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

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ABSTRACT

Using the longest event window, we find that public target shareholders receive a 63% (14%) higher premium when the acquirer is a public firm rather than a private equity firm (private operating firm). The premium difference holds with the usual controls for deal and target characteristics, and it is highest (lowest) when acquisitions by private bidders are compared to acquisitions by public companies with low (high) managerial ownership. Further, the premium paid by public bidders (not private bidders) increases with target managerial and institutional ownership.

1. Introduction

The significant participation of private firms in general and private equity firms in particular in the market for corporate control over recent years has drawn much attention in the press. In 2005, 15% of the total deal value of U.S. mergers and acquisitions came from private equity deals and 18 of the top 100 deals were private equity deals.[1]

Though the press has emphasized the relative importance and growing role of private bidders in the takeover market, academic research has devoted little attention to these bidders. For example, we know of no systematic evidence on whether the gains to target shareholders differ when the acquirer is a private firm rather than a public firm. Yet both academics and the press have suggested reasons why private bidders might behave differently from public bidders. Academics have emphasized that the incentives of private equity firm managers are much more high-powered than those of public firms (see, e.g., Jensen, 1989). There is much debate in the press about whether private equity firms get away with paying lower premiums because target management colludes with the acquirers.[2] In this paper, we provide evidence on how the premiums paid by private acquirers compare to the premiums paid by public companies.

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 cash deals. Therefore, to make an apples-to-apples comparison, it is necessary to compare premiums for cash offers by private

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

[2] See, e.g., Newsweek, April 24, 2006.

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firms to premiums for cash offers by public firms. Using a sample of completed cash-only deals during the period 1980–2005 consisting of 453 deals by private bidders and 1,214 deals by public bidders, we find a sizable difference in premiums between the two types of acquisitions, measured as in Schwert (1996) from pre-announcement runup to completion. In our sample, the average premium for target shareholders when the bidder is a public firm is 46.5%. The average premium when the acquirer is a private operating company is 40.9%, and it is only 28.5% when the acquirer is a private equity firm, so that the premium for an acquisition by a public firm is 63.3% higher than for an acquisition by a private equity firm. Similar results hold for other premium measures.

Why are there such differences in the gains to target shareholders between acquisitions by public firms versus private firms? The simplest explanation is that public firms and private firms acquire different types of firms. With such an explanation, target shareholders do not necessarily receive less if a private firm acquires their firm than they would if a public firm made the acquisition. One might also argue that acquisitions by public firms generate more shareholder wealth because public firms are operating companies, so that such acquisitions would have synergy gains that are shared with the target. Similarly, private equity firms acquire firms for which synergy gains are nonexistent, and hence premiums for the acquired firms are not driven as high as the premiums that public firms pay.

Nonetheless, we find that for most premium measures private operating companies pay less than public firms (47.9% of the private bidders in our sample are operating companies). 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, private operating companies pay more than private equity companies. If, instead, we use a 3-day announcement return, there is no premium difference. Further, when we take into account target and deal characteristics, private operating companies pay less for acquisitions than public companies irrespective of the premium measure, but whether they pay more than private equity firms depends on the premium measure used. It is clear, however, that there is support for an important role for synergy gains in explaining the premium difference when we use premiums estimated over a long window.

A vast literature shows that differences in firm and deal characteristics help explain differences in target gains. 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 do not explain the difference in premiums, either target and deal characteristics we cannot observe with our dataset explain the difference or private bidders and public bidders make different offers for similar firms. There are at least two possible explanations for why offers would depend on the organizational form of the bidder. First, failure of an offer has more adverse consequences for managers of public firms than for managers of private firms.[3] In particular, public firms might have to reveal more information about their strategy in the process of making an offer, which could possibly help competitors and perhaps make it more likely that an unsuccessful acquirer becomes a target. However, Lehn and Zhao (2006) find that managers are more likely to keep their jobs if they cancel an offer to which the market has reacted poorly instead of going through with the acquisition. Second, as advanced by Jensen (1989) and others, agency problems might be more serious in many public firms than in private firms. There is a long tradition in finance, starting with Berle and Means (1932), questioning whether managers with low firm ownership make decisions that go against the interests of shareholders. This tradition emphasizes the potential for managers to gain from acquisitions that do not benefit shareholders. In particular, managers can gain in prestige from managing larger firms, receive more perks, be better compensated, and be safer from hostile takeovers.

To address the agency view, we examine the difference in target premiums between private bidders and public bidders with highly concentrated managerial ownership (defined broadly as ownership by insiders). The difference in target shareholder gains 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%. In addition, private firms differ from the bidding behavior of public firms in that private firms are much less reluctant to walk away from a deal than are public firms—while 37.4% of the offers by private firms are withdrawn, only 16.9% 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 could also reflect greater agency costs in the typical public firm relative to private firms or a greater willingness of private firms to make offers that have little chance of success.

