining shares. Given that the price paid for the remaining equity will be determined based on the performance at the time of transaction, this flexibility can support continuity and sustained commitment from the target management minority owners. This flexibility contrasts with the fixed time horizon of traditional earnouts, where the contractual relationship concludes once the earnout period expires.

Overall, while traditional and synthetic earnouts share the same economic logic they differ in several key aspects. Synthetic earnouts involve a staged acquisition in which not all shares are acquired at the initial closing. This allows target management to retain ownership and continued economic exposure, while also providing greater flexibility in timing and structuring compared to the fixed measurement period and immediate transfer in traditional earnouts. Due to their differences, a synthetic earnout cannot be considered the same thing as a standard traditional earnout. Rather, it constitutes a type of synthetic contract. By definition, a synthetic contract replicates the economic exposure of an underlying arrangement through alternative instruments or mechanisms rather than through direct ownership or standard contractual payments. Synthetic earnouts exemplify this concept as it replicate the economic incentives of traditional earnouts, but embed the performance-based contingency in the purchase of the remaining shares through option-based structures rather than additional payments on the already acquired equity. The term *synthetic* earnout thus reflects both the replication of traditional earnout economics and the synthetic nature of the mechanism through which it is achieved.

3. Literature review and Theoretical Background

In this section, we review the theoretical and empirical literature that is relevant to understand why earnout structures are used in M&A transactions. In Section 3.1, we utilise concepts from contracting theory to explain how earnout structures can resolve problems with information asymmetry between the buyers and the sellers both before and after the transaction. In Section 3.2, we summarise and discuss prior empirical research focused on the determinants of using traditional earnouts. We finish by describing how this study contributes to extant literature.

3.1. Contracting Theory

3.1.1. Adverse Selection in M&A

In M&A transactions, one important challenge acquirers face is to determine a reasonable value for the target. The quality of a firm is the result of a multitude of different factors, many of which are not directly observable to the prospective acquirer, making it difficult to estimate a fair purchase consideration. By contrast, the seller, who has access to unobservable information, has superior knowledge about the quality of the firm.

Akerlof (1970) demonstrates how markets featuring information asymmetry between the buyer and the seller are at risk of adverse selection. When the buyer faces difficulty in separating good assets from bad ones, they will offer at maximum a price that corresponds to the expected quality of all the traded goods. In contrast, the seller, who over the time of ownership of the asset has gained knowledge about its quality, knows whether the asset is good or bad. Consequently, the seller will at minimum accept a price that corresponds to the quality of that specific asset. Since the buyer and the seller must agree on the same price, an agreement will only materialise when the asset's value corresponds to a price that is either below or, at maximum, the same as the expected price of all the assets at sale in the market. High-quality

sellers, whose assets have a value that is higher than the expected value in the marketplace, will leave the market since they cannot find buyers that accept their price levels. The result is adverse selection, where the bad assets drive out the good ones from the market since they all trade at the same price. According to Akerlof (1970), this risks resulting in a negative spiral. Since the expected quality of the traded assets decrease as the high-quality sellers leave the marketplace, the price that buyers are willing to pay decreases, pushing out even more sellers from the market. This continues until there are no sellers left, and the market collapses completely.

In the M&A setting, we know that the market does not collapse due to adverse selection. In fact, few markets do. One reason is that market participants have developed methods and tools that allow the hidden information to be credibly transferred from the buyer and the seller, which prevents good sellers from exiting the market and enabling the transaction to proceed. One category of such tools is referred to as signalling. First introduced by Spence (1973), signalling theory explains how the more informed party in a transaction (i.e. the seller) can credibly transfer that information to the less informed party (i.e. the buyer), through signals that are either difficult or costly to fake. A good example of a signal is when the seller offers a guarantee on the transferred asset, which allows the buyer to get the money back if the asset breaks down following the purchase. For a high-quality seller, the risk of the asset breaking down after the transaction is low, and followingly, the signalling cost is worth to bear to make the transaction go through. A low-quality seller however, for whom the probability that the asset will break down is much higher, is less inclined to offer guarantees on their assets. Based on if the seller is willing to offer guarantees or not, the buyer can infer if the asset is good or bad.

Another category of tools used to circumvent adverse selection in the market is called screening. First formalised by Stiglitz (1975), screening functions much like signalling, but instead of the more informed party taking a costly action to reveal their type, the less informed party offers a menu of options (e.g. different contract alternatives) that induces the informed party to self-select, revealing the asset quality through their choice. A good example of screening is the insurance market, where the insurance company can deduce if the insurance-taker is a high-risk or low-risk customer through their choice between contracts offering higher or lower levels of premiums and coverage (Rothschild & Stiglitz, 1976).

In the M&A market, both synthetic and traditional earnouts can be seen as an example of such tools. Future demand, customer retention and other forward-looking factors that determine the target firm's value are often better known by the seller than the buyer, despite rigorous information-sharing and extensive due diligence processes. In these settings, earnout structures can be used to deal with valuation uncertainty arising from these factors. By incorporating both signalling and screening characteristics, earnout structures can help the buyers and the sellers agree on the valuation by enabling the credible transfer of hidden information. If, for instance, a seller wants to secure a transaction with a hesitant buyer, the seller can suggest that a part of the consideration is contingent on future performance. This option is costly if the seller knows that they have set an overly optimistic forecast, but can help truthful firms credibly signal that they believe in their forecast and thus help them achieve a higher valuation. Alternatively, a

buyer who is uncertain if a seller's financial forecast is credible can offer two alternative consideration structures; 1) consists of a one-time upfront payment or 2) a lower upfront payment plus a consideration based on the future performance, that can make the total consideration higher than in the first alternative. A seller that believes in their financial forecast will self-select to the two-part payment option, whereas a less confident seller will opt for the first alternative, making the earnout structures serve as efficient screening tools. The earnout structures thus, in theory, work as effective screening and signalling tools when valuation uncertainty regarding the target is high.

3.1.2. Moral Hazard in M&A

Another fundamental concern in M&A is the problem of moral hazard. The success of an M&A transaction depends not only on the acquisition decision and the price paid, but just as much on the target's post-acquisition performance. One key determinant of this performance is how motivated the target managers are to maximise their effort. Target managers may possess inimitable, tacit knowledge that is critical for the company's future value creation. Therefore, the success of the acquisition largely depends on the buyer's ability to keep them motivated to apply this knowledge in the post-acquisition period. Since the buyer cannot, in practice, force the target managers to maximise performance, a central risk in M&A is that they become less motivated post-acquisition or demonstrate a behaviour that is inconsistent with the buyer's value creation objectives. This risk is especially significant in transactions where the target managers are among the selling shareholders, since their incentives to drive performance diminish when they no longer hold an equity interest in the company that links their performance to their financial gain.

The above issue illustrates a situation of moral hazard. The separation of ownership and control in the post-acquisition period gives rise to a principal-agent relationship between the target company's shareholders (i.e. the buyers) and its management, whereby the management becomes an agent that carries out tasks and exerts decision-making authority on behalf of the shareholders (Jensen & Meckling, 1976). This separation can lead to problems if the principal cannot monitor the agent's behaviour. Since management may have personal incentives that diverge from the interests of the shareholders (e.g. to shirk or engage in excessive risk-taking), it cannot be guaranteed that the managers work to maximise the firm's performance after the transaction. Holmstrom (1979) suggests that when an agent's effort is unobservable, optimal incentive contracts must tie the agent's compensation to observable outcomes that serve as credible signals of effort. By designing incentive-compatible compensation schemes that base managerial pay on financial or non-financial indicators of performance, the shareholders (i.e. the principals) can align the interests of the manager with their own, and thereby mitigate problems with moral hazard.

Several different structures exist to align the incentives between a company's managers and its owners. In the context of M&A, both synthetic and traditional earnouts can, in theory, be viewed as effective tools to mitigate post-acquisition moral hazard between the buyer and the target managers. If managers are also shareholders, these earnout structures can create a link

between their personal payoffs and their post-acquisition performance.⁴ This is achieved since these structures make a part of the total consideration paid contingent on the target's performance in the post-acquisition period. Although managerial effort is unobservable, these structures therefore give target managers an incentive to exert high effort in order to maximise the corresponding payment. Conceptually, synthetic and traditional earnouts should therefore help the buyer increase the chances for strong target performance in the post-acquisition period.

3.2. Empirical Evidence on Traditional Earnouts in M&A

Drawing on the theoretical frameworks serving as a foundation for this paper, this section will provide empirical evidence on the use of traditional earnouts in relation to those theoretical channels. The reason for focusing on the empirical evidence of traditional earnouts is due to the novelty and missing scholarly attention to synthetic earnouts. Traditional earnouts, given its resemblance to synthetic earnout thus serve as a strong reference point for synthetic earnouts.

3.2.1. Traditional Earnouts and Adverse selection

Building on Akerlof's (1970) adverse selection theory, several scholars have explored whether information asymmetry between the buyer and the seller pre-deal predicts the use of traditional earnout structures in M&A. Because information asymmetry is unobservable, researchers rely on proxies to operationalise it into testable variables indicating valuation uncertainty. These proxies generally consist of two categories, either target firm-specific variables or transaction-specific variables.

Several prior studies use target firm-specific variables as proxies for information asymmetry, with the rationale that certain target attributes result in an increased difficulty to assign a correct value to the target. Early papers within this strand of literature argue that information asymmetry is higher with small and private firms since these are less likely to disclose value-relevant information. The findings indicate that these characteristics, serving as proxies for valuation uncertainty, are significantly associated with the use of traditional earnout contracts (Datar et al., 2001; Kohers & Ang, 2000). Ragozzino & Reuer (2009) extend this by hypothesising that adverse selection is more severe with young target firms, on the notion that these have little information of historical operations and often lack verifiable performance signals, causing uncertainty around the valuation of these targets. They confirm this through evidence that traditional earnouts are more common in transactions involving new ventures.

Furthermore, several studies examine certain target financials as proxies for valuation uncertainty. Datar et al. (2001) find that traditional earnouts are more common in transactions

⁴ For traditional earnouts, the fact that the post-acquisition managers are among the selling shareholders is sufficient for the traditional earnout to establish a link between their performance and personal payoffs. For a synthetic earnout, it is also necessary that the post-acquisition managers retain a minority stake in the post-acquisition period, given that the contingent payment is embedded in the remaining target equity. Since the minority stake is held by the selling shareholders, the mere fact that target post-acquisition managers are among sellers is in practice typically sufficient for the synthetic earnout to establish a link to the manager's performance. We elaborate on this reasoning under Section 4.2.

including high-growth, R&D-intensive, and intangible asset-heavy targets. The association between these types of targets and the use and design of traditional earnouts has also been confirmed by later research (Cain et al., 2011; Jansen, 2020).⁵ These firms are difficult to value based on financial information given that they tend to have assets whose value does not appear in the financial statements (Lev & Zarowin, 1999). Valuation uncertainty has also been proxied in subsequent research through the target's future growth prospects (proxied by Tobin's Q).⁶ This approach builds on it being difficult to correctly assess the value of a firm's future growth prospects *ex ante*, which results in higher valuation uncertainty (Jansen, 2020). The literature provides evidence that both the traditional earnout use and traditional earnout size are positively associated with the future growth prospects of the target (Cain et al., 2011; Jansen, 2020). Overall, prior literature shows strong evidence that certain firm target characteristics that indicate high valuation uncertainty serve as a significant predictor of traditional earnout use.

The second category of proxy variables for information asymmetry that has been examined in prior research is transaction-specific characteristics, with the rationale that certain deal attributes increase the difficulty for the acquirer to value the target. Datar et al. (2001) argue that information asymmetry should be more severe for cross-industry and cross-border deals, given that the acquirer possesses less knowledge about the target firm's operations. They find that transactions where the target comes from another SIC code than the buyer are more likely to include traditional earnouts. Opposed to their hypothesis, they however find that cross-border transactions are *less* likely to include traditional earnouts than domestic deals. Subsequent research looks closer into the valuation uncertainty between different industries and find that the larger the knowledge gap between the buyer's and the seller's industries, the more likely is the transaction to include traditional earnouts (Ragozzino & Reuer, 2009). It has also been found that the maturity of the M&A market is negatively associated with the use of traditional earnouts, suggesting that the more precedent transactions buyers can benchmark against, the less valuation uncertainty there is (Datar et al., 2001, Allee & Wangerin, 2018). Lastly, prior findings also indicate that traditional earnout use is less common in management buyout transactions, suggesting that when the management of a target is part of the group of buyers, information asymmetry should be less severe (Datar et al., 2001, Ewelt-Knauer et al., 2021). Overall, the literature provides support that valuation uncertainty proxies in the form of transaction-specific variables predict the use of traditional earnouts.

Altogether, prior literature provides robust evidence that both categories of proxy variables for valuation uncertainty predict the use of traditional earnouts. Thus, these findings suggest that

⁵ Both Jansen (2020) and Cain et al. (2011) found a positive relationship between traditional earnouts and the growth characteristics of the target firm. Cain et al. (2011) does however provide a positive association between earnout size and growth characteristics rather than earnout use. Furthermore, (Jansen, 2020) confirm that a firm's relative level of tangible assets predicts earnout use through showing a negative relationship between traditional earnout use and asset tangibility (defined as tangible assets divided by sales). Cain et al. (2011) also confirm a positive relationship between traditional earnout size and R&D intensity.

⁶ The Tobin's Q measures the ratio between a firm's enterprise value and its book value of assets. Since a higher Q value indicates that investors value the firm at more than replacement cost of its asset, firms with high Q values are expected to have a larger part of their value derived from future projects, thus indicating high growth prospects.

the theoretical motivations for using traditional earnouts to mitigate adverse selection and valuation uncertainty also apply in practice.

3.2.2. Traditional Earnouts and Moral Hazard

In contrast to the rich body of literature focusing on valuation uncertainty as a motive for traditional earnouts, only a few studies explicitly examine whether moral hazard considerations explain their use. The moral hazard motive suggests that since traditional earnouts make the total payoff to selling owner-managers dependent on their post-acquisition performance, they can incentivise managers to maximise their effort.

The literature on traditional earnouts suggests that these structures not only can motivate the post-acquisition performance of target managers, but also incentivise them to remain in the firm. When selling a business, target managers may feel little or no motivation to stay involved, and therefore choose to exit the company completely. Since target managers can only affect the contingent consideration if they remain, traditional earnouts can be effective to motivate target managers to continue in the firm.

Consistent with this logic, Kohers & Ang (2000) argue that traditional earnouts can hold target owner-managers hostage in the firm by linking a part of the consideration they receive to their behaviour in the post-acquisition period. Studying the post-acquisition period for a small sample of traditional earnout transactions, they indeed find descriptive evidence that management remained in the post-acquisition period in ~85 per cent of the cases, indicating that traditional earnouts can help buyers retain target management. Datar et al. (2001) also find indications that management retention is a motive for the use of traditional earnouts. In a small exploratory survey of 27 buyers involved in earnout transactions, 13 answered that retaining management was part of their motivation for using traditional earnouts.

One potential reason why only a few studies examine moral hazard mitigation as a motive for traditional earnout use is that some methodological challenges make it difficult to examine these factors in a generalisable way. A first challenge regards the overall lack of meaningful data. Cain et al. (2011) point out that for earnouts to motivate performance in the post-acquisition period, target management must remain after the deal and own equity in the target. If any of these conditions does not hold, the traditional earnout will not provide a link between management performance and the earnout payment. Consistent with this reasoning, if the motivation of target managers is an important motive for using traditional earnouts, one would expect traditional earnouts to be used more frequently in deals where both these conditions are satisfied. However, Cain et al. (2011) acknowledge that since most of the targets in transactions involving traditional earnouts are private, such data is usually difficult to obtain.

A second challenge regards the difficulty in using proxies to measure if moral hazard mitigation is a motive to use traditional earnouts. Cain et al. (2011) posit that while the intention to retain and motivate management should be higher in settings where managerial effort is important for the target's performance, it is likely that those settings are also characterised by high valuation uncertainty. Therefore, a limitation of using proxies for managerial effort to measure

if moral hazard mitigation drives the use of traditional earnouts is that these proxies might just as well capture the prevalence of high valuation uncertainty. Despite this, Cain et al. (2011) develop a methodology aimed at separating the valuation uncertainty and the moral hazard channels. Acknowledging that management ownership is generally higher among private companies, they hypothesise that if moral hazard motives explain the design of traditional earnouts, one would expect a stronger association between earnout size and proxies for managerial effort among these firms. However, using this methodology, they do not find any evidence that the importance of managerial effort has a stronger effect on traditional earnout size among these firms.

Cadman et al. (2014) apply a different methodology to disentangle the motives for the use of traditional earnouts. Examining the size of the recognized fair value of traditional earnouts in relation to the maximum traditional earnout amount as an indicator of the motive behind using the traditional earnout, their findings support that firms use traditional earnouts to mitigate valuation uncertainty, retain management and mitigate moral hazard issues.

Overall, while the literature supports the view that valuation uncertainty is a key motive behind traditional earnouts, the empirical evidence of a moral hazard motive is less conclusive. Given the small number of studies, the variant use of methodology, and the mixed results, general conclusions are difficult to draw from previous research.

3.2.3. Contribution of This Study

This paper contributes to the literature above in several ways. First, synthetic earnouts represent a new empirical phenomenon that, to the best of our knowledge, has not received any scholarly attention. Consequently, there is no empirical evidence on whether established contracting theories can explain the use of synthetic earnouts. Second, there is no prior evidence comparing traditional and synthetic earnouts, despite exploratory interviews indicating that synthetic earnouts are sometimes used as substitutes for traditional earnouts. We address this gap by examining synthetic earnout use relative to both non-earnout transactions and transactions that employ traditional earnouts, allowing us to assess the explanatory power of contracting theories across both contractual forms and to identify potential differences in their adoption.

Third, prior research on traditional earnouts has highlighted methodological limitations in testing the moral hazard channel, particularly because managerial ownership and post-acquisition retention have often been proxied indirectly (e.g., through listing status). We address this limitation by hand-collecting data on target managers' continued employment and equity ownership, as alluded by Cain et al. (2011).

4. Hypotheses Development

In Section 2, we established a frame of reference for synthetic earnouts by summarising insights from interviews with M&A practitioners, and by providing a formal definition and detailed description of the contract structure. In Section 3, we drew on contracting theory and reviewed empirical research on traditional earnouts to explain why traditional earnout structures are used

in M&A transactions. In this section, we integrate these insights. Building on contracting theory, the design and payoff structure of synthetic earnouts, empirical evidence on traditional earnouts, and interviews with M&A practitioners, we develop hypotheses about the motives for using synthetic earnouts in M&A control transactions.

