

Is High Cash Flow a Blessing or a Curse? Evidence from Bidder's Long-term Performance

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Abstract

This study detects the informativeness of cash flow for investment spending by analyzing the impact of a firm's free cash flow level on its acquisition activity. We find that the targets acquired by bidders with low cash flow have lower operating performance but higher leverage than those acquired by bidders with high cash flow. Irrespective of the quality of the targets acquired, bidders with low cash flow perform poorly in the stock market, their operation deteriorates, and finally a significant number become bankruptcy or acquired by other firms following the acquisitions. Bidders with high cash flow significantly outperform their control firms following the acquisitions if they acquire low-leverage targets. Conversely, if the managers overstate their ability and acquire high-leverage targets, bidders with high cash flow perform poorly after the acquisitions. Our findings show that cash flow to a large extent reflects the ability of managers to run the firm. Firms with high cash flow exhibit more valuable investment opportunities in acquisitions activities.

I. Introduction

In this study, we detect the informativeness of cash flow for investment spending by analyzing the impact of a firm's free cash flow level on its acquisition activity. Our study is motivated by the two decades-long debate in the literature on how to interpret the very meaning of the empirical cash flow sensitivity of investment. In an influential paper, Fazzari, Hubbard, and Petersen (1988) document positive significant coefficients on firm's cash flow in reduced-form investment regressions.¹ Fazzari et al. propose that when firms face financing constraints, investment spending will vary with the availability of internal cash flow. They therefore interpret the positive investment-cash flow sensitivities as evidence of external financial constraints. Such interpretation, nonetheless, is challenged by subsequent studies. Kaplan and Zingales (1997) argue that the positive investment-cash flow sensitivities should be non-monotonic in empirical tests. Erickson and Whited (2000) argue that the sensitivities are driven by measurement error in Tobin's q . Recently, Alti (2003) demonstrates that in a model with no financing frictions, firms with high growth rates still exhibit high sensitivity of investment to cash flow level after controlling for q . Alti argues that cash flow in itself contains valuable information about a firm's investment opportunities (See also Poterba (1988) and Gomes (2001)).

These studies all tackle directly the very meaning of the empirical cash flow sensitivities of investment. Yet, what seems missing in this debate, in our view, is a careful examination of a firm's real-side investment decisions contingent on its cash flow level. Therefore, it is not clear the exact information contained in cash flow, which, according to Alti (2003), is central to understand the meaning of the cash flow-investment link. Acquisition is one specific type of significant corporate investment. In this study, we seek to determine whether bidders with high cash flow will exhibit valuable investment opportunities in the acquisition activity. We also seek to explore the economic rationale for such association. By delving into the informativeness of a bidder's cash flow level for its acquisition activity, we hope to shed light on the two decades-long debate in this strand of literature. With such examination, we also hope to help people understand more clearly the events happened in the recent financial tsunami: a significant number of corporations, due to financial constraints, get into trouble for their acquisitions undertaken before the financial tsunami when the stock market was booming.² These unfortunate events often drive people to think how important a firm's cash flow is for its various policies including the normal operation.

¹ See Hubbard (1998) and Stein (2003) for a survey of the literature. Latest researches on this issue include Mizen and Vermeulen (2005), Hovakimian (2009), Bushman et al. (2011), and so on.

² For example, to pursue profit growth, Merrill Lynch acquired First Franklin in December 2006 and First Republic Bank in January 2007. These acquisitions enabled Merrill Lynch to approach those rich private investors and increase Merrill Lynch's broker profit. In a short term, these acquisitions indeed improved Merrill Lynch's performance. Merrill Lynch's profit increased 30.2% in the second quarter of year 2007 relative to the same quarter in 2006, far better than that of industry peers like Goldman Sachs. Yet, First Franklin later fell into the subprime mortgage crisis. Since Merrill Lynch could not raise enough cash to cope with the crisis, it was eventually acquired by Bank of America.

Free cash flow, particularly cash flow from the operating activities, is generally considered to be the best measure to evaluate whether a firm is able to generate sufficient cash to continue as a going concern. Empirically, cash flow is widely used to measure a firm's operating performance in a large body of accounting and finance literature (e.g., Dechow (1994), Healy, Palepu and Ruback (1992); Harford (1999), (2005)). The efficient operation in a firm to a large extent depends on the ability of its managers while income from the operation eventually converts to free cash flow.³ Therefore, in our view, cash flow necessarily contains important information about the capacity of the management to run the firm. Good managers can find good projects for the firm, and furthermore they are competent in managing the projects well, for which, high cash flow is generated. In contrast, bad managers generally find bad projects for the firm, or even though they find good projects, they are not capable to manage well, for which, poor cash flow is generated. Accordingly, a positive link may arise between cash flow and the quality of investment opportunities as argued by Alti (2003).

Bad performing firms have more incentive to advance acquisitions to assure the survival of the firm or to find new businesses to improve the performance. However, acquisitions by bad performing firms may be disastrous due to the poor ability of their managers. Morck, Shleifer and Vishny (1990) find that investors respond negatively to acquisitions by firms whose managers performed poorly before the acquisitions. They argue that bad managers might make bad acquisitions simply because they are bad managers. Based on this argument, we predict that the targets acquired by bidding firms with low cash flow have low quality and the bidding firms also perform poorly in the long-run following the acquisitions. In practice, it is possible that in some circumstances (e.g., good luck) bad managers might also seek good targets in the bidding. Nevertheless, the successful combination of the bidder and the target is a challenging task which needs great intelligence, and bad managers may be not competent in doing this job. Therefore, we predict that, for bidding firms with low cash flow, their post-bid performance is still poor even though they acquire good targets.

High cash flow level may indicate that the management has strong capacity to run the firm. As such, we predict that targets acquired by bidding firms with high cash flow have high quality and these bidders also perform well following the acquisitions. A potential problem, however, is that operating success may drive the manager overconfident. Malmendier and Tate (2008) argue that overconfident CEOs over-estimate their ability to generate returns and ultimately overpay for targets. Based on their measures of overconfidence, they find that an overconfident CEO is 65% more likely to make an acquisition, which leads to value-destroying mergers. Roll's (1986) hubris hypothesis also indicates that the worst acquisitions are made by well performing firms, since their managers are most likely to be infected by hubris.⁴ Therefore, we predict that, for

³ A large body of literature shows that top managers are fired due to poor firm performance. See, for example, Kini et al. (2004), Franks et al. (2001), Denis et al. (1997), Denis and Denis (1995), Murphy and Zimmerman (1993), and Warner et al. (1988).

⁴ Hayward and Hambrick (1997) empirically show that acquisitions by hubristic managers realize negative returns upon the bid announcement.

bidding firms with high cash flow, their post-bid performance is poor if their managers overestimate their capacity to acquire bad targets.

The empirical results confirm our predictions. Based on a large sample of 9,172 takeover bids announced in the period 1990-2006, we find that targets acquired by bidding firms with low cash flow have low operating profitability but high financial leverage. In the three years following the acquisitions, bidders with low cash flow significantly underperform their peer control firms in the stock market. Their operating performance declines abnormally while their financial leverage increases sharply after the acquisitions. A significant number of these bidders even become bankrupt or get acquired by other firms. However, further analysis shows that such poor post-bid performance is not just driven by the bad acquisitions. Some targets acquired by firms with low cash flow indeed have high quality. But the bidders still perform poorly in the long-term after the acquisitions. These evidences provide support to our argument that cash flow level can reflect the operating capacity of management team and acquisitions by firms with low cash flow are disastrous due to the poor ability of their managers.

As a whole, targets acquired by firms with high cash flow have higher operating profitability but lower financial leverage than those acquired by firms with low cash flow. Bidding firms with high cash flow also perform as well as their peer control firms following the acquisitions. These evidences are consistent with the argument of Alti (2003) that firms with high cash flow level exhibit valuable investment opportunities. Further analysis shows that if bidders with high cash flow acquire low-leverage targets, they significantly outperform their control firms after the acquisitions. Conversely, if they acquire high-leverage targets, they experience a sharp increase in financial leverage and significantly underperform the control firms in the long-term following the acquisitions. These evidences show clearly that high cash flow is a two-edged sword for investment spending. On one hand, high cash flow implies that managers have a strong capacity to run the firm, and naturally capable managers can seek good investment opportunities to improve firm value. On the other hand, the operating success associated with high cash flow may also cause the managers to be overconfident to participate in bad acquisitions and consequently destroy firm value.

In this study, we also find that bidders with low cash flow have a lower Tobin's q but higher level of cash holding than those with high cash flow. This evidence is consistent with the study of Bates, Kahle and Stulz (2009) which document that firms hold more cash when their cash flow becomes riskier. Riddick and Whited (2009) also find that cash saving and cash flow are negatively related after controlling for Tobin's q . They argue that firms lower cash reserves to invest after receiving positive cash flow shocks.

Our study contributes to the strand of literature investigating the effects of financial constraints on firm behavior. Stemming from Fazzari, Hubbard, and Petersen (1988), financial literature documents positive significant coefficients on firm's cash flow in reduced-form investment regressions (e.g., Fazzari, Hubbard, and Petersen (1988); Kaplan and Zingales (1997); Erickson and Whited (2000)). However, how to interpret the meaning of investment-cash flow sensitivities is challenging. A recent study by Alti (2003) suggests that the exact information contained in cash flow is central to understand the meaning of the cash flow-investment link. In a

model with no financing frictions, Alti finds that firms with high growth rates still exhibit high sensitivity of investment to cash flow level after controlling for q . He therefore argues that cash flow in itself contains valuable information about a firm's investment opportunities. Such argument is confirmed by the findings in this study that firms with high cash flow generally have higher Tobin's q and also exhibit better investment opportunities in acquisition activities than those with low cash flow. Furthermore, we provide an economic explanation for such informativeness of cash flow in investment spending from the perspective of management ability. Although we do not tackle directly the very meaning of the cash flow-investment link, we shed light on this debate by delving into the informativeness of a bidder's cash flow level for its acquisition activity.

