**Do Target Shareholders Lose To Private Acquirers?**

**Yuxin Wen**

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_____ Chair

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Dr.  Yuan Wang

_____ Supervisor

Dr. Ravi Mateti

_____ Supervisor

Dr. Saif Ullah


Approved by _____

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_____

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**Abstract**

Focusing on private equity firms, I find that targets receive a higher premium when acquirers are private firms. When the target management is in the private acquirer's team, the targets receive a lower premium. When I look at cumulative abnormal returns (CARs), targets of private acquirers have lower CARs than those of public acquirers, and private acquisitions with management participation have higher CARs than without management participation. Also, private acquisitions are more likely to be successful than public acquisitions, and within private acquisitions, those with target's management participation have even better odds.

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## 1. Introduction

Mergers and acquisitions (M&A) is one of the most researched areas in finance. Until now, many papers have investigated the impact that M&A has on firms from either the acquirer's or target's perspective, but not many have paid attention to the deals where the acquirers are private equity firms. Private firms behave differently from public firms in many ways, and so their M&A decision making is influenced by different motivations and goals.

This paper examines mergers and acquisitions where the primary acquirers are private equity firms. Some of these acquirers have teamed up with the management of target firms to take these firms private. The biggest criticism leveled against these acquisitions is that the private acquirers are teaming up with target management to exploit target shareholders. In this study, I examine whether the target premiums and target valuations in these acquisitions are lower than those in comparable public acquisitions. A closely related academic study is by Bargeron et al. (2007). They examine the targets' returns and premiums and find that they are lower when the acquirer is a private firm. They also find that there is no difference in the premiums paid by private acquirers and public acquirers with high managerial ownership.

This study differs from the above study in several ways. First, my focus is on the valuation of the target firm, whereas Bargeron et al. (2007) mainly focus on the three-day announcement period returns. Second, my study includes private acquisitions where the target management is part of the buyout team. The Bargeron study uses management ownership of the acquirer and finds no difference between the acquisitions made by public and private acquirers when the acquirers have high managerial ownership, especially when

it is more than 20%. In contrast, I study the deals where the managers of target firms are involved in the buyout.

The main findings of this paper are as follows. First, public targets receive higher premiums when acquirers are private firms. Second, for private acquisitions, when the target management is in the acquirer's team, the targets receive a lower premium. However, despite receiving the higher premiums, targets of private acquirers have lower cumulative abnormal returns (CARs) than do targets of public acquirers. And private acquisitions with management participation have higher CARs than those without management participation. I also study the effects of firm and deal characteristics on the outcome of an acquisition bid. I find that private acquisitions are more likely to succeed than public acquisitions, and within private acquisitions, those with target's management participation have even better odds.

## 2. Literature review

Since mergers and acquisitions continue to be a popular corporate strategy, many academic studies have paid attention to this area. Dodd and Ruback (1977) estimate the stock market reaction to tender offers. Their results show that only successful bidders have positive abnormal returns, whereas targets always have positive abnormal returns. Most of the papers that investigate M&A have focused on public acquirers and targets. Capron and Pistre (2002) find that acquirers do not have positive abnormal returns when they receive resources from target firms, but when they transfer their own resources to the target, a positive abnormal return generally occurs. Trillas (2002) analyzed M&A in the European market and finds that the average effect on acquirers' shareholder value is not significantly different from zero, which is consistent with the finding of previous studies that acquiring

firm's shareholders do not benefit from takeovers. On the other hand, many previous studies show that target firm's shareholders benefit from acquisitions. Huang and Walking (1987) study the effects of managerial reaction, payment method, and type of acquisition on the target firm's abnormal returns. Healy et al. (1992) examine 50 largest U.S. mergers between 1979 and 1984 and find that merged firms' asset productivity significantly improved, which led to increasing returns.

Since the beginning of the 21th century, many private firms have been participating in M&A and have drawn much attention from analysts and investors. Although the growing role of private acquirers has become an important aspect of the M&A market, not many papers have studied these acquirers. Also, there are not many papers that investigate private targets. Fuller et al. (2002) study shareholder returns of firms that acquired five or more targets, which includes private and subsidiary targets, and show that acquirers benefit from acquiring private firms or subsidiaries. Faccio (2006) investigates the acquirers' announcement period abnormal returns in 17 European countries and finds that acquirers of unlisted targets experience positive abnormal returns, but acquirers of listed targets experience negative abnormal returns. Capron and Shen (2007) study the selection of private and public targets and find that acquirers tend to choose private targets in similar industries, and they perform better than those acquirers that choose public targets. Officer et al. (2009) show that acquirer's returns are significantly higher if targets are hard to value (due to information asymmetry) and the acquirer's stock is used to pay for the acquisition.

Not many papers have focused on private acquirers. Bargeron et al. (2007) examine the target's returns and premiums and find that they are significantly lower when the acquirer is a private firm. The difference in premiums is not much when acquisitions by private acquirers are compared with public acquirers who have high managerial ownership. Brown

and Maloney (1999) show the relationship between board composition and acquisition returns and find that smaller boards help in better acquisition performance.

I want to study acquisitions where the acquirer is a private firm. My study contributes to the literature on private acquisitions by studying a special set of these acquisitions where the target's management is part of the acquisition team.

## 3. Hypotheses

Private acquirers behave differently from public acquirers in many ways, and my study focuses on these important players in M&A transactions. In my study, I want to know how differences in firm and deal characteristics influence the target's gains. My first hypothesis is that the private acquirers are able to buy firms at a discount compared to public acquirers. One reason could be that private acquirers prefer to buy distressed firms and turn them around to make money, and distressed firms usually have less bargaining power. Previous studies have not focused much on private acquisitions where the target's management is part of the acquisition team. A goal of my study is to fill this gap. My second hypothesis is that when a target's management works with a private acquirer and helps in acquiring the firm it works for, the target firm receives an even lower premium. One explanation is that the target's management has vested interest in helping negotiate a deal that favors the acquirers. Since the target's management is part of the acquisition team, they could be compensated in many different ways after the acquisition is completed.