4.1. Hypothesis 1

As established in the previous sections, in M&A settings information asymmetry arises when sellers possess superior information about the target's quality or future performance that buyers cannot fully verify *ex ante*. Following Akerlof's (1970) argument on adverse selection, such asymmetries create valuation uncertainty that complicates price determination. Signalling and screening mechanisms (Spence, 1973; Stiglitz, 1975) therefore are central in facilitating transactions under information asymmetry, forming the theoretical foundation for why earnout structures can mitigate valuation uncertainty in M&A transactions.

Building on this theoretical logic, prior research has consistently provided evidence that traditional earnouts are more likely to be adopted when valuation uncertainty is high (Cain et al., 2011; Datar et al., 2001; Jansen, 2020; Kohers & Ang, 2000; Ragozzino & Reuer, 2009). By linking part of the purchase price to the future performance of the target firm, traditional earnouts allow acquirers to postpone part of the valuation until uncertainty is resolved *ex post*. Traditional earnouts thus combine signalling and screening functions: sellers signal confidence in the firm's prospects by accepting performance-contingent compensation, while buyers use traditional earnouts to allocate risk and filter for high-quality targets.

Synthetic earnouts extend the same economic rationale through a different contractual form. Although formally distinct, synthetic earnouts replicate the fundamental payoff structure of traditional earnouts by linking the price of the final transfer of ownership to the target's post-acquisition performance. Conceptually, synthetic earnouts should also enable similar signalling and screening characteristics since 1) sellers signal confidence by agreeing to future performance-based valuations on the remaining shares and 2) acquirers can differentiate between high-quality and low-quality targets based on the sellers' willingness to agree to such terms. In this sense, synthetic earnouts also preserve similar underlying information revealing properties as traditional earnouts.

Given the economic resemblance, the characteristics that predict traditional earnout use should also predict synthetic earnout use. Since valuation uncertainty is one of the key drivers of traditional earnout use, it is expected to have a similarly positive association with the use of synthetic earnouts. The first hypothesis is thus formulated accordingly:

H1: Valuation uncertainty in M&A control transactions is positively associated with the use of synthetic earnouts.

4.2. Hypothesis 2

As argued by Kohers & Ang (2000), the human capital of managers can constitute a material component of a company's value. Top executives may possess unique and tacit knowledge

about their firm's operations which is difficult to replicate. For this reason, the buyer in a transaction may seek to retain and motivate the target managers in the post-acquisition period if they are expected to be an important ingredient for continued value creation in the target. Consistent with the reasoning by Holmstrom (1979), Cadman et al. (2014) assert that the inclusion of traditional earnouts in a transaction agreement can help resolve moral hazard problems by linking payouts to measurable outcomes that occur in the post-acquisition period. Given the design of synthetic earnouts which also allow the target managers' personal payoff to be influenced by post-acquisition behaviour, we conjecture that synthetic earnouts can function as an incentive-alignment tool between acquirers and sellers.

It should be noted that two conditions are necessary for synthetic earnouts to function as an incentive alignment tool. First, target managers must hold equity interest in the target that at least is partially retained in the post-acquisition period. This condition is necessary since the benefits arising from strong target post-acquisition performance will be reflected through an increased future consideration to the minority shareholders. If target managers do not hold the minority stake, the payoff from the synthetic earnout will not affect their personal economic payoffs, and thus cannot motivate post-acquisition effort. Second, to be motivated by the synthetic earnout, the target management who holds equity must remain in the firm in the post-acquisition period. If the selling management exit upon deal completion and a new management team assumes control, the synthetic earnout cannot motivate management since the payout will accrue to other people than those who determines the target's performance.

Given the above discussion, we argue that if synthetic earnouts are used to align the incentives of the buyer and the target management, they should be more common in transactions where the target managers retain an equity interest and remain in the firm in the post-acquisition period. However, because post-acquisition ownership can only occur when less than 100 per cent of the equity is acquired, it cannot be used as an empirical measure without excluding full acquisitions, where such ownership is impossible by design. To enable comparison between transactions involving synthetic earnouts and those involving acquiring 100 per cent, we require a measure that does not restrict the inclusion of full acquisitions.

In the context of synthetic earnouts, the minority stake retained post-acquisition is held by the selling shareholders. Therefore, the fact that target management are among the selling shareholders and remain with the firm should, in practice, indicate that they can be responsive to the incentive-aligning effect of the synthetic earnout. Therefore, we further argue that if synthetic earnouts are used as an incentive alignment tool, they should be more common in transactions where the target management are among the sellers and remain in the firm in the post-acquisition period. For this reason, we formulate the following second hypothesis:

H2: Synthetic earnouts are more likely to be used when target management both i) are among the selling shareholders and ii) remain in the firm in the post-acquisition period.

4.3. Hypothesis 3

As suggested by our two first hypotheses, we believe that synthetic earnouts may serve the same purposes in M&A transactions as traditional earnouts. Nevertheless, the fact that both structures are used in M&A transactions suggests that some factor determines the choice between the two. Based on the slightly differing properties between the two structures, we posit that the intention to motivate management in the post-acquisition period is better achieved by synthetic earnouts than traditional earnouts.

Synthetic and traditional earnouts differ in their ownership arrangements, which creates slight differences in their payoff functions and the way managerial effort translates into economic rewards post-acquisition. In a traditional earnout, managers receive a fixed upfront payment plus a contingent payment based on the target's future performance. If future performance falls short of expectations, the contingent payment could be minimal or zero. This introduces an asymmetric payoff because the buyer has already paid a fixed price for the equity initially acquired, which establishes a floor for the consideration paid to the target.⁷ Managers cannot reduce that payment through poor performance, so if they perceive the contingent portion as difficult to achieve, additional effort may seem ineffective. This can result in lost motivation or that managers may take greater risks to try to earn the extra payment, since there is no downside to the upfront consideration. Such asymmetry can therefore undermine the intended incentive alignment.

Synthetic earnouts, by contrast, tie the contingent payment directly to the remaining equity, producing a symmetrical payoff function. Every incremental improvement in post-acquisition performance increases the final purchase price of the remaining shares. Conditional on ownership, managers therefore always have a direct economic incentive to enhance performance. For traditional earnouts, the initial payment for acquired equity sets a de facto floor that can result in lost motivation or encourage excessive risk-taking. In contrast, synthetic earnouts involve purchasing additional equity with no such floor, so improvement in performance directly increases the final consideration. By including this retained ownership into the structure, synthetic earnout provides managers with financial incentives to sustain high performance in all situations, resulting in a more consistent and robust alignment of interests between buyers and target management throughout the post-acquisition period.

In addition to the incentive effects described above, a further structural difference may explain why synthetic earnouts are believed to be particularly effective in motivating target management post-acquisition. Traditional earnouts have a fixed time horizon, which implies that target management is only incentivised by the traditional earnout for that limited period. Effort beyond this date no longer affects compensation, which in theory should encourage managers to focus on short-term targets at the expense of longer-term performance. In contrast,

⁷ The exact structure of traditional earnouts can vary widely across transactions. While some contracts may specify performance thresholds, others link the contingent payment to a multiple of future earnings or revenue without a formal threshold. The asymmetric payoff described here arises from the general feature that the initial payment for acquired equity creates a de facto floor, meaning that managers cannot reduce the value of the already received upfront consideration, regardless of whether a threshold is explicitly defined for the contingent consideration.

as indicated by our exploratory interviews, synthetic earnouts do not require a predetermined end date, allowing the retained equity to remain under the control of target management indefinitely. If both parties are satisfied with the post-acquisition relationship, neither the buyer nor the seller is required to initiate a transaction of the remaining shares, allowing the hypothesised incentive-alignment effect of ownership to persist. This structural flexibility further supports the argument that synthetic earnouts are particularly well-suited to sustaining managerial incentives over time.

The above discussion suggests that if a buyer wishes to motivate target management in the post-acquisition period through some form of earnout structure, they should prefer synthetic earnouts. Consistent with the reasoning in H2, we argue that if the intention behind using any form of earnout contract is to incentivise target management in the post-acquisition period, such contracts should be more common under circumstances where they can work as incentive alignment tools. A prerequisite for both traditional earnouts and synthetic earnouts to incentivise target management is that the managers are among the sellers and remain in the post-acquisition period. Since we argue that synthetic earnouts are better as an incentive alignment tool, we formulate our third hypothesis as follows:

H3: Contingent on using some form of earnout structure, synthetic earnouts are more likely to be used when target management both i) are among the selling shareholders and ii) remain in the firm in the post-acquisition period.

5. Method

In this section, we outline the methodology used to test the hypotheses formulated in Section 4. We start with an overview of the overall research design. We then define and motivate the variables included in our statistical models. In Section 5.3, we define the model specifications used to test the hypotheses. In Sections 5.4 and 5.5 we describe the sample selection and data collection processes.

5.1. Research Design

This study has been structured to allow us to test our three hypotheses aimed to capture if valuation uncertainty and moral hazard considerations are drivers of synthetic earnout use in relation to non-earnout and traditional earnout transactions. The study focuses on control acquisitions selected through a defined sample selection process. Based on this initial sample, we manually collect data on the inclusion of synthetic and traditional earnouts, as well as moral hazard proxies through management ownership and retention in the target firm. Additional data on transaction and acquirer characteristics are also gathered to construct proxies for valuation uncertainty. The dataset is subsequently analysed quantitatively using logistic regression models to evaluate the hypothesised relationships, allowing us to determine which factors drive the adoption of synthetic earnouts.

5.2. Operationalisation of Hypotheses

5.2.1. Dependent Variables

To answer the hypotheses defined in Section 4, we test whether proxies capturing the degree of valuation uncertainty in a transaction, as well as a dummy indicating whether the target managers are among the sellers and remain after the transaction, are positively associated with the use of synthetic earnouts. The dependent variable in the analyses therefore represents the use of a synthetic earnout, as this represents the observable contractual outcome. This specification enables an assessment of which of the independent variables, if any, that are associated with the adoption of such contract structure. The first two hypotheses test the use of synthetic earnouts compared to transactions where no earnout structure is used. The third hypothesis aims to examine how well the independent variables are associated with the use synthetic earnouts when comparing with transactions that include only traditional earnouts. To reflect this distinction, we construct one binary dependent variable for H1 and H2, and a separate binary dependent variable for H3. For both constructed dependent variables, the value “0” denotes that the transaction does not include a synthetic earnout. Both dependent variables are defined and explained in detail below.

Synthetic earnout versus no earnout

The first two hypotheses examine the drivers of synthetic earnout use relative to transactions that do not employ such structures. To operationalise this comparison, we construct the binary dependent variable *SEO_VS_NO_EO*, which takes the value 1 when the transaction includes a synthetic earnout and 0 when it includes neither a synthetic nor a traditional earnout. The dependent variable is constructed accordingly to eliminate the potential influence of traditional earnout transactions, which prior research has shown to be positively associated with valuation uncertainty. It is thus possible, that synthetic earnout and traditional earnout use is explained by the same drivers. Removing these transactions eliminates potential confounding effects and enables a more accurate identification of the factors associated with synthetic earnout adoption.

Synthetic earnout versus traditional earnout transactions

The third hypothesis aims to identify which characteristics, if any, that predict the use of synthetic earnouts relative to traditional earnouts. To examine this relationship, the dependent variable must isolate transactions involving either of these two contract forms while excluding deals without an earnout component altogether. We therefore construct the binary variable *SEO_VS_TEO*, which takes the value 1 for transactions that include a synthetic earnout and 0 for transactions that include a traditional earnout but not a synthetic one. If a transaction includes both a synthetic and a traditional earnout, the dependent variable is coded as 1, since our objective is to capture in what situations the parties in the transaction have chosen to include a synthetic earnout. Excluding deals with no earnout structure further removes non-comparable observations and ensures that the estimated statistical relationships are not distorted by transactions outside the relevant comparison group.

5.2.2. Independent Variables

5.2.2.1. Measuring Valuation Uncertainty

If adverse selection considerations are a motive behind using synthetic earnouts, we expect valuation uncertainty to be positively associated with the use of synthetic earnouts in M&A transactions. To evaluate this hypothesis, we employ several proxy measures that reflect situations where buyers face greater difficulty valuing the target. The measures used are derived from previous studies on traditional earnouts. Since the targets in our sample are either private or subsidiaries to public companies, target-specific indications such as financial ratios are difficult to obtain. We therefore rely on industry-level data in our proxies. Like (Cain et al., 2011), we utilise the following three independent variables to capture the effect valuation uncertainty has on the use of synthetic earnouts: (1) if the seller belongs to another industry than the buyer, as measured by primary 3-digit SIC code (*Cross_Ind*); (2) the target industry's median standard deviation of weekly returns (*TarInd_Vol*); and (3) the target industry's median Tobin's Q value (*TarInd_Q*). We further build on previous literature and include: (4) the target industry's median tangible asset to sales ratio (*TarInd_Ass_Tan*) (Datar et al., 2001; Jansen, 2020; Kohers & Ang, 2000).⁸ Additionally, inspiration is drawn from Datar et al. (2001) resulting in the inclusion of a fifth variable: (5) if the seller is incorporated in a different country than the buyer (*Cross_Bord*). Below, we define and elaborate on how these measures effectively capture valuation uncertainty.

Cross-industry

Cross_Ind is used as a proxy for valuation uncertainty since cross-industry transaction give rise to several situations where assessing a target's value can be difficult. In these transactions, the buyer is likely less knowledgeable of several factors that affect the target's value compared to if the target belongs to the same industry as the buyer. For instance, buyers without experience of the target industry will have a more difficult time evaluating the target's competitive landscape, as well as to assess the overall viability in the target's financial forecasts and budgets. In addition, the value of the synergies arising from cross-industry acquisitions is more difficult to approximate to the buyer given that integration uncertainty will be higher when the two firms are dissimilar. To capture that a target belongs to another industry than the buyer in our model, we use a dummy variable which takes the value of 1 if the target has a different primary 3-digit SIC code than the buyer and 0 otherwise.

Target industry return volatility

TarInd_Vol is used since buyers are likely to face valuation challenges when there is high volatility in the performance of the target. If, for instance, the target belongs to a cyclical industry, future forecasts are probably characterised by high uncertainty, given that a changed economic landscape would have significant effects on the target's development. To capture the volatility in the performance of the target, we use the standard deviation of the weekly return

⁸ While all papers include a metric capturing the target firm's level of tangible and intangible assets, the specific variable definitions vary slightly across studies. The definition applied in this study follows the specification used in Jansen (2020).

of the median firm operating in the same industry of the target the year before the transaction (Cain et al., 2011).⁹ The industry is defined based on the target's 3-digit SIC code.

Target industry Tobin's Q

TarInd_Q is applied since valuation uncertainty is expected to be higher for firms with high growth prospects. As argued by Jansen (2020), the value derived from the future growth prospects of a firm is ambiguous since, ex-ante, it rests on soft information that is difficult for the seller to credibly convey and the buyer to assess. To incorporate this in our model, we include the target 3-digit SIC industry median Tobin's Q ratio the year before the transaction as an independent variable.¹⁰

Target industry asset tangibility

TarInd_Ass_Tan is a commonly used proxy for valuation uncertainty, and is calculated as the ratio of tangible assets divided by sales (see for example Datar et al., 2001; Jansen, 2020; Kohers & Ang, 2000). Firms with a lower ratio depend more on intangible assets such as brand, intellectual property, and customer relationships to generate revenues. These factors are more difficult for acquirers to objectively assess and benchmark, since their economic contribution is closely linked to assumptions about future performance, competitive positioning, and market development rather than observable asset values. The ratio is calculated based on the median 3-digit industry the year prior to the transaction.

Cross-border

Lastly, *Cross_Bord* is included as a proxy for valuation uncertainty. Building on the logic of Datar et al. (2001), cross-border transactions tend to involve greater information frictions, as the acquirer often has limited familiarity with the target's institutional environment, regulatory framework, and competitive dynamics. This increases the risk that important characteristics of the target or its market is not fully observed, which in turn raises the overall uncertainty surrounding the valuation assessment. To capture cross-border transactions a dummy variable is introduced, which takes the value of 1 if the target is incorporated in a different country than the acquirer and 0 otherwise.

5.2.2.2. Measuring target management ownership and retention

As discussed in Section 4.2, we argue that if synthetic earnouts are used to align the incentives of the buyer and the target management, we expect them to be more common in transactions where target managers are among the sellers and remain in the firm in the post-acquisition period. The rationale for this is that synthetic earnouts cannot function as an incentive alignment tool if these conditions do not hold. Accordingly, a positive association between the use of synthetic earnouts and transactions in which these conditions prevail would be consistent with the view that synthetic earnouts are used as an incentive alignment tool. Such an

⁹ Computed as the standard deviation of weekly log normal price returns over the past year, annualised with a factor of 52 for the 52 trading weeks in a year.

¹⁰ The Tobin's Q measures the ratio between a firms' enterprise value and its book value of assets. Since a higher Q value indicates that investors value the firm at more than replacement cost of its asset, firms with high Q values are expected to have a larger part of their value derived from future projects, thus indicating high growth prospects.

association would thereby support the notion that these structures are used to mitigate problems of moral hazard.

Previous literature acknowledges that the retention of selling owner-managers is also a prerequisite for traditional earnouts to function as an incentive alignment tool (Cain et al., 2011). Therefore, finding the same association, but with transactions including traditional earnouts, would likewise be consistent with the idea that these are used to align incentives post-acquisition. However, since the targets in transactions including earnout structures typically are private, systematic data on whether target managers are among the sellers and remain in the firm is typically difficult to obtain. For this reason, extant literature aiming to capture if the moral hazard channel explains the use of traditional earnouts has predominantly relied on indirect proxies for if target managers are responsive to the incentive-aligning effects of these structures. For instance, both Cain et al. (2011) and Cadman et al. (2014) argue that, since management ownership are higher among private firms, managers of private target firms should generally be more responsive to the incentive provided by traditional earnouts. Accordingly, these studies use target listing status as a proxy for if traditional earnouts are used to align the incentives between the buyers and target managers.

In this study, we make a methodological contribution to these earlier studies by identifying and hand-collecting data on if target management are among selling shareholders and remain in the target after the acquisition. This method allows us to utilise deal-level information rather than indirect proxies to examine more directly whether the use of synthetic earnouts is associated with transactions where target management can plausibly be responsive to their incentive-aligning properties.

Management ownership and retention

To empirically examine if earnout structures are associated with transactions in which the target management are among the sellers and remain in the post-acquisition period, we construct a dummy variable named *Mgmt_Ret_Own*, which takes the value of 1 if key target management i) owns shares in the target prior to the transaction and ii) remains in the target after the transaction. Given that both these criteria must be satisfied for both a synthetic earnout and a traditional earnout to function as an incentive alignment tool, the dummy variable is set to 0 whenever either or both conditions are not met.

Since target management can refer to a rather large group of executives, we have limited the scope to if, what we define as key management, are among the sellers and remain in the company. In this definition, we include the CEO given that this role is deemed the most crucial for the target's success. We also include founding target management in this definition. In section 5.5, we provide a more comprehensive discussion about the definition of key management as well as the collection process of this data.