Our study also adds to the strand of literature investigating the association of financial constraints and corporate takeover activities. Smith and Kim (1994) examine the impact of a bidder's cash flow level on its announcement return. They find that investors respond positively when bidders with high cash flow acquire firms with low cash flow. Lang et al. (1991) also document positive announcement returns for bidders with high cash flow and high Tobin's q . In another line, several studies investigate the impact of a bidder's cash holding on its acquisition performance. Harford (1999) finds that investors respond negatively to acquisitions undertaken by bidders with high level of cash holding. Oler (2008) also shows that bidders with large cash holdings perform poorly relative to other bidders in the long run following the acquisitions. Given the fact that cash holding is negatively associated with cash flow, the evidences presented in these studies, including ours, are not conflicting.

However, our study essentially distinguishes from these literatures. These studies are to examine Jensen's (1986) free cash flow hypothesis within the background of mergers and acquisitions. Jensen argues that, due to agency problem, managers in firms with excess cash flow may squander the money in bad investment opportunities but not distribute it to shareholders via dividend payment or share repurchase. Therefore, in these studies, a large cash holding or a high cash flow may indicate a potential agency problem in the firm. Our study, nonetheless, is motivated by the debate among the financial literature (e.g., Fazzari, Hubbard, and Petersen (1988); Kaplan and Zingales (1997)) on the very meaning of the empirical cash flow sensitivities of investment. We examine whether and why, as Alti (2003) argues, firms with high cash flow would exhibit valuable investment opportunities within the background of acquisition activities. In our study, a firm's cash flow level reflects management ability to run the firm which is crucial to the quality of the targets acquired.

We find that, irrespective of the quality of the targets acquired, bidders with low cash flow perform poorly in the long-run following the acquisitions. This evidence cannot be explained by the free cash flow hypothesis, but is supportive to our viewpoint that cash flow can reflect the management ability to run the firm. Moreover, a number of bidders with low cash flow become bankruptcy or get acquired by other firms. This finding is also consistent with the study of Mitchell and Lehn (1990) which document that firms making bad acquisitions subsequently become takeover targets. Rhodes-Kropf and Robinson (2008) show that firms with similar valuations combine in mergers and acquisitions. They assert that there is a like-buys-like pattern

in mergers which pairs together firms with similar characteristics: higher quality firms choose to combine with higher quality partners, while lower quality firms choose to search for lower quality partners. Definitely, the findings in this study are consistent with their argument, which confirm again that cash flow contains significant information about managerial ability.

The rest of the paper is organized as follows. Section II reports the data collection process and defines the cash flow measure. Section III presents the empirical results. Conclusion is drawn in section IV.

II. Data

We collect the acquisition data from the Securities Data Company's (SDC) U.S. Mergers and Acquisitions Database, financial data from the COMPUSTAT dataset, and stock data from the CRSP database. The sample selection starts from the Mergers and Acquisitions database based on the following criteria: (1) The bidder is an American firm traded on NYSE, AMEX or the NASDAQ; (2) The deal value of the acquisition equals to or greater than \$ 1 million; (3) The takeover announcement date lies between 1990 and 2006. The requirements yield 29,187 takeover bids. We then require that the takeover bids have financial data to calculate bidder's cash flow level and long-term return. This selection criterion finally yields a sample of 9,172 takeover bids undertaken by 3,115 individual bidders for this study.

(Insert Table 1 here)

The distribution of the sample is reported in Table 1. For a comparison, the distribution of the total bids (according to our selection criteria) announced in the same period is also reported. Panel A reports the sample distribution by year. As shown, our sample accounts to 31.4% of the total bids announced in the period, and its yearly distribution is also quite consistent with that of the total bids. The large sample enables us to eliminate the selection bias problem and conduct different robustness tests necessary for our study.

Panel B reports some salient descriptive statistics of the sample. Roughly 83% of acquisitions in the sample involve non-public acquisitions. That is, the targets acquired are either private firms or subsidiaries of public firms. Prior literatures examining takeovers mainly focus on public targets. Yet, our sample shows that transactions of non-public targets are in fact more representative of the nature of the takeover market. Since tender offer does not exist in transactions of non-public firms, tender offer only accounts to 3.1% in the sample. As to the payment method, roughly 28% of the transactions in the sample is conducted with pure cash offer, 36% is non-pure cash offer (mixture offer or pure stock offer), and for the left 36%, SDC does not report the payment method. In the sample, 65% of the transactions are diversifying acquisitions. Here, a transaction is defined as diversifying acquisition if the four-digit SIC code

of the primary business line of the bidder is different as that of the target. The SIC codes are collected from SDC M&A dataset. Lastly, 25% of the bids are undertaken in merger waves.⁵

Panel B also reports the distribution of deal characteristics for the total bids announced in the same period. The comparison shows that the distribution of our sample is quite similar to that of the total bids. For each type of deal characteristics, our sample accounts to about 30% of the total SDC bids. This shows that there is no selection bias in our sample.

To conduct this study, we need a measure about firm's cash flow level. Existing studies provide several measures to calculate a firm's cash flow level (e.g., Dechow (1994), Bowen et al. (1986)). Based on these studies, we here construct the cash flow measure as the cash from operations deducting investment and dividend. Specifically, the cash flow measure FCF is constructed in the following way:

$$FCF = (Net\ income + depreciation\ and\ amortization - \Delta\ accounts\ receivables - \Delta\ inventory - \Delta\ non-cash\ current\ assets + \Delta\ accounts\ payable + \Delta\ income\ tax\ payable + \Delta\ other\ current\ liabilities - proceeds\ from\ the\ sale\ of\ property,\ plant\ and\ equipment - \Delta\ capital\ expenditures - preferred\ dividend - common\ dividend) / total\ asset \quad (1)$$

In model (1), all of the variables are calculated with the data in year t-1, where year t is the year of takeover announcement. Δ is the change in each variable from year t-2 to year t-1.

(Insert Table 2 here)

Table 2 reports the bidder characteristics in the year prior to the bids. We divide the sample into five quintiles based on bidder's cash flow level, starting from quintile Q1 with the lowest cash flow level to quintile Q5 with the highest cash flow level.⁶ As shown, bidders with low cash flow in quintile Q1 have smaller firm size, lower market-to-book ratio, and lower Tobin's Q than bidders with high cash flow in quintile Q5.

Bidders with low cash flow hold more cash. For instance, the cash holding, on average, is 0.282 for bidders in quintile Q1, which is significantly higher (T- statistic= 18.3) than that of 0.169 for bidders in quintile Q5.⁷ This evidence is consistent with the study of Bates, Kahle and

⁵ The identification of merger wave follows Mitchell and Mulherin (1996) and Harford (2005) in which each merger wave lasts 24-month period. We first collect all takeover bids with a transaction value of at least \$ 1 million recorded by SDC M&A dataset in the period 1990-2006. We then calculate the number of all takeover bids in each month for each industry based on their two-digit SIC code recorded by SDC dataset, and get the 24-month period with the highest concentration of takeover bids in each industry. A 24-month period is coded as merger wave if the number of takeover bids within it exceeds 95% of the bids of highest 24-month concentration in its industry.

⁶ We also divide the sample into five quintiles each year according to the cash flow level of the bidder and then combine the sub-samples together and get quite similar main results.

⁷ We actually conduct a series of tests about the association between cash holdings and cash flow. All of the robustness tests show that there is a negative association between them after year 1980. Results for these tests are not reported but available upon requests.

Stulz (2009) which document that firms hold more cash when their cash flow becomes riskier. Riddick and Whited (2009) also find a negative association between cash saving and cash flow. They argue that firms lower cash reserves to invest after receiving positive cash flow shocks.

Though holding more cash, the financial position for bidders with low cash flow is not as strong as that for bidders with high cash flow. As shown, the average debt level is 0.498 for bidders with low cash flow in quintile Q1, which is significantly higher (T-statistic=14.51) than that of 0.4 for bidders with high cash flow in quintile Q5. The result is very similar if we check the net debt position by excluding the cash holding from the total liability.

III. Empirical Results

A. Target Quality

Morck, Shleifer and Vishny (1990) assert that bad managers might conduct bad acquisitions due to their poor ability. Empirically, they show that investors respond negatively to acquisitions by firms whose managers performed poorly before the acquisitions. In our view, cash flow to a large extent reflects the managerial ability to run the firm. Therefore, we predict that targets acquired by firms with low cash flow have lower quality than those acquired by firms with high cash flow.

To check the quality of the targets, we examine target's operating profitability and financial leverage. Target operating performance, ROA, is obtained as target operating income before depreciation normalized by total asset at the end of the year prior to the takeover announcement. Target leverage is obtained as total liability divided by total asset at the end of the year prior to the takeover announcement. Financial data for public targets are collected from the COMPUSTAT database and that of private targets from the SDC database. A majority of our sample is private targets. Due to data missing for private targets, we eventually get 2,130 bids with complete target data.

We also examine the bid price received by the targets in the transactions. Following prior literature (e.g., Rau and Vermaelen (1998), Louis (2004)), bid premium for public targets is obtained as the proportional change of the offer price relative to the target stock price of four weeks prior to the takeover announcement. However, there is no stock price reference for private firms. Damodaran (2002) notes that valuation multiple is a common approach used by investment bankers and appraisers in takeover practice. He finds that almost 90% of equity research valuations and 50% of acquisition valuations use some combination of multiples and comparable companies. Therefore, we calculate the valuation multiple- the P/E ratio- received by the private targets in the transactions. Specifically, P/E ratio is obtained as the transaction value divided by the product of target earnings before interest and tax (EBIT) in the year before the takeover announcement and the percentage of target shares acquired by the bidder in the transaction. Data to calculate the P/E ratio is collected from the SDC M&A database. Again, due to data missing, we get the valuation multiple for 678 private targets.