We also investigate the hypothesis that target shareholders are somehow cheated in acquisitions by private firms because target managers are willing to sell to private bidders at a lower price. Such an argument makes sense if a private acquirer can offer the promise of continued employment to target managers along with 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 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 premium difference to fall as institutional ownership increases because institutional shareholders have greater ability and incentives to force management to seek improvements in the premium offered. We find that target shareholder gains are higher for firms with greater managerial ownership, but only for our long-horizon premium estimates. When we allow the relation between

[3] We thank Jeff Gordon for this suggestion.

the shareholder gains and target ownership to depend on the type of acquirer, we find weak evidence that target managerial ownership drives up the premium for acquisitions by public firms but not by private firms. Institutional ownership in the target firm leads to higher premiums for public acquirers but has no impact on premiums when the acquirer is a private firm. It could well be that private firms make acquisitions only if the target management is cooperative, possibly because of private gains from the acquisition, and such cooperation from target management weakens the efforts of institutional investors to increase the premium. Supporting this perspective, we find that no private equity acquisition in our sample is hostile.

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. We also compare the target gains for acquisitions by different types of private firms. In Section 4, we control for target and deal characteristics. Section 5 examines the relation between premium differences and ownership concentration at public firms. In Section 6, we examine whether premium differences are 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 spinoffs, recaps, self-tenders, exchange offers, repurchases, minority stake purchases, acquisitions of remaining interest, or privatizations. We check the Lexis-Nexis database for announcement press releases for the private bidders and we exclude all cases where the bidder is a group of individual 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 1 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 of 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 individual investors, 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 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 2 years, the value of the acquisitions by private companies averages 28.3% of the total value of acquisitions. With the exception of the 2003–2004 and 2004–2005 periods, there is no other 2-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 across industries. The fraction of acquisitions in manufacturing industries is greater for public firm bidders (43.1%) than for private firm bidders (35.8%). The second-most-important group of industries in the sample is the group of service industries (22.4% of acquisitions by public firms and 24.3% of acquisitions private firms). Among the other industries, acquisitions of financial firms are less prevalent for private bidders (11.9% of all acquisitions by private firms) than for public firms (15.2%), but acquisitions of firms in the retail industry are more prevalent for private firms (13.0%) than for public firms (5.7%).

Table 1 also reports the distribution of acquisitions across types of private firms. To identify the type of private firm acquirer, 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 private equity acquirers and private operating company acquirers. By private equity acquirers, we mean all 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., for $2.8 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 groups of investors from the private firm acquirers. Alternative approaches would be to include these investor groups among the private equity acquirers or to create a third group of private firm acquirers. Results when we define private equity acquirers to include 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.

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 result in 100% ownership by the bidder. The aggregated deal value is in CPI-adjusted 2005 millions of dollars.

	All bidders		Public bidders		Private bidders		Private bidders % of all deals		Private equity bidders % of private bidder deals	
Year	*n*	Deal value	*n*	Deal value	*n*	Deal value	Deals	Deal value	Deals	Deal value
1980	3	1,190	3	1,190	0	0	0	0	–	–
1981	7	4,209	5	3,981	2	228	29	5	0	0
1982	9	328	8	318	1	10	11	3	0	0
1983	3	80	2	77	1	3	33	3	100	100
1984	15	8,812	11	6,220	4	2,592	27	29	25	53
1985	59	61,617	50	57,100	9	4,517	15	7	33	20
1986	91	50,910	72	43,822	19	7,088	21	14	63	82
1987	60	20,532	45	17,380	15	3,153	25	15	60	41
1988	99	79,754	64	65,561	35	14,194	35	18	71	51
1989	64	33,728	44	29,716	20	4,012	31	12	35	27
1990	25	4,689	23	4,415	2	275	8	6	50	84
1991	19	2,873	14	2,672	5	201	26	7	40	73
1992	17	4,679	13	4,310	4	369	24	8	25	59
1993	26	6,649	20	6,186	6	463	23	7	50	86
1994	59	36,365	47	33,934	12	2,431	20	7	25	7
1995	97	36,017	76	34,323	21	1,694	22	5	24	11
1996	88	46,111	66	42,029	22	4,082	25	9	41	38
1997	114	57,324	84	49,593	30	7,731	26	13	63	60
1998	127	60,979	88	48,760	39	12,219	31	20	38	42
1999	146	75,784	104	64,511	42	11,274	29	15	64	81
2000	120	96,954	83	89,180	37	7,774	31	8	51	56
2001	93	33,427	74	28,786	19	4,641	20	14	32	81
2002	79	20,807	57	17,161	22	3,647	28	18	50	80
2003	80	20,531	47	17,149	33	3,382	41	16	73	70
2004	79	67,338	54	45,735	25	21,603	32	32	72	98
2005	88	89,693	60	67,713	28	21,980	32	25	54	81
Total	1,667	921,382	1,214	781,821	453	139,561	27	15	52	66

