Free Cash Flow versus Reputation: A Study of Multiple Bidders

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Abstract

This paper studies the behavior of multi-target bidders in tender offers, their financial and tender offer characteristics, and the motivation behind their takeover activities. From a large sample of 1097 tender offers over the 1980-1995 period obtained from SDC, it is found that compared to single-target bidders, multiple bidders are large firms with low Tobin's Q , and therefore are more subject to the agency cost of free cash flow. These bidders often make tender offers to targets that are not in the same line of their business, and have lower success rate in their tender offers. After other bidder characteristics are controlled for, bid premium, tender offer success rate and target cumulative abnormal return are found not correlated with the number of tender offers a bidder makes over time.

1. Introduction

An interesting yet largely unexplored issue in the corporate takeover literature is the behavior of multi-target bidders. These bidders (hereafter referred to as multiple bidders) make multiple takeover offers to different target firms over time. As an extreme example, Investors Group made 32 tender offers to its targets during the 1980-1996 period. The bidder characteristics as opposed to other, single-target bidders (hereafter referred to as single bidders) and the motivation of these multiple bidders behind these takeover activities warrant investigation.

Leach (1992) builds up a multi-target takeover model with bidder revisions, in which multiple bidders desire a reputation for having low valuations of their targets. Such a reputation increases the likelihood that future targets will accept low take-it-or-leave-it offers. Consequently, his model predicts that multiple bidders have lower tender premiums, bid revision rates and success rates. Furthermore, since reputation building is more likely in highly correlated target valuations, offer premiums are lower for bidders that takeover targets that are within the same line of business.

A related, but opposing reputation hypothesis is given by introducing uncertainty over the generosity profile of the bidder. Consider the type of a bidder to be either “generous” - meaning that he desires to pay out more of his posttakeover value than appears necessary - or “stingy” - meaning that he desires to minimize the total premiums paid. High bids may now signal that he is “generous”, which inclines future targets to concede to knowingly low bids. Target infer that the “generous” bidder they face must have truly low valuation for their firm and expect no revision. This scenario is in line with Kreps and Wilson (1982) and Milgrom and Roberts (1982). Under this type of models, the generosity reputation is desirable and may aid future bargaining, therefore multiple bidders will bid high, at least in the beginning of their acquisition process.

A completely different argument to account for the behavior of multiple bidders is the free cash flow hypothesis proposed by Jensen (1988). Free cash flow is defined as cash flow left after the firm has invested in all available positive net present value projects. The free cash flow hypothesis states that managers endowed with free cash flow will invest it in negative NPV projects rather than pay it out to shareholders. This may happen because management perquisites increase with investments in operations even when these investments have a negative NPV. Managers have incentives to cause their firms to grow beyond the optimal size. Growth increases managers' power by increasing the resources under their control. So, once management has exhausted positive NPV projects, it proceeds to invest in negative NPV projects rather than pay out funds to shareholders. Tender offers are large investments made by the bidder firms. If it is the case that multiple bidders tend to have low investment opportunities and therefore are subject to the agency problems associated with free cash flow, then these bidders will make tender offers regardless whether such offers benefit shareholders. The free cash flow hypothesis therefore predicts that multiple bidders are firms with low investment opportunities and severe agency problems associated with free cash flow.

There are few empirical studies devoted to multiple bidder characteristics, obviously due to the limited data sample of multiple bidders. Schipper and Thompson (1983) study the announcement effect of acquisition programs by 55 bidders during the 1952-1968 period. These bidders announce their intention to acquire multiple target firms before they make the actual offers. They find significantly positive abnormal performance associated with the announcement of acquisition programs. The result supports the view that acquisition had a favorite *ex ante* impact on the value of firms announcing an intention to engage in acquisitions. Holderness and Sheehan (1985) consider 13-d file announcement effect of “raiders” versus those of a random sample. A 13-d is filed when an investor acquires more than 5 percent of a publicly traded firm’s equity. They find a more positive effect on returns of targets of “raiders” than on returns of a random sample. However, both Schipper and Thompson (1983) and Holderness and Sheehan (1985) consider only the announcement effect of possible takeovers and not the actual offers.

Mikkelson and Ruback (1985) investigate the difference in target announcement abnormal returns of single and multiple bidders that repeated at least 6 times during 1978-1980. They find a insignificant difference of 9.35% less two-day cumulative abnormal returns to successful targets of multiple bidders. Their study involves only 16 targets of single bidders and 3 of multiple bidders and is far from conclusive. Leach (1992) compares successful premiums from single and multiple bidders on a sample over the 1958-1980 period from the MERC Tender Offer database. He finds that successful premiums as measured 30 days prior to the announcement are significantly lower for multiple bidders than for single bidders. His result is consistent with his reputation hypothesis.

In this paper, I study bidder characteristics using a much larger data sample from the Securities Data Corporation. My main sample consists of 1097 tender offers made during 1980-1995. I find that excluding the 2 bidders that made more than 20 tender offers over the 1980-1996 period , there is no relation between successful premium and the number of offers a bidder makes over time. Compared to single bidders, multiple bidders are large firms with low Tobin's Q, and make more across-industry offers. I also find that after controlling for offer characteristics, neither the probability of tender offer success nor target cumulative abnormal return is related to the number of offers a bidder makes over time. My results give little support to the reputation hypothesis, but are consistent with the free cash flow hypothesis.

2. Data and Methodology

2.1. Tender offer Data

All my tender offer data are obtained from Securities Data Corporation (SDC). To ensure as many multiple bidders in my sample as possible, I include all tender offers available from SDC (from September 1980 through December 1996), with only the following requirements: (1) targets are domestic U.S. firms, (2) value of the transaction is at least 10 million dollars, (3) target and bidder firms are different (repurchases are excluded from the sample). These requirements result in a sample of 1543 tender offers. To get bid premium data, I further require that target firms be listed on either the NYSE/AMEX or NASDAQ and stock price data be available 20 trading days prior to the announcement date. This reduces my sample to 1097 tender offers (of course the sample period is now 1980-1995), which I shall refer to as the main sample.

For each tender offer, I get the following data items from SDC: bidder CUSIP and SIC code, target CUSIP and SIC code, announcement date, status of the offer (whether the tender offer is completed or not), attitude of the offer (friendly or hostile), whether there are opposing bids at the time of the announcement, number of tender offer extensions from the bidder, percentage shares sought by the bidder, percentage shares owned by the bidder 6 months prior to the announcement, percentage shares the bidder seeks to own after the tender offer. Not all of the above data items are available for each tender offer, but I do not exclude an offer simply because some of the data items are missing, otherwise I lose too many multiple bidder observations.

I define a dummy variable INDUSTRY according to the first 2-digit SIC code. To provide an estimate for the industry profile of the bidder and the target, I set the dummy INDUSTRY to be 1 if the bidder and the target have the same 2-digit SIC code and 0 otherwise. Admittedly, this measure of industry profile is rudimentary[1], but no better measures are readily available for all the bidder and target firms. I also define a dummy variable CONTROL as follows. If the bidder owns less than 70 percent of the target firm at the time of the offer and seeks to increase by 15 percent or more of target's shares, the dummy CONTROL is set to 1, otherwise it is set to 0. This grouping scheme is suggested by Bradley, Desai, and Kim (1983).

I also distinguish all-cash tender offers from the rest offers, but find that of all the 1932 tender offers (including repurchases) available from SDC, only 50 are not cash offers. All results in this paper are not changed when I narrow down the sample to all-cash offers.

2.2. Multiple Bidders

[1] see Khale and Walkling (1996) for a discussion of the problems associated with SIC code.

The 1543 tender offers in my raw sample are from 1210 distinct bidders, among which 1041 are single-target bidders and 169 are multiple bidders with an average of 2.97 targets. I use two definitions of multiple bidders in my analysis:

(1) Definition 1 of multiple bidder: A bidder is referred to as a multiple bidder if it made at least 2 tender offers during 1980-1996.

(2) Definition 2 of multiple bidder: A bidder is referred to as a multiple bidder if it made at least 4 tender offers during 1980-1996.

It is possible that some bidders have only one bid in my sample, but undertook other bids before 1980. This introduces a bias against finding any difference in the characteristics between single and multiple bidders. Using definition 2 should alleviate this problem, but at the cost of losing many multiple bidders from the sample. Panel D of Table 1 shows a breakdown of the number of tender offers in the main sample according to the total number of tender offers a bidder made over the 1980-1996 period (NOACQ).

