

The use of escrow contracts in acquisition agreements^{*}

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Abstract:

Many private stand-alone firm and subsidiary acquisition deals make use of escrow contracts, whereby a fraction of the total sale proceeds is placed in an escrow account. These contracts give the bidder the opportunity to lay claim on these funds subsequent to the acquisition if the seller fails to meet specific terms of the acquisition agreement or it is found that negative information about the target was hidden from the bidder. We hypothesize that escrow contracts are an efficient contracting mechanism that helps buyers and sellers to manage acquisition-related transaction risk and mitigate information asymmetry problems. Supporting our hypothesis, we show using hand-collected data that the likelihood an escrow contract is used in a private stand-alone firm or subsidiary acquisition is higher when buyer and seller transaction risk or information asymmetry about the value of the target is larger. Further, we document that escrow contracts enable sellers to obtain a higher sale price and that the use of these contracts positively impacts the extent to which a private firm or subsidiary acquisition results in value creation for the bidder.

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1. Introduction

Most acquisitions made by publicly traded firms consist of acquisitions of stand-alone private firms or subsidiaries of other firms (e.g., Fuller, Netter, and Stegemoller (2002) and Netter, Stegemoller, and Wintoki (2011)). However, there is only limited empirical evidence on acquisitions of unlisted targets in prior work, which restricts our understanding of these types of acquisitions.¹ In this paper, we study escrow contracts. These contracts are employed in a large number of private firm and subsidiary acquisitions, but are not used in acquisitions of publicly traded targets.² When these contracts are used the bidder places a percentage of the total purchase price in an escrow account, which is held for a negotiated period of time after the completion of the acquisition. Bidders can lay claim to the funds in the escrow account to cover their losses if the seller fails to meet specific terms of the acquisition agreement or it is found that negative information about the target was hidden from the bidder prior to the sale. We hypothesize that escrow contracts are an efficient contracting mechanism that allows buyers and sellers to manage acquisition-related transaction risk and mitigate large information asymmetry problems inherent in private firm and subsidiary acquisitions.

For a sample of 569 acquisitions of stand-alone private firms and 374 subsidiary acquisitions over the 1994-2009 period, we hand-collect data on escrow contracts from bidder firms' 8-K, DEF 14A, 10-Q, and 10-K filings. We find that escrow contracts are employed in 52.1% of the acquisitions we study. Also, for the deals with an escrow contract, on average, 12.2% of the sale proceeds are placed in an escrow account and the funds are held in the escrow account for approximately 17.4 months.

We investigate whether the likelihood that an escrow contract is employed in the context of an acquisition is greater when it is more important for the bidder to manage acquisition-related transaction

¹ The existing empirical evidence on acquisitions of stand-alone private or subsidiary targets shows that when public bidders acquire such targets they tend to earn positive abnormal returns (e.g., Chang (1998), Fuller, Netter, and Stegemoller (2002), Faccio, McConnell, and Stolin (2006), and Cooney, Moeller, and Stegemoller (2009)). Also, the price paid for these targets is typically lower than that for similar public targets because of the need to compensate bidders for the larger opacity of these targets and because the sellers of these targets are often financially constrained and these deals provide liquidity for the sellers (Officer (2007)).

² When an escrow contract is included in an acquisition agreement, all shareholders need to individually sign the contract, and also sign a contract with the custodian bank that maintains the escrow account. Hence, escrow contracts are not used in public firm acquisitions due to the large number of shareholders who would need to sign these contracts.

risk. We first compare the use of escrow contracts in subsidiary versus private stand-alone firm acquisitions. In the case of subsidiary acquisitions, a bidder would have legal recourse post-deal closure against both the parent firm that sold the subsidiary and the principal shareholders of the parent firm, while for private firm acquisitions the bidder would only have recourse against the principal shareholders of the target. Consequently, we expect escrow contracts to be used more often in the case of private firm acquisitions than subsidiary acquisitions. Our findings are consistent with this proposition. We document that escrow contracts are used in 65% of private firm acquisitions, but that these contracts are used in only 32% of subsidiary acquisitions. Further, in multivariate tests we show that whether an acquisition is a private firm acquisition positively impacts the likelihood that an escrow contract is used.

When the relative size of the target to the bidder is greater it should be more important for the bidder to manage acquisition-related transaction risk. Thus, in these instances the use of an escrow contract should be more prevalent. Supporting this prediction, we find that the relative size of the target to the bidder has a positive effect on the likelihood that an escrow contract is employed in the context of an acquisition.

Because when there is more information asymmetry about the target's value the bidder faces greater transaction risk, in these instances the benefits to using an escrow contract should be larger. We consider five cases in which information asymmetry about a target's value is likely to be greater. First, we assume there is more information asymmetry about a target's value if it operates in an industry in which earnings volatility is higher. Second, we expect that if there are fewer distinct analysts covering the publicly traded firms in a target's industry this makes it more difficult to value unlisted targets in the industry, which leads to greater information asymmetry about these targets. Third, we consider if the target operates in a different industry than does the bidder, assuming that if so, then information asymmetry problems will be larger. Fourth, we look to a target's total accruals, as measured by the difference between its earnings and its free cash flows and follow prior work (e.g., Dechow and Dichev (2002)) that argues that when total accruals for a firm are greater it can be more difficult for investors to

infer a firm's financial performance and its value from its earnings. Finally, we expect that there is greater information asymmetry about the value of financially distressed targets. Here, we use a target's interest coverage ratio to proxy for the likelihood it is financially distressed. Consistent with expectations, our results show that the likelihood an escrow contract is used in the context of the acquisition of an unlisted target is positively associated with: (1) earnings volatility in the target's industry, (2) whether there is a smaller number of analysts covering the target's industry, (3) if the target operates in a different industry than does the bidder, (4) the target's total accruals, and (5) if a target's interest coverage ratio is low.

If a target has a dominant shareholder, defined as a shareholder that owns at least 20 percent of the target's shares but not all of its shares, an escrow contract can be particularly useful to manage this shareholder's acquisition-related transaction risk. When there is such a contract in place all target shareholders would bear pro rata costs of bidder recourse actions subsequent to an acquisition. In contrast, if such a contract is not in place bidder recourse actions subsequent to an acquisition could result in the target's dominant shareholder being held liable and sued by the bidder. Supporting the proposition that an important motive for escrow contracts is that they help reduce the transaction risk of a target's dominant shareholder, we find that the presence of a target dominant shareholder positively impacts the likelihood that an escrow contract is used.

We also investigate how several other contingent payment mechanisms are associated with the use of an escrow contract. If a bidder agrees to a cap on the amount it could sue the sellers for subsequent to the acquisition, this should make it easier to persuade the sellers to agree to an escrow contract, which suggests a complement relation between the existence of a cap and the use of an escrow contract. Supporting this notion, we show that if the bidder agrees to put a cap on how much future compensation it could seek from the sellers this positively impacts the likelihood an escrow contract is used in conjunction with the acquisition. Prior work on contingent payouts subsequent to acquisitions has studied earnout contracts, which provide for future payments to target firm managers contingent on some observable measure of performance (e.g., Kohers and Ang (2000), Datar, Frankel and Wolfson

(2001), and Cain, Denis, and Denis (2011)). We find that the presence of an escrow contract is not associated with the use of an earnout contract. This potentially reflects the fact that although earnout and escrow contracts both help to mitigate information asymmetry problems between sellers and buyers, these two types of contracts serve different purposes. Whereas earnout contracts are meant to increase the bidder's upside return from an acquisition, escrow contracts protect bidders from downside risk.

We next examine if the use of escrow contracts in private firm and subsidiary acquisitions creates value for the buyer and seller parties. The use of these contracts could reduce bidder costs in three ways. First, the use of an escrow contract should reduce the need for a bidder to incur significant information gathering costs about a target so that a precise estimate for the value of the target can be determined. Second, the use of such a contract will reduce bidder losses in the event that the seller fails to meet specific terms of the acquisition agreement or it hides negative information about the target. Finally, employing an escrow contract can allow a bidder to avoid financial and time costs that would be incurred if the bidder has to sue seller parties subsequent to an acquisition in order to obtain indemnification. We document evidence that supports the notion that the use of escrow contracts lowers bidder due diligence costs in private firm and subsidiary acquisition deals and also reduces bidder concerns about future acquisition-related costs, such as having to sue the seller in the event the seller fails to meet specific terms of the acquisition agreement. Specifically, even after controlling for the endogeneity of having an escrow contract in place, we show that the use of such a contract is associated with approximately a 50% decrease in the length of the negotiation period between the announcement of a preliminary acquisition agreement and the completion of the deal.

Subsequently, we investigate if the reduction in bidder costs resulting from the use of an escrow contract leads to a higher price paid for an unlisted target. Given the evidence in Officer (2007) that in stand-alone private firm and subsidiary acquisitions the target is typically sold at a discount relative to comparable public targets, we examine if the use of an escrow contract reduces this price discount. After controlling for the endogeneity of having an escrow contract in place and potential costs to the sellers if

the bidder ends up receiving some of the funds in the escrow account, we estimate that, on average, the use of an escrow contract is associated with approximately a 6% increase in the total proceeds received by the sellers of an unlisted target. This effect is more pronounced in instances when reductions in bidder costs stemming from the use of an escrow contract should be greater. Specifically, we find that the extent to which the use of escrow contracts reduces the discount in the final price paid for an unlisted target is larger when a target is a private stand-alone firm, the relative size of the target to the bidder is larger, or there is likely more information asymmetry about the target's value.

Lastly, we examine whether reductions in bidder costs in private firm and subsidiary acquisitions resulting from the use of an escrow contract lead to more positive market reactions for bidders to the announcement of an acquisition deal. This would be the case if the cost savings to a bidder from using an escrow contract are larger in magnitude than is the increase in a target's sales price when such a contract is used. We find that bidder acquisition announcement returns are positively associated with whether an escrow contract is used in conjunction with the acquisition of an unlisted target, and also show that this result is robust to controlling for the endogeneity of having an escrow contract in place. Further, we document that this effect is more pronounced when the reduction in bidder costs from using an escrow contract is anticipated to be greater, as proxied for by a target being a stand-alone private firm, a higher value for the relative size of the target to the bidder, or the existence of greater information asymmetry about the value of the target.

Overall, our paper makes several contributions. First, we document widespread use of escrow contracts in private stand-alone firm and subsidiary acquisitions and the results of our tests on the determinants and effects of these contracts shed light on how the participants in these transactions solve contracting problems. This is important because although much is known about acquisitions of publicly traded targets, our understanding of private firm and subsidiary acquisitions is relatively limited. Second, our findings provide new insights on the determinants of the method of payment used in mergers and acquisitions and how it can be a function of buyers and sellers attempting to manage acquisition-related

transaction risk.³ Finally, our paper also contributes to the broader literature on how financial contracting can resolve problems resulting from information asymmetry and moral hazard (e.g., Myers and Majluf, (1984), Grossman and Hart (1986), Hart and Moore (1990), Kaplan and Stromberg (2003), and Cain, Denis and Denis (2011)).

The remainder of the paper is organized as follows. Section 2 reports institutional details on the use of escrow contracts in acquisition agreements and also develops the study's main hypothesis and discusses related empirical predictions. Section 3 discusses our sample and methodology, and provides the results of univariate tests. Section 4 presents our multivariate results. Finally, Section 5 concludes.

2. Institutional details on the use of escrow contracts in acquisition agreements, hypothesis development, and empirical predictions

In this section, we first report institutional details regarding the use of escrow contracts in acquisitions of stand-alone private firms and subsidiary targets and then discuss the study's main hypothesis and related empirical predictions.

