

Why do private acquirers pay so little compared to public acquirers?

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Abstract

We find that the premium paid for acquisitions of public targets is significantly lower when the acquirer is a private firm instead of a public firm. The premium difference between public and private acquirers is small but significant when the acquirer is a private operating company. In contrast, target shareholders receive 63% more if a public firm instead of a private equity firm makes the acquisition. The premium difference cannot be explained by deal or target characteristics typically controlled for in acquisition studies. However, we find evidence that the premium difference is affected by the incentives of target and bidder managers. The premium difference is highest (lowest) when private acquisitions are compared to acquisitions by public firms with low (high) managerial ownership. Further, there is some evidence that the target premium increases in target managerial ownership and institutional ownership levels for public firm acquisitions but not for private firm acquisitions.

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1. Introduction

At least six so-called merger waves have taken place since the end of the nineteenth century and much research has been done trying to understand them.¹ The current merger wave started approximately in 2002. It is associated in the popular press with the growing participation of private firms in general and private equity firms specifically.² Strikingly, while private equity acquisitions represented only 2% of total U.S. mergers and acquisitions deal value in 2000, 15% of that deal value in 2005 came from private equity deals and 18 of the top 1000 deals in 2005 were private equity deals.³

Whereas the press has emphasized the relative importance and growing role that private bidders play in the takeover market, academic research has devoted little attention to the actions of these bidders. We know of no systematic evidence on whether the gains of target shareholders differ when the acquirer is a private firm instead of a public firm.⁴ Yet, there is much debate in the press about whether shareholders of acquired firms are being exploited by private equity bidders with the help of the management of the acquired firm; which amounts to saying that the acquisition premiums paid by private equity firms are too low.⁵ In this paper, we provide evidence on how the premiums paid by private acquirers compare to the premiums paid by public companies.

¹ Earlier M&A waves that have been identified in the literature are the 1895-1904 'horizontal merger' wave, the 1925-1929 'vertical merger wave', the 1965-1970 'conglomerate merger' wave, and the 1981-1987 wave, which is mostly characterized by hostile takeovers, break-ups of large conglomerates, more going-private deals, and the use of leverage to finance these deals. Finally, the merger wave during the second half of the nineties is mostly characterized by deregulation, very large deals by public firms, the use of a relatively high degree of equity financing, and some deals with extreme negative bidder returns (see e.g., Moeller, Schlingemann, and Stulz, 2005). See Bruner (2004) for a more detailed description of these waves.

² See e.g., Newsweek, April 24, 2006.

³ These statistics from Mergerstat are cited in "A high-water mark?," by Tim Reason, CFO Magazine, January 1, 2006.

⁴ The literature has investigated going private transactions (see, for instance, DeAngelo, DeAngelo, and Rice, 1984; Lehn and Poulsen, 1989; Kaplan, 1989). The focus in this literature has been on the issues that arise when management takes the firm private, possibly with the help of a private equity firm. Only one-third of the private firm acquisitions in our sample are management buyouts.

⁵ See, for instance, the article cited in footnote 3.

Since a private firm does not have publicly traded equity to offer in an acquisition, it is not surprising that most acquisitions by private firms are paid for with cash. Therefore, to make an apples-to-apples comparison, it is necessary to compare premiums for cash offers by private firms to premiums for cash offers by public firms. We follow Schwert (1996) and use as our main premium estimate the gains to shareholders from the pre-announcement runup to completion. Using a sample of completed cash-only deals during the period 1980-2005 that consists of 453 deals by private bidders and 1,214 deals by public bidders, we find that the difference in premiums between these two types of acquisitions is sizeable. In our sample, the average gain for target shareholders when the bidder is a public firm is 46.5%. This gain is 35.02% higher than the gain for shareholders when a private firm is the acquirer. This difference is magnified when the acquirer is a private equity firm. The average premium when the acquirer is a private operating company is 40.93%, but it is only 28.47% when it is a private equity fund, so that the premium for an acquisition by a public firm is 63.33% higher than for an acquisition by a private equity fund.

After documenting this dramatic difference in the gains of target shareholders between acquisitions by public firms and by private firms, we investigate why such a difference exists. The simplest explanation would be that public firms and private firms acquire different types of firms. With such an explanation, target shareholders do not receive less if a private firm acquires their firm than they would if a public firm makes the acquisition. The obvious issue is why then private firms concentrate on making acquisitions for firms that can be acquired for a low premium. One might argue that public firm acquisitions generate more shareholder wealth because public firms are operating companies, so that the typical acquisition by a public firm would have synergy gains. Consequently, private equity firms would acquire firms for which synergy gains are non-existent, and hence they would not have to pay as much. Though the majority of the private acquirers are private equity funds, 47.90% of the private bidders in our sample are operating companies. The private operating companies pay less for acquisitions than

public companies when we take into account target and deal characteristics. Whether private operating companies pay more than private equity companies depends on the measure of the premium used. If we use a premium estimated from the pre-announcement runup to completion, operating companies pay less than private equity companies. If, instead, we use a three-day announcement return, there is no difference. Though most of our results are not sensitive to the premium measure, some are. We discuss the few cases where the conclusions are sensitive to the premium measure individually.

There is a vast literature that attempts to explain differences in target gains. It could be, therefore, that the difference in premiums results from differences in target and deal characteristics. Controlling for target and deal characteristics does not reduce the difference in target premiums between private acquisitions and public acquisitions. If observable target and deal characteristics cannot explain the difference in premiums, it must be either that target and deal characteristics we cannot observe with our dataset explain the difference or that bidders make different offers for similar firms depending on whether the bidder is private or public. There are at least two possible explanations for why offers would depend on the organizational form of the bidder. First, it could be that failure of an offer has more adverse consequences for managers of public firms than for managers of private firms.⁶ In particular, it could be that public firms have to reveal more information about their strategy in the process of making an offer, so that failure has a cost, which is that information about the bidder becomes public, which could possibly help competitors and perhaps make it more likely that the acquirer could become a target. However, evidence from Lehn and Zhao (2006) does not appear supportive of this hypothesis. They find that managers are more likely to keep their job if they cancel an offer to which the market reacted poorly instead of going through with the acquisition.

As advanced by Jensen (1989) and others, agency problems may be more serious in many public firms than in private firms. There is a long tradition in finance, starting with Berle and

⁶ We thank Jeff Gordon for this suggestion.

Means (1932), questioning whether managers with low ownership in their firm make decisions that go against the interests of shareholders. In the context of acquisitions this tradition emphasizes the potential for managers to gain from acquisitions that do not benefit shareholders. Particularly, managers may gain in prestige from managing larger firms, receive more perks, be better compensated, and be safer from hostile takeovers. We call this the managerial discretion theory of takeovers. It posits that there are private benefits to acquisitions for managers such that they may be willing to pay more for target firms than shareholders would. Consistent with this view, Harford and Li (2007) find for their sample that managers of bidder firms are better off in three quarters of the acquisitions that are associated with decreases in shareholder wealth. As managers' stakes in the firm increase, we expect managers to become less likely to make acquisitions that adversely impact shareholders.

We find evidence that is consistent with the managerial discretion theory of takeovers. Our approach is to see whether the difference in target returns still exists when we compare private bidders to public bidders with highly concentrated managerial ownership (defined broadly as ownership by insiders). The difference in target shareholder gains between acquisitions by private firms and by public firms is highest when acquisitions by private equity firms are compared to acquisitions by public firms with managerial ownership of less than or equal to 1% and insignificant when private equity firm acquisitions are compared to acquisitions by public firms with managerial ownership in excess of 50%. Further evidence that the bidding behavior of private firms differs from the bidding behavior of public firms is that private firms are much less reluctant to walk away from a deal than public firms. More precisely, we find that while 37.39% of the offers by private firms are withdrawn, only 16.88% of the offers by public firms are withdrawn. This evidence is consistent with the hypothesis that failure is more costly for public firms, but it may also reflect the existence of greater agency costs in the typical public firm relative to private firms.

We investigate the hypothesis that target shareholders are somehow cheated in acquisitions by private firms because target managers are willing to sell the firm at a low price. Such an argument could make sense if the private firm acquirer can offer the promise of continued employment to target managers and the possibility of a large payoff if they improve the firm enough that it eventually goes public again. With this hypothesis, however, we expect that the difference in shareholder gains between the two types of acquisitions falls as the share ownership of target managers increases because, as their stake increases, they lose more from a low acquisition premium. We also expect the difference between the two types of acquisitions to fall as the ownership of institutional shareholders increases because these shareholders have greater ability and incentives to force management to seek improvements in the premium offered. We find no evidence that the difference in target shareholder gains between acquisitions by public bidders is decreasing in target managerial ownership. However, our evidence, though weak, is troubling in that our long-horizon premium estimates significantly increase when target managers have high ownership for public firm acquisitions, but not for private firm acquisitions. With respect to institutional ownership in the target firm, we find that it leads to higher premiums for public firm acquisitions but that it has no impact on premiums when the acquirer is a private firm. It could well be that private firms make acquisitions only if target management is cooperative, possibly because of private gains from the acquisition, and that cooperation from target management weakens the efforts of institutional investors to increase the premium. Supporting this perspective, we find that no private equity acquisition is hostile in our sample.

The remainder of the paper is organized as follows. In Section 2, we describe our sample of acquisitions by private and public firms. In Section 3, we compare target gains for acquisitions by private firms and by public firms. In that section, we also compare the target gains for acquisitions by different types of private firms. In Section 4, we control for target and deal characteristics. We examine the relation between the difference in premium and ownership concentration at public firms in Section 5. In Section 6, we examine whether the premium

difference we document is related to target managerial and institutional ownership. We conclude in Section 7.

2. The sample of acquisitions

We collect our sample of acquisitions from the Securities Data Company's (SDC) U.S. Merger and Acquisition Database. To obtain a sample where offers are most comparable between types of acquirers, we collect all completed majority acquisitions for the period 1980-2005 between U.S. public targets and U.S. bidders in which the acquirer owns 100% of the shares of the target after the deal. We exclude all transactions with non-operating targets, without disclosed deal value, and labeled as spin-offs, recaps, self-tenders, exchange offers, repurchases, minority stake purchases, acquisitions of remaining interest, or privatizations. We also exclude transactions where SDC identifies the bidder as private, but hand-checking the Lexis-Nexis database for announcement press releases reveals that the bidder is a group of investors. We further require each target firm to match on the Center for Research in Securities Prices (CRSP) and Compustat databases and to have a share code indicating a public firm (10, 11). We follow Schwert (1996) and require that the acquisition from first bid to completion takes place in no more than one year. Finally, we want to focus on a sample of cash only offers to have an apples-to-apples comparison between deals that involve private bidders and those that involve public bidders. Excluding non-cash deals results in a final sample with 1,667 deals where 453 deals involve a private bidder and 1,214 deals have a public bidder according to SDC. Though all results reported in tables use this sample, we have also estimated our regressions using broader samples. All the conclusions we draw from our regression analysis hold if we include failed offers, other forms of payment (including all-equity offers), groups of private bidders, or offers for majority interests where the bidder ends up with less than 100% of the target shares.

Table 1 shows the distribution of the number and of the aggregate value of the acquisitions through time. The fraction of acquisitions each year made by private companies is highest at the

end of the 1980s and in recent years. The dollar amounts of the acquisitions by private companies are extremely large in 1988, 2004, and 2005 compared to any other year. The fractions of the total value of acquisitions by private bidders are large in 2004 and 2005 compared to most other years in the sample. In these two years, the value of the acquisitions by private companies averages to 28.3% of the total value of acquisitions. With the exception of the 2003-2004 and 2004-2005 periods, there is no other two-year period for which that fraction exceeds 20%.

Though we do not report the results in a table, we investigate the distribution of the acquisitions in our sample across industries. We find that the fraction of public firm acquisitions (43.08%) made in manufacturing industries is greater than the fraction of private firm acquisitions (35.76%) made in such industries. The second most important group of industries for acquisitions is the group of service industries (22.41% of public firm acquisitions and 24.28% of private firm acquisitions). Among the other industries, acquisitions of financial firms are less prevalent for private firms (11.92% of all private firm acquisitions) than for public firms (15.24%), but acquisitions of firms in the retail industry are more prevalent for private firms (13.02%) than for public firms (5.68%).