2.3. Bid Premiums

Throughout the analysis, I use the following 4 definitions of bid premiums:

PREM1: Bid premium 1 week (5 trading days) prior to the announcemen calculated as PREM1=(Bid Offer Price - P_5)/P_5, where P_5 is the target stock price 5 trading days before the announcement date,

PREM4: Bid premium 4 weeks (20 trading days) prior to the announcement, calculated as PREM1=(Bidder Offer Price - P_{20})/P_{20}, where P_{20} is the target stock price 5 trading days before the announcement date, SHPREM1: Bid premium 1 week (5 trading days) prior to the announcement, weighted by the percentage of shares sought by the bidder, calculated as SHPREM1=PREM1*(percentage sought by bidder)/100,

SHPREM4: Bid premium 4 weeks (20 trading days) prior to the announcement, weighted by the percentage of shares sought by the bidder, calculated as SHPREM4=PREM4*(percentage sought by bidder)/100.

All stock price data are obtained from CRSP, while bidder offer prices are obtained from SDC. Premiums 1 week and 4 weeks prior to the announcement are both analyzed to check for possible pre-bid runup effect. Schwert (1996) shows that pre-bid runups are added cost to the bidders. If that is the case, PREM4 is the more relevant premium measure since it includes most of the runup. If the bidder is not seeking all of the target's shares outstanding, then the out-of-pocket premium paid by the bidder is the weighted premium measures, as outlined in Walkling (1985). Extreme outliers, such as PREM1 greater than 200% or PREM1 less than -50%, were excluded from the sample.

2.4. Accounting Data

In order to examine bidder characteristics, the following bidder accounting data are collected from Compustat (item number is in parenthesis):

total assets measured as book value of assets (6),

market value of equity measured as the stock price at the end of the year prior to the tender offer (24) times the number of shares outstanding (25),

total sales measured as annual sales (12),

liquidity measured as the ratio of net liquid assets (4-5) to total assets (6), *debt/equity* measured as the ratio of debt (9) to equity (60),

Tobin's Q defined as the ratio of value of the firm (debt and equity) to the replacement value of its assets, estimated by (total assets (6) + market value of equity (24*25) - shareholders equity (60) - deferred taxes (74))/total assets (6), in accordance with Kaplan and Zingales (1995).

cash flow measured as the sum of income before extraordinary items and depreciation and amortization (18+14), deflated by total assets (6),

investment measured as annual investment expenses (128),

acquisition measures as the acquired assets (129) over the five year period prior to the tender offer,

dividend payout measured as the ratio of dividend per share (26) to earnings per share (58),

return on equity measured as the ratio of net income (172) to shareholders equity (60),

return on assets measured as the ratio of net income (172) to total assets (6),

R&D measured as the annual research and development expenses (46).

Extreme outliers, such as debt/equity ratios greater than 100, or Tobin's Q greater than 5, were omitted from the sample.

As a caveat, the accounting data are available for only a small subset of the bidder firms, and I keep all the available data in my analysis. This may provide a selection bias in bidder's financial profile. For example, if the firms listed in Compustat are larger than non-listed firms, my accounting data for the bidders are applicable to the larger bidders in my sample.

2.5. Cumulative Abnormal Returns

Standard event study methodology is applied to measure the cumulative abnormal returns (CARs) around the announcement date for both the bidder and the target firms. Market model parameters for each firm are estimated over the 200 days estimation period beginning from 260 days before the announcement date, using the following linear regression:

(1) $$R_{jt} = a_j + b_j R_{mt} + e_{jt} \qquad t = -260, \ldots, -61,$$

where R_{jt} is the daily return of firm j on date t, R_{mt} is the return of CRSP value weighted market index, and ε_{jt} is the regression error term. Suppose the announcement period is from τ_1 days prior to the announcement to τ_2 days after the announcement. The event period abnormal return is

(2) $$AR_{jt} = R_{jt} - (a_j + b_j R_{mt}) \qquad t = -t_1, \ldots, t_2,$$

where α_j and β_j are the coefficient obtained from regression (1), and AR_{jt} is the abnormal return for stock j on date t. The cumulative abnormal return (CAR) for stock j during the event period is thus

(3) $$CAR_j = \sum_{t=t_1}^{t_2} AR_{jt}$$

Under the assumption that the regression error terms are independently and identically normally distributed, the variance of CAR_j is

(4) $$VAR(CAR_j) = (t_1 + t_2 + 1)\, s_j^2$$

where

(5) $$s_j^2 = \frac{1}{198} \sum_{t=-260}^{-61} e_{jt}^2 .$$

The average CAR for a portfolio of J stocks is

$$(6) \qquad \overline{CAR} = \frac{1}{J}\sum_{j=1}^{J} CAR_j \ ,$$

and the Z-statistics is

$$(7) \qquad T_1 = \frac{\overline{CAR}}{VAR(\overline{CAR})} = \frac{\sum_{j=1}^{J} CAR_j}{\sqrt{(t_1 + t_2 + 1)\sum_{j=1}^{J} s_j^2}} \sim N(0,1).$$

We can construct another measure of significance by using the standardized cumulative abnormal return,

$$(8) \qquad \overline{SCAR} = \frac{1}{J}\sum_{j=1}^{J} SCAR_j = \frac{1}{J}\sum_{j=1}^{J} \frac{CAR_j}{\sqrt{(t_1 + t_2 + 1)s_j^2}} ,$$

and the Z-statistics is

$$(9) \qquad T_2 = \frac{\overline{SCAR}}{\sqrt{1/J}} = \frac{1}{\sqrt{J}}\sum_{j=1}^{J}\left(\frac{\sum_{t=-t_1}^{t_2} AR_{jt}}{\sqrt{(t_1 + t_2 + 1)s_j^2}} \right) \sim N(0,1).$$

The two expressions in (7) and (9) can be used as significance test for the CARs. The above discussion of CARs is a simplified version of Campbell, Lo and MacKinlay (1997) pp. 158-162. In this study, I examine only the two-day announcement period CARs of the bidders and the targets, i.e., $\tau_1 = 0$, and $\tau_2 = 1$.

3. Empirical Analysis and Results

3.1. Overview

Table 1 presents descriptive statistics for the main sample of 1097 tender offers over the 1980-1995 period. Panel A shows some summary statistics that are available to each tender offer. Out of the full 1097 tender offers, 728 are from single bidders, 369 are from bidders with at least 2 targets (definition 1 of multiple bidders), and 105 are from bidders with at least 4 targets (definition 2 of multiple bidders). For the full main sample, 79% of the offers are completed, 39% are within-industry offers, 73% are friendly offers, and 20% are offers with opposing bids at the time of announcement. There is little difference in offer characteristics between offers from single bidders and offers from definition 1 of multiple bidders, but offers from definition 2 of multiple bidders have lower success rate and less friendly offers, and much less within-industry offers. Panel B shows all bidder premiums 1 week and 4 weeks before the announcement on an annual basis for the sample period, Panel C shows the same statistics for successful offers only. We see that there is a tender offer clustering during the late 1980s, and the number of offers is increasing again more recently. This fact is consistent with the takeover literature, e.g., Mitchell and Mulherin (1996) and Comment and Schwert (1995). There are no apparent trend in premiums across time, nor is there an apparent difference in mean of successful and unsuccessful bid premiums. However, prem1 is lower than prem4 in the vast majority of the years for all types of bidders, which suggests that there is strong pre-bid runups in the target stock prices, consistent with Schwert (1996). Further, multiple bidders seem to have lower premiums, but conditional on successful offers, the difference in premiums becomes smaller. The issue of difference in premiums between single and multiple bidders will be discussed further in the next two subsections.