2.1 Institutional details on the use of escrow contracts in acquisition agreements

When an escrow contract is included in an acquisition agreement a percentage of the total sale proceeds is placed in an escrow account, which is held for a negotiated period of time after the acquisition. The funds in the escrow account are used to cover bidder losses resulting from seller breaches of representations and warranties made to the bidder in the acquisition agreement. For instance, if after the completion of an acquisition it is found that the seller misstated in its

³ Related work shows that the use of stock to pay for an acquisition can reduce bidder acquisition-related transaction risk resulting from information asymmetry about the value of the target (Hansen (1987) and Officer, Poulsen, and Stegemoller (2009)) and that the use of collars in acquisitions that are at least partly paid for with stock lower target firm transaction risk resulting from volatility in a bidder's stock price (Houston and Ryngaert (1997) and Officer (2004)). As well, the use of earnout contracts help to mitigate bidder transaction risk by providing incentives to a target firm's managers to remain with the firm post-acquisition and maximize acquisition related synergies (Ang and Kohers (2000), Datar, Frankel, and Wolfson (2001), and Cain, Denis and Denis (2011)). Prior work documents that the method of payment is also determined by factors such as taxes (e.g., Kaplan (1989) and Brown and Ryngaert (1991), and Erickson (1998)), a firm's ownership structure (e.g., Amihud, Lev, and Travlos (1990), Martin (1996), and Ghosh and Ruland (1998)), firm financing policies (e.g., Bharadwaj and Shivdasani (2003) and Harford, Klasa, and Walcott (2009)), and bidder firm overvaluation (e.g., Shleifer and Vishny (2003) and Dong, Hirshleifer, Teoh, and Richardson (2006)).

representations and warranties the target's earnings before depreciation and amortization, the bidder firm could lay claim to some of the funds in the escrow account. Likewise, a bidder could make a claim on these funds to address purchase price adjustments, if after the acquisition it is determined that the physical condition and value of certain of the target's assets differ from what was represented by the seller. Another common reason why a bidder might make a claim on escrow account funds is if the target's working capital (i.e., accounts receivable, inventory, and other current assets) was misrepresented by the seller. Also, if the seller misstates what are the target's total liabilities, including liabilities such as environmental liabilities, pending litigation, contractual obligations related to collective bargaining agreements, or unpaid taxes due, the bidder could make a claim on some of the escrow account funds.⁴

When negotiating what is the percentage of the sale proceeds placed in the escrow account and how long the funds are kept in the account, the bidder and seller(s) also decide on an escrow agent and an arbitrator to resolve disputes related to bidder claims on the escrow account funds. The escrow agent is often a division of a bank holding company, such as the escrow services division of J.P. Morgan Chase. The funds placed in the escrow account are held by the escrow agent until the remaining funds are to be disbursed back to the sellers of the target, as stipulated in the escrow contract. In return for being the custodian of the funds, the escrow agent typically receives a fixed fee and earns some interest on the funds with the remainder of the interest earned on the funds going to the sellers of the target.⁵

Even though using an escrow contract can significantly reduce transaction-related litigation after deal completion, disputes may arise as to the use of the escrow account funds. When such disputes occur, parties commonly rely on the provisions of the escrow contract for arbitration. For that purpose, arbitrators used in conjunction with escrow contracts are typically hired from organizations that

⁴An alternative to using an escrow contract to manage acquisition-related transaction risk is to purchase insurance to manage this risk from an insurance brokerage firm such as Marsh & McLennan Company. However, the costs for a bidder to purchase such insurance are usually considerably higher than would be the costs involved in establishing an escrow contract. Moreover, coverage by such insurance policies is usually very limited in scope when compared to uses of escrow funds as written in the escrow contract.

⁵ We note that in cases where the method of payment is a combination of cash and bidder stock, cash is placed in the escrow account. However, if the method of payment consists only of bidder stock then the funds placed in the escrow account are in the form of bidder stock and no interest is earned on these funds.

specialize in alternative dispute regulation (i.e., alternative to litigation in court). Examples of these organizations include the American Arbitration Association and the Judicial Arbitration and Mediation Services. These organizations typically hire arbitrators who are retired judges, attorneys, or business executives with relevant experience and expertise. In return for their services, arbitrators typically earn a fixed fee and/or a variable fee that is a percentage of the dispute value. Arbitrators' decisions relating to bidder claims on escrow account funds can be binding or non-binding, and that is written up in the escrow contract. In the case of non-binding arbitration, the arbitrator's decision could be challenged in court, which would lead to additional legal costs and to information about the dispute becoming public information. Therefore, using binding arbitration is typically the more efficient and commonly observed approach.⁶

2.2 *Hypothesis development and empirical predictions*

By enabling a buyer to lay claim to some of the funds in the escrow account if there are seller breaches of representations and warranties made to the buyer in the acquisition agreement, the use of escrow contracts can facilitate the completion of acquisition deals. This assertion leads to the study's main hypothesis that the use of escrow contracts in private firm and subsidiary acquisitions is an efficient contracting mechanism that allows buyers and sellers to manage acquisition-related transaction risk and overcome information asymmetry problems.

This hypothesis generates a number of empirical predictions. First, the use of escrow contracts should be more prevalent in instances when it is more important for the buyer and seller parties to manage acquisition-related transaction risk. We expect that it is more important for bidders to manage this risk when an acquisition is for a self-standing private firm target rather than a subsidiary target. In the case of private firm acquisitions the bidder would only have recourse against the principal shareholders of the target if there were seller breaches of representations and warranties made to the

⁶ The bidder and seller could also stipulate in the escrow contract that a mediator will be used to help resolve disputes. However, mediators' suggested solutions to a dispute are non-binding, and as such, in most cases using an arbitrator who makes binding decisions is a more efficient way to resolve disputes relating to an escrow contract.

bidder in the acquisition agreement. However, in the case of subsidiary acquisitions, the bidder would have legal recourse post deal closure against both the parent firm that sold the subsidiary and the principal shareholders of the parent. We also anticipate that it is more important for bidders to manage acquisition-related transaction risk when the relative size of the target to the bidder is greater and when there is more information asymmetry about the value of the target. Finally, we expect that because in stock purchase transactions the bidder assumes the target's liabilities, it is more important for the bidder to manage acquisition-related transaction risk when a transaction is a stock purchase transaction rather than an asset purchase transaction.

In cases in which a target has a dominant shareholder, defined as a shareholder who owns at least 20 percent of the target's shares but not all of its shares, it will be important for this shareholder to manage acquisition-related transaction risk. Namely, this shareholder would face the risk that bidder recourse actions subsequent to an acquisition could result in her/him being held liable and personally sued by the bidder.⁷ One way to reduce this risk would be to have an escrow contract in place so that all target shareholders would bear pro rata costs of bidder recourse actions subsequent to an acquisition.

The study's hypothesis also leads to the prediction that in instances when the bidder agrees to a cap on the amount it could sue the sellers for subsequent to the acquisition for a breach of the representations and warranties in the merger agreement, it should be less difficult to persuade the sellers to include an escrow contract in the acquisition agreement. Likewise, our hypothesis generates the prediction that the use of escrow contracts leads to a higher price for the target, even after accounting for the likelihood of a bidder receiving some of the funds in the escrow account. This prediction stems from the premise that these contracts reduce bidder due diligence costs related to an acquisition and bidder costs in the event the seller makes misstatements in its representations and warranties, and as a result, bidders agree to pay a higher sales price if an acquisition deal includes an escrow contract. Finally,

⁷ In such cases, the dominant shareholder could then try to sue the smaller shareholders to recover some of their share of the sale proceeds. However, given that this would be costly, the use of an escrow contract would be a more efficient way for this shareholder to manage acquisition-related transaction risk.

our hypothesis generates the prediction that the use of an escrow contract results in reductions in bidder acquisition-related costs that are larger in magnitude than is the increase in a target's sale price when such a contract is used, and that as a result, the use of these contracts is positively associated with bidder acquisition announcement returns.

3. Sample, methodology, and univariate results

We compile data for this paper from several sources. Our sample of acquisitions includes transactions that meet the following criteria: (i) the acquisition deal is for an unlisted target (either a stand-alone private firm or a subsidiary of another firm), it is announced and completed over the 1994-2009 period, and it is included in the Securities Data Corporation (SDC) U.S. Mergers and Acquisitions database, (ii) the acquirer is a public company that is included on the Compustat and CRSP databases, (iii) the size of the deal is at least 25 million dollars (this ensures that the deals we are looking at are economically important and makes it easier to collect necessary data on escrow contracts from SEC filings), (iv) there is less than 50% pre-acquisition ownership of the target by the bidder, and the bidder acquires full ownership of the target post-acquisition, and (v) the target is included in Pratt's Statistics Database (discussed below) enabling us to collect accounting data on the target. Having imposed these requirements, our sample consists of 943 acquisitions.

We use the Pratt's Statistics database, maintained and distributed by the Business Valuation Resources LLC, as our main source of detailed accounting data about the targets in our sample. We rely on this database for this data because detailed accounting data for most private stand-alone targets and subsidiary targets is not available from the SDC database. The Pratt's Statistics database provides deal-related information for acquisitions in which publicly-traded acquirers purchase private stand-alone private companies or subsidiary targets and for which it is possible through 8-K and DEF14A searches to obtain an income statement for the target and to determine the sale date and the selling price. As this is a new database, not frequently used in prior academic research, we randomly check its quality by comparing data on target accounting characteristics from Pratt's Statistics to data which is hand-collected

from disclosures available from the SEC on EDGAR for 100 observations. We find more than 95% matching data for these observations.

We hand-collect data on escrow contracts through a review of the relevant merger or acquisition agreements in bidders' 8-K, DEF 14A, 10-Q, and 10-K filings. Specifically, we first establish whether an escrow contract is used in the context of an acquisition, and if so, we hand-collect information on the amount of funds placed in the escrow account and the length of time the funds are kept in the account. We also hand-collect from these filings data on the use of caps that limit the amount that a bidder could sue the target for and on the ownership structure of the unlisted target.

Tables 1 to 3 provide descriptive statistics for our sample and compare deals with and without escrow contracts. Panel A of Table 1 reports that 491 out of the 943 (52.1%) acquisition deals in our sample include an escrow contract. For deals with an escrow contract, on average, 12.2% of the deal proceeds are placed in an escrow account, which represents about \$11.7 million dollars. The average length of time that the funds are kept in the escrow account is 17.4 months. Additionally, Panel A of Table 1 compares the escrow contract characteristics of stand-alone private targets and subsidiary targets. Although the dollar amount kept in the escrow account and the length of time the funds are kept in the account are similar across the two types of targets, the percentage of the sale proceeds kept in the account is a bit higher in the case of private targets. Specifically, the mean (median) values for this percentage for private and subsidiary targets are, respectively, 13.0% (9.9%) and 8.9% (7.7%).

Panel A also reports evidence for the deals we study on the discount in the price paid for an unlisted target relative to the prices paid for comparable public targets. To calculate the discount in the price of an unlisted target we use an approach similar to Officer (2007). We match each private firm or subsidiary target to a portfolio of comparable acquisitions of publicly traded targets that are identified from the SDC database. The acquisitions of publicly traded targets are permitted to enter multiple portfolios matched to unlisted targets. The comparable acquisitions of publicly traded targets are for targets in the same two-digit SIC code industry as the unlisted target in our sample for which the deal

value is within 20% of the deal value of the unlisted target. We also require that the comparable transactions are announced within the 36-month window centered on the announcement of the acquisition of the unlisted target. To calculate the unlisted target discount, we use the deal value-to-sales multiple. We do not use the deal value-to-EBITDA multiple because it is negative for 32% of private firm targets and 31% of subsidiary targets in our sample. The discount in the price paid for an unlisted target is calculated as the percent difference between the deal value-to-sales multiple for the unlisted target and the median deal value-to-sales multiple for the portfolio of comparable acquisitions. Thus, the price discount is a negative number if the deal value-to-sales multiple for the unlisted target is less than the median multiple of the matched comparable targets and a positive number if the reverse is the case.⁸

Panel A of Table 1 shows that the average unlisted target price discount for our sample is 24.3% and that the average values for the subsamples consisting of only private stand-alone firm targets and subsidiary targets are 17.1% and 33.3%. These findings are similar to those in Officer (2007). He finds average discounts of 18% and 30% for stand-alone private targets and subsidiary targets when using the deal value-to-sales multiple.⁹ Panel A also shows that the average unlisted target price discount is 19.6% for deals with an escrow contract and 28.9% for deals without such a contract in place. One reason why the discount may be lower for targets with an escrow contract is that because the use of an escrow contract reduces bidder acquisition-related transaction risk, bidders may be willing to increase their offer price when an escrow contract is included within the acquisition agreement. In Table 6 we report the results of tests that examine this issue in a multivariate context after accounting for the endogeneity that an escrow contract is included in an acquisition agreement.

Panel B of Table 1 reports statistics on target firm characteristics for all the deals in our sample, as well as for the subsamples with or without an escrow contract. Targets tend to be smaller for the deals

⁸ Following Officer (2007), we do not calculate a value for the unlisted target price discount for deals in which the price multiple for an unlisted target is more than 100% larger than that of the portfolio of comparable publicly traded targets matched to it.