3. Gains to target shareholders for public bidders and private bidders

We use the 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) 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). 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. With 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 in that such a measure is sensitive to misspecification of the benchmark return (see Kothari and Warner, 2007). We therefore also 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 (CARs) 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 and incomplete if there are systematic differences in how information about acquisition likelihood and terms is revealed to the market before and after the bid announcement 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 46.5%. In contrast, the average premium for acquisitions by private firms is 34.4%. The difference is similar for the medians. Consequently, shareholders of firms acquired by public firms receive about 35% more than shareholders of firms acquired by private firms. In the second row, we show estimates of the premium using cumulative abnormal returns from the market model (MFBC premium) from 42 trading days before the first bid to the completion date of the transaction. In this case, shareholders of firms acquired by public firms receive 30.6% more than shareholders acquired by private firms. 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) is similar.

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 result in 100% ownership by the bidder. Panel A reports mean and median [in brackets] return measures for the full sample (All) and for subsamples consisting of private bidders, public bidders, and their difference. Panel B reports mean and median [in brackets] return measures 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. The last two columns report the difference in mean [median] returns and its significance level 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 days 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 1 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 bidders	Private bidders	Public bidders	Private−public	
				Difference	*p*-value
FBC	0.4322	0.3444	0.4650	−0.1206	0.000
	[0.3685]	[0.2841]	[0.3956]	[−0.1115]	0.000
MFBC	0.4002	0.3273	0.4274	−0.1002	0.000
	[0.3556]	[0.2895]	[0.3776]	[−0.0881]	0.000
WBC	0.4248	0.3371	0.4576	−0.1205	0.000
	[0.3626]	[0.2781]	[0.3888]	[−0.1107]	0.000
MWBC	0.3938	0.3130	0.4240	−0.1110	0.000
	[0.3465]	[0.2824]	[0.3742]	[−0.0918]	0.000
CAR3	0.2747	0.2206	0.2948	−0.0743	0.000
	[0.2181]	[0.1775]	[0.2361]	[−0.0585]	0.000
CAR5	0.2851	0.2239	0.3080	−0.0841	0.000
	[0.2268]	[0.1806]	[0.2463]	[−0.0657]	0.000
CAR11	0.3045	0.2398	0.3287	−0.0888	0.000
	[0.2528]	[0.2042]	[0.2705]	[−0.0663]	0.000
FFRET	0.2990	0.2528	0.3162	−0.0634	0.001
	[0.2345]	[0.1925]	[0.2496]	[−0.0572]	0.001
RUNUP	0.0909	0.0837	0.0936	−0.0099	0.546
	[0.0490]	[0.0414]	[0.0533]	[−0.0119]	0.456

Panel B: Return measures by private bidder type

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

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 3-day window (CAR3), we find that shareholders of firms acquired by public firms earn 29.5% on average over the 3 days around the announcement of the acquisition. In contrast, shareholders of firms acquired by private firms earn 22.1%, or 25.2% less than if the bidder were public.

We find similar results using a 5-day window (CAR5) and an 11-day window (CAR11).

To evaluate the relevance of the short event-window premium 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). The results are similar using market-model cumulative abnormal returns. 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 3-day abnormal return does not lead us to understate the premium paid by private firms compared to public firms.

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 and helps in explaining 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. Panel B of Table 2 shows estimates of the acquisition premium by the two types of private acquirers. The average FBC premium is 28.5% 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 all private acquirers. Strikingly, target shareholder premiums are 63.3% higher if an offer is by a public firm rather than by a private equity firm. Given these numbers, private operating companies must pay more than private equity firms. We find that private operating companies pay a 40.9% premium 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 in 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. However, the same cannot be said for the results for private operating companies. All other estimates of target shareholder premiums show that the mean premium 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 that there is no significant difference between target shareholder premiums paid by private equity firms versus 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.

If private equity firms cannot typically exploit operating synergies from their acquisitions, we would expect that 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 could 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 target premiums between acquisitions by private operating firms and acquisitions by private equity firms. To further check the role of synergies, we estimate the premiums for acquisitions by firms that are in the same two-digit SIC code industry as the target and for acquisitions by firms that are not in the same two-digit SIC code industry. Though we do not report the results in a table, in general we find that the within-industry acquisitions have insignificantly different premiums from the diversifying acquisitions within both the public and private bidder groups. (For private non-operating bidders, an SIC code industry classification might be meaningless).