(Insert Table 3 here)

Table 3 reports the target and deal characteristics. In general, the target ROA increases while leverage decreases monotonically with the cash flow level of the bidder. For example, the targets acquired by bidders with low cash flow in quintile Q1 have a median ROA of 1.8% and leverage of 58.4%, while those acquired by bidders with high cash flow in quintile Q5 have a median ROA of 4.7% and leverage 53.5%. Clearly, the targets acquired by bidders with low cash flow have lower quality than those acquired by bidders with high cash flow, which is consistent with our prediction.

As to the bid premium for public targets, it increases monotonically with the cash flow level of the bidder. Public targets acquired by bidders with the lowest cash flow in quintile Q1 get a median bid premium of 24.6%, while those acquired by bidders with the highest cash flow in quintile Q5 get a median premium of 35.9%. The difference between them is highly significant with a Z-statistic of -3.82. As to the valuation multiple for private targets, the median bid price equals 5.93 times of the target's EBIT paid by bidders with the lowest cash flow in quintile Q1, which is significantly lower (Z-statistic = -2.42) than the 8.39 times paid by bidders with the highest cash flow in quintile Q5. Apparently, targets acquired by firms with high cash flow receive a higher bid price. However, it is hard to conclude that the bidders overpay, given that these targets have higher quality.

Table 3 also shows that bidders with high cash flow conduct the transactions with more cash offer and the form of tender offer. There are two possible explanations. One is that bidders with high cash flow are financially stronger and thus they can afford the transactions with cash. Another one is that bidders with high cash flow may pay the targets with cash to preempt potential competitive bidders. Fishman's (1989) preemptive model argues for cash acquisition when the acquirer has a high valuation of the target.

In general, the targets acquired by firms with low cash flow have lower quality than those acquired by firms with high cash flow. Alti (2003) asserts that cash flow level contains valuable information about a firm's investment opportunities. Consistent with his argument, our findings show that firms with high cash flow indeed exhibit better investment opportunities. Such phenomenon may be driven by two factors. One is that managers in bidders with low cash flow can only seek bad targets. Another is that targets usually combine with bidders stronger than their own, and thus high-quality targets reject to combine with bidders whose cash-generating ability is low. In either case, it confirms our viewpoint that cash flow can reflect management ability to run the firm. Rhodes-Kropf and Robinson (2008) assert that there is a like-buys-like mode in mergers: higher quality firms choose to combine with higher quality partners, while lower quality firms choose to search for lower quality partners. The evidence reported here, apparently, is consistent with such argument.

B. Post-bid Stock Performance

We next examine bidder's long-run stock performance in the three years following the acquisitions. We predict that due to the poor ability of the managers, firms with low cash flow may perform badly following the acquisitions. This is especially so, given that the targets acquired by these bidders have low quality.

Following Lyon, et al. (1999) and Bouwman et al. (2009), we construct a reference portfolio as benchmark to calculate the bidder's long-term abnormal stock return. Detailed discussion is reported in Appendix A for the procedure of reference portfolio construction and calculation of bidder's long-term abnormal return. As prior literature documents that the long-term abnormal stock return is highly sensitive to the choice of benchmark, in the robustness tests in section III.F, we also adopt the *size- and market-to-book* control firm approach to calculate bidder abnormal returns and get similar results.

(Insert Table 4)

Table 4 reports the long-term abnormal stock return for the five quintiles of bidders sorted by their cash flow level. On average, bidders with the lowest cash flow level in quintile Q1 suffer a significant loss of 16.7%, while those with the highest cash flow level in quintile Q5 get a positive return of 2.2%. The difference between them is highly significant with a T-value of -3.13. Apparently, firms with low cash flow perform much worse than those with high cash flow following the acquisitions, which is consistent with our prediction.

We also divide the sample according to some factors that may affect bidder's long-term abnormal return, including target listing status, payment method, acquisition form, bidder size, deal size, bidder market-to-book ratio, whether the takeover is a diversifying transaction, and whether the takeover is undertaken in a merger wave. As shown, for nearly all of the robustness tests, bidders with low cash flow in quintile Q1 get significantly negative long-term abnormal returns while those with high cash flow in quintile Q5 get normal returns following the acquisitions. In particular, our results show that the poor long-term stock performance, no matter for glamour bidders documented by Rau and Vermaelen (1998) or for bidders clustered in merger waves by Rosen (2006) and Bouwman et al. (2009), are mainly driven by those bidders with low cash flow level.

We next conduct the multiple regression of bidder long-term abnormal return on its cash flow level. Considering that the association may be not exactly linear, we conduct the regression with the following model:

$$POSTRETURN = a_0 + a_1*Q2 + a_2*Q3 + a_3*Q4 + a_4*Q5 + b_1*PRETURN + b_2*Control\ Variable \quad (2)$$

Where *POSTRETURN* is bidder's post-bid long-term abnormal stock return; *Q2*, *Q3*, *Q4* and *Q5* are dummy variables that equal one for the corresponding quintile of cash flow level and zero otherwise; *PRETURN* is bidder pre-bid raw stock return from 365 days until 28 days prior to the date of takeover announcement; *Control Variable* include bidder size, bidder market-to-

book ratio, deal size, payment method, acquisition form, target listing status, toehold of the bidder, accounting processing method, diversifying acquisition, merger wave, year and industry dummy.

The intercept a_0 from model (2), which is independent of bidder and deal characteristics, measures the post-bid long-term abnormal stock return for bidders with the lowest cash flow level. The coefficient a_1, a_2, a_3 and a_4 capture the additional effect of cash flow on bidder's long-term abnormal return.

(Insert Table 5 here)

Table 5 presents the regression results. To save space, we report only results of the intercept and coefficients of Q2, Q3, Q4, Q5 and *PRETURN*. Look at first the results of the total sample. *PRETURN* is significantly negatively related to the post-bid abnormal return with an estimated coefficient of -0.47 (T statistic=7.49). This is consistent with prior literature which document that there is a price reversal at horizon of around three to five years (e.g., DeBondt and Thaler (1985, 1987), Chopra et al. (1992)).

After controlling for the bidder and deal characteristics, the estimated intercept -0.161 is significantly different from zero with a T-value of -2.67. This means that bidders in the quintile with the lowest cash flow get an abnormal return of -16.1% in the three years following the acquisitions. The estimated coefficients of Q2, Q3, Q4 and Q5 are 0.089, 0.103, 0.185 and 0.230 respectively, all statistically significant. These results indicate that bidders in these quintiles get an abnormal return of -7.2% (-0.161+0.089), -5.8% (-0.161+0.103), 2.4% (-0.161+0.185), and 6.9% (-0.161+0.230) respectively in the three years following the acquisitions. These evidences show clearly that bidders with low cash flow perform poorly in the long-run following the acquisitions while those with high cash flow perform much better.

The regression results are quite similar for the sample divisions. Except for sub-samples of tender offer and value firms G1, the estimated intercepts are significantly negative in all regressions. On the other hand, estimated coefficient of dummy variable Q5, the quintile of bidders with highest cash flow, is significantly positive in nearly all of the regressions.

(Insert Figure 1 here)

To get a clear picture of the association of cash flow and bidder post-bid abnormal return, we draw a graphical form for the five quintiles of bidders about their accumulation of the post-bid abnormal returns with a period of 36 months. As shown in Figure 1, there is a decreasing trend of abnormal return with the time for bidders with low cash flow in quintile Q1 and Q2. In contrast, such trend does not exist for bidders with high cash flow. In addition, the figure also shows clearly that the abnormal return is not significantly different for bidders in quintile Q3, Q4, and Q5. This indicates that once a firm's cash flow reaches a certain level, the positive effect disappears of cash flow on post-bid performance, indicating that the association between them is not quite linear.

Overall, consistent with our prediction, bidders with low cash flow significantly underperform their control firms following the acquisitions while such underperformance does not exist for bidders with high cash flow.

C. Post-bid Operating Performance

Next, we examine bidder's long-term abnormal operating performance following the acquisitions. We use three measures to examine operating performance. The first measure is return on total assets, ROA. Following Bouwman et al. (2009), ROA is defined as operating income before depreciation normalized by average total assets. Such a definition can eliminate the impact of payment method and accounting method on operating performance as highlighted by Healy et al. (1992). The second measure is operating cash flow return on assets, OCF. Following Healy et al. (1992) and Harford (1999), OCF is obtained as operating cash flow normalized by average total assets. The last measure is bidder's financial status, Leverage, obtained as total liability normalized by total asset.

We adopt two approaches to calculate bidder's abnormal operating performance. The first approach is industry-adjusted abnormal performance, obtained as bidder's operation performance deducting the median performance of the other firms in its industry with the same two-digit SIC code. This approach does not reduce the sample size and thus enable us to have a general picture of bidder's abnormal operating performance.

We then follow the spirit of Barber and Lyon (1996) and adopt the control firm approach to calculate bidder's abnormal operating performance. To be selected as a control firm, the firm should not advance any takeover in the eight years (-4, +4) around the sample firm's takeover announcement. At the end of the year prior to the takeover announcement, the firm should have the same two-digit SIC code with the sample firm, its total asset should be between 70% and 130% of the sample firm, and its cash flow level should between 70% and 130% of the sample firm. The criteria leave us with a sample of 2,026 bids.

Following prior literatures (e.g., Healy et al. (1992), Harford (1999, 2005)), we use the following regression model to estimate the abnormal change of bidder's post-bid operating performance:

$$POSTVAL = b_0 + b_1 * Q2 + b_2 * Q3 + b_3 * Q4 + b_4 * Q5 + c * PREVAL \quad (3)$$

Where *POSTVAL* is bidder's average industry-adjusted or control firm-adjusted operating performance within three years following the acquisition (year +1 through +3); *Q2*, *Q3*, *Q4* and *Q5* are all dummy variables that equal one for their corresponding quintile of cash flow level and zero otherwise; *PREVAL* is bidder's average industry-adjusted or control firm-adjusted operating performance within three years prior to the acquisition (year -3 through -1).