⁹ The evidence in Officer (2007) suggests that one reason why the average discount in the price paid for subsidiary targets is particularly large is that the parent firm selling a subsidiary often has urgent liquidity needs.

with an escrow contract than without (median deal value of \$68.1 million versus \$80.0 million). Also, targets tend to have a lower return on assets (median values of 0.035 versus 0.040) and a lower interest coverage ratio (median values of 1.93 versus 3.89) in deals that use an escrow contract. To the extent that there is more information asymmetry about the value of smaller targets and targets that are more likely financially distressed, these findings are consistent with the notion that escrow contracts are used to help mitigate information asymmetry between buyers and sellers involved in an acquisition transaction.

Panel A of Table 2 reports information on additional deal characteristics for the acquisitions in our sample and also provides evidence on how these characteristics differ between deals with and without escrow contracts. This panel first documents that 73.7% of the deals we study are stock purchase transactions in which the bidder becomes responsible for the target's liabilities, and that for deals with escrow contracts as compared to deals without these contracts there is a significantly higher fraction of deals that are stock purchase transactions (80.0% versus 66.8%).¹⁰ This result supports the prediction generated from the study's main hypothesis that the use of escrow contracts is more prevalent when a bidder's acquisition-related transaction risk is greater. Providing further evidence consistent with this prediction, Panel A shows that when an escrow contract is used that 75.6% of the deals are for private stand-alone firm targets, but that for deals without an escrow contract that only 43.8% of acquisitions are for these targets.

Panel A of Table 2 also shows that in 36.7% of the deals we study the target has a dominant shareholder, defined as a shareholder who owns at least 20% of the target's stock, but not all of its stock.¹¹ For deals that use escrow contracts the fraction of the deals with a dominant target shareholder is markedly higher than it is for the deals that do not use an escrow contract (48.3% versus 24.1%). This finding is consistent with the notion that in targets with a dominant shareholder an escrow contract can

¹⁰ We note that stock purchase transactions differ from stock-for-stock mergers. While the latter represent statutory mergers where the means of payment is stock, the former represents the purchase of a company by means of purchasing its authorized and issued stock with either cash or stock of the acquirer. Unlike stock purchases, asset purchases represent agreements where the target sells certain assets in exchange for either cash or stock of the bidder.

¹¹ Although not tabulated, we find that in 48.5% of acquisitions of stand-alone private firms the target has a dominant shareholder and that in 18.7% of subsidiary acquisitions there is such a target shareholder.

be particularly useful to manage this shareholder's acquisition-related transaction risk. Panel A further documents that in 73.7% of the deals we study, the bidder agrees to a cap on the dollar amount that the sellers of the target could be sued for subsequent to the acquisition. This panel also shows that the fraction of deals that use caps is significantly greater among the deals with an escrow contract than the deals without such a contract (85.3% versus 61.1%). This result supports the prediction that if a bidder agrees to a cap this should make it easier to persuade the sellers of the target to use an escrow contract.

Panel A shows that 12.2% of the deals in our sample use an earnout contract. However, there is no significant difference with respect to the use of an earnout contract between deals with or without an escrow contract. This finding is consistent with the conjecture that although earnout and escrow contracts both help to reduce contracting problems resulting from information asymmetry between buyers and sellers in acquisition deals, these two types of contracts serve different functions. Earnout contracts increase the bidder's upside return from an acquisition through the use of contingent future payments to target firm managers that provide them with incentives to remain with the firm post-acquisition and maximize acquisition-related synergies. On the other hand, escrow contracts protect bidders from downside risk resulting from seller breaches of representations and warranties made to the bidder in the acquisition agreement.

As well, Panel A reports evidence on the fraction of deals in which the method of payment is only stock or only cash. It could be the case that when there is significant information asymmetry about the value of a target that this would increase the likelihood that both an escrow contract is used and that stock is the method of payment because this form of payment can mitigate contracting problems resulting from information asymmetry about the value of the target (e.g. Hansen (1987) and Officer, Poulsen and Stegemoller (2009)). On the other hand, given that in most cases the funds in the escrow account are cash this could increase the probability that when an escrow contract is used the method of payment is only cash rather than only stock. Panel A shows that in deals with an escrow contract that the fraction of deals in which the method of payment is only stock is slightly higher than is the case in deals

that do not use an escrow contract (11.2% versus 6.6%). Also, this panel documents that when an escrow contract is used that the percentage of deals in which the method of payment is only cash is a bit lower than is the case when an escrow contract is not used (31.8% versus 42.0%). Finally, Panel A documents that in 61.8% of the deals in our sample the bidder and target operate in different industries (industry is defined at the 4-digit SIC level). However, the percentage of deals in which the bidder and target operate in different industries does not differ between deals that use an escrow contract and those that do not (62.3% versus 61.3%).

Panel B of Table 2 compares the usage of an escrow contract between deals with different characteristics. Consistent with the Panel A results, this panel shows that the percentage of deals using an escrow contract is higher for deals that are stock purchase transactions rather than asset sales (60.5% versus 43.5%), deals that are the acquisition of a private stand-alone firm rather than a subsidiary target (65.2% versus 32.1%), deals in which there is a dominant target shareholder (68.5% versus 42.5%), deals using a liability cap (60.3% versus 29.1%), or deals in which the method of payment consists only of stock (64.7% versus 50.8%). Also, Panel B documents that the percentage of deals using an escrow contract is lower when the method of payment is only cash (45.1% versus 56.1%).

Table 3 reports information on the industry distribution across the Fama-French 49 industries (Fama and French (1992)) of the acquirer firms for the deals in our sample that use an escrow contract, as well as the industry distribution of the acquirer firms for all the deals in our sample. This table shows that the two distributions are quite similar, except for the computer software industry, where the percentage of acquirers who include an escrow contract in the acquisition agreement is higher than is the percentage of all the acquirers in our sample operating in this industry (19.1% versus 13.9%). Although not tabulated, we document similar results if we define industry by considering a target's industry and also find that the industry distribution of targets closely resembles that of acquirers. Overall, the Table 3 results suggest that our study's findings are unlikely to be driven by a few select industries. Nevertheless, to ensure that this is not the case in our multivariate regressions we include industry fixed effects.

4. Multivariate results

4.1 *The determinants of the use of an escrow contract*

Table 4 reports the marginal effects results from Probit models that examine the determinants of the use of an escrow contract. In these Probit models the dependent variable takes a value of one if an escrow contract is included in the acquisition agreement, and zero otherwise. The first model is estimated using the entire sample of private firm and subsidiary acquisitions, while the second and third models are estimated using only the subsamples consisting of these two types of acquisitions.

Officer (2007) provides evidence that the sellers of unlisted targets are often financially constrained and he shows that the discount in the price paid for these targets relative to public targets is accentuated when credit conditions are tight, as measured by the average spread of commercial and industrial loan rates relative to the federal funds rate.¹² Hence, it is possible that credit market conditions can impact how open are the sellers of unlisted targets to including an escrow contract in the acquisition agreement. To control for this issue and also to more generally control for changes over time in the extent to which the sellers of unlisted targets could be more financially constrained, we include in the Table 4 models as an independent variable the average spread of commercial and industrial loan rates over the federal funds rate during the four quarters prior to the quarter of the deal completion date. We also control for deal value given the Table 1 evidence of a negative correlation between whether an escrow contract is used and target size.¹³ Finally, we control for industry fixed effects and year fixed effects because merger and acquisition activity tends to be clustered over time within particular industry groups (e.g., Mitchell and Mulherin (1996) and Harford (2005)).

¹² See also Lown, Morgan, and Rohatgi (2000), Harford (2005), and Harford, Klasa, and Maxwell (2013) for discussions about why the spread of average commercial and industrial loan rates relative to the federal funds rate is a valid proxy for the extent to which credit market conditions are tightening.

¹³ As discussed earlier, there is not a clear ex-ante prediction for the association between the likelihood that an escrow contract is included in the acquisition agreement and whether the method of payment is only stock versus only cash. Although we do not tabulate the results of these analyses, we tried including dummy variables for whether the method of payment is only cash or only stock in the Table 4 models. Irrespective of whether these variables are included separately or together, the coefficients on these variables are insignificant and the inclusion of these variables in the Table 4 models do not affect any of the other Table 4 results. Also, including these variables in the Table 4 models does not change the results of any of our later analyses that use instrumented values for whether an escrow contract is included in an acquisition agreement.

In subsequent analyses, we use the predicted values from the three models in Table 4 to examine whether the use of an escrow contract is associated with the length of time between the preliminary announcement of an acquisition deal and the completion of the deal, the discount in the price paid for an unlisted target relative to the price paid for similar public targets, and bidder firm acquisition announcement returns. As a result, in the Table 4 models we include two variables used as instruments for the likelihood that an escrow contract is used. The first variable is the percentage of deals for unlisted targets in a target's Fama-French 49 industry that used an escrow contract during the previous year (calculated using data from our sample). Here, we predict that the higher is this percentage the more likely it is that an escrow contract is included in the acquisition agreement. The second variable is an indicator for if during the prior year the bidder paid for an acquisition using a hybrid method of payment, defined by SDC as a mix of cash and securities in the bidder firm. We expect that bidders that previously used a hybrid method of payment to pay for an acquisition are likely to offer more complex types of payment when making an acquisition, such as including a payment that would be placed in an escrow account. Thus, we predict this indicator is positively associated with the likelihood that an escrow contract is included in the acquisition agreement.

The results for the first model in Table 4 provide strong support for the prediction generated from the study's hypothesis that escrow contracts are an efficient contracting mechanism used to reduce buyers' and sellers' acquisition-related transaction risk. Notably, the results from this model show that the likelihood that an escrow contract is used in the context of a given acquisition is higher in instances when it should be more important for buyers and sellers to manage transaction risk. The findings for this model show that if a target is a private firm rather than a subsidiary this increases the likelihood that an escrow contract is used by 22.2%. The results for this model also provide evidence on how the ratio of the size of the target to the bidder impacts the likelihood that an escrow contract is used in an acquisition transaction. Presumably, the larger is the value for this ratio, the more important it should be for a bidder to manage acquisition-related transaction risk. Consistent with this notion, we find that this ratio

positively impacts the probability that an escrow contract is used. However, the economic importance of this result is moderate. An increase from the 25th to the 75th percentile of the ratio of target to bidder firm size would result in a 0.6% higher likelihood that an escrow contract is used.

The first model in Table 4 also shows whether when there is greater information asymmetry about the value of a target, if it is more likely that an escrow contract is included in the acquisition agreement. Here, we use five different measures to proxy for information asymmetry between the bidder and seller about the target's value. Specifically, we consider whether 1) a target operates in an industry in which earnings volatility is higher, 2) the number of distinct analysts covering the publicly traded firms in the target's industry is lower¹⁴, 3) the target operates in a different industry than does the bidder, 4) the target has greater total accruals, as measured by the difference between its earnings and its free cash flows (e.g., Dechow and Dichev (2002))¹⁵, and 5) the target is more likely to be financially distressed, as measured by a lower interest coverage ratio.¹⁶ We find strong evidence supporting the notion that when there is more information asymmetry about the target's value, this increases the likelihood that an escrow contract is used. Specifically, the results for the first model in Table 4 show that this likelihood is

¹⁴ We assume that if there are fewer distinct analysts covering the publicly traded firms in an industry this makes it more difficult to value unlisted targets in the industry, which in turn leads to larger information asymmetry about these targets.

¹⁵ Prior work argues that if a firm has large accruals and it is difficult to map its accruals into its future cash flows then it can be more difficult for investors to infer the firm's financial performance and value from its earnings. In the case of private firm or subsidiary targets, it should be difficult for the bidder to map accruals into future cash flows given that this would require the bidder to study the financial statements of the target over a significant period.