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 later period for both public bidders and private bidders; 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 acquirers. 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 firms.

4. Can target characteristics explain the difference in premiums?

In this section, we investigate whether private firms acquire different types of firms and structure deals differently than public firms and whether these differences explain the difference in target premiums. 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 multiple regression analyses in Section 4.2.

4.1. Univariate comparisons of target and deal characteristics

Panel A of Table 3 compares target characteristics for public and private bidders. The first variable we consider is the market value of target equity (MVE) 63 trading days prior to the announcement measured in CPI-adjusted 2005 dollars. We compute this value from CRSP data. We find that public acquirers make significantly larger

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 result in 100% ownership by the bidder. Panel A reports mean and median [in brackets] values for target characteristics. 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 two-digit SIC code industry value of this variable. Age (AGE) is the number of months that the firm has been listed on CRSP. Sales growth (ΔSALES) and employee growth (ΔEMPLOYEE) are both based on the 3-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, TARTERM, and 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, or 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 bidders	Private bidders	Public bidders	Private–public		Private Equity bidders	Difference from public *p*-value	Private operating bidders	Difference from public *p*-value	Private equity–private operating	
				Difference	*p*-value					Difference	*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

Table 3 (continued)

Panel A: Target characteristics (continued)

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

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 premiums are higher for acquisitions by public firms than for acquisitions by private firms. We next consider a measure of leverage (DEBT) equal to 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 acquisitions by private firms 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. A lower Tobin's q could be explained by low growth opportunities. As emphasized by Jensen (1986), firms with low growth opportunities but high cash flows are prone to agency problems of free cash flow, so that private equity buyers can create value by providing an organizational form where these problems are less likely to flourish. The difference is also strong when we compute an industry-adjusted q (IAQ) by subtracting the yearly median q of firms in the same two-digit SIC code. Firms acquired by private bidders have a lower Tobin's 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 in months since listing on CRSP between public and private 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 Tobin's q is consistent with higher growth opportunities of firms acquired by public bidders. We show data for the last 3 years of sales growth (ΔSALES) and the last 3 years of employment growth (ΔEMPLOYEE). 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), where operating cash flow is defined as in Moeller, Schlingemann, and Stulz (2004) as Sales less COGS less SGA less ΔNWC (the fraction of operating cash flow over book assets is winsorized at the 1% level in the regression analysis). Such evidence is consistent with the view that private equity firms can create value by returning free cash flow to shareholders. We find no difference in the cumulative 12-month market-model residual (ARET_12), making it unlikely that the premium for acquisitions by private firms is lower because the acquisition premium is incorporated to a greater extent into the stock price for such acquisitions compared to acquisitions by public firms. 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 acquisitions by public versus private acquirers. 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 targets of public versus private acquirers. 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 (2002) measure of stock illiquidity (STOCKLIQ), measured as the average ratio of the absolute daily return divided by dollar daily volume. A higher value of this 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 consists of firms that trade 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 targets of public firm acquirers versus private firm acquirers. 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). It is not surprising that more acquisitions by private firms are management buyouts (MBO). Studies of management buyouts (DeAngelo, DeAngelo, and Rice, 1984; Kaplan, 1989) find no evidence that such buyouts are underpriced. 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, although there is no difference in the proportion of hostile offers between public and private acquirers for the 1990–2005 period (reflecting the decrease in hostile acquisitions among public acquirers). Under 1% of all targets are 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, no target of a private firm in our sample uses defensive tactics according to SDC.

Burch (2001) finds that target lockups are associated with higher target gains. We only find target lockups (TARLOCK) for targets of public firm acquirers. In contrast, bidder lockups (BIDLOCK) are significantly more likely for

acquisitions by public firms. Officer (2003) shows that target termination fees result in significantly higher premiums. We find that targets of public firm acquirers are just as likely to have a termination fee as targets of private firm acquirers, so that this lack of difference in the frequency of target termination fees (TARTERM) is unlikely to explain the difference in premiums. 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 bidders as for public bidders. 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. Targets of private equity buyers have a more active market for corporate control. The targets of acquisitions by private equity firms have more business segments than the targets of acquisitions by private operating firms. Presumably, having more segments decreases potential synergy gains with the acquirer. There is no difference in sales growth and employment growth between firms acquired by private operating companies and private equity 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 multiple 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 first discuss the results for regression (1) which uses the FBC premium. Both indicator variables are significantly negative, showing that acquisitions by private firms have significantly lower premiums than acquisitions by public firms. The indicator variable is −0.1868 for acquisitions by private equity firms, significant at the 1% level. Everything else constant, private equity firms pay a premium lower by 18.7% of pre-bid firm equity value than public companies. In contrast, the indicator variable for acquisitions by private operating companies is −0.0597, significant only at the