5.2.3. Control variables

In this study, we adopt a parsimonious approach to the inclusion of control variables, meaning that we intentionally limit the numbers of variables we control for in the respective regression analyses. There are two main reasons for this. First, many of the variables that one might wish

to control for in empirical studies of M&A transactions are, in this study, the variables of interests. For instance, studies examining M&A transactions often control for if the target comes from another industry or country than the acquirer (see for instance Barbopoulos & Adra, 2016). In this study, these deal characteristics constitute test variables aimed to capture valuation uncertainty. Second, some control variables used in previous studies focusing on traditional earnouts are already controlled for in our study given our sample selection (for a detailed overview of the sample selection in this study, please see Section 5.4). For instance, while some previous studies control for acquirer listing status (see e.g. Jansen, 2020), we only include transactions involving public buyers, thus omitting the need for such control variable.

Relative acquirer size

For the above reasons, we follow the approach by (Cain et al., 2011) and limit the inclusion of deal-level control variables to the relative size of the acquiring firm to the deal value, denoted as *RelAcq_Size*. This variable is calculated by dividing the market value of equity of the acquiring firm by the transaction value. (Kohers & Ang, 2000) show that the use of traditional earnouts decreases with the relative size of the acquirer to the deal value, suggesting that buyers in transactions of relatively small targets may be less inclined to use traditional earnouts since the financial risk of an unsuccessful acquisitions is smaller for them compared to acquisitions of relatively large targets. Findings by (Cain et al., 2011) also show that the relative acquirer size is generally lower in transactions including traditional earnouts.

Time fixed effects

The use of synthetic earnouts likely varies over time depending on macroeconomic cycles, interest rate environment and economic shocks such as Covid 19. While these time-dependent factors likely affect all transactions each year, they are difficult to measure directly. In addition, during informant interviews, M&A professionals indicated that they experience a general increase in the use of synthetic earnouts in the market. Missing to control for the possibility that the general adoption of synthetic earnouts has varied during the sample period risks biasing the results in the regression analyses. To avoid this, we include year fixed effects in all regressions.

Acquirer industry fixed effects

Acquirers operating in different industries may face distinct competitive dynamics and contracting practices that can influence their propensity to employ synthetic earnouts. To account for such systematic industry-level differences on the acquirer side, acquirer industry fixed effects are included in the regressions. In line with Bates et al. (2018), this approach may capture time-invariant characteristics across industries that affect the likelihood of using synthetic earnouts. 1-digit SIC codes are applied to limit the risk of perfect prediction that could arise with a more granular classification due to limited sample size.¹¹

¹¹ Target industry fixed effects are not included, with the rationale that several of the valuation uncertainty proxies are defined relative to the median values within each target industry. Introducing target industry fixed effects could absorb parts of the cross-industry variation that these measures are intended to capture and weaken their explanatory power.

5.3. Statistical Method

5.3.1. Model Specifications

This study employs quantitative statistical methods to test the hypotheses developed in Section 4. The empirical design is based on logistic regression models. Logistic regressions are appropriate for modelling dichotomous outcomes, since they estimate the probability that the dependent variable equals one while constraining predicted probabilities to lie between zero and one. The general logistic regression model can be expressed as:

$$\text{Logit}(P(Y_i = 1)) = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \dots + \beta_k X_{ki}$$

Where Y_i represents the binary dependent variable for observation i . $X_{1i}, X_{2i}, \dots, X_{ki}$ denote the independent variables, β_0 is the intercept and $\beta_1, \beta_2, \dots, \beta_k$ are the coefficients to be estimated.

The models are estimated using maximum likelihood, and observations with missing values in any variable included in a given specification are excluded from the analysis (listwise deletion). Consequently, the effective sample size may differ across models, and the number of observations for each regression is reported in the result tables. Coefficients are interpreted in terms of log-odds, and hypothesis tests rely on the Wald statistic, with significance evaluated at the 10, 5, and 1 per cent thresholds levels. To account for potential heteroskedasticity, robust standard errors are included and calculated using the Huber-White sandwich estimator.

In line with Section 5.2, the hypotheses are tested using appropriately specified regression models. To examine the first hypothesis, we formulate Model (1), which uses the binary dependent variable *SEO_VS_NO_EO*, coded as 1 for transactions with synthetic earnouts and 0 for transactions without synthetic or traditional earnouts. Since the first hypothesis focuses on the relationship between valuation uncertainty and the use of synthetic earnouts, Model (1) includes independent variables capturing valuation uncertainty, namely *TarInd_Vol*, *TarInd_Q*, *TarInd_Ass_Tan*, *Cross_Ind* and *Cross_Bord* (as discussed in Section 5.2.2.1). In addition, the model controls for the relative size of the acquisition via *RelAcq_Size*, accounts for temporal variation through year fixed effects ($\sum_{t=1}^{T-1} \gamma_t (Year)_{it}$) and time-invariant systematic acquirer industry-level differences through acquirer industry fixed effects ($\sum_{k=1}^{K-1} \delta_k (AcqInd)_{ik}$). Model (1) is specified accordingly:

$$\begin{aligned} \text{Logit}(P(\text{SEO_VS_NO_EO}_i = 1)) = & \beta_0 + \beta_1(\text{TarInd_Vol})_i + \beta_2(\text{TarInd_Q})_i \\ & + \beta_3(\text{TarInd_Ass_Tan})_i + \beta_4(\text{Cross_Ind})_i \\ & + \beta_5(\text{Cross_Bord})_i + \beta_6(\text{RelAcq_Size})_i \\ & + \sum_{t=1}^{T-1} \gamma_t (Year)_{it} + \sum_{k=1}^{K-1} \delta_k (AcqInd)_{ik} \end{aligned} \quad (1)$$

To test the second hypothesis, Model (2) examines whether the retention of target owner-managers, *Mgmt_Ret_Own*, is associated with the use of synthetic earnouts relative to non-earnout transactions. As the underlying comparison group remains identical, the dependent variable *SEO_VS_NO_EO* is retained. In this model, *Mgmt_Ret_Own* replaces the valuation

uncertainty proxies, while the control variables and fixed effects remain unchanged. Model (2) is specified as follows:

$$\begin{aligned} \text{Logit}(P(SEO_VS_NO_EO_i = 1)) = & \beta_0 + \beta_1(Mgmt_Ret_Own)_i + \beta_2(RelAcq_Size)_i \\ & + \sum_{t=1}^{T-1} \gamma_t (Year)_{it} + \sum_{k=1}^{K-1} \delta_k (AcqInd)_{ik} \end{aligned} \quad (2)$$

To assess the robustness of the explanatory channels in the first two models, Model (3) includes both the valuation uncertainty proxies and the *Mgmt_Ret_Own* variable simultaneously. This combined specification examines whether the effects of the valuation uncertainty proxies and the *Mgmt_Ret_Own* variable persist when included in the same model, and allows for an assessment of whether one channel dominates the other. The dependent and control variables remain consistent with the previous models. Model (3) is specified below:

$$\begin{aligned} \text{Logit}(P(SEO_VS_NO_EO_i = 1)) = & \beta_0 + \beta_1(TarInd_Vol)_i + \beta_2(TarInd_Q)_i \\ & + \beta_3(TarInd_Ass_Tan)_i + \beta_4(Cross_Ind)_i \\ & + \beta_5(Cross_Bord)_i + \beta_6(Mgmt_Ret_Own)_i \\ & + \beta_7(RelAcq_Size)_i + \sum_{t=1}^{T-1} \gamma_t (Year)_{it} \\ & + \sum_{k=1}^{K-1} \delta_k (AcqInd)_{ik} \end{aligned} \quad (3)$$

The third hypothesis concerns the choice between synthetic and traditional earnouts. To compare the association between the independent variables and these two structures, the dependent variable is changed to *SEO_VS_TEO*, which takes the value 1 for transactions with synthetic earnouts and 0 for transactions with traditional earnouts only. Since we argue that synthetic earnouts provide stronger incentive alignment than traditional earnouts, the main focus of this hypothesis is *Mgmt_Ret_Own*. This variable captures if synthetic earnouts are more common in situations where target managers are responsive to their incentive-aligning effects, and is therefore aimed to capture if moral hazard considerations explain the use of synthetic earnouts. However, given the absence of prior academic research on synthetic earnouts, it remains uncertain whether valuation uncertainty may also influence the relative choice between the two earnout structures. To provide a comprehensive examination, the same modelling strategy used in Models (1) to (3) is applied here.

Model (4) isolates the effect of valuation uncertainty proxies while controlling for *RelAcq_Size* and the fixed effects and is specified as below:

$$\begin{aligned} \text{Logit}(P(SEO_VS_TEO_i = 1)) = & \beta_0 + \beta_1(TarInd_Vol)_i + \beta_2(TarInd_Q)_i \\ & + \beta_3(TarInd_Ass_Tan)_i + \beta_4(Cross_Ind)_i \\ & + \beta_5(Cross_Bord)_i + \beta_6(RelAcq_Size)_i \\ & + \sum_{t=1}^{T-1} \gamma_t (Year)_{it} + \sum_{k=1}^{K-1} \delta_k (AcqInd)_{ik} \end{aligned} \quad (4)$$

Model (5) only includes the *Mgmt_Ret_Own* variable, as well as the control variable and the fixed effects. This specification directly tests whether the retention of target owner-managers distinguishes between transactions including synthetic earnouts and those that include traditional earnouts only. Model (5) is specified as follows:

$$\begin{aligned} \text{Logit}(P(\text{SEO_VS_TEO}_i = 1)) = & \beta_0 + \beta_1(\text{Mgmt_Ret_Own})_i + \beta_2(\text{RelAcq_Size})_i \\ & + \sum_{t=1}^{T-1} \gamma_t (\text{Year})_{it} + \sum_{k=1}^{K-1} \delta_k (\text{AcqInd})_{ik} \end{aligned} \quad (5)$$

Finally, Model (6) includes both the valuation uncertainty proxies and the *Mgmt_Ret_Own* variable to examine whether either the variables used to capture the valuation uncertainty and the moral hazard channel remain significant once both jointly are accounted for. This model provides the most comprehensive test of the third hypothesis and evaluates the robustness of potential associations when the full set of explanatory variables is considered. Model (6) is specified accordingly:

$$\begin{aligned} \text{Logit}(P(\text{SEO_VS_TEO}_i = 1)) = & \beta_0 + \beta_1(\text{TarInd_Vol})_i + \beta_2(\text{TarInd_Q})_i \\ & + \beta_3(\text{TarInd_Ass_Tan})_i + \beta_4(\text{Cross_Ind})_i \\ & + \beta_5(\text{Cross_Bord})_i + \beta_6(\text{Mgmt_Ret_Own})_i \\ & + \beta_7(\text{RelAcq_Size})_i + \sum_{t=1}^{T-1} \gamma_t (\text{Year})_{it} \\ & + \sum_{k=1}^{K-1} \delta_k (\text{AcqInd})_{ik} \end{aligned} \quad (6)$$

5.3.2. Expected Relationship of Variables

In Table 1, we provide an overview of the dependent variables used in the model specifications.

Table 1. Definition of Dependent Variables

| Variable | Variable Definition |
|----------------------------|---|
| Dependent variables | |
| <i>SEO_VS_NO_EO</i> | Binary variable coded 1 when the transaction includes a synthetic earnout and 0 when it includes neither a synthetic nor a traditional earnout |
| <i>SEO_VS_TEO</i> | Binary variable coded 1 when the transaction includes a synthetic earnout and 0 for transactions that include a traditional earnout but not a synthetic earnout |

In Table 2 an overview of the independent variables is provided, including the variable definitions, the expected signs as well as in which previous research the variables has been included and their corresponding significance level in that literature.

Table 2. Definition of Independent Variables

| Variable | Expected Sign | | Variable Definition | Prior Research on Traditional Earnouts |
|------------------------------|---------------|---------------|--|--|
| Independent variables | | | | |
| <i>Valuation uncertainty</i> | <i>Model</i> | | | |
| | (1), (2), (3) | (4), (5), (6) | | |
| <i>Cross_Ind</i> | + | ? | 1 = if acquirer and target operate in different 3-digit SIC industries; 0 otherwise | Bates et al. (2018), Cadman et al. (2014)* Cain et al. (2011), Datar et al. (2001)*, Kohers & Ang (2000)***, Ragozzino & Reuer (2009)*** |
| <i>TarInd_Vol</i> | + | ? | Median annualised return volatility of the target's 3-digit SIC industry | Bates et al. (2018)***, Cadman et al. (2014), Cain et al. (2011)*** |
| <i>TarInd_Q</i> | + | ? | Median Tobin's Q of the target's 3-digit SIC industry | Cadman et al. (2014), Cain et al. (2011)**, Jansen (2020)** |
| <i>TarInd_Ass_Tan</i> | - | ? | Median tangible assets to sales ratio in the target's 3-digit SIC industry | Jansen (2020)** |
| <i>Cross_Bord</i> | + | ? | 1 = if buyer and seller are incorporated in different countries; 0 otherwise | Datar et al. (2001)*, Kohers & Ang (2000) |
| Moral hazard | | | | |
| <i>Mgmt_Ret_Own</i> | + | + | 1 = if target management owns shares prior to transaction and remains after; 0 otherwise | Methodological contribution with new variable based on: Cadman et al. (2014)*, Cain et al. (2011)** |

Notes: *, **, *** represent significance levels in prior studies, where * is $p < 10\%$, ** is $p < 5\%$ and *** is $p < 1\%$. Cadman et al. (2014) provided evidence on *Cross_Ind* for one of the models where they compared the low vs middle fair value of traditional earnout groups. Ragozzino & Reuer (2009) examine knowledge distance between buyer and seller industries, capturing similar cross-industry informational frictions as the *Cross_Ind* variable. *TarInd_Vol* is computed as the standard deviation of weekly log normal price returns over the past year, annualised with a factor of 52 for the 52 trading weeks in a year. Tobin's Q is calculated as the total enterprise value of a firm divided by the book value of its assets. Jansen (2020) finds partial evidence for asset tangibility; significance is not consistent across all models. Datar et al. (2001) found a significant relationship between traditional earnout use and cross-border transactions, however, a negative association, which was the opposite of their expectations. Cadman et al. (2014) provided evidence in one of the models for the proxy aimed at capturing the moral hazard channel, where they compared the low vs middle fair value of traditional earnout groups.

In Table 3 a similar overview as for the independent variables, is included for the control variables, including expected signs (if applicable), definition and reference to prior literature.

Table 3. Definition of Control Variables

| Variable | Expected Sign | | Variable Definition | Prior Research on Traditional Earnouts |
|--------------------------|---------------|---------------|---|--|
| Control variables | | | | |
| <i>Model</i> | | | | |
| | (1), (2), (3) | (4), (5), (6) | | |
| <i>RelAcq_Size</i> | - | ? | Market capitalisation of the acquirer (4 weeks pre-announcement) relative to the implied 100% equity deal value | Cadman et al. (2014), Cain et al. (2011) ^{***} , Kohers & Ang (2000) ^{***} |
| Year FE | Yes | Yes | Dummy variable capturing year-level unobserved heterogeneity | Bates et al. (2018), Jansen (2020), Ragozzino & Reuer (2009) |
| Acquirer industry FE | Yes | Yes | Dummy variable capturing unobserved acquirer 1-digit SIC industry-level heterogeneity | Bates et al. (2018) |

Notes: *, **, *** represent significance levels in prior studies, where * is $p < 10\%$, ** is $p < 5\%$ and *** is $p < 1\%$

5.4. Sample Selection

5.4.1. Country Selection

The starting point of the sample selection process was the choice of countries to examine. The informant interviews were conducted with practitioners employed by Swedish public and private firms. From these interviews we identified that the contractual structures under investigation are used by Swedish acquirers, which motivates the inclusion of Sweden in the sample. To increase both the sample size and, more importantly, the generalisability of the empirical findings, we introduced an additional country. Given that Sweden hosts one of the leading financial markets in Europe, particularly within the Nordic region, the United Kingdom was selected as the second country in the sample. Similar to Sweden, the United Kingdom possesses a highly developed financial market, which enhances the comparability and external validity of the results, allowing us to generalise findings to two of Europe's most advanced financial markets.

5.4.2. Transaction Selection

As presented in the definition of synthetic earnouts (Section 2.2.2), the transactions are characterised by the acquirer purchasing equity corresponding to ownership above 50 per cent and below 100 per cent of the target's equity. Traditional earnouts on the contrary can also be used in transactions where the acquirer purchases 100 per cent of the target's equity. On this basis, the initial filtering of transactions included control transactions, where the acquirer after the transaction owned more than 50 per cent of the target's equity. In terms of sample period,

we included transactions that were announced 2015-2024. This time frame was chosen based on indications from interviewed industry professionals that synthetic earnouts has become more common recently, suggesting that it is an interesting period for examination. To ensure availability of information, we also limit our sample to public acquirers.

We inserted the aforementioned criteria in the LSEG Workspace database SDC Platinum (“LSEG”) and could extract a total of 8,303 transactions.¹² For all transactions, deal-specific data and firm-specific data on both acquirer and targets was gathered.¹³ Following the initial extraction, three additional sample restrictions were introduced to the sample.

Firstly, given that synthetic earnout structure could result in unequal treatment of shareholders and conflict with public takeover regulations, acquisitions of public targets were consistently excluded to ensure a comparable sample.¹⁴ Thus, the sample only includes transactions where the target is either private, or a subsidiary to a public company. Second, following previous literature (see e.g. Bates et al., 2018) we further excluded transactions involving finance, insurance and real estate target firms due to their distinct financial structures and regulatory environments.¹⁵ Third, to ensure that the effect of small deals does not distort the empirical findings, transactions with a missing deal value or a deal value below €1M were excluded (Barbopoulos et al., 2018).

Furthermore, to ensure the reliability and feasibility of the data collection process, we introduced an additional complementary screening filter. This filter initially restricted the sample to transactions for which the target company’s sales in the year prior to the acquisition are reported in the LSEG database. The criterion was applied for two reasons. Firstly, prior research has indicated that LSEG data can occasionally be inaccurate or incomplete, and transactions with available sales information were therefore considered more likely to provide reliable disclosure for other deal and firm characteristics (Ince & Porter, 2006). Secondly, applying this filter reduced the overall sample size, making the manual collection of additional variables more manageable.

¹² The initial filtering criteria inserted in LSEG can in some cases be subject to different alternatives in applied methodology. The cases allowing for different options have been treated accordingly: 1) Acquirer country is based on its country of incorporation. As described in Section 5.5.1 we further excluded transactions where the acquirer was not listed on stock exchanges in countries corresponding with criteria in Section 5.4. 2) LSEG generally define the transaction date as the announcement date of the acquisition. In cases where the completion date and announcement date are not the same, as further elaborated in Section 5.5.1 we have excluded transactions when the completion date is outside the time period defined in Section 5.4.