¹⁶ We use a target's interest coverage ratio rather than its debt ratio to proxy for the likelihood that the target is financially distressed because the data provided in Pratt's Statistics database enables to calculate only the former. Further, prior work such as Berens and Cuny (1995) and Andrade and Kaplan (1998) suggests that a firm's interest coverage ratio can more reliably proxy for whether it is financially distressed than its debt ratio. As reported in the legend to Table 1, Panel B, if a target has no interest expense we arbitrarily set its interest expense to \$1000 to calculate a value for the target for the interest coverage ratio. Doing so allows us to avoid dropping observations in which a target has no debt from the Table 4 multivariate analyses and to avoid biasing our sample towards it consisting of targets that are unlikely to be financially distressed. To ensure that doing this does not somehow affect the study's results, we run the following two sets of robustness tests. First, we re-estimate the three models in Table 4 after dropping observations in which a target has no interest expense. All of the independent variables in the Table 4 models with significant coefficients retain their significant coefficients when we re-estimate these three models. Next, using the instrumented values calculated from re-estimating these three models we rerun the second, fourth, and sixth models in Table 5 and Panel A of Tables 6 and 7, which examine after controlling for the endogeneity of having an escrow contract in place the effect of the use of an escrow contract on the time-to-completion of an acquisition deal, the discount in the price paid for an unlisted target, and bidder acquisition announcement returns. In all cases we find that the coefficients on the instrumented escrow indicator variables remain significant. Second, we re-estimate the three models in Table 4 after dropping the interest coverage variable from these models. Here again, we find that this does not affect any of the Table 4 results or the results in the second, fourth, and sixth models in Table 5 and Panel A of Tables 6 and 7.

positively associated with the indicator variables for if earnings volatility in the target's four-digit SIC industry is in the top sample quintile, whether analyst coverage of the publicly traded firms in a target's four-digit SIC industry is not in the top sample quintile, and whether the target operates in a different four-digit SIC industry than does the bidder.¹⁷ Also, we find that the likelihood an escrow contract is used is positively associated with a target's accruals and negatively associated with its interest coverage ratio. These results are for the most part economically important. Specifically, if a target operates in an industry with higher earnings volatility, lower analyst coverage, or its four-digit SIC industry is different than is the bidder's four-digit SIC industry this leads to, respectively, 0.9%, 3.8%, or 1.6% increases in the probability that an escrow contract is used. Likewise, an increase from the 25th to the 75th percentile value of total accruals or the interest coverage ratio would result respectively in 3.7% or -0.2% changes in the probability that an escrow contract is used.

The first model in Table 4 also shows if an acquisition occurs in the context of an asset sale whether this decreases the likelihood that an escrow contract is used. This could potentially be the case because bidders do not assume target liabilities in asset sales, which should reduce bidder transaction risk. Although we find that whether an acquisition occurs in the context of an asset sale is indeed negatively associated with if an escrow contract is used, this association is not statistically significant.

The results for the first model in Table 4 support the prediction that if a target firm has a dominant shareholder, an escrow contract can be particularly useful to manage this shareholder's acquisition-related transaction risk. Specifically, we find that the presence of a dominant target shareholder increases the probability that an escrow contract is used by 16.1%. The results for this model also document how other forms of contingent payments are associated with the use of an escrow contract. We find that if a bidder agrees to a cap on the amount it could sue the target for subsequent to the acquisition this increases the likelihood that an escrow contract is used by 26.7%. This result

¹⁷ For the low analyst coverage indicator variable, we consider whether analyst coverage of a target's industry is in the bottom four quintiles of the distribution of this variable rather than the bottom quintile of this distribution because for 42% of the targets in our sample there are no analysts covering the firms in a target's four-digit SIC industry. This relatively high percentage is in part due to a number of these industries having no firms that are publicly traded.

supports the proposition that if a bidder agrees to such a cap this would make it easier to persuade the sellers to agree to the use of an escrow contract, suggesting a complement relation between the existence of a cap and the use of an escrow contract. However, consistent with the Table 2 univariate findings, we also find that the use of an escrow contract is unrelated to the use of an earnout contract.

The results for the remaining variables in the first model of Table 4 are generally consistent with ex-ante predictions. If there is more information asymmetry about the value of smaller targets then the significant negative coefficient on deal size is additional support for the notion that escrow contracts are used to mitigate information asymmetry problems between buyers and sellers about the value of a target. Also, the positive coefficients on the variable measuring the percentage of deals for unlisted targets in a target’s industry that used an escrow contract during the previous year and the indicator variable for whether during the prior year the bidder used a hybrid method of payment to pay for an acquisition are consistent with these two variables being useful instruments for the likelihood that an escrow contract is included in an acquisition agreement.¹⁸ In Section 4.2 we report the results of diagnostic tests for the suitability of these two instruments, which confirm the validity of these two instruments.

The results for the second model in Table 4, which is estimated on only the subsample consisting of stand-alone private targets, show that except for the deal value variable that all of the variables with significant coefficients in the first model in this table retain significant coefficients. On the other hand, the results for the third model in Table 4, which is estimated on only the subsample

¹⁸ It is also likely that within deals that use an escrow contract the fraction of the sale proceeds held in the escrow account is associated with buyer and seller acquisition-related transaction risk. To examine this issue, for the subsample of 491 deals in which an escrow contract is used, we re-estimate the first model from Table 4 using the OLS procedure and replacing the dependent variable in this model with the fraction of the sale proceeds held in the escrow account. We find that the majority of the independent variables retain significant coefficients with expected signs. Specifically, we document that the following independent variables retain statistically significant coefficients with predicted signs: whether the target is a stand-alone private firm, target relative size, the low target industry analyst coverage indicator, whether the target and the acquirer are in different industries, target accruals, the indicator for if a liability cap is included in the acquisition agreement, the natural logarithm of deal size, and the percent of acquisition deals in a target’s industry that included an escrow contract during the prior year. Further, although in the first model of Table 4 we find an insignificant coefficient on the indicator variable for if the acquisition is considered to be an asset sale, when we re-estimate this model replacing the dependent variable with the fraction of the sale proceeds held in the escrow account, we find, as predicted, a statistically significant positive coefficient on this indicator variable. Overall, these results are consistent with the notion that the larger is acquisition-related transaction risk the greater is the fraction of the sale proceeds placed in the escrow account.

consisting of subsidiary targets, document that of the twelve variables with significant coefficients in the first model only six of these variables retain significant coefficients. A potential explanation for why there is stronger support for private firm than for subsidiary targets that escrow contracts are used to manage acquisition-related transaction risk is that, as discussed earlier, in acquisitions of private targets it is more important for bidders to manage this risk.

4.2 *Results of diagnostic tests for the suitability of instruments*

From the Table 4 models, we calculate predicted values for the likelihood an escrow contract is included in an acquisition agreement. Next, in Tables 5-7 we use these instrumented values in two-stage least squares (2SLS) analyses that examine the impact of the use of an escrow contract on the length of time between the preliminary announcement of an acquisition deal and the completion of the deal (Table 5), the discount in the price paid for subsidiary and private targets (Table 6), and bidder acquisition announcement returns (Table 7). To determine the validity of our 2SLS analyses, we perform diagnostic tests to examine the suitability (i.e., relevance) of the instruments used for these analyses and the appropriateness (i.e., exclusivity) of using an instrumental variables approach. The results of these tests are as follows. First, the results of an F-test of excluded instruments and a partial R-squared test for the first-stage regressions indicate that the instruments in our first-stage models are jointly significant in explaining if an escrow contract is included in a given acquisition agreement.¹⁹ Second, the results of the Anderson (1951) canonical correlation likelihood ratio test reject the hypothesis that our 2SLS analyses suffer from weak instrument problems.²⁰ Next, in order to verify the exclusivity (i.e., the effect of our instruments onto the endogenous channel is confined to the first stage equation alone) of our instruments, we ran a Sargan test of over-identifying restrictions and found that the second-stage

¹⁹ The F-test is based on the F-statistic of excluded instruments and tests the joint significance of all excluded instruments in the first-stage regressions. The partial R-squared is the fraction of the variation of the instrumented variable explained by the instruments, net of their effect through the exogenous variables.

²⁰ The Anderson (1951) canonical correlation likelihood ratio statistic examines the null hypothesis of under-identification using the canonical correlation between the regressors and their instruments.

regressions do not suffer from over-identification problems, meaning that our instruments are exclusive.²¹ Based on these tests, we conclude that our instruments are both (i) relevant and (ii) exclusive.

4.3 *Escrow contracts and the time-to-completion of acquisition deals*

Table 5 provides evidence on how the time-to-completion of acquisition deals, defined as the number of days between the announcement of a preliminary deal and its closing, is related to the use of an escrow contract. If the use of escrow contracts lowers bidders' due diligence costs and concerns about incurring losses in acquisitions of unlisted targets then the use of these contracts should reduce the time-to-completion of acquisition deals. The models we use in Table 5 include as controls the independent variables from the Table 4 models, but exclude the two instrument variables. The first model in Table 5 shows that, as expected, whether an escrow contract is used in the context of an acquisition agreement is negatively associated with the time-to-completion of the acquisition deal. The coefficient estimate on the escrow agreement indicator variable indicates that the use of an escrow contract is associated with a 20.4 day reduction in the time-to-completion of an acquisition deal. Relative to the mean value for our sample for the time-to-completion for a deal of 57.5 days, this represents a 35.5% decrease in the time-to-completion of a deal.

In the second model we attempt to control for the endogeneity of whether an escrow contract is used in a particular acquisition deal by replacing the escrow agreement indicator variable with the instrumented escrow agreement indicator calculated from the first model in Table 4. Here also, we document a negative effect of the use of an escrow contract on the time-to-completion of a deal. Multiplying the coefficient estimate of -54.32 with the mean value for the instrumented escrow indicator variable of 0.543, we estimate that the results for the second model imply that the use of an escrow contract is associated with a 29.5 day decrease in the time-to-completion of a deal. This represents a 51.3% reduction in the time-to-completion for a deal.

²¹The test of over-identifying restrictions (i.e., a Sargan test) tests the joint null hypothesis that the instruments are uncorrelated with the error term and are hence correctly excluded from the second-stage equations.

The third and fourth models of Table 5 report the effect of the use of escrow contracts on the time-to-completion of private stand-alone firm acquisitions and the fifth and sixth models similarly report this effect for subsidiary acquisitions. The coefficient estimate on the escrow agreement indicator in the third model indicates that the use of an escrow contract is associated with an 18.7 day decrease in the time-to-completion of private firm acquisition deals. Given that the mean value for the time-to-completion of these deals is 48.2 days, this represents a 38.8% reduction in the time-to-completion of these deals. In the fourth model, in which we replace the escrow agreement indicator with the instrumented escrow agreement indicator calculated from the second model in Table 4, we find a negative coefficient on the instrumented escrow agreement indicator variable. Multiplying the coefficient estimate of -32.42 with the mean value for the instrumented escrow indicator variable for private firm deals of 0.625, we calculate from this model that the use of an escrow contract is associated with a 42.0% ($=32.42 \times 0.625 / 48.2$) decrease in the time-to-completion of a private firm acquisition deal.

The results for the fifth model in Table 5 show that the use of an escrow contract is associated with a 24.2 day reduction in the time-to-completion of an acquisition deal. The mean value for the time-to-completion of subsidiary deals is 71.6 days, implying a 33.8% reduction in the time-to-completion of these deals from using an escrow contract. Finally, in the sixth model of Table 5 we replace the escrow agreement indicator with the instrumented escrow agreement indicator calculated from the third model in Table 4. Multiplying the coefficient estimate of -21.89 with the mean value for the instrumented escrow indicator variable for subsidiary deals of 0.414, we estimate that the use of an escrow contract is associated with a 12.7% ($=21.89 \times 0.414 / 71.6$) decrease in the time-to-completion of a deal.

Overall, the Table 5 results are supportive of the proposition that the use of escrow contracts reduce bidders' due diligence costs and bidder concerns about incurring losses in the event of target firm breaches of representations and warranties made to the seller in the acquisition agreement, and as a result, the use of these contracts reduce the time-to-completion of an acquisition deal. Further, the findings that the percentage decrease in the time-to-completion of an acquisition deal resulting from the

use of an escrow contract is larger in deals for private-stand alone firms than in deals for subsidiaries is consistent with the notion that escrow contracts are more useful in decreasing bidder acquisition-related transaction risk in acquisitions of stand-alone private targets.

4.4 Escrow contracts and the discount in the price paid for an unlisted target

Officer (2007) shows that unlisted targets are typically sold at discounts of about 17% to 30% relative to the price paid for comparable publicly traded targets. As discussed earlier, our study's main hypothesis predicts that because the use of escrow contracts reduces bidder acquisition-related transaction risk and bidder costs in acquisitions of unlisted targets, the use of these contracts should result in a higher sales price for the target. Table 6, Panel A provides evidence on whether the use of an escrow contract is associated with a reduction in the discount in the price paid for an unlisted target. The first model in this table regresses the discount in the deal value-to-sales multiple of an unlisted target relative to the deal value-to-sales multiple of comparable publicly traded targets on an indicator variable for whether an escrow contract is used. The second model in this table accounts for the endogeneity in the decision to use an escrow contract by replacing the indicator variable for whether an escrow contract is used with the fitted value from Model 1 of Table 4.

