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ABSTRACT

We examine a sample of 12,023 acquisitions by public firms from 1980 to 2001. Shareholders of these firms lost a total of $218 billion when acquisitions were announced. Though shareholders lose throughout our sample period, losses associated with acquisition announcements after 1997 are dramatic. Small firms gain from acquisitions, so that shareholders of small firms gained $8 billion when acquisitions were announced and shareholders of large firms lost $226 billion. We examine the cross-sectional variation in the announcement returns of acquisitions. Small firm shareholders earn systematically more when acquisitions are announced. This size effect is typically more important than how an acquisition is financed and than the organizational form of the assets acquired. The only acquisitions that have positive aggregate gains are acquisitions of subsidiaries.

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1. Introduction

In this paper, we examine whether shareholders of acquiring firms gain when firms announce acquisitions of public firms, private firms, and subsidiaries. We consider these different types of acquisitions together since corporations acquiring a public firm, a private firm, or a subsidiary could be acquiring similar assets.[1] Typically, such purchases are large investments for the firms that undertake them. We form a sample of all such purchases for more than $1 million by public firms recorded by SDC from 1980 to 2001. For our sample of 12,023 acquisitions, the average announcement return for acquiring firm shareholders is 1.1%, representing a gain of $5.80 per $100 spent on acquisitions. Assuming that the capital markets have an unbiased assessment of the gains from acquisitions, this gain corresponds to the economic benefit of the acquisition for the shareholders of the acquiring firm together with other information released or inferred by investors when firms make acquisition announcements.

The average gain on acquisitions provides an incomplete, perhaps even deceiving, picture of the impact of acquisitions on shareholder wealth. Over our sample period, the sample firms spent roughly $3 trillion on acquisitions. The announcement of these acquisitions cost the shareholders of these firms a total of $218 billion dollars. Acquisitions by small firms are profitable, but these firms make small acquisitions with small dollar gains. Large firms make large acquisitions that result in large dollar losses. Acquisitions make losses for shareholders in the aggregate because the losses made by large firms are much larger than the gains made by small firms. Roughly, shareholders from small firms earn $8 billion from the acquisitions they made from 1980 to 2001, whereas the shareholders from large firms lose $226 billion. Shareholders would have made aggregate losses ignoring the latest merger wave, but the latest merger wave contributes overwhelmingly to the total amount spent on acquisitions and to the dollar amount of losses.

[1] Kaplan and Weisbach (1992) have a sample of 282 large acquisitions. They find that almost 44% of the acquisitions are subsequently divested. 216 of their acquisitions were acquisitions of public companies. The acquired assets were then spun off in some cases and acquired by other companies in most cases. Hence, in their sample, the same assets most likely were first acquired as a public firm acquisition and then as a division acquisition in the divestiture.

Roughly, one quarter of the firms acquiring public firms are small firms whereas half of the firms acquiring private firms are small firms. The small firms that acquire public firms on average increase shareholder wealth doing so; the large firms do not. Whether an acquiring firm is a small firm explains more of the return to shareholders than how the acquisition is paid for and at least as much as whether a public company, a private company, or a subsidiary is acquired. An acquisition made by a small firm, regardless of form of payment and regardless of the organizational form of the assets acquired, has an announcement return that is 2.24% higher than a comparable acquisition made by a large firm. In contrast, acquisitions of public firms made by large firms make losses for the shareholders of the acquiring firm irrespective of how they are paid for.

Fuller, Netter, and Stegemoller (2002) show that for a sample of firms that make five or more acquisitions in the 1990s the returns to acquiring firm shareholders differ across organizational form of the acquired assets. In our sample of acquisitions through the 1980s and 1990s, we find that the shareholders of the acquiring firm gain the most when the firm acquires a subsidiary or a private firm. The announcement abnormal return for the acquisition of a subsidiary is 2%. In contrast, the acquiring firm shareholders gain 1.5% when a private firm is acquired and lose 1% when a public firm is acquired. However, the only acquisitions that have positive aggregate dollar gains for shareholders are acquisitions of subsidiaries.

The literature has identified many determinants of bidder returns. Much evidence has been produced showing a sharp difference in bidder returns between acquisitions of public targets paid for with cash and acquisitions of public targets paid for with equity.[2] Fuller et al. (2002) and Chang (1998) show that these differences do not extend to acquisitions of private firms. Fuller et al. (2002) find that acquisitions of private firms paid for with equity have a positive abnormal return in their sample.

[2] See Andrade, Mitchell, and Stafford (2001) for recent evidence and review of the literature.

We find in our sample that the difference in acquirer abnormal returns across organizational form of acquired assets is dramatic for equity offers. The announcement return for acquisitions of private firms and subsidiaries paid for with equity is, respectively, 3.51% and 4.74% higher than the announcement return for the acquisition of public firms. The announcement return is 0.85% higher for private firm cash acquisitions and 1.33% higher for subsidiary cash acquisitions than for cash acquisitions of public firms. After controlling for deal and firm characteristics, there is no significant difference for cash offers between acquisitions of private firms, public firms, and subsidiaries. Our results create difficulties for a common explanation of the negative return of bidders, namely the fact that the bidder's decision to pay with equity reveals that bidder management believes that the equity is overpriced. If this were the explanation, there would be no reason for the difference between abnormal returns of large bidders and small bidders. However, we find evidence indicating that the impact of short-sales by arbitrageurs identified by Mitchell, Pulvino, and Stafford (2002) may explain part of the announcement return for large bidders.

Acquisition announcement returns might convey information unrelated to the merger itself. For instance, it could be that the market learns from a merger announcement both that a firm is making a specific acquisition that might be better or worse than expected and that the firm has fewer internal growth opportunities than expected. In this case, a merger that is a positive net present value project for the firm might be associated with a negative announcement return.[3] The negative announcement return would not be evidence that the merger reduces the wealth of the bidder's shareholders. Strikingly, however, even if the abnormal returns incorporate other information than an estimate of the net present value of the acquisition, this information differs across small and large firms and that difference is of first-order importance in understanding the abnormal returns. Small firms make acquisitions that, when announced, have an abnormal return that is systematically higher than acquisitions by large firms and acquisitions of public firms by

[3] Jovanovic and Braguinsky (2002) provide a formal model where an acquisition announcement has a negative abnormal return for the acquiring firm even though the acquisition is a positive net present value project for the firm.

large firms are accompanied by significant negative abnormal returns regardless of how they are financed.

It is possible that the market does not correctly anticipate the benefits and costs of acquisitions for acquiring-firm shareholders. This could be because subsequent events affect the value of acquisitions or because, for whatever reason, the market has a biased assessment of the value of the acquisitions. We therefore investigate the long-run stock performance of acquiring firms to examine this issue.

The paper is organized as follows. We describe our sample and the characteristics of sample firms in Section 2. In Section 3, we document that shareholders from acquiring firms gain when acquisitions are announced. We show how abnormal returns differ according to the organizational form of the acquired assets, the method of payment, and firm size. In Section 4, we demonstrate how some of these differences can be understood when we control for deal and firm characteristics. In Section 5, we consider the long-term returns following acquisition announcements. We conclude in Section 6.

2. The sample of acquisitions.

The sample of acquisitions comes from the Securities Data Company's (SDC) U.S. Mergers and Acquisitions Database. We select the sample of domestic mergers and acquisitions with announcement dates between 1980 and 2001. We consider only acquisitions where acquiring firms end up with all of the shares of the acquired firm or subsidiary. We do not want to consider acquisitions where the acquiring firm already has control of the acquired assets, so we require the acquiring firm to control less than 50% of the shares of the acquired firm before the announcement. We further require that (1) the transaction is completed, (2) the deal value is greater than $1 million, (3) a public or private U.S. firm or a non-public subsidiary of a public or private firm are acquired, and (4) the acquirer is a public firm listed on CRSP and Compustat during the event window. After collecting these acquisitions, we eliminate those where the relative transaction size is less than one percent. We define the relative transaction size as the

total value of the consideration paid by the acquirer, excluding fees and expenses as reported by SDC, relative to the market value of assets of the acquirer. We also require that the number of days between announcement and completion dates is less than one thousand.

Our requirements yield a sample of 12,023 transactions. Almost half of the sample involves acquisitions of private firms (5,583). There are also more subsidiary acquisitions (3,798) than acquisitions of public firms (2,642). Table 1 shows the number of acquisitions by year. The number of acquisitions does not increase monotonically through time: it falls in 1990 and in recent years. The number of acquisitions in the 1990s is dramatically larger than in the 1980s. In our tests, we will often use time dummy variables to take into account these changes. In a given year, the sample typically has more acquisitions of private firms than public firms and has more acquisitions of subsidiaries than public firms. In the 1990s, there are more acquisitions of private firms than subsidiaries, but in the 1980s, there are years with more acquisitions of subsidiaries than of private firms.