3.2. Univariate Results

Table 2 and Table 3 compare financial and tender offer characteristics of single and multiple bidders, respectively. Mean values and p-values of the standard t-test for equal means between single and multiple bidder characteristics are shown. The accounting data in Table 2 reveal much of the differences in financial characteristics between single and multiple bidders. (1) Multiple bidders by either definition are larger than single bidders in terms of total assets, market value of equity and total sales. For example, the market value of equity for either multiple bidders group is significantly higher than the single bidders group at the 5% level. This is in accordance with the "stylized" fact that multiple bidders are typically large firms. (2) Multiple bidders have lower Tobin's Q values. The mean Tobin's Q for single bidders is 1.36, while the mean for multiple bidders by definition 1 is 1.23, the difference is significant at the 10% level. However, the mean Q for multiple bidders by definition 2 is only 1.18 and is significantly lower than the mean Q value for single bidders at the 5% level. Since Tobin's Q is a good measure of a firm's investment opportunities[2], this implies that multiple bidders have less growth opportunities and therefore are more likely to have the agency problems associated with free cash flow. This evidence is a support for Jensen (1988)'s free cash flow hypothesis. (3) Multiple bidders have lower debt/equity ratio, although the difference is not significant. Still, this fact is consistent with Jensen (1988), in the sense that debt helps reduce the agency cost of free cash flow. If multiple bidders have lower debt in their capital structure, the agency problem of free cash flow exacerbates. (4) Multiple bidders by definition 2 have lower cash flow/total assets and return on assets

[2] see, for example, Lang, Stultz and Walkling (1991).

ratios. This reveals that frequent takeover activities by multiple bidders should not signal good performance, at least by the accounting measures. (5) Multiple bidders by both definitions have higher investment/cash flow ratio than single bidders, and the difference is significant at the 10% level. This is not surprising since tender offer is a particularly large form of investment. (6) Multiple bidders have significantly higher acquired assets. Since some asset acquisitions are not publicly announced, this fact shows that the accounting measure of acquisition is consistent with publicly announced acquisitions. All other financial measures reported are not significantly different between single and multiple bidders.

Table 3 compares tender offer characteristics between offers from single and multiple bidders. Panel A shows offer characteristics for all tender offers. One important difference is that multiple bidders by definition 2 have significantly lower success rate (0.66) than single bidders (0.79) at the 1% level. Also, both panel A and panel B reveal that multiple bidders by definition 2 have significantly fewer within-industry offers than single bidders at the 1% level. Combined with the results from Table 2, it is reasonable to conclude that multiple bidders that have at least 4 targets are large, low growth firms with severe agency problems of free cash flow, and frequently make tender offers to targets that are not in their line of business, and have lower success rate in their tender offers. It is also plausible that these bidders will not stop because of failure in their offers, but keep making new offers, since they have no other sensible investment opportunities. These results are highly consistent with Jensen (1988)'s free cash flow hypothesis.

Although not reported in the tables, I also compare the bidder premium revision rate between the single and multiple bidders, based on 133 all-cash tender offers in which the bidder seeks 100 percent shares of the target.[3] There are 125 single bidders and 8 multiple bidders in this sample. A bidder is considered to have revised its bid if the initial and the final offer price are different. I find no significant difference in the revision rate between single and multiple bidders. In fact, the mean revision rate for these two groups of bidders are almost identical (0.38). This is further evidence against the reputation hypothesis.

Panel A of Table 3 shows that multiple bidder premiums are lower in general than single bidder premiums. The two premium measures 1 week prior to the announcement is significantly lower for multiple bidders by definition 2, but there are no significant differences in premiums 4 weeks prior to the announcement. This is suggestive: multiple bidders are in general larger firms and more closely followed by the market[4], therefore there are more leakage of information prior to the announcement, and thus the pre-bid runup is higher for multiple bidders. Even if there are no significant differences in premium measures 4 weeks prior to the announcement, there could be significant differences in premium measures 1 week prior to the announcement due to larger runups in the multiple bidders' stock prices.

However, Panel B of Table 3 shows that when we consider only successful offers, there is no more significant differences in all premium measures between single and multiple bidders. The issue of what determines bidder premiums are discussed further in the next subsection.

3.3. The Determinants of Bid Premiums

[3] I thank Jan Jindra for allowing me to use his data set.

If the reputation hypothesis of Leach (1992) is valid, then successful bidder premiums should be lower for multiple bidders. To investigate the possible differences in premiums between single and multiple bidders, I first regress each of the four premium measures for successful offers on the number of tender offer a bidder made during the 1980-1996 period (NOACQ). The coefficient of NOACQ (not reported) is significantly negative regardless which premium measure is used, which seems to be consistent with the reputation hypothesis. I then regress the following equation,

$$\mathrm{Pr}\,emium_j = a_0 + \sum_k a_{kj}\, D_{kj} + e_j$$

where the dummy variables D_{kj} equal 1 if NOACQ = k (all possible values of k are 1,2, 3, 4, 5, 6, 7, 8, 21, 32) in tender offer j and 0 otherwise. Perhaps surprisingly, only the coefficients on the last two dummy variables (k=21 and k=32) are significantly negative, all other coefficients are insignificantly different from zero. This suggests that the negative relationship between bidder premiums and NOACQ is due to the two multiple bidders that made more than 20 tender offers during 1980-1996 (These two bidders are not exchange-listed. According to SDC, the company name for these two bidders are "Investors" and "Investors Group", respectively).

In Table 4, I include some more tender offer characteristics in the regressions. The dummy FRIENDLY equals 1 if the offer is friendly and 0 otherwise, the dummy CHAL equals 1 if there are opposing bids at the time of the offer and 0 otherwise, the dummy CONTROL equals 1 if the bidder seeks control of the target in the sense of Bradley, Desai and Kim (1983) and 0 otherwise, and the dummy INDUSTRY equals to 1 if the bidder and the target have the same 2-digit SIC code. In Panel A, all premiums are

[4] for example, through 13d filings.

regressed on bid characteristics. The coefficient of NOACQ is significantly negative in all cases. In Panel B, only successful premiums are regressed on the same variables, and the coefficient of NOACQ is still significantly negative, although less significantly than in Panel A. In Panel C, the two extreme bidders that made more than 20 offers are removed from the regression, and the coefficient on NOACQ is no longer significantly different from zero. This result shows that the seemingly negative relationship between bid premiums and NOACQ is due to the two extreme bidders, and when they are excluded, there is no relationship between bid premium and number of tender offers a bid makes over time. This is evidence against the reputation hypothesis proposed by Leach (1992).

In all panels of Table 4, the coefficient on FRIENDLY is significantly negative, meaning that premiums are lower in friendly offers. The coefficient of CONTROL is significantly positive in the two regressions with SHPREM1 and SHPREM4 being the dependent variable, respectively. Since the share adjusted premiums are more relevant measures of bidder cost, and the two regressions have the highest adjusted R-squared number, the result suggests that bid premium is higher when the bidder seeks control over the target. Interestingly, the coefficient of CHAL are significantly negative in two of the regression models: model 2 with PREM1 and SHPREM1 being the dependent variable, respectively. With opposing bids, pre-bid runup is likely to be high, therefore premium measures 1 week prior to the announcement is likely to be low, and the negative coefficient of CHAL is not surprising. However, this result is different from Comment and Schwert (1995), who find that premiums are higher with auctions. The difference may lie in the reporting mechanism by SDC. SDC generally reports the last offer price of the bidder, which is not the correct price to calculate bid premium.

To further test the validity of the reputation hypothesis, I regress multiple bidder premiums on the sequence number of target in the bidder's tender offer process (NOSEQ). According to Leach (1992), bid premiums should be lower in the beginning of the bidding process, so the coefficient of NOSEQ should be positive. On the other hand, if the "generosity" profile story is valid, bid premiums should be higher in the beginning of the bidding process, and the coefficient of NOSEQ should be negative.

Table 5 shows my regression results. To adjust for possible time trend of bid premiums, I also regress the demeaned premium, i.e., the difference between the original premium and the average premium of all tender offers in the particular year the offer is made. When all tender offer premiums are regressed on NOSEQ (Panel A), the coefficient of NOSEQ is significantly negative in both the undemeaned and demeaned models. When only the successful premiums are regressed (Panel B), the result does not change. But when the 2 extreme bidders with more than 20 targets are removed from the regression, the coefficient of NOSEQ in the undemeaned regressions becomes positive, but is insignificantly different from zero in the demeaned regressions. This result is consistent with Table 4 and is evidence against either of the reputation hypothesis.

