M&A and Financial Constraints: An Assessment of the Choice of Earnout Structure

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Preliminary Version

Abstract

Structuring the payment in M&A using an earnout contract has become a common practice around the world. Using a European-based sample, we provide compelling evidence that the choice and structure of this financing apparatus are driven by both the acquirer's and the target's financial constraints. Consistent with previous literature, we show that constrained bidders are more likely to use earnout. We also hypothesise and later find strong support that the target's financial constraints matter in the design of this contingency-based contract. Indeed, financial constraints at the level of the targets increase the propensity of earnout use and lead to a larger relative earnout size. These results align with private targets literature that has shown that unlisted firms have difficulties accessing external funds to invest in their growth opportunities pressuring them to sell out. Therefore, accepting an earnout deal is a potential solution to bridge the valuation gap. Last, we find the interaction of both parties' financial constraints to increase the likelihood of earnout use and relative earnout size. This research also documents a positive and significant impact on the premia paid to targets when the bidder is constrained. It indicates that the acquirer also invests in cooperation costs ex-post to compensate the target for bearing its operational environment. This study emphasises the importance of understanding the profile of private targets and how they interact with the bidder to reach pre-deal decisions.

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1 Introduction

In an ordinary takeover process, the choice of payment method is deemed a strategic pre-deal decision that will heavily influence the merger's completion and the ex-post gains to the two participating parties (Travlos, 1987; Chang, 1998; Eckbo et al., 2019). The importance of this choice is exponentiated when companies aim to acquire targets that are difficult to value; adding a level of uncertainty to the takeover process that can lead to a large valuation gap and potential abandonment of the merger (Caselli et al., 2006; Chatterjee and Yan, 2008; Mantecon, 2009). In this setting, earnouts (EO hereafter) are an increasingly used financing contract that provides a solution to misvaluation risk by splitting the payment into one or more parts and making the subsequent installments contingent on the target achieving a pre-determined performance goal (Cain et al., 2011).

The increasing prevalence of EOs, especially in deals involving unlisted targets, has motivated several researchers to investigate the factors that influence the choice, structure and valuation of such deals (Barbopoulos and Sudarsanam, 2012; Cain et al., 2011; Kohers and Ang, 2000; Datar et al., 2001) . The work of these researchers has shed light on different determinants of EO use to structure an M&A payment but has left unanswered questions regarding target- and acquirer- level characteristics and their interaction in determining the EO choice; among which is the impact of the involved parties' financial constraints. Financial constraints have already been established as a crucial determinant in the structure of takeovers (Khatami et al., 2015; Masulis and Simsir, 2018; Matvos et al., 2018; Greene, 2017; Gorbenko and Malenko, 2018). Among the most fundamental terms of this structure is the choice of payment method. The present study aims to tackle this gap by determining how earnout contracts are chosen and shaped in the presence of financial constraints. This will be achieved by taking a granular look at the financial position of both the target and bidder that engage in earnouts and estimating the impact of financial constraints on the choice and structure of EO deals.

A rich strand of the literature uses contracting theories to link earnout use to adverse selection and moral hazard concerns. Indeed, EOs are particularly beneficial when information asymmetry makes it difficult to value opaque targets (Kohers and Ang, 2000) which exacerbates misvaluation risk. As advanced by Eckbo et al. (2019), in a setting where the two parties are perfectly symmetrically informed, the choice of payment method becomes a mere matter of the ability of the acquirer to use internal or external financing sources to raise funds. However, when information asymmetry is prevalent, adverse selection concerns arise. Consequently, forms of payment methods, known to hold contingent properties, become attractive tools to share

risk between the two parties (Hansen, 1987; Travlos, 1987; Eckbo et al., 2018). Engaging in EOs also entails that the target management remains with the merged entity. This process allows the acquirer to retain valuable talent while reducing valuation risk. Consequently, it represents an attractive solution to moral hazard as the retained management of the acquired firm keeps working toward a monetary goal for the pre-specified earnout period (Cain et al., 2011).

Testable predictions derived from these theories led researchers to uncover the impact of several factors pertaining to bidder, target and deal feature(Kohers and Ang, 2000; Datar et al., 2001; Cain et al., 2011; Barbopoulos et al., 2012) on the structure of EOs. Their assessment increased our understanding of what characteristics matter in choosing such a contract to manage M&A uncertainty and what gains can be attributed to this financing tool [1]. Increasingly, EO-focused studies have taken a more detailed approach to explain the motive and outcomes of this contractual choice. In this regard, EO use has been linked to the acquirer's resourcefulness; older and larger acquirers have been found to benefit more from earnout as they arguably have more experience and are supported by top-tier financial advisers (Barbopoulos and Danbolt, 2021). Chatterjee and Yan (2008) also find that acquirer with less internal capital available for use in projects are more likely to offer contingency contract. In a similar vein, Bates et al. (2018) find that acquirers' financial constraints increase the propensity of using EO as it is used as a tool to manage their liquidity.

While empirical studies thoroughly assessed bidder financial and accounting features, target-level characteristics determining the choice and structure of EOs received scant attention. To the best of our knowledge, only Jansen (2020) assesses the tangibility of target firms and finds it negatively related to the choice of earnout use [2]. This study aims to add a layer of understanding to the target's features influencing EO structure and their interaction with the buy-side characteristics. We start by exploring the external financial constraints of targets and acquirers and how they lead to the choice and structure of earnout.

Assessing financial constraints in this study is motivated by the association of this corporate feature with the decision to engage in M&A for both parties. It has notably been documented

[1] Notably, studies show a positive relationship between earnout use and deferred payment ratio and premia (Kohers and Ang, 2000; Barbopoulos and Adra, 2016). This showcases that acquirers are also aiming to reach a strategic level of deferred payment and premia that would incentivise the targets to reach their goal while being subjected to the riskiness of the bidder's environment (Lukas et al., 2012; Cain et al., 2011; Barbopoulos and Adra, 2016). When it comes to valuation gain for the acquirer, the use of earnout is also linked to larger returns for listed acquirers using EOs compared to similar acquirers paying upfront, which entails that the market perceives the use of this contract positively (Barbopoulos and Sudarsanam, 2012; Barbopoulos and Danbolt, 2021).

[2] Most target characteristics assessed by previous literature are limited to their listing status, age and industry or are assessed using industry proxies.

that constrained targets will initiate a takeover process to relieve their financial constraints (Masulis and Simsir, 2018; Eckbo et al., 2019). Additionally, it has been found that being acquired by less constrained firms allows targets to access a better internal capital market, overcome underinvestment and avoid bankruptcy costs (Liao, 2014; Masulis and Simsir, 2018; Erel et al., 2015; Hotchkiss et al., 2008). While less obvious, constrained acquirers also engage in mergers and acquisitions. Their motive range from strategic shifts to bankruptcy risk diversification (Zhang, 2022). In this paper, we follow Williamson and Yang (2021)'s approach and assess external financial constraints, which are the difficulty of accessing external sources of funds to invest. It entails that firms can still initiate mergers and invest in projects internally. However, the difficulty of raising funds externally will make them rely on their internal sources more and eventually be more careful with how they manage their liquidity (Gorbenko and Malenko, 2018; Bates et al., 2018) [3].

In this setup, it is evident that the choice of payment method to finance a M&A deal is particularly important when one or both parties are financially constrained (Faccio and Masulis, 2005; Alshwer et al., 2011; Gorbenko and Malenko, 2018). Moreover, neither of the two parties holds perfect private knowledge of the internal situation of the other, creating a "double lemon problem" (Lukas et al., 2012). Additionally, most targets involved in EOs are unlisted, which skews the asymmetry towards the acquired firm. This leads to two main outcomes. First, the listed bidder's misvaluation and adverse selection concerns are arguably higher. If they are financially constrained, they are naturally compelled to choose their investment projects carefully . Second, the bargaining power of the target firm is low. If they are financially constrained, they are pressured to sell out. Consistent with previous literature, the private market for corporate control is assumed to be illiquid (Draper and Paudyal, 2006), and the lack of acquisition opportunities will be exacerbated by the target's financial constraints, giving the upper hand to the acquirer in the negotiation.

In this scenario, a deferred payment can be an attractive solution for a constrained bidder (Bates et al., 2018) irrespective of the financial constraints or the limited bargaining power of the target . Indeed, EOs allow them to manage their liquidity by deferring part of the payment to the future. Indeed, we find that bidder's financial constraints (BFC hereafter) increase the propensity of EO use, corroborating Bates et al. (2018)'s finding with a European sample that also includes cross-border deals. Additionally, we find that BFC increases the deferred payment ratio, which

[3]Since our sample involves only listed acquirers and earnout deals are mainly composed of unlisted targets, there will always be a differential in terms of the level of access to external investors. In relative terms, if a listed bidder acquires an unlisted target, they arguably have an advantage in raising external funds as their access to financial markets is larger, and they suffer less from information asymmetry due to the public nature of their financial information.

is the slice of the payment contingent on the target's ex-post performance.

EOs can also be a solution for targets seeking to cash-out. Similarly, we assess the target's financial constraints (TFC) and their impact on the choice and structure of the earnout payment. We posit that private targets will accept the EO as they are given the opportunity to mitigate their financing access limitations while becoming a subsidiary of the acquirer, accessing new internal resources [4] and proving their ability while avoiding potential bankruptcy costs. The higher are the difficulties to access funds to achieve their potential growth opportunities, the larger is the pressure to sell out (Draper and Paudyal, 2006; Officer, 2007; Poulsen and Stegemoller, 2008; Greene, 2017) and by extension accept an earnout to bridge the valuation gap. Corroborating our hypotheses, we find that TFC significantly increases the propensity of earnout use and the share of deferred payment to the future.

Finally, we argue that the incentive for a constrained bidder to use earnout as part of the M&A payment structure becomes higher if the target is also constrained as it allows them to mitigate adverse selection concerns. This study finds that hedging for such risks is increasing in both target's and bidders's constraints. We test the interaction of both parties' constraints and find a positive interaction coefficient that substantiates the premise that bidders have a larger bargaining power leading the deal toward an earnout and potentially a larger deferred payment ratio. Our results show the interaction term has a positive and significant impact on the choice of earnout and the contingent slice of the payment.

Ex post, bidders will also be concerned with retained target management to perform properly. In this setting, moral hazard also predicts that these targets ought to be incentivised according to the effort they will put into attaining their pre-determined goal. Cain et al. (2011) find empirical support for this prediction. They advance that the incentive level must be proportional to the level of effort that the target is expected to exert during the earnout period to receive a part or all of the payment. In that setting, we hypothesise that a riskier bidder environment increases the riskiness of the merger, thus target management (often the sole shareholders of the firm as they are in major part privately held) must be compensated accordingly to mitigate moral hazard(Barbopoulos and Adra, 2016; Lukas et al., 2012). We find that BFC choosing to engage in EOs will pay larger premia. Additionally, we find partial evidence that the larger the deferred payment ratio when bidders are constrained, the larger the premia.

To investigate our hypotheses, we use a sample of 2,677 deals over the period from 2005 and

[4] It is important to emphasise that even in the event where the acquirer are deemed constrained, on average, they are still less constrained than the targets they acquire ex ante. The question of whether targets acquired by more constrained target perform better or worse ex post can be the focus of future research.

2020 with targets incorporated in 6 European countries, including the United Kingdom, France, Denmark, Sweden, Finland, and Germany. We limit our scope to Europe because it represents an interesting pool of companies that often face tighter banking regulations and less access to non-banking external funds, such as venture capitalists, compared to their American counterparts (Guariglia, 2008). Moreover, data availability for private companies is larger (compared to the U.S., where privately held firms rarely disclose financial data). It allows us to build a more appropriate laboratory to study privately held companies (Erel et al., 2015). These countries also represent the right balance between data availability and prevalence of earnout use to enable us to build our sample. We allow the scope of the acquirer's country of incorporation to include cross-border deals. All acquirers in our sample are publicly traded.

This paper extends the existing literature by using contracting theories to raise testable predictions to investigate new features linked to the propensity of using EOs and the determinants of their design. It also contributes to the literature assessing private targets M&A as they represent the primary type of targets acquired by publicly listed acquirers. In the same vein, they represent most EO targets. By building a collected sample of data on the deal, targets and bidders' characteristics, we aim to expand our knowledge of the negotiation outcome that decides the structure of this form of payment. More specifically, this paper aims to add on the findings of previous studies by incorporating the sell-side characteristics that received scant attention from the literature. We will also provide further tests of moral hazard and adverse selection theories in a new empirical setting. This paper also complements the literature assessing contractual choices in M&A and their drivers, especially when bidders are acquiring majority stakes.

In the next section, we present our theoretical background and formulate our hypotheses. The subsequent part of this paper details our sample selection and summary statistics. The final sections include our empirical results and present a discussion of our findings.

2 Literature Review & Hypothesis Formulation

2.1 Measuring Financial Constraints

In perfect capital markets, the choice between internal and external sources of funds is irrelevant. Fazzari et al. (1987) provide their own view by showing that the substitutability between internal cash and cash raised from equity or debt markets is not perfect. Indeed, there is a higher cost to raising funds externally, especially when information asymmetry is large [5]. This seminal paper documents an interesting relationship that links the sensitivity of investment to cash flow (I-CF hereafter). Indeed, when it becomes difficult for firms to access the necessary funds to invest in their projects, these organisations tend to rely on their internally retained cash. In this setting, they can only invest when cash becomes available. Hence, they conclude that a larger I-CF sensitivity is indicative of financial constraints.[6]

Later, Guariglia (2008) contribute to this literature by providing further insights into the difference between internally and externally constrained firms [7]. By definition, internal constraints are related to liquidity and access to immediate cash and would be measured by related liquidity ratios (e.g., coverage ratio is one commonly used metric). External constraints are more linked to the access to funds provided by entities such as banks. Metrics such as age, size and tangibility of the firm's assets are more relevant to the latter. It is important to note that these variables will have a large impact on the information asymmetry between the firm and its creditors.

The literature that ensued the seminal paper of Fazzari et al. (1987) led to the development of indices to allow the classification of business entities into constrained and unconstrained firms. The KZ index has been developed by Lamont et al. (2001) and eponymously named after the Kaplan and Zingales (1997) research that inspired it. In their attempt to relate stock returns to financial constraints, they use the regression coefficients that Kaplan and Zingales (1997) obtain from an ordered logit regression that includes mainly accounting ratios to build their index.

[5] An example provided in Fazzari et al. (1987)'s paper is when potential investors are concerned about the informational disconnect between them and the managers of firms seeking funds. It is a consequence of the latter holding a larger amount of information compared to these investors on the value of the company and the projects they are willing to pursue. This concern makes extending funds (through equity or debt) difficult.

[6] Hoshi et al. (1991) find evidence to support these findings using Japanese firms that are closely tied to banks in comparison to those that are not. The firms that are part of a keiretsu (i.e., belonging to an industrial group that is closely monitored by a bank that plays both the role of the shareholder and creditor) will have weaker I-CF sensitivity.

[7] While the previous research has been largely based on quoted firms, Guariglia (2008) uses a UK sample to shed light on the case of unlisted companies.