We also investigate the distribution of acquisitions across types of private firms and report the results in Table 1. For that purpose, we search the Lexis-Nexis database for press releases around the announcement period of each of the deals that according to SDC involves a private bidder. We divide the private acquirers into two groups: private equity acquisitions and private operating company acquisitions. By private equity acquisitions, we denote all acquisitions made by private entities that are not private operating companies. The largest private equity transaction in our sample is the acquisition of Sungard Datasystems in 2005 for almost \$11 billion by a consortium that includes Blackstone and KKR. The largest acquisition by a private operating company is the 1988 acquisition of Koppers Company by BNS, Inc., a wholly owned subsidiary of Beazer PLC, a British construction company, for \$2.823 billion (in 2005 CPI-adjusted dollars).

As noted before, some acquisitions are made by groups of investors. The largest acquisition by a group of investors is the acquisition of Park Communications for \$938 million (in 2005 CPI-adjusted dollars). The acquisition took place through an auction with five qualified bidders. The main acquiring investors, Donald Tomlin and Dr. Gary Knapp, were the principals of an acquisition company, PAI. Throughout the paper, we exclude acquisitions by groups of investors from the private firm acquisitions. Alternative approaches would be to include these acquisitions among the private equity firm acquisitions or to create a third group of private firm acquisitions. Results when we define private equity firm acquisitions to include acquisitions made by private investor groups are similar to the results reported here and we conclude that no insights would be gained by having a third group of private firms.

3. Gains to target shareholders for public firm acquisitions and private firm acquisitions

We use the Center for Research in Securities Prices (CRSP) database to collect daily return data for our sample of targets. To measure the premium received by the target, we estimate size and book-to-market portfolio adjusted buy-and-hold abnormal returns from 42 days before the *first* bid to completion (FBC premium).⁷ As Schwert (1996) notes, this approach to estimating the premium has the advantage of including all of the days when the offer to the target shareholders might have changed as well as any pre-bid runup. When using this measure of the premium, it cannot be argued that somehow we find differences in premiums because takeover contests proceed differently for private bidders than they do for public bidders.

There is an obvious problem with using a premium measure estimated over a long period of time; such a measure is sensitive to misspecification of the benchmark return.⁸ It is important to make sure that our inferences are not affected by such misspecifications. We therefore also

⁷ Size and book-to-market adjusted returns are calculated using the returns on the 25 Fama French size and book-to-market portfolios. Our results are similar if we use market-model cumulative abnormal return measures.

⁸ See Kothari and Warner (2007).

estimate target shareholder gains over short event windows using standard event study methods (see, e.g., Brown and Warner, 1985) since such estimates are relatively insensitive to benchmark returns. We compute cumulative abnormal returns (CAR) using market model abnormal returns based on the CRSP value-weighted index. Market model parameters are estimated from day -379 to day -127 relative to the first acquisition announcement day as in Schwert (1996). Such a measure is much less sensitive to benchmark specification (see Brown and Warner, 1985), but it would be biased if there are systematic differences in how information about acquisition likelihood and terms is revealed to the market between private and public acquisitions.

The first row of Panel A of Table 2 shows the mean and median abnormal returns for the FBC premium. The average premium for acquisitions by public firms is 46.50%. In contrast, the average premium for acquisitions by private firms is 34.44%. The difference is similar for the medians. Consequently, shareholders from firms acquired by public firms receive about 35% more than shareholders acquired by private firms. In the next row, we show estimates of the premium using cumulative abnormal returns from the market model (MFBC premium).⁹ In this case, shareholders acquired by public firms receive 30.6% more than shareholders acquired by private firms. For each premium estimate, we also calculate an alternative estimate that is the abnormal return of the target from 42 days before the announcement of the bid by the *winning* firm to completion (i.e., WBC and MWBC). These alternative estimates of the premium are similar.

We next turn to estimates of shareholder gains obtained from narrow windows around the announcement date (unless we say otherwise, the announcement date is always the date at which the winning bid is announced). Using a cumulative abnormal return for a three-day window (CAR3), we find that shareholders of firms acquired by public firms earn 29.48% on average over the three days around the announcement of the acquisition. In contrast, shareholders of firms

⁹ CAR premium is the cumulative abnormal return from 42 trading days before the first bid to the completion date of the transaction.

acquired by private firms earn 22.06%, or 25.2% less than if the bidder were public. We also provide estimates for a five-day window (CAR5) and an eleven-day window (CAR11). These results are similar to CAR3.

To evaluate the relevance of the CAR estimates, it is useful to evaluate whether information revealed in the runup period and the post-runup period differs between types of acquirers. We therefore calculate abnormal returns for the runup period (RUNUP) and from the day before the announcement date to the close of the acquisition using size and book-to-market portfolio adjusted buy-and-hold returns (FFRET).¹⁰ Table 2 shows that the target shareholder returns from announcement to the close of the acquisition are significantly lower for acquisitions made by private firms than for acquisitions made by public firms. The absolute value of this difference is similar to that of the announcement returns and is economically large as well. In contrast, there is no difference in RUNUP. It follows that focusing on the three-day abnormal return does not appear to induce a systematic bias when comparing acquisition premiums paid by public firms to acquisition premiums paid by private firms.

Across all the approaches we consider, target shareholders on average earn at least seven percentage points less of pre-announcement firm value when a private firm acquires the target relative to when a public firm does. Alternatively, target shareholders earn at least 30% more in the deal if it is a deal with a public firm instead of with a private firm. These differences are similar across all measures of returns we use.

We now turn to the differences across types of private acquirers. Given the interest in acquisitions by private equity firms, such a comparison is important. Such a comparison also helps in understanding why target shareholders gain less when a private company makes an acquisition since private operating companies are more similar to public acquirers than are private equity companies.

¹⁰ The results are similar using a market-model cumulative abnormal return measure.

Panel B of Table 2 shows estimates of the premium for acquisitions by two different types of private acquirers. The average FBC premium is 28.47% for private equity acquirers. This premium is significantly lower than the premium paid by the public acquirers and is roughly six percentage points less than the sample average for private acquirers. Strikingly, target shareholders get 63.33% more if an offer is by a public firm rather than by a private equity firm. Not surprisingly, given these numbers, private operating companies pay more than private equity firms. We find that private operating companies pay 40.93% on average. With the FBC premium measure, there is no significant difference between the average premium paid by private operating companies and public firms – but there is a significant difference for the medians.

As we did in Panel A, we provide alternative estimates of the gains to the target shareholders. For acquisitions by private equity firms, the results are all consistent with the results obtained for the FBC premium. The same cannot be said for the results for private operating companies. All other estimates of target shareholder gains show that the mean gain is significantly lower when the firm is acquired by a private operating company relative to when it is acquired by a public firm.

The last two columns of Panel B show the difference in shareholder gains between acquisitions made by private equity firms and by private operating companies. There is no significant difference between target shareholder gains for acquisitions by private equity firms and by private operating companies except when we use premiums estimated from the pre-runup period to completion and use market-to-book and size portfolios as benchmarks.

In contrast to private operating firms, private equity firms cannot typically exploit synergies from their acquisitions. Consequently, target firms that have the potential for synergies would be acquired by operating firms and would have a higher premium. In contrast, firms without the potential for synergies would be acquired by private equity firms and would have a lower premium. It follows from the results in Panel B of Table 2 that the lack of synergies may help explain the lower announcement returns for acquisitions by private equity firms compared to

acquisitions by public firms and private operating firms. However, such a conclusion is highly sensitive to how premiums are measured. Except for the long windows using the market-to-book and size portfolios, there is no evidence of a difference in premiums between acquisitions by private operating firms and acquisitions by private equity firms. To check the role of synergies further, we also estimate the abnormal returns for acquisitions by firms that are in the same two-digit industry as the target and for acquisitions by firms that are not in the same two-digit industry. Though we do not report the results in a table, in general we find that the within-industry acquisitions have insignificantly different abnormal returns from the diversifying acquisitions within both the public and private bidder groups.

Lastly we estimate the premiums for each half of the sample period, though we do not reproduce the results in a table. In particular, we estimate premiums for the 1980-1992 and 1993-2005 periods. When considering the CAR3 premium measure, we observe an increase in the average premium from the earlier to the latter period for both public bidder acquisitions and private bidder acquisitions; however the increase in the private bidder deals is only attributable to the private operating companies, so that the CAR3 premium actually falls for private equity acquisitions. There is evidence that the FBC premium is lower in the second half of the sample for private equity acquirers and is unchanged for acquisitions by public firm acquirers.

4. Can target characteristics explain the difference in abnormal returns?

In this section, we investigate whether private acquirers seek to acquire different firms than public acquirers and whether these differences explain the difference in target gains. We also consider differences in deal characteristics. We focus on target and deal characteristics that the empirical and theoretical literatures have found important. We first explore these characteristics at the univariate level in Section 4.1 and then continue with multivariate regression analyses in Section 4.2.

4.1. Univariate comparisons of target and deal characteristics

Panel A of Table 3 compares target characteristics for both types of acquisitions. The first variable we consider is the market value of target equity (MVE; measured in CPI-adjusted 2005 dollars) 63 trading days prior to the announcement. We compute this value from CRSP data. We find that public acquirers make significantly larger acquisitions. There is evidence that target shareholders gain less when their firm is larger (see e.g., Officer, 2003), so the fact that public firms make larger acquisitions increases the puzzle of why the premiums are higher for public firm acquisitions than for private firm acquisitions. We consider next a measure of leverage (DEBT), namely the ratio of the book value of debt to the sum of the book value of debt and the market value of equity. Firms acquired by private acquirers are substantially more levered than firms acquired by public firms. To the extent that more highly levered firms have a weaker bargaining position since they do not have the option to recapitalize to defend against the takeover attempt, we expect private firm acquisitions to benefit target shareholders less. However, it could also be that leverage facilitates more concentrated ownership of the target and hence forces a successful acquirer to offer a greater premium (see e.g., Stulz, 1988).

Firms acquired by private firms have a significantly lower Tobin's q (Q) than firms acquired by public acquirers. When the target Tobin's q is lower because of managerial entrenchment and agency costs at the target firm, there are more opportunities for the acquiring firm to create value through the acquisition and hence this makes it possible for the bidder to pay more for the target (See e.g., Lang, Stulz, Walkling, 1989). The difference is also strong when we compute an industry-adjusted q (IAQ). We estimate this industry-adjusted q by subtracting the yearly median Q of firms in the same 2-digit SIC code. Firms acquired by private bidders have a lower Q relative to their industry median than firms acquired by public bidders. The lower Q is not the result of recent poor performance.

Younger firms typically have a higher Tobin's q , but there is no difference in target firm age (AGE; measured since listing on CRSP) between the two types of acquirers, so that age seems an

unlikely explanation for the difference in Tobin's q . There are, however, significant differences in other proxies for growth opportunities, suggesting that the difference in Q is consistent with higher growth opportunities of firms acquired by public bidders. We show data for the last three years of sales growth ($\Delta SALES$) and last three years of employment growth ($\Delta EMPLOYEE$). These measures are often used as proxies for growth opportunities. Firms acquired by public firms have greater sales growth and greater employment growth than firms acquired by private firms. They also have higher R&D expenditures, but there is no difference in the ratio of intangible assets to total assets ($INTANGIBLE$). Finally, we find evidence that firms taken over by private firms have greater operating cash flows divided by total assets (OCF).¹¹ Such evidence is consistent with the view that private equity firms can create value by returning free cash flow to shareholders.