My two hypotheses are as follows:

*Hypothesis 1*

*Targets acquired by private firms receive lower premiums than targets acquired by public firms.*

*Hypothesis 2*

*Targets acquired by private firms with the help of target's management receive lower premiums than targets in regular private acquisitions.*

## 4. Data

The data on acquisitions was obtained from the Securities Data Company's (SDC) U.S. Merger and Acquisition Database. All transactions between 1990 and 2016 were considered for inclusion in our sample. Stock price data was obtained from CRSP and the accounting and company characteristic data from Compustat. Table 1 reports the distribution across years of U.S. completed private and public acquisitions during the period 1990-2016. From this table we can see that the number of M&A transactions has a decreasing trend after 2002. The Sarbanes-Oxley Act of 2002 (hereafter referred to as SOX) was passed by the U.S. congress in 2002 after a series of corporate frauds, and it set new requirements in governance, accounting, auditing, and reporting of U.S. public firms. It is not surprising that after the enactment of the SOX act in 2002, it has cost firms substantially to comply with the provisions of the act. The auditing and other fees relating to the act are a heavy burden for publicly traded companies, especially smaller firms, which influences their financial decision making (Ghosh et. al (2009)). Bova et al. (2014) state that SOX may influence the decisions of private firms to go public via acquisition. Therefore, this act may be one of the reasons for the decreasing trend of mergers and acquisitions in the last fifteen years.

In my final sample, I have included all the acquisitions that took place in the period 1990-2016 that satisfied the following criteria:

(1) The acquirer is a U.S. domestic firm; the target is a U.S. domestic firm.

(2) For the main sample of private acquisitions, the acquirer is a private equity firm. For the control sample, the acquirer is a public firm.

(3) Only the first transaction of any firm in a given year is included.

(4) The target's CUSIP must match CUSIP in Compustat and CRSP databases.

The company characteristics data was collected from Compustat database. The target's stock price data was obtained from the Center for Research in Securities Prices (CRSP) database. Information regarding whether the target management is a part of the acquisition team was obtained from SDC. I also checked Factiva database in order to verify that the management participation item in SDC is accurate. My final sample includes 1,449 private acquisitions and 2,690 public acquisitions. For the 1,449 private acquisitions, 1,362 of them are without management participation and 87 with management participation.

Table 2 reports the summary statistics of my final sample. I provide the mean and median for each variable, and I also do the t-test and Wilcoxon signed- rank test to test significant differences of means and medians of public and private acquisitions, and also of private acquisitions with management participation and private acquisitions without management participation. For the differences between public and private acquisitions, I find that both the mean and median test results are significant and positive for all variables except for leverage, which is significant and negative. The results show that public firms prefer to acquire bigger firms. From firm characteristics such as EPS, FCF and leverage, we see that that private firms are more likely to buy distressed firms. They buy companies that are in a difficult situation, turn them around, and sell them off for a profit.

From the differences between private acquisitions without management participation and private acquisitions with management participation, we see that the difference in means of EPS is -0.3147. When the target management is part of the acquisition team, private

firms prefer to acquire firms that are in a relatively better financial condition. One reason for this could be that acquirers of profitable target firms are more likely to retain the existing management (which is part of the acquisition team), and this protects the interests of the target's managers. The difference in targets' Tobin's Q is 0.5472, which is significantly positive. This shows that with target managers' participation in the acquisition, the acquirers have more information about the target and are more likely to buy targets that are undervalued. Table 3 gives the correlation matrix for variables shown in Table 2.

## 5. Methodology

Now I explain how I test my two hypotheses stated above.

5.1. Examine the premiums paid to targets

Using the methodology in Moeller et al. (2002), I calculate the acquisition premium as the transaction value divided by target's market value 4 weeks before announcement date times the percentage of shares acquired. The acquisition premiums are shown in Table 4. I also attempted to get premiums from SDC. SDC provides the values of different components of the offer (cash, stock, and other securities) and the initial and terminal offer price. However, this has been the subject of criticism in Moeller, Schlingemann and Stulz (2002) that there is too much missing data, and so it can't be used to conduct research.

In Table 5, I use the comparable transactions method in Kaplan and Ruback (1995) to compute the differences between the acquisition multiples of private targets without and with management participation. In order to find the comparable transactions for 1362 private acquisitions without management participation and 87 private acquisitions with management participation, I set the following criteria:

(1) The comparable transaction should be in the same industry (Fama French 12-industry)

(2) The comparable transaction should happen in the same year.

(3) The target market value of the comparable transaction should be within the range of 30 percent.

5.2. Event study

In my study, I estimate thirty-day cumulative abnormal returns for targets using the market model.

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it}$$

where $R_{it}$ = return on stock i in period t

$R_{mt}$ = return on CRSP equally weighted index in period t

The effect of SOX cannot be ignored in my study, and so I divide my sample into two parts according to the announcement date, one before SOX and the other after SOX. I do the event study separately for these two subsamples.

5.3. Regression Analysis

5.3.1. Regression Analysis of Premiums Offered

I use multivariate regression analysis to control for different variables and see if my univariate analysis results hold up in the presence of these control variables. I estimate the regression coefficients in three different models and construct three subsamples for their estimation. The first subsample includes 3,719 completed public and private acquisitions excluding private acquisitions with management participation. The second subsample includes all 1,449 completed private acquisitions. And the third subsample includes 2,489 completed public and private acquisitions excluding private acquisitions without management participation.

Dependent Variable:

In the regressions, the dependent variable is acquisition premium, whose summary values are shown in Table 4. The acquisition premium is calculated using transaction value divided by target's market value four weeks before acquisition times the percentage of outstanding shares acquired.

Independent Variables:

*Mgmt*: Mgmt is a dummy variable that is equal to one when the target's management is part of the acquisition team and equal to zero otherwise.

*Private*: Private is a dummy variable that is equal to one when the acquirer is a private firm and equal to zero otherwise. Previous research has shown that private firms are different from public firms in many different ways. I want to know how the difference between private and public firms influences the premium paid to targets.

The control variables can be separated into two classes, firm characteristics and deal characteristics.