On the one hand, their parameter estimates give leverage and Tobin's Q a positive sign (i.e., they increase financial constraints). Conversely, cash flow, dividend payout and cash holding take a negative sign. While these coefficients were based solely on low dividend-paying manufacturing companies, the KZ index became one of the most popular indices in the empirical literature (Farre-Mensa and Ljungqvist, 2016).

Along these lines, Whited and Wu (2006) revisit Lamont et al. (2001) research question by constructing their own index using a structural model of investment from which they estimate an Euler equation instead of relying on classical regression coefficients. The factors used in their WW model also include cash flow, dividend, size, and both the industry and the firm's sales growth. Their paper also contrasts their index (WW) with the KZ index. They provide evidence that the KZ index classifies as constrained larger firms characterised by over-investing behaviour and often holding a rating on their bonds. Regarding the WW index, they document financial constraints within small firms that often exhibit significant information asymmetries that hinder them from accessing external funds (i.e., little to no analyst coverage and no bond ratings, among other factors).

Another important index comes a few years later through the work of Hadlock and Pierce (2010). They believe that the reliance of previous indices on endogenously [8] determined factors undermines the relevance of the studies that use them to proxy financial constraints. Therefore, they suggest using an index relying solely on size and age (HP1 index hereafter). They hand collect qualitative data from managerial reports, annual letters, and other companies' reports. This data is used to indicate qualitatively the level of financial constraints the firm is facing. They find the size-age factors to be significantly more useful proxies for financial constraints after subjecting them to a series of robustness tests. While it is a simple index in nature, it is fairly intuitive to consider that smaller and younger firms would face difficulties raising capital to invest even when they have worthwhile projects to pursue. In addition, Hadlock and Pierce (2010) conduct a thorough assessment of the KZ index using different subsamples and reach the conclusion that only the cash-flow and leverage variables remain significant with a sign that is consistent with the initial findings of Lamont et al. (2001). Following Liao (2014), the augmented model of HP1 can also be used to gauge financial constraints by adding leverage and cash holdings to the index (HP2 index hereafter)[9].

[8] Factors such as sales growth, capital expenditure or leverage.

[9] In a similar vein, Becchetti et al. (2010) use qualitative data survey data providing information on credit rationing of small to medium enterprises to assess the relationship between financial constraints and the I-CF sensitivity. They find that the use of size and age is significantly associated with these firms' decision to self-declare credit-rationing. Moreover, Farre-Mensa and Ljungqvist (2016) present a comprehensive summary of these approaches and provide a cross-tabulation to understand how they relate to each other. This initial approach finds

The assessment of the aforementioned constraints indices (HP1, HP2, WW, KZ) is important since they are widely used in the M&A literature to create a classification or assess the behaviour of either constrained targets or acquirers. Since our paper will follow a similar approach, we will also look at the research that linked the choice of takeover to the involved parties financial constraints.

2.2 Financial Constraints & Takeover Activity

When firms become financially constrained, they tend to reduce their levels of investment, accumulate cash and only invest using internal resources (Campello et al., 2010; Hovakimian and Hovakimian, 2009; Almeida et al., 2004; Guariglia, 2008). In this setting, empirical evidence has shown that the access to funding becomes an important driver of M&A. It is a stylized fact that failing to relieve financial constraints can lead to distress and eventually bankruptcy. Pastena and Ruland (1986) show that M&A can be an attractive alternative to the inefficient termination of the business. On the targets' side, Officer et al. (2008) argues that it can be very costly for firms to raise money through IPOs, selling a block of shares to private equity or extending a seasoned offering. Consequently, some businesses simply prefer to sell out or divest from subsidiaries.

To investigate the relevance of a financing motive to acquisitions, Liao (2014) conducts an assessment of all the potential arguments [10] that would explain minority acquisitions and finds the financial and contracting motives to be the most substantial and significant explanations. Indeed, her paper showcases that targets experiencing financial constraints have a larger propensity to experience minority block acquisitions. Similarly, Khatami et al. (2015) use a sample of M&A between publicly listed bidders and targets and find that targets' financial constraints constitute one of the most critical drivers of takeover bids. In such deals, the target accumulates more gains at the deal announcement and generally receives a larger premium if constrained. Khatami et al. (2015) raise the argument that constrained firms are often attractive targets with large growth opportunities that they are unable to harness due to the difficulties in accessing external funds (Hubbard and Palia, 1999). Moreover, target firms relieve part of their constraints ex post. As shown by Erel et al. (2015), the acquisition of constrained targets by less constrained firms drives them to hoard less cash and increase their investment.

The financing view as motivation for acquisitions also anticipates bidders to gain from such

that the HP1 index correlates the most with the no dividend payout (i.e., constrained), no rating (i.e., constrained), and the WW index.

[10] The author investigates a contracting and product market relationships argument, financial constraints argument, and monitoring motives argument.

deals. Mantecon (2008) finds that the excess returns to acquirers of privately held targets come from the bargaining advantage bidders have in this setting. As uncertainty and adverse selection hinder the target's access to external financing sources, their viability is reduced, giving acquirers the upper hand in negotiating these deals. Similarly, Masulis and Simsir (2018) find that distressed targets suffering from economic weakness or economy-wide shocks will initiate M&A. Since these deals are driven by targets, they find that the premium and excess returns (to targets) in such bids are lower compared to targets in bidder-initiated deals.

While the examination of constrained targets has been given much attention in the literature, the studies on constrained acquirers remain sparse (Zhang, 2022). Indeed many studies find that financially constrained companies decrease their levels of investment and generally retain cash to avoid depleting their liquidity resources (Almeida et al., 2004; Erel et al., 2015). Nonetheless, empirical research has shown that constrained acquirers can be motivated to engage in M&A (Kuppuswamy and Villalonga, 2016; Matvos et al., 2018). Among these drivers is the search for diversifying opportunities where they capitalise on the co-insurance effect to smooth their earnings volatility or improve their cost of capital (Lewellen, 1971; Leland, 2007).

When seeking relief, constrained acquirers can also look to develop their business environment and prospects. Zhang (2022) provides evidence that these acquirers are aware of their constraints and often target firms with more considerable growth opportunities to diversify their risk. The author uses an exogenous shock that decreases bankruptcy risk to derive causal inference. Zhang (2022) finds that post-shock, the most constrained companies significantly decrease the investment funds dedicated to M&A and the frequency of deal announcements. She concludes that M&A is utilised to reduce bankruptcy risk. Zhang (2022)'s research extends the work of Bruyland et al. (2019), who find that distressed firms engage in mergers to avoid costly bankruptcies by diversifying their risk profile. They argue that the motive is managerial self-interest. Indeed, Bruyland et al. (2019)'s study also document that these acquisitions lead to largely adverse reactions from the market.

From a similar perspective, Matvos et al. (2018) find that market frictions within capital markets lead publicly traded firms to seek diversification through M&A. The justification for such a shift toward diversification is mainly the motive to create an "internal capital market" by absorbing new firms when external financing becomes tight. In a recent study, Williamson and Yang (2021) find that constrained acquirers can use mergers and acquisitions to alleviate some of the financial challenges they face by acquiring more liquid targets. They use the adverse impact of the 2009 financial crisis to test their model and find that constraints are relieved post-acquisition, as evidenced by an increase in investment and a reduction in cash holdings (Erel

et al., 2015). After building a proxy of financial constraint based on multiple popular indices, they also find evidence that constrained acquirers typically acquire less constrained targets.

Therefore, whether bidder, target or both are experiencing financial constraints, the parties involved in a takeover must agree on the deal's structure. In a value maximisation setting, the terms of the deal will be determined by the parties' bargaining power in the negotiation and their aim to maximise the shareholders' wealth (Fuller et al., 2002; **?**; Officer et al., 2008; Draper and Paudyal, 2006) . Since every deal is characterised by some level of information asymmetry (Myers and Majluf, 1984), predictions based on information theories advance that each party seeks to maximise their gains while protecting themselves from uncertainty (Hansen, 1987; Eckbo et al., 1990, 2018) [11].

Consequently, previous empirical studies tested the determinants and outcomes of the decisions undertaken by both parties to achieve the aforementioned equilibrium when one of the parties is financially constrained (Khatami et al., 2015; Bates et al., 2018; Masulis and Simsir, 2018; Mantecon, 2008; Zhang, 2022). Among these critical decisions is the method of payment. Using a European sample, Faccio and Masulis (2005) show empirically that the choice of stock in M&As is increasing with bidder's financing constraints (i.e., over-levered acquirers tend to use stock instead of cash). Gorbenko and Malenko (2018) provide a theoretical model in which financial constraints reduce a given bidder's incentive to approach a target and decrease the propensity to use cash. On the other hand, targets' financing limitation influence their bargaining power and to an extent the mean of payment and the price paid to acquire them (Officer et al., 2008; Mantecon, 2009; Greene, 2017). When uncertainty on the value of the target is exacerbated by the firm's characteristics [12] that hinder both participating firms to move forward with the deal, contractual tools such as earnout can be used to overcome these obstacles (Caselli et al., 2006).

[11] M&A market is often compared to Akerlof (1978)'s market for lemons. Since information on the value of each party is not perfectly captured by the other, they can oversell their value when in reality they are "lemons". We assume the Hansen's (1987) double lemon problem that encompasses the disconnect that may happen between the managers and shareholders of publicly traded bidders. In this context, a third self-interested party in the form of management also plays a role in engaging and structuring M&A.

[12] Typically, private, foreign or highly intangible firms are examples of businesses that are difficult to price as stand-alone entities or value through the synergistic gains they can achieve. Hence, disagreement on their value arise and can potentially lead to the bidder withdrawing their offer and foregoing any given prospective synergies (Kohers and Ang, 2000).

2.3 Earnout Use in the Presence of Financial Constraints

2.3.1 Adverse Selection & Bargaining Power Arguments

Hansen (1987) built a theoretical justification for using stock swaps in M&A as a contingency mechanism to transfer part of the overvaluation risk from bidder to target. Contingency properties are important in this setting since informational imbalance on the real value of the target raises adverse selection concerns (Myers and Majluf, 1984). Officer et al. (2008) show that bidders acquiring difficult-to-value businesses will often reap positive gains when using stock payment instead of cash to mitigate uncertainty [13].

In the same vein, EOs provide similar contingency features and are documented to have short- and long-term positive returns to acquirers employing them to structure their payment (Barbopoulos et al., 2012). The literature revolving around the determinants of EO often presents adverse selection as the main driver of this contractual apparatus (Kohers and Ang, 2000; Cain et al., 2011). Since research provided evidence that information asymmetry when targets are difficult to value will lead bidders to use contingency mechanisms to reduce uncertainty risk, we posit that the larger the target's financial constraints, the more risk it will have to share with the bidder. In this setting, it is reasonable to advance that if the target's financial constraints exacerbate uncertainty, a bidder determined to protect itself from this risk will offer an earnout contract to move forward with the deal. Private targets will accept the EO as they are given the opportunity to mitigate their financial hurdles while integrating a new company and being offered the possibility to invest in their projects since they are retained for the earnout period.

Another important consideration is the bargaining power of each party in deciding the choice of payment method (Fuller et al., 2002; Faccio and Masulis, 2005). In instances where bidders are publicly traded, and targets are privately held companies, the bargaining power has been found to be stronger on the bidder's side. Previous research link this lower bargaining power of targets to the illiquidity of their market for corporate control. Liquidity is defined in this context as the ease with which shares of ownership are exchanged rather than accounting liquidity. As put forward by Draper and Paudyal (2006), it is unlikely that unlisted targets have a large number of bidders competing for their control. Due to high information asymmetry, it is difficult to value their assets and growth opportunities precisely. Consequently, it is more plausible for them to negotiate with one bidder rather than conduct an auction-type sellout (Eckbo et al., 2019). In this framework, bargaining power matters and is often stronger on the buyer side

[13] This work is also a continuation of Travlos (1987) and Chang (1998) foundational papers that showcase similar qualitative findings.

due to the liquidity limitations of such markets. In assessing acquirer's returns, Fuller et al. (2002) find empirical evidence of this liquidity effect. They explain that each party's share of gains is associated with their liquidity that puts a private target in a weaker bargaining position. They also advance that the pressure to sell on managers — as funding sources become scarce — of such targets can further decrease their bargaining power. When information asymmetry creates obstacles for targets to raise external financing, accepting an earnout contract can be a attractive option to gain a deferred premium.

Consequently, we derive the first set of hypotheses:

- H1a: Target financial constraints increase the **propensity of using earnout** as part of the M&A payment structure.
- H1b: Target Financial constraints lead to an increase in **the earnout to deal value ratio (deferred payment ratio).**
- H1c: The interaction of acquirer and target's financial constraints will increase the **propensity of using earnout**.
- H1d: The interaction of acquirer and target's financial constraints will increase **the deferred payment ratio**.

2.3.2 Liquidity Argument

In a recent study, Bates et al. (2018) present a novel theory to explain the use of EO. Their research claims that the acquirer's financial constraints motivate them to use this structure as it defers a part of the payment to the future. Hence, when they have difficulty accessing external financing, they rely on this contractual apparatus to relieve themselves from paying the full consideration upfront. In this vein, Bates et al. (2018) support this argument by showing that the acquirer's financial constraints are associated with a more significant propensity to use earnout. We extend their analysis to also investigate whether a same effect is also observed for the deferred payment ratio.

- H2a: Acquirer financial constraints increase the **propensity of using earnout** as part of the M&A payment structure.
- H2b: Acquirer financial constraints increase **the deferred payment ratio**.

2.3.3 Moral Hazard Argument

Another feature of EOs is their ability to mitigate moral hazard concerns. As put forward by Cain et al. (2011), the principal (i.e., the bidder) and the agent (i.e., the target) will gain alignment if the target is properly incentivised to achieve the pre-determined goals. In addition to this premise, the moral hazard theory predicts that incremental benefits (proportional to the level of effort exerted by the target) should be associated with staying ex-post with the combined entity. Indeed, the payoff must meet the target's effort of providing expertise, being exposed to the acquiring company measuring their performance, and the potential disagreement that might occur at the end.

Lukas et al. (2012) develop a theoretical option pricing approach to EO. In this setup, a larger uncertainty of the target's cash flow increases the earnout ratio and the premium paid to the targets. Since our study focuses on majority stakes where the acquired company's operations will be fully absorbed by the acquiring firm and lead to a significant change in their operational setting, the target's cash flow uncertainty will be sensitive to both the acquirer's and the target's financial constraints. They theorise that an increase in target's cash-flows will lead to an increase in the probability that the earnout share will be paid to the acquired firm. As a consequence, it will decrease the cooperation level of the target and by default the potential synergies. To counter this problem, the acquirer must increase the premium paid to these targets. Their model is based on the premise that target efforts cannot be directly observable or fixed by a contract (i.e. agency issue). Therefore, an acquiring firm, seeking to protect itself from uncertainty risk, must suggest a contract with an optimal level of deferred payment ratio and premium to keep target's cooperation level and reduce adverse selection seamlessly.