¹³ Deal-specific data includes percentage owned prior to the transaction, percentage acquired in the transaction, the transaction date and deal value if available. Firm-specific data includes country of incorporation, listing status, target sales the year prior, 4-digit SIC codes, etc.

¹⁴ Under EU takeover regulation and corresponding national rules, all shareholders of the same class must be treated equally in a public acquisition. Structures that involve selling a majority but not all shares, coupled with a commitment by the acquirer to purchase the remaining shares at a future, performance-linked price, cannot be offered selectively to a subset of shareholders in a public company. For this reason, synthetic earnout structures are generally incompatible with acquisitions of publicly listed targets (‘Directive 2004/25/EC of the European Parliament and of the Council of 21 April 2004 on Takeover Bids’, 2016).

¹⁵ Target firms in SIC codes between 6000 to 6999 were excluded.

After applying the primary sample selection criteria and the complementary screening filter, 3,342 transactions remained. Of these, only 222 involved acquisitions of less than 100 per cent of the target's equity, which is the only group in which synthetic earnouts can occur. To preserve these critical observations, the sales availability requirement removed for transactions of less than 100 per cent ownership. Furthermore, as deal values were not reported for all transactions in LSEG, we manually collected this information for this group.¹⁶ Each transaction was then again reviewed to ensure it met the initial sample criteria with respect to listing status, target industry and deal value. In total, 72 transactions of less than 100 per cent ownership were re-introduced to the sample, ensuring that the final dataset contained a sufficient number of observations for meaningful empirical analysis. Table 4 presents the number of transactions remaining before manual data collection.

Table 4. First Sample Selection

| Sample Selection | No. of Observations |
|--|---------------------|
| Selection of Transactions | |
| Control acquisitions of private targets in UK and SWE 2015-2024 | 8,303 |
| (-) First sample restriction criteria* | -4,969 |
| Control acquisitions after sample restriction before sample screening filter** | 3,342 |
| (-) Missing target sales on acquisitions of 100% target equity | -2,221 |
| (+) Acquisitions of <100% satisfying first sample criteria after manual review | 72 |
| Control acquisitions after sample restriction and screening | 1,193 |
| (-) Transactions excluded during the additional manual data collection (see Section 5.5) | -375 |
| Final Sample | 818 |

* Sample restriction criteria include removing public targets, targets belonging to SIC codes between 6000 and 6999, and transactions where the announced deal value does not exceed €1m.

** Sample screening criteria included announced target sales in LSEG, except for transactions of <100% of equity where all transactions were reviewed based on manually collected data regarding if they met the first sample restriction criteria.

Our initial dataset comprised 1,193 transactions, representing the starting point prior to an extensive manual data collection process. During this stage, 375 transactions were excluded (see Section 5.5), resulting in a final sample of 818 M&A control transactions. This sample includes transactions with synthetic earnouts, traditional earnouts, or no earnout structures. The methodology used for deriving the final sample is detailed in the following section.

5.5. Data Collection

This section outlines the process of arriving at our final sample, as well as the overall data collection process of the variables included in our regression analyses. After the initial sample

¹⁶ Deal value was collected through browsing both press releases from either the acquirer or target and annual reports where deal values can be disclosed both in text as well as in the PPA.

selection process, all remaining transactions were manually analysed at more depth. The purpose of this exercise was two-fold. First, it allowed us to control if each transaction met the sample selection criteria as outlined in Section 5.4. Second, it allowed us to gather extensive data, not reported in the databases, on if transactions include synthetic and traditional earnouts, as well as if management in the target firm owned equity in the company prior to the transaction and if target management remained following the transaction. Data on if the transactions in our sample included synthetic or traditional earnouts was hand-collected from corporate filings and press releases relating to the transactions. Management data was mainly obtained from press releases, corporate filings, from official government sources such as Companies House as well as alternative sources such as LinkedIn. After completion, the manual data collection was complemented by collection of data from the databases LSEG and Capital IQ Pro for the other variables.

5.5.1. Overview of Data Collection

For all 1,193 transactions that remained after the initial sample restriction and screening process, we browsed the acquirers' corporate websites to locate the annual and interim reports in which the acquisition was expected to be recognised. To not miss any communicated information, we also searched for press releases related to each acquisition. We then examined the corporate documents to confirm that the deal had been completed, and to ensure that each transaction met the criteria described in Section 5.4. For certain transactions, we managed to identify the acquirer, and its subsequent corporate filings yet could not identify the transaction provided by LSEG. If that was the case, we searched for corporate filings the years prior and after the acquisition year provided by LSEG to see if we could find information about the acquisition. In the cases where we could not, the transaction was excluded from the sample.

During the identification and scanning process, 1 transaction was removed since it was a duplicate in the LSEG list. 4 transactions were removed when the completion date of the acquisition differed from the announcement date, and that completion date was outside the time period defined under Section 5.4. We excluded transactions where the acquirer was listed on a stock exchange in a country differing from the defined criteria in Section 5.4 (16 observations). 130 transactions were excluded since the acquirer reported under different accounting standards than IFRS.¹⁷ 68 transactions were excluded since no corporate filings could be found to confirm the transaction, which in most cases was due to the buyer having been acquired by another company or delisted after the transaction. Furthermore, 45 transactions were removed since they were outside the scope of IFRS 3 and not classified as a business combination.¹⁸ 43

¹⁷ If the acquirers are listed on Swedish stock exchanges other than the main markets and Nasdaq First North Premier Growth Market the listed firm can choose to report under Swedish GAAP instead of IFRS. The transactions where the listed acquirer reports under Swedish GAAP are excluded (*Nasdaq First North Nordic – Rulebook 1 July 2018*; Regulation (EC) No 1606/2002 of the European Parliament and of the Council of 19 July 2002 on the Application of International Accounting Standards, 2002, p. Article 4). Acquirers not reporting under IFRS were excluded, due to potential differences in reporting compared to IFRS 3 Business Combination which ensures fully comparable observations.

¹⁸ Transactions outside the scope of IFRS 3 include: (a) combinations involving joint ventures (IFRS 3.2(a)); (b) acquisitions of assets that do not meet the definition of a business (IFRS 3.2(b)); (c) combinations under common control (IFRS 3.2(c)); and (d) acquisitions by investment entities applying the exemption under IFRS 3.2A.

transactions are SPACs and reverse takeovers transactions and are excluded.¹⁹ Additionally, 13 transactions involve acquisitions when the target is acquired from the administrators and are excluded.²⁰ Finally, 40 transactions were removed due to not satisfying the first sample criteria defined under Section 5.4.

Section 5.5.2 outlines the data collection procedures, including the identification of synthetic and traditional earnouts at the transaction level. Transactions where acquirers stated that they use an earnout structure, but did not disclose whether the structure applies to the specific deal, were excluded to ensure that the presence or absence of the contractual mechanism is known with certainty. In total, 15 transactions were removed on this basis.

Overall, the data collection process described in this section together with the initial criteria in Section 5.4 resulted in the final sample, as presented in Table 5.

Table 5. Final Sample

| Sample Selection | No. of Observations |
|---|----------------------------|
| Selection of Transactions | |
| Control acquisitions after sample restriction and screening | 1,193 |
| Manual data collection | |
| (-) Duplicate in LSEG list | -1 |
| (-) Transaction completed outside defined time period | -4 |
| (-) Listed on stock exchange outside UK and Sweden | -16 |
| (-) Acquirer reporting under accounting standards different than IFRS | -130 |
| (-) No corporate filings found | -68 |
| (-) Not classified as a business combination under IFRS 3 | -45 |
| (-) SPAC driven acquisitions and reverse takeovers | -43 |
| (-) Target acquired from administrators | -13 |
| (-) Transaction does not satisfy first sample criteria after manual verification | -40 |
| (-) Synthetic earnout or traditional earnout is not derived to individual transaction | -15 |
| Final Sample | 818 |

In total we estimate that we spent on average 15-20 minutes on each transaction to conduct the manual data collection in accordance with the process described above and further elaborated on in Section 5.5.2. 375 transactions were excluded during the process, resulting in a total final sample of 818 transactions. The total sample consists of 98 transactions where synthetic

¹⁹ Excluded since their economic substance typically reflects a listing mechanism rather than a conventional business combination aimed at acquiring and integrating operations.

²⁰ Transactions where the target was acquired from administrators were excluded, as their distress-driven nature and limited managerial control reduce the applicability of synthetic earnout structures, and to ensure that the remaining transactions in the sample are economically comparable.

earnouts are used, 328 transactions where only traditional earnouts are used and 392 transactions where no of the contractual structures discussed are used.²¹

5.5.2. Variable-Specific Data Collection

The empirical analysis relies on a rigorous manual data collection procedure for both the dependent and independent variables. The full coding procedures, definitions, assumptions, and the rationale behind the various choices are documented in Appendix A. This includes the collection of synthetic earnouts, traditional earnouts, management ownership and retention, and the additional independent and control variables used in the regressions specified in Section 5.3. For all manually collected data, a clearly defined coding scheme was applied to ensure consistency across observations. This scheme was formulated prior to the data collection. For the dependent variables, transactions with insufficient information to make a reliable determination whether they included earnout structures were excluded. For the management ownership and retention variable, observations where this information could not be obtained were coded as “Not disclosed”. In accordance with Section 5.3.1, these observations remained in the full sample but are excluded from the regression models in which the variable is included. This approach preserves the sample size while preventing missing data from affecting specific coefficient estimates. A brief overview of the data collection process is provided below.

Synthetic earnouts were identified in accordance with the definition in Section 2.2.2 and involve examining each control acquisition of less than 100 per cent of the target’s equity. For these transactions, as described in Appendix A.1, we used a coding scheme to determine whether they included a (i) future obligation to acquire the remaining shares in the target and, if so, (ii) the value of these shares was based on the target’s future performance. Data sources included voluntary disclosures, press releases, annual reports, other corporate filings, and, where possible, inferences from IFRS-required accounting treatments, as IFRS does not mandate explicit disclosure of buyout obligations or pricing formulas.

All control transactions, including both partial and full acquisitions, were examined for the inclusion of traditional earnouts in accordance with Appendix A.2. While LSEG provides information on traditional earnouts, manual verification of press releases and acquirer filings was performed to ensure alignment with the contingent consideration definition and to capture unreported cases. Of the 328 traditional earnout transactions in the final sample, LSEG reported only 61.5 per cent of those, underscoring the importance of manual verification. Information on traditional earnouts is typically disclosed alongside deal values in press releases or in the business combination sections of annual reports.

Data for proxy variables of valuation uncertainty and control variables were retrieved from LSEG and S&P Capital IQ Pro as described in Appendix A.3. The data for the dummy variables *Cross_Ind* and *Cross_Bord* were obtained from LSEG, based on 3-digit SIC codes and country of incorporation, respectively. The remaining valuation uncertainty proxies (*TarInd_Vol*, *TarInd_Q*, *TarInd_Ass_Tan*) were collected from S&P Capital IQ Pro.

²¹ Transactions where both synthetic earnouts and traditional earnouts are used are classified as transactions including synthetic earnouts, in accordance with Section 5.2.1.

Industry-year medians were computed by aggregating data for all publicly listed firms in developed Europe from 2014 to 2023 and matched to each transaction based on the year prior to the announcement date and the 3-digit SIC classification.²² For the control variable *RelAcq_Size*, the market capitalisation of the acquirer 4 weeks prior to the acquisition was retrieved from S&P Capital IQ Pro.

Management ownership and retention data was collected for the key employees deemed most critical to the firm as further elaborated under Appendix A.4. Although the most important key employees can differ among firms, to ensure consistency, management was defined as the CEO, and where applicable, actively involved founders as these should, in theory, consistently possess tacit knowledge about the target firm. Ownership data represents whether the key employees held shares prior to the transaction, using a binary coding scheme, while retention data indicate whether they remained with the firm after the initial acquisition. Sources include press releases, annual and interim reports, company filings, shareholder registers and LinkedIn.

6. Results

In this section, we present the results of our main analyses. Section 6.1 presents descriptive statistics on the regression variables grouped based on if the transaction includes a synthetic earnout, a traditional earnout or no earnout at all. Section 6.2 reports the results of the model specifications formed to test our hypotheses.

6.1. Descriptive Statistics

Table 6 summarises the number of observations, mean standard deviation, and median values for all variables.

²² The year 2014 is included since the value of the proxy variables assigned to each transaction is based on the median value in target's industry the year before the transaction was announced. Since our sample of transactions has its start date in 2015, we must include industry ratios based on the year 2014.

Table 6. Descriptive Statistics

| Descriptive Statistics | | | | |
|-------------------------------|-----------------------|-------------------------|----------------|--------------------|
| Transaction Groups Overview | | | | |
| | Synthetic earnouts | Traditional earnouts | No earnouts | Full Sample |
| N | 98 | 328 | 392 | 818 |
| <i>Cross_Ind</i> | | | | |
| Mean | 0.694 | 0.692 | 0.635 | 0.665 |
| Std | 0.463 | 0.462 | 0.482 | 0.472 |
| Median | 1 | 1 | 1 | 1 |
| <i>TarInd_Vol</i> | | | | |
| Mean | 0.386 | 0.381 | 0.380 | 0.381 |
| Std | 0.133 | 0.141 | 0.128 | 0.134 |
| Median | 0.358 | 0.368 | 0.368 | 0.368 |
| <i>TarInd_Q</i> | | | | |
| Mean | 1.164 | 1.188 | 1.226 | 1.203 |
| Std | 0.446 | 0.492 | 0.551 | 0.516 |
| Median | 1.004 | 1.098 | 1.098 | 1.098 |
| <i>TarInd_Ass_Tan</i> | | | | |
| Mean | 0.928 | 1.063 | 1.060 | 1.045 |
| Std | 0.473 | 1.604 | 0.963 | 1.225 |
| Median | 0.794 | 0.766 | 0.840 | 0.793 |
| <i>Cross_Bord</i> | | | | |
| Mean | 0.633 | 0.329 | 0.434 | 0.416 |
| Std | 0.485 | 0.471 | 0.496 | 0.493 |
| Median | 1 | 0 | 0 | 0 |
| <i>Mgmt_Ret_Own</i> | | | | |
| Mean | 0.977 | 0.860 | 0.458 | 0.694 |
| Std | 0.152 | 0.347 | 0.499 | 0.461 |
| Median | 1 | 1 | 0 | 1 |
| <i>RelAcq_Size</i> | | | | |
| Mean | 3.282 | 2.780 | 2.767 | 2.833 |
| Std | 1.350 | 1.395 | 1.589 | 1.494 |
| Median | 3.248 | 2.757 | 2.716 | 2.830 |

Across the full sample, synthetic earnouts account for 12.0 per cent of transactions, traditional earnouts for 40.1 per cent, and transactions without any type of earnout for 47.9 per cent. This composition indicates that synthetic earnouts are less common relative to other transaction types. However, caution is required when interpreting the relative prevalence of these structures. As described in Section 5.4, the original sample applies data-availability restrictions only to transactions in which 100 per cent of the target is acquired, which introduces

inconsistent treatment across subgroups and limits the prevalence comparability of synthetic earnouts with the other contract types.²³ To enable a consistent comparison, a hypothetical sample is constructed in which the same screening criteria are applied to all transactions.²⁴ Although this hypothetical sample does not represent all transactions included in our final sample, it provides a consistent basis for comparing the contract structures. It offers an empirical reference point for the use of traditional earnouts and, within the limits of the applied filtering criteria, an initial indication of the prevalence of synthetic earnouts.

After this exercise, 2.9 per cent of transactions include a synthetic earnout, 45.2 per cent include a traditional earnout, and 51.9 per cent do not include any type of earnout. The prevalence of synthetic earnouts is slightly below the early research on traditional earnouts, where such structures accounted for 3.9 to 5.0 per cent of transactions (Cain et al., 2011; Datar et al., 2001; Ragozzino & Reuer, 2009).²⁵ This might suggest that synthetic earnouts are beginning to gain traction which justify further empirical attention. By contrast, traditional earnouts appear considerably more frequently in the hypothetical sample than reported in recent literature, where they are observed in 11 to 23 per cent of transactions (Barbopoulos et al., 2024; Gill-de-Albornoz et al., 2025; Jansen, 2020).²⁶ This can be explained by various factors. For instance, it is possible that the use of traditional earnouts is more common in Sweden and the UK than in the geographical settings of previous studies, which largely focus on transactions in the US. It could also be explained by the fact that we exclude public targets from our sample, since it is well-established that traditional earnouts are more common when the target is private (see e.g. Cain et al., 2011 and Datar et al., 2001).

Alternatively, this outcome could reflect a methodological contribution of this study. Unlike previous literature, which typically has relied on LSEG's (SDC Platinum) reported traditional earnout indicators, we have manually collected data on the existence of traditional earnouts for all transactions in our sample. In the constructed hypothetical sample, the LSEG database identifies that 27.8 per cent of the transactions include a traditional earnout, while manual verification finds 45.2 per cent. The difference underscores that manual data collection likely provides a more accurate representation of traditional earnout prevalence, thereby

²³ To ensure feasible manual data collection, transactions in which 100 per cent of the target was acquired were subject to additional filtering criteria, whereas transactions with less than 100 per cent acquisitions were manually reviewed in full.

²⁴ In the original sample used for the empirical tests, transactions involving a 100 per cent acquisition were screened by excluding observations with missing deal values or missing information on target sales. For transactions involving an acquisition of less than 100 per cent, these criteria were not applied; instead, deal values were manually collected, and the availability of target sales data was not required (Section 5.4). To enable a like-for-like comparison across subgroups, we construct a new hypothetical sample in which the same screening criteria used for the 100 per cent acquisitions are also applied to the less-than-100-per-cent transactions. This newly constructed hypothetical sample therefore reflects how the distribution of contract structures would appear had the full set of screening criteria been uniformly imposed.

²⁵ Cain et al. (2011) found 3.9 per cent traditional earnout use during 1994-2003, Datar et al. (2001) found 4.2 per cent traditional earnout use during 1990-1997 and Ragozzino & Reuer (2009) found 5.0 per cent traditional earnout use on private targets between 1993-2000.

²⁶ Jansen (2020) provided evidence of 21 per cent of transactions involving public buyers and private targets 1991-2014 included traditional earnouts, Gill-de-Albornoz et al. (2025) found 15 per cent traditional earnout use but 20 per cent during the Covid years, and Barbopoulos et al. (2024) found that 11 per cent of transactions included traditional earnouts but 23 per cent during the Covid years.

strengthening the methodological robustness of the analysis. It also indicates that the overall use of traditional earnouts might be far more common than previously reported.