3.4. More on Tobin's Q

I also investigate the relationship between the time span of two consecutive tender offers from multiple bidders and their Tobin's Q. The results are presented in Table 6. I first regress the time span on NOACQ for all tender offers and for successful offers only (the first two models). The coefficient of NOACQ is significantly negative, meaning that the time span between two consecutive tender offers are not uniformly distributed across multiple bidders and are shorter for bidders with more targets. When Tobin's Q is added as an explanatory variable (the last two models), the coefficient of NOACQ is no longer significant, while the coefficient of Q is significantly positive. This suggests that among multiple bidders, high Q firms pick their targets more carefully and wait longer before taking on the next target. Low Q firms have less investment opportunities and make tender offers more frequently, even if such offers do not benefit shareholders. The result is thus consistent with the free cash flow hypothesis.

3.5. What factors affect tender offer outcome?

To estimate how bidder characteristics affect tender offer outcome, I use the following multivariate logistic regression model:

P(tender offer success) = f(NOSEQ, bidder characteristics)

where NOSEQ is the sequence number of target in the bidder's tender offer process. If the reputation hypothesis is valid, NOSEQ should be positively related to the success rate of multiple bidders, since the bidder is more concerned with building up its reputation and is more "tough" in the beginning of the bidding process. I include as my other explanatory variables the following bidder characteristics: (1) PERST, percentage of shares sought by the bidder, (2) TOEHOLD, percentage of shares owned by the bidder 6 months prior to the offer, (3) FRIENDLY, dummy variable which is equal to 1 if the offer is friendly and 0 otherwise, (4) INDUSTRY, dummy variable which is equal to 1 if the bidder and the target have the same 2-digit SIC code, (5) Tobin's Q of the bidder, and (6) one of the premium measures. Due to data availability, including all the characteristic variables results in too few observations and little explanatory power, so I use two separate specifications, as shown Table 7.

Regression results from Model A show that PERST is negatively related to the success rate, while TOEHOLD is positively related to the success rate, although the relationships are only marginally significant. The success rate is significantly higher in friendly offers and in within-industry offers. Among the coefficient of the premium measures, the coefficient of PREM1 and SHPREM1 are significantly positive, but the coefficient of PREM4 and SHPREM4 are not as significant. This suggests that high bidder premium as measured 1 week prior to the announcement date increases the probability of success of the tender offer, but premium as measured 4 weeks prior to the announcement is not so important to the success rate. This means that the pre-bid runup is an added cost to the bidder, which is consistent with Schwert (1996). The coefficient of NOSEQ is not significant, another evidence against the reputation hypothesis.

Model B of the specification is used to examine how Tobin's Q is related to the tender offer success rate. The coefficient of Q is significantly positive, which suggests that multiple bidders with low Q values have lower success rate. All other variables except FRIENDLY do not provide significant explanatory power when Q is included.

Cotter and Zenner (1994) find that the success rate is negatively related to the size of the target in their sample over the 1988-1991 period. When I include the target size variable into the explanatory variables, I fail to find such a significant relationship. The difference could be due to different model specifications.

3.6. Relation between tender offer characteristics and abnormal returns

The market reaction on the tender offers is reflected in the abnormal returns of the bidder and the target's stocks during the announcement period. In Table 8, I present the two-day announcement period cumulative abnormal returns (CARs) for the bidders and the targets grouped by the number of tender offers made by the bidder (NOACQ). It is obvious that the CARs for the targets are much larger and more significant than the CARs for the bidders, which is consistent with the takeover literature. The CARs for the targets are apparently lower for offers from bidders with NOACQ greater than 8. This is probably due to the lower premiums offered by these bidders. As shown in Table 9, target CARs and bid premiums are highly positively correlated. Bidder CARs are generally not significantly different from zero, except for the group with NOACQ = 5, which has a significantly negative average CAR of -3.8%.

I analyze the market's reaction to the tender offer to determine whether there is a significant relation between the announcement CARs and the ultimate success of the offer, given various premium measures. At the time of the announcement, the outcome of the offer is still unknown. A significant relation would indicate that the market is able to assess whether the tender offer will be successful. The results in Panel A of Table 9 suggest that target CARs are significantly higher in successful offers, which implies that the market has some predicting ability for the ultimate outcome of the offer. In Panel B of Table 9, FRIENDLY is included as an explanatory variable, and the coefficient is in general significantly positive. Adding other tender offer characteristics do not alter the results. In particular, the coefficient of NOSEQ is not significant. Both my results from Panel A and Panel B are consistent with Cotter and Zenner (1994). As a sensitivity check, I run the same regressions using weighted least squares, with weights being 1 over the standard deviation of the error term of the estimation period regression (weight = $1/\sigma_i$ where σ_i is given by eq. (5) in section 2.5). Although not reported in the table, similar results with OLS regression is obtained, except that the significance level of the coefficients is generally lower than OLS.

The market's reaction on the bidder is examined by examining the relation between bidder CAR and tender offer characteristics. In model 1 through model 4 of Table 10, the dependent variable ACAR is the bidder CAR. Model 1 through model 3 are designed to test the hubris hypothesis proposed by Roll (1986). This hypothesis predicts that bidder management will sometimes pursue takeover success even when the price is too high. As a result, the bidder CAR should be negatively correlated with the bidder premium and target CAR. The results in Table 10 do not support such prediction. The coefficients of TCAR and SHPREM4 are insignificant, although they have the predicted sign (negative). The coefficient of NOSEQ in model 4 is significantly negative, which seems to imply that the market reacts negatively when a multiple bidder makes more tender offers. The result is robust to replacing SHPREM4 with other premium measures. This would contradict with Schipper and Thompson (1983), who find a positive market reaction to the announcement of acquisition programs. However, Schipper and Thompson (1983) measure the effect of the announcement of the acquisition programs, not the actual acquisitions. Finally, in model 5, the absolute value of bidder CAR is regressed on NOSEQ. If there is less surprise associated with the announcement of tender offers from multiple bidders, there should be less market reaction on those announcements. Yet the coefficient of NOSEQ is insignificantly different from zero, which is against the above reasoning. Since the adjusted R-squared numbers are low in all the regressions of bidder CAR, the result is not conclusive.

4. Conclusions

In this paper I study the behavior of multi-target bidders, their financial and tender offer characteristics, and the motivation for taking on multiple targets. I try to relate the multiple bidder behavior to two different hypotheses: the reputation hypothesis proposed by Leach (1992), and the free cash flow hypothesis proposed by Jensen (1988). Based on a large sample of 1097 tender offers over the 1980-1995 period, I find that, compared to single-target bidders, multiple bidders are large firms with low growth opportunities. Therefore these bidders are more subject to the agency cost of free cash flow. These bidders make multiple tender offers to targets that are often not in the same line of business as the bidders, and the success rate of these tender offers are lower than offers from single bidders. The time span between two consecutive tender offers increase with bidder Tobin's Q value. The lower their growth opportunity, the more frequently these bidders make tender offers. My results support the free cash flow hypothesis.

I also find that excluding the 2 bidders that made more than 20 tender offers over the sample period, there is no relation between successful bid premium and the number of offers a bidder makes over time. Bid premium is higher when the bidder seeks control over the target, and is lower in friendly offers. The probability of tender offer success is higher in friendly offers and within-industry offers. The success rate is also higher when the bidder has higher Tobin's Q value. After controlling for other bidder characteristics, I find that neither the success rate of the tender offer nor the target cumulative return is related to the number of offers a bidder makes over time. There is no evidence of difference in the bid premium revision rate between single and multiple bidders. My results thus do not support the reputation hypothesis.

An obvious problem with this study is data accuracy. Since my only data source is SDC, and there appear to be much inaccurate reports in SDC, especially with respect to bidder offer prices and rumor details, verification with other data source is needed to get more reliable results. In addition, one important aspect of bidder characteristics that is missing in this study is the ownership structure of the bidder firms. Further investigation in bidder ownership structure should yield more insightful information about the motivation of these multiple bidders.

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Table 1
Descriptive statistics for the main sample of 1097 tender offers over the 1980-95 period.

Panel A: Tender offer characteristics by bidder type. An offer is successful if the status of the offer is completed. An offer is considered to be within the same industry if the bidder and the target have the same 2-digit SDC SIC code. An offer is friendly if the attitude of the bidder firm to the target firm is friendly. An offer is referred to as challenged if there are opposing bids at the time of announcement. All characteristics are from SDC. The number in parenthesis is the percentage of the total number for each bidder group.