Firm characteristics include:

*Tobin*: It denotes Tobin's Q and reflects growth opportunities. It can also indicate if a company is undervalued or overvalued. Servaes (1991) investigates the relationship between Tobin's Q and the gains from takeovers. He finds that Tobin's Q and the cumulative abnormal returns are negatively correlated.

*Leverage*: It denotes the leverage ratio and is calculated as the total long-term debt divided by the total equity of the firm. Private firms prefer to acquire targets with high leverage. Highly levered companies have a weaker bargaining power in the takeover (Bargeron et. al (2008)), and so the target shareholders benefit less from private acquirers.

*Logmv*: It denotes the logarithm of a firm's market value and is used to measure the size of the company. The market value is calculated as the stock price times the number of shares

outstanding. Moeller et al. (2002) show in a sample of 12,023 acquisitions by public firms that M&A returns are higher for smaller acquirers. They show that there is a size effect in mergers and acquisitions. Officer (2003) show that when the target's firm size is larger, their shareholders get lower premium.

Deal characteristics include:

*Cash*: It is a dummy variable which is equal to one when the method of payment for the acquisition is all-cash and equal to zero otherwise. Because private firms do not have publicly traded equity, most of their deals are cash only. It is not surprising that this variable influences my regression results. Huang and Walking (1987) show that cash offers usually come with high abnormal returns.

*Toehold*: It is a dummy variable which is equal to 1 when the acquirer holds at least 5% of the target shares prior to acquisition and equal to zero otherwise. Previous studies show the influence of toehold on M&A activities. Betton and Eckbo (2000) found that acquirers with toeholds offer lower premiums in winning bids. Betton et. al (2009) state that toehold can help increase the probability of successfully acquiring of targets.

*Tender offer*: A tender offer is a public, open offer by a company to buy its current shareholders' shares. The investors offer a specific price which is often above the company's current stock price. Previous studies show that tender offer is often associated with higher premiums.

*Hostile*: Hostility is usually perceived when an offer is made public and is aggressively rejected by the target firm. Hostile takeovers are often harmful to at least some of the stakeholders in the target firms. In contrast, friendly takeovers are often seen to create synergies that benefit both the acquirer and the target firms.

Appendix A gives a description of all the variables used in this regression.

5.3.2.   Regression Analysis of Cumulative Average Abnormal Returns

For the regressions on CAR, my sample includes all the completed public and private acquisitions. The dependent variable is the cumulative abnormal return. I choose three different event windows (-1, +1), (-30, -2), (+2, +30) and use the CAR in each event window as the dependent variable. I regress the CARs in these event windows on various independent variables using two different models.  In the first model, I would like to find out how the type of acquirer (public vs private) and the target management's participation in the acquisition (in both public and private acquisitions) influence the CARs. I also consider the effect of SOX on the CARs.  In the second model, I would like to find out how within private acquisitions the target management's participation in the acquisition influences CARs. The independent variables are given below. In the first regression model, the independent variables are:

*mgmt*: It is a dummy variable that is equal to 1 if the management of the target is part of the acquisition team and equal to zero otherwise, irrespective of whether the acquirer is a public or a private firm.

*sox_mgmt*: It is an interaction variable between the mgmt variable and whether the acquisition took place after the passing of SOX on July 30, 2002.

*pvnomgmt*: It is a dummy variable that is equal to 1 if the acquisition is by a private firm without the help of the target's management.

*sox_pvnomgmt*: It is an interaction variable between pvnomgmt variable and SOX.

The other variables in this regression have already been explained above.

The independent variables in the second regression model that have not previously been explained are:

*pvandmgmt*: It is a dummy variable which is equal to 1 when the acquisition is by a private firm with the help of the target's management and equal to zero for other private acquisitions.

*sox_pvandmgmt*: It is an interaction variable between pvandmgmt and SOX.

5.3.3.  Logistical Analysis of Deal Status

I run three more regressions to find the effect of different variables on the likely success of an acquisition bid. The dependent variable is deal status, a dummy variable that is equal to 1 when the deal is complete and equal to zero otherwise. In the first regression, the sample consists of all complete and incomplete private acquisitions from 1990 to 2016. In the second regression, all 21,561 complete and incomplete deals are included in my sample. In the third regression, I choose all private and public acquisitions with management participation as my sample and add a new independent variable 'Number of Bidders' to my regression.

**6.  Results**

6.1. Acquisition premiums

In table 4, I report the acquisition premiums. We see that the targets of public acquiring firms receive lower acquisition premiums than targets of private acquiring firms. This result does not seem to support our first hypothesis. To get conclusive evidence, we have to control for other variables that influence premiums and then test the effect of the type of the acquiring firm (public vs private) on acquisition premiums. I test this in the section relating to multivariate analysis. At this stage of our analysis, a possible explanation of why the premiums paid by private firms are higher than those paid by public firms is that private firms, as we have seen in Table 2, tend to acquire more distressed firms than public firms do. These targets have low stock price and are possibly undervalued. Given how I

calculate acquisition premiums as the ratio of the transaction value divided by target market value 4 weeks before announcement date times the percentage of shares acquired, the smaller denominator in the ratio tends to raise the acquisition premium.

We also see from Table 4 that targets of private firms with the target's management participation in the acquisition team receive lower premiums than targets of private firms without management participation. In fact, this premium is also lower than the premium received by the targets of public firms. This result seems to be consistent with our second hypothesis. A possible explanation for this result is that the target's managers take actions to help reduce the premium paid for their own interest. However, for conclusive evidence, we have to wait for the results of multivariate analysis.

6.2. Event Study

The results of the event study are shown in Table 6. In the event window (-1, +1), and all other event windows too, the CAR for public acquisitions is more than that for private acquisitions with no management participation. This is despite the higher premiums paid by private acquirers with no target management participation. An explanation for this could be that private firms buyout companies that are in worse financial condition than public firms, as seen in Table 2. Though private firms seem to have faith in their acquisitions and believe that the acquired companies can be turned around, the market does not seem to share this optimism to the extent of the private acquirers.