In terms of how the values of independent variables differ among the different subsamples, several things can be noted. Among the variables measuring valuation uncertainty, *Cross_Ind*, *TarInd_Vol*, *TarInd_Q*, and *TarInd_Ass_Tan* show modest differences across transaction types. For example, the mean *TarInd_Vol* is similar across synthetic earnouts (0.386), traditional earnouts (0.381), and non-earnout transactions (0.380) suggesting that target industry volatility alone may not be a strong differentiator for synthetic earnout adoption. *TarInd_Q* and *TarInd_Ass_Tan* also display relatively minor variation across the groups. In contrast *Cross_Bord* shows a substantial difference where 63.3 per cent of synthetic earnout transactions are cross-border compared to 32.9 per cent for traditional earnouts and 43.4 per cent for non-earnout transactions respectively. The differences in the cross-border transactions indicate that it may be an important factor in determining synthetic earnout use.

The *Mgmt_Ret_Own* variable exhibits the most pronounced difference across groups. Nearly all synthetic earnout transactions (97.7 per cent) involves target management ownership prior to the transaction and retention after, compared to 86.0 per cent for traditional earnouts and 45.8 per cent for non-earnout transactions. The fact that management are among the sellers and remain in the target substantially more often when a synthetic earnout is used provides a first indication that this structures functions as an incentive alignment tool.

6.2. Regression Results

6.2.1. Synthetic Earnout vs Non-Earnout Transactions

In this section we present our results relating to hypotheses 1 and 2. Table 7 reports the coefficients of the regressions used to examine if these are supported, where the dependent variable takes the value 1 if a transaction includes a synthetic earnout and 0 if no earnout structure is used. Thus, transactions including only traditional earnouts are excluded from these tests. In Models (1) and (2) we test separately if the variables aimed to indicate if the valuation uncertainty and moral hazard channels explain synthetic earnout use. In Model (3), we include all variables from both regressions to see if their effects remain after controlling for the other channel.

To the extent that valuation uncertainty explains synthetic earnout use, we expect all independent variables but *TarInd_Ass_Tan* to assume positive and statistically significant coefficients. For *TarInd_Ass_Tan*, where low values suggest a higher dependence on intangible assets, we expect a negative and statistically significant coefficient. As shown in Model (1), the only independent variable that demonstrates the expected effect is *Cross_Bord*, which is positive and significant at the 1 per cent level. This effect remains equally strong in Model (3), suggesting that coefficient is robust even when controlling for the *Mgmt_Ret_Own* variable. Insofar as valuation uncertainty is higher for cross-border transactions, this finding is consistent with Hypothesis 1. For the other valuation uncertainty proxies, the results in Table 7 are less conclusive. None of the test variables *Cross_Ind*, *TarInd_Vol*, *TarInd_Q* or

TarInd_Ass_Tan exhibit statistically significant coefficients in any of the models. Thus, based on our proxies, we cannot find evidence that cross-industry deals or acquisitions of riskier, high-growth, or intangible-intensive targets are more likely to include synthetic earnouts.

In Model (2), we run a single regression logit model to test Hypothesis 2 in isolation. A synthetic earnout only can function to motivate target management if the target management are among the selling shareholders and remain in the company following the acquisition. Therefore, we expect finding a positive association between synthetic earnouts and transactions where these conditions prevail. As shown by the regression results, the *Mgmt_Ret_Own* is positive and statistically significant at the 1 per cent level. With a coefficient of almost 4, the test results suggest that transactions in which the target management are among the sellers and remain post-acquisition are very much more likely to include synthetic earnouts. The powerful effect remains equally significant and with a slightly higher coefficient in Model (3) when controlling for the valuation uncertainty proxies, thus providing strong support for Hypothesis 2.²⁷

The control variable *RelAcq_Size* is positive and statistically significant at the 5 per cent level across all models in Table 7. This indicates that the likelihood of including synthetic earnouts in M&A transactions increases with the acquirer's relative size to the target. This result contrasts to previous findings which show that the use of traditional earnouts is negatively associated with the relative acquirer size. Comparing the different models, we find that the pseudo R-squared is higher in Model (2) than in Model (1), suggesting that the specification testing whether *Mgmt_Ret_Own* is associated with synthetic earnout use has greater explanatory power than the specification testing the valuation uncertainty proxies. Model (3) has the highest pseudo R-squared of all models in Table 7.

Taken together, the results in Table 7 offers strong support for Hypothesis 2, which is consistent with the view that synthetic earnouts are used to as an incentive alignment tool. The regressions also yield partial, however no conclusive support for that synthetic earnouts are used to mitigate valuation uncertainty in accordance with Hypothesis 1.

²⁷ In odds terms, the *Mgmt_Ret_Own* coefficient of 4.109 in Model (3) translates to a synthetic earnout being ~61 times more likely if target management are among the sellers and remain in the firm in the post-acquisition period compared to if these conditions do not prevail.

Table 7. Regression Output on Models Comparing Synthetic and Non-Earnout Use

| Logit Regressions: Main Models | | | |
|---------------------------------------|---|-------------------|-------------------|
| Model: | Synthetic Earnout vs Non-Earnout Transactions | | |
| | (1) | (2) | (3) |
| | Valuation uncertainty | Moral hazard | Full model |
| Intercept | -1.748* (0.975) | -5.067*** (1.112) | -5.279*** (1.478) |
| <i>Independent variables</i> | | | |
| <i>Cross_Ind</i> | -0.023 (0.303) | | 0.087 (0.417) |
| <i>TarInd_Vol</i> | 0.828 (1.235) | | -1.101 (1.968) |
| <i>TarInd_Q</i> | -0.134 (0.237) | | -0.300 (0.362) |
| <i>TarInd_Ass_Tan</i> | -0.383 (0.234) | | -0.077 (0.321) |
| <i>Cross_Bord</i> | 1.070*** (0.279) | | 1.073*** (0.353) |
| <i>Mgmt_Ret_Own</i> | | 3.993*** (0.745) | 4.109*** (0.792) |
| <i>Control variables</i> | | | |
| <i>RelAcq_Size</i> | 0.206** (0.081) | 0.235** (0.103) | 0.245** (0.119) |
| <i>Year FE</i> | Yes | Yes | Yes |
| Acquirer Industry FE | Yes | Yes | Yes |
| Pseudo R ² | 0.092 | 0.276 | 0.330 |
| N | 425 | 385 | 334 |

Notes: Logit regressions are estimated via maximum likelihood with robust standard errors in parentheses. *, **, *** denote significance at 10%, 5%, and 1% levels, respectively. All models include year and acquirer industry fixed effects. Sample sizes vary across models due to listwise deletion of observations with missing values.

6.2.2. Synthetic Earnout vs Traditional Earnouts

In this section, we present our results relating to Hypothesis 3. Table 8 reports the findings of the regressions specified to examine what factors that affect the decision to adopt a synthetic rather than a traditional earnout, contingent on some form of earnout structure being used. In all regressions, the dependent variable takes the value of 1 if a synthetic earnout is included in the transaction, and the value of 0 if no synthetic earnout but a traditional earnout is included. Transactions where no earnout structure is used are excluded from these tests. Model (4) and (5) separately test if the variables aimed to indicate if the valuation uncertainty and moral hazard channels affect the likelihood of using a synthetic earnout structure. Model (6) includes the full set of variables from both specifications to assess whether their effects persist.

As described in Section 4.3, we posit that synthetic earnouts, given their inherent structure, more effectively aligns the interest of the acquirer and the target management post-acquisitions than traditional earnouts. Since target management only can be responsive to the incentivising effects of different earnout structures if they are among the sellers and remain post-acquisition, we therefore expect *Mgmt_Ret_Own* to demonstrate a positive and statistically significant association with the use of synthetic earnouts. The result in Model (5) indeed shows that *Mgmt_Ret_Own* is positive and significant at the 1 per cent level. This finding indicates that,

contingent on an earnout being used, the synthetic earnout structure is significantly more likely than traditional earnouts if the target management owns shares and remains in the target after the acquisition. The significant effect remains in Model (6), indicating that it is robust also when controlling for the valuation uncertainty variables.

Regarding the valuation uncertainty channel, the results in Table 8 show that the only variable that significantly affects the likelihood of using a synthetic earnout versus a traditional structure is *Cross_Bord*, which is positive and significant at the 1 per cent level. This finding indicates that the probability that an earnout is structured as a synthetic rather than a traditional earnout increases when the transaction is cross-border. None of the other valuation uncertainty variables are significantly different from 0, indicating that they within our sample do not meaningfully distinguish between the use of synthetic and traditional earnouts.

The control variable *RelAcq_Size* is positive and significant at the 5 per cent level in all models in Table 8, indicating that synthetic earnouts are more likely compared to traditional earnouts when the target is relatively small. In contrast to the regressions in Table 7, Pseudo R-squared is slightly higher in the specification including valuation proxies (Model (4)) than the model aimed at capturing the moral hazard channel (Model (5)). Model (6), which incorporates both channels, demonstrates the highest pseudo R-squared.

Altogether, the results in Table 8 demonstrate a strong association between *Mgmt_Ret_Own* and the use of synthetic earnouts, conditional on some earnout structure being used. Since this indicates that transactions in our sample are significantly more likely to include a synthetic earnout than only a traditional earnout if the target management are among the sellers and remain in the firm after the transaction, this finding indicate support for Hypothesis 3.

Table 8. Regression Output on Models Comparing Synthetic and Traditional Earnout Use

| Logit Regressions: Main Models | | | |
|---------------------------------------|---|-------------------|-------------------|
| Model: | Synthetic Earnout vs Traditional Earnout Transactions | | |
| | (4) | (5) | (6) |
| | Valuation uncertainty | Moral hazard | Full model |
| Intercept | -1.337 (1.025) | -3.678*** (1.121) | -2.936*** (1.310) |
| <i>Independent variables</i> | | | |
| <i>Cross_Ind</i> | -0.166 (0.310) | | -0.186 (0.354) |
| <i>TarInd_Vol</i> | -1.066 (1.600) | | -0.218 (1.555) |
| <i>TarInd_Q</i> | 0.173 (0.296) | | 0.013 (0.362) |
| <i>TarInd_Ass_Tan</i> | -0.178 (0.216) | | -0.075 (0.089) |
| <i>Cross_Bord</i> | 1.606*** (0.311) | | 1.594*** (0.344) |
| <i>Mgmt_Ret_Own</i> | | 2.208*** (0.743) | 2.236*** (0.816) |
| <i>Control variables</i> | | | |
| <i>RelAcq_Size</i> | 0.245** (0.101) | 0.239** (0.099) | 0.275** (0.123) |
| Year FE | Yes | Yes | Yes |
| Acquirer Industry FE | Yes | Yes | Yes |
| Pseudo R ² | 0.130 | 0.101 | 0.183 |
| N | 368 | 363 | 316 |

Notes: Logit regressions are estimated via maximum likelihood with robust standard errors in parentheses. *, **, *** denote significance at 10%, 5%, and 1% levels, respectively. All models include year and acquirer industry fixed effects. Sample sizes vary across models due to listwise deletion of observations with missing values.

7. Discussion

This study aims to examine the determinants for using synthetic earnouts in M&A transactions, a structure whereby the buyer acquires a majority share in a target with an obligation to acquire the remaining equity at a price contingent on the target's post-acquisition performance. In this section, we discuss the implications of the test specifications used to examine why this contract structure is used. We also discuss the validity of the results and perform additional tests to further verify their robustness and to account for potential methodological weaknesses. Lastly, we discuss some general limitations with this study.

7.1. Evaluation of Results

7.1.1. Evaluation of Hypothesis 1

The test results provide partial support for Hypothesis 1, though the evidence is inconclusive. We hypothesised that valuation uncertainty is positively associated with the use of synthetic earnouts when comparing to transactions with no earnout structure. Except for the *Cross_Bord* variable, which is positive and significant, none of the other four proxies for valuation uncertainty show a significant association with synthetic earnout use. This result is unexpected. Extant literature shows unambiguous evidence that valuation uncertainty is a key driver for the use of traditional earnouts. Like traditional earnouts, synthetic earnouts link part of the

purchase consideration to the target's post-acquisition performance and should theoretically bridge differing views on target firm value.

We see two possible interpretations to these results. First, contrary to our initial hypothesis, synthetic earnouts may not generally be employed to mitigate valuation uncertainty. It is possible that the structural design of synthetic earnouts is regarded as inefficient to cope with differing views about the target valuation. Unlike traditional earnouts, which can make the entire purchase price contingent on post-acquisition performance, synthetic earnouts tie only the minority portion of the target's equity to performance. While this issue could theoretically be addressed by assigning a higher multiple to the remaining portion, it may still make practitioners perceive synthetic earnouts as inferior for bridging valuation gaps. Additionally, synthetic earnouts may allow for flexibility in terms of when the remaining equity in the target is acquired. This introduces potential timing ambiguity that may further reduce synthetic earnouts' perceived effectiveness in handling valuation uncertainty. These factors may lead practitioners to prefer traditional earnouts when the objective is to manage valuation uncertainty in M&A transactions.

Second, another reason might be that our proxies may not fully capture the presence of valuation uncertainty. Three of the five proxies are industry-level measures, which, while consistent with prior literature (Bates et al., 2018; Cadman et al., 2014; Cain et al., 2011), may obscure deal-specific heterogeneity. Relying on industry-level medians rather than target-specific data can hide firm characteristics that represent valuation uncertainty.²⁸ One way to assess whether the weak effect of the valuation uncertainty proxies reflects inefficiency rather than a true absence of valuation uncertainty is to consider their performance in the additional regressions in Table 8, which compare synthetic and traditional earnouts. Because traditional earnouts are well-documented in previous literature to be associated with valuation uncertainty, we would expect them to demonstrate the same association in our specifications. If synthetic earnouts in fact are not driven by valuation uncertainty, we would therefore predict the proxies for valuation uncertainty to be associated with traditional earnouts in the tests comparing these two structures. However, the proxies also fail to significantly predict traditional earnout use in these regressions. This is line with the notion that the variables are unable to capture valuation uncertainty. Nevertheless, it may also be caused by a multitude of other factors, such as differences in sample composition or contextual differences compared to previous studies.

It is notable that, by contrast to the other proxies, the *Cross_Bord* variable is positive and significantly associated with the use of synthetic earnouts, implying that cross-border acquisitions are more likely to feature synthetic earnouts than domestic deals. Compared to extant literature on traditional earnouts, this result appears contradictory. While Kohers & Ang (2000) argue that cross-border transactions are likely characterised by higher valuation

²⁸ This risk is further amplified by the fact that the number of firm observations on which target 3-digit industry medians are based on are low for some of the industries in our sample, thus creating a high dependence on few firms. For this reason, we also run the regressions in the main analysis but based on the 2-digit industry SIC code, as further discussed in Section 7.2.5 and shown in Appendix B.4.

uncertainty, they find that this category of transactions is actually less likely to feature traditional earnouts. The authors notes that targets may be unwilling to accept traditional earnout agreements due to difficulties to legally enforce them if future disagreements emerge. For synthetic earnouts, however, this does not appear to be the case. To the extent that valuation uncertainty is higher in cross-border deals, this finding is thus consistent with Hypothesis 1.

Overall, we find partial, yet inconclusive, support for Hypothesis 1. While four of the five valuation uncertainty proxies are not significant, synthetic earnouts are significantly more likely in cross-border transactions. Given the higher information asymmetry in such deals, this provides some support for the hypothesis that valuation uncertainty positively influences synthetic earnout use.

7.1.2. Evaluation of Hypothesis 2

In contrast to Hypothesis 1, the results in Table 7 provide strong and significant support for Hypothesis 2. When comparing synthetic earnouts to non-earnout transactions, the regressions show that transactions where the target management are among the selling shareholders and remain in the post-acquisition period are positively associated with the use of synthetic earnouts. The argument underlying Hypothesis 2 is that, if synthetic earnouts are used to mitigate post-transaction moral hazard, they should be more common in situations where they are able to align the interests of the buyer and target management. For a synthetic earnout to link management's post-acquisition behaviour to their personal payoff, management must both be among the sellers and remain in the firm after the deal. The finding that synthetic earnouts are more frequently used in transactions where these conditions hold is therefore consistent with the view that synthetic earnouts are used as an incentive alignment tool.

The strength of this association is further reflected in the descriptive statistics in Table 6. Synthetic earnouts almost never appear when target management are either not sellers or not retained post-acquisition: in 98 per cent of synthetic earnout transactions, management both hold equity and stay on after the deal. However, the reverse relationship is not true. The descriptive statistics show that several transactions where management are among sellers and remain do not use a synthetic earnout structure. This pattern supports an important inference: the retention of selling target owner-managers appears to be almost a prerequisite, but not a guarantee, for the use of synthetic earnouts. In other words, the retention of owner-managers seems to be a nearly necessary condition for the use of synthetic earnouts, but not sufficient to explain synthetic earnout adoption.

The above inference suggests that while the retention of target owner-managers explains *why* synthetic earnouts are used, it does not fully explain *when* they are used. Thus, additional factors seem to influence whether it is deemed necessary to incentivise target managers in the post-acquisition period. Cain et al. (2011) posit that the intention to motivate management should be stronger in situations when managerial effort is regarded important for firm performance. They further conjecture that target manager effort is more important in deals that are also characterised by valuation uncertainty, namely those involving high-growth, risky, or intangible-intensive targets, or targets from industries different from the acquirer. Using a

similar argument, Datar et al. (2001) suggest that cross-border transactions not only feature greater valuation uncertainty, but also make managerial effort more important due to the target managers' country-specific expertise.

This reasoning provides an alternative interpretation of the findings related to the first hypothesis. The proxies intended to capture valuation uncertainty may also reflect situations where keeping target managers motivated is considered important by the buyers. From this perspective, the association between cross-border transactions and synthetic earnouts may reflect that these structures are used to incentivise managers whose country-specific expertise is deemed important, rather than to mitigate valuation uncertainty.

Overall, our results show strong and significant support for the hypothesis that synthetic earnouts are more common in transactions where the target management are among the sellers and remain post-acquisition. Based on the transactions in our sample, the retention of selling target managers appears to be close to a prerequisite for the use of synthetic earnouts. This finding is in line with the view synthetic earnouts are used as an incentive alignment tool, suggesting that moral hazard considerations can explain their use.

7.1.3. Evaluation of Hypothesis 3

The results in Table 8 provide strong support for Hypothesis 3. We find a positive and statistically significant association between synthetic earnout use and transactions where target management holds equity at closing and remains involved in the firm after the acquisition. This suggests that when conditions for incentive alignment in the post-acquisition period are present, synthetic earnouts are more likely than traditional earnouts to be used. This is in line with the view that synthetic earnouts are regarded as a more efficient tool for motivating target management.

To further understand what drives the choice between synthetic and traditional earnout structures, we also examine the valuation uncertainty channel. In Table 8 we can see whether differences in earnout adoption can be explained by valuation uncertainty. In our sample, the regression results show that only the cross-border variable significantly explain synthetic earnout use. Overall, we however find limited support for valuation uncertainty proxies significantly explaining the use of synthetic earnouts relative to traditional earnouts and vice versa. This suggests that variation in valuation uncertainty generally does not account for the observed differences, supporting the interpretation that incentive alignment is the main driver of synthetic earnout adoption relative to traditional earnouts.