	All Bidders	Single Bidders[a]	Multiple Bidders (Definition 1)[b]	Multiple Bidders (Definition 2)[c]
Total Number	1097 (100%)	728 (100%)	369 (100%)	105 (100%)
Successful	862 (79%)	576 (79%)	286 (78%)	69 (66%)
Same Industry	425 (39%)	287 (39%)	138 (37%)	17 (16%)
Friendly	804 (73%)	535 (73%)	269 (73%)	70 (67%)
Challenged	220 (20%)	147 (20%)	73 (20%)	23 (22%)

Panel B: Bid premiums 1 week and 4 weeks before announcement by year - all tender offers. Prem1 and Prem4 are the bid premiums 1 week (5 trading days) and 4 weeks (20 trading days) before the announcement.

	All bidders			Single Bidders[a]			Multiple bidders (Definition 1)[b]		
Year	N	Prem1	Prem4	N	Prem1	Prem4	N	Prem1	Prem4
1980	4	0.58	0.65	4	58	65	-	-	-
1981	67	0.38	0.51	43	0.42	0.53	24	0.34	0.46
1982	56	0.45	0.49	33	0.43	0.50	22	0.47	0.49
1983	41	0.33	0.42	21	0.27	0.36	20	0.40	0.47
1984	93	0.33	0.40	56	0.32	0.38	37	0.35	0.43
1985	81	0.28	0.38	45	0.28	0.39	36	0.28	0.38
1986	129	0.31	0.41	90	0.30	0.40	39	0.33	0.41
1987	111	0.33	0.37	74	0.33	0.35	37	0.34	0.40
1988	180	0.42	0.59	127	0.41	0.57	53	0.45	0.63
1989	101	0.37	0.41	76	0.41	0.42	25	0.28	0.37
1990	38	0.50	0.57	25	0.60	0.68	13	0.33	0.36
1991	17	0.46	0.54	9	0.34	0.41	8	0.59	0.69
1992	12	0.33	0.33	8	0.39	0.40	4	0.23	0.21
1993	32	0.44	0.49	24	0.48	0.54	8	0.33	0.37
1994	59	0.42	0.50	38	0.47	0.52	21	0.34	0.47
1995	76	0.42	0.49	55	0.43	0.50	21	0.38	0.47
	1097	0.40	0.47	728	40	48	105	36	44

Panel C: Bid premiums 1 week and 4 weeks before announcement by year - successful tender offers only. Prem1 and Prem4 are the bid premiums 1 week (5 trading days) and 4 weeks (20 trading days) before the announcement.

	All bidders			Single Bidders[a]			Multiple Bidders (Definition 1)[b]		
Year	N	Prem1	Prem4	N	Prem1	Prem4	N	Prem1	Prem4
1980	2	0.54	0.71	2	0.54	0.71	-	-	-
1981	46	0.34	0.46	30	0.37	0.52	16	0.28	0.37
1982	32	0.48	0.49	19	0.45	0.48	13	0.53	0.51
1983	30	0.37	0.44	13	0.31	0.39	17	0.41	0.48
1984	70	0.34	0.40	42	0.32	0.37	28	0.36	0.44
1985	61	0.28	0.38	33	0.27	0.38	28	0.28	0.37
1986	106	0.31	0.40	75	0.30	0.40	31	0.34	0.40
1987	92	0.33	0.36	60	0.33	0.34	32	0.33	0.39
1988	138	0.41	0.57	99	0.39	0.55	39	0.46	0.61
1989	80	0.38	0.40	61	0.41	0.41	19	0.30	0.39
1990	33	0.52	0.58	23	0.60	0.67	10	0.35	0.38
1991	17	0.46	0.54	9	0.34	0.41	8	0.59	0.69
1992	12	0.34	0.34	8	0.39	0.40	4	0.23	0.21
1993	25	0.47	0.50	19	0.50	0.51	6	0.38	0.44
1994	52	0.43	0.53	35	0.47	0.53	17	0.36	0.52
1995	66	0.44	0.52	48	0.46	0.52	18	0.41	0.51
	862	40	48	576	40	46.2	286	37	45

Panel D: Number of tender offers in the main sample by bidder's NOACQ. NOACQ is the total number of tender offers a bidder made over the 1980-1996 period. The main sample contains only offers over the 1980-1995 period.

NOACQ of the Bidder	1	2	3	4	5	6	7	8	21	32
Number of Tender Offers	728	179	85	36	11	9	4	8	16	21

[a]A single bidder is a bidder with only a single target during the sample period.
[b] Definition 1 of multiple bidder: A bidder is referred to as multiple bidder if it made at least 2 tender offers during the sample period.
[c] Definition 2 of multiple bidder: A bidder is referred to as multiple bidder if it made at least 4 tender offers during the sample period.

Table 2
Financial Characteristics of Single and Multiple Bidders

The sample consists of bidder firms of tender offers over the 1980-95 period. Variable definitions and Compustat data item numbers are given as follows: Total assets is the book value of assets (6); Market value of assets is the stock price at the end of the year before the tender offer (24) times the number of shares outstanding (25); Total Sales is annual sales (12); Liquidity is the ratio of net liquid assets (4-5) to total assets (6); debt/equity is the ratio of debt (9) to equity (60); Tobin's Q is the ratio of the market value of the firm (debt and equity) to the replacement value of its assets and is estimated by (total assets (6) + market value of equity (24*25) - shareholders equity (60) -deferred taxes (74))/total assets (6); cash flow is income before extraordinary items (18) plus depreciation and amortization (14); investment is investment expenses (128); acquisition is the sum of assets acquired over the five year period before the tender offer (sum of item 129); dividend payout is the ratio of dividend per share (26) to earnings per share (58); return on equity is the ratio of net income (172) to shareholders equity (60); return on assets is the ratio of net income (172) to total assets (6); R&D is the research and development expenses (46); alpha and beta are the market model intercept and slope estimated from 260 days to 61 days before the announcement date. Mean values for single and multiple bidders and the p-values for equal means are shown. P-value (1) refers to comparisons between single bidders and multiple bidders by definition 1, and p-value (2) refers to comparisons between single bidders and multiple bidders by definition 2. Because of data availability, each data item has different sample size, which is indicated in the parenthesis below the mean value.

Variable	Single bidders	Multiple bidders (Defin.1)[a]	p-Value (1)	Multiple bidders (Defin. 2)[b]	p-Value (2)
Total Assets*	3586.58 (190)	5532.92 (164)	0.06	7515.69 (32)	0.12
Market Value of Equity*	1984.35 (188)	3464.57 (163)	0.01	3818.0 (32)	0.04
Total Sales*	3162.8 (189)	6404.88 (164)	0.00	6027.1 (32)	0.08
Liquidity	0.23 (171)	0.22 (156)	0.78	0.17 (31)	0.10
Debt/Equity	1.32 (175)	0.68 (158)	0.25	1.02 (32)	0.60
Tobin's Q	1.36 (130)	1.23 (158)	0.07	1.18 (30)	0.02
Cash Flow/Tot.Assets	0.11 (156)	0.10 (148)	0.21	0.09 (32)	0.01

Variable	Single bidders[a]	Multiple bidders (Defin.1)[b]	p-Value (1)	Multiple bidders (Defin. 2)[c]	p-Value (2)
Invest./Cash Flow	2577.82 (154)	3982.51 (142)	0.07	4790.1 (31)	0.07
Acquisition*	154.40 (157)	455.83 (144)	0.00	585.99 (28)	0.03
Acquisition/Tot.Assets	0.09 (157)	0.15 (144)	0.00	0.20 (28)	0.01
Dividend Payout	0.42 (119)	0.41 (132)	0.72	0.46 (29)	0.69
Return on Equity	0.16 (163)	0.17 (146)	0.33	0.14 (31)	0.21
Return on Assets	0.064 (163)	0.070 (146)	0.19	0.048 (31)	0.01
R&D*	217.71 (75)	219.42 (81)	0.98	209.52 (19)	0.95
Market Model Alpha	0.00026 (178)	0.00035 (172)	0.50	0.00014 (37)	0.55
Market Model Beta	0.88 (178)	0.93 (172)	0.60	0.97 (37)	0.27

* In units of million dollars.