The CAR in the event window (-1, +1), and in most event windows, is higher for private acquisitions with management participation than for private acquisitions without management participation. From the results in Table 4, we saw that private acquirers with management participation paid lower premiums than private acquirers with management participation. Yet, we see that the CAR is higher for the former than the latter. A reason

for this could be that the management of the target is on the acquisition team when the acquired company is good and can do better after the acquisition or is currently in a bad condition but has good chances of being turned around. If the market shares this view, then though lower premiums are paid by private acquirers with management participation, we should expect to see higher CARs for their targets.

Comparing the results of event study before and after SOX, we notice that the difference is significant. In general, the abnormal returns for the event window (-30, -2) are less after SOX than before SOX. The abnormal returns for (-1, +1) window are higher after SOX than before SOX. This shows that there is less leakage of information before the announcement date after the enactment of SOX in 2002. After SOX, most of the action happens around the announcement date, (-1, +1) window.

6.3. Regressions Analysis

6.3.1.  Regressions on premiums

Panel A of Table 7 shows the correlation matrix of independent variables. In Panel B, we see that the independent variable private in the first regression is positively related to premium. This result supports the univariate result in Table 4 where we saw that private acquirers tend to pay higher premiums than public acquirers. The probable reason given earlier for this seems more convincing in light of this multivariate result. I reasoned that private acquirers tend to buy more distressed firms than public firms do. These targets have low stock price and are possibly undervalued. Given how I calculate acquisition premiums as the ratio of the transaction value divided by target market value 4 weeks before announcement date times the percentage of shares acquired, the smaller denominator in the ratio tends to raise the acquisition premium. This result does not support my first hypothesis.

In the second regression, the estimated coefficient for mgmt. is -0.3399, which is negative and significantly related to acquisition premium. It indicates that when there is management participation, targets receive lower premium. This result is consistent with the univariate result in Table 4. Now we have conclusive evidence that having the target's management on the acquisition team helps in negotiating a lower premium. The target's management may be willing to do so in return for some compensation or a promise for a better future in the acquired company. This result supports our second hypothesis.

For all the three regressions, the coefficients of Tobin's Q, toehold, market value, and cash are all negative. The results for Tobin's Q are consistent with previous academic studies. When the acquirer holds more than 5% of the target shares prior to acquisition, the premium paid to targets is lower, which is consistent with previous research. Furthermore, the tender offer is positively and significantly related to premium.

6.3.2.  Regressions on CAR

As explained earlier, I regress the CARs in three event windows on various variables using two different models.  The results are shown in Table 8. The p-values of the independent variables in the regressions for the event windows (-30, -2) and (+2, +30) are statistically insignificant. Therefore, I will discuss the results only for the event window (-1, +1). From the first model, we see that the influence of target management's participation in all kinds of acquisitions (public and private) on CAR is statistically insignificant before SOX but is very significant after SOX. A more dramatic change occurs when we compare the results of pvnomgt variable before and after SOX. Before SOX, the type of acquirer has a strong influence on CARs. In particular, if the acquisition is by a private acquirer, it has a strong negative influence on CARs. This is consistent with my univariate results. As reasoned earlier, this may be because of the fact that private firms tend to acquire

companies that are in distress, and the market has not much faith that these targets can be turned around. The very act of acquiring these targets may be reinforcing the beliefs of the investors leading to negative CARs. However, after SOX we see a dramatic change in the influence of this variable, sox_pvnomgt. From being a strong negative influencer of CARs, it changes to become a strong positive influencer of CARs. Though the provisions of SOX are meant primarily for public companies, it looks like SOX has made private companies become very careful in the type of acquisitions they make. Complying with the provisions of SOX is costly enough, and acquiring companies that are in bad shape may put the acquirers, especially private acquirers, in a very difficult situation. It looks like that after SOX, private acquirers have been targeting companies that have a realistic chance of being turned around. Therefore, we see that the CARs associated with private acquirers changed from being negative to positive. From the second regression, we see a similar kind of change for the influence of management participation in private acquisitions. All these results point to the fact that companies have become more careful in the acquisitions they make after SOX. This point of view is supported by the observation that the number of acquisitions per year has been going down after SOX. As a result, when companies are being acquired, the investors seem to believe that these targets are being acquired after a lot of thought and scrutiny and therefore have a realistic chance of being turned around. Hence, the CARs of targets have been positive on announcement of acquisitions after SOX.

6.3.3.   Regressions on deal status

The results of the regressions on deal status are shown in Table 9. For the first regression, the sample consists of all complete and incomplete private acquisitions from 1990 to 2016, and the estimated coefficient for mgmt is - 0.132, which is significantly negative. This indicates that the M&A deals are less likely to succeed when there is management

participation. For the second regression, all 21,561 complete and incomplete deals are included in my sample. The results show that private bidders have higher probability to conduct a successful M&A deal. The coefficient for private is 0.107 and is significant at 1% level. For the third regression, I choose all private and public acquisitions with management participation as my sample and add a new independent variable 'Number of Bidders' to my regression. The parameter for the new variable 'Number of Bidders' is negative (-0.184), which is significant at 5% level. When there is more than one bidder, the likelihood of the acquisition being completed goes down. In all the three regressions, the estimated coefficient for toehold is significantly positive. The acquirers with toehold are more likely to succeed, which is consistent with Betton et. al (2009). Except for the third regression, the coefficients for hostile are significantly negative. In this case, if the target company's management does not want the deal to go through, they will take actions to prevent it from happening, and the acquisition attempt is less likely to succeed.