Since targets acquired by private firms have lower Q values than targets acquired by public firms, we would expect these targets to have performed more poorly than targets acquired by public firms. However, we find no difference in the cumulative twelve-month market-model residual ($ARET_{12}$). Such a result makes it even more unlikely that the premium for private firm acquisitions is lower because the acquisition premium is incorporated to a greater extent into the stock price for such acquisitions compared to public firm acquisitions. We examine more directly if there is a difference in stock returns close to the acquisition and find that there is none. As a final check of this possibility, we investigate whether the asset liquidity measure ($TARLIQ$) of Schlingemann, Stulz, and Walkling (2002) differs between the two types of acquisitions. This measure captures the intensity of the market for corporate control and asset sales in an industry. If an industry has great asset liquidity, stock prices might be higher to reflect possible future acquisition premiums. We find no difference in the measure of asset liquidity between the two

¹¹ Operating cash flow is defined as in Moeller, Schlingemann, and Stulz (2004) as Sales - COGS - SGA - ΔNWC . The fraction of operating cash flow over book assets is winsorized at the one percent level in the regression analysis.

types of acquisitions. There is also no clear evidence that uncertainty about the value of the targets differs between private firm and public firm targets.

We estimate the Amihud (2001) measure of stock illiquidity (STOCKLIQ), measured as the average ratio of the absolute daily return divided by dollar daily volume. A higher value of that measure means that a stock's market is less liquid. We find that targets acquired by private firms have a much less liquid common stock than firms acquired by public firms. Targets acquired by private firms have a similar number of business segments (SEGMENTS) as targets acquired by public firms. A large fraction of targets trades on NASDAQ, but that fraction is the same across private and public bidders.

Panel B of Table 3 shows deal characteristics. All information is obtained from SDC, unless otherwise noted. We find that the dollar value of the deals (DEALVALUE; measured in CPI-adjusted 2005 dollars) is significantly higher for public firm acquisitions than for private firm acquisitions. Public bidders are more likely to be involved in tender offers (TENDER) than private bidders. Tender offers tend to be associated with higher premiums (see e.g., Huang and Walkling, 1987). We find that acquisitions by private firms are more likely to be diversifying acquisitions (DIVERSIFY) than acquisitions by public firms (meaning that the target is in a different 2-digit SIC code than the bidder). This finding is not surprising since so many of our private bidder acquisitions are by private equity firms. Similarly, it is not surprising that more private firm acquisitions are management buyouts (MBO). Betton and Eckbo (2000) provide evidence that premiums are lower for acquirers with toeholds. Private firms are more likely to have a toehold (TOEHOLD) than public firms. Across our entire sample period the proportion of hostile acquisitions (HOSTILE) is greater for public bidders than for private bidders, however there is no difference in the proportion of hostile offers across types of acquirers for the 1990-2005 period reflecting the decrease in hostile acquisitions among public acquirers. Less than 1% of all targets were bankrupt (BANKRUPT) at the time of acquisition and the proportion of bankrupt targets is not different for public and private bidders. Targets of acquisitions by public

firms are more likely to use defensive tactics (DEFENSE) – in fact in our sample no target of a private firm uses defensive tactics according to SDC.

Burch (2001) finds that target lockups are associated with higher target gains. We find that target lockups (TARLOCK) are slightly more likely for targets of public firm acquirers, whereas bidder lockups (BIDLOCK) are significantly more likely for public acquisitions than for private ones. Officer (2003) shows that target termination fees result in significantly higher premiums. We find that targets in public firm acquisitions are just as likely to have a termination fee as targets in private firm acquisitions, so that this lack of difference in the frequency of target termination fees (TARTERM) is unlikely to explain the difference in shareholder gains. There is also no difference in the incidence of bidder termination fees (BIDTERM) across bidder types.

We use two measures of competition. The first measure “COMPETE” indicates whether there was a previous offer for the target prior to the winning bid. Such a situation is equally likely for private firm acquisitions as it is for public firm acquisitions. The second measure “INITBID” indicates whether the initial bid, when it is the winning bid, is followed by an offer by another firm. We find that such an outcome is weakly more likely for offers made by private firms. Finally, in contrast to conventional wisdom we find that it takes almost a month longer on average for a private acquisition to be completed than for a public one. The variable “DAY” is the number of elapsed calendar days from announcement date to the completion date.

Table 2 also shows the difference between target and deal characteristics for acquisitions by private equity firms and by private operating firms. The private equity firms acquire larger targets. The targets of acquisitions by private equity firms have more business segments than the targets of acquisitions by private operating firms. Acquisitions by private equity firms are more likely to be MBOs, to have a toehold, and to take longer. There are fewer hostile acquisitions by private equity firms than by private operating firms.

4.2. Regression analysis

Our comparison of target and deal characteristics suggests that there are many reasons why shareholders of targets acquired by private firms might receive a different premium than shareholders of targets acquired by public firms. To investigate whether these differences in target and deal characteristics can explain why public acquirers pay more than private acquirers, we estimate multivariate regressions. In these regressions, we use abnormal returns as the dependent variable and the target and deal characteristics as explanatory variables. We include an indicator variable for acquisitions by private equity firms (PEBIDDER) and another one for acquisitions by private operating companies (POBIDDER). If target and deal characteristics explain the difference in abnormal returns, these indicator variables should be insignificantly different from zero in our multiple regressions.

Table 4 shows the regression estimates. We use two different dependent variables: the FBC premium in regression models (1) – (4) and the three-day announcement abnormal return (CAR3) using the market model in regression models (5) – (8). We first discuss the results for the regressions using the FBC premium. Both indicator variables are significantly negative, showing that both acquisitions by private equity firms and acquisitions by private operating companies have significantly lower premiums than acquisitions by public firms. However, there is a dramatic difference between the indicator variable for acquisitions by private equity firms and the indicator variable for acquisitions by private operating companies. For instance, in the first regression, the indicator variable is -0.1868 for acquisitions by private equity firms, significant at the 1% level. In contrast, the indicator variable for acquisitions by public firms is -0.0597, significant only at the 10% level. The two indicator variables have significantly different coefficients at the 1% level using an F-test. Controlling for target and deal characteristics seems to have no impact on the extent to which private operating companies pay less than public firms, but seems to worsen the degree to which private equity firms pay less than public firms. We find that target shareholders realize smaller gains when their firm is larger, has a higher industry-

adjusted Tobin's q , has performed better over the past year, and the offer comes after a prior offer. In addition, target shareholders gain more when the target firm has more leverage, the acquisition is hostile, the successful bidder follows another bid, and the acquisition is a tender offer.

We discuss next the results for the regressions using the three-day announcement abnormal return. The private bidder indicator variables are both significant at the 1% level and much closer in absolute value. Using an F-test, the difference between the indicator variables is not statistically significant. Though the indicator variable for private equity firm acquisitions is large in absolute value in models (1) through (4) compared to the FBC premium estimate of Table 2, the three-day announcement abnormal return is similar to the indicator variable in absolute value in models (5) through (8). There is no evidence that introducing target and deal characteristics is helpful in explaining the lower target shareholder gains of acquisitions by private firms. There are some differences in the estimated coefficients between the regressions using the FBC premium and those using the three-day abnormal returns. In particular, leverage is highly significant with the FBC premium but is insignificant for the three-day abnormal returns. The bidder lock-up indicator variable is positive and significant for the three-day abnormal return but not for the FBC premium. Finally, the estimate of the liquidity of the market for corporate control in the target's industry has a significantly negative coefficient for the three-day abnormal return but is insignificant (though the coefficient is roughly the same) for the FBC premium. None of these differences have any bearing on the conclusions of this paper.

We estimate the regressions in Table 4 for two periods of 13 years each (not reported). The coefficient on the private equity indicator variable is negative and significant across all eight models for both periods. The indicator variable for private equity acquisitions increases from the earlier period to the later period by roughly 50% in absolute value. The private operating dummy is significantly negative in all cases except when the FBC premium is used for the 1980-1992 period.

We also estimate the regressions of Table 4, but do not report them, with an additional dummy variable for target management involvement with the bidder. The reason we do not focus on these regressions in the reported table is that it seems difficult to evaluate the extent of target management involvement, making the variable perhaps somewhat subjective. We find that the gains of target shareholders are not significantly different for deals that include management involvement compared to other acquisitions. Controlling for management involvement has no effect on the private bidder estimates.

OLS regressions are vulnerable to departures from normality. To evaluate the strength of our results, we also estimate median and robust regressions. These regressions put less weight on extreme observations. These regressions (not reported) do not change our conclusions. However, the estimates of the premium difference between public and private bidders are lower in these regressions. The estimates for PEBIDDER are roughly fourteen percent and four percent in absolute value, respectively for the FBC premium and the CAR3 abnormal return, and statistically significant with p -values mostly below one percent. The estimates for POBIDDER are between three and four percent in absolute value for both premium measures, but only statistically significant when explaining the variation in the three-day abnormal return.

Finally, to be sure that our findings are not sensitive to our examination of cash only deals, we estimate models (1) – (8) in Table 4 using all offers instead of just cash offers, but do not report the results in a table. When we use all offers the sample increases from 1,667 to 3,957 observations. Almost all of the increase in deals is due to offers that include equity by public firms. There are only 120 acquisitions by private firms that include some equity and they are much more prevalent in the first half of our sample period. We estimate the regressions first without controlling for the form of payment. The indicator variable for private equity funds is negative and significant at the 1% level across all eight specifications and has a magnitude of roughly 0.174 (0.043) in absolute value when the FBC premium (CAR3) is used. The private operating dummy is consistently negative with an average magnitude of 0.048 (0.023) when the

FBC premium (CAR3) premium is the dependent variable, however it is only significant at the 10% level for models (1), (2), and (4) and is not significant for the other models. Such regressions are difficult to justify in light of the literature since the literature concludes that the form of payment is highly correlated with the premium paid (Huang and Walking, 1987). When we add an indicator variable for all cash offers, both the private equity and private operating indicators are negative and statistically significant across all eight specifications. For the FBC premium (CAR3) the average magnitudes are -0.178 (-0.076) and -0.05 (-0.045) for private equity and private operating bidders, respectively. Consequently, whether we include non-cash offers in the regressions or not, target shareholders earn less when they are acquired by a private bidder.

5. Bidder characteristics and the gains to target shareholders for public firm acquisitions and private firm acquisitions

So far we have shown an economically large and statistically significant difference in target shareholder gains between acquisitions by private firms and acquisitions by public firms. Observable target and deal characteristics do not explain this difference. We investigate next whether the lower shareholder gains in acquisitions by private firms can be explained by differences in bidder characteristics. In contrast to public acquirer deals, such an investigation is necessarily limited by the fact that there is not much information available on private acquirers. Nevertheless, private acquirers have concentrated ownership. If a private acquirer is a private operating company, it cannot have diffuse ownership because its stock is not publicly listed. If a private acquirer is a private equity firm it can have many investors, but decisions are made by a managing partner whose high-powered incentives are closely aligned with those of investors. We therefore investigate the hypothesis that private firms pay less for targets because their managers have better incentives to maximize firm value than managers of diffusely held public corporations. This difference in incentives makes it less likely that managers of private firms will make acquisitions that benefit them at the expense of other shareholders in their company. In

contrast, managers of public companies may benefit from acquisitions even if these acquisitions do not benefit shareholders. For instance, Bebchuck and Grinstein (2007) find that compensation of managers increases as the firm they manage becomes larger, so that mergers that increase firm size may increase managerial compensation even if they destroy shareholder wealth. As previously mentioned, Harford and Li (2007) find that managers experience wealth increases in most cases where acquisitions destroy shareholder wealth. Managers of public companies also gain prestige and perks if they manage larger companies.

If private firms pay less for acquisitions than public firms do because their ownership is more concentrated, we would expect the difference in target shareholder gains between private and public acquirers to be less when ownership of the public acquirer is more concentrated. To test this hypothesis, we collect ownership data for the public bidders in our sample from Compact Disclosure CD's. We collect the ownership data from the CD that contains the most recent information on ownership for officers and directors prior to the announcement date. Since we are only able to access Compact Disclosure data starting in 1990, we do not have ownership information for the 1980s portion of our sample. As is common in the literature, we call this ownership the firm's managerial ownership. We then estimate our target shareholder gain regressions using different samples of public firms to estimate the coefficient on the private firm indicator variables. The samples of public firms differ by their level of managerial ownership. A priori, there seems to be no reason why the synergy gains of public firm acquisitions would be related to the managerial ownership of the acquiring firm. Consequently, the synergy gain explanation for the difference in premium between public firm acquisitions and private firm acquisitions does not appear capable of explaining a relation between the premium difference and the managerial ownership of public acquirers.