Empirically, Kohers and Ang (2000) and Barbopoulos and Adra (2016) test these predictions and find that earnout contract lead to targets receiving a larger premium. Additionally, Barbopoulos and Adra (2016) also argue that a larger deferred payment and a longer earnout period [14] are associated with larger premiums as target managers must be compensated proportionally for the time they will wait and the slice of payment they will forgo to reduce the information asymmetry (Lukas et al., 2012). Nonetheless, successfully achieving their goals ultimately allows them to share any upside if the synergistic gains are captured. The two empirical studies do not take into consideration the levels of constraints of the acquirer. Indeed, if bidders are financially constrained, their operational and business environment is riskier. If larger uncertainties on future cash flows increase the effort exerted by the target's managerial team to reach its goal [15]

[14] Period during which the target's performance is measured before the subsequent payments are made.

[15] There are differences between the types of performance goals the targets need to reach. They can be milestones

- especially considering the acquired firm is fully absorbed -, we hypothesize the following:

- H3a: Ceteris paribus, **constrained acquirers** engaged in an **earnout** will pay a **larger premium to targets**.
- H3b: Ceteris paribus, **constrained acquirers** engaged in an earnout will pay a **larger premium** to targets that have a **larger part of their payment contingent on their performance**.

3 Empirical Design

3.1 Proxy Selection for Financial Constraints

This paper aims to assess how bidder and target constraints determine the design of earnout contracts. Therefore, we must find appropriate proxies of financial constraints for both parties to test our hypotheses. While many indices gauging financial constraints were used in the M&A literature, we limit our study to two of the main ones. Following Liao (2014), we use the two metrics developed by Hadlock and Pierce (2010). The first includes size and age and is the most recommended by the authors as they consider it the least endogenous approximation of financial constraints. The second one includes the firm's size, age, leverage and operating cash (more detailed formulas can be found in the appendix).

As assessed in section 2.1, other indices use accounting metrics such as sales growth (WW index) or dividend payout (KZ index) to evaluate financial constraints. However, since our targets are mostly privately held, we limit our analysis to the widely used HP1 and HP2 as they still provide a valuable proxy for measuring external financing constraints [16]. Another concern is that these indices also measure the degree of information asymmetry these firms face in a M&A setting and do not capture the particular channel of financial constraints. Nevertheless, as information asymmetry creates uncertainty for both parties engaging in a M&A deal, it similarly generates obstacles for these firms to access external financing. Since Leland and Pyle (1977)'s

in the form of product release or patents for example. They can also be goals pertaining to sales level or EBITDA. The rest of the payment can be received as an all or nothing or proportional to the level of attainment of the final objective. The heterogeneity in these features are not considered here.

[16] On one hand, KZ index is usually more focused on internal financial constraints and yields different profiles of financially constrained bidders and targets as showcased in Khatami et al. (2015); Almeida et al. (2004); Farre-Mensa and Ljungqvist (2016). On the other hand, WW index is highly correlated with the Hadlock and Pierce (2010) indices.

seminal paper on the role of moral hazard in hindering information transfer between borrowers and lenders, other studies have examined the relationship between the degree of information asymmetry and access to credit. In this vein, Petersen and Rajan (1994) find that lending relationships can increase the availability of financing for small businesses. Moro et al. (2015) find that if borrowers transfer a more significant and superior amount of information on time to lenders, the credit amount significantly increases. Hence, our measures of financial constraints are also correlated with information asymmetry that limits the access to credit of these firms. Guariglia (2008) also use size and age as a proxy for external financial constraints (alternatively described as the difficulty to access external financing) and finds support that the I-CF relationship is stronger for firms with large external financing constraints.

When it comes to the distribution of the HP1 and HP2 indices, they are, on average, negative. By construction, the larger they are (or, the more positive they become), the more significant the firm's financial constraints. We compute them one year before the deal is announced using the financial statements disclosed a year before the deal is announced. We choose this period since most deals are already negotiated before they are announced, and we want to capture their financial situation at this particular phase. We will use both the continuous and dummy alternatives of the computed indices. This choice, as argued by Williamson and Yang (2021), allows us to have a continuous measure of constraints as most firms fall between been extremely constrained and unconstrained. In order to calculate the dummy variable, we give the value of 1 to the acquirers in the top 2 deciles of the distribution and 0 otherwise. The initial choice of cut-off is the most widely used in the literature (Liao, 2014; Bates et al., 2018). The size and age index will be referred to as HP1, and the index complemented with leverage and operating cash ratio is referred to as HP2.

3.2 Model Structure

To answer our first set of hypotheses, we will build a model with a binary dependent variable that represents the choice of engaging in an earnout. This first model will be a logistic regression where we test the likelihood of earnout use when one or both parties are financially constrained. In addition to our main independent variables, we will include a battery of control variables that were found to have a significant impact on the propensity of EO use.

The next specification will include our first dependent variable of interest that is the deferred payment ratio (DPR). It is computed as the maximum earnout value divided by the total deal value and corresponds to the part of the payment that will be entirely contingent on the perfor-

mance of the target. We consider that non-earnout deals do not have a share of the payment that is contingent. Consequently, the deferred payment ratio for such deals will take the value of 0. The first equations in our model will test the target and bidder financial constraints separately and their interaction as a continuous variable (Equation 1). Similarly, they will be tested separately as a dummy variable. Next, a dichotomous regressor will be created that takes the value of 1 if both are ranked as constrained and 0 otherwise.

$$DPR_i = \beta_0 + \beta_1 \left(\text{Acquirer FC}_i \times \text{Target FC}\right)_i + \beta_2 \text{Acquirer FC}_i + \beta_3 \text{Target FC}_i + \sum_{n=1}^{6} \alpha_n \text{ Control Variables} + \delta \text{ Year FE} + \eta \text{ Industry FE} + \lambda \text{ Target Country FE} + \mu_i \tag{1}$$

In another specification of our main model using DPR as our dependent variable, we will also split the sample of acquisitions into constrained acquirers and less/unconstrained ones. To perform this split, we will use the dividend payout ratio. If the firms paid zero dividend one year before the deal, it is considered constrained, otherwise it is not (Fazzari et al., 1987; Almeida and Campello, 2007). Another variant of this split uses the credit rating of the acquiring firm. If the firm has not received any, we deem it a constrained acquirer, otherwise it is not (Bates et al., 2018).

Next, our second model uses as a dependent variable the premium computed as the deal value divided by the target's positive earnings before tax, depreciation and amortisation (EBITDA). Following Officer (2007) and Barbopoulos and Adra (2016), we only use the deals with positive EBITDA.

$$ln(Premium)_i = \beta_0 + \beta_1 \text{Earnout}_i + \beta_2 \text{Acquirer FC}_i + (\beta_3 \text{Acquirer FC}_i \times \text{Earnout}) + \sum_{n=1}^{6} \alpha_n \text{ Control Variables} + \delta \text{ Year FE} + \eta \text{ Industry FE} + \lambda \text{ Target Country FE} + \mu_i \tag{2}$$

$$ln(Premium)_i = \beta_0 + \beta_1 \text{DPR}_i + \beta_2 \text{Acquirer FC}_i + \beta_3 (\text{Acquirer FC}_i \times \text{DPR}) + \sum_{n=1}^{6} \alpha_n \text{ Control Variables} + \delta \text{ Year FE} + \eta \text{ Industry FE} + \lambda \text{ Target Country FE} + \mu_i \quad (3)$$

It may seem counterintuitive that constrained acquirers will bid for constrained targets or that constrained targets would accept to engage in mergers with constrained bidders. Consequently, it is important to emphasise two main elements. First, the financial constraints measured by our indices are more likely to capture external financing difficulty (Guariglia, 2008). The latter entails that these companies will have difficulties building funds through loans or by going public, offering seasoned equity or accessing lines of credit from banks. However, it does not imply that they are extremely illiquid or out of business. Indeed, other metrics such as interest coverage or altman Z-score would be more appropriate if our purpose was to measure more extreme economic states. Indeed, the features described above define economic distress rather than external financial constraints. Moreover, we only calculate our indices one year before the deal. Financial constraints also have a time-varying dimension that is not taken into consideration in this research [17]. Secondly, the bidders in our sample still have the advantage of being publicly traded. Therefore, they suffer less from the adverse impact of information asymmetry when compared with exactly similar private targets. In reality, since we allow for continuous measures of financial constraints, we note that, on average, bidders are less constrained than the targets they acquire. For privately target firms, the opportunity to be acquired by a larger (relative size in our sample has a median of 0.09, and on average most bidders are larger than the target they acquire) listed entity to cash out or receive a larger deferred premium in the case of an earnout payment can be their only alternative to potential bankruptcy if they cannot finance their growth.

4 Sampling and Descriptive Statistics

[INSERT TABLE 1]

We construct a sample of M&A deals that took place between the 1st of January 2005 and the

[17] We are looking at the level of constraints at the time where the negotiation was most likely taking place.

31st of December 2020. All transactions were retrieved from Refinitiv's deals database. We restricted the sample to the transactions involving a publicly listed acquirer and target firms incorporated in the United Kingdom, France, Germany, Denmark, Finland and Sweden. To be part of the initial sample, the country of the target and the value of the transaction must be known. The value of the deal must be at least a million dollars (Barbopoulos et al., 2012). We also eliminated spin-offs, buybacks, leverage buyouts, repurchases and recapitalisations. The transaction must be structured as a full merger or an acquisition of a major stake (at least 50% to go from less than 50% to more than 50%) which automatically eliminates acquisitions of partial interest or remaining interest. Lastly, targets and acquirers which are depository institutions, nondepository institutions and security and commodity brokers were dropped as their accounting is very different from more standard business entities. As shown in Table 5.1, after discarding deals with missing acquirer and deal characteristics, we end up with a sample size of 2,677 deals including 629 earnouts that represent 23.5% (Table **??**).

Table 2 shows a continuous use of earnout throughout our sample period that often parallels the level of M&A. The average is 23% which is slightly higher than our initial sample size (15.96 %). The country with the largest share of earnout is Sweden, followed by the United Kingdom. However, it is essential to point out that data availability could have impacted these ratios.

[INSERT TABLE 2]

We present the descriptive statistics in Table 3 where we contrast earnout and non-earnout deals for different types of deal groups [18]. We start by assessing deal characteristics and find that that deal's involving EO are smaller in size than their NEO counterparts at the 1% significance level regardless of the deal or target type which corroborates previous literature. When it comes to the form of payment used, we note that the cash ratio for EO deals is significantly larger than non-earnout deals (Bates et al., 2018; Barbopoulos et al., 2018) except for high-tech targets which can be linked to the highly intangible nature of these companies that may require an additional contingent mechanism in the form of stock payments [19]. In line with Barbopoulos and Adra (2016), we find stock payments to be larger in NEO deals. Likewise, it can be explained by the similarity of stock payment to EO regarding their contingency properties. Finally, the premium paid to EO mergers is larger for all types of deals when we use a more normally distributed measure for premia that is the logged alternative (Barbopoulos and Adra, 2016). In our sample, the average premium paid to EO is 86.90 compared to 39.74 for NEO deals.

[18] Descriptive Statistics for the whole sample are available in the appendix.

[19] It is important to mention that we are comparing the initial payment made to the target (i.e., the non-earnout part of the earnout) to the total deal consideration for the NEO deal.

When it comes to target's characteristics, we find that the majority of targets involved in EOs are unlisted. A similar observation can be made for high-tech targets which is aligned with the assessment of Barbopoulos et al. (2012) and Datar et al. (2001) showing that the share of low-tangibility target is larger in EO deals when compared to NEO deals. Earnout targets also are smaller on average than NEO targets, with medians of 34.47 million vs 4.51 million dollars in non-logged terms, respectively. They are also younger (18.57 vs 28.18) than their NEO counterparts. Earnout targets present larger growth opportunities (proxied by sales growth) than NEO targets. This outcome is significant at least at the 10% level for all types of deals (except domestic deals). Based on the two HP measures, EO targets are more constrained than NEO targets, with an average HP1 for EO (NEO) targets of -3.73 (-4.19) and an average HP2 of -2.73 (-3.14) [20]. The differences in constraints levels are statistically significant at the 1% level and hold through all types of deals, which showcases that the target profiles between NEO and EO deals are systematically different in all the measures we use.

Regarding acquirers, in line with Barbopoulos et al. (2018) and Cain et al. (2011), we find that EO acquirers are smaller in size (medians of 778.55 million dollars vs 169.73 for NEO) and age than their NEO counterparts. Regarding the measures of their financial constraints, bidders in earnout deals are more constrained based on the HP1 and HP2 indices corroborating Bates et al. (2018)'s findings. These differences are also significant at the 1% level through all types of deals. The descriptive statistics also showcase that in both EO and NEO deals, targets are generally more constrained than their acquirers, which is in line with Erel et al. (2015).

We also observe that targets of diversifying deals are more constrained than targets of focused deals but the difference is not statistically significant. We also note that cross-border deals involve significantly less constrained targets than domestic ones. However, unconstrained acquirers are found to be significantly more present in both diversifying and cross-border deals (Jensen and Meckling, 1976; Amihud and Lev, 1981).

Next, based on the target's HP1 and HP2 indices separately, we split the sample into five equal quintiles and perform a comparison between the most constrained and unconstrained quantiles. The results are reported in Table 4. Panel A shows the the split based on acquirers' constraints indices while Panel B presents the targets' split. We note that transactions in which unconstrained targets are involved are larger. They also often receive a larger portion of their payment in cash when compared to constrained targets and have significantly less of the payment deferred to the future. While the HP2 classification provided no significance regarding

[20] In unreported results, we also document that EO targets are less leveraged (0.13) than NEO targets (0.22) and have double (0.16 vs 0.08) their operating cash ratio.

the stock ratio difference between constrained and unconstrained targets, HP1 shows that constrained targets are more paid in stock than their unconstrained counterpart. The two contingency mechanisms, earnout and stock, are used more for constrained targets. We also observe that the constrained targets have significantly larger growth opportunities in our sample which justifies their selection as a potential target. Finally, we find that constrained targets receive significantly larger premiums than unconstrained targets, which is in line with Khatami et al. (2015). The bidders acquiring constrained targets are smaller in size and age and have less operating cash than the acquirers purchasing unconstrained targets.

Using a similar assessment, we divide the sample based on acquirers' constraints and compare the highest to the lowest quantile. By construction in HP2, unconstrained acquirers will have, on average, a significantly bigger cash flow ratio. However, it is not the case for HP1, and we note that unconstrained targets still have larger cash flows compared to their assets even if we only control for age and size. Additionally, we also note that unconstrained acquirers pay their deals signficiantly more in cash and less in stock when compared to constrained bidders which emphasises the idea that constrained acquirers are more careful with their cash reserves. Constrained bidders defer a larger share of the payment to the future. The latter generally acquire targets that are smaller and younger than them but also smaller and younger than the targets acquired by unconstrained acquirers. Targets acquired by constrained targets have significantly more growth opportunities than the ones acquired by unconstrained acquirers. These univariate assessment showcases that constrained acquirers select target more carefully and use contingent form of payment to settle their deals. Last but not least, as in Khatami et al. (2015), from a univariate perspective, we find no significant difference between the premia paid by unconstrained acquirers when compared to constrained ones.