Table 4
Multiple 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 result in 100% ownership by the bidder. The dependent variable in model (1) 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 model (2) it is the 3-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. Regressions include year and industry (two-digit SIC code main classifications) dummy variables. *p*-Values are in brackets and are based on heteroskedasticity-consistent standard errors. Coefficients denoted with [a], [b], or [c], are significant at the 1%, 5%, or 10% level, respectively.

	(1) FBC	(2) CAR3
PEBIDDER	−0.1866[a]	−0.0853[a]
	[0.000]	[0.000]
POBIDDER	−0.0600[c]	−0.0611[b]
	[0.095]	[0.012]
ln(MVE)	−0.0263[b]	−0.0133[c]
	[0.016]	[0.064]
IAQ	−0.0201[c]	−0.0250[a]
	[0.078]	[0.003]
DEBT	0.1419[b]	0.0161
	[0.034]	[0.746]
OCF	−0.0152	0.0433
	[0.869]	[0.481]
TARLIQ	−0.1635	−0.1375[c]
	[0.209]	[0.070]
ARET_12	−0.0700[a]	−0.0599[a]
	[0.001]	[0.000]
HOSTILE	0.1866[a]	0.1345[a]
	[0.001]	[0.001]
COMPETE	0.0897[b]	−0.1010[a]
	[0.042]	[0.000]
INITBID	0.0347	−0.0382
	[0.517]	[0.234]
TENDER	0.0770[a]	0.0853[a]
	[0.005]	[0.000]
TARTERM	0.0388	0.0085
	[0.198]	[0.651]
TOEHOLD	−0.0263	0.0100
	[0.466]	[0.622]
STDEVAR	0.1974	0.4391
	[0.819]	[0.515]
BIDLOCK	0.0072	0.0376[c]
	[0.825]	[0.056]
Constant	0.7082[a]	0.2051[b]
	[0.000]	[0.028]
Obs.	1,662	1,662
Adj. R^2	0.119	0.127

10% level. The two indicator variables have significantly different coefficients at the 1% level using an *F*-test. The estimated indicator variables are of the same magnitude as the premium differences shown in Table 2. Consequently, controlling for firm and deal characteristics does not seem to reduce the average premium difference between acquisitions by private firms versus public firms. We find that target shareholders realize smaller gains when their firm is larger, has a higher industry-adjusted Tobin's *q*, and has performed better over the past year. 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.

Regression (2) uses the 3-day announcement abnormal return, CAR3, as the dependent variable. The private bidder indicator variables are significant at the 1% and 5% level, respectively, and much closer in absolute value than in regression (1). An *F*-test shows that the difference between the indicator variables is not statistically significant. Though the indicator variable for private equity bidders is large in absolute value in model (1) compared to the FBC premium estimate of Table 2, the 3-day announcement abnormal return is similar in absolute value to the indicator variable in model (2). In contrast to regression (1), leverage is insignificant and the COMPETE variable is negative and insignificant. Surprisingly, the bidder lockup variable is positive and significant in regression (2) but not in regression (1). There is no evidence that introducing target and deal characteristics is helpful in explaining the lower target shareholder gains of acquisitions by private firms.[4]

To investigate the stability of the estimates over time, 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 for both periods and increases by roughly 50% in absolute value from the earlier period to the later period. The private operating dummy is significantly negative except with the FBC premium in 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 using SDC data. 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 estimates of the private bidder indicator variables.

Ordinary least squares regressions are vulnerable to departures from normality. To evaluate the strength of our results, we also estimate median and robust regressions that put less weight on extreme observations. These regressions (not reported) do not change our conclusions, but they yield lower estimates of the premium difference between public and private bidders. The estimates for PEBIDDER are roughly 14% and 4% in absolute value, respectively, for the FBC premium and the CAR3 abnormal return, and statistically significant with *p*-values mostly below 1%. The estimates for POBIDDER are between 3% and 4% in absolute value for both premium measures, but only statistically significant when explaining the variation in the 3-day abnormal return.