In the Table 6, Panel A models we control for the following deal characteristics which are related to bidder acquisition-related transaction risk, whether a target is a stand-alone private firm, whether a deal is an asset sale, whether the target is in a different industry than is the acquirer, the relative size of the target to the bidder, and deal value. We also additionally control for asymmetric information concerning the value of the target, by including in the Table 6, Panel A models the indicator variables for if the target operates in an industry with high earnings volatility or with low analyst coverage. To partly control for the issue that the sellers of unlisted targets could have urgent liquidity needs and that these needs can affect the discount in the price paid for an unlisted target (e.g., Officer (2007)), we include as an independent variable whether the method of payment consists only of cash. Also, because Officer (2007) shows that discounts for unlisted targets are larger when credit conditions are tighter, we control

for the average spread of commercial and industrial loan rates over the federal funds rate during the four quarters prior to the quarter of the deal completion date.²² Finally, as in our prior multivariate analyses, we control for industry and year fixed effects.

The coefficient on the escrow agreement indicator variable in first model in Table 6, Panel A is significant and positive. We interpret the coefficient of 0.084 to suggest that, on average, the discount in the deal-to-sales multiple for an unlisted target relative to the median deal-to-sales multiple of comparable public targets is reduced by 8.4% through the use of an escrow contract. For instance, for the typical unlisted target in our sample that has a discount in its deal-to-sales multiple of 24.3%, the use of an escrow contract would reduce this discount to 15.9%. The economic impact of using an escrow contract on the discount in the price paid for an unlisted target is slightly higher if instead we use the regression coefficient on the instrumented escrow agreement indicator variable in the second model of Table 6, Panel A, (i.e., the coefficient of 0.199). We multiply this coefficient with the mean value for the instrumented escrow indicator variable of 0.543 and estimate that this coefficient suggests a *reversal* of the unlisted target price discount of 10.8% if an escrow contract is included in the acquisition agreement.

Because when an escrow contract is used the bidder might ultimately keep some of the escrow account funds, we also provide an economic interpretation of the reversal of the unlisted target discount caused by the use of an escrow contract after accounting for this possibility. From bidders' public disclosures it is not possible to determine the fraction of the escrow account funds that are returned to the seller parties. However, the escrow services division of J.P. Morgan Chase reported to us that in the context of escrow contracts used in acquisitions of unlisted targets, on average, 60% of escrow account funds are returned to the seller parties. In Panel A of Table 1, we document that for the 491 deals in our sample that include an escrow contract that, on average, 12.2% of the sale proceeds are deposited into an escrow account. Thus, based on the assumption that typically 60% of the funds in the escrow account

²² We do not include a control variable in the Table 6, Panel A models for whether the seller of an unlisted target is financially constrained that is constructed using data about the seller because this data is not available for acquisitions of stand-alone private firms. Also, it is only the case that for 199 out of the 374 subsidiary sales in our sample that the parent firm selling the subsidiary target is a publicly traded firm that is included in the Compustat database.

are returned to the seller parties, we estimate that, on average, among the deals in our sample that use an escrow contract 4.9% ($=0.4 \times 12.2\%$) of the sale proceeds are ultimately kept by the acquiring firm. Given that the coefficient estimates on the escrow indicator variable and the instrumented escrow indicator variable in Table 6, Panel A suggest that the use of an escrow contract leads to a reversal of the unlisted target discount of approximately 8.4% or 10.8%, this implies that after accounting for funds in the escrow account that are not returned to the sellers that the use of an escrow contract leads to a reversal in the unlisted target discount of approximately 3.5% to 5.9% ($=8.4\% - 4.9\%$ and $10.8\% - 4.9\%$).

In the third to sixth models in Panel A of Table 6 we examine separately the effect of using an escrow contract on the discount in the price multiple for a private firm or subsidiary target relative to the price multiple of comparable public firms. In the third and fifth models we regress the discount in the price multiple on the indicator variable for whether an escrow contract is used. In the fourth and sixth models we replace the indicator variable for whether an escrow contract is used with fitted values for whether an escrow contract is used that are calculated from Models 2 and 3 of Table 4, that separately examine private firm and subsidiary targets. The findings for the third to sixth models show that escrow contracts reduce the discount in the price paid for an unlisted target both in the case of private firm and subsidiary targets. However, the effect is substantially larger for private firm than for subsidiary targets. The results for the third and fifth models suggest that the discount in the price paid for private firm and subsidiary targets relative to that for comparable public targets is reduced, respectively, by 12.6% and 4.4% through the use of an escrow contract. In the fourth model the coefficient estimate on the instrumented escrow agreement indicator is 0.190. We multiply this coefficient with the mean value for the instrumented escrow indicator variable for private targets of 0.625 (calculated from the second model in Table 4) and estimate this coefficient suggests a *reversal* of the unlisted target discount of 11.9% for a private firm target if an escrow contract is included in the acquisition agreement. Similarly, we multiply the coefficient estimate on the instrumented escrow agreement indicator in Model 6 of 0.161 with the mean value for the instrumented escrow indicator variable for subsidiary targets of 0.414 (calculated

from third model in Table 4) and estimate this coefficient suggests a *reversal* of the unlisted target discount of 6.7% for a subsidiary target if an escrow contract is included in the acquisition agreement.

For private firm and subsidiary targets, we also estimate the reversal of the unlisted target discount caused by the use of an escrow contract after accounting for the possibility that the bidder will keep a portion of the escrow account funds. In Panel A of Table 1, we show that when an escrow contract is used in the acquisition of a private firm or subsidiary target that the mean values of the sale proceeds deposited into the escrow account are, respectively, 13.0% and 8.9%. Based on the assumption that, on average, 60% of the escrow account funds are returned to the seller, we estimate that, on average, among the deals for private targets in our sample that use an escrow contract 5.2% ($=0.4 \times 13.0\%$) of the sale proceeds are kept by the bidder. Likewise, on average, among the deals for subsidiary targets in our sample that use an escrow contract 3.6% ($=0.4 \times 8.9\%$) of the sale proceeds are kept by the bidder. As reported above, the coefficient estimates on the escrow indicator and instrumented escrow indicator variables in Table 6, Panel A suggest that for private targets using an escrow contract leads to a reversal of the unlisted target discount of approximately 12.6% or 11.9%, while for subsidiary targets using an escrow contract leads to a reversal of the unlisted target discount of about 4.4% or 6.7%. Thus, after accounting for funds in the escrow account that are expected to not be returned to the seller, the use of an escrow contract would lead to a reversal in the unlisted target discount of approximately 7.4% to 6.7% ($=12.6\% - 5.2\%$ and $11.9\% - 5.2\%$) for private targets, and 0.8% to 3.1% ($=4.4\% - 3.6\%$ and $6.7\% - 3.6\%$) for subsidiary targets. Overall, the findings that the use of an escrow contract would lead to a larger reduction in the unlisted target discount for private than for subsidiary targets is consistent with the notion that because in acquisitions of private targets it is particularly important for bidders to manage acquisition-related transaction risk, for these types of acquisitions escrow contracts lead to larger increases in the price paid for an unlisted target.²³

²³ The Table 6, Panel A results suggesting that the use of escrow contracts reduce the discount in the price paid for an unlisted target to a greater extent for private firm than for subsidiary targets could also in part be driven by the fact that, as reported in Table 1, the percentage of the sale proceeds deposited into the escrow account tends to be higher in the

Table 6, Panel B provides additional evidence on whether the extent to which the use of an escrow contract reduces the discount in the price paid for an unlisted target is larger when the bidder faces larger acquisition-related transaction risk. Specifically, in this panel we report if the effect of using an escrow contract on the price paid for an unlisted target is more pronounced when the target is a private firm, the relative size of the target to the bidder is greater, or information asymmetry about the value of the target is larger (as measured by whether the target operates in an industry with high earnings volatility or low analyst coverage). To do so, in the first and second models of this panel we include as independent variables the interactions of the indicator variable for whether a target is a private firm with the escrow agreement indicator variable and the instrumented escrow agreement indicator variable. Similarly, in the third and fourth models in this panel we include the interactions of the relative size of the target to the bidder with the escrow agreement indicator variable and the instrumented escrow agreement indicator variable, in the fifth and sixth models we include the interactions of the indicator variable for whether earnings volatility is in the top sample quintile with the escrow agreement indicator variable and the instrumented escrow agreement indicator variable, and finally in the seventh and eighth models we include the interactions of the indicator variable for whether analyst coverage of a target's industry is not in the top sample quintile with the escrow agreement indicator variable and the instrumented escrow agreement indicator variable.

The coefficients on the interaction variables in the first to fourth models and the sixth to eighth models of Table 6, Panel B are positive and significant, which suggests that the extent to which the use of an escrow contract reduces the discount in the price paid for an unlisted target is larger if a target is a private firm, the relative size of the target to the bidder is greater, or the target operates in an industry with high earnings volatility or lower analyst coverage. Thus, when bidders face larger acquisition-related transaction risk, they are even more likely to accept to pay a higher acquisition price if an escrow contract is used.

case of private targets. However, the fact that this percentage is higher for these transactions may itself be due to the larger acquisition-related transaction risk for private targets.

4.5 *Escrow contracts and bidder acquisition announcement returns*

If the inclusion of an escrow contract in the acquisition agreement reduces bidder acquisition-related risk and costs stemming from private firm and subsidiary acquisitions and these cost savings are larger in magnitude than is the increase in the acquisition price when an escrow contract is used then the use of an escrow contract should lead to more positive market reactions to the announcement of an acquisition deal. Table 7, Panel A provides the results of an examination of this issue. Bidder announcement returns are the $(-1, 1)$ day abnormal return surrounding the acquisition announcement date, calculated using the market model where the estimation window is the $(-220, -20)$ days prior to the acquisition announcement date. The acquisition announcement date is the date of the filing of form DEF 14A for the preliminary acquisition deal. In this filing, it would be reported if an escrow contract is included in the acquisition agreement given that the escrow contract would be noted as part of the price consideration offered in the transaction.

In the Table 7, Panel A models the dependent variable is the bidder acquisition announcement return. The independent variables in these models are the same as in Table 6, except that because the dependent variable relates to the bidder we control for bidder size rather than deal size. Also, we additionally control for whether the method of payment is only stock because prior work shows that in acquisitions of unlisted targets bidder announcement returns tend to be more positive when the method of payment is only stock (e.g., Chang (1998), Fuller, Netter, and Stegemoller (2002), and Officer, Poulsen, and Stegemoller (2009)).

The results for the first two models in Panel A of Table 7 show that use of an escrow contract is associated with higher bidder acquisition announcement returns and that this is the case both using OLS and a 2SLS approach that controls for the endogeneity of having an escrow contract in place. These findings are consistent with escrow contracts creating value for bidders by mitigating bidders' acquisition-related transaction risk and costs in private firm and subsidiary acquisitions.

In the third and fourth models of Panel A of Table 7 we report the results for only private targets, while in the fifth and sixth models we report the results for only subsidiary targets. The findings for these four models show that the use of an escrow contract is associated with higher bidder acquisition announcement returns irrespective of whether the target is a private firm or a subsidiary of another firm.²⁴

In the first to eighth models of Table 7, Panel B we include as independent variables the eight interaction variables used in Table 6, Panel B to provide evidence on whether the extent to which the use of an escrow contract is associated with value creation for a bidder is more pronounced when the bidder faces greater acquisition-related transaction risk. The coefficients on the interaction variables in the first four models in this panel have positive and significant coefficients, which implies that the positive association between the use of an escrow contract and bidder acquisition announcement returns is more pronounced if a target is a private firm or the relative size of the target to the bidder is greater. Further, the coefficients on the interaction variables in the fifth and seventh models also have positive and significant coefficients, which shows that when using the OLS approach the positive association between the use of an escrow contract and bidder acquisition announcement returns is more pronounced if the target operates in an industry with high earnings volatility or low analyst coverage. Put together, the Table 7, Panel B provide support to the proposition that escrow contracts lead to greater value creation for bidders when they face larger acquisition-related transaction risk.