[INSERT TABLE 3]

[INSERT TABLE 4]

[INSERT TABLE 5]

In Table 5, we conducted a univariate analysis of our main dependent variables. Using a similar approach as in Table 4, we split the target and acquirer's constraints into five quintiles and computed the difference between the highest and lowest quintiles for each one of our dependent variables. We perform this HML analysis for each quintile of targets and bidders' constraints, forming a matrix of comparisons.

Our analysis starts by taking the difference of our dependent variables between the most and least constrained groups of targets at different levels of acquirer constraints, starting with the ratio of earnout use computed as the number of earnout deals divided by the total number of deals. We observe that at all quintiles of acquirer's constraints, the ratio of earnout deals is larger for the most constrained targets compared to the least constrained ones. This result is significant for at least a 5% significance level, regardless of which index is used. We note that, on average, the earnout deals are 20.7 % more prevalent when the target is classified as constrained than when it is ranked unconstrained. An assessment of the deferred payment ratio provides results aligned with our initial observations. At all levels of acquirer's constraints, the difference in DPR between the most and least constrained targets is always positive and highly significant. We note that, on average, constrained targets have 8.9% of their payment deferred to the future compared to unconstrained ones. Last, the premium assessment provides consistent results at all levels of the acquirer's constraints. However, We find a positive and significant difference between the premium paid to highly constrained targets and most unconstrained ones only when the acquirer is unconstrained (constrained) using HP2 (HP1). However, the average difference is statistically significant at the 1% level.

We subsequently take the difference of our dependent variables between the most and least constrained groups of acquirers at different levels of target constraints. In this analysis, we find that the difference in earnout use across all levels of target constraints is positive using HP1 (HP2), but we lose significance at the 1st (first and fourth) quintiles of target constraints. Similarly, for DPR, we find that the most constrained acquirers will defer a larger part of the payment to the future at most levels of the target's constraints using HP1 and HP2. These results show that the interaction of both target and acquirer constraints matters and directly impacts the structure of the earnout deal. When it comes to premiums, the results are ambiguous. On average, the most constrained acquirers pay more premiums, but this result is insignificant (for both HP1 and HP2). Inside the HP1 matrix, acquirers pay more premiums when constrained to highly constrained targets. The sign is reversed when they are dealing with less constrained ones. These are, however, marginally significant. These results corroborate Khatami et al. (2015)'s findings. Last, these observations hold when we use quartiles or a 30-40-30 % split.

So far, the descriptive statistics and univariate analysis support our first and second hypotheses. However, we cannot solely lean on this assessment to derive more reliable results. In the next section, we provide the results of the baseline multivariate analysis. Next, we will enhance the model by correcting for potential selection bias arising from endogenously determined earnout deals. We will use a set of matching methods to have a more comparable set of NEO deals. It is especially important as we do not want our results to be driven by a characteristic that is specific to one group or the other. Following Barbopoulos and Adra (2016), we also use a Rosenbaum bounds sensitivity analysis to verify whether the omission of a covariate impacts the likelihood of being treated (being an EO deal) and, by extension, alter our conclusions.

5 Empirical Results

5.1 Baseline results

5.1.1 Earnout Likelihood and Financial Constraints

In this section, we present the results of the baseline models. The first step of this multivariate analysis is to test whether TFC and BFC significantly impact the likelihood of an EO agreement. Therefore, we ran a logistic regression where the choice of earnout is the dependent variable. We control for variables that were found by previous studies to have an impact on EO use. In each of the models, we supplement our equations with the target's country, the target and acquirer's industry and year-fixed effects. The industry is proxied by the 2-digit SIC code of each firm. Table 6 presents the results using the HP1 (Models 1-4) and HP2 (Models 5-8) indices. In Panel A, we use the continuous measure of financial constraints (Williamson and Yang, 2021).

Starting with the target's financial constraints, we find them to significantly increase the propensity to use earnout, which aligns with the adverse selection predictions (H1a). As shown by previous literature, the target's characteristics leading to high levels of uncertainty will increase the propensity of earnout use (Kohers and Ang, 2000; Cain et al., 2011). If targets are experiencing the adverse impact of information asymmetry, accepting an earnout deal can help bridge the valuation gap. If the target is financially constrained due to difficulties accessing external funds, it can end up forgoing projects that would boost its growth. Since their knowledge of these projects is larger than the knowledge held by the acquirer, the target's accepting an earnout is also a way of avoiding disagreement on its value and remaining with the acquiring

firm to achieve its growth opportunities.

In a similar vein, Jansen (2020) who proxies information asymmetry using tangibility measures [21] finds that being a firm with high levels of tangibility decreases the likelihood of using earnout. These results entail that a target firm able to find other sources of funds will not be pressured to accept an earnout to bridge a given valuation gap. Our findings corroborate his conclusions by showing the positive and significant link between target financial constraints and EO use. To control for the target's growth opportunities and due to the scarcity of data, we follow Cain et al. (2011) and Bates et al. (2018) and control for the target industry R&D expenditure to sales and the target industry's average market-to-book ratio.

When it comes to acquirer's financial constraints, they are also found to significantly increase the likelihood of earnout use which is in line with Bates et al. (2018)'s findings (H2a). Last, we find the interaction between both parties' financial constraints to have a significant positive impact on earnout use except when we use HP2 as a continuous variable. This outcome showcases the upper hand of the acquirer in the negotiation of the deal as it attempts to manage its liquidity and the cooperation of the target, as it seeks to reduce disagreement on its value by accepting an earnout to move forward with the deal . Chatterjee and Yan (2008) also finds that acquirers with limited access to external funds are more likely to rely on contingent payments to protect themselves from misvaluation risk. The model we tested also shows that EO agreement are more likely to take place if the bidder is experienced. Finally, paying with stock reduces the likelihood of earnout use since this form of payment has also contingency features of its own. This finding demonstrates that the protective properties of EOs are more useful when the payment is cash (Bates et al., 2018).

In Panel B of Table 6, we give the top 2 deciles in our index distribution (most constrained) the value of 1 and zero otherwise to perform the same assessment but with dummy variables. Additionally, following Hubbard and Palia (1999), we give the dummy variable "Both Constrained" the value of 1 if both the target and the acquirer are ranked as constrained (i.e., within the top 20% of their respective distributions). Our results are aligned with the conclusions we derived from our analysis that uses the continuous version of constraint indices. If an acquirer or a target are classified in the most constrained category, they positively increase the propensity of using earnout. When they are measured as separate variables, being ranked in the two most constrained deciles increases the odds of earnout use by 113.61% (32.18) for targets and 55.43%

[21] Tangibility has been found to be a determinant of access to loans and to play a "credit multiplier role" (Kiyotaki and Moore, 1997; Almeida and Campello, 2007). Consequently, firms with low tangibility will also find hurdles in accessing external financing opportunities.

(94.84) for acquirers using the HP1 (HP2) measure. When both are constrained, the odds of having an earnout deal are 2.20 times and 2.08 times higher if we use HP1 and HP2, respectively. These findings give economic and statistical support for hypotheses H1a, H1c and H2a. The second part of these hypotheses looks at the deferred payment ratio.

[INSERT TABLE 6]

5.1.2 Deferred Payment Ratio

This section will delve into the baseline results, where the dependent variable is the deferred payment ratio. Our sample includes both earnout and non-earnout deals. For NEO deals, we consider the deferred payment to be equal to 0 as the entirety of the payment is made upfront. As determined earlier, we posit that the impact of targets' financial constraints will increase the deferred payment ratio. The uncertainty created by their financial constraints will drive the acquirer to increase the level of risk shared by the acquired party. Increasing the deferred payment ratio entails that the contingency part increases as the uncertainty of the target's future cash flow increases (Cain et al., 2011; Lukas et al., 2012; Barbopoulos and Adra, 2016).

While we previously established that accepting the earnout payment for these targets allows them to bridge the valuation gap, we have also hypothesised that their low bargaining power in this scenario will be more advantageous to the acquirer, particularly if these targets are financially constrained. Lukas et al. (2012) also advance in their theoretical model that the higher the riskiness of the target cash flows, the larger is the deferred payment ratio. As a consequence, we expect the deferred payment to increase with TFC. In addition to finding support for these predictions in our univariate analysis, we find economic and statistical support in a multivariate setting where we control for a battery of control variables and fixed effects. The results using the continuous measure of constraints are presented in Panel A of Table 7. We start by assessing the impact of each party financial constraints separately. We notably find that a one standard deviation increase in the acquirer HP1 index (HP2 index) is linked to a 1.39% (1.55 %) increase in the deferred payment ratio. This percentage increase is equivalent to a deferred amount of 10.17 (11.36) million dollars for the average transaction size and 2 (2.26) million dollars for the average transaction size in which an earnout is included. Regarding the target's constraint, their impact is slightly larger than acquirer constraints. With the HP1 measure (HP2), a standard deviation increase is met with a 2.0% (1.6 %) increase in DPR.

The findings give support to our H1b and H2b hypotheses. Including non-linear relationships

in the model by adding the interaction of acquirer and target financial constraints, we find that the individual impact of each party's constraints increases DPR and the interaction is also positive and statistically significant. The last specification includes both types of constraints without interaction. The levels of significance are also high in this setup. These results indicate that the target's characteristics matter in the structure of this contingent payment method and should not be omitted. The interaction of BFC and TFC is also a strong predictor of the share of payment that will be contingent.

A similar analysis is conducted with dummy variables reported in Panel B of Table 7. In this baseline specification, the impact of an acquirer being classified in the most constrained category significantly impacts the deferred payment ratio. Similarly, a target in the top 2 deciles will positively and significantly impact DPR. We also note that the impact of the target's constraints is larger than the acquirer's. When both are ranked as constrained, using HP1 (HP2), the outcome is an 8.8% (5.6%) increase in the contingent slice. It corresponds to an additional 12.65 (8.14) million dollars of deferred payment if we consider earnout deals transaction size. The average size of an earnout target is 66.62 million dollars of total assets. The extra deferred payment it has to forego today is almost 19 % (12.22) of the target's total assets if we consider HP1 (HP2). We can see that the larger both parties' constraints are, the larger and more significant the marginal impact on DPR.

Since our acquirers are all publicly listed companies, we perform an additional assessment using other proxies deemed indicative of financial constraints by previous literature (Almeida and Campello, 2007). Using dividend payout and credit ratings, we classify the acquirers as financially constrained or unconstrained (cf. Empirical Design). We run our models using the target's financial constraints only and find that when the acquirer is classified as constrained, the target's financial constraints' impact is larger and more significant on the DPR. Results of this assessment are shown in Table 8. Using credit rating, we find the target's HP2 and HP1 insignificant at the most common significance levels. Using dividend payout, we find target HP2 to be insignificant as well [22]. However, for acquirers who pay no dividends or have no credit rating, the impact of the target's constraint on DPR is positive and significant at the 1% level. The largest impact is measured with the target's HP1 index. With one standard deviation increase in this variable, we observe a 10.75% increase in DPR when the acquirer is in the sample of firms with no dividend payout a year before the deal was announced. This conclusion provides further evidence that the interaction between both parties' levels of constraint is statistically and significantly relevant to the structure of EOs. It also entails that the acquirer's negotiation power

[22] Target's HP1 has a significant impact when the acquirer is unconstrained. Nonetheless, this impact is almost half the impact of constrained targets (5.4% vs 9.6%) .

is a driver of the deferred payment ratio.

[INSERT TABLE 7]

[INSERT TABLE 8]

5.1.3 Premium and Financial Constraints

In this section, we will assess the impact of financial constraints on the premia paid to targets. The premium is computed as the total transaction cost divided by the target positive earnings before tax and depreciation. The transaction value is a representation of the value agreed upon in the negotiation, mainly based on the potential upside gains the two firms will achieve through this M&A. It also encompasses the contingent slice that is only payable if the pre-determined goals are achieved. For that reason, the premium is also party representative of the incentive for the target to work toward the goal and is a way to mitigate moral hazard ex-post (Cain et al., 2011).

The results of the baseline equation are reported in Table 9. In all specifications, we control for the target's constraints levels. Consistent with Khatami et al. (2015), we highlight two main findings. First, TFC is found to have consistently a positive and significant relationship to premium using both HP1 and HP2. Second, acquirer constraints are reported to have no significant (marginal) relationship to our dependent variable using HP1 (HP2). In addition, we also control for the logarithm of the target's sales, the transaction size, and the target's sales growth two years before the deal takes place, among other critical regressors that were found to impact the takeover premium.

In this baseline model, the interaction between earnout and acquirer constraint indices has a positive and significant relationship to takeover premia when we use the dummy version that gives the value of 1 to the most constrained acquirers. Using HP1 (HP2), we find that highly constrained acquirers engaging in earnout will pay their targets 47% (39%) per cent more premium than less constrained acquirers paying upfront. However, we lose this significance when employing the continuous measure. This finding supports the H3a hypothesis[23]. When testing whether an increase in the contingent slice will have a similar effect on premium [24], the

[23] In unreported results, we find no significant relationship between highly constrained targets engaged in earnout and premium.

[24] We are using the dummy version of the constraint indices when testing DPR. We find similar qualitative results when using the continuous measure

results show no significant relationship between the interaction term and premium. However, following Barbopoulos and Adra (2016), we find that a larger contingent share leads to a larger premium paid to targets. They explain this positive relationship as a reflection of the "acquisition riskiness of success", for which the target must be compensated accordingly.

The results we have shown so far are not based on a sample of comparable deals, so they raise some self-selection concerns. In order to remedy these issues, we will use matching methods and rerun our models to derive more robust results.

[INSERT TABLE 9]

5.2 Self Selection Concerns

5.2.1 Propensity Score Matching

This section will rely on non-parametric modelling to mitigate self-selection concerns. We will investigate the impact of TFC and BFC on the structure of our outcome variables using propensity score matching (PSM). The findings we report in our baseline results show a strong correlation between the two parties' financial constraints and the deferred payment ratio. We also find evidence of a positive and significant relationship between acquirers' constraints and the premia they pay to targets when an EO agreement is used. In this setup, claiming causality becomes difficult since confounding regressors can affect the choice of engaging and structuring EOs and the premium. Moreover, we also established that EO deals are systematically different from NEO deals. To circumvent the effect of this heterogeneity, we use PSM to match EO deals with comparable NEO deals. It is important to emphasise that this approach does not solve all endogeneity issues but helps decrease the bias stemming from self-selection and leads to more robust results.

Many matching algorithms can be used to pair treated and control observations when conducting a propensity score matching exercise, and each of these methods presents trade-offs (Caliendo and Kopeinig, 2008). Consequently, to ensure the robustness of our results, we use several matching algorithms. We start with the most straightforward matching method: the nearest neighbour matching without replacement. If EO choice characterises treated deals, in 1-1 NN, it is matched with a similar untreated deal that will only be used once. Our second approach is to allow replacement and match to multiple neighbours (5 in this setting). While matching with replacement increases bias, it also has the advantage of increasing the quality of

matching (Caliendo and Kopeinig, 2008). For these two matching algorithms, we also impose a calliper of 0.04 to avoid very large propensity score distances. Since we are oversampling (the untreated group is larger than the treated group), we do not worry about over-restraining our model. The third algorithm is coarsened exact matching. This method will create coarsened bins of properties in which each treated observation will fall discretely. Next, untreated observations falling within the same bin will be exactly matched to the treated observations. Last, we also use entropy balancing that gives different weights to observations to force a given variable moment (mean, variance, etc.) to match between treated and control groups.

