"Value Creation of Cash Mergers. Empirical Investigation"

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VALUE CREATION OF CASH MERGERS.
EMPIRICAL INVESTIGATION

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Abstract

We examine the gains to shareholders of public firms that acquire public companies in cash transactions. Our results suggest that it is not Tobin's q and free cash flow of the acquirer which are the main determinants of the bidders' CARs, but rather the industry relatedness of the acquiring firm and the target. Our results show a marginal leverage effect on the bidders' abnormal returns and support the free cash flow hypothesis for unrelated acquisitions only.

Key words: industry relatedness, cash acquisitions, bidder returns.
JEL Classification: G30, G34.

1. Introduction

Carleton et al. (1983) argue that cash and non-cash acquisitions exhibit different financial characteristics and failure to distinguish between them may lead to inappropriate generalizations. In this paper, we examine the gains to shareholders of public firms that announce cash acquisitions of public companies. Previous research on the market for corporate control finds that successful acquisitions usually increase the value of target company shares; however, whether successful takeovers create market value for acquiring companies' shareholders remains full of debate.

The literature has recognized many determinants of acquiring companies' returns (e.g., type of acquisition (Wansley et al., 1983); Tobin's q (Lang et al., 1989); cash flow (Smith and Kim, 1994); industrial relatedness and firm's structural factors (Limmack and McGregor, 1995); target size and form of payment (Fuller, et al., 2002)). Much evidence has been produced showing a sharp difference in bidder returns depending on the acquisition method of payment (cash vs. equity) and the target type (private vs. public)[1]. Jensen and Ruback (1983) claim that an information effect plays a role in determining the behavior of bidder stock prices at the acquisition announcement. If bidder management's inside information (unrelated to acquisition) reveals its stock is overvalued it will prefer a stock offer and vice versa for a cash offer. This implies that bidder returns may be higher in cash acquisitions relative to stock acquisitions.

Additionally, Fuller et al. (2002) find that bidder shareholders gain when buying a private firm but lose when purchasing a public company. For private firms, the abnormal return increases with the relative size of the target regardless of the method of payment due to the illiquid nature of private companies. Furthermore, the authors attribute the higher abnormal returns for stock offers compared to cash offers for private firms to the creation of a blockholder as a monitor and favorable tax implications for private firm owners. At the same time, their empirical evidence suggests that the bidder returns increase with the relative size of the target in all-cash acquisitions for public companies; however, authors provide little explanation to the sources of these gains.

Several studies report target positive abnormal returns in all-cash offers (e.g., Huang and Walking, 1987; Eckbo and Langohr, 1989; Andrade et al., 2001) compared to acquisitions in which the bidder and target exchange common stock. At the same time, Eckbo et al. (1990, 2000) present evidence that bidder gains are the greatest when the acquiring firm offers stock or a combination of cash and stock to the target. In contrast, Travlos (1987) and Moeller et al. (2004) find that bidder gains are larger in cash offers compared to all stock or a combination of cash and stock offers.

The previous research focuses on taxes and information asymmetries to explain these mixed results. It is frequently hypothesized that the bidder must increase the offer premium in all-

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[1] See Andrade, Mitchell, and Stafford (2001) for an excellent review of the literature.

cash acquisitions to compensate target shareholders for the tax penalty associated with this particular method of payment (see, Gilson et al., 1988). Despite the importance of the tax considerations in bidder's choice of payment method, the tax argument does not appear to explain the relatively large premium in cash mergers (e.g., Eckbo and Langohr, 1989; Eckbo et al., 1990).

Several studies examine the role of asymmetric information in the choice of acquisition payment (e.g., Hansen, 1987; Fishman, 1989; Eckbo et al., 1990) and premiums in cash mergers. These studies assume two-sided information asymmetry (i.e., the acquirer and the target have private information about their own value). In general, this stream of finance research concludes that the bidder abnormal returns consist of two components: (1) synergy revaluation and (2) signaling. According to Eckbo et al. (1990), all-cash mergers have no signaling, because these offers occur only when the target value is a common knowledge, thus the bidder does not carry the burden of overpayment costs. As a result, the acquiring company returns reflect only the synergy component. Additionally, Berkovitch and Narayanan (1993) develop a model in which they demonstrate that high-synergy bidders use cash offers and low-synergy bidders use stock exchange offers as a method of payment.

Consequently, despite the existing empirical evidence, researchers offer inconclusive explanations on the determinants of bidding companies' returns in cash acquisitions. The focus of our study is to examine the returns of acquirers making bids for public targets using cash, and to determine factors that affect acquirers' returns[1].