The lack of conclusive evidence for a valuation uncertainty effect reinforces the interpretation that incentive alignment should explain the relative use between synthetic and traditional earnouts. Prior studies on traditional earnouts have struggled to isolate the incentive alignment channel because they relied on indirect proxies, such as listing status, or on small descriptive samples (Cadman et al., 2014; Cain et al., 2011; Datar et al., 2001 and Kohers & Ang, 2000). In this study, hand-collected data on management ownership and retention allow for a direct observation of the incentive alignment channel. Descriptive statistics in Table 6 show that the *Mgmt_Ret_Own* variable equals 1 in 86 per cent of transactions featuring a traditional earnout,

compared to 46 per cent of transactions without an earnout. These figures indicate that traditional earnouts are more frequently employed in deals where the buyer has an interest in retaining and motivating target management. This is consistent with the idea that traditional earnouts serve an incentive alignment function relative to non-earnout transactions, although synthetic earnouts appear to provide stronger post-acquisition alignment.

Taken together, the evidence suggests that both earnout types may address moral hazard challenges in the post-acquisition period, but that synthetic earnouts represent a more direct and effective mechanism for aligning incentives. This interpretation is reinforced by the lack of evidence that valuation uncertainty explains differences between earnout structures and by the stronger and statistically significant association between the retention of target owner-managers and synthetic earnout use.

Overall, we find strong support for Hypothesis 3. Synthetic earnouts are significantly more likely to be used when management remains involved post-acquisition and holds equity at closing. These findings imply that incentive alignment is a key driver of their adoption relative to traditional earnouts. Traditional earnouts may still serve a motivational function, but they are unlikely to be preferred over synthetic earnouts when management motivation is the central objective of earnout design.

7.2. Robustness Tests

7.2.1. Imbalanced Explanatory Variable

One potential concern in the test specifications is the imbalance in the key independent variable *Mgmt_Ret_Own*. In the full sample of M&A transactions, the *Mgmt_Ret_Own* takes the value of 1 in 97.7 per cent of the cases when the transaction involves a synthetic earnout. Although the exact percentage varies slightly across models due to different effective sample sizes, the imbalance remains consistently severe. At first glance, this might appear as an almost mechanical relationship between *Mgmt_Ret_Own* and synthetic earnout use.

The imbalance of the variable can, however, be explained by its economic significance, which aligns with the incentive-alignment rationale of synthetic earnouts. These structures operate effectively only when management retains equity and remains involved post-acquisition, as this ensures that post-acquisition effort is directly linked to contingent rewards. A comparison with traditional earnouts further supports this interpretation. If the use of traditional earnouts were equally motivated by incentive alignment, we would expect similar rates of management ownership and retention across both earnout types. Instead, descriptive statistics show that *Mgmt_Ret_Own* equals 86 per cent for traditional earnouts, meaningfully lower than for synthetic earnouts. This contrast suggests that management ownership and retention is more strongly associated with synthetic earnouts, reflecting a meaningful economic driver rather than a statistical artefact.

However, the imbalanced variable may still pose a statistical concern. Such structural skewness can raise the risk of quasi-complete separation, even when it occurs in an explanatory variable rather than the dependent variable. Under these conditions, the maximum likelihood estimates

in the standard logit model may yield inflated or unstable coefficient estimates. The Firth estimator (Firth, 1993) mitigates this issue by applying a bias-reducing correction based on Jeffreys' prior, ensuring finite and more stable coefficient estimates.²⁹ Using Firth penalised logistic regression therefore provides confidence that the main results are not driven by separation-induced bias.

The results of the Firth penalised logistic regressions are presented in Appendix B.1. For consistency, all six models were re-estimated using this method. Across these models, the explanatory variables remain statistically significant at the same levels with the same signs, while non-significant variables remain non-significant. There are some minor differences in the control variables and intercept, but these changes do not affect the interpretation of the main results.³⁰ These findings provide further confidence that the results are robust. In models including the imbalanced variable *Mgmt_Ret_Own*, the Firth estimator mitigates potential bias from quasi-complete separation, while in models excluding this variable, the results confirm that coefficient estimates remain stable under an alternative estimation method. Overall, the robustness check supports the reliability of the conclusions drawn in the primary analyses.

7.2.2. Addressing Reverse Causality

Our regressions are potentially also subject to some endogeneity concerns. First, we acknowledge that *Mgmt_Ret_Own* may suffer from reverse causality. Since the variable captures if target management remains in the firm, it partially relies on factors occurring subsequent to the transaction. Although the retention of target management and the inclusion of earnout structures in practice typically are jointly negotiated, it is theoretically possible that the existence of an earnout structure affects if management remains. This implies that there is a risk the dependent variable in our specifications drives this independent variable, rather than covary with it.

To make sure that reverse causality does not drive the results in our test specifications, we replace *Mgmt_Ret_Own* with *Mgmt_Own*, a variable capturing only pre-acquisition ownership of target managers. Since management ownership is one of the conditions needed for target managers to be responsive to the incentive-aligning effects of different earnout structures, target managers that own shares in the firm should in general be more responsive to earnout structures than those that do not. A positive association between *Mgmt_Own* and synthetic earnouts should therefore be in line with the view that these structures are used to incentivise target managers, without relying on any ex-post information.

The results of the robustness regressions are presented in Appendix B.2. The models that originally included *Mgmt_Ret_Own*, namely Model (2), (3), (5) and (6), were re-estimated using the alternative ownership variable *Mgmt_Own*. Across these specifications, the main

²⁹ Jeffreys' prior is a distribution representing initial assumptions about the parameters before observing the data. It is used in Firth logistic regression to penalise the likelihood, reducing small-sample bias and preventing coefficient estimates from becoming extreme when separation occurs.

³⁰ *RelAcq_Size* in Model (3) changed from significance at the 5% level to the 10% level, and the intercept in Model (6) changed from significance at the 1% level to the 10% level.

findings remain stable. The management ownership variable continues to be statistically significant in all models, although at slightly lower significance levels in Model (5) and (6) compared with the baseline regressions.³¹ All other independent and control variables broadly retain the same signs as in the main models, and their significance patterns remain generally unchanged.³² Overall, the results confirm a positive association between management ownership and the likelihood of a synthetic earnout. They also show that the main conclusions for Hypotheses 2 and 3 are not driven by the construction of the management retention variable, and remain robust when relying solely on pre-transaction information.

7.2.3. Non-Random Missing Data

Another potential endogeneity concern relates to the hand-collection of management data. While multiple sources are used, the primary data collection method relies to some extent on voluntary disclosures by the acquiring firm in conjunction with the acquisition (see Section 5.5 for a detailed discussion of the data collection procedure). Since we exclude observations from the test specifications where management data could not be obtained, this raises the risk that some observations are missing not at random. Specifically, acquirers may be more likely to report post-transaction management retention when it occurs than when it does not. If true, this could introduce bias, with included observations more likely to feature cases where *Mgmt_Ret_Own* equals 1 and excluded observations more likely to feature cases where the variable equals 0.

We conjecture that this potential bias is particularly prevalent for data on the retention of target managers, but less severe for target management ownership data. While acquirers are more likely to communicate if managers remain than if they do not, they tend to communicate who the sellers of the target are, regardless if it is the target managers or some other party. In addition, target management ownership information has during the data collection process also been easier to obtain from alternative, independent sources that are not subject to the problem of missing not at random (e.g. Companies House). As a result, we argue that the robustness regressions using *Mgmt_Own*, which is defined in Section 7.2.2 and presented in Appendix B.2, also addresses potential biases arising from non-random missing data in *Mgmt_Ret_Own*. As further discussed in Section 7.2.2, the results continue to provide support for Hypotheses 2 and 3, suggesting that they remain robust when controlling for both reverse causality and data missing not at random.

7.2.4. Country-Specific Effects

Because our sample includes transactions where the buyers are either from Sweden or the UK, we conduct additional tests to verify that the results of our main analyses are consistent across both geographies and not driven primarily by one country. Differences in market practices could result in variation regarding the adoption of contract structures across the two countries.

³¹ *Mgmt_Own* is significant at 10% and 5% level in Model (5) and (6) respectively, compared to *Mgmt_Ret_Own* which is significant at the 1% level for both Model (5) and (6) in the main regressions.

³² Minor changes in significance levels were observed for some independent and control variables. For example, *TarInd_Q* becomes significant at the 5% level in Model (3) with a negative association, but these changes do not affect the interpretation of Hypotheses 2 and 3, which are the focus of this robustness test.

To control for if the results of our main analysis remain robust when controlling for unobserved, time-invariant country heterogeneity, the baseline regressions are re-estimated with country fixed effects. The results presented in Appendix B.3 remain consistent with the main findings, and the explanatory independent variables retain their signs and significance levels across all models, suggesting that the results are not driven by country-specific factors.³³

As previously described, synthetic earnouts should in theory be able to mitigate both target valuation uncertainty and post-transaction moral hazard. Since it possible that the drivers of using these structures, due to e.g. cultural or institutional reasons, differ between the two countries, we further analyse if their determinants seem to be consistent across both geographies. We do this by constructing two subsamples based on the country of the acquirer in each transaction, and repeat the test specifications from our main analyses. The subsample regressions are also reported in Appendix B.3.

In the Swedish subsample, the main findings are largely consistent with the baseline regressions. The management ownership and retention variable (*Mgmt_Ret_Own*) remains statistically significant in all models where it is included, retaining the same signs as in the baseline regressions, although significance levels are slightly lower for Models (5) and (6).³⁴ Moreover, *TarInd_Ass_Tan* in model (1), *TarInd_Q* in model (3), and *Cross_Bord* in both Models (1) and (3) are statistically significant with the expected signs. Thus, the Swedish subsample offers slightly stronger support than the full sample for the view that synthetic earnout use is positively associated with valuation uncertainty.³⁵ In the UK subsample, the management ownership and retention variable is omitted due to perfect prediction.³⁶ Despite this, the remaining independent and control variables maintain signs broadly consistent with the baseline results, with *Cross_Bord* remaining positive and statistically significant across all models.

Overall, the subsample analyses and country fixed effects results provide confidence that the main findings are not driven by solely one country. The Swedish subsample further offers somewhat stronger support for the view that valuation uncertainty is associated with synthetic earnout use in addition to the continued support for it being used to mitigate post-acquisition moral hazard. Taken together, the results appear to be consistent across both geographies.

³³ Changes in significance occur only for the intercept and *RelAcq_Size*. The intercept falls from 10% significance to non-significant in Model (1), and from 1% to 5% significance in Model (3). *RelAcq_Size* decreases from 5% to 10% significance in Models (2) and (3), as well as in Models (5) and (6).

³⁴ In the Swedish subsample, *Mgmt_Ret_Own* is significant at the 1% level in Models (2) and (3), and at the 10% and 5% levels in Models (5) and (6), respectively, compared with significance levels of 1% in the baseline regressions.

³⁵ In the Swedish subsample, *TarInd_Ass_Tan* is significant at the 10% level in model (1), *TarInd_Q* is significant at the 10% level in Model (3), and *Cross_Bord* remains significant at the 5% or 1% level across all models where it is included, all with the expected sign in line with Hypothesis 1.

³⁶ In the UK subsample, *Mgmt_Ret_Own* is omitted in Models (2), (3), (5), and (6) due to perfect prediction, where all observations with a synthetic earnout have *Mgmt_Ret_Own* = 1.

7.2.5. Alternative Industry Classifications

In an additional robustness test we assess whether the main results are sensitive to the level of industry aggregation applied to the target-industry variables (*TarInd_Vol*, *TarInd_Q*, *TarInd_Ass_Tan*). The main specification relies on 3-digit SIC codes, which offer granular industry definitions but may introduce noise in industries with few observations or where individual firms exhibit atypical characteristics. To evaluate the stability of the findings, all industry-level variables were recalculated using 2-digit SIC codes, which pool related sub-industries and increase the number of observations per category. The *Cross_Ind* variable was recalculated on the same basis. This broader classification also aligns with the conceptual view that mechanisms such as valuation uncertainty may operate at a higher industry level.

The two-digit SIC regressions, reported in Appendix B.4, produce patterns consistent with the main results. The key explanatory variables, *Cross_Bord* and *Mgmt_Ret_Own*, retain their significance and expected signs across all specifications. The industry-level variables, which are generally non-significant in the main models, exhibit only minor changes in magnitude, with the exception of *TarInd_Ass_Tan* which becomes significant at the 10 per cent level in Model (6).³⁷ Given that the valuation uncertainty proxies in aggregate still do not provide any conclusive results, this variation does not challenge the interpretation of the baseline regressions. Overall, the robustness test indicate that our conclusions are not dependent on the granularity of the SIC code classification.

7.3. Limitations

We acknowledge that this study is subject to several limitations. One constraint regards the overall generalisability of our results. In terms of geographical delimitations, this study focuses on transactions involving acquirers from Sweden and the United Kingdom. We recognise that only including transactions with acquirers from these two countries limits the external validity of these results for other geographic settings. For instance, cultural and legal differences might cause the determinants for, and general use of earnout structures to differ systematically between countries. Factors such as the regulatory environment and general risk-appetite might influence the attitude towards incorporating these types of structures. Thus, we note that our results might not be generalisable to jurisdictions with substantially different cultural or institutional characteristics. Nevertheless, despite these potential differences, we find that the results in this study are consistent across both Sweden and United Kingdom. These countries represent two developed and liquid financial markets. Against this background, we posit that our findings on synthetic earnouts are not only the results of one local trend, but rather represent a real pattern that may extend to similar sophisticated financial markets.

³⁷ In the two-digit SIC robustness regressions, all statistically significant explanatory variables retain the same signs and significance levels as in the main 3-digit SIC models. *TarInd_Ass_Tan* becomes significant at the 10 per cent level in Model (6) for synthetic versus traditional earnouts, whereas it is non-significant in the corresponding three-digit specification. The control variable *RelAcq_Size* increases from significance at the 5 per cent level to 1 per cent in Model (1), and decreases from 5 per cent to 10 per cent in Models (4), (5), and (6). Minor shifts in significance levels and occasional sign changes among non-significant coefficients do not affect the substantive interpretation of the baseline results or the overall conclusions.

Another limitation regards the overall representativeness of the studied sample. Due to time constraints, we restricted our sample of full acquisitions to transactions for which LSEG provides information on the target's sales figure.³⁸ We conjecture that this kind of information may correlate with factors such as acquirer size and how material the transaction is regarded by the acquirer. Followingly, our sample of full acquisitions is possibly tilted towards deals undertaken by large acquirers and towards more strategically important transactions. If these types of transactions exhibit a systematically different pattern in the use of traditional earnouts compared to other full acquisitions, our results may be biased. However, we argue that these sample restrictions were necessary to ensure the feasibility of this study within the available time frame. Limiting the sample size allowed for more time spent for each transaction during the data collection process, thus improving the overall data quality. We therefore acknowledge the potential biases in the results as a limitation, but view them as an unavoidable trade-off required to ensure this study's feasibility and data quality.

Lastly, even though the restricted sample allowed us to spend more time per observation, we still recognise that the variables for which data was hand-collected are associated with a risk of error. Since a systematic approach, with a clearly defined coding scheme, was applied we believe that the risk of incorrect classifications is low. To gather data on the inclusion of synthetic earnouts and traditional earnouts, as well as management ownership and retention, several sources or documents has been examined to reduce the risk of misclassifications and ensuring high data quality. Additionally, a high degree of prudence has been applied where transactions involving ambiguous data has been excluded to further ensure high data quality. As a result of the systematic, extensive and prudent approach we deem the risk of incorrect data as low.

8. Conclusions

In this study, we provide a theoretical definition and an empirical examination of what we term “synthetic earnouts”, an M&A contract structure that is regularly used in practice but has not previously been examined in academic research. Synthetic earnouts refer to a contractual arrangement under which the buyer in an M&A transaction acquires a controlling stake but less than 100 per cent of a target, accompanied by an obligation to acquire the remaining equity at a price contingent on the target's post-acquisition performance. Since the acquirer pays a part of the total consideration upfront and one part based on future performance, this contractual arrangement achieves the same economic effect as traditional earnouts but through an alternative form. Analysing a hand-collected dataset of 818 M&A transactions occurring in Sweden and the United Kingdom between 2015 and 2024, we document the recurring use of synthetic earnouts across these two leading financial markets in Europe.

The study aims to identify what factors that drive the use of synthetic earnouts in M&A control transactions. Building on concepts from contracting theory, we examine whether adverse

³⁸ As described in Section 5.4, a more relaxed screening criterion was applied to majority transactions of less than 100 per cent to obtain a sufficiently large sample of transactions involving synthetic earnouts.

selection and moral hazard considerations explain the use of this type of contract. Comparing with transactions where no earnout structure is used, we find that the use of synthetic earnouts is positively associated with transactions where target managers are among the sellers and remain in the firm in the post-acquisition period. Since target managers only can be motivated by synthetic earnouts in transactions where these conditions prevail, this finding is consistent with the view that synthetic earnouts are used as an incentive-alignment tool. We also find suggestive, though inconclusive evidence that synthetic earnouts may be used to mitigate information asymmetry under high valuation uncertainty compared with non-earnout transactions. We also compare the use of synthetic earnout relative to traditional earnouts, and again find a significant association between synthetic earnout use and the retention of target-owners. Taken together, our results indicate that synthetic earnouts are primarily used as an incentive alignment mechanism. Moreover, compared with traditional earnouts, synthetic earnouts appear to align the interests of the buyers and the target management more effectively.

We acknowledge that our interpretations may be affected by endogeneity concerns. To address the risk of reverse causality, we re-estimate our models using only pre-transaction managerial ownership to ensure that the independent variable is not driven by the inclusion of a synthetic earnout, and the main results remain unchanged. Beyond this, we perform several robustness tests to assess the stability of our results. Our findings remain consistent across acquirer-country sub-samples, when applying alternative industry definitions for the valuation uncertainty measures, and when evaluating the potential impact of non-random missing data patterns.

This study makes several important contributions. First, we introduce and examine synthetic earnouts, an empirical phenomenon that has not been addressed in previous literature. By analysing what factors drive their use, we contribute to the broader literature on how different M&A contract structures can be used to manage transaction risks. Second, by applying contracting theory concepts on a previously unexplored phenomenon, we provide further evidence of their practical implications. This paper also makes two methodological contributions. Unlike most previous traditional earnout literature, the analyses in this paper are based on hand-collected data, thus improving overall data accuracy. In addition, we construct deal-level measures of management ownership and retention, rather than relying on indirect proxies as in earlier work. In addition, this study offers practical guidance for practitioners in the M&A field. The insights from this paper can inform about optimal deal structuring choices, and help acquirers mitigate challenges inherently connected to M&A transactions.