When we compare the target shareholder gains associated with private firm acquisitions to the shareholder gains of public firm acquisitions in Table 5 for different levels of public firm managerial ownership using the FBC premium estimate, we find that the difference in the

premium is highest when private firm acquisitions are compared to public firm acquisitions by public firms with managerial ownership less than or equal to 1%. In our sample of firms for which managerial ownership is available, 281 firms out of 628 have managerial ownership less than or equal to 1%. For private equity firm acquisitions, the indicator variable is -0.2851 and significant at the 1% level. For acquisitions by private operating companies, the premium paid is significantly different when compared to acquisitions of public firms with managerial ownership less than or equal to 1% or 5%. The decrease in the absolute value of the indicator variable is not monotone across categories of public firm acquirers with higher managerial ownership, but the indicator variable is always lower than in regression (1) and it is significant at only the 10% level in regressions (4) and (5). When we compare private equity firm acquisitions to acquisitions by public firms with managerial ownership in excess of 50% in regression (6), which are the public firms for which managerial incentives come closest to the managerial incentives in private equity firms, the absolute value of the indicator variable is less than one-third of its value in regression (1) and is insignificant. Not surprisingly, there are fewer public firms available for regressions (4) through (6) (53 for regression (4), 55 for regression (5) and 45 for regression (6)).

We perform the same comparisons using the three-day abnormal return in regressions (7) through (12). For the three-day abnormal return regressions, there is a monotone decrease in the absolute value of the indicator variable as private equity firm acquisitions are compared with acquisitions by public firms with increasing managerial ownership. We find that the private equity indicator variable is not significant when the managerial ownership of the public firm exceeds 25%. Again, the magnitude of the absolute value of the indicator variable when public firms have more than 50% managerial ownership is less than a third of its value when public firms have less than or equal to 1% managerial ownership. The estimates of the absolute value of the indicator variable for private operating firms exhibit the same monotonically decreasing pattern as the private equity coefficients do and are only significant when compared to public bidders with managerial ownership less than or equal to 1% or 5%.

Another way to shed light on the importance of managerial agency problems as a potential explanation for the difference in target shareholder gains is to investigate how this difference holds up as the size of the public acquirer varies. One would expect that managers have more discretion in large companies because the costs of collective action for shareholders are larger in such companies. We therefore predict that the difference in target shareholder gains between private and public acquirers is smaller for smaller public acquirers. As we show in Table 6, this is the case.¹² When we use the FBC premium, the indicator variable for private equity firm acquisitions is significant for all size quartiles and its magnitude is directly related to the public bidder size quartile as predicted. For operating firms, the indicator variable is only significant for the two largest quartiles and again there is a direct relation between the estimates magnitude and the size quartile. When we turn to the three-day abnormal returns, CAR3, we find that the same patterns hold for both private equity funds and private operating companies except for the fact that the private equity coefficient is statistically insignificant for the smallest size quartile.

The evidence suggests that the gains to target shareholders from being acquired by a private firm are similar to the gains these shareholders would make if their firm were acquired by a small public firm but not by a large public firm. Moeller, Schlingemann, and Stulz (2004) find that targets receive larger premiums from larger public bidders. The results in this paper point to agency costs as an explanation for the premium differentials between public and private bidders.

It is often argued that institutional investors reduce the importance of managerial agency problems. We collect institutional ownership data for the public bidders from Compact Disclosure and compare the gains of target shareholders in acquisitions by private firms to the gains of target shareholders in acquisitions by public firms with different levels of holdings by institutional shareholders. Though we do not report the results in a table, we find that the private firm indicator variables in our regressions do not vary much as the institutional investor threshold

¹² We estimate our regressions restricting the public acquirers to belong to size quartiles since, not having the size of private acquirers, we cannot use a bidder size variable as is common in regressions seeking to explain acquisition abnormal returns.

for the public firm comparison group increases. In fact, the private equity indicator variable is significant at less than 1% across all institutional ownership categories using the same ownership cutoffs as in Table 5 and has an average magnitude of -0.23 and -0.11, respectively for the FBC premium and the CAR3 abnormal return. When considering the three-day cumulative abnormal return premium measure, the private operating indicator variable averages -0.077 in absolute value and is significant at least at the 5% level. For the FBC premium estimate, the private operating firm indicator variable has an average coefficient of 0.093 in absolute value and is statistically significant for four of the six institutional ownership bins.

If managers of private firms have better incentives to maximize shareholder wealth, we would expect them to be less likely to overpay and hence more likely to walk away from a deal than managers from public firms. We find that there indeed is a striking difference. For a broad sample from 1980 through 2005 that includes withdrawn deals, private bidders withdrew 37.4% of their offers. In contrast, only 16.88% of the public bidder offers were withdrawn. Further, we would expect that when public firm and private firm bidders compete for a target, public firms would be more likely to win. We find that this is the case for our sample of 1,667 completed cash only deals. We have 75 contests with both private and public firm bidders. Public firm bidders win in 57 contests and private firm bidders win in 18 contests.

6. Can the incentives of target managers explain the return difference?

A concern mentioned in the press is that managers of private firms have two advantages over managers of public firms. First, they are not subject to the greater monitoring that comes from having to report quarterly results and they do not have to deal with the laws and regulations that affect public firms. At a time when there is much discussion about the costs of Sarbanes-Oxley, managers of private firms are not affected by these costs. Second, managers of private firms can make an outsized payoff when the firm is taken public. It would therefore not be surprising if private bidders could convince managers of public firms to be acquired in exchange for keeping

their job and receiving a share of the payout when the acquired firm goes public. With such a view, one would expect that target managers would be less diligent in getting the best possible deal for their shareholders. Existing empirical evidence is supportive of the view that managers may have at times incentives to obtain more personal benefits from an acquisition at the expense of their shareholders. In particular, Hartzell, Ofek, and Yermack (2004) show that target abnormal returns are less when the target's CEO receives large personal benefits from the acquisition.

As managerial ownership in the target firm increases, the post-acquisition payoff from an acquisition by a private bidder becomes smaller relative to the loss in premium resulting from acquiescing to a low premium offer. We therefore expect less of a difference in abnormal returns between bidder types for targets with high managerial ownership. We also predict it to be harder for target managers to acquiesce to a low premium if their firm has high ownership by institutional investors. To test these predictions, we collect managerial ownership and institutional ownership for the target firms from Compact Disclosure. As before, based on availability, we are able to collect this data starting in 1990.

We find little difference in managerial ownership between targets of private firms and targets of public firms. Mean managerial ownership is 19.91% for targets of private firms and 19.16% for targets of public firms. This difference is not significant. The median difference is also insignificant (12.68% versus 10.49%). This result suggests that private acquirers do not systematically target low managerial ownership firms. When it comes to institutional ownership, we again find no difference in the means (32.43% for targets of private firms versus 37.02% for targets of public firms) or in the medians (28.52% versus 28.41%).

In Table 7, model (1) is the model (4) specification from Table 4 for the subsample for which we have target insider and target institutional ownership. We find that the private bidder indicator variables have higher absolute values than those in Table 4. Regression (2) adds target insider ownership and target institutional ownership to the regression. We find that both ownership

measures have a significant positive coefficient. The economic significance of the coefficients seems small: Going from zero to the mean or from the mean to twice the mean increases the premium by roughly 2.56% of pre-announcement of firm value for managerial ownership and by 4.12% for institutional ownership. Strikingly, however, the ownership variables have no impact whatsoever on the estimates of the private bidder indicator variables. It is conceivable that the relation between the ownership variables and the target gains is nonlinear. To address the possibility that the relation between the premium and target ownership variables is nonlinear, we add the square of the ownership variables in regression (3). The private bidder indicator variables are unaffected by the addition of the square ownership terms, however the squared ownership measures are not significant and multicollinearity renders insignificant the level ownership measures as well.

In regression (4), we allow for a differential effect of insider and institutional ownership for acquisitions by private equity firms and private operating firms. Since we now interact the respective private bidder indicators with ownership measures we de-mean the ownership variables to maintain the interpretation of the private bidder intercept coefficients (see Aiken and West, 1991). We find that while target managerial ownership is associated with significantly higher premiums for public firm acquisitions, this effect disappears when considering offers by private acquirers. In other words, the total impact of insider ownership is essentially zero for acquisitions by either type of private firms. Similarly, we find that target institutional ownership is associated with higher premiums when the acquirer is a public firm, but has no effect on target shareholder gains when the acquirer is a private firm. These results suggest that target managerial ownership and institutional ownership play a different role for private firm acquisitions than they do for public firm acquisitions. A plausible explanation is that private equity acquisitions take place when target managers are in favor of the acquisition and when they are, their influence either makes institutional investors powerless to push for a higher premium or agreeable to the premium offered.

In regressions (5) through (8), we estimate similar regressions using the three-day abnormal return. The ownership variables are not significant (except for a positive coefficient for de-meaned institutional ownership and a negative coefficient for institutional ownership interacted with private equity). However, the signs of the insider ownership variables and the interactions in regression (8) are consistent with the findings in regression (4).

7. Conclusion

In this paper, we compare the target shareholder wealth gains of acquisitions made by public firms to acquisitions made by private firms. We find that target shareholders gain statistically and economically more if a public firm makes the acquisition. Using a premium measure that includes the pre-bid period as well as the period from the first bid to completion as in Schwert (1996), we find that target shareholders gain 35% more if a public firm makes the acquisition instead of a private firm. Target shareholders gain even more, 63%, if a public firm instead of a private equity firm makes the acquisition.

We investigate why target shareholder wealth gains differ so much depending on whether the acquirer is a public or a private company. We find that, although private operating companies pay less than public firms for most of our premium measures, the difference between these two types of acquisitions is much smaller than the difference between acquisitions by private equity firms and public companies. However, observable differences in targets cannot explain the differences in premiums paid.

Managerial ownership in the bidder and the target seem to play an important role in explaining the differences in premiums across organizational forms of the acquirer. There is no significant difference between premiums paid by private equity firms and public firms when the public firms have high managerial ownership. We find that the difference in abnormal returns is highest between acquisitions made by private equity firms and by public acquirers with low managerial ownership. As the managerial ownership of the public bidder increases, so that the

ownership of the public acquirer becomes more similar to the ownership of the private acquirers, the difference in abnormal returns between the two types of bidders becomes small and insignificant. We also find that, whereas high target managerial ownership and institutional ownership are associated with higher premiums for acquisitions by public firms, this is not the case for acquisitions by private firms, suggesting that private firm acquisitions are more likely to involve cooperation by managers to facilitate the acquisition. A striking outcome variable consistent with these differences in incentives is the sharply greater willingness of managers of private equity firms to walk away from an acquisition than managers of public firms.

Why is it that targets do not wait for a public firm to make a bid and why is it that public firms do not always outbid private firms when such firms make a bid? It must be that public firms are not willing to pay large premiums for just any firm. They only pay large premiums for the firms they decide to acquire, so that competition for individual targets may typically be limited. It is therefore plausible that unobservable target characteristics can explain why some firms only attract the attention of private bidders or are ultimately more valuable for private equity bidders. Such firms may have little short-run potential for synergy gains. It could also be that these unobservable target characteristics have to do with a greater willingness of target management to be acquired by a private firm than a public firm. Further research should help resolve the issue of whether target characteristics we do not observe in this study help understand the premium difference.

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Table 1

Number of deals and aggregate deal value by type of bidder over time

The sample includes all SDC completed cash only merger and acquisition deals between a U.S. bidder and a U.S. public target announced between 1980 and 2005 that results in 100% ownership by the bidder. The aggregated deal value is in CPI-adjusted 2005 millions of dollars.