4.6 *Propensity matched score analysis*

A potential concern with the results of our analyses that suggest the use of an escrow contract reduces the discount in the price paid for an unlisted target and leads to more positive bidder acquisition

²⁴ The adjusted R-squared values for the fifth and sixth models in Table 7 are negative. We find that this is due to the large number of control variables with insignificant coefficients in the two models. Specifically, if we rerun the two models including only the two independent variables in the models with significant coefficients (i.e., the escrow agreement indicators and the indicator for whether the transaction is an asset sale) and year and industry fixed effects the adjusted R-squared values increase to 0.005 and 0.013 and the two variables retain their significant coefficients. However, we note that in these two models we present the results using the extended list of controls for consistency with our prior analyses.

announcement returns is that the linear controls used in our models may not adequately account for differences between deals that include or do not include an escrow contract. An empirical approach to address this concern is to create a propensity score matched sample (e.g., Rosenbaum and Rubin (1983) and Dehejia and Wahba (2002)). Using the first model in Table 4, we predict the propensity score for each of the deals in our sample that use an escrow contract. We next match each deal with an escrow contract to a deal in our sample without an escrow contract. The match is based on (i) the two targets being in the same industry, (ii) the two deals occurring within two years of one another, (iii) the two targets not having a difference in value that is greater than 30 percent, and (iv) the propensity score being closest to the counterpart transaction but within 20 percent of the propensity score of the transaction with an escrow contract. Allowing for the repeated use of matched deals, this yields a sample of 292 observations (the subsample of acquisitions with escrow contracts has 491 observations). We use a t-test to test for differences in means for the discount in the price paid for an unlisted target between the sample of deals with an escrow contract and the matched sample and find that the mean values are statistically different at the 1% level and that the discount is 11.2% larger for the matched deals without an escrow contract. Similarly, we test for differences in bidder announcement returns between the two samples and find they differ at the 5% level and that they are 1.70% higher for transactions with an escrow contract as compared to those without.

4.7 Why are escrow contracts not used in all acquisitions of unlisted targets?

Given our evidence that suggests the use of escrow contracts enables sellers of unlisted targets to obtain a higher sales price and positively impacts the extent to which acquisitions of such targets leads to value creation for the bidder, a natural question that arises is why these contracts are not used in all deals involving unlisted targets. Below we discuss several potential reasons for why these contracts may not be used in all such acquisition deals.

In some cases sellers who are aware of potential misstatements made to the bidder in the representations and warranties section of the acquisition agreement may prefer to not include an escrow

contract within the acquisition agreement. If so, then a target's preference to not include an escrow contract in the acquisition agreement could result in larger bidder concerns about the quality of the target and to a larger discount in the price paid for the unlisted target. Also, a target's preference to not use an escrow contract could lead to lower bidder acquisition announcement returns if market participants expect that acquisition-related transaction risk for the bidder and aggregate bidder acquisition-related costs are higher in acquisitions of unlisted targets in which the acquisition agreement does not include an escrow contract. The scenario described above would be similar to that discussed in prior work (e.g. Akerlof (1970) and Myers and Majluf (1984)), in which buyers will demand a discount in the price paid for a product if they cannot verify its quality and they are not offered a warranty for it.

In the case of acquisitions of stand-alone private targets another factor that could lead to an escrow contract not being used is that there could be discord among target shareholders with respect to including an escrow contract in the acquisition agreement. For instance, a number of smaller target shareholders, whose combined ownership is substantial, could prefer to not include an escrow contract in the acquisition agreement and instead make one or two large shareholders of the target more liable for seller breaches of warranties and representations made to the bidder. In the case of subsidiary acquisitions, a factor that could decrease the propensity of sellers and buyers to use an escrow contract is that if the subsidiary's parent firm is strong financially, a buyer could also potentially receive indemnification for seller breaches of warranties and representations in the acquisition agreement by suing the parent. Finally, another factor that could result in an escrow contract not being used in the context of a given private firm or subsidiary acquisition is that because at times an important motive for these sales is that the sellers have an urgent need for liquidity (e.g., Officer (2007)), in some cases it could be important for the sellers to have immediate access to the entire sale proceeds. In these instances, an escrow contract could be viewed by the sellers as costly, as it would reduce the liquidity that they seek.

5. Conclusion

Although many private stand-alone firm and subsidiary acquisition deals include an escrow contract, whereby a percentage of the total sale proceeds is placed in an escrow account, there is scant empirical evidence on these contracts. Escrow contracts give the bidder the opportunity to lay claim on the funds placed in the escrow account subsequent to the acquisition if the seller fails to meet specific terms of the acquisition agreement or it is found that negative information about the target was hidden from the bidder. We hypothesize that escrow contracts are an efficient contracting mechanism that helps buyers and sellers to manage acquisition-related transaction risk and mitigate information asymmetry problems. To test this hypothesis, we study 569 private firm acquisitions and 374 subsidiary acquisitions made by publicly traded firms over the 1994-2009 period and hand-collect data on escrow contracts.

We document widespread use of escrow contracts in acquisitions of unlisted targets. Notably, we show that these contracts are used in 65% of private firm acquisitions and 32% of subsidiary acquisitions. Consistent with our hypothesis, we show that the likelihood an escrow contract is used in a private firm or subsidiary acquisition is greater when buyer and seller acquisition-related transaction risk is higher or information asymmetry about the value of the target is larger. Also, we document evidence that suggests the use of an escrow contract enables the sellers of unlisted targets to reduce an economically important part of the discount in the price paid for these targets relative to comparable public targets. Likewise, we show that the use of these contracts positively impacts the extent to which a private firm or subsidiary acquisition results in value creation for the bidder. Further, we find that the latter two results are more pronounced in instances in which bidder acquisition-related transaction risk is likely to be greater. Overall, our findings increase the understanding of how participants in private firm and subsidiary acquisitions resolve contracting problems. In doing so, we also provide new insights on how the method of payment used in mergers and acquisitions can be a function of buyers and sellers trying to manage acquisition-related transaction risk and on how in general financial contracting can resolve problems resulting from information asymmetry and moral hazard.

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Table 1. Univariate sample statistics

The sample includes 569 acquisitions of stand-alone private companies and 374 subsidiary acquisitions completed between 1994-2009 in the U.S., with a deal value of at least \$25 million, in which the acquirer did not have a controlling stake in the target prior to the acquisition, but obtained a 100% stake after the acquisition.

Panel A. Escrow contract and unlisted target price discount characteristics

Details about escrow contracts are hand-collected from bidder firms' 8-K, DEF 14A, 10-Q, and 10-K filings. The escrow contract duration statistics are calculated using data for 341 stand-alone private firm targets and 104 subsidiary targets. Escrow contract duration is the number of months that the escrow contract funds are kept in the escrow account. The unlisted target price discount is defined as the percentage difference between the deal value to sales multiple for an unlisted target and the median such multiple for industry- and size-matched comparable acquisitions of publicly traded targets. The portfolio of comparable acquisitions matched to each unlisted target is all acquisitions of publicly traded targets in the same Fama-French 49 industry as the unlisted target with a deal value within 20% of the deal value of the unlisted target and occurring within the 36-month window centered on the acquisition announcement date of the unlisted target. We do not calculate a value for the unlisted target price discount for deals in which the deal multiple for an unlisted target is more than 100% larger than the median multiple of the portfolio of comparable publicly traded targets. The unlisted target price discount variable is winsorized at the 1% level. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively, for two-tailed Wilcoxon rank-sum tests to determine whether median values differ between subsamples or two-tailed t-tests to determine whether mean values differ between subsamples.

<i>Escrow contract characteristics for the 491 out of 943 acquisition deals in the sample that include an escrow contract:</i>						
	Unlisted targets (491 observations)		Stand-alone private targets (371 observations)		Subsidiary targets (120 observations)	
	<i>Mean</i>	<i>Median</i>	<i>Mean</i>	<i>Median</i>	<i>Mean</i>	<i>Median</i>
Percent of sale proceeds deposited in escrow account	12.2	9.3	13.0	9.9	8.9***	7.7**
Escrow contract size (millions of \$)	11.7	6.0	11.9	6.0	11.0	5.9
Escrow contract duration (months)	17.4	15.0	17.5	15.0	17.1*	15.0

<i>Unlisted target price discount characteristics for the 931 acquisition deals with necessary data to calculate the price discount measure:</i>						
	Unlisted targets (931 observations)		Stand-alone private targets (557 observations)		Subsidiary targets (374 observations)	
	<i>Mean</i>	<i>Median</i>	<i>Mean</i>	<i>Median</i>	<i>Mean</i>	<i>Median</i>
Unlisted target price discount	-0.243	-0.361	-0.171	-0.316	-0.333***	-0.447***

	Unlisted targets with an escrow contract (481 observations)		Unlisted targets without an escrow contract (450 observations)	
	<i>Mean</i>	<i>Median</i>	<i>Mean</i>	<i>Median</i>
Unlisted target price discount	-0.196	-0.312	-0.289***	-0.396***

Table 1. Panel B. Target financial characteristics

Deal value is the price paid for the target plus the amount of any assumed liabilities of the target. Relative size of target to acquirer is the ratio of deal value to market value of assets of the acquirer. Target interest coverage is the ratio of operating income before depreciation to interest expense for the target and it is set to zero for targets with negative operating income. In order to avoid dropping observations when a target has no interest expense from the Table 4 multivariate analyses, if a target has no interest expense its interest expense is arbitrarily set to \$1000. The statistics for target interest coverage and target return on assets are calculated using data for, respectively, 930 and 909 observations. The relative size of target to acquirer, target interest coverage, and target return on assets variables are winsorized at the 1% level. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively, for two-tailed Wilcoxon rank-sum tests to determine whether medians differ between deals with or without escrow contracts or two-tailed t-tests to determine whether mean values differ between deals with or without escrow contracts.

	Unlisted targets (943 observations)		Unlisted targets with an escrow contract (491 observations)		Unlisted targets without an escrow contract (452 observations)	
	<i>Mean</i>	<i>Median</i>	<i>Mean</i>	<i>Median</i>	<i>Mean</i>	<i>Median</i>
Target net sales (millions of \$)	42.9	48.7	32.7	38.4	57.6***	63.7***
Target book assets (millions of \$)	33.1	32.2	23.4	24.6	48.9***	43.9***
Deal value (millions of \$)	93.8	73.0	82.8	68.1	107.5***	80.0***
Relative size of target to acquirer	24.8%	18.4%	24.6%	17.8%	24.9%	18.9%*
Target interest coverage	76.39	2.90	47.30	1.93	108.51***	3.89***
Target return on assets	0.049	0.040	0.034	0.035	0.066***	0.040*

Table 2. Univariate relations between the use of an escrow contract and other deal characteristics

This table reports evidence on univariate relations between whether an escrow contract is included within an acquisition agreement and other deal characteristics.

Panel A. Comparison of other deal characteristics between deals with or without an escrow contract

A stock (asset) purchase transaction includes (does not include) the assumption of target liabilities. A dominant target shareholder is a target shareholder who owns at least 20% of the target's shares, but not all of its shares. A liability cap puts a cap on the amount that the bidder could sue the sellers for subsequent to the acquisition due to breaches of the representations and warranties in the acquisition agreement. Whether the bidder and target operate in different industries is determined using 4-digit SIC codes. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively, for chi-square tests corrected for continuity to determine whether proportions differ between deals with or without escrow contracts.

	Unlisted targets (943 observations)	Unlisted targets with an escrow contract (491 observations)	Unlisted targets without an escrow contract (452 observations)
Percent of deals that are a stock purchase transaction	73.7%	80.0%	66.8%***
Percent of deals that are an asset purchase transaction	26.3%	20.0%	33.2%***
Percent of deals for stand-alone private firm targets	60.3%	75.6%	43.8%***
Percent of deals for subsidiary targets	39.7%	24.4%	56.2%***
Percent of deals with a dominant target shareholder	36.8%	48.3%	24.1%***
Percent of deals with a liability cap	73.7%	85.3%	61.1%***
Percent of deals with an earnout contract	12.2%	13.8%	10.4%
Percent of deals where payment is only stock	9.0%	11.2%	6.6%***
Percent of deals where payment is only cash	36.7%	31.8%	42.0%***
Percent of deals in which bidder and target industry differs	61.8%	62.3%	61.3%

Panel B. Comparison of the use of an escrow contract between deals with or without a particular deal characteristic

***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively, for chi-square tests corrected for continuity to determine whether proportions differ between deals with or without a particular deal characteristic.

	Percent of deals with characteristic in row that include an escrow contract	Percent of deals without characteristic in row that include an escrow contract
Stock purchase transaction	60.5%	43.5%***
Stand-alone private firm target	65.2%	32.1%***
Dominant target shareholder	68.5%	42.5%***
Use of a liability cap	60.3%	29.1%***
Use of an earnout contract	59.1%	52.1%
Payment is only stock	64.7%	50.8%**
Payment is only cash	45.1%	56.1%***
Bidder and target industry differs	52.5%	51.4%

Table 3. Industry distribution of deals using escrow contracts and of all deals in the sample

This table reports the industry distribution of the deals in our sample that use an escrow contract and also the industry distribution of all the deals in our sample. Industry is defined as the acquirer's industry. Percentage values are reported.