The intercept b_0 in model (3) measures the abnormal change of post-bid operating performance for bidders with the lowest cash flow level. The coefficient b_1 , b_2 , b_3 and b_4

capture the additional effect of cash flow on abnormal change of post-bid operating performance. The slope coefficient c captures any correlation in operating performance between the pre- and post-bid years.

(Insert Table 6 here)

Table 6 presents the regression results. Panel A reports the industry-adjusted operating performance. Look at the regression results for ROA and OCF first. For both regressions, the pre-bid performance is significantly positively related to post-bid performance, indicating that industry-adjusted operating performance tends to persist over time. The intercepts of the regressions are significantly negative, indicating that the operating performance of bidders with lowest cash flow decline abnormally following the acquisitions. Estimated coefficients of dummy variables $Q2$, $Q3$, $Q4$ and $Q5$ are significantly positive, indicating a better post-bid performance for firms with high cash flow. For example, in the regression of bidder ROA, the intercept is -0.015 with a T-value of -2.77. This indicates that bidders with lowest cash flow experience a per-year abnormal decline of 1.5% in their return on asset following the acquisitions. The estimated coefficient of dummy variable $Q5$ is 0.052 with a T-value of 6.87, indicating that bidders with highest cash flow experience an abnormal increase of 3.7% (-0.015+0.052) each year in their return on asset following the acquisitions.

Then look at the regression result for financial leverage. The intercept 0.054 is significantly positive with a T-value of 19.54. This indicates a per-year abnormal increase of 5.4% of financial leverage for bidders with low cash flow following the acquisitions. The estimated coefficients of dummy variables $Q2$, $Q3$, $Q4$ and $Q5$ are all significantly negative, indicating that the degree of abnormal leverage increase is less for bidders with high cash flow. For instance, the estimated coefficient of dummy variable $Q5$ is -0.053 with a T-value of -10.65, indicating that bidders with highest cash flow experience a trivial abnormal increase of 0.1% (0.054-0.053) each year in their financial leverage following the acquisitions.

Panel B reports the control firm-adjusted operating performance. Similarly, it also shows that operating performance declines abnormally following the acquisitions for bidders with low cash flow while such abnormal decline does not exist for bidders with high cash flow.

D. Post-bid Trading Status

The deterioration of operating performance, especially the sharp increase of financial leverage, challenges the going-concern ability of bidders with low cash flow. Mitchell and Lehn (1990) find that firms advancing acquisitions that destroy firm value subsequently become the targets of other firms in the takeover market. As a further test, we therefore examine the bidder's trading status at the end of the third year following the takeover announcement.

The trading status is collected from CRSP database which reports a firm's delisting reason and delisting time (last trading day). The delisting reasons include acquired by other firms, insufficient (or non-compliance with rules of) float or assets, bankruptcy, declared insolvency,

delinquent in filing, non-payment of fees, price falling below acceptable level, or not meeting the exchange's financial guide lines for continued listing. To examine the association of bidder's trading status and its cash flow level, we conduct separately three sets of regressions with the following model:

$$\begin{aligned} \text{Delisted, Bankruptcy, Acquired} = & c_0 + c_1*Q2 + c_2*Q3 + c_3*Q4 + c_4*Q5 \\ & + d * \text{Control Variable} \end{aligned} \quad (4)$$

Where the three separate dependent variable equals one if the bidder is delisted or become bankruptcy or get acquired by other firms respectively within three years following the takeover attempts and zero otherwise; again, $Q2$, $Q3$, $Q4$ and $Q5$ are all dummy variables that equal one for their corresponding quintile of cash flow level and zero otherwise; *Control Variable* include bidder size, market-to-book ratio, leverage, deal size, year and industry dummy.

The intercept c_0 in model (4) measures the total delisting, bankruptcy, and acquisition ratio of bidders with lowest cash flow level. The coefficient c_1 , c_2 , c_3 and c_4 capture the additional effect of cash flow on trading status.

(Insert Table 7 here)

Table 7 presents the results. Panel A reports the delisting ratio for the 3,115 individual bidders. The bidders are sorted with the free cash flow level when advancing the first takeover attempt. Robustness test get similar result if the bidders are sorted with their cash flow level when they advance the last takeover attempt. Apparently, the delisting ratio and bankruptcy ratio are significantly higher for bidders with low cash flow level. For instance, totally 15% of bidders with low cash flow in quintile Q1 are delisted, 6.4% are delisted for bankruptcy and 8.5% for being acquired by other firms. In comparison, only 9.4% of bidders with high cash flow in quintile Q5 are delisted, 1.7% is delisted for bankruptcy and 7.5% for acquisition. Strikingly, the bankruptcy ratio of bidders with the least cash flow level is as high as nearly four times of that of bidders with the highest cash flow level.

Panel B reports the multiple regression results of trading status on cash flow. The intercepts of the three regressions are all significantly positive, indicating that a significant number of bidders with low cash flow level are delisted, become bankruptcy, or acquired by other firms within three years following the acquisitions. Estimated coefficients of dummy variable Q2, Q3, Q4 and Q5 are generally negative and statistically significant in the total delisted and bankruptcy regressions. These results indicate a better status for bidders with high cash flow following the acquisitions.

In addition, bidder's leverage is significantly positively related to the bankruptcy probability with an estimated coefficient of 0.028 and a T-value of 2.34, but significantly negatively related to acquisition probability with an estimated coefficient of -0.061 and a T-value of -3.26. These

results indicate that bidders with high leverage are more likely to become bankruptcy following the acquisitions while those with low leverage are more likely to become takeover targets.

In sum, the results in table 7 show that a significant number of bidders with low cash flow become bankruptcy or get acquired by other firms. In contrast, there is a better position for bidders with high cash flow following the acquisitions. These evidences are consistent with the study of Mitchell and Lehn (1990) which document that firms making bad acquisitions subsequently become takeover targets.

E. Distinguishing the Effect of Target Quality and Cash Flow Level

Till now, we document that the targets acquired by firms with low cash flow have low quality. Bidders with low cash flow also perform badly in the long-term following the acquisitions. In this section, we distinguish whether such post-bid poor performance is driven by the bad acquisitions or by the poor ability of the managers to run the firm. If the poor performance is driven by the poor ability of the managers, bidders with low cash flow would perform badly following the acquisitions, no matter the targets acquired is high quality or not. Otherwise, if the poor performance is driven by the bad acquisitions, bidders with low cash flow would perform badly following the acquisitions of low-quality targets but perform much better following the acquisitions of high-quality targets.

Targets acquired by firms with high cash flow have high quality. Bidders with high cash flow also perform well following the acquisitions. Such good performance may be driven by the interplay of two factors. One is the strong ability of the bidder managers to run the firm, and another is the high quality of the targets acquired. Good managers can seek good targets in the acquisitions and also are capable to manage the combined entity well, resulting in good performance following the acquisitions. However, good managers also may be infected by hubris, as argued by Roll (1986). If they overestimate their ability and acquire low-quality targets, firms with high cash flow may perform badly following the acquisitions.

To distinguish the effect of target quality and manager ability on bidder performance, we split the sample into two groups according to the median leverage or ROA of the targets. We then sort each group to five quintiles based on bidder cash flow level. The sample is thus divided to ten groups for which we examine bidder post-bid long-term abnormal return.

(Insert Table 8 here)

Table 8 presents the results. Panel A reports the bidder abnormal return split by target leverage. On average, targets with low cash flow in quintile Q1 suffer a significant loss of 29.5% following the acquisitions of high-leverage targets. They also suffer a significant loss of 44.5% following the acquisitions of low-leverage targets. Clearly, irrespective of target leverage, bidders with low cash flow significantly underperform the control firms following the acquisitions. These evidences show that the poor ability of managers is the major factor that causes the post-bid bad performance for bidders with low cash flow.

Target leverage has a significant effect on the abnormal return of bidders with high cash flow. On average, bidders with the highest cash flow in quintile Q5 suffer a significant loss of 11.6% following the acquisitions of targets with high leverage. Conversely, they get a significant positive return of 13.3% following the acquisitions of targets with low leverage. The difference between them is highly significant with a T-value of -2.71. These results confirm our prediction that capable managers can create value for the shareholders by acquiring high-quality targets. However, if they overstate their ability and acquire low-quality targets, firm value will be destroyed.⁸

Panel B reports the bidder long-term abnormal stock return split by target ROA. Again, irrespective of target ROA, bidders with low cash flow in quintile Q1 perform poorly following the acquisitions.

Next, we investigate the effect of target leverage on bidder operating performance following the acquisitions. In model (3), we introduce a dummy variable *High Leverage* which equals one if the target leverage is above the median level (0.52) of the sample and zero otherwise. The dummy variable and its interaction with Q2, Q3, Q4 and Q5 would tell us the effect of target leverage on bidder operating performance.

(Insert Table 9 here)

Table 9 reports the results. As shown, in the regression of bidder *ROA*, the intercept is -0.014 which is significantly negative with a T-value of -1.84, and the dummy variable *High Leverage* is positive but statistically not significant. These results indicate that, irrespective of target leverage, the post-bid operating performance decreases abnormally for bidders with low cash flow. In the regression of bidder *Leverage*, the intercept is 0.040 which is significantly positive with a T-value of 3.45, and the dummy variable *High Leverage* is significantly positive with an estimated coefficient of 0.032 and a T-value of 2.03. These results indicate that bidders with low cash flow experience an abnormal increase of 4% and 7.2% (0.040+0.032) per-year in their financial leverage respectively following the acquisition of low-leverage and high-leverage targets.⁹ Apparently, bidders with low cash flow experience a sharp increase in financial leverage following the acquisitions.