Finally, to be sure that our findings are not sensitive to our examination of cash-only deals, we estimate the regressions of Table 4 using all offers instead of just cash offers, but do not report the results in a table. The sample increases from 1,667 to 3,957 observations due primarily 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 firms 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, although 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 since the literature concludes that the form of payment is highly correlated with the premium paid (Huang and Walkling, 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 bidders and private bidders

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 now investigate whether the lower shareholder gains in

[4] All results presented in Table 4 are robust to the exclusion of or controlling for private equity club deals. We define club deals as those deals with a private bidder comprised of two or more private equity firms. Our sample includes 43 club deals with an average target CAR3 (FBC) of 17.0% (13.7%). If we exclude club deals, the coefficients on PEBIDDER and POBIDDER in the FBC (CAR3) regression are −0.1838*** (−0.0729***) and −0.0591* (−0.0609**), respectively. Alternatively if we add a control variable for club deals (i.e. a dummy variable equal to 1 for club deals and 0 otherwise), the coefficients on PEBIDDER and POBIDDER in the FBC (CAR3) regression are −0.1834*** (−0.0737***) and −0.0599* (−0.0610**), respectively. The club deal coefficients are negative, however only the coefficient in the CAR3 regression is significantly different from zero. Furthermore, our Table 4 results are robust to the consideration of only the 1990–2005 period, when the majority of club deals occur.

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 can benefit from acquisitions even if these acquisitions do not benefit shareholders. For instance, Bebchuck and Grinstein (2007) find that managerial compensation increases as the firm becomes larger, so that mergers that increase firm size can increase managerial compensation even if they destroy shareholder wealth. Consistent with this view, Harford and Li (2007) find that managers of bidder firms are better off in 3-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. Managers of public companies also gain prestige and perks if they manage larger companies. There is also the possibility, suggested by Harford, Jenter, and Li (2007), that some shareholders do not care when managers of a public firm overpay to buy another public company because they have stakes in both companies.

If private firms pay less for acquisitions than do public firms 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. We collect 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 managerial ownership information for the 1980s portion of our sample. 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 (regressions (1), (3), (5), (7), (9), and (11)), we find that the difference in the premium is highest when private bidders are compared to public bidders in which managerial ownership is less than or equal to 1%. The regressions in Table 5 use all the control variables used in the regressions in Table 4, but we do not reproduce the estimates for the coefficients on these variables as they are irrelevant for our discussion. 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 bidders, the indicator variable is −0.2851 and significant at the 1% level. For private operating bidders, the premium paid is significantly different when compared to acquisitions by 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 monotonic across categories of public 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 (7) and (9). Not surprisingly, there are fewer public bidders available for regressions (7), (9), and (11): 53 for regression (7), 55 for regression (9) and 45 for regression (11).

When we compare private equity bidders to public bidders with managerial ownership in excess of 50% in regression (11), 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. There are a variety of firms with greater than 50% managerial ownership, but in most cases these firms are controlled by one individual investor (e.g., Kirk Kerkorian at MGM Mirage).

We perform the same comparisons using the 3-day abnormal return in regressions (2), (4), (6), (8), (10), and (12). For the 3-day abnormal return regressions, there is a monotonic decrease in the absolute value of the indicator variable as private equity bidders are compared with public bidders 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 do the private equity coefficients 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

Table 5
Multiple 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 result 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), (3), (5), (7), (9), and (11) 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 (2), (4), (6), (8), (10), and (12) it is the 3-day abnormal announcement return (CAR3). The regressions use but do not report the control variables used in the regressions of Table 4. *p*-Values are in brackets and are based on heteroskedasticity-consistent standard errors. Coefficients denoted with [a], [b], or [c], are significant at the 1%, 5%, or 10% level, respectively.