Table 2 provides information for deal and firm characteristics for our sample. We organize this information according to the organizational form of the assets acquired. In the first row, we show that the dollar value of acquisitions is much larger for acquisitions of public firms than for private firms, while the dollar value of acquisitions of subsidiaries are in between the two. Even as a fraction of the assets of the acquirer, acquisitions of public firms are fifty percent larger than acquisitions of private firms. We then report days to completion. Not surprisingly, it takes longer to complete an acquisition of a public firm than it takes to complete the acquisition of a private firm or subsidiary. To estimate whether a particular acquisition takes place in an active merger and acquisition market, we use the measure of asset liquidity developed in Schlingemann, Stulz, and Walkling (2002). This measure is defined as the value of deals divided by the book value of the 2-digit SIC code industry assets. We find that the private firm acquisitions take place in a market with a higher liquidity index than the other acquisitions. Cash is used more frequently to pay for acquisitions of private firms and subsidiaries than in acquisitions of public firms. Not surprisingly, almost no acquisitions of private firms or subsidiaries involve a tender offer or are

part of a hostile deal. We define a transaction as diversifying if the target and the acquirer have different two-digit SIC codes (using the SIC codes reported by SDC). Acquisitions of private firms and subsidiaries are more likely to be diversifying acquisitions than acquisitions of public firms. We would expect competition for a target to decrease the return to the acquirer. We construct a proxy for competition, where competed deals are deals with multiple firms that make a public bid. With this measure, competition is rare in acquisitions of public firms, but almost non-existent for acquisitions of private firms or subsidiaries. However, our measure suffers from the fact that there may be multiple potential acquirers, but the competition among them is resolved privately. Boone and Mulherin (2002) show that, in the 1990s, an acquisition by one public bidder may follow a private auction in which many firms participate. In such a situation our measure of competition would indicate no competition, even though there would have been strong competition in the private auction.

In panel B of Table 2, characteristics of the acquiring firm are detailed. In the first row, we show that firms acquiring private firms have more liquid assets as a proportion of total assets than firms acquiring public firms. The book value of assets is much smaller for firms that make private firm and subsidiary acquisitions than for firms that make public firm acquisitions. The same is true for market capitalization. Firms that make private firm acquisitions have lower leverage than firms that make public firm acquisitions, but not dramatically so. We compute a proxy for Tobin's *q* where we use the book value of debt plus the market value of equity in the numerator and the book value of assets in the denominator. The *q* of firms making private firm acquisitions is much higher than the *q* of other firms making acquisitions. Firms making private acquisitions have lower operating cash flow. We define an acquirer to be a small firm if in the year of the acquisition the acquirer's market capitalization is below the 25th percentile of firms listed on the NYSE. We see from the last row of the table that the percentage of acquisitions made by small firms is higher for acquisitions of private firms and dramatically lower for acquisitions of public firms.

3. The gains to acquiring firm shareholders.

We estimate the gains to shareholders of acquiring firms in three ways:

1) **Abnormal return over the three days around the announcement for each transaction.** To estimate that abnormal return, we use standard event study methodology, following Brown and Warner (1985). Abnormal returns are calculated using market model benchmark returns with the CRSP equally weighted index returns. The parameters for the market model are estimated over the (–205, –6) day interval, and the *p*-values are estimated using the time-series and cross-sectional variation of abnormal returns.[4] As pointed out by Andrade, Mitchell, and Stafford (2001), the three-day window is one of the two most commonly used event windows for merger studies. The other window most commonly used starts before the announcement and ends with the completion of the merger. The longer window makes it possible to take into account bid revisions and other actions taken by the bidder in reaction to defensive actions taken by the target (see Dann and DeAngelo (1988) and Schwert (2000)) and to competition. The advantage of the shorter window is that its results are typically insensitive to the model chosen for expected returns.

2) **Gain to shareholders per dollar spent on the acquisition over the three-day announcement window.** We call this measure the percentage net present value of the acquisition. The advantage of this second measure is that it more directly estimates the profitability of the investment made by the acquiring firm. A given acquisition could be associated with vastly different abnormal returns if undertaken by different firms simply because the acquiring firms differ in size. In contrast, if the change in the value

of the acquirer's shares measures the gain to the acquiring firm's shareholders from the acquisition, an acquisition will have the same percentage net present value regardless of the size of the acquiring firm. Morck, Shleifer, and Vishny (1990) introduced the percentage net present value, but they used the gross change in the value of the acquirer's equity to estimate it. In contrast, we compute the numerator using the approach proposed by Malatesta (1983) to compute the dollar abnormal return. We subtract from the gross change in the value of the acquirer's equity the predicted change from the market model. This gives us the dollar abnormal change in the value of the acquirer, or what Malatesta (1983) calls the dollar abnormal return. We then divide the dollar abnormal return by the total value of the transaction as reported by SDC to obtain the percentage net present value of the transaction.

3) **Aggregate net present value from acquisitions over the three-day announcement window.** This measure represents the sum of the dollar net present value of all the acquisitions in our sample and is defined as the sum of the dollar abnormal returns. It tells us how much wealth was created for acquiring firm shareholders for the sample of acquisitions announced from 1980 to 2001.

Table 3 provides estimates of the abnormal return and percentage net present value for the whole sample and for each type of acquisition. The table reports that the average abnormal return for an acquisition is 1.103%. This abnormal return is significant at the 1% level. The median abnormal return is 0.364% and is also significant. Because almost all acquisitions involve the acquisition of a firm or subsidiary that is worth less than the acquiring firm, it is not surprising that the percentage net present value is larger than the abnormal return. For the whole sample, the average percentage net present value is 5.796%. This means that, on average, an acquisition increases shareholder wealth by $5.796 for each $100 spent. Finally, the aggregate net present

[4] We also calculate abnormal returns by subtracting the value-weighted CRSP market return from the firm's return. Our results are not sensitive to using either definition of abnormal returns.

value of acquisitions is −$218.593 billion, so in total the shareholders of the acquiring firms in our sample lost substantially from 1980 to 2001 when acquisitions were announced.

Since we saw in Table 1 that the number of acquisitions changes over time and is extremely large over the most recent acquisition wave, we have to be concerned about whether the results we obtain for the gains from acquisitions are due to the most recent acquisition wave. The answer is yes and no. There are only five years in our sample where the aggregate net present value of acquisitions is positive. These years are not clustered. They are 1982, 1984, 1993, 1995, and 1996. If we stop our sample before the most recent merger wave the total dollar amount of gains from acquisitions is still negative, but the magnitude of losses until the end of 1993 is $10.421 billion. Since 87.31% of the money spent on acquisitions in our sample is spent after 1993, it is perhaps not surprising that 95.23% of the losses occurred after 1993. Figure 1 shows the pattern over time of the yearly amount spent on acquisitions and of the yearly aggregate net present value. It is clear that the magnitudes of the last four years of the sample for amounts spent and aggregate net present values are very different from what they are for the other years.

Table 3 shows estimates of the acquisition gains for each type of organizational form of acquired assets. The table shows dramatic differences in shareholder returns between acquisitions of assets organized as public firms on the one hand and assets organized as private firms or subsidiaries on the other hand. Zingales (1995) provides an analysis where the acquirer of a private firm or a subsidiary faces a different bargaining situation from the acquirer of a public firm. With the acquisition of a public firm, the free-rider problem identified by Grossman and Hart (1980) comes into play. It could therefore make sense that the shareholders of public firms would get a better deal when acquired than shareholders of private firms. Further, however, it may also be the case that with acquisitions of private firms and subsidiaries, it is more often the case the owners of the entities wanted to sell them. This could be because the owners of the private firm wanted to exit or because the owner of the subsidiary had to raise funds. In such cases, the acquirer may benefit from providing a liquidity service.