## 7. Conclusion

In this paper, I focus on private acquiring firms. Using different methods, I want to find out which kind of acquirers benefit target shareholders more, public acquirers or private acquirers. Furthermore, I test the effect the target's management participation has on the gains of the target's shareholders. Overall, my results can be explained from two perspectives. From one perspective, when I use premium as the measuring standard, my results show that private acquirers pay higher premium than public acquirers, and private acquirers with target's management participation pay lower premiums than private acquirers without management participation. From another perspective, when I use CARs as the measuring criteria, the results are slightly different. Targets of public acquirers

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experience higher returns than targets of private acquirers. Of the private acquirers, those with target management participation experience higher returns than those without target management participation. Why are the results different when I use different measure of shareholders' gains? One possible explanation is that CARs include more information than just premiums. It reflects not only the premiums, but also what the market thinks about the deal. For example, even though private acquirers pay higher premiums than public acquirers, the CARs associated with the former are lower. This could be because the market does not have much faith in the acquisitions by private firms. Regarding which acquisition deals are more likely to succeed, I find that private acquisitions as a whole are more likely to succeed than public acquisitions. Among private acquisitions, those with target's management participation have a lower probability of succeeding than those without target's management participation. This is probably because when there is target's management participation, investors are less likely to trust the deal, which leads to a lower probability of success.

**References:**

Agrawal, A., Jaffe, J. F., & Mandelker, G. N. (1992). The post-merger performance of acquiring firms: a re-examination of an anomaly. *The Journal of finance*, *47*(4), 1605-1621.

Bargeron, L., Schlingemann, F., Stulz, R. M., & Zutter, C. (2007). Why do private acquirers pay so little compared to public acquirers? (No. w13061). *National Bureau of Economic Research*.

Barney, J. B. (1988). Returns to bidding firms in mergers and acquisitions: Reconsidering the relatedness hypothesis. *Strategic Management Journal*, *9*(S1), 71-78.

Betton, S., Eckbo, B. E., & Thorburn, K. S. (2009). Merger negotiations and the toehold puzzle. *Journal of Financial Economics*, *91*(2), 158-178.

Betton, S., & Eckbo, B. E. (2000). Toeholds, bid jumps, and expected payoffs in takeovers. *The Review of Financial Studies*, *13*(4), 841-882.

Brown, S. J., & Warner, J. B. (1985). Using daily stock returns: The case of event studies. *Journal of financial economics*, *14*(1), 3-31.

Capron, L., & Pistre, N. (2002). When do acquirers earn abnormal returns? *Strategic Management Journal*, *23*(9), 781-794.

Dodd, P., & Ruback, R. (1977). Tender offers and stockholder returns: An empirical analysis. *Journal of financial economics*, 5(3), 351-373.

Faccio, M., McConnell, J. J., & Stolin, D. (2006). Returns to acquirers of listed and unlisted targets. *Journal of Financial and Quantitative Analysis*, *41*(01), 197-220.

Fuller, K., Netter, J., & Stegemoller, M. (2002). What do returns to acquiring firms tell us? Evidence from firms that make many acquisitions. *The Journal of Finance*, *57*(4), 1763-1793.

Ghosh, A. & Pawlewicz, R. (2009). The impact of regulation on auditor fees: Evidence from the Sarbanes-Oxley Act. *Auditing: a journal of practice & theory*, *28*(2), 171-197.

Healy, P. M., Palepu, K. G., & Ruback, R. S. (1992). Does corporate performance improve after mergers? *Journal of financial economics*, *31*(2), 135-175.

Huang, Y. S., & Walkling, R. A. (1987). Target abnormal returns associated with acquisition announcements: Payment, acquisition form, and managerial resistance. *Journal of Financial Economics*, *19*(2), 329-349.

Kaplan, S. N., & Ruback, R. S. (1995). The valuation of cash flow forecasts: An empirical analysis. *The Journal of Finance*, *50*(4), 1059-1093.

Lindenberg, E. B., & Ross, S. A. (1981). Tobin's q ratio and industrial organization. *Journal of business*, 1-32.

Moeller, S. B., Schlingemann, F. P., & Stulz, R. M. (2004). Firm size and the gains from acquisitions. *Journal of Financial Economics*, *73*(2), 201-228.

Moeller, S. B., Schlingemann, F. P., & Stulz, R. M. (2005). Wealth destruction on a massive scale? A study of acquiring-firm returns in the recent merger wave. *The Journal of Finance*, 60(2), 757-782.

Officer, M. S. (2007). The price of corporate liquidity: Acquisition discounts for unlisted targets. *Journal of Financial Economics*, *83*(3), 571-598.

Officer, M. S., Poulsen, A. B., & Stegemoller, M. (2009). Target-firm information asymmetry and acquirer returns. *Review of Finance*, *13*(3), 467-493.

Servaes, H. (1991). Tobin's Q and the Gains from Takeovers. *The Journal of Finance*, *46*(1), 409-419.

Schwert, G. W. (2000). Hostility in takeovers: in the eyes of the beholder?. *The Journal of Finance*, *55*(6), 2599-2640.

Trillas, F. (2002). Mergers, acquisitions and control of telecommunications firms in Europe. *Telecommunications Policy*, *26*(5), 269-286.

**Appendix A**

**Description of variables**

| Variable Name | Variable Description |
|---|---|
| Dependent variable: | |
| Acquisition premium | Transaction premium is calculated using transaction value divided by targets market value four weeks before acquisition times shares acquired. |
| CAR | Cumulative abnormal return for three different event windows (-1, +1), (-30, -2), (+2, +30). |
| Deal status | A dummy variable equals to one when the deal is complete and zero otherwise. |
| Independent variable: | |
| Mgmt | A dummy variable equals to one if the acquirer includes target's management participation |
| Private | A dummy variable equals to one if the acquirer is a private company |
| Pvnomgmt | A dummy variable equals to one if the acquirer is a private company and without target management participation |
| Pvwithmgmt | A dummy variable equals to one if the acquirer is a private company and with target management participation |
| Tobin | Tobin's Q ratio = total market value of firm / total asset value of firm Total market value is calculated using stock price per share times number of shares outstanding. |
| Leverage | Leverage ratio = total long-term debt / total equity |
| Logmv | Logarithm of target market value, |
| Cash | A dummy variable equals to one if there is all-cash payment to target shareholders |
| Toehold | A dummy variable equals to one if the acquirer holds at least 5% of the target shares prior to acquisition |
| Tender | A dummy variable equals to one if the deal is tender offer |
| Hostile | A dummy variable equals to one if the deal is hostile, as opposed to friendly/neutral. |
| SOX | A dummy variable equals to 1 when the deal happened after SOX (July 30, 2002) and zero otherwise. |