	Public bidder managerial ownership	Return	PEBIDDER	POBIDDER	Constant	Obs.	Adj. R^2
(1)	$0 \leqslant own \leqslant 1\%$	FBC	−0.2851[a]	−0.1479[b]	1.0179[a]	628	0.152
			[0.000]	[0.025]	[0.001]		
(2)	$0 \leqslant own \leqslant 1\%$	CAR3	−0.1413[a]	−0.1119[a]	0.3644[c]	628	0.149
			[0.000]	[0.003]	[0.059]		
(3)	$0 \leqslant own \leqslant 5\%$	FBC	−0.2496[a]	−0.1068[b]	0.8307[a]	788	0.140
			[0.000]	[0.048]	[0.002]		
(4)	$0 \leqslant own \leqslant 5\%$	CAR3	−0.1064[a]	−0.0754[b]	0.3600[b]	788	0.143
			[0.000]	[0.022]	[0.024]		
(5)	$5\% < own \leqslant 15\%$	FBC	−0.1876[a]	−0.0707	0.5561[b]	468	0.117
			[0.004]	[0.269]	[0.048]		
(6)	$5\% < own \leqslant 15\%$	CAR3	−0.0961[b]	−0.0611	0.4913[b]	468	0.108
			[0.018]	[0.165]	[0.031]		
(7)	$15\% < own \leqslant 25\%$	FBC	−0.1401[c]	0.0165	0.4559	400	0.095
			[0.095]	[0.838]	[0.302]		
(8)	$15\% < own \leqslant 25\%$	CAR3	−0.0930[c]	−0.0476	0.5762	400	0.105
			[0.063]	[0.367]	[0.133]		
(9)	$25\% < own \leqslant 50\%$	FBC	−0.1785[c]	−0.0467	0.4689	402	0.078
			[0.072]	[0.634]	[0.149]		
(10)	$25\% < own \leqslant 50\%$	CAR3	−0.0548	−0.0100	0.3809[b]	402	0.111
			[0.156]	[0.819]	[0.044]		
(11)	$50\% < own$	FBC	−0.0850	0.0288	0.8855[a]	392	0.116
			[0.400]	[0.761]	[0.006]		
(12)	$50\% < own$	CAR3	−0.0360	−0.0084	0.4058[b]	392	0.122
			[0.422]	[0.851]	[0.043]		

Table 6
Multiple 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 result 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), (3), (5), and (7) 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 (2), (4), (6), and (8) it is the 3-day abnormal announcement return (CAR3). The regressions use but do not report the control variables used in the regressions of Table 4. *p*-Values are in brackets and are based on heteroskedasticity-consistent standard errors. Coefficients denoted with [a], [b], or [c], are significant at the 1%, 5%, or 10% level, respectively.

	Public bidder size quartile	Return	PEBIDDER	POBIDDER	Constant	Obs.	Adj. R^2
(1)	Q1 (smallest)	FBC	−0.1038[b]	0.0226	0.9989[a]	709	0.104
			[0.040]	[0.644]	[0.000]		
(2)	Q1 (smallest)	CAR3	−0.0282	−0.0072	0.2545[b]	709	0.134
			[0.242]	[0.804]	[0.047]		
(3)	Q2	FBC	−0.1860[a]	−0.0467	0.3355	708	0.129
			[0.000]	[0.309]	[0.100]		
(4)	Q2	CAR3	−0.0827[a]	−0.0488	0.3251[c]	708	0.128
			[0.002]	[0.127]	[0.053]		
(5)	Q3	FBC	−0.2229[a]	−0.1016[b]	0.5247[b]	712	0.137
			[0.000]	[0.028]	[0.036]		
(6)	Q3	CAR3	−0.1175[a]	−0.0842[a]	0.3714[a]	712	0.132
			[0.000]	[0.004]	[0.008]		
(7)	Q4 (largest)	FBC	−0.2711[a]	−0.1619[a]	0.9191[a]	711	0.161
			[0.000]	[0.000]	[0.000]		
(8)	Q4 (largest)	CAR3	−0.1236[a]	−0.1110[a]	0.3591[a]	711	0.124
			[0.000]	[0.001]	[0.009]		

managers have more discretion in large companies because the costs of collective action for shareholders are larger. We therefore predict that the difference in target shareholder gains between private and public acquirers is smaller for smaller public acquirers. Table 6 (we again omit the coefficients on control variables) shows that this is the case. We estimate our regressions restricting the public acquirers 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. 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 magnitude of the estimates and the size quartile. When we turn to the 3-day abnormal returns, CAR3, we find that the same patterns hold for both private equity firms and private operating companies except 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 to these shareholders 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 impact 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 institutional holdings. 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 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. With respect to the 3-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 of 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 16.9% of the public bidder offers were withdrawn. A concern with withdrawn deals is that the private equity firms that withdraw an offer might really never have been competitive with their offer, so that a withdrawn deal is not necessarily one where the private bidder walks away because the deal became too pricey. Nevertheless, private bidders seem more willing to make offers that do not succeed. Further, we would expect that when public and private 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 bidders. Public bidders win in 57 contests and private 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 dealing 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 earn 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 jobs and receiving a share of the payoff when the acquired firm goes public. In this view, target managers might be less diligent in getting the best possible deal for their shareholders. Existing empirical evidence is supportive of the view that managers at times have incentives to obtain greater 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 only 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 19.9% for targets of private firms and 19.2% for targets of public firms. This difference is not significant. The median difference is also insignificant (12.7% versus 10.5%). These results suggest that private acquirers do not systematically target firms with low managerial ownership. When it comes to institutional ownership, we again find no significant difference in the means (32.4% for targets of private firms versus 37.0% for targets of public firms) or medians (28.5% versus 28.4%).