<i>Number of deals and aggregate deal value (2005 CPI \$ millions)</i>										
Year	<u>All bidders</u>		<u>Public bidders</u>		<u>Private bidders</u>		<u>Private equity bidders</u>		<u>Private operating bidders</u>	
	<i>n</i>	Deal value	<i>n</i>	Deal value	<i>n</i>	Deal value	<i>n</i>	Deal value	<i>n</i>	Deal value
1980	3	1,190	3	1,190	0	0	0	0	0	0
1981	7	4,209	5	3,981	2	228	0	0	2	0
1982	9	328	8	318	1	10	0	0	1	228
1983	3	80	2	77	1	3	1	3	0	10
1984	15	8,812	11	6,220	4	2,592	1	1,380	3	1,212
1985	59	61,617	50	57,100	9	4,517	3	903	6	3,614
1986	91	50,910	72	43,822	19	7,088	12	5,816	7	1,273
1987	60	20,532	45	17,380	15	3,153	9	1,308	6	1,845
1988	99	79,754	64	65,561	35	14,194	25	7,173	10	7,021
1989	64	33,728	44	29,716	20	4,012	7	1,086	13	2,926
1990	25	4,689	23	4,415	2	275	1	231	1	44
1991	19	2,873	14	2,672	5	201	2	146	3	55
1992	17	4,679	13	4,310	4	369	1	219	3	150
1993	26	6,649	20	6,186	6	463	3	400	3	63
1994	59	36,365	47	33,934	12	2,431	3	181	9	2,250
1995	97	36,017	76	34,323	21	1,694	5	180	16	1,514
1996	88	46,111	66	42,029	22	4,082	9	1,531	13	2,551
1997	114	57,324	84	49,593	30	7,731	19	4,630	11	3,101
1998	127	60,979	88	48,760	39	12,219	15	5,101	24	7,118
1999	146	75,784	104	64,511	42	11,274	27	9,176	15	2,098
2000	120	96,954	83	89,180	37	7,774	19	4,370	18	3,404
2001	93	33,427	74	28,786	19	4,641	6	3,755	13	885
2002	79	20,807	57	17,161	22	3,647	11	2,907	11	740
2003	80	20,531	47	17,149	33	3,382	24	2,380	9	1,002
2004	79	67,338	54	45,735	25	21,603	18	21,128	7	475
2005	88	89,693	60	67,713	28	21,980	15	17,783	13	4,197
Total	1,667	921,382	1,214	781,821	453	139,561	236	91,784	217	47,777

Table 2

Target return measures for different bidder types

The sample includes all SDC completed cash only merger and acquisition deals between a U.S. bidder and a U.S. public target announced between 1980 and 2005 that results in 100% ownership by the bidder. In Panel A, mean and median [in brackets] return measures are reported for the full sample (All) and for the subsamples consisting of private bidders, public bidders, and their difference. In Panel B, mean and median [in brackets] return measures are reported for each private bidder type. The p-value for each difference between the mean [median] return for the private bidder type and public bidders is reported. In the last two columns the difference in mean [median] returns and its significance level is reported across the private bidder types. All reported p-values are based on t-tests for differences in the mean and on Wilcoxon tests for differences in the median. The variable FBC (WBC) is the Fama-French size and book-to-market portfolio adjusted buy-and-hold return from 42 trading days prior to the announcement of the first (winning) bid to the completion date. The variable MFBC (MWBC) is the cumulative abnormal return from 42 trading day prior to the announcement of the first (winning) bid to the completion date, based on market model parameters. The variables CAR3, CAR5, and CAR11 are respectively the 3-, 5-, and 11-day cumulative abnormal returns around the announcement day, based on market model parameters. The variable FFRET is the Fama-French size and book-to-market portfolio adjusted buy-and-hold return from one day before the announcement date to the completion date of the transaction. RUNUP is the market-adjusted buy-and-hold return from 63 days prior to the announcement to 6 days prior to the announcement.

Panel A: Return measures for private versus public bidders

	All	Private	Public	Private - public	
	bidders	bidders	bidders	Difference	p-value
FBC	0.4322 [0.3685]	0.3444 [0.2841]	0.4650 [0.3956]	-0.1206 [-0.1115]	0.000 0.000
MFBC	0.4002 [0.3556]	0.3273 [0.2895]	0.4274 [0.3776]	-0.1002 [-0.0881]	0.000 0.000
WBC	0.4248 [0.3626]	0.3371 [0.2781]	0.4576 [0.3888]	-0.1205 [-0.1107]	0.000 0.000
MWBC	0.3938 [0.3465]	0.3130 [0.2824]	0.4240 [0.3742]	-0.1110 [-0.0918]	0.000 0.000
CAR3	0.2747 [0.2181]	0.2206 [0.1775]	0.2948 [0.2361]	-0.0743 [-0.0585]	0.000 0.000
CAR5	0.2851 [0.2268]	0.2239 [0.1806]	0.3080 [0.2463]	-0.0841 [-0.0657]	0.000 0.000
CAR11	0.3045 [0.2528]	0.2398 [0.2042]	0.3287 [0.2705]	-0.0888 [-0.0663]	0.000 0.000
FFRET	0.2990 [0.2345]	0.2528 [0.1925]	0.3162 [0.2496]	-0.0634 [-0.0572]	0.001 0.001
RUNUP	0.0909 [0.0490]	0.0837 [0.0414]	0.0936 [0.0533]	-0.0099 [-0.0119]	0.546 0.456

Table 2 – Continued

Panel B: *Return measures by private bidder type*

	Private equity bidders	Difference from public <i>p</i> -value	Private operating bidders	Difference from public <i>p</i> -value	Private equity - private operating	
					Difference	<i>p</i> -value
FBC	0.2847 [0.2620]	0.000 0.000	0.4093 [0.3504]	0.114 0.058	-0.1246 [-0.0884]	0.002 0.005
MFBC	0.3004 [0.2860]	0.000 0.000	0.3566 [0.2943]	0.096 0.053	-0.0562 [-0.0083]	0.228 0.344
WBC	0.2793 [0.2607]	0.000 0.000	0.3999 [0.3230]	0.093 0.061	-0.1206 [-0.0622]	0.002 0.004
MWBC	0.2832 [0.2707]	0.000 0.000	0.3453 [0.2877]	0.050 0.050	-0.0621 [-0.0170]	0.162 0.184
CAR3	0.2064 [0.1816]	0.000 0.000	0.2360 [0.1749]	0.016 0.000	-0.0296 [0.0067]	0.257 0.828
CAR5	0.2080 [0.1760]	0.000 0.000	0.2413 [0.1898]	0.008 0.000	-0.0333 [-0.0138]	0.215 0.506
CAR11	0.2179 [0.1932]	0.000 0.000	0.2638 [0.2109]	0.018 0.001	-0.0459 [-0.0177]	0.119 0.242
FFRET	0.2251 [0.1840]	0.000 0.001	0.2830 [0.1955]	0.267 0.136	-0.0580 [-0.0115]	0.073 0.193
RUNUP	0.0652 [0.0209]	0.151 0.154	0.1039 [0.0624]	0.658 0.737	-0.0386 [-0.0415]	0.164 0.166

Table 3

Summary statistics on target and deal characteristics

The sample includes all SDC completed cash only merger and acquisition deals between a U.S. bidder and a U.S. public target announced between 1980 and 2005 that results in 100% ownership by the bidder. In Panel A, mean and median [in brackets] values for target characteristics are reported. Accounting variables are from Compustat. The market value of equity (MVE) is from CRSP calculated as the CPI-adjusted 2005 dollars price of the stock times the number of shares outstanding 63 days prior to the announcement date. Debt-to-assets (DEBT) is calculated as the book value of debt divided by the sum of the book value of debt and the market value of equity. Tobin's q (Q) is defined as the firm market value divided by the book value of assets. Industry-adjusted Tobin's q (IAQ) is defined as Tobin's q minus the median 2-digit SIC code industry value of this variable. Age (AGE) is the number of months since the firm has been listed on CRSP. Sales growth (Δ SALES) and employee growth (Δ EMPLOYEE) are both based on the three-year compounded annual growth in sales and number of employees. R&D is the expense on research and development divided by the book value of assets. Intangible assets (INTANGIBLE) is calculated as the fraction of the firm's assets minus net PPE and minus current assets, divided by the book value of assets. Operating cash flow (OCF) is defined as sales minus costs of goods sold, sales and general administrative expenses, and change in net working capital, divided by book value of assets. ARET_12 is the market-adjusted buy-and-hold return for the 12 months prior to the runup period. TARLIQ is the liquidity of the market for corporate control for the target firm's industry and is defined as the value of all corporate control transactions for \$1 million or more reported by SDC for each year and two-digit SIC code divided by the total book value of assets of all Compustat firms in the same two-digit SIC code and year. STDEVAR and STDEV are defined, respectively, as the standard deviation of the market model residuals and raw returns from day -379 to day -127 relative to the announcement date. STOCKLIQ is the measure of stock illiquidity of Amihud (2002). SEGMENTS is the number of business segments reported on Compustat. FOCUS is an indicator variable equal to one if SEGMENTS is equal to one. NASDAQ is an indicator variable equal to one if the target firm is listed on the Nasdaq exchange. In Panel B, mean (and median for continuous variables in brackets) values are reported for deal characteristics. The deal value (CPI-adjusted 2005 \$ million) (DEALVALUE) is the total value of consideration (cash) paid by the acquirer, excluding fees and expenses. TENDER, DIVERSIFY, MBO, TOEHOLD, HOSTILE, BANKRUPT, DEFENSE, TARLOCK, BIDLOCK, and TARTERM, BIDTERM, are indicator variables from SDC equal to one if the deal respectively is a tender offer, involves a target with a two-digit SIC code other than that of the bidder, is classified as a management buyout, involves a bidder that holds 0.5% or more of the target stock prior to the announcement, is hostile, includes a bankrupt target, includes a defensive tactic, includes target or bidder lockup provisions, includes target or bidder termination fees. COMPETE is an indicator variable equal to one if another deal for the same target is announced in SDC during the 12 months prior to the announcement date. INITBID is an indicator variable equal to one if the announcement of the offer is followed by an offer by another firm, while no bids took place during the 12 months before the announcement. The variable DAY is the number of calendar days between the announcement date and the completion date.