We start with the DPR specification. We use logistic regression to derive the propensity scores with EO choice (binary choice) as a dependent variable. The covariates we aim to balance in this setup are the share of the consideration paid in equity to the target as in Barbopoulos and Adra (2016) since stock payments have similar contingent properties as an earnout. We balance the proportion of cross-border deals. In order to capture growth opportunities, we also include the target's industry M/B and R&D. In addition, we balance the deals with the largest relative deal sizes in the two groups. One of the variables with the largest imbalance is the presence of unlisted targets, which we also add to our logistic regression. Last, we include target firms' countries to have similar compositions on both sides. The functional form of this regression is in Model 1 of Appendix .15.

Using the four algorithms, we find support for H1b and H2b as reported in Table 10 that uses the continuous version of the constraints indices. In Models 1 (Model 3) of each PSM method, we report the specifications that include both TFC and BFC proxied by HP1 (HP2), and we find similar results to the baseline findings. An increase in the target's financial constraints leads to an increase in the deferred payment ratio when we include comparable deals in the sample to reduce self-selection concerns. Similarly, we find that an increase in the bidder's financial constraints leads to a significant increase in DPR. We also note that in all specifications, including both variables, the impact of TFC is larger than BFC. Last, we also find evidence supporting H1d hypothesising that interaction has a significant positive effect on the structure of the earnout (except for the 1:1 without replacement). In unreported results, we test the same models with dummy variables as proxies and find qualitative support for our findings.

[INSERT TABLE 10]

When testing the premium equations, we use a similar logistic regression but add the target's financial constraints as a continuous variable and balance it between the treated and untreated

groups (Results are reported in Appendix .15). Similar to Khatami et al. (2015), balancing observed targets financial constraints helps in ensuring that they do not drive the model's results. The findings are reported in Table 11 and Table 12. We note that we gain more significance than we did in the baseline results when we use the balanced sample. The interaction between the presence of earnout and BFC is systematically positive and highly significant regardless of whether we are using the dummy or the continuous versions of the indices. Consistent with Barbopoulos and Adra (2016) and the predictions of Lukas et al. (2012)'s model we find that the presence of EO significantly increases the premium paid to the target. Similarly, the higher the deferred payment ratio, the higher the premium to ensure target's cooperation ex post. The effect is further increased if the acquirer is financially constrained as the absorbed target is exposed to the acquirer's business environment and needs to be compensated accordingly if they are able to achieve the pre-determined goals. It is also important to point out that acquirer's constraints alone are found to be negatively related to the premium. However, it is not significant which supports our univariate assessment. Last, to ensure robustness of our results, we ran the same analysis using the Whited and Wu (2006)'s financial constraints index. This change financial constraints proxy does not alter our conclusions.

[INSERT TABLE 11]

In order to gauge to what extent a missing covariate in our balancing will alter our conclusions, we conduct a sensitivity analysis based on Rosenbaum's bounds analysis. Since we cannot balance all potential observables and unobservables in the PSM, this analysis allows us to know how much the chances of being assigned to treatment can be affected by failing to add one of these covariates. It measures the needed bias that ought to be present to change the conclusions we have drawn. The results are reported in Table 13. We note that the premium paid by acquirers in earnout deals is 31.11% higher than non-earnout deals when we use HP1 as a balancing covariate and 27.73% when we use HP2. These estimates are statistically significant at the 1% level and corroborate (Barbopoulos and Adra, 2016)'s findings. In this table, Gamma represents the level of bias needed to change our inferences at different levels of significance. For HP2 (HP1), the gamma cut-off needed to alter our inferences at a 5% is 1.48 (1.31), which entails that a deal has to be 1.48 (1.31) times more likely to be in the treated group due to an unobserved covariate for our conclusions to change. At the 10% level, the gamma cut-off is 1.55 (1.38) for HP2 (HP1). We conclude that a missing covariate is unlikely to significantly alter our conclusions.

6 Conclusion

This paper studies the relationship between target and bidder financial constraints and the structure of earnout payments. By constructing a sample of 2,677 deals involving targets incorporated in the United Kingdom, France, Sweden, Finland, Denmark and Germany, covering a period ranging from 2005 to 2020, we aim to shed light on the role played by financial constraints in determining the choice of an earnout, the size of the earnout payment relative to the transaction and the premium paid to targets. A vibrant branch of the literature has documented the important role played by earnout contracts in mitigating adverse selection and moral hazard concerns. On the bidders' side, by making part of the payment contingent on the target's performance ex-post, they arguably protect themselves from misevaluation and retain the acquired firm's valuable talent during the earnout period. On the targets' side, engaging in an earnout can help them bridge the valuation gap and avoid today's disagreement on their value, especially knowing that they are mostly privately held. As shown by earlier literature, the use of this contingency-based contract enables them to sell out and cash a significant premium later if they achieve their pre-determined goal. Previous studies are built around the premise that EO deals are, first and foremost, to the bidders' advantage. It is a way to hedge against M&A risk and manage their liquidity by deferring a part of the payment to the future. However, the privately held targets' characteristics that determine the choice and terms of earnout contracts have received scant attention.

In this study, we assess external financing constraints, which are the financial hurdles that hinder entities from accessing external funds to invest in their growth opportunities. Indeed, previous literature documents financial constraints as a motive to engage in M&A and to determine other pre-deal decisions, such as the payment method. In this setting, we hypothesise and later find evidence that the target's financial constraints have a positive and significant relationship with the likelihood of including an earnout in the deal. Similarly, we find evidence of a positive association with the deferred payment ratio. In other words, the more constrained the target is, the more likely it is to accept the inclusion of an earnout in the deal and have a more significant part of the payment contingent on its performance. These results show that adverse selection is an essential driver of earnout choice and structure. We posit that the presence of a larger contingent slice payment in the contract when the target is constrained is suggestive of low bargaining power on the acquired firm side. Indeed, small unlisted companies will have a more challenging time accessing external financing, which increases the pressure to sell in an illiquid market for corporate control, eventually leading them to accept such terms. However, we do not test these channels empirically, making them a great avenue for future research.

Corroborating previous studies, we also find that being a constrained bidder increases the propensity of earnout use Chatterjee and Yan (2008); Bates et al. (2018) and the deferred payment ratio. The interaction between both parties' financial constraints has a positive and significant association with the propensity of earnout use and the deferred payment ratio. We posit that a positive interaction coefficient will substantiate the premise that bidders have a larger bargaining power leading the deal toward an earnout and a larger slice of the payment contingent on the target's ex-post performance.

From our European-based sample, we find a positive and significant relationship between earnout choice and relative earnout size and the premia paid to targets. This documented association shows that there is a cost to the bidder for the cooperation of the target. Moreover, we find novel evidence that larger bidder constraints lead to a larger premium when an earnout is involved. This shows that the targets are compensated proportionally to the effort they will make to achieve their goal. To improve our identification strategy and reduce potential selection bias, we use propensity score matching algorithms augmented with a Rosenbaum's bounds analysis to assess the magnitude of bias from randomisation needed to alter our conclusions. We document similar results when we match earnout deals with comparable non-earnout ones.

This paper contributes to the literature assessing earnout financing, which is an increasingly used contracting tool, by shedding light on the role played by financing constraints in structuring this payment. Moreover, the targets involved in such transactions are largely privately held, making their data difficult to access. Since European countries' firms provide audited financial statements, we were able to build a sample to raise testable predictions and gain an understanding of the dynamics in a listed bidder - private target pre-deal negotiations. Last, our research also provided a new framework to test contracting theories such as adverse selection and moral hazard.

Table 1: Sampling

	Sample size	Earnout Deals	% of Earnout Deals
Initial Sample Size	11.946	1,907	15.96%
(-) Missing Acquirer Data	2,857	-	-
(-) Financial Acquirers and Targets	206	-	-
Sample size	8.883	1,416	15.94%
Complete Sample with Target Data	2,677	629	23.5%

This table reports the sampling steps undertaken to reach our final sample. The initial sample was collected by retrieving all transactions Refinitiv's deals database taking place between the 1st of January 2005 to the 31st of December 2020. We also restricted the sample to the transactions involving a publicly listed acquirer and target firms incorporated in the United Kingdom, France, Germany, Denmark, Finland and Sweden. To be part of the initial sample, the country of the target and the value of the transaction must be known. The value of the deal must be at least a million dollars. We also eliminated spin-offs, buybacks, leverage buyouts, repurchases and recapitalisations. The transaction must be structured as a full merger or an acquisition of a major stake. Next, we eliminate targets and acquirers which are depository institutions, nondepository institutions and security and commodity brokers. The final sample include the deals which target's data was collected from their audited financials in other databases such as Pitchbook, CIQ and country's companies registrars. We match the latter to each target using acquirer's and target's names, target's address and target's industry.

Table 2: Earnout Distribution

Panel A: Sample Yearly Distribution				
	Non-Earnout Deals	Earnout Deals	Total	Share of Earnout
2005	176	55	231	24%
2006	186	46	232	20%
2007	227	84	311	27%
2008	134	52	186	28%
2009	83	19	102	19%
2010	74	26	100	26%
2011	96	28	124	23%
2012	103	17	120	14%
2013	111	37	148	25%
2014	134	35	169	21%
2015	176	47	223	21%
2016	148	41	189	22%
2017	121	30	151	20%
2018	116	48	164	29%
2019	92	33	125	26%
2020	71	31	102	30%
Total	2,048	629	2,677	23%

Panel B: Sample Target Country Distribution				
	Non-Earnout Deals	Earnout Deals	Total	Share of Earnout
Denmark	85	29	114	25%
Finland	79	13	92	14%
France	413	43	456	9%
Germany	242	35	277	13%
Sweden	174	83	257	32%
United Kingdom	1,055	426	1,481	29%
Total	2,048	629	2,677	23%

This table reports the yearly and target country's distribution of earnout and non earnout deals. Earnout is a contractual clause between targets and acquirers whereby the target's does not receive the entirety of the payment upfront. One or more parts of the consideration are based on the target achieving pre-determined performance goals.

Table 3: Descriptive Statistics

	N	Targ HP1	Acq. HP1	Targ HP2	Acq HP2	Def. Ratio	Premium *	ln(Premium)*	Cash Ratio	Stock Ratio	Deal Size (ln)	Rel. Size	Tar. Age	Acq. Age	Tar Sales Gr.*
All	2677	-4.08	-4.65	-3.04	-3.84	0.32	50.05	2.54	46.78	15.86	7.65	0.37	25.92	38.79	0.27
Non-Earnout	2048	-4.19	-4.76	-3.14	-3.95	-	39.74	2.48	44.42	18.17	7.77	0.38	28.18	41.72	0.24
Earnout	629	-3.73	-4.29	-2.73	-3.48	0.32	86.90	2.77	54.45	8.33	7.23	0.33	18.57	29.26	0.41
Difference p-value		[.0000]	[.0000]	[.0000]	[.0000]	-	[0.035]	[.0000]	[.0000]	[.0000]	[.0000]	[0.2769]	[.0000]	[.0000]	[.0111]
Cross-Border	1291	-4.19	-4.82	-3.13	-4.04	0.28	58.44	2.61	46.59	11.08	7.84	0.31	28.10	43.23	0.25
Non-Earnout	1078	-4.26	-4.90	-3.20	-4.12	-	47.86	2.56	44.29	11.69	7.90	0.31	29.86	45.57	0.21
Earnout	213	-3.79	-4.39	-2.76	-3.64	0.28	118.51	2.89	58.24	8.03	.49	0.32	19.14	31.42	0.52
Difference p-value		[.0000]	[.0000]	[.0000]	[.0000]	-	[0.051]	[0.003]	[.0000]	[0.080]	[.0000]	[0.88301]	[.0000]	[.0000]	[.0029]
Domestic	1386	-3.99	-4.49	-2.96	-3.65	0.34	42.09	2.48	46.95	20.31	7.47	0.41	23.90	34.65	0.28
Non-Earnout	970	-4.11	-4.59	-3.06	-3.76	-	30.57	2.39	44.56	25.38	7.63	0.45	26.31	37.44	0.27
Earnout	416	-3.70	-4.25	-2.72	-3.40	0.34	71.09	2.71	52.51	8.49	7.09	0.34	18.28	28.15	0.35
Difference p-value		[.0000]	[.0000]	[.0000]	[.0000]	-	[0.1674]	[0.000]	[0.0011]	[.0000]	[.0000]	[0.048]	[.0000]	[.0000]	[.3537]
Diversifying	1189	-4.06	-4.78	-3.02	-3.93	0.32	41.37	2.58	46.18	13.14	7.61	0.33	25.29	42.17	0.25
Non-Earnout	906	-4.14	-4.89	-3.08	-4.05	-	41.92	2.54	43.09	15.16	7.74	0.34	26.95	45.17	0.22
Earnout	283	-3.80	-4.43	-2.82	-3.57	0.32	39.62	2.70	56.10	6.67	7.21	0.30	19.99	32.55	0.39
Difference p-value		[.0000]	[.0000]	[.0000]	[.0000]	-	[0.8878]	[0.068]	[.0000]	[.0000]	[.0000]	[0.5558]	[.0000]	[.0000]	[.0806]
Focused	1488	-4.10	-4.54	-3.07	-3.76	0.32	57.37	2.51	47.25	18.03	7.67	0.40	26.43	36.09	0.28
Non-Earnout	1142	-4.23	-4.65	-3.18	-3.87	-	37.99	2.43	45.48	20.56	7.80	0.41	29.16	38.98	0.25
Earnout	346	-3.68	-4.19	-2.66	-3.42	0.32	134.42	2.83	53.10	9.69	7.24	0.36	17.42	26.57	0.43
Difference p-value		[.0000]	[.0000]	[.0000]	[.0000]	-	[0.015]	[.0000]	[0.0040]	[.0000]	[.0000]	[0.3615]	[.0000]	[.0000]	[.0619]
High-Tech Target	627	-3.71	-4.36	-2.70	-3.64	0.34	64.37	2.69	48.79	15.91	7.46	0.40	17.05	31.28	0.35
Non-Earnout	459	-3.79	-4.44	-2.74	-3.74	-	32.52	2.61	47.42	18.64	7.54	0.38	18.39	33.42	0.29
Earnout	168	-3.50	-4.14	-2.57	-3.36	0.34	161.33	2.95	52.53	8.46	7.25	0.46	13.37	25.43	0.62
Difference p-value		[.0000]	[.0000]	[.0035]	[.0000]	-	[0.0730]	[.0080]	[0.1839]	[.0000]	[.0000]	[0.3577]	[.0000]	[.0002]	[.0408]
Unlisted Target	2006	-3.96	-4.58	-2.88	-3.75	0.32	62.91	2.66	45.21	9.56	7.45	0.31	23.17	36.74	0.25
Non-Earnout	1380	-4.06	-4.71	-2.95	-3.87	-	52.33	2.61	40.95	10.18	7.55	0.30	25.23	40.09	0.20
Earnout	626	-3.73	-4.30	-2.74	-3.49	0.32	87.24	2.77	54.59	8.21	7.23	0.32	18.62	29.34	0.41
Difference p-value		[.0000]	[.0000]	[.0000]	[.0000]	-	[0.2117]	[0.0261]	[.0000]	[0.0840]	[.0000]	[0.5656]	[.0000]	[.0000]	[.0013]

This table reports the average of multiple covariates of interest in this study. The covariates are the target's and acquirer's HP1 index which is a size and age index, the target's and acquirer's HP2 index which uses on top of these two measures leverage and operating cash ratio, the deferred payment ratio computed as the payment contingent on the target's performance divided by the total deal value, the premium computed as the transaction size divided by the target's profit before interest, depreciation and tax as well, the premium logarithmic form, the deal cash ratio computed as the ratio of the consideration paid in cash, the *deal stock ratio* computed as the ratio of the consideration paid in equity, the transaction size which is the logarithmic form of the deal value, the *Relative Size* of the deal computed as the ratio of the deal size and the bidder's total assets, the target and acquirer's ages, and the target's sales growth computed as its change in sales in two years preceding the merger. The first section of the table reports the mean of these variables computed for the whole sample and the earnout and non-earnout samples and also reports the p-value of mean-difference between EO and NEO samples. The rest of the table conducts a similar analysis between these two samples for different category of deals. We focus our scope on cross-border deals that encompass deals taking place between entities in different countries, domestic deals encompassing deals within the same country, diversifying deals that include only deals between entities in different industries, and focused deals that only include deals whithin the same industry, high-tech deals that only include high-tech targets and unlisted deals that only include unlisted targets.