These arguments could explain why shareholders of a public firm acquiring a public firm gain less than when acquiring a private firm or a subsidiary. They cannot explain why, as Table 3 shows, shareholders lose when an acquirer buys a public firm. The abnormal return is −1.020% and shareholders lose 5.9 cents per dollar spent on acquiring a public firm. The aggregate losses on acquisitions of public firms are $256.864 billion. Acquisitions of public firms made an aggregate gain in only three years in our sample. In contrast, acquiring firm shareholders gain significantly for acquisitions of private firms and subsidiaries. The most profitable acquisitions are those involving subsidiaries. When a firm acquires a subsidiary, the shareholders of the acquirer gain more than 10 cents per dollar spent on the acquisition. The shareholders of the acquiring firm earn 0.507% more if it acquires a subsidiary instead of a private firm and they earn 2.516% more if it buys a private firm instead of a public firm. Even though acquisitions of private firms are profitable on average, shareholders lost in the aggregate from the announcement of such acquisitions. However, these losses are due to the most recent merger wave. Without it, acquisitions of private firms make an aggregate positive gain and such acquisitions make an aggregate positive gain in thirteen sample years. The only acquisition announcements from which shareholders gain in the aggregate over our whole sample period are acquisitions of subsidiaries. Acquisitions of subsidiaries make positive aggregate gains in thirteen sample years, but in addition they are extremely successful in 1998 and 1999.

We saw in Table 2 that public firm acquirers are typically larger and more likely to pay with equity than private firm acquirers and subsidiaries. We know from earlier evidence that public firm acquisitions paid for with equity have lower abnormal returns than public firm acquisitions paid for with cash. Chang (1998) and Fuller, Netter, and Stegemoller (2002) show that this result does not hold for private firm acquisitions in their samples and these acquisitions have significant positive abnormal returns when paid for with equity. Though earlier research does not examine acquisitions by small firms separately, such an examination is warranted here. We find that on average acquisitions are profitable, but in the aggregate they are not. A possible explanation for

such a result is that large firms make large deals with large losses. There are a number of reasons why acquisitions by small firms might be more profitable than those by large firms. In particular, acquisitions by small firms are less likely to draw the attention of regulators and politicians. Small firms are more likely to be at the beginning of their lifecycle than large firms, so that the hubris emphasized by Roll (1986) as a possible explanation for poor bidder returns is less likely to be a factor. Agency costs of managerial discretion are also likely to be less for firms that have a smaller margin of error.

In Table 4, we therefore split the sample according to the organizational form of the assets acquired, how the acquisition is paid for, and the size of the acquirer. We find first that the method used to pay for an acquisition of a private firm essentially does not matter for our sample. The abnormal return associated with the acquisition of a private firm is significantly positive regardless of how the acquisition is paid for and the abnormal returns for paying with equity are not significantly different from those for other payment methods. For the acquisition of public firms, the method of payment matters. Acquisitions of public firms paid for with cash have abnormal returns insignificantly different from zero, while those paid for with equity have significantly negative abnormal returns. Finally, for acquisitions of subsidiaries, it is rare for an acquisition to be paid for with equity alone, but these acquisitions are the most profitable for shareholders.

We then turn to the relation between acquiring firm size and shareholder returns. For the whole sample, large firms have an insignificant abnormal return, while small firms have a significantly higher return. The difference in average abnormal return between small firms and other firms is 2.240%. Looking across organizational forms of target assets, this difference is smallest for acquisitions of private firms and largest for acquisitions of public firms. On average, shareholders of large firms acquiring public firms lose 1.696% when an acquisition is announced. In contrast, there is a significant gain when a small firm acquires a public firm.

Could differences between the information environment of small firms and large firms explain why abnormal returns of acquisition announcements made by small firms are higher than those made by large firms? It is often argued that small firms are followed less closely by the press and analysts compared to other firms. Hence, it could be that announcements by smaller firms are less noticed. If this were the case, however, the abnormal returns of small firms should be insignificant. Consequently, this cannot explain our results since small firms have positive significant announcement returns. Alternatively, greater following of large firms could imply that announcements by large firms are less surprising. Since we find negative significant abnormal returns for large firms that make public acquisitions, the possible leakage of information means that if anything, we understate the adverse shareholder impact associated with the announcement of such acquisitions.

Since method of payment differences between small firms and large firms could explain differences in abnormal returns, we show estimates of abnormal returns for small firms and large firms according to how acquisitions are paid for. We divide the acquisitions between acquisitions paid for with equity only, cash only, or a mix of cash, equity and other consideration. Acquisitions by large firms typically have low announcement returns regardless of the organizational form of the assets acquired and the way the acquisition is paid for, while acquisitions of private firms and subsidiaries have systematically higher abnormal returns. Acquisitions by small firms have higher abnormal returns than those made by other firms, but even for small acquiring firms acquisitions of public firms paid for by equity do not have positive abnormal returns. Regardless of the type of acquisition, there is a significant difference in abnormal returns between small firms and large firms. The smallest difference is for acquisitions of private firms paid with cash, 0.699%, and the largest difference is for acquisitions of subsidiaries paid for with equity, 5.464%.

4. The impact of firm and deal characteristics.

The abnormal return of acquisition announcements by small firms is significantly higher than the abnormal return of acquisition announcements by large firms. Further, though there are no significant differences between acquisitions of private firms and public firms for cash, there are differences among other types of acquisitions. Differences in abnormal returns between small and large firms or between public firm acquisitions with equity and private firm acquisitions with equity might be due to differences in firm or deal characteristics. To investigate whether this is the case, we run a regression of abnormal returns on dummy variables corresponding to each type of acquisition and on deal and firm characteristics. The deal and firm characteristics are the variables described in Table 2. Many of these variables have been shown to be correlated with abnormal returns for some types of acquisitions.

In Table 5, regression (1) uses all the acquisitions for which we have data regardless of the type of acquisition. The most important result is that acquisitions by small firms have higher abnormal returns after controlling for firm and deal characteristics. Controlling for firm and deal characteristics, the abnormal return of an acquisition is 1.55% higher if it involves a small acquirer. In the regression, the intercept corresponds to acquisitions of subsidiaries. Acquisitions of private firms and public firms have significantly lower abnormal returns than acquisitions of subsidiaries. Whether an acquisition is financed by equity is not correlated with abnormal returns when the whole sample is used. However, cash acquisitions have significantly lower abnormal returns.

Since Asquith, Bruner, and Mullins (1983), the literature generally emphasizes the importance of the size of the target relative to the size of the acquirer when considering acquisitions of public firms and finds that bidder returns are positively related to the relative size of the target. Since the relative size variable falls as bidder size increases, it follows that bidder

returns are negatively related to bidder size.[5] Regression (1) uses that variable as an explanatory variable. This variable has a coefficient of 0.0117 that is significant. The dummy variable for small firms is significant when we control for the value of the target relative to the value of the acquirer, so that the size effect we document is not the relative size effect documented in the literature. Looking at the economic significance of the two effects, across types of acquisitions, if an acquisition represents 30% of the market capitalization of the acquirer instead of 10%, the abnormal return increases by roughly 0.23%. In contrast, if an acquisition is made by a small firm instead of a large one, the abnormal return increases by 1.55%. The small firm effect in acquisition returns is therefore much larger than the relative size effect in our regression.

In regression (1), conglomerate acquisitions have lower abnormal returns, but the coefficient on the dummy variable that takes value one if an acquisition is in a different 2-digit industry SIC code is small and insignificant. Acquiring firm shareholders gain more with tender offers. Almost all tender offers are acquisitions of public firms paid for with cash. Consequently, an acquisition of a public firm paid for with cash through a tender offer has a higher abnormal return than an acquisition of a public firm paid for with equity in a merger. Our proxy for q has a negative significant coefficient, but the size of the coefficient means that the effect is economically trivial. Further, the significance of the coefficient is due to the firms with extremely large q values. If we truncate q at 4, the coefficient is not significant. Acquisitions in industries with more merger and acquisition activity, *i.e.*, industries with a high liquidity index, have a lower abnormal return.

[5] Schwert (2000) finds a positive coefficient on bidder size when examining cumulative abnormal returns from day 63 before the announcement to day 126 after the announcement. His abnormal returns are market model abnormal returns assuming an intercept of zero. He interprets this coefficient as inconsistent with Roll's hubris hypothesis. The average bidder size in Schwert (2000) is much higher than in our study. Using our sample until 1996, our abnormal returns, and Schwert's (2000) explanatory variables (using only SDC information for hostility), we find that the coefficient on bidder size becomes positive, but insignificant, when we eliminate firms with assets below $250 million. Since his sample period starts in 1976 and since he includes unsuccessful offers, our sample is not the same as his. However, as we use a sample more similar to his, we seem to find a result more consistent with his. In contrast, Asquith, Bruner, and Mullins (1983) compute abnormal returns from day 20 before the announcement to the announcement. Our study is focused directly on announcement returns, but we examine long-term returns in Section 5.

Potential competition therefore lowers returns to acquiring firm shareholders. Finally, leverage is not significant.