Acquirer FF Ind. Code	Fama-French 49 industry name	Industry distribution of deals in the sample that use an escrow contract	Industry distribution of all deals in the sample
1	Agriculture	0.2	0.5
2	Food products	0.8	1.0
3	Candy and soda	0.2	0.1
4	Beer and liquor	0.0	0.1
5	Tobacco products	0.0	0.0
6	Toys and recreation	0.2	0.6
7	Entertainment	1.0	1.1
8	Printing and publishing	2.1	2.0
9	Consumer goods	0.8	1.1
10	Clothing and apparel	1.4	1.5
11	Healthcare	3.9	3.0
12	Medical equipment	3.5	3.0
13	Pharmaceutical products	3.7	4.9
14	Chemicals	0.8	1.4
15	Rubber and plastic products	1.0	1.3
16	Textiles	0.0	0.2
17	Construction materials	0.8	1.6
18	Construction	2.7	2.4
19	Steel works	1.7	1.4
20	Fabricated products	0.0	0.0
21	Machinery	2.9	2.2
22	Electrical equipment	1.4	1.9
23	Automobiles and trucks	1.2	1.1
24	Aircraft	1.0	0.9
25	Shipbuilding and railroad equipment	0.6	0.4
26	Defense	0.8	0.4
27	Precious metals	0.0	0.2
28	Non-metallic and industrial metal mining	0.0	0.1
29	Coal	0.2	0.1
30	Petroleum and natural gas	2.3	2.2
31	Utilities	0.2	0.6
32	Telecommunication	3.7	3.5
33	Personal services	1.7	1.2
34	Business services	10.3	10.5
35	Computers	2.9	2.5
36	Computer software	19.1	13.9
37	Electronic equipment	8.0	8.5

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FF Ind. Code	Fama-French Industry Definition Name	Industry distribution of deals in the sample that use an escrow contract	Industry distribution of all deals in the sample
38	Measuring and control equipment	3.7	3.4
39	Business supplies	0.8	0.8
40	Shipping containers	0.0	0.2
41	Transportation	2.1	2.2
42	Wholesale	4.1	4.5
43	Retail	2.5	3.5
44	Restaurants, hotels, and motels	1.2	1.2
45	Banking	0.8	1.2
46	Insurance	0.6	1.5
47	Real Estate	0.2	0.3
48	Financial trading	1.9	2.6
49	Other	0.8	1.3

Table 4. The likelihood that an escrow contract is included in an acquisition agreement

This table reports results from Probit models that examine the determinants of the likelihood that an escrow contract is included within an acquisition agreement, in which the dependent variable equals one if an escrow contract is used and zero otherwise. Model (1) is run using the full sample of unlisted target acquisition deals. Model (2) is run using only the acquisition deals for stand-alone private targets. Model (3) is run using only the acquisition deals for subsidiary targets. Top quintile target industry earnings volatility indicator is calculated by first determining for each public firm in Compustat the standard deviation of its ROA during the previous five years. Next, we calculate 4-digit SIC code industry-year median values and rank these values into quintiles. Low target industry analyst coverage indicator is calculated by first determining from IBES what is the number of distinct analysts that cover each 4-digit SIC industry in each year of our sample and then sorting industries into quintiles based on the number of distinct analysts that cover an industry and next coding an indicator variable for whether a target's industry is in the bottom four quintiles for the number of distinct analysts that cover it. Commercial and industrial loan rate spread is the average spread of commercial and industrial loan rates over the federal funds rate during the four quarters prior to the quarter of the deal completion date. Target accruals are calculated as (gross profit - operating profits)/book assets. The percentage of deals in the target's industry that included an escrow contract during the prior year is calculated using a target's Fama-French 49 industry and data from our sample of acquisition deals involving unlisted targets. We are unable to calculate a value for this variable during the first year in our sample period. The indicator variable for if during the prior year the bidder pays for an acquisition using a hybrid method of payment is as defined in SDC. This variable considers whether the bidder paid for an acquisition using a mix of cash and securities in the bidder during the prior year. Fama-French 49 industry (of the acquirer) fixed effects and year fixed effects are included in all the models. All other variables are previously defined. All continuous variables are winsorized at the 1% level. Marginal effects are reported. The number of observations used for a particular model reflects the type of acquisition that is considered and our ability to construct the variables appearing in the model. T-statistics (in their absolute value) calculated using robust standard errors are in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	<i>All unlisted targets</i>	<i>Private firm targets</i>	<i>Subsidiary targets</i>
	(1)	(2)	(3)
Target is a stand-alone private firm	0.222*** (5.63)		
The acquisition is considered an asset sale	-0.017 (0.42)	-0.034 (0.53)	-0.002 (0.03)
Relative size of target to acquirer	0.019* (1.66)	0.022** (2.54)	0.008 (1.19)
Top quintile target industry earnings volatility indicator	0.009** (2.03)	0.085** (2.27)	0.105 (1.14)
Low target industry analyst coverage indicator	0.038* (1.79)	0.043* (1.88)	0.111** (2.10)
Target and acquirer are in different industries	0.016** (2.48)	0.041*** (2.98)	0.024 (0.40)
Target accruals	0.541** (2.14)	0.515* (1.70)	0.798* (1.82)
Target interest coverage (scaled by 1,000)	-0.079* (1.89)	-0.070** (2.03)	-0.031 (1.57)
Indicator for the presence of a target firm dominant shareholder	0.161*** (4.51)	0.126*** (2.97)	0.221*** (2.75)
Indicator for the use of a liability cap in the acquisition agreement	0.267*** (6.94)	0.310*** (5.49)	0.228*** (3.69)
Indicator for if an earnout contract is included in the acquisition agreement	0.011 (0.22)	0.037 (0.62)	-0.027 (0.26)
Commercial and industrial loan rate spread	-0.005 (0.09)	-0.023 (0.35)	-0.073 (0.73)
Ln (Deal value)	-0.045*** (2.73)	-0.022 (0.99)	-0.054** (2.00)
<u>Instruments</u>			
Percentage of deals in the target's industry that used an escrow contract during the prior year	0.207* (1.68)	0.424** (2.22)	0.047 (1.21)
The bidder uses a hybrid method of payment to pay for an acquisition in the prior year	0.012* (1.91)	0.010** (2.04)	0.047** (2.48)
Observations	837	520	317
Pseudo R-squared	0.247	0.225	0.289

Table 5. The existence of an escrow contract and the time-to-completion of acquisition deals

This table presents multivariate analyses of the determinants of the time-to-completion of acquisition deals, defined as the number of days between the announcement of a preliminary acquisition agreement and the completion of the deal. All other variables are as previously defined. All continuous variables are winsorized at the 1% level. Models (1), (3) and (5) show OLS estimates, while Models (2), (4) and (6) show 2SLS estimates, where we instrument the escrow agreement indicator using respectively Models (1), (2) and (3) in Table 4. Fama-French 49 industry (of the acquirer) fixed effects and year fixed effects are included in all the models. The number of observations used for a particular model reflects the type of acquisition that is considered and our ability to construct the variables appearing in the model. T-statistics (in their absolute value) calculated using robust standard errors are in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	<i>All unlisted targets</i>		<i>Private firm targets</i>		<i>Subsidiary targets</i>	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
	(1)	(2)	(3)	(4)	(5)	(6)
Escrow agreement indicator	-20.405*** (2.68)		-18.694* (1.72)		-24.223** (1.99)	
Instrumented escrow agreement indicator		-54.317** (2.57)		-32.418** (2.58)		-21.894** (2.38)
Target is a stand-alone private firm	0.514 (0.05)	15.797 (0.74)				
The acquisition is considered an asset sale	0.696 (0.07)	0.797 (0.08)	0.181 (0.01)	2.954 (0.19)	10.881 (0.94)	9.310 (0.74)
Relative size of target to acquirer	3.273 (0.54)	5.673 (0.91)	3.987 (0.47)	6.198 (0.70)	-0.016 (0.00)	-2.921 (0.29)
Top quintile industry earnings volatility indicator	6.919** (2.45)	8.939** (2.58)	15.437* (1.77)	19.089** (1.99)	-12.215 (0.82)	-15.449 (1.02)
Low target industry analyst coverage indicator	23.389** (2.32)	28.659*** (2.77)	35.996*** (2.87)	39.563*** (2.75)	0.494 (0.03)	1.735 (0.10)
Target and acquirer are in different industries	3.705*** (2.64)	0.797 (1.13)	-0.774 (0.13)	0.038 (0.01)	10.369* (1.79)	0.731 (0.05)
Target accruals	11.972 (0.38)	25.969 (0.42)	-23.198 (0.57)	-64.656 (1.04)	62.021 (1.05)	34.405 (0.50)
Target interest coverage (scaled by 1,000)	36.006 (0.91)	40.221 (0.88)	65.272 (0.90)	70.766 (0.93)	0.804 (0.08)	6.765 (0.44)
Indicator for the presence of a target firm dominant shareholder	-3.543 (0.53)	-2.874 (0.18)	-11.591 (1.34)	-16.911 (1.16)	8.327 (0.58)	-15.484 (0.83)
Indicator for the use of a liability cap in the acquisition agreement	8.899 (1.15)	18.541 (0.75)	11.614 (1.12)	-10.497 (0.45)	9.003 (0.79)	0.255 (0.01)
Indicator for if an earnout contract is included in the acquisition agreement	2.034 (0.19)	1.074 (0.10)	-0.744 (0.05)	-4.973 (0.30)	-9.947 (0.70)	-10.652 (0.68)
Commercial and industrial loan rate spread	6.572 (0.73)	9.395 (0.92)	27.009** (2.13)	31.530** (2.13)	-14.305 (0.98)	-7.382 (0.42)
Ln (Deal value)	11.308** (2.21)	8.437 (1.21)	5.886 (1.15)	6.330 (1.32)	20.806*** (3.13)	23.397*** (2.82)
Observations	884	837	536	520	348	317
Adjusted R-squared	0.085	0.089	0.131	0.130	0.031	0.024

Table 6. Panel A. The existence of an escrow contract and the unlisted target price discount

This table presents multivariate analyses of the determinants of the unlisted target price discount. All variables are as previously defined. All continuous variables are winsorized at the 1% level. Models (1), (3) and (5) show OLS estimates, while Models (2), (4) and (6) show 2SLS estimates, where we instrument the escrow agreement indicator using respectively Models (1), (2), and (3) in Table 4. Fama-French 49 industry (of the acquirer) fixed effects and year fixed effects are included in all the models. The number of observations used for a particular model reflects the type of acquisition that is considered and our ability to construct the variables appearing in the model. T-statistics (in their absolute value) calculated using robust standard errors are in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	<i>All unlisted targets</i>		<i>Private firm targets</i>		<i>Subsidiary targets</i>	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
	(1)	(2)	(3)	(4)	(5)	(6)
Escrow agreement indicator	0.084** (2.30)		0.126** (2.35)		0.044* (1.65)	
Instrumented escrow agreement indicator		0.199*** (3.15)		0.190*** (3.24)		0.161*** (2.85)
Target is a stand-alone private firm	0.159*** (4.00)	0.197*** (3.81)				
The acquisition is considered an asset sale	0.025 (0.63)	0.029 (0.70)	0.121* (1.94)	0.130** (1.98)	-0.019 (0.34)	-0.004 (0.06)
Target and acquirer are in different industries	0.070* (1.92)	0.061 (1.60)	0.050 (0.95)	0.036 (0.65)	0.088** (2.47)	0.062** (1.96)
Relative size of target to acquirer	-0.051*** (2.72)	-0.04** (2.26)	0.012 (0.18)	0.011 (0.17)	-0.093*** (2.84)	-0.070* (1.80)
Ln (Deal value)	0.042** (2.23)	0.039* (1.86)	0.044 (1.52)	0.042 (1.42)	0.046* (1.76)	0.065** (2.06)
Top quintile target industry earnings volatility indicator	0.121** (1.99)	0.134** (2.15)	0.187** (2.10)	0.186** (2.05)	0.060 (0.67)	0.054 (0.54)
Low target industry analyst coverage indicator	-0.133* (1.93)	-0.131* (1.80)	-0.066 (0.70)	-0.087 (0.90)	-0.203* (1.84)	-0.234* (1.85)
Method of payment is only cash	-0.011 (0.29)	-0.015 (0.39)	-0.038 (1.63)	-0.049* (1.78)	0.028 (0.52)	0.033 (0.58)
Commercial and industrial loan rate spread	-0.019 (0.33)	-0.019 (0.32)	-0.019 (0.24)	-0.038 (0.47)	-0.013 (0.15)	0.007 (0.07)
Observations	889	825	530	508	359	317
Adjusted R-squared	0.218	0.228	0.179	0.187	0.225	0.261