Our findings open for several interesting venues for future research. First, since our examination of synthetic earnouts is limited to Sweden and the United Kingdom, it is unclear to what extent the patterns we find extend to other geographical settings that feature different cultural and institutional environments. Future work examining the use of synthetic earnouts in a broader international setting is therefore needed to draw more general conclusions. Second, this paper focuses solely on the determinants of using synthetic earnouts. For a more comprehensive understanding of these contracts, future research could analyse both how they are designed, and what implications they have on the future performance of the firms that use

them. Third, while this study investigates what factors that influence the choice between synthetic earnouts and traditional earnouts, more qualitative work in this area is needed. A case-based study that examines how buyers and sellers negotiate between synthetic and traditional earnout structures would contribute with a deeper understanding on the trade-offs when choosing between these alternatives. Lastly, we conjecture that the inconclusive results for valuation uncertainty as a determinant of synthetic earnout use might stem from the inability of industry-based proxies to capture situations where such uncertainty prevails. Future research could address this by using target-specific accounting numbers to construct more accurate measures of valuation uncertainty.

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Appendices

Appendix A. Data Collection Procedure

This section provides a detailed description of the data collection procedure for the dependent, independent and control variables used in this paper. This include describing the full coding procedures, definitions, assumptions, and the rationale behind the various choices. Firstly, in Appendix A.1, the collection of synthetic earnout structures is described. Secondly, Appendix A.2 provides an overview of the collection of traditional earnouts. Appendix A.3 describe the data collection for the independent and control variables, excluding the management retention and ownership variable which is described in Appendix A.4.

Appendix A.1. Collections of Synthetic Earnout Transactions

As described under Section 2.2.2, we in this paper define a synthetic earnout as a “*contractual arrangement in a control acquisition of less than 100 per cent of the target under which the acquirer has a future obligation to transfer additional assets or equity interests to the target’s remaining owners as part of the exchange for the remaining minority interest, if specified future events occur or conditions are met*”. In our data collection of synthetic earnouts, we therefore for each control acquisition of less than 100 per cent equity in the target aimed to answer if (1) there was a future obligation to acquire the remaining shares in the target (hereafter buyout obligation); and, if so, (2) that the value of the remaining shares was based on the future performance of the target.

It is important to note that IFRS does not hat require companies to separately disclose buyout obligations, nor the formula for how the price of the remaining shares under such arrangement is determined. For this reason, we largely relied on voluntary disclosures from the acquirers to determine the existence of an obligation as well as the pricing of such. Additionally, IFRS stipulations require companies to disclose other useful information and apply certain accounting treatments, from which the answers to question (1) and question (2) sometimes can be inferred. Below, we describe the specific process used to answer those questions.

Appendix A.1.1. Buyout Obligation

To answer whether there was a potential or certain buyout obligation, we first identified all acquisitions in our sample where the buyer acquired less than 100 per cent of the target’s equity. For each such deal, we coded in Excel if we could find evidence of any contractual arrangement to acquire the remaining shares, using a binary coding scheme (1 = Yes, 0 = No). Scanning through press releases and corporate filings, we searched for terms such as “option”, “commitment” and “obligation”. Second, for all transactions where we could find evidence of a contractual arrangement to purchase the remaining shares, we manually coded what type of structure that was used. Since only structures that *oblige* the buyer to acquire the remaining shares qualify for our definition of a synthetic earnout, we wanted to exclude e.g. regular call options, since these only give a right to the buyer to purchase the remaining shares. To code the structure type, we used the categories “put option”, “put/call option”, “call option” and

“other type of obligation”.³⁹ All categories except “call option” were assessed to meet the obligation criteria of a synthetic earnout. In addition to the four-category coding scheme, a description or reference to the data was included for each observation. This allowed for further checks and controls to minimise errors and ensure data accuracy.

For some observations where it was unclear if the buyer had a buyout obligation, we could utilise certain accounting rules as stipulated by IFRS to infer that information. When such an obligation for the buyer exists, they can choose to apply the Anticipated Acquisition Method (AAM). Under this method, the transaction is accounted for as if 100 per cent of the equity in the target was acquired, resulting in no non-controlling interests (NCI) being recognised. Exploiting this fact, we could for some transactions deduce the existence of an obligation to the buyer by observing that no NCI were recognised in relation to the acquisition. Similarly, since only buyout obligations constitute a liability, we were in some cases also able to infer the existence of such from the liabilities recognised in the balance sheet.

Transactions where we could not find any evidence of a buyout obligation were classified to not include synthetic earnouts. These included both transactions where we did not find any evidence of a contractual arrangement for the acquisition the remaining shares in the target, and transactions where we found evidence of a contractual arrangement to acquire remaining shares, but no evidence that this arrangement constituted an obligation. In addition, we excluded transactions from the sample where we could not clearly attribute buyout obligations to a specific acquisition.

Appendix A.1.2. Performance-Based Valuation Criteria

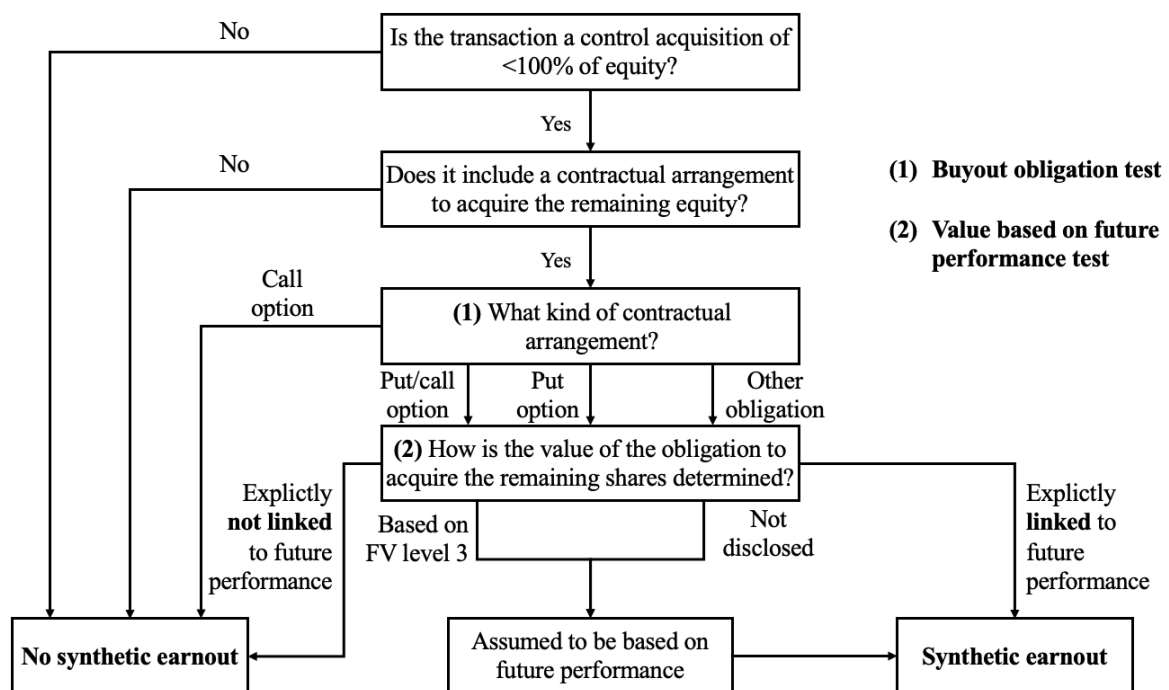
For transactions where we found evidence of a buyout obligation, we examined if the price of the obligation was based on the target’s future performance. To obtain this data, we scanned through press releases as well as annual and interim reports. In the annual reports, this information is often described in either the section discussing business combinations, or in the note discussing accounting policies. To code the valuation of the obligation to acquire the remaining shares, we used four different categories: (i) “explicitly linked to future performance”; (ii) “explicitly *not* linked to future performance”; (iii) “valued according to level 3 fair value”; and (iv) “not disclosed”. We also included a description or reference to the data for each observation to allow for subsequent control that the data was correct.

Transactions that belong to category (i) meet the criteria that the value of the remaining shares should be based on future performance, and followingly also meet our definition of a synthetic earnout. Transactions belonging to category (ii) are more similar to deferred purchase considerations than traditional earnouts, and thus not meet the definition of a synthetic earnout. For transactions belonging to category (iii), it was disclosed that the buyout obligation was valued at Level 3 of the fair value hierarchy. While this is not a proof that the buyout obligation had been valued based on the target’s future performance, it implies that it had been valued

³⁹ By “other type of obligation”, we refer to any kind of duty or responsibility of the buyer to acquire the remaining equity in the target which constitutes a liability according to IAS 37, and that is not captured by the other coding categories.

using unobservable inputs, which include e.g. forecasted cash flows, performance scenarios and valuation multiples. Unless any disclosure indicated that the value of the obligation was fixed, we treated observations in this category as performance linked. Lastly, for a few observations, the basis for valuation of the buyout obligation was not disclosed. For these, we also assumed that they were performance linked. This assumption was made from analysing the rest of our sample of transactions that include buyout obligations and where the valuation method is disclosed. Since the vast majority of these transactions base valuation of the buyout obligation on future performance, we conjectured that this assumption is unlikely to result in a meaningful number of incorrect classifications. This was further reinforced by the fact that the total number of observations in our sample that do not disclose the valuation method of buyout obligations is small. In Figure 1, we illustrate the entire decision process used for if transactions were considered to include synthetic earnouts.

Figure 1. Synthetic earnout classification decision tree



Appendix A.2. Collection of Traditional Earnout Transactions

For our first two hypotheses, we want to test what factors that drive the use of synthetic earnouts in M&A transactions. Given our belief that traditional and synthetic earnouts work at least partially as substitutes for each other, omitting information on the presence of traditional earnouts in transactions without synthetic earnouts could lead to bias into our estimates. Therefore, for every transaction in our sample that does not include synthetic earnouts, we coded if the consideration included a traditional earnout using binary classification (1 = Yes, 0 = No). While LSEG normally provides this information for transactions where they have details on deal value, we manually went through each transaction to ensure the data were reliable and met the definition of a contingent consideration as outlined in Section 2.2.1. Indeed, we found that only 61.5 per cent of all traditional earnouts in our sample are reported by LSEG. To

determine if a transaction included an earnout, we searched through press releases and the acquirer's annual and interim reports. Information regarding earnouts are commonly disclosed in conjunction with details about the deal value in press releases or in the section discussing business combinations in annual reports. For some observations, the acquiring company disclosed that they have contingent considerations, but did not derive them to individual transactions. Since we could not accurately classify these, we excluded them completely from the subsample of transactions that do not include synthetic earnouts.

Appendix A.3. Collection of Other Independent and Control Variables

For the valuation uncertainty proxies and control variable we retrieved data from S&P Capital IQ Pro and LSEG. For the dummy variables denoting if the target belongs to another 3-digit industry SIC code than the buyer and if the acquirer is incorporated in another country than the target, data was collected from LSEG. For the three industry related valuation uncertainty proxies, i.e. target industry median return volatility, target industry median tangible assets-to-sales ratio, and target industry median Tobin's Q, we collected data from the S&P Capital IQ Pro database. To obtain median industry values for these variables, we extracted the relevant financial and market data for all firms in developed Europe that were publicly listed at any time between period 2014-2023.⁴⁰ For each individual company, we calculated a weekly return volatility, tangible assets-to-sales ratio, and average Tobin's Q for all the years in the sample period. Next, we computed annual industry medians by allocating companies to 3-digit SIC codes and calculating the median of each variable within each SIC-year group. This resulted in industry-year median values for each of these three proxy variables. Finally, we assigned to each M&A transaction their corresponding proxy values based on the value the year prior to the deal being announced, and the target's 3-digit industry SIC code. For the control variable measuring the relative acquirer size, the market capitalisation of the acquirer 4 weeks prior to the acquisition was retrieved from S&P Capital IQ Pro. The deal value of the transaction (which also is included in the variable), was based on LSEG's reported values, or alternatively for certain transactions of less than 100 per cent (see Section 5.4.2) manually collected, through corporate filings or press releases providing information about the transaction.

Appendix A.4. Collection of Management Ownership and Retention Data

In conjunction with the manual collection of the previously described data points, additional data on each target firm's management was collected. This data comprises management retention following the acquisition, and management ownership prior to the transaction. The data was manually collected for all transactions in the sample, encompassing transactions without no type of earnout, those with traditional earnouts, and those with synthetic earnouts. This section first defines management and subsequently describes the collection of the two data points, the coding scheme, the overall assumptions, and the treatment of ambiguous scenarios.

⁴⁰ The year 2014 is included since the value of the proxy variables assigned to each transaction is based on the median value in target's industry the year before the transaction was announced. Since our sample of transactions has its start date in 2015, we must include industry ratios based on the year 2014.

Appendix A.4.1. Definition of Management

To ensure a consistent and accurate collection of data on management ownership and management retention, the concept of management must first be defined. The purpose of both data points is to capture characteristics of employees considered important to the target firm. The definition of key employees is often subject to interpretation, as firms' management structures exhibit substantial heterogeneity and the most influential employees may vary across firms.

Ideally, one would collect information on all C-suite executives and complement this with information on other employees who, although not part of the C-suite, may hold significant ownership stakes or exert notable influence within the company. However, because manual data collection introduces risks of judgment, misclassification, and inconsistent coverage across observations, certain assumptions and conditions were introduced. Accordingly, key management is defined to exclude the C-suite and is limited to the target firm's CEO. The CEO holds the ultimate decision-making authority within the firm and is responsible for its actions, thus being deemed the most important employee. In addition, some firms have founders who remain involved in daily operations but do not hold the CEO position. In such cases, founders were also classified as part of management. In those cases, the founders have also been included as key employees/management. The rationale for including founders who are not the CEO is that they should, in theory, possess tacit knowledge about the target firm, can be important for customer relations and influential in deciding the firm's overall strategy.

Limiting management to the CEO and, when applicable, the founders allow for a consistent approach across the data collection process and reduces the risk of transaction-specific judgment regarding which employees are considered most important. This limitation also implies that no emphasis is placed on board members, the chairman, or other employees who are not part of the day-to-day operations. Although these individuals may be important to the target firm, their exclusion is based on their distance from daily operations and on the need to maintain a consistent and feasible data collection process.

Appendix A.4.2. Management Ownership

The first dimension of the management data concerns management equity ownership in the target. This data point aims to provide information on whether the defined management members are also shareholders. For acquisitions where the acquirer purchases 100 per cent of the target's equity (i.e. non-earnout and traditional earnout transactions), it is only possible to examine whether the key employees held shares prior to the transaction.⁴¹ In transactions where less than 100 per cent of the target's equity is acquired, it is possible to examine both the ownership held prior to the transaction and whether management remains minority shareholders thereafter. For transactions involving synthetic earnouts (i.e. where a minority interest remains), ideally one would collect data on whether management are shareholders after the transaction since management are only affected by synthetic earnouts if they remain shareholders. However, this data is not possible to generalise across all transactions due to

⁴¹ Non-earnout and traditional earnout transactions can also exist in transactions of less than 100 per cent of target equity, however, the transactions of 100 per cent only include non-earnout and traditional earnout transactions.

limited disclosure of post- transaction ownership. Instead, management ownership prior to the acquisition has been collected for all transactions. In cases where a minority interest remains, it is assumed that if management hold ownership before the transaction, they will also retain ownership afterwards.

To collect management ownership data, a binary coding scheme was employed. The coding scheme comprises several categories, and each transaction was classified according to them. Each category was coded as a binary variable (1 = Yes, 0 = No) to facilitate systematic classification. The categories for classifying transactions' management ownership data were as follows: (i) "Yes"; (ii) "No"; (iii) "Not disclosed". The categories were further defined as follows. Category (i) includes transactions where management owned shares prior to the acquisition. Category (ii) represents transactions where management did not own shares prior to the acquisition. Category (iii) represents transactions for which the data are insufficient to reliably classify the transaction into either of the first two categories. Transactions classified in category (iii) are in accordance with Section 5.3.1 included in the full sample, but removed from the particular models where the variable is included. This procedure ensures high sample quality and reduces potential misclassifications, thereby minimising the risk that observations distort the results of the empirical tests. In addition to the three-category coding scheme, a description or reference to the data was included for each observation. This allows for further checks and controls to minimise errors and ensure data accuracy.

The management ownership data was collected for individuals meeting the definition provided in Appendix A.4.1. The data was retrieved from several sources, including press releases from both the acquirer and target, company filings such as annual reports and registration documents providing shareholder information, and LinkedIn profiles. The collection procedure comprised of first identifying the ownership structure and shareholder information prior to the transaction and subsequently checking whether the owning parties meet the definition of management. To identify ownership, the process began with scanning press releases issued in connection with the acquisition, which often contain information on the selling parties. The level and detail of disclosure in press releases vary considerably, but they can include information confirming that the selling parties include specific members of the management team or founders. If ownership could be confirmed and management met the definition, the observation was classified under category (i) "Yes".

If no information was available in press releases, the target firm's corporate filings prior to the acquisition were scanned. In certain cases, ownership data was provided in the target firm's annual report. In other cases, particularly for UK target firms, ownership data was retrieved from Companies House, the government-run corporate registry. UK firms are required to report key ownership information to Companies House, including details of persons with significant control. If ownership data was found through any of these sources, it was examined whether the owning parties met the management definition and are active in the firm. To confirm this, annual reports, press releases, and LinkedIn were used to determine whether the owners held management positions and remained active. For several observations, it was confirmed that the owners had previously held management positions, but their current activity within the business

could not be verified. To remain prudent, these observations were classified under category (iii) “Not disclosed”.

To ensure that a sufficient number of transactions include management ownership data and are not excluded due to missing information, some simplifying assumptions were introduced. It was assumed that if management were also founders, and no significant acquisition of the target firm’s equity occurred after the founding date, the founders was assumed to continue holding an ownership position. If no information on potential founding employees was available from press releases or corporate filings, the company’s website was scanned. Several firms provided a webpage describing the firm’s history, which may also include information on the founder(s). If the founder(s) were mentioned but did not currently hold the CEO position, the previously mentioned sources were further scanned to confirm whether they held operational roles. If operational roles were confirmed, the transactions were classified under category (i) “Yes”.

Overall, a pragmatic and prudent approach was applied, in which transactions are only classified under categories (i) or (ii) if sufficient data are available to make an informed decision. If sufficient data was not available, the observations were classified under category (iii).

Appendix A.4.3. Management Retention

The second dimension of management data consists of management retention. The purpose of this data point is to capture the retention of key employees within the target firm, reflecting the continuity of management following the transaction. Key employees are defined in accordance with the management definition outlined in Appendix A.4.1, ensuring consistency with the above ownership data collection. After identifying the employees under examination, several factors were considered to determine whether they were retained. To maintain a structured and objective methodology that reduces misclassifications, a clear coding scheme was applied. As with the previously collected data, a binary coding scheme was used (1 = Yes, 0 = No). The overall approach was based on the definition of employee retention which requires that the employee remained within the target firm or with the newly combined entity.