Panel A: Target characteristics											
	All	Private	Public	Private - public		Private	Difference	Private	Difference	Private equity	
	bidders	bidders	bidders	Difference	p-value	bidders	from public	operating	from public	- private operating	p-value
MVE	324.5862	199.4723	371.2720	-171.7997	0.000	262.4093	0.031	131.0248	0.000	131.3845	0.006
	[93.9366]	[70.5135]	[104.0371]	[-33.5236]	0.000	[93.0717]	0.117	[54.6712]	0.000	[38.4005]	0.000
DEBT	0.1961	0.2259	0.1849	0.0409	0.000	0.2393	0.000	0.2112	0.068	0.0281	0.144
	[0.1473]	[0.1841]	[0.1332]	[0.0509]	0.001	[0.2104]	0.000	[0.1617]	0.091	[0.0487]	0.172
Q	1.4726	1.2629	1.5509	-0.2880	0.000	1.2880	0.000	1.2356	0.000	0.0524	0.405
	[1.1769]	[1.0732]	[1.2134]	[-0.1402]	0.000	[1.1545]	0.000	[1.0361]	0.000	[0.1184]	0.026
IAQ	-0.0168	-0.1658	0.0389	-0.2047	0.000	-0.1684	0.001	-0.1630	0.000	-0.0054	0.933
	[-0.1043]	[-0.1872]	[-0.0667]	[-0.1205]	0.000	[-0.2059]	0.000	[-0.1679]	0.001	[-0.0380]	0.632
AGE	136.3761	137.0309	136.1318	0.8991	0.899	145.4534	0.334	127.8710	0.340	17.5824	0.135
	[91.0000]	[99.0000]	[90.0000]	[9.0000]	0.141	[102.5000]	0.082	[98.0000]	0.639	[4.5000]	0.284
ΔSALES	0.1704	0.1173	0.1920	-0.0746	0.001	0.1146	0.003	0.1205	0.013	-0.0059	0.840
	[0.0975]	[0.0699]	[0.1070]	[-0.0371]	0.000	[0.0672]	0.005	[0.0766]	0.004	[-0.0093]	0.843
ΔEMPLOYEE	0.0784	0.0476	0.0910	-0.0434	0.015	0.0596	0.207	0.0326	0.003	0.0270	0.336
	[0.0345]	[0.0186]	[0.0434]	[-0.0248]	0.001	[0.0164]	0.004	[0.0214]	0.019	[-0.0050]	0.822
R&D	0.0419	0.0224	0.0491	-0.0267	0.000	0.0173	0.000	0.0279	0.001	-0.0106	0.096
	[0.0000]	[0.0000]	[0.0000]	[0.0000]	0.000	[0.0000]	0.000	[0.0000]	0.000	[0.0000]	0.989
INTANGIBLE	0.1869	0.1995	0.1822	0.0173	0.113	0.2142	0.029	0.1836	0.921	0.0306	0.107
	[0.1228]	[0.1280]	[0.1204]	[0.0076]	0.246	[0.1368]	0.033	[0.1228]	0.673	[0.0140]	0.065
OCF	0.0766	0.1066	0.0654	0.0412	0.002	0.1242	0.000	0.0875	0.314	0.0367	0.113
	[0.0933]	[0.1029]	[0.0904]	[0.0126]	0.001	[0.1222]	0.000	[0.0890]	0.861	[0.0332]	0.000
ARET_12	-0.0514	-0.0304	-0.0592	0.0288	0.417	-0.0404	0.614	-0.0196	0.489	-0.0209	0.746
	[-0.1418]	[-0.1297]	[-0.1433]	[0.0136]	0.615	[-0.1286]	0.454	[-0.1460]	0.998	[0.0175]	0.591
TARLIQ	0.0691	0.0674	0.0697	-0.0023	0.632	0.0757	0.389	0.0584	0.038	0.0173	0.033
	[0.0449]	[0.0454]	[0.0446]	[0.0008]	0.548	[0.0470]	0.012	[0.0367]	0.086	[0.0103]	0.001
STDEVAR	0.0367	0.0383	0.0361	0.0022	0.078	0.0367	0.670	0.0400	0.040	-0.0033	0.137
	[0.0317]	[0.0319]	[0.0315]	[0.0004]	0.159	[0.0320]	0.353	[0.0317]	0.222	[0.0003]	0.809
STDEV	0.0376	0.0390	0.0371	0.0020	0.112	0.0376	0.701	0.0406	0.063	-0.0030	0.177
	[0.0327]	[0.0330]	[0.0326]	[0.0004]	0.231	[0.0329]	0.371	[0.0330]	0.352	[-0.0001]	1.000
STOCKLIQ	0.5698	0.9312	0.4343	0.4969	0.040	0.8831	0.197	0.9837	0.060	-0.1007	0.812
	[0.0388]	[0.0790]	[0.0288]	[0.0502]	0.000	[0.0489]	0.006	[0.1175]	0.000	[-0.0686]	0.000
SEGMENTS	1.3868	1.4208	1.3733	0.0475	0.318	1.4911	0.052	1.3333	0.532	0.1577	0.050
	[1.0000]	[1.0000]	[1.0000]	[0.0000]	0.141	[1.0000]	0.006	[1.0000]	0.428	[0.0000]	0.010
FOCUS	0.7546	0.7277	0.7652	-0.0375	0.147	0.6741	0.008	0.7944	0.377	-0.1203	0.006
	[1.0000]	[1.0000]	[1.0000]	[0.0000]	0.139	[1.0000]	0.004	[1.0000]	0.391	[0.0000]	0.007
NASDAQ	0.6635	0.6777	0.6582	0.0195	0.450	0.6314	0.435	0.7281	0.036	-0.0968	0.027
	[1.0000]	[1.0000]	[1.0000]	[0.0000]	0.453	[1.0000]	0.429	[1.0000]	0.044	[0.0000]	0.028

Panel B: Deal characteristics											
	All bidders	Private bidders	Public bidders	Private - public		Private equity bidders	Difference from public <i>p</i> -value	Private operating bidders	Difference from public <i>p</i> -value	Private equity - private operating	
				Difference	<i>p</i> -value					Difference	<i>p</i> -value
DEALVALUE	552.7184 [157.8988]	308.0815 [108.9949]	644.0039 [180.4255]	-335.9224 [-71.4306]	0.000 0.000	388.9164 [135.1475]	0.001 0.018	220.1688 [91.4598]	0.000 0.000	168.7476 [43.6877]	0.010 0.000
TENDER	0.4877 [0.0000]	0.3466 [0.0000]	0.5404 [1.0000]	-0.1938 [-1.0000]	0.000 0.000	0.3263 [0.0000]	0.000 0.000	0.3687 [0.0000]	0.000 0.000	-0.0424 [0.0000]	0.345 0.344
DIVERSIFY	0.5279 [1.0000]	0.7020 [1.0000]	0.4629 [0.0000]	0.2391 [1.0000]	0.000 0.000	0.9619 [1.0000]	0.000 0.000	0.4194 [0.0000]	0.234 0.235	0.5425 [1.0000]	0.000 0.000
MBO	0.0516 [0.0000]	0.1854 [0.0000]	0.0016 [0.0000]	0.1838 [0.0000]	0.000 0.000	0.3347 [0.0000]	0.000 0.000	0.0230 [0.0000]	0.039 0.000	0.3117 [0.0000]	0.000 0.000
TOEHOLD	0.0984 [0.0000]	0.1236 [0.0000]	0.0890 [0.0000]	0.0347 [0.0000]	0.048 0.035	0.1483 [0.0000]	0.016 0.005	0.0968 [0.0000]	0.719 0.711	0.0515 [0.0000]	0.094 0.096
HOSTILE	0.0204 [0.0000]	0.0088 [0.0000]	0.0247 [0.0000]	-0.0159 [0.0000]	0.011 0.041	0.0000 [0.0000]	0.000 0.015	0.0184 [0.0000]	0.538 0.576	-0.0184 [0.0000]	0.045 0.036
BANKRUPT	0.0060 [0.0000]	0.0110 [0.0000]	0.0041 [0.0000]	0.0069 [0.0000]	0.188 0.104	0.0127 [0.0000]	0.255 0.103	0.0092 [0.0000]	0.451 0.322	0.0035 [0.0000]	0.721 0.722
DEFENSE	0.0138 [0.0000]	0.0088 [0.0000]	0.0157 [0.0000]	-0.0068 [0.0000]	0.229 0.288	0.0000 [0.0000]	0.000 0.053	0.0184 [0.0000]	0.777 0.764	-0.0184 [0.0000]	0.045 0.036
TARLOCK	0.0024 [0.0000]	0.0000 [0.0000]	0.0033 [0.0000]	-0.0033 [0.0000]	0.046 0.221	0.0000 [0.0000]	0.046 0.377	0.0000 [0.0000]	0.046 0.397	0.0000 [0.0000]	. .
BIDLOCK	0.1200 [0.0000]	0.0574 [0.0000]	0.1433 [0.0000]	-0.0859 [0.0000]	0.000 0.000	0.0381 [0.0000]	0.000 0.000	0.0783 [0.0000]	0.002 0.010	-0.0402 [0.0000]	0.070 0.066
TARterm	0.5141 [1.0000]	0.5011 [1.0000]	0.5189 [1.0000]	-0.0178 [0.0000]	0.517 0.517	0.5085 [1.0000]	0.769 0.768	0.4931 [0.0000]	0.484 0.483	0.0154 [1.0000]	0.744 0.744
BIDterm	0.0744 [0.0000]	0.0795 [0.0000]	0.0725 [0.0000]	0.0070 [0.0000]	0.636 0.629	0.0763 [0.0000]	0.841 0.838	0.0829 [0.0000]	0.605 0.588	-0.0067 [0.0000]	0.794 0.793
COMPETE	0.0906 [0.0000]	0.0839 [0.0000]	0.0931 [0.0000]	-0.0092 [0.0000]	0.553 0.561	0.0720 [0.0000]	0.264 0.301	0.0968 [0.0000]	0.865 0.864	-0.0247 [0.0000]	0.347 0.343
INITBID	0.0258 [0.0000]	0.0375 [0.0000]	0.0214 [0.0000]	0.0161 [0.0000]	0.103 0.065	0.0466 [0.0000]	0.081 0.025	0.0276 [0.0000]	0.601 0.568	0.0190 [0.0000]	0.285 0.289
DAY	104.5525 [88.0000]	120.1722 [109.0000]	98.7241 [79.0000]	21.4482 [30.0000]	0.000 0.000	129.7415 [120.5000]	0.000 0.000	109.7650 [98.0000]	0.017 0.002	19.9765 [22.5000]	0.002 0.002

Table 4**Multivariate regression analysis**

The sample includes all SDC completed cash only merger and acquisition deals between a U.S. bidder and a U.S. public target announced between 1980 and 2005 that results in 100% ownership by the bidder. The dependent variable in models (1) – (4) is the Fama French size and market-to-book adjusted compounded return from 42 days before the announcement date of the first bid to the completion date (FBC) and in models (5) – (8) is the three-day abnormal announcement return (CAR3). PEBIDDER (POBIDDER) is an indicator variable equal to one if the bidder is a private equity (operating) firm. The market value of equity (MVE) is from CRSP calculated as the price of the stock times the number of shares outstanding 63 days prior to the announcement and is in S&P500-adjusted 2005 dollars. All remaining variables are defined in the header of Table 3. ARET_12 is measured relative to the winning (first) bid when CAR3 (FBC) is the dependent variable. *p*-values are in brackets and are based on heteroscedasticity-consistent standard errors. Regressions include year and industry (2-digit SIC code main classifications) dummy variables. Coefficients denoted with ^a, ^b, or ^c, are significant at the 1%, 5%, or 10% level respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	FBC	FBC	FBC	FBC	CAR3	CAR3	CAR3	CAR3
PEBIDDER	-0.1868 ^a [0.000]	-0.1855 ^a [0.000]	-0.1876 ^a [0.000]	-0.1866 ^a [0.000]	-0.0887 ^a [0.000]	-0.0848 ^a [0.000]	-0.0859 ^a [0.000]	-0.0853 ^a [0.000]
POBIDDER	-0.0597 ^c [0.096]	-0.0586 ^c [0.100]	-0.0616 ^c [0.087]	-0.0600 ^c [0.095]	-0.0628 ^a [0.009]	-0.0607 ^b [0.012]	-0.0629 ^a [0.010]	-0.0611 ^b [0.012]
ln(MVE)	-0.0289 ^a [0.002]	-0.0280 ^a [0.009]	-0.0290 ^a [0.009]	-0.0263 ^b [0.016]	-0.0165 ^a [0.002]	-0.0144 ^b [0.036]	-0.0147 ^b [0.043]	-0.0133 ^c [0.064]
Q	-0.0081 [0.483]	-0.0089 [0.448]	-0.0079 [0.506]		-0.0169 ^b [0.030]	-0.0176 ^b [0.023]	-0.0171 ^b [0.029]	
IAQ				-0.0201 ^c [0.078]				-0.0250 ^a [0.003]
DEBT	0.1477 ^b [0.029]	0.1441 ^b [0.034]	0.1510 ^b [0.028]	0.1419 ^b [0.034]	0.0138 [0.787]	0.0130 [0.799]	0.0177 [0.734]	0.0161 [0.746]
OCF	-0.0066 [0.943]	-0.0008 [0.993]	-0.0138 [0.882]	-0.0152 [0.869]	0.0400 [0.520]	0.0498 [0.430]	0.0480 [0.449]	0.0433 [0.481]
TARLIQ	-0.1649 [0.203]		-0.1612 [0.215]	-0.1635 [0.209]	-0.1415 ^c [0.064]		-0.1360 ^c [0.074]	-0.1375 ^c [0.070]
ARET_12	-0.0715 ^a [0.001]	-0.0719 ^a [0.001]	-0.0707 ^a [0.001]	-0.0700 ^a [0.001]	-0.0608 ^a [0.000]	-0.0608 ^a [0.000]	-0.0611 ^a [0.000]	-0.0599 ^a [0.000]
HOSTILE	0.1905 ^a [0.001]	0.1820 ^a [0.001]	0.1894 ^a [0.001]	0.1866 ^a [0.001]	0.1360 ^a [0.001]	0.1341 ^a [0.001]	0.1380 ^a [0.000]	0.1345 ^a [0.001]
COMPETE	0.0907 ^b [0.040]	0.0934 ^b [0.033]	0.0893 ^b [0.044]	0.0897 ^b [0.042]	-0.1010 ^a [0.000]	-0.1003 ^a [0.000]	-0.1018 ^a [0.000]	-0.1010 ^a [0.000]
INITBID	0.0352 [0.511]	0.0323 [0.537]	0.0363 [0.507]	0.0347 [0.517]	-0.0419 [0.194]	-0.0383 [0.223]	-0.0403 [0.220]	-0.0382 [0.234]
TENDER	0.0785 ^a [0.004]	0.0764 ^a [0.005]	0.0807 ^a [0.003]	0.0770 ^a [0.005]	0.0883 ^a [0.000]	0.0851 ^a [0.000]	0.0869 ^a [0.000]	0.0853 ^a [0.000]
TARTERM	0.0377 [0.210]	0.0384 [0.201]	0.0385 [0.202]	0.0388 [0.198]	0.0091 [0.628]	0.0074 [0.693]	0.0076 [0.686]	0.0085 [0.651]
TOEHOLD	-0.0265 [0.464]	-0.0279 [0.439]	-0.0253 [0.486]	-0.0263 [0.466]	0.0084 [0.683]	0.0102 [0.617]	0.0100 [0.625]	0.0100 [0.622]
STDEV		0.3231 [0.705]				0.5179 [0.434]		
STDEVAR			-0.2381 [0.800]	0.1974 [0.819]			0.4295 [0.569]	0.4391 [0.515]
BIDLOCK		0.0103 [0.752]	0.0094 [0.774]	0.0072 [0.825]		0.0383 ^b [0.050]	0.0379 ^c [0.055]	0.0376 ^c [0.056]
STOCKLIQ			0.0045 ^c [0.064]				0.0000 [0.991]	
Constant	0.7313 ^a [0.000]	0.8212 ^a [0.000]	0.6957 ^a [0.000]	0.7082 ^a [0.000]	0.2469 ^a [0.002]	0.1324 [0.102]	0.2565 ^a [0.007]	0.2051 ^b [0.028]
Obs.	1,662	1,667	1,652	1,662	1,662	1,667	1,652	1,662
Adj. R ²	0.119	0.120	0.116	0.119	0.123	0.123	0.120	0.127