Table 6. Panel B. Cross-sectional variation in the association between the existence of an escrow contract and the unlisted target price discount

This table presents multivariate analyses of the determinants of the unlisted target price discount using the full sample of unlisted targets. We include interactions of (i) the escrow agreement indicator and (ii) the instrumented escrow agreement indicator with (a) an indicator for if the target is a stand-alone private firm, or (b) the demeaned relative size of target to acquirer, or (c) if the target's industry has high earnings volatility (as previously defined), or (d) if the target's industry has low analyst coverage (as previously defined). All continuous variables are winsorized at the 1% level. Fama-French 49 industry (of the acquirer) fixed effects and year fixed effects are included in all the models. The number of observations used for a particular model reflects the type of acquisition that is considered and our ability to construct the variables appearing in the model. T-statistics (in their absolute value) calculated using robust standard errors are in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Escrow agreement indicator	0.079** (2.52)		0.066 (1.56)		0.087** (2.26)		0.089** (2.35)	
Instrumented escrow agreement indicator		0.151* (1.68)		0.161* (1.71)		0.150* (1.65)		0.161 (1.59)
Target is a stand-alone private firm * escrow agreement indicator	0.011** (2.15)							
Target is a stand-alone private firm * instrumented escrow agreement indicator		0.041** (2.38)						
Demeaned relative size of target to acquirer * escrow agreement indicator			0.041** (2.18)					
Demeaned relative size of target to acquirer * instrumented escrow agreement indicator				0.018* (1.68)				
Top quintile target industry earnings volatility indicator * escrow agreement indicator					0.008 (1.09)			
Top quintile target industry earnings volatility indicator * instrumented escrow agreement indicator						0.015* (1.82)		
Low target industry analyst coverage indicator * escrow agreement indicator							0.027** (2.26)	
Low target industry analyst coverage indicator * instrumented escrow agreement indicator								0.044** (2.04)

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	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Target is a stand-alone private firm	0.154*** (3.00)	0.279*** (2.81)	0.161*** (4.05)	0.197*** (3.83)	0.159*** (4.02)	0.195*** (3.76)	0.161*** (4.01)	0.193*** (3.78)
The acquisition is considered an asset sale	0.025 (0.63)	0.030 (0.72)	0.027 (0.67)	0.031 (0.75)	0.025 (0.63)	0.031 (0.73)	0.025 (0.62)	0.027 (0.65)
Target and acquirer are in different industries	0.071* (1.93)	0.062 (1.63)	0.071* (1.93)	0.059 (1.55)	0.071* (1.94)	0.059 (1.55)	0.071* (1.94)	0.069* (1.84)
Demeaned relative size of target to acquirer	-0.051* (1.73)	-0.039 (1.23)	-0.065* (1.73)	-0.109** (2.19)	-0.051* (1.72)	-0.041 (1.29)	-0.051* (1.72)	-0.035 (1.11)
Ln (Deal value)	0.043** (2.38)	0.043** (2.09)	0.043** (2.37)	0.039* (1.92)	0.043** (2.38)	0.041** (2.03)	0.043** (2.38)	0.038* (1.86)
Top quintile target industry earnings volatility indicator	-0.121** (2.00)	-0.135** (2.18)	-0.123** (2.03)	-0.138** (2.20)	-0.125* (1.68)	-0.045 (0.38)	-0.12** (1.99)	-0.132** (2.16)
Low target industry analyst coverage indicator	-0.132* (1.91)	-0.129* (1.80)	-0.132* (1.91)	-0.127* (1.77)	-0.132* (1.92)	-0.131* (1.84)	-0.146* (1.70)	-0.383*** (2.70)
Method of payment is only cash	-0.010 (0.28)	-0.014 (0.36)	-0.009 (0.26)	-0.012 (0.31)	-0.010 (0.28)	-0.014 (0.37)	-0.011 (0.29)	-0.011 (0.28)
Commercial and industrial loan rate spread	-0.019 (0.35)	-0.022 (0.39)	-0.020 (0.35)	-0.017 (0.29)	-0.020 (0.35)	-0.017 (0.30)	-0.020 (0.36)	-0.020 (0.35)
Observations	889	825	889	825	889	825	889	825
Adjusted R-squared	0.217	0.228	0.218	0.230	0.217	0.228	0.218	0.234

Table 7. Panel A. The existence of an escrow contract and bidder acquisition announcement returns

This table presents multivariate analyses of the determinants of bidder acquisition announcement returns. The dependent variable is the cumulative abnormal announcement return for the acquirer starting -1 and ending +1 trading days around the day of the acquisition deal announcement. All other variables are as previously defined. All continuous variables are winsorized at the 1% level. Models (1), (3) and (5) show OLS estimates, while Models (2), (4) and (6) show 2SLS estimates, where we instrument the escrow agreement indicator using respectively Models (1), (2), and (3) in Table 4. Fama-French 49 industry (of the acquirer) fixed effects and year fixed effects are included in all the models. The number of observations used for a particular model reflects the type of acquisition that is considered and our ability to construct the variables appearing in the model. T-statistics (in their absolute value) calculated using robust standard errors are in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	<i>All unlisted targets</i>		<i>Private firm targets</i>		<i>Subsidiary targets</i>	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
	(1)	(2)	(3)	(4)	(5)	(6)
Escrow agreement indicator	0.014* (1.92)		0.016** (1.96)		0.014* (1.80)	
Instrumented escrow agreement indicator		0.030* (1.78)		0.032* (1.86)		0.024* (1.65)
Target is a stand-alone private firm	0.002 (0.26)	-0.002 (0.25)				
The acquisition is considered an asset sale	0.006 (0.79)	0.009 (1.18)	-0.015 (1.34)	-0.013 (1.16)	0.023** (2.13)	0.028** (2.58)
Target and acquirer are in different industries	-0.006* (1.79)	-0.009** (2.20)	-0.010** (2.03)	-0.012** (2.15)	-0.001 (1.05)	-0.004 (1.32)
Relative size of target to acquirer	0.012 (1.55)	0.016* (1.79)	0.022* (1.77)	0.022* (1.79)	0.005 (0.44)	0.009 (0.55)
Log(Market value of acquirer assets)	-0.004 (1.20)	-0.003 (0.87)	-0.005 (0.91)	-0.004 (0.74)	-0.002 (0.42)	-0.001 (0.25)
Top quintile target industry earnings volatility indicator	-0.015 (1.28)	-0.016 (1.33)	-0.026* (1.71)	-0.028* (1.80)	-0.006 (0.36)	-0.005 (0.29)
Low target industry analyst coverage indicator	-0.005 (0.48)	-0.008 (0.68)	-0.014 (0.96)	-0.017 (1.11)	-0.004 (0.21)	-0.005 (0.20)
Method of payment is only cash	0.006 (0.88)	0.007 (0.93)	0.009 (0.95)	0.012 (1.13)	0.002 (0.15)	0.001 (0.02)
Method of payment is only stock	0.038** (2.29)	0.040** (2.29)	0.046** (2.38)	0.049** (2.50)	-0.006 (0.01)	-0.009 (0.25)
Commercial and industrial loan rate spread	0.009 (1.08)	0.012 (1.31)	0.001 (0.02)	0.002 (0.17)	0.015 (1.01)	0.017 (1.00)
Observations	844	783	504	483	340	300
Adjusted R-squared	0.019	0.023	0.047	0.043	-0.013	-0.012

Table 7. Panel B. Cross-sectional variation in the association between the existence of an escrow contract and bidder acquisition announcement returns

This table presents multivariate analyses of the determinants of bidder acquisition announcement returns using the full sample of unlisted targets. We include interactions of (i) the escrow agreement indicator and (ii) the instrumented escrow agreement indicator with (a) an indicator for if the target is a stand-alone private firm, or (b) the demeaned relative size of target to acquirer, or (c) if the target's industry has high earnings volatility (as previously defined), or (d) if the target's industry has low analyst coverage (as previously defined). All continuous variables are winsorized at the 1% level. Fama-French 49 industry (of the acquirer) fixed effects and year fixed effects are included in all the models. The number of observations used for a particular model reflects the type of acquisition that is considered and our ability to construct the variables appearing in the model. T-statistics (in their absolute value) calculated using robust standard errors are in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	OLS (1)	2SLS (2)	OLS (3)	2SLS (4)	OLS (5)	2SLS (6)	OLS (7)	2SLS (8)
Escrow agreement indicator	0.007* (1.67)		0.009 (1.00)		0.013* (1.76)		0.011 (1.38)	
Instrumented escrow agreement indicator		0.022* (1.71)		0.028* (1.78)		0.021* (1.71)		0.034** (2.02)
Target is a stand-alone private firm * escrow agreement indicator	0.012* (1.73)							
Target is a stand-alone private firm * instrumented escrow agreement indicator		0.023* (1.69)						
Demeaned relative size of target to acquirer * escrow agreement indicator			0.009*** (2.62)					
Demeaned relative size of target to acquirer * instrumented escrow agreement indicator				0.005* (1.70)				
Top quintile target industry earnings volatility indicator * escrow agreement indicator					0.002** (2.12)			
Top quintile target industry earnings volatility indicator * instrumented escrow agreement indicator						0.024 (1.37)		
Low target industry analyst coverage indicator * escrow agreement indicator							0.014* (1.81)	
Low target industry analyst coverage indicator * instrumented escrow agreement indicator								0.011 (1.02)

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	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Target is a stand-alone private firm	0.004 (0.43)	0.009 (0.47)	0.002 (0.28)	-0.002 (0.26)	0.002 (0.25)	-0.002 (0.20)	0.002 (0.22)	-0.003 (0.28)
The acquisition is considered an asset sale	0.006 (0.80)	0.009 (1.20)	0.006 (0.80)	0.009 (1.16)	0.006 (0.78)	0.008 (0.99)	0.006 (0.79)	0.009 (1.14)
Target and acquirer are in different industries	-0.006* (1.80)	-0.009** (2.17)	-0.006* (1.80)	-0.009** (2.23)	-0.005* (1.79)	-0.009** (2.18)	-0.005* (1.79)	-0.009** (2.20)
Demeaned relative size of target to acquirer	0.012 (1.55)	0.016* (1.81)	0.008 (0.84)	0.007 (0.53)	0.012 (1.55)	0.016* (1.84)	0.012 (1.51)	0.016* (1.83)
Log(Market value of acquirer assets)	-0.004 (1.17)	-0.003 (0.78)	-0.004 (1.20)	-0.003 (0.75)	-0.004 (1.20)	-0.003 (0.89)	-0.004 (1.21)	-0.003 (0.85)
Top quintile target industry earnings volatility indicator	-0.015 (1.30)	-0.016 (1.34)	-0.015 (1.30)	-0.017 (1.35)	-0.016 (1.03)	0.023 (0.92)	-0.015 (1.24)	-0.016 (1.34)
Low target industry analyst coverage indicator	-0.006 (0.50)	-0.008 (0.70)	-0.005 (0.48)	-0.008 (0.71)	-0.005 (0.48)	-0.007 (0.63)	0.003 (0.20)	-0.027 (1.03)
Method of payment is only cash	0.006 (0.87)	0.007 (0.93)	0.006 (0.95)	0.008 (1.05)	0.006 (0.87)	0.006 (0.90)	0.006 (0.84)	0.007 (0.98)
Method of payment is only stock	0.038** (2.31)	0.040** (2.30)	0.038** (2.31)	0.039** (2.26)	0.038** (2.28)	0.039** (2.24)	0.037** (2.25)	0.04** (2.25)
Commercial and industrial loan rate spread	0.009 (1.08)	0.012 (1.27)	0.009 (1.09)	0.012 (1.35)	0.009 (1.08)	0.012 (1.28)	0.009 (1.10)	0.012 (1.30)
Observations	844	783	844	783	844	783	844	783
Adjusted R-squared	0.018	0.022	0.018	0.027	0.017	0.026	0.018	0.022