[a]A single bidder is a bidder with only a single target during the sample period.

[b] Definition 1 of multiple bidder: A bidder is referred to as multiple bidder if it made at least 2 tender offers during the sample period.

[c] Definition 2 of multiple bidder: A bidder is referred to as multiple bidder if it made at least 4 tender offers during the sample period.

Table 3.
Mean Values of Tender Offer Characteristics for Offers from Single and Multiple Bidders

TOEHOLD = % Shares controlled of the bidder 6 months before the announcement,
PERST = % Shares sought by the bidder,
PEROWN = % Shares the bidder seeks to own,
SUCCESS = Dummy variable which is equal to 1 if the offer is completed, 0 otherwise,
FRIENDLY = Dummy variable which is equal to 1 if the offer is friendly, 0 otherwise,
NOEXT = Number of tender offer extensions made by the bidder,
CONTROL = Dummy variable which is equal to 1 if the bidder seeks control of the target in the Bradley, Desai and Kim (1983) sense, 0 otherwise,
INDUSTRY = Dummy variable which is equal to 1 if the bidder and the target have the same 2-digit SDC SIC code,
CHAL = Dummy variable which is equal to 1 if there are opposing bids at the time of announcement,
PREM1 = Bidder premium 1 week (5 trading days) before the announcement,
PREM4 = Bidder premium 4 weeks (20 trading days) before the announcement,
SHPREM1 = Bidder premium 1 week (5 trading days) before the announcement, weighted by percentage of shares sought by the bidder,
SHPREM4 = Bidder premium 4 weeks (20 trading days) before the announcement, weighted by percentage of shares sought by the bidder.

Panel A: Both successful and unsuccessful offers

Variable	Single Bidders[a]	Multiple Bidders (Def. 1)[b]	p-Value (1)	Multiple Bidders (Def. 2)[c]	p-Value (2)
TOEHOLD (%)	21.79 (251)	20.66 (135)	0.64	22.13 (43)	0.93
PERST (%)	92.29 (582)	90.83 (280)	0.34	88.98 (82)	0.26
PEROWN (%)	93.5 (622)	90.25 (307)	0.06	92.03 (88)	0.54
SUCCESS	0.79 (728)	0.76 (369)	0.54	0.66 (105)	0.01
FRIENDLY	0.73 (728)	0.73 (369)	0.84	0.67 (105)	0.14
NOEXT	3.21 (307)	2.54 (145)	0.05	2.28 (39)	0.02
CONTROL	0.91 (158)	0.95 (101)	0.21	0.90 (29)	0.80
INDUSTRY	0.39 (728)	0.37 (369)	0.52	0.16 (105)	0.00
CHAL	0.20 (728)	0.20 (369)	0.87	0.22 (105)	0.68
PREM1	0.38 (728)	0.36 (369)	0.23	0.31 (105)	0.03
PREM4	0.46 (728)	0.46 (369)	0.66	0.41 (728)	0.14
SHPREM1	0.35 (582)	0.33 (280)	0.10	0.28 (82)	0.02
SHPREM4	0.44 (582)	0.42 (280)	0.48	0.38 (82)	0.12

[a,b,c] The same definitions as in Table 2.

Panel B: Successful Offers Only.

Variable	Single Bidders[a]	Multiple Bidders (Def. 1)[b]	p-Value (1)	Multiple Bidders (Def. 2)[c]	p-Value (2)
TOEHOLD (%)	27.26 (175)	24.73 (95)	0.42	29.94 (25)	0.62
PERST (%)	92.08 (481)	89.67 (225)	0.19	87.52 (60)	0.22
PEROWN (%)	95.26 (508)	91.27 (243)	0.02	94.27 (63)	0.68
FRIENDLY	0.85 (576)	0.84 (286)	0.76	0.83 (69)	0.65
NOEXT	2.79 (235)	2.14 (111)	0.05	2.15 (26)	0.17
CONTROL	0.93 (148)	0.87 (77)	0.21	0.73 (22)	0.10
INDUSTRY	0.40 (576)	0.38 (286)	0.64	0.16 (69)	0.00
CHAL	0.15 (5 76)	0.15 (286)	0.93	0.14 (69)	0.86
PREM1	0.38 (576)	0.37 (286)	0.60	0.36 (69)	0.54
PREM4	0.46 (576)	0.46 (286)	0.86	0.45 (69)	0.86
SHPREM1	0.36 (481)	0.33 (225)	0.25	0.32 (60)	0.33
SHPREM4	0.43 (481)	0.42 (225)	0.64	0.41 (60)	0.69

[a,b,c] The same definitions as in Table 2.

Table 4.
Least squares regression of bidder premium measures on tender offer characteristics.

Model 1 regresses NOACQ, INDUSTRY, CHAL, CONTROL and FRIENDLY. Model 2 is the same regression except CONTROL is not included. Therefore Model 2 has more number of observations in each case.

PREM1 = Bid premium 1 week (5 trading days) before the announcement,
PREM4 = Bid premium 4 weeks (20 trading days) before the announcement,
SHPREM1 = Bid premium 1 week (5 trading days) before the announcement, weighted by percentage of shares sought by the bidder,
SHPREM4 = Bid premium 4 weeks (20 trading days) before the announcement, weighted by percentage of shares sought by the bidder.
NOACQ = Number of tender offers that a bidder made during the 1980-1995 period,
FRIENDLY = Dummy variable which is equal to 1 if the offer is friendly, 0 otherwise,
CONTROL = Dummy variable which is equal to 1 if the bidder seeks control of the target in the Bradley, Desai and Kim (1983) sense, 0 otherwise,
INDUSTRY = Dummy variable which is equal to 1 if the bidder and the target have the same 2-digit SDC SIC code,
CHAL = Dummy variable which is equal to 1 if there are opposing bids at the time of announcement.

Panel A: All Tender Offers.

Explanatory Variables	Dependent Variables							
	PREM1		PREM4		SHPREM1		SHPREM4	
	model 1 N=319	model 2 N=1097	model 1 N=319	model 2 N=1097	model 1 N=319	model 2 N=862	model 1 N=319	model 2 N=862
INTERCEPT	0.34	0.46	0.35	0.52	0.13	0.41	0.14	0.47
	(5.36)	(22.62)	(4.96)	(22.32)	(2.03)	(17.01)	(1.97)	(16.41)
NOACQ	-0.008	-0.006	-0.007	-0.007	-0.007	-0.007	-0.005	-0.008
	(-3.04)	(-3.60)	(-2.29)	(-3.36)	(-2.51)	(-3.50)	(-1.66)	(-3.32)
INDUSTRY	0.037	-0.001	0.062	0.006	0.047	0.012	0.068	0.022
	(1.25)	(-0.06)	(1.88)	(0.29)	(1.62)	(0.61)	(2.04)	(0.96)
CHAL	-0.034	-0.084	0.03	-0.001	0.0001	-0.061	0.063	0.023
	(-1.03)	(-3.83)	(0.89)	(-0.06)	(0.00)	(-2.64)	(1.73)	(0.88)
CONTROL	0.070		0.12		0.23		0.27	
	(1.20)		(1.82)		(4.08)		(4.26)	
FRIENDLY	-0.049	-0.073	-0.071	-0.055	0.068	-0.048	-0.10	-0.039
	(-1.63)	(-3.68)	(-2.14)	(-2.455)	(-2.30)	(-2.11)	(-2.99)	(-1.46)
Adj-R-Sq	0.04	0.03	0.06	0.02	0.10	0.02	0.14	0.01

Panel B: Successful Offers.