⁸ The median leverage is 0.52 for the 2,130 targets in our sample. Considering that the split is arbitrary based on the median value, we also divide the sample according to other value of target leverage. For example, we define good (bad) acquisition as acquiring a target with leverage below (above) 0.4, 0.5, and 0.6 respectively. For all of the splits, we find that bidders with high cash flow perform worse following the acquisitions of high-leverage targets than acquisitions of low-leverage targets. In robustness tests, we divide the sample according to target listing status, merger wave and diversifying acquisition, and conduct the examination within the sub-samples. We also conduct the analysis with the bidder long-term abnormal return obtained with size- and market-to-book control firms as benchmark. The results generally hold for all of the tests.

⁹ We check the non-adjusted financial leverage of bidders with the lowest cash flow (quintile Q1) from the year immediately before the takeover announcement to the third year following the acquisitions. We find that, for those acquiring low-leverage targets, their average (median) financial leverage increases from 0.442 (0.379)

Bidders with high cash flow perform well following the acquisitions of low-leverage targets. For instance, in the regression of bidder *ROA*, the dummy variable Q5 is significantly positive with an estimated coefficient of 0.084 and a T-value of 4.54, indicating an abnormal increase of 7% $(-0.014+0.084)$ per-year in return on assets following the acquisitions of low-leverage targets. In the regression of bidder *Leverage*, the dummy variable Q5 is significantly negative with an estimated coefficient of -0.034 and a T-value of -2.41, indicating a slightly abnormal increase of 0.6% $(0.040-0.034)$ per-year in financial leverage following the acquisitions of low-leverage targets. These results show an improvement in operating performance for bidders with high cash flow following the acquisitions of low-leverage targets.

Bidders with high cash flow perform relatively worse following the acquisitions, if they acquire high-leverage targets. For instance, in the regression of bidder *ROA*, the interaction of dummy variable *High Leverage* and Q5 is significantly negative with an estimated coefficient of -0.043 and a T-value of -1.77. In the regression of bidder *OCF*, the interaction of dummy variable *High Leverage* and Q4 is also significantly negative with an estimated coefficient of -0.018 and a T-value of -1.73. These results show that bidders with high cash flow do not perform as well following the acquisitions of high-leverage targets. Moreover, their financial leverage experiences an abnormal increase of 3.8% $(0.040-0.034+0.032)$ per-year following the acquisitions, as shown in the regression of bidder *Leverage*.¹⁰

Taken as a whole, the results in this section show that no matter acquiring high quality or low-quality targets, bidders with low cash flow perform poorly following the acquisitions. These evidences indicate that the poor ability of the management team is a more determinant factor that causes the bad performance for bidders with low cash flow following the acquisitions. For bidders with high cash flow, they significantly outperform the control firms following the acquisitions of high quality targets. Yet, if the managers overstate their ability and acquire bad targets, bidders with high cash flow perform poorly following the acquisitions.

F. Robustness Tests

We conduct several robustness tests for bidder's long-term abnormal return following the acquisitions. (1) We delete bidders that are delisted within the three years following the acquisitions. (2) We delete bidders in the financial industry. (3) We delete the overlapping observations. Following Loughran and Vijh (1997), if a takeover occurs within three years of a

before the acquisitions to 0.574 (0.521) following the acquisitions. For those acquiring high-leverage target, their average (median) financial leverage increases from 0.558 (0.547) before the acquisitions to 0.712 (0.672) following the acquisitions.

¹⁰ We check the non-adjusted financial leverage of bidders with the highest cash flow (quintile Q5) from the year immediately before the takeover announcement to the third year following the acquisitions. Their average (median) financial leverage increases from 0.429 (0.414) before the acquisitions to 0.640 (0.517) following the acquisitions of high-leverage targets. In comparison, if they acquire low-leverage targets, their average (median) financial leverage increases from 0.369 (0.344) before the acquisitions to 0.414 (0.410) following the acquisitions.

previously included acquisition by the same firm, the latter observation is excluded. (4) We construct a sample including only the first bid undertaken by the 3,115 individual bidders in the period 1990-2006. (5) We construct a *size-, industry- and market-to-book* control sample as benchmark to calculate the bidder's long-term abnormal stock return.¹¹

(Insert Table 10 here)

As shown in Table 10, for all of the robustness tests, bidders with low cash flow in quintile Q1 get significantly negative long-term abnormal returns while those with high cash flow in quintile Q5 get normal returns following the acquisitions. The difference of abnormal returns between the two quintiles is statistically significant.

IV. Conclusion

Stemming from Fazzari, Hubbard, and Petersen (1988), there is a two decades-long debate in the financial literature on how to interpret the very meaning of the empirical cash flow sensitivity of investment. According to a recent study by Alti (2003), detecting the exact information contained in cash flow is helpful to understand this issue. This study therefore investigates the informativeness of cash flow for investment spending by analyzing the impact of a firm's free cash flow level on its acquisition activity. We check whether and why bidders with high cash flow would exhibit better investment opportunities in the acquisition activities as asserted by Alti.

We argue that cash flow level reflects the management ability to run the firm which is central to the quality of the targets acquired in the acquisitions. Based on this argument, we find that bidders with low cash flow conduct bad acquisitions. The targets acquired by them have lower operating performance but higher leverage than those acquired by bidders with high cash flow. Following the acquisitions, Bidders with low cash flow significantly underperform their peer firms in the stock market. Their operating performance also declines abnormally, while their financial leverage increases sharply following the acquisitions. Finally, a significant number of these bidders become bankruptcy or acquired by other firms.

Further analysis shows that the post-bid poor performance for bidders with low cash flow is not just caused by the bad acquisitions. Actually, regardless of the quality of the target acquired, bidders with low cash flow experience a sharp increase of financial leverage, and their operating performance decline abnormally following the acquisitions. These evidences indicate that the poor performance is more likely to be driven by the poor ability of their managers to run the firm, which provides support to our argument.

The targets acquired by bidders with high cash flow, on the whole, have a high quality than those acquired by bidders with low cash flow. This evidence shows that firms with high cash flow level indeed exhibit more valuable investment opportunities, which is supportive to the

¹¹ See Appendix B for a detailed discussion of the construction of control firms and calculation of bidder's long-term abnormal return.

argument of Altı. Moreover, we find that bidders with high cash flow outperform the peer firms in the stock market following the acquisitions of low-leverage targets. Conversely, if they acquire high-leverage targets, they significantly underperform the control firms in the long-term.

Appendix A

The reference portfolio is constructed in the following procedure. In June of each year from 1990-2006, we calculate firm size defined as market valuation of equity. We rank all public firms in CRSP database on the basis of firm size, and sort them into 14 groups. Then, we calculate a firm's market-to-book ratio. For each the 14 groups, we further divide them into 5 groups according to the market-to-book ratio. We select the group as reference portfolio where the bidder's firm size and market-to-book ratio is located. The bidder long-term abnormal stock return AR_i is thus calculated as the long-term buy and hold return subtracting the long-term portfolio return:

$$AR_i = \prod_{t=1}^T (1 + R_{i,t}) - 1 - R_{portfolio} \quad (5)$$

Where $t = 1$ is the first trading month following the takeover announcement, $R_{i,t}$ is the return on stock i on month t , and T is the three-year investment horizon in months following the takeover announcement. $R_{portfolio}$ is the portfolio's three-year post-acquisition returns calculated as:

$$R_{portfolio} = \sum_{i=1}^n \frac{\left[\prod_{t=1}^T (1 + R_{i,t}) \right] - 1}{n} \quad (6)$$

Where $R_{i,t}$ is the monthly return of security i on month t , n is the number of securities in the portfolio traded on month $t=1$, month $t=1$ is the first trading month following the announcement date of takeover, and T is the three-year investment horizon in months following the takeover announcement.

Appendix B

We construct the *size-, industry- and market-to-book* control sample of non-bidding firms in the following procedure. To be selected as a control firm, the firm should not advance any takeover in the eight years (-4, +4) around the sample firm's takeover announcement. The firm should have the same two-digit SIC industry code with the sample firm. The firm's market-value

of total equity at the end of the month immediately preceding the takeover announcement should be between 80% and 120% of the sample firm, and its market-to-book ratio should be between 80% and 120% of the sample firm. This forms the base set of control firms. Then, we select from them the one with the closest market-value of total equity relative to the sample firm.

A bidder's long-term abnormal stock return is obtained as its three-year long-term stock return following the acquisition deducting that of the control firm during the same period. We adopt the buy-and-hold approach to calculate the long-term stock return for the bidder and the control firm. The buy-and-hold return, BHR_i , is calculated as:

$$BHR_i = \prod_{t=1}^T (1 + R_{i,t}) - 1 \quad (7)$$

Where day $t = 1$ is the first trading day following the announcement date of takeover, $R_{i,t}$ is the return on stock i on day t , and T is the three-year anniversary date of the announcement date, or the acquiring firm's CRSP delisting date, whichever is earlier.

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Table 1
Sample Distribution

This table presents the distribution of the sample used in this study which contains 9,172 mergers and acquisitions announced between 1990 and 2006. For a comparison, this table also presents the distribution of total 29,187 takeover bids from SDC database announced during the same period, which the bidder is an American firm traded on NYSE, AMEX or the NASDAQ and the deal value of the acquisition equals to or greater than \$ 1 million. Panel A presents the sample distribution by year. Panel B presents the sample distribution by target listing status, acquisition form, payment method, whether the transaction is a diversifying acquisition and whether it is undertaken in a merger wave.