Table 4: Comparisons of Constrained and Unconstrained Targets and Acquirers

Panel A : Acquirer Constraints							
	Acquirer Low	Acquirer High	HP1 Acquirer HML		Acquirer Low	Acquirer High	HP2 Acquirer HML
Cash Ratio (Initial Paymnt.)	48.15	41.99	-6.16^{b}	Cash Ratio (Initial Paymnt.)	49.38	40.87	-8.51^{a}
Stock Ratio (Initial Paymnt.)	10.81	21.94	11.13^{a}	Stock Ratio (Initial Paymnt.)	11.81	23.81	12.00^{a}
Transaction Size (ln)	7.97	7.42	-0.55^{a}	Transaction Size (ln)	8.10	7.23	-0.87^{a}
Relative Size	0.19	0.65	0.46^{a}	Relative Size	0.18	0.90	0.72^{a}
Deferred Ratio	0.04	0.11	0.07^{a}	Deferred Ratio	0.03	0.12	0.09^{a}
Target HP1	-4.57	-3.72	0.85^{a}	Target HP2	-3.51	-2.60	0.91^{a}
Targe Size (ln)	7.84	7.12	-0.72^{a}	Targe Size (ln)	8.02	6.97	-1.05^{a}
Target Age	37.65	17.43	-20.22^{a}	Target Age	39.48	17.15	-22.33^{a}
Target Operating Cash	0.11	0.10	-0.01	Target Operating Cash	0.10	0.01	-0.09
Target Leverage	0.20	0.19	-0.01	Target Leverage	0.21	0.19	-0.02
Target Sales Growth	0.14	0.52	0.38^{a}	Target Sales Growth	0.15	0.45	0.30^{a}
Acquirer HP1	-7.03	-3.36	3.67^{a}	Acquirer HP2	-5.67	-2.66	3.01^{a}
Acquirer Size (ln)	9.33	8.20	-1.13^{a}	Acquirer Size (ln)	9.49	7.77	-1.72^{a}
Acquirer Age	100.23	6.54	-93.69^{a}	Acquirer Age	100.46	10.42	-90.04^{a}
Acquirer Operating Cash	0.12	0.04	-0.08^{a}	Acquirer Operating Cash	0.12	0.01	-0.11^{a}
Acquirer Leverage	0.17	0.14	-0.03^{b}	Acquirer Leverage	0.15	0.19	0.04^{a}
Premium	26.74	28.22	1.48	Premium	27.94	31.41	3.47
Premium (ln)	2.53	2.65	0.12	Premium (ln)	2.53	2.61	0.08

Panel B : Target Constraints							
	Target Low	Target High	HP1 Target HML		Target Low	Target High	HP2 Target HML
Cash Ratio (Initial Paymnt.)	48.72	43.89	-4.83^{c}	Cash Ratio (Initial Paymnt.)	51.15	44.21	-6.94^{b}
Stock Ratio (Initial Paymnt.)	13.39	19.79	6.40^{a}	Stock Ratio (Initial Paymnt.)	16.00	14.79	-1.21^{a}
Transaction Size (ln)	8.11	7.30	-0.81^{a}	Transaction Size (ln)	8.35	7.37	-0.98^{a}
Relative Size	0.31	0.42	0.11^{b}	Relative Size	0.38	0.34	-0.04^{a}
Deferred Ratio	0.03	0.15	0.12^{a}	Deferred Ratio	0.02	0.11	0.09^{a}
Target HP1	-5.92	-3.18	2.74^{a}	Target HP2	-4.52	-1.86	2.66^{a}
Targe Size (ln)	8.15	6.77	-1.38^{a}	Targe Size (ln)	8.45	7.00	-1.45^{a}
Target Age	71.78	5.26	-66.52^{a}	Target Age	71.43	9.61	-61.82^{a}
Target Operating Cash	0.09	0.07	-0.02	Target Operating Cash	0.12	-0.11	-0.23^{a}
Target Leverage	0.22	0.20	-0.02	Target Leverage	0.18	0.45	0.27^{a}
Target Sales Growth	0.10	0.61	0.51^{a}	Target Sales Growth	0.15	0.42	0.27^{a}
Acquirer HP1	-5.27	-4.18	1.09^{a}	Acquirer HP2	-4.49	-3.56	0.93^{a}
Acquirer Size (ln)	9.22	8.33	-0.89^{a}	Acquirer Size (ln)	9.41	8.48	-0.93^{a}
Acquirer Age	55.21	26.69	-28.52^{a}	Acquirer Age	57.09	31.33	-25.76^{a}
Acquirer Operating Cash	0.10	0.07	-0.03^{a}	Acquirer Operating Cash	0.11	0.08	-0.03^{a}
Acquirer Leverage	0.18	0.13	-0.05^{a}	Acquirer Leverage	0.19	0.14	-0.05^{a}
Premium	26.66	43.85	17.19^{a}	Premium	22.84	41.40	18.56^{a}
Premium (ln)	2.45	2.83	0.38^{b}	Premium (ln)	2.38	2.76	0.39^{a}

This table reports the average of multiple covariates of interest in this study. Panel A presents the averages for the most constrained and least constrained acquirers (left hand side uses HP1 and right hand side uses HP2 indices to make a quintile split (5 equal parts)). Panel B presents these averages computed for the most constrained and least constrained targets (LHS uses HP1 and RHS uses HP2 indices to make a quintile split (5 equal parts)). All panels test the significance of the H-L difference. *The first index (HP1)* is a size and age index and *the second (HP2)* uses on top of these two measures leverage and operating cash ratio. Both are derived by Hadlock and Pierce (2010). The covariates included are the deal cash ratio computed as the ratio of the consideration paid in cash, the *deal stock ratio* computed as the ratio of the consideration paid in equity, the transaction size which is the logarithmic form of the deal value, the *Relative Size* of the deal computed as the ratio of the deal size and the bidder's total assets, the deferred payment ratio computed as the payment contingent on the target's performance divided by the total deal value, the target and acquirer's sizes computed as the logarithmic form of the entity's total assets, the target and acquirer's ages, the target and acquirer's operating cash computed as the entity's earnings before depreciation, tax, and interest divided by total assets, the target and acquirer's leverage computed as the entity's long term debt divided by its assets, the target's sales growth computed as its change in sales in two years preceding the merger and the premium computed as the transaction size divided by the target's profit before interest, depreciation and tax as well as its logarithmic form. ^{c},^{b},^{a} show the level of statistical significance at the 10, 5 and 1%. respectively.

Table 5: Comparisons of Constrained and Unconstrained Targets and Acquirers

		Acquirer (HP2)									Acquirer (HP1)								
	Earnout %	L	2	3	4	H	Total	H-L	P-value		Earnout %	L	2	3	4	H	Total	H-L	P-value
Target (HP2)	L	0.050	0.114	0.136	0.145	0.136	0.101	0.086	0.115	Target (HP1)	L	0.093	0.129	0.179	0.133	0.130	0.125	0.037	0.459
	2	0.153	0.157	0.208	0.189	0.283	0.191	0.130	0.048^{b}		2	0.143	0.161	0.149	0.291	0.182	0.178	0.039	0.462
	3	0.152	0.232	0.181	0.321	0.313	0.246	0.161	0.012^{b}		3	0.168	0.160	0.176	0.281	0.362	0.227	0.193	0.003^{a}
	4	0.143	0.317	0.301	0.228	0.430	0.305	0.287	0.000^{a}		4	0.213	0.258	0.333	0.250	0.245	0.262	0.031	0.605
	H	0.177	0.250	0.267	0.347	0.390	0.307	0.212	0.003^{a}		H	0.211	0.427	0.415	0.373	0.414	0.384	0.203	0.006^{a}
	Total	0.119	0.200	0.215	0.260	0.357	0.230	0.239	0.000^{a}		Total	0.148	0.206	0.245	0.276	0.302	0.235	0.154	0.000^{a}
	H-L	0.127	0.136	0.131	0.201	0.253	0.207				H-L	0.117	0.298	0.236	0.241	0.283	0.259		
	P-Value	0.002^{a}	0.015^{b}	0.031^{b}	0.007^{a}	0.021^{b}	0.000^{a}				P-Value	0.018^{b}	0.000^{a}	0.000^{a}	0.000^{a}	0.000^{a}	0.000^{a}		

		Acquirer (HP2)									Acquirer (HP1)								
	DPR	L	2	3	4	H	Total	H-L	P-value		DPR	L	2	3	4	H	Total	H-L	P-value
Target (HP2)	L	0.006	0.023	0.026	0.038	0.032	0.020	0.026	0.008^{a}	Target (HP1)	L	0.019	0.028	0.049	0.035	0.031	0.030	0.011	0.440
	2	0.046	0.043	0.061	0.050	0.063	0.052	0.017	0.402		2	0.037	0.043	0.036	0.059	0.041	0.042	0.004	0.813
	3	0.034	0.067	0.055	0.086	0.091	0.069	0.057	0.011^{b}		3	0.039	0.060	0.059	0.064	0.101	0.064	0.062	0.003^{a}
	4	0.032	0.117	0.093	0.082	0.145	0.103	0.113	0.000^{a}		4	0.068	0.068	0.123	0.092	0.083	0.089	0.015	0.549
	H	0.064	0.075	0.086	0.124	0.148	0.109	0.084	0.012^{b}		H	0.076	0.195	0.148	0.138	0.180	0.155	0.104	0.005^{a}
	Total	0.031	0.059	0.063	0.082	0.117	0.070	0.087	0.000^{a}		Total	0.040	0.068	0.081	0.083	0.107	0.076	0.067	0.000^{a}
	H-L	0.058	0.052	0.060	0.086	0.116	0.089				H-L	0.057	0.167	0.099	0.103	0.149	0.125		
	P-Value	0.000^{a}	0.001^{a}	0.007^{a}	0.008^{a}	0.023^{b}	0.000^{a}				P-Value	0.001^{a}	0.000^{a}	0.000^{a}	0.000^{a}	0.000^{a}	0.000^{a}		

		Acquirer (HP2)									Acquirer (HP1)								
	ln(Premium)	L	2	3	4	H	Total	H-L	P-value		ln(Premium)	L	2	3	4	H	Total	H-L	P-value
Target (HP2)	L	2.287	2.448	2.407	2.455	2.235	2.377	-0.052	0.878	Target (HP1)	L	2.451	2.497	2.314	2.611	2.287	2.453	-0.164	0.441
	2	2.454	2.427	2.195	2.290	2.472	2.366	0.019	0.931		2	2.591	2.486	2.535	2.543	2.297	2.506	-0.293	0.086^{c}
	3	2.605	2.600	2.555	2.340	2.446	2.510	-0.159	0.401		3	2.402	2.467	2.097	2.513	2.699	2.415	0.297	0.141
	4	2.944	2.618	2.669	2.687	2.695	2.709	-0.250	0.187		4	2.640	2.518	2.535	2.668	2.542	2.578	-0.098	0.557
	H	2.948	2.777	2.731	2.736	2.731	2.763	-0.217	0.328		H	2.678	2.716	2.625	2.854	3.071	2.829	0.392	0.092^{c}
	Total	2.531	2.550	2.498	2.525	2.610	2.542	0.079	0.353		Total	2.525	2.521	2.399	2.634	2.648	2.542	0.122	0.136
	H-L	0.662	0.329	0.324	0.281	0.496	0.387				H-L	0.227	0.219	0.312	0.243	0.784	0.376		
	P-Value	0.003^{a}	0.122	0.118	0.122	0.147	0.000^{a}				P-Value	0.303	0.326	0.137	0.244	0.000^{a}	0.000^{a}		

This table reports a univariate analysis where we test the differences between our main dependent variables when the targets and acquirers are at different levels of constraints. To build each of the six matrices, we split targets and acquirers into five equally sized quintiles and distribute them accordingly in each cell of the matrix and measure our variable of interest. The split is based on the HP1 index which is a size and age index and the HP2 index uses on top of these two measures leverage and operating cash ratio. Both are derived by Hadlock and Pierce (2010)the targets and acquirers into quintiles based on both HP1 and HP2 indices. Next, we test, using a Student's T test, whether the difference between the highest and lowest quintile is significant for each line and column. Panel A represents the Earnout % as the percentage of earnout deals in each cell, Panel B reports the DPR which the average deferred payment in each cell, and Panel C shows ln(Premium) which is logarithm of the premium computed as the transaction size divided by the target's profit before interest, depreciation and tax. ^{c},^{b},^{a} show the level of statistical significance at the 10, 5 and 1%. respectively.