**Appendix B**

**Table 1 Distribution of Acquisitions by Calendar Year**

Sample distribution across years of U.S. completed private and public acquisitions during the period 1990—2016. The sample is taken from the Securities Data Company database.

| Year | Private Acquisitions | private buyout with mgmt | Management Acquisitions | Public targets and Public Bidders |
|------|------|------|------|------|
| 1990 | 323 | 21 | 9 | 524 |
| 1991 | 291 | 21 | 5 | 459 |
| 1992 | 282 | 24 | 7 | 454 |
| 1993 | 306 | 21 | 9 | 526 |
| 1994 | 490 | 23 | 9 | 743 |
| 1995 | 591 | 19 | 3 | 758 |
| 1996 | 683 | 25 | 12 | 895 |
| 1997 | 419 | 22 | 15 | 837 |
| 1998 | 328 | 23 | 13 | 904 |
| 1999 | 288 | 29 | 20 | 802 |
| 2000 | 241 | 29 | 24 | 739 |
| 2001 | 174 | 21 | 19 | 491 |
| 2002 | 189 | 18 | 15 | 330 |
| 2003 | 174 | 25 | 20 | 340 |
| 2004 | 114 | 8 | 4 | 326 |
| 2005 | 166 | 5 | 1 | 335 |
| 2006 | 156 | 19 | 8 | 344 |
| 2007 | 187 | 4 | 4 | 380 |
| 2008 | 155 | 4 | 0 | 287 |
| 2009 | 229 | 1 | 1 | 224 |
| 2010 | 153 | 6 | 2 | 205 |
| 2011 | 120 | 2 | 1 | 225 |
| 2012 | 91 | 4 | 4 | 238 |
| 2013 | 87 | 3 | 2 | 252 |
| 2014 | 76 | 2 | 0 | 279 |
| 2015 | 82 | 0 | 0 | 277 |
| 2016 | 110 | 0 | 0 | 219 |
| Total | 6505 | 379 | 207 | 12393 |

**Table 2 Summary Statistics for Targets**

Summary statistics of selected variables for targets during the period 1990—2016. Except for acquisition price, values are for the year prior to acquisition.

| Variables | Public Acquirers and targets(N=2690) | Private Acquirers and Public Targets (N=1449) | Difference between public and private acquisitions | Private Acquisitions no mgmt(N=1362) | Private acquisitions with mgmt(N=87) | Difference between no mgmt and mgmt | Management Acquisitions (N=40) |
|---|---|---|---|---|---|---|---|
| | Mean (median) | Mean (median) | | Mean (median) | Mean (median) | | Mean (median) |
| Acquisition Price | 846.00 | 158.91 | 687.10*** | 153.31 | 246.55 | -93.24*** | 321.70 |
| | (23.00) | 5.05 | 17.95*** | (5.32) | (735.58) | -730.25** | (40.11) |
| Target Total Assets | 5989.20 | 861.68 | 5127.52*** | 880.48 | 567.45 | 313.03*** | 304.71 |
| | (257.70) | (133.12) | 124.58*** | (135.74) | (86.29) | 49.45** | (75.09) |
| Target Sales | 3213.82 | 694.51 | 2519.32*** | 708.37 | 477.55 | 230.81*** | 299.26 |
| | (195.00) | (118.94) | 76.06*** | (123.42) | (94.90) | 28.52** | (94.88) |
| Target SEQ | 1449.14 | 229.31 | 1219.83*** | 226.37 | 275.31 | -48.95*** | 111.51 |
| | (96.84) | (47.67) | 49.17*** | (50.30) | (30.91) | 19.40** | (32.62) |
| Target EBITDA | 551.92 | 78.19 | 473.73*** | 78.29 | 76.51 | 1.78*** | 48.40 |
| | (22.50) | (10.57) | 11.93*** | (10.81) | (8.37) | 2.44 | (9.14) |
| Target EPS | 0.74 | -0.06 | 0.80*** | -0.08 | 0.24 | -0.31*** | 0.56 |
| | (0.55) | (0.20) | 0.35*** | (0.19) | (0.40) | -0.21 | (0.46) |
| Tobin | 1.24 | 1.22 | 0.02*** | 1.25 | 0.70 | 0.55*** | 0.67 |
| | (0.76) | (0.65) | 0.11*** | (3.95) | (0.51) | 3.44** | (0.48) |
| Target FCF to AT | -0.05 | -0.12 | 0.07*** | -0.12 | 0.00 | -0.13*** | 0.04 |
| | (0.01) | (-0.01) | 0.02*** | (-0.01) | (-0.00) | -0.01 | (0.02) |
| Target Leverage | 0.76 | 0.77 | -0.02*** | 0.79 | 0.55 | 0.24*** | 0.81 |
| | (0.26) | (0.29) | -0.03* | (0.29) | (0.41) | -0.12 | (0.34) |

**Table 3  Correlation Matrix of variables**

|         | tranvalue | AT | SALE | SEQ | EBITDA | EPSPX | tobin | FCFtoAT |
|---------|-----------|-----|------|-----|--------|-------|-------|---------|
| AT      | 0.5495*** |     |      |     |        |       |       |         |
| SALE    | 0.1834*** | 0.6386*** |  |     |        |       |       |         |
| SEQ     | 0.6526*** | 0.8262*** | 0.5251*** |  |    |       |       |         |
| EBITDA  | 0.5052*** | 0.8953*** | 0.6903*** | 0.8183*** |  |       |       |         |
| EPSPX   | 0.0510**  | 0.0923*** | 0.0954*** | 0.1280*** | 0.2124*** |  |   |         |
| Tobin   | -0.0059   | -0.0410 | -0.0309 | -0.0278 | -0.0361 | -0.0026 |  |         |
| FCFtoAT | 0.0069    | 0.0122 | 0.0104 | 0.0146 | 0.0143 | 0.0274 | -0.6791*** |  |
| leverage| 0.0093    | 0.0286 | 0.0195 | 0.0086 | -0.0084 | -0.0135 | -0.0129 | 0.0036 |