Explanatory Variables	Dependent Variables							
	PREM1		PREM4		SHPREM1		SHPREM4	
	model 1 N=225	model 2 N=862	model 1 n=225	model 2 N=862	model 1 N=225	model 2 N=706	model 1 N=319	model 2 N=706
INTERCEPT	0.38 (5.56)	0.50 (18.10)	0.38 (5.18)	0.53 (17.24)	0.15 (2.26)	0.44 (14.14)	0.17 (2.26)	0.49 (13.47)
NOACQ	-0.008 (-2.30)	-0.005 (2.24)	-0.006 (-1.65)	-0.006 (-2.32)	-0.006 (-1.78)	-0.006 (-2.37)	-0.004 (1.02)	-0.007 (-2.35)
INDUSTRY	0.011 (0.31)	-0.010 (-0.49)	0.051 (1.35)	0.007 (0.33)	0.029 (0.86)	0.011 (0.51)	0.061 (1.62)	0.036 (1.42)
CHAL	0.019 (0.42)	-0.094 (3.44)	0.062 (1.25)	-0.008 (-0.26)	0.053 (1.18)	-0.074 (-2.67)	0.093 (1.88)	0.013 (0.42)
CONTROL	0.072 (1.22)		0.12 (1.82)		0.23 (3.99)		0.27 (4.27)	
FRIENDLY	-0.078 (-2.13)	-0.11 (-3.90)	-0.108 (-2.70)	-0.074 (2.43)	-0.092 (-2.55)	-0.078 (-2.58)	-0.14 (-3.39)	-0.069 (-1.97)
Adj-R-Sq	0.04	0.03	0.08	0.01	0.13	0.02	0.17	0.01

Panel C: Successful offers, excluding the 2 multiple bidders that made more than 20 offers.

Explanatory Variables	Dependent Variables							
	PREM1		PREM4		SHPREM1		SHPREM4	
	model 1 N=217	model 2 N=843	model 1 n=217	model 2 N=843	model 1 N=217	model 2 N=690	model 1 N=217	model 2 N=690
INTERCEPT	0.35 (4.53)	0.48 (15.61)	0.36 (4.39)	0.50 (14.48)	0.13 (1.67)	0.44 (12.56)	0.13 (1.62)	0.47 (11.58)
NOACQ	-0.00 (-0.02)	0.004 (0.48)	0.015 (1.05)	0.014 (1.47)	0.003 (0.19)	0.00 (0.04)	0.017 (1.17)	0.010 (0.88)
INDUSTRY	0.011 (0.32)	-0.010 (-0.50)	0.051 (1.33)	0.007 (0.30)	0.030 (0.86)	0.010 (0.47)	0.062 (1.60)	0.035 (1.39)
CHAL	0.018 (0.40)	-0.098 (-3.55)	0.060 (1.21)	-0.013 (-0.41)	0.052 (1.15)	-0.080 (-2.84)	0.091 (1.82)	0.007 (0.22)
CONTROL	0.088 (1.38)		0.11 (1.53)		0.24 (3.85)		0.28 (3.98)	
FRIENDLY	-0.073 (-1.92)	-0.11 (-3.85)	-0.11 (-2.72)	-0.075 (-2.45)	-0.090 (-2.39)	-0.083 (-2.72)	-0.14 (-3.33)	-0.074 (-2.08)
Adj-R-Sq	0.01	0.02	0.06	0.01	0.10	0.01	0.15	0.01

Table 5.
Least squares regression showing the relationship between multiple bidder premiums and the acquisition sequence number.

Undemeaned bidder premium is the original premium. Demeaned bidder premium is the year-adjusted premium, i.e., the difference between the original premium and the average premium of all tender offers in that particular year the offer is made.
PREM1 = Bid premium 1 week (5 trading days) before the announcement,
PREM4 = Bid premium 4 weeks (20 trading days) before the announcement,
SHPREM1 = Bid premium 1 week (5 trading days) before the announcement, weighted by percentage of shares sought by the bidder,
SHPREM4 = Bid premium 4 weeks (20 trading days) before the announcement, weighted by percentage of shares sought by the bidder.
NOSEQ = Sequence number of target in the bidder's tender offer process during the 1980-1995 period.

Panel A: All tender offers from multiple bidders.

Explanatory Variables	Dependent Variable							
	Undemeaned Premiums				Demeaned Premiums			
	PREM1 (N=368)	PREM4 (N=368)	SHPREM1 (N=279)	SHPREM4 (N=279)	PREM1 (N=368)	PREM4 (N=368)	SHPREM1 (N=279)	SHPREM4 (N=279)
INTERCEPT	0.39	0.50	0.36	0.47	0.024	0.039	0.024	0.039
	(23.21)	(25.49)	(19.23)	(20.72)	(1.43)	(2.04)	(1.31)	(2.04)
NOSEQ	-0.010	-0.013	-0.011	-0.014	-0.011	-0.013	-0.012	-0.013
	(-3.23)	(-3.64)	(-3.43)	(3.65)	(-3.52)	(-3.65)	(-3.79)	(-3.65)
Adj-R-Sq	0.03	0.03	0.04	0.04	0.03	0.03	0.03	0.03

Panel B: All successful tender offers from multiple bidders.

Explanatory Variables	Dependent Variable							
	Undemeaned Premiums				Demeaned Premiums			
	PREM1 (N=286)	PREM4 (N=286)	SHPREM1 (N=225)	SHPREM4 (N=225)	PREM1 (N=286)	PREM4 (N=286)	SHPREM1 (N=225)	SHPREM4 (N=225)
INTERCEPT	0.40	0.49	0.36	0.46	0.028	0.038	0.027	0.042
	(20.09)	(22.16)	(17.14)	(18.39)	(1.45)	(1.81)	(1.27)	(1.73)
NOSEQ	-0.008	-0.011	-0.009	-0.012	-0.010	-0.012	-0.011	-0.013
	(-2.16)	(-2.52)	(-2.52)	(-2.66)	(-2.80)	(-2.94)	(-3.07)	(-3.02)
Adj-R-Sq	0.01	0.02	0.02	0.03	0.02	0.03	0.04	0.04

Panel C: Successful tender offers, excluding offers from the 2 multiple bidders with more than 20 targets.

Explanatory Variables	Dependent Variable							
	Undemeaned Premiums				Demeaned Premiums			
	PREM1 (N=267)	PREM4 (N=267)	SHPREM1 (N=209)	SHPREM4 (N=209)	PREM1 (N=267)	PREM4 (N=267)	SHPREM1 (N=209)	SHPREM4 (N=209)
INTERCEPT	0.34	0.39	0.30	0.36	-0.015	-0.032	-0.020	-0.028
	(9.84)	(10.43)	(8.02)	(8.36)	(-0.46)	(-0.87)	(-0.55)	(-0.65)
NOSEQ	0.023	0.040	0.023	0.037	0.011	0.024	0.0097	0.019
	(1.53)	(2.35)	(1.50)	(2.01)	(0.72)	(1.43)	(0.63)	(1.10)
Adj-R-Sq	0.01	0.02	0.01	0.01	-0.00	0.00	-0.00	0.00

Table 6
Least squares regression showing the relationship between the time span between two consecutive offers from multiple bidders and their Tobin's Q.

NOACQ is the number of tender offers from a multiple bidder. Q is the bidder Tobin's Q value. Model (i) regresses the time span on NOACQ for all the tender offers from multiple bidders. Model (ii) is the same regression as (i) but applies to successful offers only. Model (iii) regresses the time span on NOACQ and Q for all tender offers from multiple bidders. Because of the availability of the Q value, the number of observations decreases. Model (iv) is the same regression as (iii) but applies to successful offers only.

	(i) All Offers (N=218)	(ii) Successful Offers (N=170)	(iii) All Offers (N=67)	(iv) Successful Offers (N=54)
INTERCEPT	34.06	32.77	10.31	9.88
	(13.29)	(11.87)	(0.98)	(0.91)
NOACQ	-0.94	-0.78	2.31	1.81
	(-4.26)	(-2.94)	(0.89)	(0.65)
Q			10.13	10.45
			(2.49)	(2.60)
Adj-R-Sq	0.07	0.04	0.07	0.09

Table 7
Logistic Regression Results on the Tender Offer Outcome.

Multivariate logistic regression results of the tender offer outcome on the characteristics of the tender offer. The dependent variable is an indicator variable equal to one if the tender offer is successful. The p-values of the regression coefficients are in parentheses.