Table 6: Financial Constraints and Earnout Choice

Panel A	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Acquirer HP1	0.283***		0.245***	0.795***				
	(0.056)		(0.057)	(0.186)				
Target HP1		0.368***	0.315***	0.992***				
		(0.080)	(0.081)	(0.239)				
Acquirer HP1 x Target HP1				0.137***				
				(0.043)				
Acquirer HP2					0.430***		0.414***	0.581**
					(0.074)		(0.084)	(0.226)
Target HP2						0.254***	0.194**	0.405
						(0.080)	(0.083)	(0.274)
Acquirer HP2 x Target HP1								0.056
								(0.069)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry, Country and Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Num. obs.	2587	2581	2581	2581	2582	2158	2154	2154

Panel B	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Acquirer HP1	0.441***		0.370**					
	(0.146)		(0.148)					
Target HP1		0.759***	0.728***					
		(0.133)	(0.134)					
Acquirer HP2					0.667***		0.655***	
					(0.166)		(0.166)	
Target HP2						0.279*	0.252*	
						(0.150)	(0.151)	
Both Constrained				0.788***				0.731***
				(0.205)				(0.241)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry, Country and Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Num. obs.	2581	2581	2581	2581	2154	2154	2154	2154

This table reports the logistic regression results testing the choice of earnout payment. The dependent variable takes the value of 1 if an earnout is included in the deal and 0 otherwise. Panel A shows the models output when we use constraints indices in their continuous form whereas Panel B reports the results of the specification that uses the dummy version of the indices. The dummy version ranks the target or bidder as highly constrained if they are in the top two deciles of the sample distribution. *The first index (HP1)* is a size and age index and *the second (HP2)* uses on top of these two measures leverage and operating cash ratio. Both are derived by Hadlock and Pierce (2010). All models include a battery of control variables including *Target Industry R&D* computed as the average R&D expenditure of the industry (at the 2-digit SIC code) to Sales, *Target Industry Market-to-Book* computed as the industry's (at the 2-digit SIC code) average market capitalisation to book value of assets, *High-Tech* dummy taking the value of 1 if the target is ranked in the high-tech industry based on its SIC code and 0 otherwise, *Frequent Bidder* dummy taking the value of 1 if the bidder is involved in more than one acquisition in the sample and 0 otherwise, *Relative Size* of the deal computed as the ratio of the deal size and the bidder's total assets, a dummy representing *cross-industry* that takes the value of 1 if the deal involves a bidder and a target with different 2-digit SIC code and 0 otherwise, a variable that represents *cross-border* deals that takes the value of 1 if the deal is between two parties in different countries, the *deal stock ratio* computed as the ratio of the consideration paid in equity and lastly a control variable taking the value of 1 if the target is *unlisted* and 0 otherwise. We also control for year fixed effect, target country fixed effects and target and bidder industry fixed effects. *,**,*** show the level of statistical significance at the 10, 5 and 1%. respectively.

Table 7: Financial Constraints and Deferred Payment Ratio

Panel A	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Acquirer HP1	0.010***				0.036***		0.007***	
	(0.002)				(0.009)		(0.002)	
Target HP1		0.018***			0.051***		0.016***	
		(0.004)			(0.012)		(0.004)	
Acquirer HP1 x Target HP1					0.007***			
					(0.002)			
Acquirer HP2			0.014***			0.032***		0.011***
			(0.003)			(0.006)		(0.003)
Target HP2				0.016***		0.039***		0.013***
				(0.004)		(0.007)		(0.005)
Acquirer HP2 x Target HP2						0.006***		
						(0.001)		
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year, Target Industry & Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.135	0.142	0.137	0.144	0.150	0.152	0.145	0.149
Num. obs.	2609	2603	2604	2177	2603	2173	2603	2173

Panel B	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Acquirer HP1	0.023*		0.015					
	(0.013)		(0.012)					
Target HP1		0.079***	0.078***					
		(0.013)	(0.012)					
Acquirer HP2					0.034***		0.031***	
					(0.008)		(0.008)	
Target HP2						0.027***	0.024***	
						(0.010)	(0.009)	
Both Constrained				0.087***				0.056***
				(0.028)				(0.013)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year, Target Industry & Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.133	0.162	0.163	0.145	0.142	0.140	0.145	0.142
Num. obs.	2603	2603	2603	2603	2173	2173	2173	2173

This table reports the OLS regression results testing the relationship between both parties financial constraints and *the deferred payment ratio*. The dependent variable is computed as the maximum earnout amount payable to the target divided by the total deal value . Panel A shows the models output when we use constraints indices in their continuous form whereas Panel B reports the results of the specification that uses the dummy version of the indices. The dummy version ranks the target or bidder as highly constrained if they are in the top two deciles of the sample distribution. *The first index (HP1)* is a size and age index and *the second (HP2)* uses on top of these two measures leverage and operating cash ratio. Both are derived by Hadlock and Pierce (2010). All models include a battery of control variables including *Target Industry R&D* computed as the average R&D expenditure of the industry (at the 2-digit SIC code) to Sales, *Target Industry Market-to-Book* computed as the industry's (at the 2-digit SIC code) average market capitalisation to book value of assets, *High-Tech* dummy taking the value of 1 if the target is ranked in the high-tech industry based on its SIC code and 0 otherwise, *Frequent Bidder* dummy taking the value of 1 if the bidder is involved in more than one acquisition in the sample and 0 otherwise, *Relative Size* of the deal computed as the ratio of the deal size and the bidder's total assets, *a relative size dummy* that takes the value of 1 if the relative size is higher than the median relative size and 0 otherwise, a dummy representing *cross-industry* that takes the value of 1 if the deal involves a bidder and a target with different 2-digit SIC code and 0 otherwise, a variable that represents *cross-border* deals that takes the value of 1 if the deal is between two parties in different countries, the *deal stock ratio* computed as the ratio of the consideration paid in equity and lastly a control variable taking the value of 1 if the target is *unlisted* and 0 otherwise. We also control for year fixed effect, target country fixed effects and target and bidder industry fixed effects. The errors are robust to heteroskedasticy. All models use clustered standard errors by target 2-digit SIC code. *,**,*** show the level of statistical significance at the 10, 5 and 1%. respectively.

Table 8: Split of Acquirers' Financial Constraints

	Credit Rating		Zero Dividend		Credit Rating		Zero Dividend	
	Uncons. Acq.	Cons. Acq.	Uncons. Acq.	Cons. Acq.	Uncons. Acq.	Cons. Acq.	Uncons. Acq.	Cons. Acq.
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Target HP1					0.037	0.082***	0.056***	0.096***
					(0.029)	(0.012)	(0.015)	(0.014)
Target HP2	−0.005	0.029***	0.006	0.043***				
	(0.022)	(0.009)	(0.015)	(0.011)				
Target Industry R&D	−0.000	0.002***	0.002***	0.001***	0.000	0.002***	0.002***	0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)
Target Industry M/B	−0.001	0.001	−0.001	0.002	0.001	0.001	0.001	0.002
	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)
Relative Size	−0.000	−0.003	0.004	−0.004	0.006	−0.000	0.004	−0.001
	(0.015)	(0.005)	(0.007)	(0.008)	(0.012)	(0.004)	(0.007)	(0.005)
Frequent Bidder	0.005	0.044***	0.042***	0.042***	0.010	0.040***	0.040***	0.039***
	(0.019)	(0.006)	(0.008)	(0.008)	(0.018)	(0.007)	(0.008)	(0.007)
Large Rel. Size	−0.011	0.031***	−0.003	0.038***	−0.014	0.019**	−0.001	0.024**
	(0.010)	(0.010)	(0.009)	(0.013)	(0.013)	(0.008)	(0.009)	(0.009)
Stock Ratio	−0.000	−0.000***	−0.000	−0.001***	−0.000	−0.001***	−0.000	−0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
High-Tech	0.027*	0.014*	0.021*	0.012	0.021**	0.016**	0.020*	0.016*
	(0.015)	(0.007)	(0.011)	(0.008)	(0.008)	(0.008)	(0.011)	(0.008)
Cross-Industry	−0.003	−0.004	−0.002	−0.005	−0.004	−0.003	−0.002	−0.004
	(0.014)	(0.008)	(0.011)	(0.008)	(0.012)	(0.008)	(0.009)	(0.009)
Cross-Border	−0.017	−0.035***	−0.029***	−0.050***	−0.013	−0.042***	−0.032***	−0.057***
	(0.015)	(0.008)	(0.008)	(0.012)	(0.017)	(0.011)	(0.008)	(0.016)
Unlisted	0.034**	0.092***	0.085***	0.086***	0.028***	0.081***	0.085***	0.070***
	(0.014)	(0.009)	(0.011)	(0.008)	(0.010)	(0.008)	(0.011)	(0.006)
Constant	0.031	−0.000	−0.016	0.026	0.023	−0.013	−0.023	0.005
	(0.036)	(0.023)	(0.025)	(0.026)	(0.036)	(0.020)	(0.019)	(0.024)
Year, Target Industry & Country FE	Yes	Yes	Yes	Yes	Yes	Yes		
Adj. R^2	0.000	0.143	0.127	0.151	0.012	0.162	0.133	0.185
Num. obs.	200	1973	987	1186	230	2373	1176	1427

This table reports the OLS regression results testing the relationship between the target's financial constraints and *the deferred payment ratio*. The dependent variable is computed as the maximum earnout amount payable to the target divided by the total deal value . In this setup, we use the dummy version of the indices. The dummy version ranks the target as highly constrained if they are in the top two deciles of the sample distribution. *The first index (HP1)* is a size and age index and *the second (HP2)* uses on top of these two measures leverage and operating cash ratio. Both are derived by Hadlock and Pierce (2010). We split the sample based on acquirer financial constraints that are proxied by credit rating in models 1,2,5 and 6 and by dividend payout in models 3,4,7 and 8. In each model, we report whether target's financial constraints significantly impacts the DPR. All models include a battery of control variables including *Target Industry R&D* computed as the average R&D expenditure of the industry (at the 2-digit SIC code) to Sales, *Target Industry Market-to-Book* computed as the industry's (at the 2-digit SIC code) average market capitalisation to book value of assets, *High-Tech* dummy taking the value of 1 if the target is ranked in the high-tech industry based on its SIC code and 0 otherwise, *Frequent Bidder* dummy taking the value of 1 if the bidder is involved in more than one acquisition in the sample and 0 otherwise, *Relative Size* of the deal computed as the ratio of the deal size and the bidder's total assets, *a relative size dummy* that takes the value of 1 if the relative size is higher than the median relative size and 0 otherwise, a dummy representing *cross-industry* that takes the value of 1 if the deal involves a bidder and a target with different 2-digit SIC code and 0 otherwise, a variable that represents *cross-border* deals that takes the value of 1 if the deal is between two parties in different countries, the *deal stock ratio* computed as the ratio of the consideration paid in equity and lastly a control variable taking the value of 1 if the target is *unlisted* and 0 otherwise. We also control for year fixed effect, target country fixed effects and target and bidder industry fixed effects. The errors are robust to heteroskedasticy. All models use clustered standard errors by target 2-digit SIC code. *,**,*** show the level of statistical significance at the 10, 5 and 1%. respectively.

Table 9: Financial Constraints and Premium

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Acquirer HP1 (C)	0.025					
	(0.022)					
Acquirer HP2 (C)		0.022				
		(0.027)				
Acquirer HP1 (D)			−0.011		0.070	
			(0.095)		(0.098)	
Acquirer HP1 (D)				0.024		0.083
				(0.088)		(0.085)
Earnout	0.500**	0.392	0.105	0.118		
	(0.221)	(0.241)	(0.081)	(0.078)		
DPR					0.578***	0.544***
					(0.151)	(0.140)
Acquirer HP1 (C) x Earnout	0.064					
	(0.049)					
Acquirer HP2 (C) x Earnout		0.047				
		(0.069)				
Acquirer HP1 (D) x Earnout			0.385**			
			(0.167)			
Acquirer HP2 (D) x Earnout				0.327**		
				(0.124)		
Acquirer HP1 (D) x DPR					0.092	
					(0.422)	
Acquirer HP2 (D) x DPR						0.365
						(0.333)
Target HP1 (C)	0.083**					
	(0.033)					
Target HP2 (C)		0.218***				
		(0.043)				
Target HP1 (D)				0.315***		0.310***
				(0.072)		(0.072)
Target HP2 (D)			0.281***		0.271***	
			(0.074)		(0.076)	
Year, Target Industry & Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.185	0.207	0.188	0.191	0.186	0.190
Num. obs.	1393	1368	1393	1368	1393	1368

This table reports the OLS regression results testing the relationship between the target's financial constraints and *the premium*. The dependent variable is computed as deal value divided by the target's positive profit before interest, depreciation and tax. In models 1 and 4, we use the continuous version of the indices. In these specifications, we test the interaction between acquirer's financial constraints and earnout choice on the premium. In model 2, 3, 5 and 6, we use the dummy version. In the second and third specifications, we test the interaction between the acquirer's financial constraints and the choice of earnout. In the 5th and 6th models, we test the interaction with the deferred payment ratio. The dummy version ranks the target and acquirers as highly constrained if they are in the top two deciles of the sample distribution. *The first index (HP1)* is a size and age index and *the second (HP2)* uses on top of these two measures leverage and operating cash ratio. Both are derived by Hadlock and Pierce (2010).All models include a battery of control variables including the *target's financial constraints*, the logarithmic form of *the transaction size*, the logarithmic form of *the target's sales*, a dummy representing *cross-industry* that takes the value of 1 if the deal involves a bidder and a target with different 2-digit SIC code and 0 otherwise, *the target's sales growth* computed as the sales growth in the two years preceding the deal , the *deal stock ratio* computed as the ratio of the consideration paid in equity and lastly a control variable taking the value of 1 if the target is *unlisted* and 0 otherwise. We also control for year fixed effect, target country fixed effects and target and bidder industry fixed effects. The errors are robust to heteroskedasticy. All models use clustered standard errors by target 2-digit SIC code. *,**,*** show the level of statistical significance at the 10, 5 and 1%. respectively.