Table 7 shows regression estimates using the firms for which we have target insider and institutional ownership

Table 7
Multiple 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 result in 100% ownership by the bidder. The dependent variable in models (1), (3), (5), and (7) 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 (2), (4), (6), and (8) it is the 3-day abnormal announcement return (CAR3). INSIDE (INSTITUTION) is the fraction of ownership held by managers (institutions) in the target firm. DINSIDE and DINSTITUTION are the de-meaned values of INSIDE and INSTITUTION. The regressions use but do not report the control variables used in the regressions of Table 3. *p*-Values are in brackets and are based on heteroskedasticity-consistent standard errors. Coefficients denoted with [a], [b], or [c], are significant at the 1%, 5%, or 10% level, respectively.

	(1) FBC	(2) CAR3	(3) FBC	(4) CAR3	(5) FBC	(6) CAR3	(7) FBC	(8) CAR3
PEBIDDER	−0.2135[a]	−0.1008[a]	−0.2221[a]	−0.1052[a]	−0.2235[a]	−0.1047[a]	−0.2210[a]	−0.1027[a]
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
POBIDDER	−0.0789[c]	−0.0698[b]	−0.0796[c]	−0.0700[b]	−0.0808[c]	−0.0689[b]	−0.0849[b]	−0.0722[a]
	[0.074]	[0.022]	[0.071]	[0.021]	[0.067]	[0.024]	[0.048]	[0.009]
INSIDE			0.1321[c]	0.0796	0.1841	0.1187		
			[0.057]	[0.122]	[0.339]	[0.332]		
INSTITUTION			0.1151[c]	0.0554	0.2035	−0.0468		
			[0.057]	[0.165]	[0.272]	[0.713]		
$INSIDE^2$					−0.0709	−0.0540		
					[0.752]	[0.723]		
$INSTITUTION^2$					−0.1077	0.1276		
					[0.586]	[0.350]		
DINSIDE							0.1917[b]	0.0895
							[0.022]	[0.153]
DINSIDE X PEBIDDER							−0.2437	−0.0457
							[0.125]	[0.658]
DINSIDE X POBIDDER							−0.2056	−0.0380
							[0.225]	[0.776]
DINSTITUTION							0.1136[c]	0.0795[c]
							[0.096]	[0.091]
DINSTITUTION X PEBIDDER							0.0186	−0.1227[c]
							[0.882]	[0.076]
DINSTITUTION X POBIDDER							−0.0557	−0.0281
							[0.739]	[0.831]
Constant	0.6010[a]	0.3734[b]	0.5855[a]	0.3588[b]	0.5633[a]	0.3658[b]	0.6612[a]	0.4210[a]
	[0.005]	[0.013]	[0.006]	[0.018]	[0.008]	[0.019]	[0.003]	[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	0.113	0.115	0.112	0.114	0.112	0.113

data (the coefficients for the control variables are omitted). We find that the private bidder indicator variables have higher absolute values than those in Table 4. Regression (3) 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 2.6% of pre-announcement firm value for managerial ownership and by 4.1% 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 this possibility, we add the square of the ownership variables in regression (5). The squared ownership measures are not significant, and multicollinearity renders insignificant the level ownership measures as well, but the private bidder indicator variables are unaffected.

In regression (7), 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). Though we find that target managerial ownership is associated with significantly higher premiums for acquisitions by public firms, an *F*-test shows that 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 firm. Similarly, target institutional ownership is associated with higher premiums when the acquirer is a public firm, but an *F*-test shows that target institutional ownership is not related to target shareholder gains when the acquirer is a private firm. These results suggest that target managerial and institutional ownership play a different role in private deals than in public deals. A plausible explanation is that private equity transactions take place when target managers are in favor of the acquisition, in which case their influence either makes institutional investors powerless to push for a higher premium or agreeable to the premium offered.

Regressions (2), (4), (6), and (8) use the 3-day abnormal return instead of the FBC premium. 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 (7).

7. Conclusion

In this paper, we find that target shareholders gain both statistically and economically 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 earn 35% higher premiums if a public firm makes the acquisition rather than a private firm. Target shareholders earn 63% higher premiums with public bidders rather than private equity bidders.

We investigate why target shareholder wealth gains differ so much between public and private acquirers. 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. This evidence suggests that bidders of operating companies pay more for acquisitions because they expect to benefit from synergies. However, observable differences in targets cannot explain the differences in premiums paid.

Managerial ownership in the bidder and the target seems 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. The difference in abnormal returns is highest between acquisitions made by private equity firms and those 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 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. An 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? One would not expect public firms to be willing to pay large premiums for just any firm. 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 could have little 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 explain the premium difference.

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