Year	Sample	Total SDC Bids	Percentage
Panel A: Distribution by announcement year			
1990	249 [2.71%]	706 [2.42%]	35.3%
1991	248 [2.70%]	821 [2.81%]	30.2%
1992	314 [3.42%]	1,083 [3.71%]	29.0%
1993	425 [4.63%]	1,501 [5.14%]	28.3%
1994	513 [5.59%]	1,854 [6.35%]	27.7%
1995	585 [6.38%]	1,888 [6.47%]	31.0%
1996	678 [7.39%]	2,336 [8.00%]	29.0%
1997	827 [9.02%]	3,103 [10.63%]	26.7%
1998	794 [8.66%]	3,090 [10.57%]	25.7%
1999	610 [6.65%]	2,375 [8.14%]	25.7%
2000	530 [5.78%]	2,091 [7.16%]	25.4%
2001	453 [4.94%]	1,350 [4.63%]	33.6%
2002	488 [5.32%]	1,263 [4.33%]	38.6%
2003	525 [5.72%]	1,243 [4.26%]	42.2%
2004	624 [6.80%]	1,374 [4.71%]	45.4%
2005	639 [6.96%]	1,501 [5.14%]	42.6%
2006	670 [7.30%]	1,608 [5.51%]	41.7%
Total	9,172 [100%]	29,187 [100%]	31.4%
Panel B: Distribution by deal characteristics			
<i>Target Listing Status</i>			
Public	1,544 [16.8%]	5,914 [20.3%]	26.1%
Non-Public	7,628 [83.2%]	23,273 [79.7%]	32.8%
<i>Acquisition Form</i>			
Tender offer	278 [3.1%]	742 [2.5%]	37.5%
Merger	8,894 [96.9%]	28,445 [97.5%]	31.3%
<i>Payment Method</i>			
Pure Cash	2,550 [27.8%]	7,583 [26.0%]	33.4%
Non-Pure Cash	3,331 [36.3%]	12,051 [41.3%]	27.6%

Unknown	3,291 [35.9%]	9,553 [32.7%]	34.4%
<i>Diversifying Acquisition</i>			
Diversify	5,928 [64.6%]	20,380 [69.8%]	29.1%
Non-Diversify	3,244 [35.4%]	8,807 [30.2%]	36.8%
<i>Merger Wave</i>			
Wave	2,290 [24.5%]	8,115 [27.8%]	28.2%
Non-wave	6,882 [75.5%]	21,072 [72.2%]	32.7%

Table 2
Bidder Characteristics Sorting by Cash Flow

This table reports the bidder characteristics for 9,172 takeovers undertaken between 1990 and 2006. The sample is sorted to five quintiles based on bidder free cash flow level (FCF), starting from quintile Q1 with low cash flow to quintile Q5 with high cash flow. BMV is the market value of equity in the year prior to the takeover announcement. ASSET is the book value of total asset in the year prior to the takeover announcement. CASH is obtained as cash and short-term investment normalized by ASSET. FCF is obtained as the operating cash flow deducting investment and dividend, normalize by ASSET. MTB is bidder market-to-book ratio, obtained as BMV divided by the book value of equity. Q is obtained as the sum of BMV and total debt normalized by ASSET. LEVERAGE is the ratio of total debt to ASSET. NLEVERAGE is the net debt position obtained as the total debt deducting cash and short-term investment normalized by ASSET. DEAL SIZE is obtained as the transaction value of takeover divided by BMV. We report both the mean and median value (in bracket). T statistic and Z statistic are reported for the value comparison between quintile Q1 and Q5. *, **, *** indicates significance at the 10%, 5%, and 1% level.

	Q1 (Low FCF)	Q2	Q3	Q4	Q5 (High FCF)	T statistic/Z statistic (Q1-Q5)
BMV	1601 [284]	3178 [553]	2860 [606]	5237 [703]	7362 [821]	-13.02*** -19.5***
ASSET	3796 [256]	4704 [879]	3026 [780]	3204 [624]	3303 [515]	1.21 -12.5***
CASH	0.282 [0.178]	0.128 [0.056]	0.112 [0.050]	0.124 [0.058]	0.169 [0.112]	18.3*** 12.5***
FCF	-0.137 [-0.045]	0.041 [0.042]	0.079 [0.079]	0.114 [0.113]	0.188 [0.173]	-74.5*** -63.5***
MTB	2.80 [2.61]	2.53 [2.10]	2.66 [2.30]	3.10 [2.52]	3.93 [4.05]	-11.00*** -14.87***
Q	2.07 [1.43]	1.70 [1.39]	1.81 [1.53]	2.09 [1.76]	2.73 [2.18]	-8.44*** -18.49***
LEVERAGE	0.498 [0.483]	0.568 [0.606]	0.530 [0.550]	0.474 [0.486]	0.400 [0.376]	14.51*** 10.82***
NLEVERAGE	0.238 [0.362]	0.411 [0.511]	0.401 [0.473]	0.327 [0.383]	0.234 [0.265]	0.30 4.14***
DEAL SIZE	0.278 [0.078]	0.191 [0.063]	0.171 [0.059]	0.138 [0.050]	0.122 [0.040]	7.28*** 15.12***

Table 3
Target Quality and Deal Characteristics Sorting by Cash Flow

This table reports the target quality and deal characteristics for 9,172 takeovers undertaken between 1990 and 2006. The sample is sorted to five quintiles based on bidder free cash flow level (FCF), starting from quintile Q1 with low cash flow to quintile Q5 with high cash flow. Target ROA is obtained as target operating income before depreciation normalized by total asset at the end of the year prior to the takeover announcement. Target Leverage is obtained as total liability divided by total asset at the end of the year prior to the takeover announcement. For public targets, bid premium is calculated as the proportional change of the offer price relative to the target stock price of four weeks prior to the takeover announcement. For private targets, valuation multiple (P/E ratio) is calculated as transaction value normalized by the product of target earnings before interest and tax (EBIT) in the year before the takeover announcement and the percentage of target shares acquired by the bidder in the transaction. We report both the mean and median value (in bracket). T statistic and Z statistic are reported for the value comparison between quintile Q1 and Q5. *, **, *** indicates significance at the 10%, 5%, and 1% level.

	Q1 (Low FCF)	Q2	Q3	Q4	Q5 (High FCF)	T statistic/Z statistic (Q1-Q5)
Target ROA (N=1,945)	-0.097 [0.018]	0.022 [0.052]	0.028 [0.073]	0.017 [0.068]	-0.043 [0.047]	-1.93* -2.96***
Target Leverage (N=2,130)	0.740 [0.584]	0.631 [0.601]	0.688 [0.586]	0.564 [0.521]	0.644 [0.535]	2.07** 2.16**
Bid premium for public targets (N=1,315)	36.8% [24.6%]	39.5% [32.5%]	43.6% [32.5%]	47.4% [41.1%]	46.9% [35.9%]	-2.03** -3.82***
Valuation multiple (P/E ratio) for private targets (N=678)	6.95 [5.93]	9.36 [6.25]	9.36 [7.60]	9.05 [7.24]	10.43 [8.39]	-1.76* -2.42**
Percentage of public target	15.7%	16.2%	17.7%	17.9%	15.6%	0.14
Percentage of tender offer	2%	2.6%	3.8%	3.6%	3.2%	-2.23**
Percentage of pure cash offer	21.6%	25.2%	32.3%	30.5%	29.2%	-4.38***
Percentage of diversifying acquisition	61.4%	67.3%	66.8%	67.6%	61.7%	-0.43
Percentage of deals in merger waves	26.5%	25.2%	25.5%	23.5%	24.1%	1.47

Table 4
Bidder Post-bid Long-term Abnormal Return Sorting by Cash Flow

This table reports the bidder buy-and-hold abnormal return in the three years following the bid announcement for 9,172 takeovers undertaken between 1990 and 2006. The sample is sorted to five quintiles based on bidder free cash flow level (FCF), starting from quintile Q1 with low cash flow to quintile Q5 with high cash flow. The analysis is done according to the target listing status, payment method, acquisition form, bidder size (market value four weeks prior to takeover announcement), deal size (transaction value divided by bidder size), merger wave, diversifying acquisition, and bidder market-to-book ratio. For each quintile, we report both the mean and median value (in bracket). For the comparison of long-term return between quintile Q1 and Q5, T statistic and Z statistic are reported. *, **, *** indicates significance at the 10%, 5%, and 1% level.

	Q1 (Low FCF)	Q2	Q3	Q4	Q5 (High FCF)	T statistic/Z statistic (Q1-Q5)
Total Sample	-0.167*** [-0.163]	-0.130*** [-0.093]	-0.073 [-0.059]	-0.049 [-0.014]	0.022 [-0.025]	-3.13*** -4.49***
<i>Target Listing Status</i>						
Public	-0.154* [-0.106]	-0.161* [-0.145]	-0.274*** [-0.163]	-0.098 [-0.026]	0.014 [-0.008]	-1.91* -1.68*
Non-Public	-0.170*** [-0.221]	-0.124** [-0.088]	-0.030 [-0.078]	-0.039 [-0.031]	0.005 [-0.058]	-2.61*** -4.37***
<i>Payment Method</i>						
Unknown	-0.081* [-0.113]	-0.068 [-0.069]	0.022 [-0.018]	0.069 [0.040]	0.046 [0.024]	-1.84* 2.89***
Pure Cash	-0.078* [-0.162]	-0.098 [-0.070]	-0.089** [-0.026]	-0.075 [-0.078]	0.012 [-0.040]	-0.84 -1.79*
Non-Pure Cash	-0.334*** [-0.242]	-0.211*** [-0.143]	-0.181* [-0.185]	-0.144 [-0.031]	0.081 [-0.016]	-3.71*** -4.47***
<i>Acquisition Form</i>						
Merger	-0.172*** [-0.164]	-0.122** [-0.093]	-0.071 [-0.056]	-0.042 [-0.026]	0.016 [-0.030]	-3.03*** 4.40***
Tender Offer	0.028 [-0.048]	-0.408** [-0.138]	-0.129 [-0.103]	-0.205 [0.201]	0.224 [0.182]	-0.69 -0.78