The next three regressions estimate the same regression but for each organizational form of acquired assets separately. This allows us to identify how different ways of paying for the acquisition are correlated with the abnormal returns depending on the organizational form. Regression (2) uses only the acquisitions of private firms in the sample. The intercept corresponds to the acquisitions with mixed financing. How a private firm acquisition is financed does not matter after controlling for deal and firm characteristics. Small firms again have significantly higher abnormal returns even when relative transaction value is controlled for. Except for the relative size of the transaction and our *q* proxy, other variables are insignificant. Similar results are obtained for subsidiaries, except that the abnormal return is significantly lower for conglomerate acquisitions and significantly lower for acquisitions in industries with greater merger and acquisition activity. Again, relatively larger transactions have higher abnormal returns.

Regression (4) uses only the public firm acquisitions. The significant variables are the dummy variable for equity financing, the small firm dummy variable, and leverage. The magnitude of the small firm dummy variable is more than twice the magnitude of the equity financing dummy variable in absolute value. As a result, an equity-financed acquisition by a small firm has a higher abnormal return than a cash-financed acquisition by a large firm, keeping the other variables unchanged. In a recent paper, Dong, Hirshleifer, Richardson, and Teoh (2002) show that bidder abnormal returns are positively related to equity book-to-market and to the ratio of an estimate of fundamental share value to share price. They argue that these measures proxy for firm overvaluation and more overvalued acquirers have lower returns. Our *q* proxy should be negatively related to their measures, but we do not find a similar result. Possible explanations for this might be that their sample is larger than our sample of public firm acquisitions, mostly

because they include more acquisitions than we do, or that *q* is an imperfect substitute for equity market-to-book.

The last three regressions of the table use sub-samples of acquisitions financed in the same way to estimate the difference in abnormal returns that can be explained by the organizational form of the assets acquired keeping everything else constant. Regression (5) uses all acquisitions with mixed financing. Acquisitions of public firms have significantly lower abnormal returns. As in the other regressions, the size dummy is significant. Further, the conglomerate dummy has a negative significant coefficient. When we turn to regression (6) that uses acquisitions financed with equity only, the results are similar except that the conglomerate dummy has a positive significant coefficient. The abnormal return of public acquisitions is lower by 4.37%. Finally, for cash acquisitions, the abnormal returns are insignificantly different across types of acquisitions. The conglomerate dummy and competed offer dummy are both negative and significant. Furthermore, the abnormal return falls with *q* and with the liquidity index.

An obvious concern about the results of Table 5 is that they may be explained by the most recent acquisition wave. We examined the robustness of the results of Table 5 to insure that our inferences hold up when we control for year and industry effects. Adding dummy variables for 2-digit SIC code major industry classification for targets and acquirers, as well as year dummies, we still find the same key results. In particular, the impact of size remains unaffected.

From the evidence of Table 5, once we control for deal and firm characteristics, the way an acquisition is financed matters only if a public firm is acquired. In Table 4, the difference between an equity-financed acquisition of a private firm and an equity-financed acquisition of a public firm is 3.511%. The difference in abnormal return between a cash acquisition of a private firm and a cash acquisition of a public firm is 0.848%. Consequently, the difference in abnormal returns between acquisitions of private firms and public firms is increased by 2.663% when equity is used to pay for the acquisition instead of cash. Table 5 confirms that this difference is due to the adverse effect on the announcement return of using equity to pay for public firm

acquisitions rather than to a potential benefit of paying with equity for private firm acquisitions. There is no significant benefit from using equity for private firm acquisitions in regression (2), while there is a significant disadvantage in using equity for public firm acquisitions in regression (4).

Why is it that public acquisitions have lower abnormal returns, especially when they are paid for with equity? First, it is important to notice that cash acquisitions of public firms by small acquirers actually have larger abnormal returns than acquisitions by small acquirers of private firms paid for with cash or equity. Consequently, the poor results of acquisitions of public firms are due to equity acquisitions and acquisitions made by large firms. Recently, Mitchell, Pulvino, and Stafford (2002) provide evidence that some of the lower abnormal return associated with equity-financed acquisitions of public firms is due to the activities of arbitrageurs who sell the stock of the bidder to hedge long positions in the target. This effect should increase with the relative size of the acquisition. However, so could price pressure resulting from the increase in the bidder's equity. We estimated a regression for equity-financed acquisitions of public firms where we allow the abnormal return to be related to the value of the acquisition relative to the value of the equity of the acquirer. As the value of the acquisition increases, everything else equal, arbitrageurs would sell a larger fraction of the firm's equity, thereby decreasing the acquirer's stock price further. As expected, we find a negative coefficient on that variable, but the coefficient is small and insignificant. However, when we estimate the regression for large firms only (not reported), the results become stronger and the coefficient on the relevant variable becomes large and significant. An acquisition that is greater by 10% of the acquiring firm's equity capitalization has a lower abnormal return of 0.6%. Our evidence is consistent with the existence of an arbitrageur effect or a more general price pressure effect for large firms but not small firms. It seems difficult to believe that price pressure effects due to the increase of the supply of shares would exist for large firms but not small ones; however, it is reasonable to expect that arbitrageurs will be more active if the bidder is a large firm. Since small firms perform

better when they announce an acquisition of a public firm financed by equity, the lack of an arbitrageur effect could help explain this better performance.

An explanation often advanced for the negative abnormal returns associated with equity-financed offers relies on the Myers and Majluf (1984) model of equity issues. Following this model a firm would not pay with equity if management believes that the firm's equity is undervalued, and hence, when an equity-financed offer is made investors infer that management believes that the firm's equity is overvalued. Empirical evidence shows that public equity issues have negative announcement returns.[6] Our evidence makes this interpretation of the negative abnormal returns associated with the announcement of acquisitions of public firms financed with equity not completely satisfactory because acquisitions of public firms by small firms have a negative abnormal return that is much smaller than the typical negative abnormal return associated with equity issues. Existing evidence on equity issues does not show a negative relation between firm size and the abnormal return.[7] We cannot exclude, however, that the abnormal return associated with an equity-financed acquisition of a public firm is roughly equal to the abnormal return associated with a cash-financed acquisition plus the abnormal return associated with an equity issue. However, if that were the case, acquisitions of public firms would decrease shareholder wealth for large firms since their acquisitions have a significant negative abnormal return.

Investors do not learn the same adverse information when a firm pays for the acquisition of a private firm or a subsidiary with equity. An acquisition of a public firm paid for with equity involves the equivalent of a public issue of equity since typically public companies have diffuse ownership. In contrast, an acquisition of a private firm paid for with equity is more similar to a private equity issue, since private companies have concentrated ownership. Empirical evidence

[6] See Eckbo and Masulis (1995) for a review article.
[7] Jung, Kim, and Stulz (1996) run a regression of abnormal returns of equity issues on various variables including total assets. The coefficient on total assets is positive but not significant.

shows that private equity issues have positive announcement returns in contrast to public equity issues. One explanation of these positive announcement returns is Wruck (1989) who argues that a private equity issue results in the creation of a large shareholder who can increase firm value through monitoring. Alternatively, Hertzel and Smith (1993) propose that investors who buy in a private equity issue can obtain information from the firm that diffuse and anonymous investors cannot, so that the potential for an equity issue to reveal adverse information is mitigated. On average, therefore, we would expect no penalty for paying with equity in the acquisition of a private firm. We investigate whether monitoring by the new equity holders plays a role in explaining the abnormal returns associated with acquisitions of private firms paid for with equity as argued by Fuller et al. (2002) for their sample of repeat acquirers. Monitoring matters more if the block created through the acquisition is larger relative to the firm's existing equity. In regression (2) in Table 5, we find that the abnormal return increases with the relative size. However, when we estimate regression (2) only for acquisitions financed with equity (not reported), the abnormal return increases less with the relative size of the acquisition than in regression (2). This is inconsistent with the hypothesis that the benefit of monitoring increases with the size of the block. When we restrict the regression to large firms (not reported), however, we find a result that is more supportive of the monitoring hypothesis.

Fuller et al. (2002) raise the possibility that acquisitions of public firms could be less profitable because the market for public firms is more liquid, so that competition reduces the gains from acquisitions. In our regressions, we control for one form of liquidity, namely the intensity of mergers and acquisitions in the industry of the target. This proxy for liquidity is significant, but it cannot explain the worse abnormal returns for acquisitions of public firms. Explicit competition in the form of multiple bidders cannot explain the worse abnormal returns either.