Table 5**Multivariate regressions by public bidder managerial ownership**

The sample includes all SDC completed cash only merger and acquisition deals between a U.S. bidder and a U.S. public target announced between 1990 and 2005 that results in 100% ownership by the bidder. Six subsamples are formed by grouping all private bidder deals with the subset of public bidder deals with managerial ownership (own) within the range specified for the model. The dependent variable in models (1) – (6) is the Fama French size and market-to-book adjusted compounded return from 42 days before the announcement date of the first bid to the completion date (FBC) and in models (7) – (12) is the three-day abnormal announcement return (CAR3). PEBIDDER (POBIDDER) is an indicator variable equal to one if the bidder is a private equity (operating) firm. The market value of equity (MVE) is from CRSP calculated as the price of the stock times the number of shares outstanding 63 days prior to the announcement and is in S&P500-adjusted 2005 dollars. All remaining variables are defined in the header of Table 3. ARET_12 is measured relative to the winning (first) bid when CAR3 (FBC) is the dependent variable. *p*-values are in brackets and are based on heteroscedasticity-consistent standard errors. Regressions include year and industry (2-digit SIC code main classifications) dummy variables. Coefficients denoted with ^a, ^b, or ^c, are significant at the 1%, 5%, or 10% level respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	FBC	FBC	FBC	FBC	FBC	FBC	CAR3	CAR3	CAR3	CAR3	CAR3	CAR3
	0 =< own	0 =< own	5% < own	15% < own	25% < own	50% < own	0 =< own	0 =< own	5% < own	15% < own	25% < own	50% < own
	<= 1%	<= 5%	<= 15%	<= 25%	<= 50%		<= 1%	<= 5%	<= 15%	<= 25%	<= 50%	
PEBIDDER	-0.2851 ^a [0.000]	-0.2496 ^a [0.000]	-0.1876 ^a [0.004]	-0.1401 ^c [0.095]	-0.1785 ^c [0.072]	-0.0850 [0.400]	-0.1413 ^a [0.000]	-0.1064 ^a [0.000]	-0.0961 ^b [0.018]	-0.0930 ^c [0.063]	-0.0548 [0.156]	-0.0360 [0.422]
POBIDDER	-0.1479 ^b [0.025]	-0.1068 ^b [0.048]	-0.0707 [0.269]	0.0165 [0.838]	-0.0467 [0.634]	0.0288 [0.761]	-0.1119 ^a [0.003]	-0.0754 ^b [0.022]	-0.0611 [0.165]	-0.0476 [0.367]	-0.0100 [0.819]	-0.0084 [0.851]
ln(MVE)	-0.0536 ^b [0.017]	-0.0529 ^a [0.005]	-0.0455 ^c [0.082]	-0.0322 [0.173]	-0.0329 [0.201]	-0.0444 ^c [0.053]	-0.0266 ^b [0.021]	-0.0237 ^b [0.024]	-0.0382 ^b [0.026]	-0.0285 ^c [0.078]	-0.0392 ^a [0.007]	-0.0380 ^a [0.008]
IAQ	-0.0070 [0.625]	-0.0001 [0.995]	-0.0816 ^b [0.013]	-0.0564 ^c [0.074]	-0.0753 ^b [0.016]	-0.0653 ^b [0.031]	-0.0152 [0.179]	-0.0168 ^c [0.085]	-0.0620 ^b [0.036]	-0.0575 ^b [0.048]	-0.0441 ^c [0.082]	-0.0445 [0.105]
DEBT	0.1932 ^c [0.069]	0.1638 ^c [0.071]	-0.0015 [0.991]	0.2045 [0.130]	0.1614 [0.229]	0.1107 [0.370]	0.0435 [0.571]	-0.0155 [0.808]	-0.1398 [0.117]	-0.0410 [0.595]	-0.0207 [0.777]	-0.0394 [0.612]
OCF	0.1456 [0.287]	0.0771 [0.542]	0.3523 ^b [0.023]	0.3466 ^c [0.069]	0.1668 [0.420]	0.3228 [0.104]	0.1916 ^c [0.083]	0.1267 [0.212]	0.3541 ^a [0.010]	0.2791 ^c [0.079]	0.3254 ^b [0.014]	0.3129 ^c [0.057]
TARLIQ	-0.0868 [0.605]	-0.1126 [0.423]	-0.0580 [0.765]	0.0105 [0.954]	-0.2056 [0.243]	-0.2816 [0.209]	-0.0878 [0.475]	-0.1636 ^c [0.088]	-0.0100 [0.942]	-0.0626 [0.635]	-0.0189 [0.884]	-0.0022 [0.988]
ARET_12	-0.0769 ^a [0.001]	-0.0846 ^a [0.001]	-0.0348 [0.214]	-0.0344 [0.219]	-0.0492 [0.118]	-0.0500 ^c [0.074]	-0.0633 ^a [0.001]	-0.0721 ^a [0.000]	-0.0394 ^b [0.045]	-0.0525 ^a [0.004]	-0.0481 ^a [0.004]	-0.0507 ^a [0.006]
HOSTILE	0.2918 ^a [0.010]	0.2645 ^b [0.017]	0.0178 [0.903]	0.1355 [0.337]	0.0174 [0.911]	0.2786 [0.209]	0.2977 ^a [0.004]	0.3095 ^a [0.001]	0.1104 [0.103]	0.0166 [0.829]	0.1223 ^c [0.076]	0.2996 ^c [0.052]
COMPETE	0.0035 [0.967]	0.0589 [0.427]	0.0948 [0.432]	0.1072 [0.319]	0.0181 [0.867]	0.0096 [0.931]	-0.0914 ^b [0.022]	-0.0948 ^a [0.002]	-0.0703 [0.121]	-0.0967 ^b [0.036]	-0.1026 ^b [0.034]	-0.0749 [0.104]
INITBID	0.0135 [0.894]	0.0013 [0.987]	0.0141 [0.907]	0.0646 [0.664]	0.0122 [0.926]	0.0255 [0.845]	-0.0773 [0.198]	-0.0561 [0.325]	-0.0246 [0.664]	-0.0511 [0.484]	-0.0376 [0.560]	-0.0669 [0.253]
TENDER	0.0840 ^c [0.063]	0.1027 ^b [0.010]	0.0606 [0.307]	0.1020 ^c [0.076]	0.0966 ^c [0.099]	0.0843 [0.146]	0.1065 ^a [0.000]	0.1203 ^a [0.000]	0.0789 ^b [0.040]	0.0772 ^c [0.051]	0.0960 ^a [0.006]	0.0918 ^b [0.016]
TARTERM	0.0006 [0.990]	0.0197 [0.644]	-0.0130 [0.794]	-0.0692 [0.171]	0.0208 [0.725]	-0.0415 [0.437]	-0.0040 [0.885]	0.0026 [0.918]	0.0008 [0.981]	0.0098 [0.777]	-0.0067 [0.839]	-0.0301 [0.380]
TOEHOLD	-0.0097 [0.897]	0.0158 [0.813]	0.0423 [0.654]	0.0874 [0.327]	0.0643 [0.531]	-0.0232 [0.842]	0.0069 [0.902]	-0.0079 [0.863]	0.1012 [0.129]	0.0797 [0.266]	0.0818 [0.317]	0.0639 [0.409]
STDEVAR	0.5900 [0.636]	0.2483 [0.820]	-0.3852 [0.775]	-0.1512 [0.914]	-0.2210 [0.871]	-0.3688 [0.805]	1.4290 [0.150]	1.3936 [0.115]	-0.8555 [0.445]	-0.3457 [0.716]	-0.7654 [0.348]	-0.6334 [0.477]
BIDLOCK	0.0511 [0.484]	-0.0077 [0.895]	0.0156 [0.883]	0.0293 [0.800]	0.0767 [0.453]	0.0375 [0.804]	0.0231 [0.553]	0.0335 [0.275]	0.1326 ^c [0.079]	0.0519 [0.409]	0.0157 [0.703]	0.0362 [0.628]
Constant	1.0179 ^a [0.001]	0.8307 ^a [0.002]	0.5561 ^b [0.048]	0.4559 [0.302]	0.4689 [0.149]	0.8855 ^a [0.006]	0.3644 ^c [0.059]	0.3600 ^b [0.024]	0.4913 ^b [0.031]	0.5762 [0.133]	0.3809 ^b [0.044]	0.4058 ^b [0.043]
Obs.	628	788	468	400	402	392	628	788	468	400	402	392
Adj. R ²	0.152	0.140	0.117	0.095	0.078	0.116	0.149	0.143	0.108	0.105	0.111	0.122

Table 6**Multivariate regressions by public bidder size quartiles**

The sample includes all SDC completed cash only merger and acquisition deals between a U.S. bidder and a U.S. public target announced between 1980 and 2005 that results in 100% ownership by the bidder. Four subsamples are formed by grouping all private bidder deals with each size quartile (Q1 – Q4) of public bidder deals. Size quartiles are based on public bidder CPI-adjusted 2005 dollars MVE for the three months prior to the announcement date. The dependent variable in models (1) – (4) is the Fama French size and market-to-book adjusted compounded return from 42 days before the announcement date of the first bid to the completion date (FBC) and in models (5) – (8) is the three-day abnormal announcement return (CAR3). PEBIDDER (POBIDDER) is an indicator variable equal to one if the bidder is a private equity (operating) firm. The market value of equity (MVE) is from CRSP calculated as the price of the stock times the number of shares outstanding 63 days prior to the announcement and is in S&P500-adjusted 2005 dollars. All remaining variables are defined in the header of Table 3. ARET_12 is measured relative to the winning (first) bid when CAR3 (FBC) is the dependent variable. *p*-values are in brackets and are based on heteroscedasticity-consistent standard errors. Regressions include year and industry (2-digit SIC code main classifications) dummy variables. Coefficients denoted with ^a, ^b, or ^c, are significant at the 1%, 5%, or 10% level respectively.