**Table 4 Acquisition Premiums**
Acquisition premium is calculated as the transaction value divided by the target market value
4 weeks before acquisition times percentage of shares acquired.

| Sample | Mean | Median | Std. Dev. | Min. | Max. |
|---|---|---|---|---|---|
| Public Acquisitions | 1.3267 | 1.0949 | 0.9060 | 0.2241 | 7.7126 |
| Private Acquisitions | 1.4414 | 1.0796 | 1.7611 | 0.1740 | 14.9068 |
| Private Acquisitions with Mgmt | 1.3144 | 1.2827 | 0.4382 | 0.1740 | 3.2131 |
| Management Buyouts | 1.4521 | 1.4156 | 0.4304 | 0.1740 | 3.2131 |

**Table 5 Estimates of Acquisition Multiples**

This table contains mean (median) of estimates of acquisition multiples for the sample of private acquisitions of public targets over the period 1990-2016. The table shows the differences in acquisition multiples (Deal Value to Book Value of Equity, Deal Value to Earnings Per Share, deal value to EBITDA, or deal value to sales) of targets of private acquisitions without and with management participation.

| Premium Metric | Private Acquisitions No Mgmt | Private Acquisitions with mgmt | Difference | p value |
|---|---|---|---|---|
| | Mean (median) | Mean (median) | | |
| Deal Value to Book Value of Equity | 0.0852 | 0.8599 | 0.7748 | 0.2520 |
| | (0.1911) | (0.4870) | 0.2959 | 0.0967 |
| Deal Value to Earnings Per Share | 17.2502 | 162.1162 | 151.8000 | 0.2863 |
| | (0.7998) | (24.3576) | 23.5578 | 0.0070 |
| Deal Value to EBITDA | 2.0234 | -11.5678 | -13.5912 | 0.3403 |
| | (0.2854) | (1.2270) | 0.9416 | 0.0967 |
| Deal Value to Sales | 0.8325 | 0.4051 | -0.4274 | 0.0339 |
| | (0.1264) | (0.2306) | 0.1042 | 0.5065 |

**Table 6 Announcement Period Returns of Target Firms**

Announcement period returns for a sample of U.S. acquisitions during the period 1990-2016. Cumulative abnormal returns are based on the single-factor market model estimated from day –255 to day –46 for each sample firm.

| Event Window | Public Acquisitions | | | Private Acquisitions Without Mgmt | | | Private Acquisitions With Mgmt | | | MBO | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Complete Sample | Before SOX | After SOX | Complete Sample | Before SOX | After SOX | Complete Sample | Before SOX | After SOX | Complete Sample | Before SOX | After SOX |
| (-30,-2) | 1.45 | 2.2 | 0.27 | 2.08 | 2.18 | 1.62 | 5.51 | 7 | 2.12 | 3.85 | 4.64 | 1.45 |
| (-1, +1) | 8.94 | 8.6 | 9.47 | 4.64 | 4.03 | 9.05 | 12.76 | 12.34 | 23.1 | 19.63 | 17.09 | 26.99 |
| (-1, 0) | 6.34 | 6.45 | 6.18 | 3.39 | 2.9 | 5.64 | 11.00 | 10.49 | 19.61 | 16.16 | 14.02 | 23.24 |
| (0, +1) | 8.52 | 7.98 | 9.36 | 4.23 | 3.6 | 8.66 | 10.26 | 9.06 | 22.27 | 15.21 | 10.84 | 26.08 |
| (+2,+30) | 0.42 | 0.66 | 0.05 | 1.39 | 1.31 | 1.85 | 0.25 | 1.03 | -2.19 | -0.89 | -0.13 | -2.73 |

**Table 7 Regression of Acquisition Premium on Acquisition, Firm, and Market Characteristics**

**Panel A: Correlation Matrix of Dependent Variables**

Pearson Correlation Coefficients for First regression

| | mgmt | Tobin | leverage | logmv | cash | toehold | tender |
|---|---|---|---|---|---|---|---|
| Tobin | -0.0339 | | | | | | |
| leverage | -0.0066 | -0.0129 | | | | | |
| logmv | -0.0627** | 0.1111*** | 0.0009 | | | | |
| cash | -0.0711*** | 0.0206 | -0.0521** | -0.0693*** | | | |
| toehold | -0.0028 | -0.0387 | 0.0060 | -0.0934*** | -0.0444* | | |
| tender | 0.0568** | 0.0238 | 0.0111 | 0.0231 | -0.0249 | -0.0137 | |
| Hostile | -0.0066 | -0.0042 | -0.0014 | -0.0155 | -0.0921*** | 0.0070 | -0.0041 |

Pearson Correlation Coefficients for 2nd and 3rd regressions

| | private | mgmt | leverage | Tobin | toehold | tender | Hostile | logmv |
|---|---|---|---|---|---|---|---|---|
| mgmt | 0.1968*** | | | | | | | |
| leverage | 0.0004 | -0.0018 | | | | | | |
| Tobin | -0.0078 | -0.0297* | -0.0026 | | | | | |
| toehold | 0.2099*** | 0.0402** | -0.0046 | -0.0349** | | | | |
| tender | -0.2216*** | -0.0276* | -0.0027 | -0.0102 | 0.0511*** | | | |
| Hostile | -0.0389** | -0.0093 | -0.0042 | 0.0098 | 0.0280* | 0.0935*** | | |
| logmv | -0.3101*** | -0.0878** | 0.0088 | 0.1057*** | -0.1972*** | 0.0704*** | 0.0468*** | |
| cash | 0.2331*** | 0.0177 | -0.0085 | 0.0215 | -0.2005*** | 0.0647*** | -0.0734*** | -0.0688*** |

**Table 7**
**Panel B Regression of Acquisition Premium on Acquisition, Firm, and Market Characteristics**

Ordinary least squares regressions of acquisition premium on acquisition, firm, and market characteristics for U.S. acquisitions during 1990—2016. For the first regression, the sample includes all private acquisitions. The second subsample includes 3719 completed private and public acquisitions excluding private acquisitions with management participation. The third subsample includes 2489 completed private and public acquisitions excluding private acquisitions without management participation.