We investigate further whether proxies for agency costs explain the cross-sectional variation in abnormal returns. Firms with poor growth opportunities are more likely to make poor

investments if the agency costs of managerial discretion are high. For the whole sample, low q firms (firms defined as firms with a q below one) do not have worse abnormal returns. However, when we consider separately the sample of large firms, we find that firms with q less than one have lower abnormal returns. This is especially the case for cash acquisitions. These acquisitions have abnormal returns lower by 0.87% when undertaken by low q firms. We also find that diversifying cash acquisitions by large firms have abnormal returns lower by 0.40%. However, the Lang, Stulz, and Walking (1991) measure of free cash flow (cash flow if q is lower than one) is not significant.

5. Post-event stock price performance.

There has been increasing concern in the literature that announcement returns may not be capturing the whole shareholder wealth impact of a corporate action. If that is the case, it is possible that announcement returns incorporate information differently across firm characteristics and deal types. Hence, the differences we document across firms characteristics and deal types might be artificial results due to the fact that markets are not equally efficient for all stocks. This concern would have some validity if we were to find out that the differences we document at announcement get reversed over time. To address this issue, we examine long-term returns following announcements.

Some of the existing studies that examine long-term returns following acquisitions of public firms suggest that shareholders fare poorly following acquisitions paid for with equity (for instance, Loughran and Vijh (1997)), but other studies do not find poor returns following such acquisitions (for instance, Mitchell and Stafford (2000) and Dong, Hirshleifer, Richardson, and Teoh (2002)). One reason why studies reach different conclusions when estimating long-term returns is that the return estimates are sensitive to the estimation method. There is a lively debate in the literature concerning which approach is better (see Fama (1998) and Loughran and Ritter (1997)). Some authors favor an examination of returns in event time, while others prefer to

consider the returns in calendar time of portfolios of firms that have experienced the event of interest. Rather than choosing one approach, we report results using both a calendar-time and an event-time analysis. For the calendar-time analysis we measure long-term stock price performance using a portfolio method similar to the one proposed by Jaffe (1974), Mandelker (1974), and Fama (1998). For each calendar month we form an equally weighted portfolio of the firms that made an acquisition in the past 3 years, measured relative to the completion date of the transaction, provided that there are at least ten such firms. The time-series of portfolio returns net of the risk-free return over the sample period is regressed on the four factors from the Fama and French (1992, 1993) and Carhart (1997) models (*i.e.*, market return net of risk-free return, HML, BMS, and Momentum) as in Hertzel, Lemmon, Linck, and Rees (2002). The intercept reflects the average monthly abnormal return for the sample. We examine long-term returns for sub-samples selected according to firm size, target organizational form, and form of payment. For each subsample, we form a portfolio that investors could have invested in. The difference between small and large acquirers' abnormal returns is calculated using a time-series of the difference between a long position in the small acquirer portfolio and a simultaneous short position in the large acquirer portfolio. If either portfolio does not have a return in a given calendar month then the time-series observation is deleted from the regression.

In Table 6 we report the post-event long-term results for the whole sample and the various sub-samples. Typically, studies using the calendar-time portfolio approach are less likely to find long-term abnormal returns. Table 6 is not surprising in this context. For the whole sample, the monthly abnormal return is -0.041% and insignificant. There is therefore no evidence that acquirers have poor long-term performance. This is what one would expect in an efficient market. Very few sub-samples have significant long-term returns. We find that private firm acquisitions by large firms have positive long-term abnormal returns, while private firm acquisitions by small firms have negative long-term abnormal returns. The difference between these abnormal returns is significant. Acquisitions of public firms paid for with cash have significant positive abnormal

returns. We find no evidence that firms paying with equity have poor long-term returns in our sample. The differences in returns across organizational forms are trivial.

We also estimate long-term returns using event-time analysis and calculate three-year buy-and-hold abnormal returns, following the approach of Barber and Lyon (1997). For each sample firm we find a matching firm based on the closest monthly market value of assets within the same yearly equity book-to-market quintile measured one month after the completion of the transaction. Sample firms are excluded from the matching population during a six-year window around the completion month. Furthermore, matching firms exclude ADR's, closed-end funds, and REIT's. Abnormal buy-and-hold returns are defined as the difference between the buy-and-hold return of the sample firm and the buy-and-hold return of the matching firm.

Estimates of long-term abnormal returns in event time tend to be larger than those obtained using the portfolio approach. This happens, for instance, if the worst long-term abnormal returns take place when the frequency of events is highest. In this case, portfolio returns weight equally months in which the portfolio has many firms that perform poorly and months in which it has few firms that perform less poorly. In contrast, the event time approach weighs each firm equally. Table 7 shows our estimates in the same format as Table 6. We find there that acquiring firms perform poorly. There is not much of a difference between large and small firms, but firms that acquire private firms have the worst long-term abnormal returns. For firms that acquire private firms, there is not much of a difference between large and small firms and between the form of payment. However, when we turn to firms that acquire public firms, large firms perform worse and there is no evidence that firms paying cash have negative long-term abnormal returns.

Long-term abnormal returns would be a source of concern if taking into account these returns would change the conclusions we draw from the announcement returns. In that case, one might possibly argue that the market fails to take fully into account the impact of the acquisitions for shareholder wealth. There is no consistent pattern of this happening. With portfolio returns, there is no evidence of significant abnormal returns for all acquirers and sub-samples based on firm

size, organizational form of target, and means of payment. The only puzzling evidence is that large firms making acquisitions of private firms perform better than small firms making acquisitions of private firms. Small firms making acquisitions of private firms have marginally significant negative abnormal returns. The evidence using the event-time approach does not lead to the same conclusion. With that evidence differences between small and large firms are never significant and acquiring firms perform poorly. It seems reasonable to conclude that the evidence on long-term returns does not suggest that inferences from announcement returns are not reliable.

6. Conclusion

Acquisitions announcements are associated with a decrease in aggregate shareholder wealth. This is true whether we include the latest acquisition wave or not, but the latest acquisition wave is associated with extremely large losses of shareholder wealth, so including that wave in our estimates leads to extremely large aggregate losses in shareholder wealth when acquisitions are announced. However, the losses in shareholder wealth are caused by acquisitions by large firms. If we consider only acquisitions by small firms, shareholders gain in the aggregate.

When looking at percentage abnormal returns, the most important variable in explaining the cross-sectional variation across acquisitions seems to be whether an acquisition is made by a large or a small firm. Though acquisitions of public firms have worse abnormal returns on average, this result is due to large firms and equity acquisitions. Cash acquisitions of public firms by small firms have significant positive abnormal returns insignificantly different from cash acquisitions of private firms by the same firms.

Our evidence is consistent with the hypothesis that agency problems in large firms lead them to make poor acquisitions. It is also possible, however, that large firms that make acquisitions are the firms that signal that they have exhausted internal growth opportunities, so that firm value drops as a result of that signal rather than because of the acquisition. Further work is required to explain why large firms make poor acquisitions in general and why they make acquisitions that

are associated with such dramatic reductions in shareholder wealth during the most recent merger wave. Our result that large firms make poor acquisitions when the acquisitions are evaluated using announcement abnormal returns shows that acquisition abnormal returns are poorly suited to analyses of the social benefits of acquisitions. Because so many acquisitions are made by small firms, abnormal returns can be positive for acquisitions even though acquisitions appear to destroy wealth as a whole.