Table 10: Financial Constraints and Deferred Payment Ratio - PSM

	1:1 without Replacement				1:5 with Replacement			
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
Acquirer HP1	0.013***	0.062***			0.013***	0.055***		
	(0.003)	(0.015)			(0.002)	(0.012)		
Target HP1	0.047***	0.106***			0.036***	0.088***		
	(0.008)	(0.022)			(0.007)	(0.018)		
Acquirer HP1 x Target HP1		0.012***				0.010***		
		(0.004)				(0.003)		
Acquirer HP2			0.025***	0.047**			0.020***	0.043***
			(0.006)	(0.018)			(0.005)	(0.007)
Target HP2			0.032***	0.060***			0.027***	0.056***
			(0.009)	(0.016)			(0.007)	(0.009)
Acquirer HP2 x Target HP2				0.007				0.007***
				(0.005)				(0.001)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year, Target Industry & Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.065	0.069	0.056	0.056	0.112	0.118	0.103	0.106
Num. obs.	1202	1202	948	948	1622	1622	1305	1305

	Coarsened Exact Matching				Entropy Balancing			
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
Acquirer HP1	0.009***	0.055***					0.014***	0.059***
	(0.003)	(0.014)					(0.003)	(0.011)
Target HP1	0.031***	0.087***					0.037***	0.092***
	(0.007)	(0.021)					(0.008)	(0.017)
Acquirer HP1 x Target HP1		0.011***						0.011***
		(0.003)						(0.002)
Acquirer HP2			0.013**	0.030***	0.022***	0.040***		
			(0.005)	(0.010)	(0.006)	(0.012)		
Target HP2			0.023***	0.044***	0.033***	0.055***		
			(0.006)	(0.010)	(0.009)	(0.011)		
Acquirer HP2 x Target HP2				0.005**		0.006**		
				(0.002)		(0.002)		
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year, Target Industry & Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.121	0.128	0.108	0.109	0.070	0.071	0.078	0.083
Num. obs.	1500	1500	1171	1171	2144	2144	2169	2169

This table reports the OLS regression results testing the relationship between both parties financial constraints and *the deferred payment ratio.* The dependent variable is computed as the maximum earnout amount payable to the target divided by the total deal value .*The first index (HP1)* is a size and age index and *the second (HP2)* uses on top of these two measures leverage and operating cash ratio. Both are derived by Hadlock and Pierce (2010). The samples used to run these models include earnout deals and a matched samples of non earnout deals. Panel A presents the results when we use 1:1 propensity score matching without replacement and 1:5 with replacement as algorithms to find the matched sample of untreated observations. Panel B presents the results when Coarsened Exact Matching and Entropy Matching are used. All models include a battery of control variables including *Target Industry R&D* computed as the average R&D expenditure of the industry (at the 2-digit SIC code) to Sales, *Target Industry Market-to-Book* computed as the industry's (at the 2-digit SIC code) average market capitalisation to book value of assets, *High-Tech* dummy taking the value of 1 if the target is ranked in the high-tech industry based on its SIC code and 0 otherwise, *Frequent Bidder* dummy taking the value of 1 if the bidder is involved in more than one acquisition in the sample and 0 otherwise, *Relative Size* of the deal computed as the ratio of the deal size and the bidder's total assets, *a relative size dummy* that takes the value of 1 if the relative size is higher than the median relative size and 0 otherwise, a dummy representing *cross-industry* that takes the value of 1 if the deal involves a bidder and a target with different 2-digit SIC code and 0 otherwise, a variable that represents *cross-border* deals that takes the value of 1 if the deal is between two parties in different countries, the *deal stock ratio* computed as the ratio of the consideration paid in equity and lastly a control variable taking the value of 1 if the target is *unlisted* and 0 otherwise. We also control for year fixed effect, target country fixed effects and target and bidder industry fixed effects. The errors are robust to heteroskedasticy. All models use clustered standard errors by target 2-digit SIC code. *,**,*** show the level of statistical significance at the 10, 5 and 1%. respectively.

Table 11: Financial Constraints and Premium - PSM

Panel A	1:1 without Replacement			1:5 with Replacement			CEM		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Acquirer HP1 (C)	−0.085			−0.047			−0.080		
	(0.057)			(0.037)			(0.064)		
Acquirer HP1 (D)		−0.210	0.033		−0.254**	−0.099		−0.078	0.115
		(0.148)	(0.146)		(0.120)	(0.128)		(0.125)	(0.141)
Earnout	1.000***	0.049		0.833***	0.075		1.156***	0.059	
	(0.293)	(0.097)		(0.215)	(0.085)		(0.371)	(0.097)	
DPR			0.457*			0.542***			0.581**
			(0.254)			(0.188)			(0.241)
Acquirer HP1 (C) x Earnout	0.180**			0.130***			0.206***		
	(0.070)			(0.047)			(0.075)		
Acquirer HP1 (D) x Earnout		0.782***			0.784***			0.697***	
		(0.185)			(0.164)			(0.192)	
Acquirer HP1 (D) x DPR			0.801**			1.033***			0.371
			(0.366)			(0.361)			(0.636)
Target HP1 (C)	0.155**			0.083			0.114		
	(0.074)			(0.078)			(0.100)		
Target HP1 (D)		0.534***	0.519***		0.366***	0.347**		0.501***	0.474***
		(0.127)	(0.136)		(0.121)	(0.131)		(0.130)	(0.135)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Year, Target Industry & Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Adj. R^2	0.152	0.189	0.176	0.142	0.167	0.158	0.191	0.224	0.214
Num. obs.	458	458	458	703	703	703	456	456	456

Panel B	1:1 without Replacement			1:5 with Replacement			CEM		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Acquirer HP1 (C)	−0.051			−0.034			−0.170**		
	(0.059)			(0.041)			(0.067)		
Acquirer HP1 (D)		−0.103	−0.043		−0.015	0.019		−0.371***	−0.185
		(0.179)	(0.183)		(0.147)	(0.141)		(0.098)	(0.116)
Earnout	0.810**	0.149		0.773***	0.190**		1.541***	0.015	
	(0.309)	(0.106)		(0.271)	(0.085)		(0.375)	(0.136)	
DPR			0.634***			0.745***			0.433**
			(0.175)			(0.177)			(0.186)
Acquirer HP2 (C) x Earnout	0.157**			0.140**			0.353***		
	(0.074)			(0.062)			(0.094)		
Acquirer HP2 (D) x Earnout		0.356*			0.274			0.945***	
		(0.193)			(0.166)			(0.149)	
Acquirer HP2 (D) x DPR			0.657*			0.581*			1.273***
			(0.379)			(0.318)			(0.466)
Target HP2 (C)	0.278***			0.261***			0.348***		
	(0.099)			(0.066)			(0.126)		
Target HP2 (D)		0.320**	0.323**		0.253**	0.247**		0.164	0.142
		(0.147)	(0.149)		(0.114)	(0.115)		(0.134)	(0.136)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Year, Target Industry & Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Adj. R^2	0.136	0.120	0.126	0.171	0.152	0.158	0.188	0.177	0.165
Num. obs.	454	454	454	692	692	692	470	470	470

This table reports the OLS regression results testing the relationship between the acquirer's financial constraints and *the premium* in the presence of an earnout clause in the deal.. The dependent variable is computed as deal value divided by the target's positive profit before interest, depreciation and tax. Our specifications use earnout deals and a matched sample of non earnout deals using PSM. The three first models use a 1:1 without replacement approach to find the propensity scores and match treated and untreated observations. The three next use a 1:5 matching with replacement and the 3 last use Coarsened Exact Mathing. Panel A presents the results using HP1 and panel B presents the results using HP2. *The first index (HP1)* is a size and age index and *the second (HP2)* uses on top of these two measures leverage and operating cash ratio. Both are derived by Hadlock and Pierce (2010).All models include a battery of control variables including the *target's financial constraints*, the logarithmic form of *the transaction size*, the logarithmic form of *the target's sales*, a dummy representing *cross-industry* that takes the value of 1 if the deal involves a bidder and a target with different 2-digit SIC code and 0 otherwise, *the target's sales growth* computed as the sales growth in the two years preceding the deal , the *deal stock ratio* computed as the ratio of the consideration paid in equity and lastly a control variable taking the value of 1 if the target is *unlisted* and 0 otherwise. We also control for year fixed effect, target country fixed effects and target and bidder industry fixed effects. The errors are robust to heteroskedasticy. All models use clustered standard errors by target 2-digit SIC code. *,**,*** show the level of statistical significance at the 10, 5 and 1%. respectively.

Table 12: Financial Constraints and Premium - Entropy Balancing

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Acquirer HP2 (C)	−0.085					
	(0.051)					
Acquirer HP1 (C)				−0.040		
				(0.035)		
Acquirer HP2 (D)		−0.094	0.037			
		(0.157)	(0.143)			
Acquirer HP1 (D)					−0.200*	0.025
					(0.110)	(0.129)
Earnout	0.722***	0.141*		0.655**	0.107	
	(0.261)	(0.072)		(0.258)	(0.089)	
DPR			0.696***			0.688***
			(0.194)			(0.202)
Acquirer HP2 (C) x Earnout	0.124*					
	(0.064)					
Acquirer HP2 (D) x Earnout		0.420**				
		(0.161)				
Acquirer HP2 (C) x DPR			0.473			
			(0.372)			
Acquirer HP1 (C) x Earnout				0.089*		
				(0.051)		
Acquirer HP1 (D) x Earnout					0.493***	
					(0.153)	
Acquirer HP1 (D) x DPR						0.104
						(0.428)
Target HP2 (C)	0.303***					
	(0.065)					
Target HP1 (C)				0.126**		
				(0.062)		
Target HP2 (D)		0.363***	0.357***			
		(0.096)	(0.095)			
Target HP1 (D)					0.418***	0.385***
					(0.079)	(0.084)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes
Year, Target Industry & Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.209	0.200	0.202	0.187	0.210	0.205
Num. obs.	1376	1376	1376	1388	1388	1388

This table reports the OLS regression results testing the relationship between the acquirer's financial constraints and *the premium* in the presence of an earnout clause in the deal. The dependent variable is computed as deal value divided by the target's positive profit before interest, depreciation and tax. Our specifications use earnout deals and a matched sample of non earnout deals using PSM. All models use entropy balancing. *The first index (HP1)* is a size and age index and *the second (HP2)* uses on top of these two measures leverage and operating cash ratio. Both are derived by Hadlock and Pierce (2010).All models include a battery of control variables including the *target's financial constraints*, the logarithmic form of *the transaction size*, the logarithmic form of *the target's sales*, a dummy representing *cross-industry* that takes the value of 1 if the deal involves a bidder and a target with different 2-digit SIC code and 0 otherwise, *the target's sales growth* computed as the sales growth in the two years preceding the deal , the *deal stock ratio* computed as the ratio of the consideration paid in equity and lastly a control variable taking the value of 1 if the target is *unlisted* and 0 otherwise. We also control for year fixed effect, target country fixed effects and target and bidder industry fixed effects. The errors are robust to heteroskedasticy. All models use clustered standard errors by target 2-digit SIC code. *,**,*** show the level of statistical significance at the 10, 5 and 1%. respectively.

Table 13: Rosenbaum Bounds Analysis

	ln(Premium) - HP1	ln(Premium) - HP2
ATT	37.11%***	27.73%***
Gamma cutoff for a 5% p-value	1.31	1.48
Gamma cutoff for a 10% p-value	1.38	1.55

This table reports the results of the Rosenbaum Bounds Analysis. It is a sensitivity analysis that showcases the magnitude of the bias from perfect randomization that is needed to alter our conclusions at different p-value levels. In our setting, treatment is Gamma represents the odds that a deal receives treatment (in our case be an earnout deal) due to missing a covariate in the propensity score leading to a change in our inferences. The PSM used is a 1:1 without replacement with a caliper of 0.01. We also report the average treatment effect on the treated on premium.

Table .14: Full Sample Descriptive Statistics

	Obs	Mean	Std	1%	25%	50%	75%	99%
Acquirer Characteristics								
Acquirer HP1 Index	2677	-4.65	1.39	-9.34	-5.28	-4.14	-3.64	-3.09
Acquirer HP2 Index	2672	-3.84	1.11	-7.16	-4.38	-3.58	-3.08	-1.90
Acquirer EBITDA/Total Cash	2672	0.09	0.13	-0.63	0.05	0.10	0.15	0.39
Acquirer Age	2677	38.40	34.79	1.00	13.00	25.00	54.00	157.00
Acquirer Leverage	2677	0.15	0.16	0.00	0.01	0.11	0.24	0.68
Acquirer Total Assets (ln)	2677	8.74	1.02	6.45	8.02	8.69	9.46	11.07
Acquirer EBITDA	2672	708.11	2,344.18	-30.85	7.72	48.45	313.82	17,302.08
Target Characteristics								
Target HP1 Index	2671	-4.08	1.12	-8.66	-4.28	-3.72	-3.40	-2.93
Target HP2 Index	2236	-3.04	1.02	-6.48	-3.40	-2.92	-2.53	-0.44
Target EBITDA/Total Cash	2258	0.10	0.33	-1.52	0.02	0.10	0.20	1.43
Target Age	2677	25.66	27.25	1.00	9.00	16.00	30.00	141.00
Target Leverage	2441	0.20	0.27	0.00	0.01	0.09	0.28	1.50
Target Total Assets (ln)	2671	7.45	1.05	5.16	6.72	7.31	8.06	10.37
Target EBITDA	2258	64.72	281.70	-42.01	0.20	2.08	12.01	2,173.81
Target Sales Growth	1814	0.27	1.06	-1.00	-0.02	0.07	0.24	8.56
Deal Characteristics								
Transaction Size (ln)	2677	7.65	0.87	6.13	7.01	7.53	8.16	10.21
Deal Premium	2228	39.76	347.92	0.00	1.53	7.73	15.92	520.75
Deal Premium (ln)	2228	2.03	1.46	0.00	0.93	2.17	2.83	6.26
Cash Ratio (%)	2677	46.78	43.34	0.00	0.00	48.34	100.00	100.00
Stock Ratio (%)	2676	15.86	32.31	0.00	0.00	0.00	8.47	100.00
Relative Size	2677	0.37	0.90	0.00	0.03	0.09	0.29	6.93

Table .15: Financial Constraints and Deferred Payment Ratio

	Model 1	Model 2	Model 3
Large Rel. Size Deals	0.345***	0.345***	0.445***
	(0.126)	(0.128)	(0.141)
Cross-Border	−0.817***	−0.799***	−0.750***
	(0.108)	(0.110)	(0.121)
Unlisted	4.478***	4.351***	4.382***
	(0.584)	(0.584)	(0.586)
Stock Ratio	−0.009***	−0.011***	−0.008***
	(0.002)	(0.002)	(0.003)
Target Country 1	−0.769**	−0.800**	−0.977**
	(0.384)	(0.387)	(0.401)
Target Country 2	−0.887***	−0.870***	−1.179***
	(0.282)	(0.284)	(0.302)
Target Country 3	−0.555*	−0.471	−0.534*
	(0.293)	(0.296)	(0.310)
Target Country 4	0.402	0.425	0.196
	(0.273)	(0.276)	(0.293)
Target Country 5	0.073	−0.022	−0.168
	(0.237)	(0.241)	(0.258)
Target HP1		0.397***	
		(0.068)	
Target HP2			0.250***
			(0.066)
Target Industry M/B	0.027	0.017	0.018
	(0.018)	(0.019)	(0.021)
Target Industry R&D	0.016	0.018*	0.021*
	(0.011)	(0.011)	(0.012)
Constant	−4.888***	−3.147***	−3.874***
	(0.633)	(0.695)	(0.682)
Num. obs.	2668	2662	2228
Specification	DPR	Premium	Premium

This table reports the logistic regression results testing the relationship between the choice of earnout payment that takes the value of 1 if an earnout is included in the deal and 0 otherwise and a set of covariates we deemed important to balance in our PSM exercise. All models yield propensity scores that will be used in different specifications. Model 1 is used for the DPR regressions whereas model 2 and 3 are used in the premium equations. The balanced covariates are the *deal stock ratio* computed as the ratio of the consideration paid in equity, *a relative size dummy* that takes the value of 1 if the relative size is higher than the median relative size and 0 otherwise*Target Industry R&D* computed as the average R&D expenditure of the industry (at the 2-digit SIC code) to Sales, *Target Industry Market-to-Book* computed as the industry's (at the 2-digit SIC code) average market capitalisation to book value of assets, a variable that represents *cross-border* deals that takes the value of 1 if the deal is between two parties in different countries, a regressor taking the value of 1 if the target is *unlisted* and 0 otherwise and a target's countries balancing. *,**,*** show the level of statistical significance at the 10, 5 and 1%. respectively.

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