<i>Bidder Size</i>						
Small (<=median)	-0.204*** [-0.226]	-0.064 [-0.104]	0.005 [-0.068]	-0.039 [-0.033]	-0.016 [-0.059]	-1.95* -3.29***
Large (>median)	-0.117*** [-0.098]	-0.195*** [-0.088]	-0.143** [-0.050]	-0.058 [0.018]	0.056 [0.000]	-2.52** -2.54**
<i>Deal Size</i>						
Small (<=median)	-0.183*** [-0.160]	-0.209*** [-0.123]	-0.157* [-0.068]	-0.150** [-0.027]	0.104* [-0.001]	-3.57*** -4.39***
Large (>median)	-0.174*** [-0.164]	-0.048 [-0.048]	0.035 [-0.037]	0.041 [-0.009]	-0.072 [-0.087]	-1.67* -1.93*
<i>Diversifying Acquisition</i>						
Diversifying	-0.169*** [-0.149]	-0.090** [-0.090]	-0.072** [-0.046]	0.014 [0.014]	-0.054 [-0.048]	-2.25** -2.74***
Non-diversifying	-0.176*** [-0.190]	-0.094* [-0.077]	-0.068 [-0.103]	-0.008 [-0.040]	0.088* [0.025]	-3.53*** -3.82***
<i>Merger Wave</i>						
Wave	-0.231*** [-0.204]	-0.197*** [-0.198]	-0.142*** [-0.151]	-0.018 [-0.049]	-0.079* [-0.078]	-3.13*** -3.43***
Non-wave	-0.138*** [-0.147]	-0.090 [-0.079]	0.046 [-0.019]	0.030 [0.022]	0.019 [-0.005]	-2.20** -2.66***
<i>Bidder market-to-book ratio</i>						
G1 (Value)	-0.085 [-0.055]	-0.074 [-0.063]	0.154 [-0.046]	-0.115 [-0.031]	0.141 [0.069]	-1.21 -1.73*
G2	-0.077 [-0.092]	-0.257* [-0.144]	-0.099 [-0.073]	0.099 [-0.051]	0.136 [0.001]	-1.93* -1.81*
G3	-0.256*** [-0.223]	-0.106 [-0.072]	-0.073 [-0.092]	0.049 [0.024]	-0.011 [-0.056]	-2.49** -2.60***
G4	-0.400** [-0.383]	-0.224** [-0.134]	-0.139 [-0.033]	0.124** [0.129]	0.023 [-0.021]	-4.04*** -4.37***
G5 (Glamour)	-0.329*** [-0.192]	-0.287*** [-0.200]	-0.143* [-0.113]	-0.134** [-0.109]	-0.069 [-0.036]	-3.17*** -3.65***

Table 5
Regressions of Bidder Long-term Abnormal Return on Cash Flow Level

This table presents the regression results of bidder long-term abnormal return on cash flow level for a sample of 9,172 takeovers announced between 1990 and 2006. Bidders are sorted to five quintiles based on their free cash flow level, starting from quintile Q1 with low cash flow to quintile Q5 with high cash flow. Q2, Q3, Q4, and Q5 are all dummy variables that equal one for their corresponding quintile of cash flow level and zero otherwise. *PRETURN* is bidder pre-bid raw stock return 365 days until 28 days prior to the date of takeover announcement. Results for control variables are not reported. T statistic is reported in bracket. *, **, *** indicates significance at the 10%, 5%, and 1% level.

	Intercept	Q2	Q3	Q4	Q5	<i>PRETURN</i>	Observation
Total Sample	-0.161*** [-2.67]	0.089* [1.76]	0.103** [2.05]	0.185*** [3.60]	0.230*** [4.39]	-0.47*** [7.49]	8,720
<i>Target Listing Status</i>							
Public	-0.227* [-1.85]	0.063 [0.63]	-0.071 [-0.71]	0.225* [1.69]	0.259* [1.83]	-0.61*** [7.78]	1,549
Non-public	-0.144*** [-4.19]	0.072 [1.55]	0.134*** [2.84]	0.171*** [3.61]	0.172*** [3.65]	-0.43*** [5.74]	7,131
<i>Payment Method</i>							
Unknown	-0.138* [-1.83]	0.003 [0.05]	0.096 [1.36]	0.151** [2.12]	0.132* [1.86]	-0.39*** [3.00]	3,155
Pure Cash	-0.172* [-1.75]	0.058 [0.76]	0.010 [0.13]	0.090 [1.23]	0.020 [0.86]	-0.48*** [6.63]	2,460
Non-Pure Cash	-0.274*** [-5.04]	0.140* [1.86]	0.144* [1.81]	0.255*** [3.25]	0.326*** [4.25]	-0.64*** [9.49]	3,103
<i>Acquisition Form</i>							
Merger	-0.134*** [-4.25]	0.081* [1.88]	0.100** [2.32]	0.174*** [4.01]	0.155*** [3.58]	-0.46*** [7.10]	8,436
Tender offer	0.017 [0.08]	-0.275 [-1.02]	-0.062 [-0.25]	0.138 [0.55]	0.357 [1.37]	-0.96*** [4.71]	283
<i>Bidder Size</i>							

Small	-0.189*** [-4.16]	0.131** [2.04]	0.153** [2.39]	0.216*** [3.33]	0.212*** [3.24]	-0.54*** [4.72]	4,405
Large	-0.173** [-2.29]	-0.011 [-0.20]	0.013 [0.24]	0.105** [2.06]	0.087* [1.68]	-0.39*** [9.07]	4,315
<i>Deal Size</i>							
Small	-0.178*** [-4.04]	0.091 [1.53]	0.072 [1.22]	0.195*** [3.31]	0.222*** [3.82]	-0.54*** [4.36]	4,149
Large	-0.113** [-2.42]	0.075 [1.16]	0.159** [2.47]	0.167** [2.54]	0.132** [2.01]	-0.36*** [7.08]	4,165
<i>Diversifying Acquisition</i>							
Diversifying	-0.130*** [-3.47]	0.074 [1.41]	0.092* [1.79]	0.182*** [3.56]	0.107** [2.05]	-0.42*** [4.78]	5,596
Non-diversifying	-0.136** [-2.44]	0.072 [0.99]	0.100 [1.31]	0.158** [2.07]	0.255*** [3.46]	-0.57*** [9.50]	3,111
<i>Merger Wave</i>							
Wave	-0.205*** [-3.70]	-0.090 [-1.13]	0.004 [0.05]	0.259*** [3.44]	0.134*** [2.63]	-0.41** [2.06]	2,381
Non-wave	-0.156*** [-4.39]	0.123** [2.46]	0.124** [2.50]	0.178*** [3.58]	0.203*** [4.04]	-0.49*** [11.28]	6,335
<i>Market-to-book ratio</i>							
G1 [Value]	-0.006 [-0.10]	-0.075 [-0.89]	0.010 [0.10]	-0.012 [-0.11]	0.162 [1.53]	-0.87*** [6.94]	1,753
G2	-0.022* [-1.86]	0.077 [0.92]	0.021 [0.24]	0.080 [0.85]	0.229** [2.16]	-0.68** [5.34]	1,754
G3	-0.212*** [-2.89]	0.148 [1.52]	0.188** [2.01]	0.314*** [3.30]	0.236** [2.35]	-0.67** [7.81]	1,729
G4	-0.392*** [-4.75]	0.286*** [2.59]	0.296*** [2.88]	0.518*** [5.20]	0.401*** [3.98]	-0.70*** [7.32]	1,726
G5 [Glamour]	-0.298*** [-3.71]	0.045 [0.37]	0.194* [1.65]	0.191* [1.95]	0.256*** [2.86]	-0.24** [2.06]	1,738

Figure 1
Average Post-bid Long-term Abnormal Stock Return

This figure shows the average bidder post-bid long-term abnormal stock returns for the 9,172 takeovers announced between 1990 and 2006. Bidders are sorted to five quintiles based on their free cash flow level, starting from quintile Q1 with the lowest cash flow to quintile Q5 with the highest cash flow. Return accumulation starts from the first month following the takeover and ends 36 months after the takeover announcement.

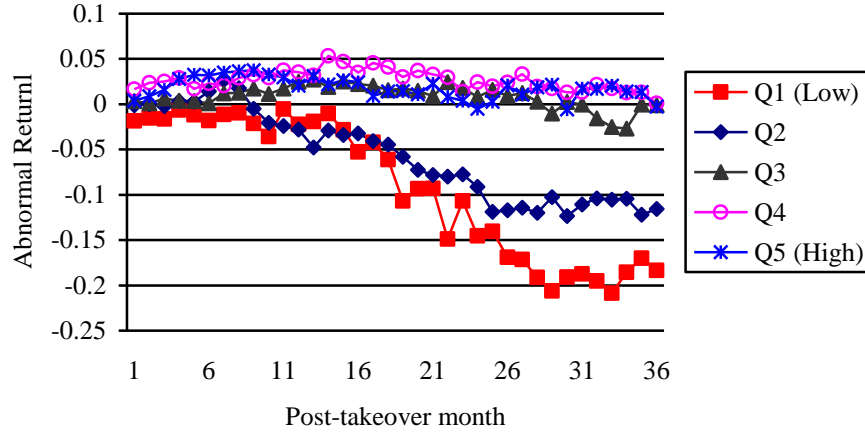


Table 6
Bidder Post-bid Long-term Abnormal Operating Performance

This table presents the regression results of bidder's average three-year post-bid operating performance on the average three-year pre-bid operating performance. Bidders are sorted to five quintiles based on their free cash flow level FCF, starting from quintile Q1 with low cash flow to quintile Q5 with high cash flow. Q2, Q3, Q4, and Q5 are all dummy variables that equal one for their corresponding quintile of cash flow level and zero otherwise. ROA is defined as operating income before depreciation normalized by average total assets. OCF is defined as operating cash flow normalized by average total asset. Leverage is obtained as total liability divided by total asset. In Panel A, operating performance is adjusted with the median value of the two-digit SIC industry performance. In Panel B, operating performance is adjusted with the two-digit SIC industry-, size- and FCF-matched control firm. T statistic is reported in bracket. *, **, *** indicates significance at the 10%, 5%, and 1% level.