The dependent variable is Winsorized at the top and bottom 1%. All independent variables are for the year prior to acquisition.

| | (1) | (2) | (3) |
|---|---|---|---|
| private | 0.161*** | | |
| | (0.045) | | |
| mgmt | | -0.340* | 0.003 |
| | | (0.199) | (0.118) |
| Tobin | -0.016** | -0.017 | -0.015 |
| | (0.007) | (0.012) | (0.011) |
| leverage | 0.001 | 0.015 | 0.001 |
| | (0.001) | (0.009) | (0.001) |
| toehold | -0.229*** | -0.069 | -0.221*** |
| | (0.054) | (0.184) | (0.053) |
| Hostile | 0.059 | -1.719 | 0.159 |
| | (0.298) | (1.714) | (0.275) |
| tender | 0.287*** | 0.430 | 0.248*** |
| | (0.061) | (0.297) | (0.056) |
| logmv | -0.066*** | -0.143*** | -0.051*** |
| | (0.009) | (0.029) | (0.009) |
| cash | -0.705*** | -1.646*** | -0.577*** |
| | (0.051) | (0.177) | (0.050) |
| Constant | 2.862*** | 4.691*** | 2.577*** |
| | (0.144) | (0.437) | (0.144) |
| Observations | 3,719 | 1,388 | 2,489 |
| R-squared | 0.064 | 0.079 | 0.065 |

Standard errors in parentheses
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

**Table 8 Regressions of cumulative abnormal return on Acquisition, Firm, and Market Characteristics**

This table reports ordinary least squares regression analysis of cumulative abnormal return on acquisition, firm, and market characteristics for U.S. acquisitions during 1990—2016. Appendix A contains variable definitions.

| | CAR(-1,1) | | CAR(-30, -2) | | CAR(+2,+30) | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| mgmt | 0.016 | | 0.038 | | 0.010 | |
| | (0.020) | | (0.025) | | (0.021) | |
| sox_mgmt | 0.111*** | | -0.046 | | -0.053 | |
| | (0.037) | | (0.045) | | (0.038) | |
| pvnomgmt | -0.048*** | | 0.011 | | 0.001 | |
| | (0.006) | | (0.008) | | (0.006) | |
| sox_pvnomgmt | 0.084*** | | -0.008 | | 0.004 | |
| | (0.012) | | (0.015) | | (0.012) | |
| pvandmgmt | | -0.045*** | | 0.012 | | 0.002 |
| | | (0.006) | | (0.007) | | (0.006) |
| sox_pvandmgmt | | 0.091*** | | -0.011 | | -0.002 |
| | | (0.011) | | (0.014) | | (0.012) |
| leverage | 0.000 | 0.000 | -0.000 | -0.000 | 0.000 | 0.000 |
| | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |
| Tobin | 0.000 | 0.000 | 0.001 | 0.001 | -0.000 | -0.000 |
| | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) |
| toehold | 0.044*** | 0.043*** | 0.011 | 0.011 | -0.001 | -0.001 |
| | (0.007) | (0.007) | (0.008) | (0.008) | (0.007) | (0.007) |
| tender | 0.046*** | 0.047*** | 0.027*** | 0.027*** | -0.014* | -0.014* |
| | (0.007) | (0.008) | (0.009) | (0.009) | (0.008) | (0.008) |
| Hostile | 0.130*** | 0.129*** | -0.033 | -0.033 | 0.021 | 0.021 |
| | (0.037) | (0.037) | (0.047) | (0.047) | (0.039) | (0.039) |
| logmv | -0.011*** | -0.011*** | -0.012*** | -0.012*** | -0.006*** | -0.006*** |
| | (0.001) | (0.001) | (0.002) | (0.002) | (0.001) | (0.001) |
| cash | -0.075*** | -0.076*** | -0.061*** | -0.061*** | 0.006 | 0.006 |
| | (0.006) | (0.007) | (0.008) | (0.008) | (0.007) | (0.007) |
| Constant | 0.248*** | 0.251*** | 0.199*** | 0.200*** | 0.080*** | 0.080*** |
| | (0.018) | (0.018) | (0.023) | (0.023) | (0.019) | (0.019) |
| Observations | 3,406 | 3,406 | 3,457 | 3,457 | 3,475 | 3,475 |
| R-squared | 0.134 | 0.130 | 0.042 | 0.041 | 0.009 | 0.008 |

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

**Table 9 Regressions of deal status on Acquisition, Firm, and Market Characteristics**

This table reports ordinary least squares regression analysis of deal status on acquisition, firm, and market characteristics for U.S. acquisitions during 1990—2016. The dependent variable is deal status, a dummy set equal to 1 if the deal is completed. All independent variables are for the year prior to acquisition.

|  | (1) | (2) | (3) |
|---|---|---|---|
| mgmt | -0.132*** |  |  |
|  | (0.023) |  |  |
| leverage | 0.000 | -0.000 | -0.017* |
|  | (0.000) | (0.000) | (0.010) |
| Tobin | 0.001 | -0.000*** | -0.005 |
|  | (0.001) | (0.000) | (0.006) |
| toehold | 0.625*** | 0.787*** | 0.583*** |
|  | (0.011) | (0.006) | (0.058) |
| Hostile | -0.503*** | -0.335*** | 0.090 |
|  | (0.047) | (0.026) | (0.413) |
| tender | -0.015 | 0.159*** | 0.092 |
|  | (0.033) | (0.010) | (0.149) |
| logmv | 0.005* | -0.001 | 0.003 |
|  | (0.003) | (0.001) | (0.017) |
| cash | 0.060*** | -0.025*** | 0.031 |
|  | (0.013) | (0.006) | (0.068) |
| private |  | 0.107*** |  |
|  |  | (0.006) |  |
| Number_of_Bidders |  |  | -0.184** |
|  |  |  | (0.079) |
| Constant | 0.237*** | 0.154*** | 0.407* |
|  | (0.038) | (0.014) | (0.214) |
| Observations | 3,367 | 21,561 | 191 |
| R-squared | 0.514 | 0.589 | 0.422 |

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1