The coding scheme was structured so that management retention was classified under the following categories: (i) “Yes”; (ii) “No”; (iii) “Not disclosed”. The categories are defined as follows. Category (i) represents that key employees were retained after the acquisition, and category (ii) represents that key employees were not retained. Category (iii) indicates that insufficient data was available, and the observation could not be reliably allocated to either of the first two categories. If a transaction was classified under category (iii) “Not disclosed”, it was accordance with Section 5.3.1 included in the full sample, but removed from the particular models where the variable is included. This ensured that the observation did not distort the results of the empirical tests, thereby supporting more reliable and robust outputs. In addition to the coding scheme, and similar to the other manually collected data points, a description of the collected data was included for each observation. This facilitated additional iterations and controls to minimise errors and ensure accurate data.

To collect sufficient data to classify observations into category (i) or (ii) in the coding scheme, several sources were utilised. Both the acquirer's and target's websites were browsed for press releases, annual reports published in conjunction with the transactions, and LinkedIn. The primary source was press releases, which often communicated whether certain key individuals, the entire management team, or the founders would remain in the business. In some cases, the press releases contained information indicating that management were expected to remain in the business. To verify their continued presence, subsequent annual reports were scanned for information confirming that the key individuals remained with the business. If such information was not available in the post-acquisition annual reports, the key employees' LinkedIn profiles were also scanned for confirmation. If information was available from the subsequent annual reports or LinkedIn, key employees had to remain for at least one year after the acquisition for management to be classified under category (i) "Yes". If an employee remained for less than one year, the transaction was classified under category (ii) "No". The one-year threshold is, however, subject to one exception. If an employee remained for less than a year but longer than the synthetic or traditional earnout period, the observation was still classified under category (i) "Yes". If the key employees retention could not be confirmed to be below or exceed the one-year threshold, the observation was classified under category (iii) "Not disclosed".

The classification of transactions includes several additional situations that must be treated consistently and systematically to ensure a representative dataset. Firstly, in certain scenarios, all key employees did not remain in the firm. In these cases, as long as at least one key employee remained, the transaction was classified under category (i) "Yes". Secondly, in accordance with the provided definition of retention, if key employees remained within the business or the new combined entity, but in a different role than prior to the acquisition, management retention was classified under category (i) "Yes". Thirdly, if nothing regarding management retention was communicated in the press release or corporate filings, LinkedIn was used to identify management retention. If key employees could be verified in accordance with the management definition and that those key employees remained, the observation was classified under category (i) "Yes". This is however, as earlier described, subject to the same one-year threshold and corresponding treatment. Finally, in some transactions, it was communicated that key employees would remain with the business only for a transition period to ensure smooth integration after the transfer of control. If the transition period was less than one year, the transaction was classified under category (ii) "No". One exception however applies. Similar to earlier treatments, if the planned transition was less than one year but longer than the synthetic or traditional earnout period, the observation was classified under category (i) "Yes".

Appendix B. Robustness tests

Appendix B.1. Firth Penalised Likelihood Regressions

Table 9. Regression Output Firth Penalised Likelihood Models

| Firth Penalised Likelihood Regressions: Robustness Models | | | | | | |
|--|---------------------------|-----------|-----------|-------------------------|----------|----------|
| Model: | SEO vs NO EO Transactions | | | SEO vs TEO Transactions | | |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Intercept | -1.648* | -4.560*** | -4.593*** | -1.345 | 3.237*** | -2.520* |
| <i>Independent variables</i> | | | | | | |
| <i>Cross_Ind</i> | -0.025 | | 0.085 | -0.142 | | -0.165 |
| <i>TarInd_Vol</i> | 0.817 | | -0.919 | -1.109 | | -0.249 |
| <i>TarInd_Q</i> | -0.118 | | -0.262 | 0.142 | | 0.027 |
| <i>TarInd_Ass_Tan</i> | -0.325 | | -0.047 | -0.006 | | -0.003 |
| <i>Cross_Bord</i> | 0.993*** | | 0.948*** | 1.479*** | | 1.446*** |
| <i>Mgmt_Ret_Own</i> | | 3.606*** | 3.577*** | | 1.921*** | 1.897*** |
| <i>Control variables</i> | | | | | | |
| <i>RelAcq_Size</i> | 0.193** | 0.216** | 0.216* | 0.220** | 0.223** | 0.248** |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Acquirer Industry FE | Yes | Yes | Yes | Yes | Yes | Yes |
| N | 425 | 385 | 334 | 368 | 363 | 316 |

Notes: *, **, *** denote significance at 10%, 5%, and 1% levels. Pseudo R² is not reported for Firth logistic regression because the penalised likelihood prevents direct computation of standard pseudo R² measures used in standard logit models. The abbreviations are defined accordingly; SEO represents transactions involving synthetic earnouts, TEO represents transactions only involving a traditional earnout, and NO EO represents transactions without any type of earnout structure.

Appendix B.2. Isolation of Management Ownership

Table 10. Regression Outputs Using Only Management Ownership

| Logit regressions: Robustness Models | | | | |
|---|---------------------------|----------------------|-------------------------|---------------------|
| Model: | SEO vs NO EO Transactions | | SEO vs TEO Transactions | |
| | (2) | (3) | (5) | (6) |
| | Moral hazard | Full model | Moral hazard | Full model |
| Intercept | -5.103*** (1.304) | -5.734*** (1.712) | -3.573*** (1.331) | -3.284** (1.570) |
| <i>Independent variables</i> | | | | |
| <i>Cross_Ind</i> | | 0.224 (0.367) | | -0.166 (0.343) |
| <i>TarInd_Vol</i> | | -0.296 (1.725) | | -0.778 (1.573) |
| <i>TarInd_Q</i> | | -0.525** (0.252) | | -0.027 (0.355) |
| <i>TarInd_Ass_Tan</i> | | -0.122 (0.253) | | -0.110 (0.134) |
| <i>Cross_Bord</i> | | 1.245*** (0.322) | | 1.714*** (0.344) |
| <i>Mgmt_Own</i> | 3.851*** (1.027) | 4.097*** (1.036) | 2.041* (1.077) | 2.560** (1.231) |
| <i>Control variables</i> | | | | |
| <i>RelAcq_Size</i> | 0.200** (0.091) | 0.179* (0.106) | 0.220** (0.095) | 0.233** (0.116) |
| Year FE | Yes | Yes | Yes | Yes |
| Acquirer Industry FE | Yes | Yes | Yes | Yes |
| Pseudo R ² | 0.186 | 0.256 | 0.081 | 0.171 |
| N | 379 | 328 | 368 | 322 |

Notes: Logit regressions are estimated via maximum likelihood with robust standard errors in parentheses. *, **, *** denote significance at 10%, 5%, and 1% levels, respectively. All models include year and acquirer industry fixed effects. Sample sizes vary across models due to listwise deletion of observations with missing values. The abbreviations are defined accordingly; SEO represents transactions involving synthetic earnouts, TEO represents transactions only involving a traditional earnout, and NO EO represents transactions without any type of earnout structure. Model (1) and Model (4) are not included in the above table as the model specifications do not include the original independent variable *Mgmt_Ret_Own* resulting in no change to the regressions and its coefficients in this robustness test.

Appendix B.3. Country-Level Analysis

Table 11. Regression Outputs Including Country Fixed Effects

| Logit regressions: Robustness Models | | | | | | |
|---|---------------------------|----------------------|---------------------|-------------------------|---------------------|---------------------|
| Model: | SEO vs NO EO Transactions | | | SEO vs TEO Transactions | | |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Intercept | -0.602 (1.047) | -4.201*** (1.304) | -4.231** (1.697) | -0.456 (1.122) | -2.915* (1.208) | -2.101 (1.400) |
| <i>Independent variables</i> | | | | | | |
| <i>Cross_Ind</i> | -0.055 (0.320) | | 0.154 (0.445) | -0.307 (0.333) | | -0.245 (0.368) |
| <i>TarInd_Vol</i> | 0.621 (1.367) | | -2.206 (2.597) | -1.355 (1.729) | | -0.672 (1.683) |
| <i>TarInd_Q</i> | -0.024 (0.242) | | 0.089 (0.383) | 0.305 (0.304) | | 0.182 (0.364) |
| <i>TarInd_Ass_Tan</i> | -0.325 (0.241) | | -0.040 (0.355) | -0.159 (0.231) | | -0.063 (0.104) |
| <i>Cross_Bord</i> | 1.006*** (0.289) | | 1.187*** (0.388) | 1.591*** (0.317) | | 1.563*** (0.351) |
| <i>Mgmt_Ret_Own</i> | | 4.099*** (0.759) | 4.295*** (0.803) | | 2.185*** (0.740) | 2.247*** (0.817) |
| <i>Control variables</i> | | | | | | |
| <i>RelAcq_Size</i> | 0.220** (0.085) | 0.261* (0.112) | 0.290* (0.125) | 0.290** (0.108) | 0.261* (0.104) | 0.307* (0.128) |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Acquirer Industry FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Country FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Pseudo R ² | 0.131 | 0.319 | 0.381 | 0.159 | 0.122 | 0.207 |
| N | 425 | 385 | 334 | 368 | 363 | 316 |

Notes: Logit regressions are estimated via maximum likelihood with robust standard errors in parentheses. *, **, *** denote significance at 10%, 5%, and 1% levels, respectively. All models include year, acquirer industry and country fixed effects. Sample sizes vary across models due to listwise deletion of observations with missing values. The abbreviations are defined accordingly; SEO represents transactions involving synthetic earnouts, TEO represents transactions only involving a traditional earnout, and NO EO represents transactions without any type of earnout structure.

Table 12. Regression Outputs Only Examining Swedish Subsample

| Logit regressions: Country Subsample Sweden | | | | | | |
|--|---------------------------|---------------------|---------------------|-------------------------|---------------------|---------------------|
| Model: | SEO vs NO EO Transactions | | | SEO vs TEO Transactions | | |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Intercept | -1.499 (1.236) | -2.996** (1.380) | -6.268** (2.423) | -1.034 (1.400) | -0.965 (1.030) | -2.315 (1.612) |
| <i>Independent variables</i> | | | | | | |
| <i>Cross_Ind</i> | 0.103 (0.813) | | 1.034 (0.612) | -0.187 (0.513) | | 0.101 (0.596) |
| <i>TarInd_Vol</i> | 2.762 (2.715) | | -4.445 (5.795) | -0.368 (2.778) | | -0.527 (3.262) |
| <i>TarInd_Q</i> | 0.165 (0.460) | | 1.424* (0.745) | 0.510 (0.530) | | 0.634 (0.614) |
| <i>TarInd_Ass_Tan</i> | -0.677* (0.392) | | -0.847 (0.605) | -0.506* (0.312) | | -0.599 (0.371) |
| <i>Cross_Bord</i> | 0.813** (0.410) | | 1.367** (0.612) | 1.483*** (0.497) | | 1.292** (0.554) |
| <i>Mgmt_Ret_Own</i> | | 3.803*** (0.905) | 4.700*** (0.976) | | 1.554* (0.867) | 1.777** (0.828) |
| <i>Control variables</i> | | | | | | |
| <i>RelAcq_Size</i> | 0.284** (0.124) | 0.270 (0.201) | 0.577** (0.269) | 0.559*** (0.159) | 0.414*** (0.155) | 0.612*** (0.185) |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Acquirer Industry FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Pseudo R ² | 0.095 | 0.326 | 0.441 | 0.187 | 0.153 | 0.242 |
| N | 174 | 148 | 132 | 170 | 165 | 144 |

Notes: Logit regressions are estimated via maximum likelihood with robust standard errors in parentheses. *, **, *** denote significance at 10%, 5%, and 1% levels, respectively. All models include year and acquirer industry fixed effects. Sample sizes vary across models due to listwise deletion of observations with missing values. All models are only estimated on observations where the acquirer is incorporated in Sweden. The abbreviations are defined accordingly; SEO represents transactions involving synthetic earnouts, TEO represents transactions only involving a traditional earnout, and NO EO represents transactions without any type of earnout structure.

Table 13. Regression Outputs Only Examining UK Subsample

| Logit regressions: Country Subsample UK | | | | | | |
|--|---------------------------|-------------------|---------------------|-------------------------|-------------------|---------------------|
| Model: | SEO vs NO EO Transactions | | | SEO vs TEO Transactions | | |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Intercept | -1.595 (1.399) | -1.569 (1.474) | -0.244 (2.325) | -1.527 (1.676) | -2.325 (1.302) | -1.232 (2.276) |
| <i>Independent variables</i> | | | | | | |
| <i>Cross_Ind</i> | -0.460 (0.491) | | -0.681 (0.751) | -0.254 (0.513) | | -0.410 (0.593) |
| <i>TarInd_Vol</i> | -1.579 (2.210) | | -3.687 (2.752) | -1.126 (2.358) | | 0.016 (2.402) |
| <i>TarInd_Q</i> | -0.441 (0.377) | | -0.797 (0.631) | -0.071 (0.451) | | -0.472 (0.657) |
| <i>TarInd_Ass_Tan</i> | -0.336 (0.290) | | -0.388 (0.452) | 0.006 (0.376) | | 0.250 (0.495) |
| <i>Cross_Bord</i> | 1.739*** (0.477) | | 1.946*** (0.599) | 2.141*** (0.507) | | 2.166*** (0.588) |
| <i>Mgmt_Ret_Own</i> | | (omitted) | (omitted) | | (omitted) | (omitted) |
| <i>Control variables</i> | | | | | | |
| <i>RelAcq_Size</i> | 0.252 (0.150) | 0.333* (0.170) | 0.217 (0.202) | 0.055 (0.158) | 0.177 (0.163) | 0.084 (0.179) |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Acquirer Industry FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Pseudo R ² | 0.205 | 0.142 | 0.229 | 0.235 | 0.158 | 0.269 |
| N | 236 | 121 | 105 | 186 | 158 | 139 |

Notes: Logit regressions are estimated via maximum likelihood with robust standard errors in parentheses. *, **, *** denote significance at 10%, 5%, and 1% levels, respectively. All models include year and acquirer industry fixed effects. Sample sizes vary across models due to listwise deletion of observations with missing values. All models are only estimated on observations where the acquirer is incorporated in the UK. The abbreviations are defined accordingly; SEO represents transactions involving synthetic earnouts, TEO represents transactions only involving a traditional earnout, and NO EO represents transactions without any type of earnout structure. *Mgmt_Ret_Own* omitted in Models (2), (3), (4), (6) due to perfect prediction. Acquirer 1-digit SIC code 6 omitted in all variables due to perfect prediction.

Appendix B.4. Alternative Industry Classifications

Table 14. Regression Outputs Using 2-digit SIC Code Industry Variables

| Logit regressions: Alternative Industry Classifications | | | | | | |
|--|---------------------------|----------------------|----------------------|-------------------------|----------------------|----------------------|
| Model: | SEO vs NO EO Transactions | | | SEO vs TEO Transactions | | |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Intercept | -2.620** (1.027) | -5.067*** (1.112) | -5.484*** (1.427) | -2.993** (1.054) | -3.678*** (1.122) | -4.536*** (1.326) |
| <i>Independent variables</i> | | | | | | |
| <i>Cross_Ind</i> | 0.086 (0.283) | | -0.038 (0.371) | 0.092 (0.286) | | -0.044 (0.311) |
| <i>TarInd_Vol</i> | 1.734 (1.857) | | -0.904 (2.477) | 0.795 (2.047) | | 0.025 (2.212) |
| <i>TarInd_Q</i> | -0.474 (0.392) | | -0.692 (0.465) | 0.095 (0.423) | | -0.138 (0.482) |
| <i>TarInd_Ass_Tan</i> | -0.021 (0.281) | | 0.333 (0.429) | 0.335 (0.317) | | 0.597* (0.331) |
| <i>Cross_Bord</i> | 1.087*** (0.262) | | 1.232*** (0.346) | 1.494*** (0.274) | | 1.517*** (0.309) |
| <i>Mgmt_Ret_Own</i> | | 3.993*** (0.745) | 4.136*** (0.806) | | 2.208*** (0.743) | 2.277*** (0.804) |
| <i>Control variables</i> | | | | | | |
| <i>RelAcq_Size</i> | 0.237*** (0.078) | 0.235** (0.103) | 0.240** (0.114) | 0.208* (0.091) | 0.239* (0.099) | 0.217* (0.108) |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Acquirer Industry FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Pseudo R ² | 0.094 | 0.276 | 0.326 | 0.131 | 0.101 | 0.178 |
| N | 477 | 385 | 376 | 417 | 363 | 357 |

Notes: Logit regressions are estimated via maximum likelihood with robust standard errors in parentheses. *, **, *** denote significance at 10%, 5%, and 1% levels, respectively. All models include year and acquirer industry fixed effects. Sample sizes vary across models due to listwise deletion of observations with missing values. All variables using industry are estimated using 2-digit SIC codes. The abbreviations are defined accordingly; SEO represents transactions involving synthetic earnouts, TEO represents transactions only involving a traditional earnout, and NO EO represents transactions without any type of earnout structure.

Appendix C. Usage of AI

AI contributed to the thesis process in three main ways. First, ChatGPT was employed to assist in developing code in StataSE 18.5, which was used to generate regressions and subsequent results. Recognising that AI-generated code may be prone to errors, several precautions were applied. All code produced with the support of ChatGPT was cross-referenced with reliable sources, and both authors ensured full understanding and agreement with the code before implementation. Additionally, ChatGPT was prompted to identify potential issues or weaknesses in the code, which, in our assessment, helped reduce errors and improve overall accuracy.

Second, AI was occasionally used to enhance language and grammar. In these instances, the AI was instructed solely to provide suggestions for improving clarity, readability, and grammatical correctness. Importantly, the original content, arguments, and line of reasoning remained unchanged by AI.

Finally, AI tools such as ChatGPT and ResearchRabbit were utilised to explore relevant literature streams and identify potential sources. Any articles identified through AI were manually verified to ensure consistency with the study's objectives and relevance to the research question. No sources referenced in this thesis were included without being read and critically evaluated by the authors.

For some purposes, we did not use AI at all. Firstly, exploratory interviews were conducted as part of this study. To ensure full compliance with GDPR and preserve the anonymity of participants, no personal or proprietary information was shared with any AI tool. All analyses of the interview material were thus carried out manually.

Furthermore, the quantitative dataset used in the regression analyses was collected, cleaned, and verified entirely through manual procedures. All data collection, coding, and verification of the data were carried out manually and AI tools were not employed at any stage of this process. Consequently, all findings, interpretations, and conclusions presented in this thesis reflect the authors' independent critical thinking and rigorous manual data handling.

Overall, AI was used to support efficiency in coding, language refinement, and literature exploration, while maintaining strict oversight to ensure accuracy and integrity. No part of the research findings or analysis was generated by AI.