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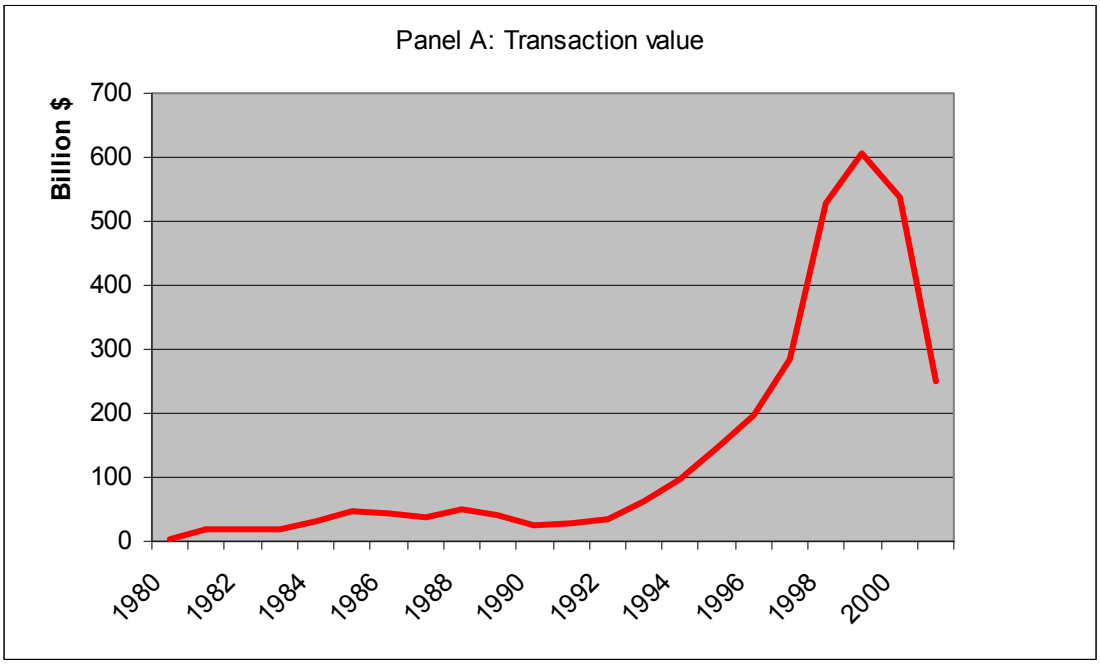
Figure 1: Yearly Aggregate Transaction Values and Net Present Values

In Panel A, the transaction values are from SDC U.S. Mergers and Acquisitions Database. The graph show the aggregated amounts spent by public firms on acquisitions of public firms, private firms, and subsidiaries for acquisitions in excess of $1 million. In Panel B, the net present values correspond to the sum of the product of the fractional abnormal return of each announcement multiplied by the equity capitalization of the acquirer.



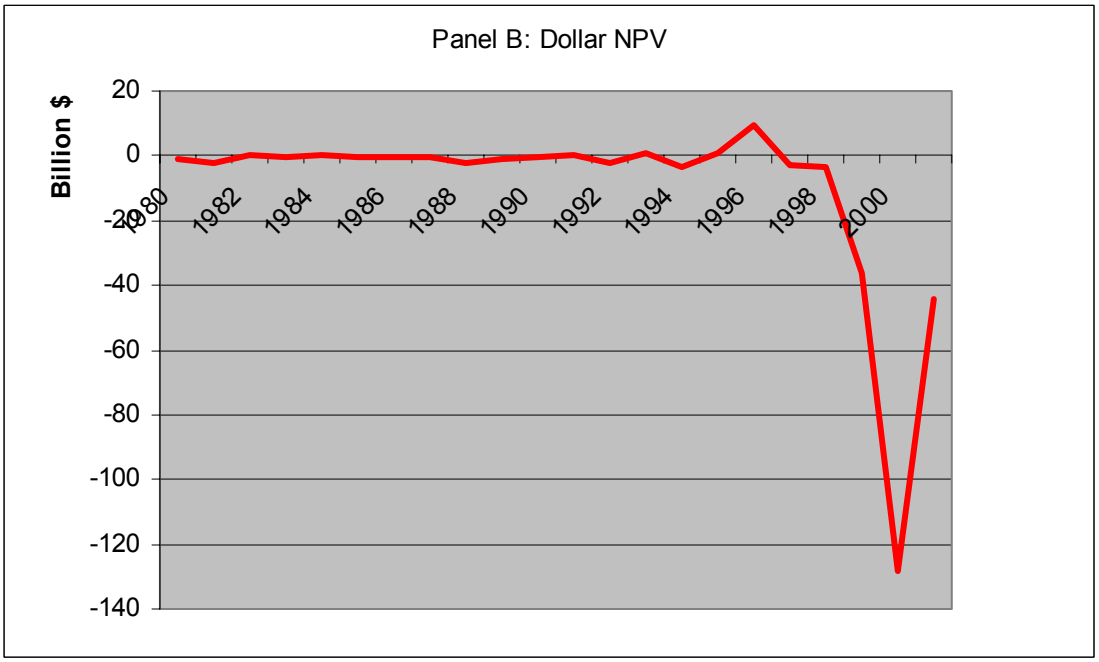


Table 1
Sample Distribution Sorted by Announcement Year

Number of observations in the sample of successful acquirers for the period 1980-2001. Acquirers are domestic publicly listed firms and are collected from the SDC Mergers and Acquisitions Database. Targets include domestic private firms, public firms, and subsidiaries.

Announcement	Target Organizational Form			
Year	Private	Public	Subsidiary	All
1980	6	14	2	22
1981	37	50	26	113
1982	43	58	48	149
1983	61	49	104	214
1984	90	82	109	281
1985	25	72	60	157
1986	86	70	89	245
1987	75	74	67	216
1988	59	75	91	225
1989	101	68	135	304
1990	97	48	111	256
1991	131	54	119	304
1992	223	72	180	475
1993	297	90	246	633
1994	397	151	256	804
1995	422	198	276	896
1996	532	218	326	1,076
1997	796	285	436	1,517
1998	795	277	436	1,508
1999	572	264	279	1,115
2000	462	214	209	885
2001	276	159	193	628
All	5,583	2,642	3,798	12,023

Table 2
Summary Statistics Sorted by Organizational Form

The transaction value ($ million) is the total value of consideration paid by the acquirer, excluding fees and expenses. The number of days to completion is measured as the number of days between the announcement and effective dates. The liquidity index for the target is calculated as the value of corporate control transactions for each year and two-digit SIC code divided by the total book value of assets of firms in the two-digit SIC code for that year. Conglomerate deals involve targets with a 2-digit SIC code other than that of the bidder. Small acquirers have a market capitalization equal or less than the market capitalization of the smallest quartile of NYSE firms in each year. Cash includes cash and marketable. Median values are in brackets.

	Private	Public	Subsidiary	All
Panel A: *Deal Characteristics*				
Transaction value (TV)	57.2 [17.5]	836.4 [126.9]	149.8 [35.0]	257.7 [31.0]
TV/ Assets	0.210 [0.070]	0.303 [0.134]	0.226 [0.086]	0.236 [0.085]
Days to completion	60 [28]	149 [133]	67 [42]	81 [52]
Liquidity index for target	0.132 [0.059]	0.072 [0.032]	0.107 [0.046]	0.111 [0.047]
Cash in payment (%)	50.56	29.57	75.92	53.96
Equity in payment (%)	36.87	55.32	9.36	32.23
Pure cash deals (%)	36.90	14.99	63.35	40.44
Pure equity deals (%)	27.82	45.38	5.42	24.60
Tender-offers (%)	0.18	17.22	0.24	3.94
Hostile deals (%)	0.02	1.97	0.05	0.46
Conglomerate deals (%)	44.81	33.42	43.71	41.96
Competed deals (%)	0.23	4.47	0.39	1.21
Panel B: *Acquirer Characteristics*				
Cash / Assets (book)	0.180 [0.085]	0.133 [0.064]	0.124 [0.052]	0.152 [0.068]
Assets (book)	963.9 [170.9]	6,757.9 [1,343.0]	2,121.8 [312.7]	2,602.9 [302.2]
Market Capitalization	793.9 [191.3]	4,206.2 [703.4]	1,315.4 [259.2]	1,708.5 [263.2]
Debt / Assets (book)	0.441 [0.412]	0.472 [0.476]	0.505 [0.499]	0.469 [0.455]
Debt / Assets (market)	0.279 [0.234]	0.322 [0.294]	0.364 [0.348]	0.316 [0.286]
Tobin's q	2.263 [1.360]	1.581 [0.957]	1.579 [1.203]	1.897 [1.222]
OCF / Assets (book)	0.133 [0.100]	0.530 [0.144]	0.190 [0.139]	0.241 [0.123]
Small Acquirer (%)	55.40	25.78	45.52	45.77

Table 3
Announcement Abnormal Returns and Market Adjusted Present Values
Sorted by Organizational Form

Each row includes the mean [median] 3-day cumulative abnormal return (in percent) and is measured using the market model. This is followed by the mean [median] market-adjusted net present value, calculated as the firm's price two days before the announcement times the number of shares outstanding times the 3-day cumulative abnormal return divided by the total transaction value reported by SDC. $NPV (in $ millions) denotes the dollar sum of value created. The final row for each sub-group lists the number of observations. Equality tests are based on *t*-tests for equality of the means and a Wilcoxon test for equality of medians.