	ROA	OCF	Leverage
Panel A: Industry-adjusted performance			
Intercept	-0.015*** [-2.77]	-0.047*** [-8.97]	0.054*** [19.54]
Q2	0.018** [2.47]	0.041*** [6.02]	-0.013*** [-2.63]
Q3	0.022*** [3.32]	0.045*** [6.51]	-0.022*** [-4.40]
Q4	0.040*** [5.43]	0.069*** [10.10]	-0.030*** [-6.17]
Q5	0.052*** [6.87]	0.081*** [11.54]	-0.053*** [-10.65]
Pre-bid performance	0.398*** [23.96]	0.260*** [25.44]	0.613*** [81.26]
Adj R-Squared	0.25	0.19	0.40
F Value	425***	228***	3380***
Observation	8,126	8,156	8,138
Panel B: Control firm-adjusted performance			
Intercept	-0.014 [-1.23]	-0.044** [-2.39]	0.012* [1.67]
Q2	0.020 [1.30]	0.035 [1.54]	0.003 [0.13]
Q3	0.037** [2.55]	0.032 [1.43]	0.002 [0.06]
Q4	0.026* [1.83]	0.051** [2.29]	-0.017 [-0.69]
Q5	0.048*** [3.19]	0.063*** [2.64]	-0.047** [-2.49]
Pre-bid performance	0.397*** [10.52]	0.311*** [7.32]	0.528*** [22.04]
Adj R-Squared	0.13	0.11	0.36
F Value	26***	13***	222***
Observation	2,026	1,653	2,002

Table 7
Bidder Trading Status Following the Takeovers

This table reports the trading status of 3,115 individual bidders at the end of the third year following the takeover announcement. The bidders are sorted to five quintiles based on their free cash flow level FCF, starting from quintile Q1 with low cash flow to quintile Q5 with high cash flow. Trading status is obtained from the CRSP database. A firm may be delisted from the current stock exchange for reasons like being acquired by other firms, insufficient (or non-compliance with rules of) float or assets, bankruptcy, declared insolvency, delinquent in filing, non-payment of fees, price falling below acceptable level, or not meeting the exchange's financial guide lines for continued listing. Panel A reports the percentage of the bidders that are delisted, bankruptcy or acquired by other firms. Panel B reports the multiple regression results of trading status on bidder free cash flow level and other variables. Q2, Q3, Q4, and Q5 are all dummy variables that equal one for their corresponding quintile of cash flow level and zero otherwise. T statistic is reported in bracket. *, **, *** indicates significance at the 10%, 5%, and 1% level.

	Delisted	Bankruptcy	Acquired
Panel A: Sorting results			
Q1 (Low FCF)	15.0%	6.4%	8.5%
Q2	13.6%	3.8%	9.7%
Q3	10.0%	2.0%	7.9%
Q4	7.9%	1.6%	6.3%
Q5 (High FCF)	9.4%	1.7%	7.5%
T statistic (Q1-Q5)	3.69***	5.04***	1.32
Panel B: Multiple Regressions			
Intercept	0.153*** [8.26]	0.058*** [5.43]	0.085*** [9.91]
Q2	0.015 [1.48]	-0.017* [-1.84]	0.015 [1.63]
Q3	-0.030*** [-2.85]	-0.033*** [-4.73]	-0.004 [-0.43]
Q4	-0.071*** [-3.28]	-0.042*** [-5.09]	-0.019 [-1.20]
Q5	-0.056*** [-3.09]	-0.035*** [-3.87]	-0.021 [-1.39]
MTB	0.001* [1.83]	0.002* [1.80]	0.003* [1.91]
LEVERAGE	-0.033 [-1.54]	0.028** [2.34]	-0.061*** [-3.26]
BMV/100000	-0.115*** [-2.92]	-0.035 [-1.63]	-0.078** [-2.33]
DEAL SIZE	0.006 [0.338]	0.007** [2.23]	-0.006 [-0.31]
Year & Industry Dummy	Yes	Yes	Yes
Adj R-Squared	0.06	0.06	0.05
F Value	8.93***	12.75***	3.90***
Observation	3,115	3,115	3,115

Table 8
Bidder Long-term Abnormal Stock Return Split by Target Quality

This table reports the bidder long-term post-bid abnormal stock return split by target quality. We report both the mean and median value (in bracket). Targets are first divided into two groups according their median leverage or ROA, and then each group is sorted to five quintiles based on bidders' free cash flow level (FCF), starting from quintile Q1 with the lowest cash flow level to quintile Q5 with the highest cash flow level. Leverage is obtained as target's total liability divided by total asset at the end of the year prior to the takeover announcement. ROA is obtained as target operating income before depreciation normalized by total asset at the end of the year prior to the takeover announcement. *, **, *** indicates significance at the 10%, 5%, and 1% level.

	Q1 (Low FCF)	Q2	Q3	Q4	Q5 (High FCF)
Panel A: Abnormal return split by target leverage (N=2,130)					
Target leverage \geq Median	-0.295* [-0.167]	0.157 [0.058]	-0.057 [-0.185]	-0.127** [-0.159]	-0.116* [-0.225]
Target leverage < Median	-0.445** [-0.326]	-0.215 [-0.216]	-0.128* [-0.101]	0.155* [-0.039]	0.133** [0.025]
T statistic/Z statistic	0.55 1.76*	1.56 1.51	0.72 -1.54	-2.79*** -2.33**	-2.71*** -3.22***
Panel B: Abnormal return split by target ROA (N=1,945)					
Target ROA \leq Median	-0.090* [-0.283]	-0.122 [-0.078]	-0.189 [-0.104]	-0.114 [0.137]	0.072 [-0.130]
Target ROA > Median	-0.154*** [-0.165]	-0.088* [-0.099]	-0.046 [-0.071]	-0.064 [-0.024]	0.014 [-0.016]
T statistic/Z statistic	0.37 -1.02	-0.20 0.13	-0.62 -0.58	-0.24 0.73	0.25 -0.06

Table 9
The Effect of Target Leverage on Bidder Post-bid Operating Performance

This table presents the regression results of the effect of target leverage on bidder's average three-year post-bid abnormal operating performance. Bidders are sorted to five quintiles based on their free cash flow level, starting from quintile Q1 with low cash flow to quintile Q5 with high cash flow. Q2, Q3, Q4, and Q5 are all dummy variables that equal one for their quintile of cash flow level and zero otherwise. ROA is defined as operating income before depreciation normalized by average total assets. OCF is defined as operating cash flow normalized by average total assets. Leverage is obtained as bidder total liability divided by total asset. Bidder operating performance is adjusted with the median value of the two-digit SIC industry performance. *High Leverage* is a dummy variable which equals one if the target leverage, obtained as target total liability divided by total asset, is above the median level of the total targets in the sample and zero otherwise. T statistic is reported in bracket. *, **, *** indicates significance at the 10%, 5%, and 1% level.

	ROA	OCF	Leverage
Intercept	-0.014*	-0.022	0.040***
	[-1.84]	[-1.38]	[3.45]
Q2	0.027	-0.026	-0.004
	[1.40]	[-1.25]	[-0.25]
Q3	0.020	0.024	0.001
	[1.09]	[1.17]	[0.07]
Q4	0.060***	0.063***	-0.016
	[3.29]	[3.12]	[-1.11]
Q5	0.084***	0.058***	-0.034**
	[4.54]	[2.85]	[-2.41]
<i>High Leverage</i>	0.008	0.009	0.032**
	[0.42]	[0.43]	[2.03]
<i>High Leverage</i> *Q2	-0.006	-0.009	-0.016
	[-0.28]	[-0.79]	[-0.74]
<i>High Leverage</i> *Q3	-0.008	0.03	0.018
	[-0.45]	[0.98]	[0.90]
<i>High Leverage</i> *Q4	-0.032	-0.018*	-0.017
	[-1.34]	[-1.73]	[-0.87]
<i>High Leverage</i> *Q5	-0.043*	-0.010	-0.009
	[-1.77]	[-0.46]	[-0.24]
Pre-bid performance	0.333***	0.358***	0.634***
	[17.68]	[13.20]	[40.44]
Adj R-Squared	0.200	0.132	0.425
F Value	55***	29***	181***
Observation	2,050	1,839	2,025

Table 10
Robustness Tests for Bidder Post-bid Long-term Abnormal Return Sorting by Cash Flow

This table reports the robustness tests for bidder buy-and-hold return in the three years following the bid announcement for 9172 takeovers undertaken between 1990 and 2006. The sample is sorted to five quintiles based on bidder free cash flow level (FCF), starting from quintile Q1 with low cash flow to quintile Q5 with high cash flow. For each quintile, we report both the mean and median value (in bracket). For the comparison of long-term return between quintile Q1 and Q5, T statistic and Z statistic are reported. *, **, *** indicates significance at the 10%, 5%, and 1% level.

	Q1 (Low FCF)	Q2	Q3	Q4	Q5 (High FCF)	T statistic/Z statistic (Q1-Q5)
Deleting delisted bidders (N=8,687)	-0.128*** [-0.136]	-0.121*** [-0.063]	-0.114** [-0.022]	0.038 [-0.056]	0.014 [-0.043]	-2.19** -3.57***
Deleting bidders in financial industry (N=8,382)	-0.160*** [-0.102]	-0.087* [-0.028]	0.103** [0.047]	0.026 [-0.023]	0.003 [-0.002]	-2.27** -2.96***
Deleting overlapping cases (N=6,406)	-0.159** [-0.185]	-0.113 [-0.079]	0.001 [-0.015]	0.006 [-0.004]	-0.032 [-0.041]	-1.76* -3.32***
Only the first transaction (N=3,115)	-0.161*** [-0.184]	-0.182*** [-0.121]	-0.017 [-0.046]	-0.097 [-0.035]	0.044 [-0.013]	-2.73*** -4.18***
Size-, market-to-book-, and industry-adjusted control firm (N=2,920)	-0.265*** [-0.175]	-0.171* [-0.043]	-0.060 [0.014]	-0.035 [0.007]	0.125 [0.034]	-2.06** -2.94***