	(1) FBC Q1 (smallest)	(2) FBC Q2	(3) FBC Q3	(4) FBC Q4 (largest)	(5) CAR3 Q1 (smallest)	(6) CAR3 Q2	(7) CAR3 Q3	(8) CAR3 Q4 (largest)
PEBIDDER	-0.1038 ^b [0.040]	-0.1860 ^a [0.000]	-0.2229 ^a [0.000]	-0.2711 ^a [0.000]	-0.0282 [0.242]	-0.0827 ^a [0.002]	-0.1175 ^a [0.000]	-0.1236 ^a [0.000]
POBIDDER	0.0226 [0.644]	-0.0467 [0.309]	-0.1016 ^b [0.028]	-0.1619 ^a [0.000]	-0.0072 [0.804]	-0.0488 [0.127]	-0.0842 ^a [0.004]	-0.1110 ^a [0.001]
ln(MVE)	-0.0486 ^b [0.020]	-0.0327 ^c [0.087]	-0.0290 ^c [0.081]	-0.0428 ^a [0.006]	-0.0312 ^a [0.004]	-0.0331 ^a [0.008]	-0.0194 ^c [0.054]	-0.0274 ^b [0.012]
IAQ	-0.0770 ^a [0.007]	-0.0533 ^b [0.029]	-0.0468 ^c [0.093]	-0.0175 [0.135]	-0.0574 ^a [0.006]	-0.0554 ^a [0.007]	-0.0349 ^c [0.059]	-0.0190 ^b [0.045]
DEBT	0.2488 ^b [0.015]	0.1956 ^c [0.058]	0.1109 [0.232]	0.1208 [0.167]	-0.0109 [0.835]	-0.0662 [0.305]	-0.0553 [0.318]	0.0335 [0.542]
OCF	0.2292 [0.106]	0.1090 [0.505]	0.0479 [0.723]	0.2311 ^b [0.044]	0.1554 [0.171]	0.2495 ^b [0.024]	0.1441 [0.152]	0.1424 [0.119]
TARLIQ	-0.1931 [0.327]	-0.2101 [0.164]	-0.0026 [0.987]	-0.2287 [0.156]	-0.0094 [0.929]	-0.0827 [0.401]	-0.0141 [0.895]	-0.0012 [0.992]
ARET_12	-0.0456 ^c [0.092]	-0.0547 ^b [0.020]	-0.0823 ^a [0.008]	-0.0313 [0.157]	-0.0431 ^a [0.005]	-0.0427 ^a [0.003]	-0.0593 ^a [0.001]	-0.0537 ^a [0.000]
HOSTILE	0.2427 ^a [0.007]	0.1844 ^b [0.036]	0.2039 ^c [0.083]	0.1922 ^b [0.017]	0.0632 [0.331]	0.0787 [0.107]	0.1397 ^a [0.009]	0.1766 ^b [0.013]
COMPETE	0.0932 [0.166]	0.1659 ^b [0.028]	0.0046 [0.945]	0.1244 ^c [0.066]	-0.0903 ^a [0.000]	-0.0729 ^a [0.002]	-0.0963 ^a [0.000]	-0.0710 ^a [0.008]
INITBID	-0.0277 [0.671]	0.0001 [0.999]	0.0291 [0.730]	0.0156 [0.848]	0.0100 [0.804]	-0.0421 [0.347]	-0.0642 [0.140]	-0.0060 [0.888]
TENDER	0.0749 ^c [0.085]	0.0642 [0.121]	0.1144 ^a [0.006]	0.0997 ^a [0.006]	0.1022 ^a [0.000]	0.0565 ^b [0.034]	0.1017 ^a [0.000]	0.0917 ^a [0.000]
TARTERM	-0.0088 [0.851]	-0.0429 [0.277]	0.0346 [0.381]	0.0136 [0.710]	-0.0020 [0.936]	-0.0131 [0.622]	0.0025 [0.924]	-0.0012 [0.966]
TOEHOLD	0.0244 [0.710]	0.0684 [0.169]	0.0031 [0.952]	0.0327 [0.546]	0.0199 [0.571]	0.0392 [0.236]	0.0255 [0.413]	0.0360 [0.328]
STDEVAR	-1.2712 [0.239]	0.1773 [0.882]	0.8021 [0.512]	0.5755 [0.611]	-0.4303 [0.499]	-0.3444 [0.709]	0.5581 [0.448]	0.5777 [0.478]
BIDLOCK	-0.0352 [0.573]	-0.0141 [0.779]	-0.0290 [0.547]	0.0573 [0.260]	0.0616 ^c [0.061]	0.0449 ^c [0.090]	-0.0087 [0.742]	0.0833 ^b [0.026]
Constant	0.9989 ^a [0.000]	0.3355 [0.100]	0.5247 ^b [0.036]	0.9191 ^a [0.000]	0.2545 ^b [0.047]	0.3251 ^c [0.053]	0.3714 ^a [0.008]	0.3591 ^a [0.009]
Obs.	709	708	712	711	709	708	712	711
Adj. R ²	0.104	0.129	0.137	0.161	0.134	0.128	0.132	0.124

Table 7**Multivariate regressions with target ownership measures**

The sample includes all SDC completed cash only merger and acquisition deals between a U.S. bidder and a U.S. public target announced between 1990 and 2005 that results in 100% ownership by the bidder. The dependent variable in models (1) – (4) is the Fama French size and market-to-book adjusted compounded return from 42 days before the announcement date of the first bid to the completion date (FBC) and in models (5) – (8) is the three-day abnormal announcement return (CAR3). PEBIDDER (POBIDDER) is an indicator variable equal to one if the bidder is a private equity (operating) firm. The market value of equity (MVE) is from CRSP calculated as the price of the stock times the number of shares outstanding 63 days prior to the announcement and is in S&P500-adjusted 2005 dollars. INSIDE (INSTITUTION) is the fraction of ownership held by managers (institutions) in the target firm. DINSIDE and DINSTITUTION are the demeaned values of INSIDE and INSTITUTION. All remaining variables are defined in the header of Table 3. ARET_12 is measured relative to the winning (first) bid when CAR3 (FBC) is the dependent variable. *p*-values are in brackets and are based on heteroscedasticity-consistent standard errors. Regressions include year and industry (2-digit SIC code main classifications) dummy variables. Coefficients denoted with ^a, ^b, or ^c, are significant at the 1%, 5%, or 10% level respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	FBC	FBC	FBC	FBC	CAR3	CAR3	CAR3	CAR3
PEBIDDER	-0.2135 ^a [0.000]	-0.2221 ^a [0.000]	-0.2235 ^a [0.000]	-0.2210 ^a [0.000]	-0.1008 ^a [0.000]	-0.1052 ^a [0.000]	-0.1047 ^a [0.000]	-0.1027 ^a [0.000]
POBIDDER	-0.0789 ^c [0.074]	-0.0796 ^c [0.071]	-0.0808 ^c [0.067]	-0.0849 ^b [0.048]	-0.0698 ^b [0.022]	-0.0700 ^b [0.021]	-0.0689 ^b [0.024]	-0.0722 ^a [0.009]
ln(MVE)	-0.0324 ^b [0.023]	-0.0415 ^a [0.010]	-0.0415 ^a [0.009]	-0.0418 ^a [0.010]	-0.0209 ^b [0.028]	-0.0251 ^b [0.020]	-0.0246 ^b [0.023]	-0.0260 ^b [0.017]
IAQ	-0.0216 ^c [0.097]	-0.0220 ^c [0.095]	-0.0216 [0.102]	-0.0219 ^c [0.098]	-0.0251 ^a [0.009]	-0.0256 ^a [0.010]	-0.0263 ^a [0.008]	-0.0255 ^b [0.011]
DEBT	0.1156 [0.160]	0.1072 [0.195]	0.1096 [0.185]	0.1066 [0.197]	0.0024 [0.970]	-0.0022 [0.973]	-0.0048 [0.940]	-0.0029 [0.964]
OCF	-0.0552 [0.611]	-0.0554 [0.608]	-0.0550 [0.611]	-0.0570 [0.598]	0.0730 [0.322]	0.0730 [0.322]	0.0723 [0.327]	0.0740 [0.318]
TARLIQ	-0.3177 ^b [0.045]	-0.3166 ^b [0.045]	-0.3109 ^b [0.048]	-0.3275 ^b [0.038]	-0.2998 ^a [0.002]	-0.2988 ^a [0.003]	-0.3052 ^a [0.002]	-0.3017 ^a [0.002]
ARET_12	-0.0695 ^a [0.004]	-0.0672 ^a [0.006]	-0.0674 ^a [0.006]	-0.0660 ^a [0.007]	-0.0593 ^a [0.000]	-0.0580 ^a [0.000]	-0.0578 ^a [0.000]	-0.0585 ^a [0.000]
HOSTILE	0.1779 ^b [0.029]	0.1914 ^b [0.018]	0.1923 ^b [0.019]	0.1986 ^b [0.016]	0.1705 ^b [0.012]	0.1794 ^a [0.008]	0.1790 ^a [0.008]	0.1762 ^a [0.010]
COMPETE	0.0078 [0.906]	0.0079 [0.904]	0.0089 [0.894]	0.0080 [0.904]	-0.1019 ^a [0.000]	-0.1015 ^a [0.000]	-0.1002 ^a [0.000]	-0.1008 ^a [0.000]
INITBID	0.0039 [0.949]	0.0111 [0.861]	0.0127 [0.841]	0.0035 [0.955]	-0.0497 [0.289]	-0.0461 [0.336]	-0.0469 [0.331]	-0.0453 [0.348]
TENDER	0.0743 ^b [0.031]	0.0689 ^b [0.043]	0.0679 ^b [0.045]	0.0664 ^c [0.053]	0.0855 ^a [0.000]	0.0827 ^a [0.000]	0.0843 ^a [0.000]	0.0819 ^a [0.000]
TARterm	0.0417 [0.233]	0.0445 [0.203]	0.0427 [0.225]	0.0472 [0.180]	0.0221 [0.289]	0.0237 [0.255]	0.0250 [0.235]	0.0224 [0.288]
TOEHOLD	-0.0520 [0.384]	-0.0584 [0.326]	-0.0602 [0.313]	-0.0518 [0.384]	0.0290 [0.410]	0.0254 [0.474]	0.0271 [0.445]	0.0283 [0.418]
STDEVAR	0.0804 [0.934]	0.0596 [0.951]	0.0886 [0.928]	-0.0441 [0.964]	0.2878 [0.713]	0.2683 [0.731]	0.2577 [0.742]	0.2530 [0.747]
BIDLOCK	-0.0119 [0.827]	-0.0039 [0.942]	-0.0050 [0.926]	-0.0017 [0.975]	0.0342 [0.264]	0.0390 [0.201]	0.0399 [0.192]	0.0387 [0.203]
INSIDE		0.1321 ^c [0.057]	0.1841 [0.339]			0.0796 [0.122]	0.1187 [0.332]	
INSTITUTION		0.1151 ^c [0.057]	0.2035 [0.272]			0.0554 [0.165]	-0.0468 [0.713]	
INSIDE ²			-0.0709 [0.752]				-0.0540 [0.723]	
INSTITUTION ²			-0.1077 [0.586]				0.1276 [0.350]	
DINSIDE				0.1917 ^b [0.022]				0.0895 [0.153]
DINSIDE X PEBIDDER				-0.2437 [0.125]				-0.0457 [0.658]
DINSIDE X POBIDDER				-0.2056 [0.225]				-0.0380 [0.776]
DINSTITUTION				0.1136 ^c [0.096]				0.0795 ^c [0.091]
DINSTITUTION X PEBIDDER				0.0186 [0.882]				-0.1227 ^c [0.076]
DINSTITUTION X POBIDDER				-0.0557 [0.739]				-0.0281 [0.831]
Constant	0.6010 ^a [0.005]	0.5855 ^a [0.006]	0.5633 ^a [0.008]	0.6612 ^a [0.003]	0.3734 ^b [0.013]	0.3588 ^b [0.018]	0.3658 ^b [0.019]	0.4210 ^a [0.009]
Obs.	1,226	1,226	1,226	1,226	1,226	1,226	1,226	1,226
Adj. R ²	0.110	0.113	0.112	0.112	0.113	0.115	0.114	0.113