	All	Private	Public	Subsidiary	Difference Tests		
	(1)	(2)	(3)	(4)	(2) – (3)	(3) – (4)	(2) – (4)
$CAR_{(-1,+1)}$	1.103[a]	1.496[a]	-1.020[a]	2.003[a]	2.516[a]	-3.023[a]	-0.507[a]
	[0.364][a]	[0.619][a]	[-0.856][a]	[0.804][a]	[1.476][a]	[-1.661][a]	[-0.185][b]
$NPV_{(-1,+1)}$	5.796[a]	8.104[a]	-5.900[a]	10.538[a]	14.004[a]	-16.438[a]	-2.433
	[1.875][a]	[4.207][a]	[-2.907][a]	[4.393][a]	[7.114][a]	[-7.300][a]	[-0.186]
$NPV	-$218,593	-$7,130	-$256,864	$45,401			
N	12,023	5,583	2,642	3,798			

[a] Denotes significance at the 1% level.
[b] Denotes significance at the 5% level.
[c] Denotes significance at the 10% level.

Table 4
Announcement Abnormal Returns
Sorted by Organizational Form, Form of Payment, and Size

Each row includes the mean 3-day cumulative abnormal return (in percent) measured using the market model. Small acquirers have a market capitalization equal or less than the market capitalization of the smallest quartile of NYSE firms in each year. The groups mixed, equity, and cash, are defined as transactions with a mix of cash, equity and other considerations, all equity, and all cash respectively. The number of observations is listed below the mean. Difference tests are based on t-tests for equality of the means.

	Mixed	Equity	Cash	All	Difference Tests		
	(1)	(2)	(3)	(4)	(1) – (2)	(2) – (3)	(1) – (3)
Panel A: *Full Sample*							
All	1.454[a]	0.152	1.379[a]	1.103[a]	1.302[a]	-1.227[a]	0.075
	4,203	2,958	4,862	12,023			
Small	2.620[a]	2.026[a]	2.172[a]	2.318[a]	0.594	-0.146	0.448
	2,152	1,103	2,248	5,503			
Not small	0.231[c]	-0.963[a]	0.697[a]	0.078	1.194[a]	-1.660[a]	-0.466[a]
	2,051	1,855	2,614	6,520			
Difference	2.389[a]	2.989	1.475	2.240[a]			
Panel B: *Private targets*							
All	1.799[a]	1.489[a]	1.211[a]	1.496[a]	0.310	0.278	0.588[b]
	1,970	1,553	2,060	5,583			
Small	2.393[a]	2.698[a]	1.520[a]	2.137[a]	-0.405	1.178[a]	0.873[b]
	1,242	700	1,152	3,093			
Not small	0.786[a]	0.497[a]	0.821[a]	0.700[a]	0.289	-0.324	-0.035
	728	853	909	2,490			
Difference	1.507[a]	2.201[a]	0.699[b]	1.437[a]			
Panel C: *Public targets*							
All	-0.397[a]	-2.022[a]	0.363	-1.020[a]	1.625[a]	-2.385[a]	-0.760[c]
	1,047	1,199	396	2,642			
Small	2.016[a]	-0.740[a]	2.849[a]	0.962[a]	2.756[a]	-3.589[a]	-0.833
	288	298	95	681			
Not small	-1.313[a]	-2.446[a]	-0.421[a]	-1.696[a]	1.133[a]	-2.025[a]	-0.892[b]
	759	901	301	1,961			
Difference	3.329[a]	1.706[a]	3.270[a]	2.658[a]			
Panel D: *Subsidiary targets*							
All	2.515[a]	2.718[a]	1.689[a]	2.003[a]	-0.203	1.030[c]	0.826[a]
	1,186	206	2,406	3,798			
Small	3.353[a]	5.397[a]	2.856[a]	3.189[a]	-2.044	2.541[b]	0.497
	622	105	1,002	1,729			
Not small	1.591[a]	-0.067	0.856[a]	1.011[a]	1.658[a]	-0.923	0.735[a]
	564	101	1,404	2,069			
Difference	1.762[a]	5.464[a]	2.000[a]	2.178[a]			

[a] Denotes significance at the 1% level.
[b] Denotes significance at the 5% level.
[c] Denotes significance at the 10% level.

Table 5
Cross-sectional Regression Analysis of Announcement Abnormal Returns by Organizational Form and Form of Payment

The dependent variable is the 3-day cumulative abnormal return measured using the market model. Small acquirers have a market capitalization equal or less than the market capitalization of the smallest quartile of NYSE firms in each year. The groups, mixed, equity, and cash, are defined as transactions with a mix of cash, equity and other considerations, all equity, and all cash respectively. Significance is based on White-adjusted standard errors. P-values are reported below the coefficients.

		Organizational Form			Form of Payment		
	All	Private	Subs	Public	Mixed	Equity	Cash
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Intercept	0.0159[a]	0.012[a]	0.0169[a]	-0.0219[a]	0.0193[a]	0.0122	0.0139[a]
	0.000	*0.001*	*0.009*	*0.003*	*0.001*	*0.311*	*0.000*
Private	-0.0043[c]				-0.0053	-0.0051	-0.0037
	0.050				*0.194*	*0.672*	*0.115*
Public	-0.0317[a]				-0.0283[a]	-0.0437[a]	-0.0095
	0.000				*0.000*	*0.000*	*0.199*
Small	0.0155[a]	0.0123[a]	0.0152[a]	0.0338[a]	0.0129[a]	0.0227[a]	0.0126[a]
	0.000	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*
Conglomerate	-0.0028	-0.002	-0.0076[b]	0.0035	-0.0071[b]	0.0094[c]	-0.0042[c]
	0.140	*0.463*	*0.014*	*0.421*	*0.032*	*0.058*	*0.075*
Tender-offer	0.0135[a]	-0.0102	-0.023[a]	0.006	0.0041	0.0156	-0.0018
	0.003	*0.655*	*0.001*	*0.225*	*0.525*	*0.281*	*0.839*
Hostile	-0.0115			-0.0082	-0.0171	-0.0198	-0.0103
	0.200			*0.388*	*0.194*	*0.503*	*0.381*
Competed	-0.0057	-0.0058	-0.0018	-0.0052	-0.0071	0.0197	-0.0191[c]
	0.389	*0.626*	*0.863*	*0.528*	*0.486*	*0.263*	*0.061*
All Equity	-0.0022	0.0035	0.0005	-0.0148[a]			
	0.464	*0.386*	*0.965*	*0.002*			
All Cash	-0.0039[c]	-0.004	-0.0045	0.0066			
	0.057	*0.185*	*0.181*	*0.210*			
Relative Size	0.0117[a]	0.0124[a]	0.0162[a]	-0.002	0.0191[a]	0.0035[c]	0.0165[a]
	0.000	*0.003*	*0.000*	*0.528*	*0.002*	*0.061*	*0.000*
Tobin's q	-0.0007[c]	-0.0009[b]	0.0007	-0.0001	-0.0012	-0.0005	-0.0013[c]
	0.083	*0.016*	*0.670*	*0.918*	*0.238*	*0.300*	*0.096*
Leverage (mkt.)	0.0012	-0.0035	-0.004	0.0296[b]	-0.0054	0.0034	-0.0028
	0.832	*0.660*	*0.710*	*0.028*	*0.593*	*0.828*	*0.707*
Liquidity Index	-0.0125[a]	-0.0069	-0.0163[a]	-0.011	-0.0065	-0.0156	-0.0112[a]
	0.002	*0.220*	*0.006*	*0.449*	*0.488*	*0.326*	*0.005*
Op. Cash Flow	0.0001	0.0049	-0.0003	0.0001	-0.0024	-0.0002	0.0001
	0.849	*0.145*	*0.579*	*0.935*	*0.111*	*0.920*	*0.543*
n	9,219	4,349	3,231	1,639	3,392	1,798	4,029
Adjusted R^2	0.053	0.035	0.066	0.054	0.059	0.063	0.068

[a] Denotes significance at the 1% level.
[b] Denotes significance at the 5% level.
[c] Denotes significance at the 10% level.

Table 6 Calendar-time Post-event Monthly Abnormal Returns

Each monthly abnormal return, AR_m, is calculated using a time-series regression, where the dependent variable is the equally-weighted portfolio return in each calendar month of all bidders within each sub-group that had an event during the 36 months prior to measurement month. The independent variables are the Fama-French and Carhart factors. A minimum of ten firms per month per subgroup must exist to calculate a portfolio return for that subgroup and month. The intercept of the time-series regression for each subgroup is the monthly abnormal return (in percent). We divide the sample according to size (small [S] versus non-small [NS]), organizational form (private [Prv], public [Pub], and subsidiary [Sub]), and the form of payment (mixed [M], equity [E], and cash [C]). Respectively, [*] and [§] denote a significant difference between small and non-small abnormal returns within the subgroup at the 1% and 10% respectively. P-values are reported below the estimates.