NOSEQ = Sequence number of target in the bidder's tender offer process,
TOEHOLD = % Shares controlled of the bidder 6 months before the announcement,
PERST = % Shares sought by the bidder,
SUCCESS = Dummy variable which is equal to 1 if the offer is completed, 0 otherwise,
FRIENDLY = Dummy variable which is equal to 1 if the offer is friendly, 0 otherwise,
CONTROL = Dummy variable which is equal to 1 if the bidder seeks control of the target in the Bradley, Desai and Kim (1983) sense, 0 otherwise,
INDUSTRY = Dummy variable which is equal to 1 if the bidder and the target have the same 2-digit SDC SIC code,
PREM1 = Bid premium 1 week (5 trading days) before the announcement,
PREM4 = Bid premium 4 weeks (20 trading days) before the announcement,
SHPREM1 = Bid premium 1 week (5 trading days) before the announcement, weighted by percentage of shares sought by the bidder,
SHPREM4 = Bid premium 4 weeks (20 trading days) before the announcement, weighted by percentage of shares sought by the bidder.

Model A:

P(success) = f(acquisition sequence number, percentage of shares sought by bidder, toehold, friendly offer indicator, same industry indicator, measure of bidder premium)

Explanatory Variables	Model 1 (N=319)	Model 2 (N=319)	Model 3 (N=319)	Model 4 (N=319)
INTERCEPT	-0.36	0.10	0.23	0.42
	(0.73)	(0.92)	(0.82)	(0.68)
NOSEQ	-0.02	-0.03	-0.03	-0.03
	(0.63)	(0.52)	(0.56)	(0.47)
PERST	-0.01	-0.01	-0.17	-0.02
	(0.25)	(0.17)	(0.08)	(0.11)
TOEHOLD	0.03	0.02	0.03	0.02
	(0.08)	(0.12)	(0.09)	(0.14)
FRIENDLY	3.03	3.02	3.03	3.02
	(0.00)	(0.00)	(0.00)	(0.00)
INDUSTRY	0.70	0.74	0.69	0.74
	(0.04)	(0.03)	(0.04)	(0.03)
PREM1	1.66			
	(0.01)			
PREM4		0.84		
		(0.13)		
SHPREM1			1.75	
			(0.01)	
SHPREM4				0.81
				(0.16)

Model B:

P(success) = f(acquisition sequence number, friendly offer indicator, same industry indicator, bidder Tobin's Q, measure of bidder premium)				
Explanatory Variables	Model 1 (N=251)	Model 2 (N=251)	Model 3 (N=189)	Model 4 (N=189)
INTERCEPT	-1.73	-1.42	-0.83	-0.67
	(0.03)	(0.07)	(0.42)	(0.51)
NOSEQ	-0.09	-0.11	-0.28	-0.30
	(0.71)	(0.62)	(0.30)	(0.25)
FRIENDLY	2.83	2.73	3.18	3.12
	(0.00)	(0.00)	(0.00)	(0.00)
INDUSTRY	-0.48	-0.51	-0.46	-0.46
	(0.23)	(0.19)	(0.40)	(0.40)
Q	1.30	1.35	1.15	1.20
	(0.01)	(0.01)	(0.06)	(0.06)
PREM1	0.92			
	(0.21)			
PREM4		0.19		
		(0.76)		
SHPREM1			0.62	
			(0.52)	
SHPREM4				0.15
				(0.85)

Table 8
Average Two-day Announcement Period Cumulative Abnormal Returns (CARs) for Bidders and Targets grouped by number of tender offers made by the Bidder (NOACQ).

N is the number of observations in the group. The numbers in parentheses and square brackets are the T_1 and T_2 statistics explained in the text, respectively.

	Bidders		Targets	
NOACQ	N	Average CAR	N	Average CAR
1	178	-0.33% (-1.51) [-3.66]	710	20.31% (127.53) [157.93]
2	72	0.56% (1.76) [1.97]	178	18.22% (61.74) [81.30]
3	63	-0.10% (-0.32) [1.68]	83	23.90% (56.03) [74.95]
4	26	1.19% (2.33) [1.80]	35	19.01% (26.89) [33.51]
5	8	-3.80% (-3.56) [3.24]	11	19.36% (18.15) [24.50]
6	3	-1.18% (-1.18) [-1.27]	9	22.86% (21.24) [23.54]
7			4	34.66% (11.03) [13.60]
8			8	13.32% (11.38) [16.57]
21			15	16.04% (17.20) [16.94]
32			20	10.05% (9.68) [22.21]

Table 9
Least Squares Regression of Target Cumulative Abnormal Returns on Tender Offer Characteristics.

NOSEQ = Sequence number of target in the bidder's tender offer process,
TOEHOLD = % Shares controlled of the bidder 6 months before the announcement,
PERST = % Shares sought by the bidder,
SUCCESS = Dummy variable which is equal to 1 if the offer is completed, 0 otherwise,
FRIENDLY = Dummy variable which is equal to 1 if the offer is friendly, 0 otherwise,
CONTROL = Dummy variable which is equal to 1 if the bidder seeks control of the target in the Bradley, Desai and Kim (1983) sense, 0 otherwise,
INDUSTRY = Dummy variable which is equal to 1 if the bidder and the target have the same 2-digit SDC SIC code,
PREM1 = Bid premium 1 week (5 trading days) before the announcement,
PREM4 = Bid premium 4 weeks (20 trading days) before the announcement,
SHPREM1 = Bid premium 1 week (5 trading days) before the announcement, weighted by percentage of shares sought by the bidder,
SHPREM4 = Bid premium 4 weeks (20 trading days) before the announcement, weighted by percentage of shares sought by the bidder.

Panel A: Explanatory variables are premium measure and outcome of the tender offer.

Explanatory Variables	Model 1 (N=1073)	Model 2 (N=1073)	Model 3 (N=844)	Model 4 (N=844)
INTERCEPT	-0.004	0.014	-0.008	0.013
	(-0.33)	(0.96)	(-0.62)	(0.78)
PREM1	0.454			
	(26.72)			
PREM4		0.315		
		(18.58)		
SHPREM1			0.530	
			(28.67)	
SHPREM4				0.35
				(18.65)
SUCCESS	0.041	0.051	0.045	0.060
	(3.45)	(3.82)	(3.32)	(3.75)
Adj-R-Sq	0.40	0.25	0.50	0.30

Panel B: Explanatory variables are premium measure and friendly offer indicator.

Explanatory Variables	Model 1 (N=1073)	Model 2 (N=1073)	Model 3 (N=844)	Model 4 (N=844)
INTERCEPT	0.006	0.038	0.006	0.042
	(0.52)	(2.80)	(0.50)	(2.78)
PREM1	0.459			
	(26.83)			
PREM4		0.316		
		(18.48)		
SHPREM1			0.534	
			(28.74)	
SHPREM4				0.349
				(18.54)
FRIENDLY	0.028	0.020	0.028	0.027
	(2.50)	(1.61)	(2.36)	(1.90)
Adj-R-Sq	0.40	0.24	0.49	0.29

Table 10
Least Squares Regression of Bidder Cumulative Abnormal Returns on Tender Offer Characteristics

ACAR = Bidder two- day period cumulative abnormal return,
ABSACAR = Absolute value of bidder two- day period cumulative abnormal return,
TCAR = Target two-day period cumulative abnormal return,
NOSEQ = Sequence number of target in the bidder's tender offer process,
SUCCESS = Dummy variable which is equal to 1 if the offer is completed, 0 otherwise,
FRIENDLY = Dummy variable which is equal to 1 if the offer is friendly, 0 otherwise,
INDUSTRY = Dummy variable which is equal to 1 if the bidder and the target have the same 2-digit SDC SIC code,
SHPREM4 = Bid premium 4 weeks (20 trading days) before the announcement, weighted by percentage of shares sought by the bidder.

	ACAR				ABSACAR
Explanatory Variables	Model 1 (N=345)	Model 2 (N=345)	Model 3 (N=267)	Model 4 (N=267)	Model 5 (N=267)
INTERCEPT	0.0076 (0.70)	0.0020 (0.41)	0.0009 (0.14)	0.0299 (2.23)	0.0586 (5.42)
TCAR	-0.0068 (-0.38)	-0.0119 (-0.77)			
SHPREM4			-0.0028 (-0.25)	-0.0027 (-0.25)	-0.142 (-1.63)
SUCCESS	-0.0189 (-1.92)			-0.167 (-1.53)	-0.0144 (-1.63)
NOSEQ	-0.0067 (-1.70)			-0.0094 (-2.27)	-0.0020 (-0.59)
INDUSTRY	0.0148 (2.31)				
FRIENDLY	0.0148 (1.70)				
Adj-R-Sq	0.02	-0.00	-0.00	0.02	0.01