All		All × Size (S,NS)		Form (Prv,Pub,Sub)		Form (Prv,Pub,Sub) × Size (S,NS)		Pay(M,E,C)		Pay(M,E,C) × Size(S,NS)		Form (Prv,Pub,Sub) × Pay(M,E,C)		Form (Prv,Pub,Sub) × Pay(M,E,C) × Size (S,NS)	
Cut	AR_m	Cut	AR_m	Cut	AR_m	Cut	AR_m	Cut	AR_m	Cut	AR_m	Cut	AR_m	Cut	AR_m
All	-0.041	All×L	0.013	Prv	-0.028	Prv×L	0.207[c]	M	-0.086	M×L	-0.065	Prv×M	-0.109	Prv×M×L	0.125
	0.664		*0.883*		*0.821*		*0.080*		*0.451*		*0.545*		*0.463*		*0.405*
		All×S	-0.082			Prv×S	-0.315[c,*]			M×S	-0.034			Prv×M×S	-0.294[§]
			0.614				*0.100*				*0.853*				*0.182*
												Prv×E	0.203	Prv×E×L	0.419[b]
													0.243		*0.026*
														Prv×E×S	-0.222[§]
															0.480
												Prv×C	0.154	Prv×C×L	0.208
													0.308		*0.209*
														Prv×C×S	-0.044
															0.833
				Pub	-0.027	Pub×L	-0.026	E	0.087	E×L	0.180	Pub×M	-0.135	Pub×M×L	-0.140
					0.796		*0.808*		*0.495*		*0.170*		*0.282*		*0.269*
						Pub×S	0.095			E×S	-0.017			Pub×M×S	-0.022
							0.646				*0.948*				*0.938*
												Pub×E	0.090	Pub×E×L	0.039
													0.528		*0.791*

[a] Denotes significance at the 1% level.
[b] Denotes significance at the 5% level.
[c] Denotes significance at the 10% level.

Table 6 - *Continued*

All		All × Size $_{(S,NS)}$		Form $_{(Prv,Pub,Sub)}$		Form $_{(Prv,Pub,Sub)}$ × Size $_{(S,NS)}$		Pay$_{(M,E,C)}$		Pay$_{(M,E,C)}$ × Size $_{(S,NS)}$		Form $_{(Prv,Pub,Sub)}$ × Pay$_{(M,E,C)}$		Form $_{(Prv,Pub,Sub)}$ × Pay$_{(M,E,C)}$ × Size $_{(S,NS)}$	
Cut	AR_m	Cut	AR_m	Cut	AR_m	Cut	AR_m	Cut	AR_m	Cut	AR_m	Cut	AR_m	Cut	AR_m
														Pub×E×S	0.815[b] *0.045*
												Pub×C	0.328[b] *0.035*	Pub×C×L	0.247 *0.141*
														Pub×C×S	0.618[c] *0.094*
				Sub	-0.057 *0.593*	Sub×L	-0.070 *0.520*	C	0.048 *0.672*	C×L	0.043 *0.700*	Sub×M	0.028 *0.842*	Sub×M×L	-0.018 *0.893*
						Sub×S	0.017 *0.921*			C×S	0.050 *0.779*			Sub×M×S	0.131 *0.563*
												Sub×E	0.219 *0.521*	Sub×E×L	0.170 *0.650*
														Sub×E×S	0.140 *0.798*
												Sub×C	-0.042 *0.723*	Sub×C×L	-0.041 *0.731*
														Sub×C×S	-0.009 *0.964*

[a] Denotes significance at the 1% level.
[b] Denotes significance at the 5% level.
[c] Denotes significance at the 10% level.

Table 7 Event-time Post-event Three-year Buy-and-hold Returns

Each three-year abnormal buy-and-hold return (in percent), AR_{BH}, is calculated as the average difference between the three-year buy-and-hold return of the sample firms and that of the matching firms. Matching firms are selected from all available CRSP firms (excluding ADR's, closed-end funds, and REIT's) with common stock, excluding the sample firms for a six-year period around the completion month. For each sample firm a matching firm is selected based on the closest market value of assets within the same market-to-book quintile as the sample firm. We divide the sample according to size (small [S] versus non-small [NS]), organizational form (private [Prv], public [Pub], and subsidiary [Sub]), and the form of payment (mixed [M], equity [E], and cash [C]). Respectively, [*] and [§] denote a significant difference between small and non-small abnormal returns within the subgroup at the 1% and 10% respectively.

All		All × Size $_{(S,NS)}$		Form $_{(Prv,Pub,Sub)}$		Form $_{(Prv,Pub,Sub)}$ × Size $_{(S,NS)}$		Pay$_{(M,E,C)}$		Pay$_{(M,E,C)}$ × Size$_{(S,NS)}$		Form $_{(Prv,Pub,Sub)}$ × Pay$_{(M,E,C)}$		Form $_{(Prv,Pub,Sub)}$ × Pay$_{(M,E,C)}$ × Size $_{(S,NS)}$	
Cut	AR_{BH}	Cut	AR_{BH}	Cut	AR_{BH}	Cut	AR_{BH}	Cut	AR_{BH}	Cut	AR_{BH}	Cut	AR_{BH}	Cut	AR_{BH}
All	-16.02[a]	All×L	-14.59[a]	Prv	-26.51[a]	Prv×L	-25.99[a]	M	-18.47[a]	M×L	-16.86[a]	Prv×M	-28.09[a]	Prv×M×L	-31.21[a]
	0.000		*0.000*		*0.000*		*0.000*		*0.000*		*0.001*		*0.000*		*0.001*
		All×S	-17.87[a]			Prv×S	-26.95[a]			M×S	-20.12[a]			Prv×M×S	-26.29[a]
			0.000				*0.000*				*0.000*				*0.000*
												Prv×E	-34.75[a]	Prv×E×L	-28.42[a]
													0.000		*0.000*
														Prv×E×S	-43.77[a]
															0.000
												Prv×C	-17.84[a]	Prv×C×L	-18.59[b]
													0.001		*0.025*
														Prv×C×S	-17.27[b]
															0.013
				Pub	-7.67[c]	Pub×L	-10.53[b]	E	-23.80[a]	E×L	-18.61[a]	Pub×M	-10.81	Pub×M×L	-14.40[c]
					0.063		*0.023*		*0.000*		*0.000*		*0.120*		*0.071*
						Pub×S	2.54			E×S	-34.20[a,§]			Pub×M×S	1.02
							0.781				*0.000*				*0.943*
												Pub×E	-9.57[c]	Pub×E×L	-10.10
													0.098		*0.115*

[a] Denotes significance at the 1% level.
[b] Denotes significance at the 5% level.
[c] Denotes significance at the 10% level.

Table 7 - *Continued*

All		All × Size $_{(S,NS)}$		Form $_{(Prv,Pub,Sub)}$		Form $_{(Prv,Pub,Sub)}$ × Size $_{(S,NS)}$		Pay$_{(M,E,C)}$		Pay$_{(M,E,C)}$ × Size $_{(S,NS)}$		Form $_{(Prv,Pub,Sub)}$ × Pay$_{(M,E,C)}$		Form $_{(Prv,Pub,Sub)}$ × Pay$_{(M,E,C)}$ × Size $_{(S,NS)}$	
Cut	AR_{BH}	Cut	AR_{BH}	Cut	AR_{BH}	Cut	AR_{BH}	Cut	AR_{BH}	Cut	AR_{BH}	Cut	AR_{BH}	Cut	AR_{BH}
														Pub×E×S	-7.62 *0.566*
												Pub×C	5.07 *0.640*	Pub×C×L	-3.04 *0.798*
														Pub×C×S	35.78 *0.171*
				Sub	-7.38[c] *0.054*	Sub×L	-5.67 *0.256*	C	-8.72[a] *0.009*	C×L	-9.55[b] *0.033*	Sub×M	-9.54 *0.175*	Sub×M×L	-2.61 *0.795*
						Sub×S	-9.53 *0.108*			C×S	-7.70 *0.133*			Sub×M×S	-16.26[c] *0.099*
												Sub×E	-30.53[c] *0.055*	Sub×E×L	-16.05 *0.484*
														Sub×E×S	-45.23[b] *0.042*
												Sub×C	-4.30 *0.365*	Sub×C×L	-6.12 *0.302*
														Sub×C×S	-1.63 *0.836*

[a] Denotes significance at the 1% level.
[b] Denotes significance at the 5% level.
[c] Denotes significance at the 10% level.