In general, we find that the target industry is the most important factor in determining the returns to cash bidders. Our empirical results support the free cash flow hypothesis advanced by Jensen (1986) and suggest that it is economically significant for unrelated cash acquisitions only. Also, when the unrelated acquisitions are separated by the acquirers' Tobin's q, the deal-to-value ratio is significantly negative when Tobin's q is less than one only, suggesting the market reacts negatively to the relative size of the acquisition when the acquiring firm is viewed as having poor investment opportunities and the bidding firm acquires a target firm outside of its own industry.

In contrast, for related acquisitions, the deal-to-value ratio positively affects bidder returns and provides a clear view of the investment value of cash acquisitions. When the sample of related acquisitions is classified according to Tobin's q, the deal-to-value ratio is significantly positive for those mergers when the acquirers' Tobin's q is greater than one only suggesting the market reacts positively to the relative size of the acquisition when the acquiring firm is viewed as having promising investment opportunities, and the bidding firm acquires a target within its own industry. Finally, we find that no matter how we divide the sample by other important factors such as Tobin's q or free cash flow, the relatedness dummy variable remains significantly positive. Thus, firms which acquire targets in their own industry for cash are rewarded by investors, and those which diversify are punished.

The remainder of the paper is organized as follows. In Section 2 we discuss the determinants of bidder returns. In section 3 we present the data sample and methodology. In Section 4 we report the results. Section 5 concludes the paper.

2. Determinants of bidders' returns

2.1. Relatedness

Financial managers and theorists proposed many reasons to account for the high level of the US merger activity between 1980 and 2000. Finance literature classifies merger motives in three broad categories: the synergy motive, the agency motive, and hubris. The motive for most mergers is to create synergy by increasing the economic value of the combined enterprise that results by integration of the two firms' resources (e.g., Andrade et al., 2001).

Researchers argue that synergistic benefits through a transfer of core skills between the bidder and the target in related acquisitions should result in greater wealth creation than in unrelated or conglomerate transactions (Datta et al., 1992; Healy et al., 1992; Berkovitch and Naraya-

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[1] Note that in our analysis, the terms bidder and acquirer are used interchangeably. All the bids in our sample lead to a completed acquisition.

nan, 1993). Sherman and Pettway (1987) and Scanlon et al. (1989) document positive abnormal returns to bidders in related acquisitions compared to acquirers in unrelated bids. Lahey and Conn's (1990) examination of the long-term wealth effect of related mergers reports that returns over the three-year post merger period for the horizontal group are significantly positive compared to the pure conglomerate mergers. In a more recent study, Fan and Goyal (2004) show that synergetic mergers generate positive wealth effects that are significantly greater compared with those for diversifying mergers.

Furthermore, Berger and Ofek (1995) find that a combination of dissimilar firms reduces shareholders' wealth, contributes to bureaucracy, lack-of-relatedness, and cross-subsidization of underperforming divisions. The authors determine that firm value losses are greater when the companies have different two-digit Standard Industry Classification (SIC) codes.

Following the commonly used approach (e.g., Kaplan and Weisbach, 1992; Limmack and McGregor, 1995; Kahle and Walkling, 1996[1]; and Johnson and Houston, 2000), we adopt the degree of relatedness based on the commonality of Compustat SIC codes for the bidder and target in the year prior to acquisition announcement. Thus, mergers between firms with a common activity at the two-digit level (or greater) are classified as related acquisitions. We hypothesize that there is a positive relationship between the degree of bidder and target relatedness and bidder abnormal returns.

2.2. Free Cash Flow

The free cash flow hypothesis, introduced by Jensen (1986), argues that managers endowed with free cash flow will waste it on negative net present value (NPV) projects rather than distribute it out to shareholders in form of dividends or stock buybacks. Jensen maintains that anything that reduces these discretionary cash flows can decrease wasteful expenditures. Cash acquisitions, for example, redirect funds from wasteful internal investments, or cause the acquiring company to incur debt. Thus, the key to Jensen's argument is that shareholders will benefit by anything (including acquisitions) that decreases agency costs and increases firm value by preventing managers from wastefully spending free cash flow.

Smith and Kim (1994) test the combined effects of free cash flow and financial slack on bidder returns. They find the acquisitions that merge slack-poor firms and firms with free cash flow enhance bidders' market value. This paper uses the proxy for free cash flow developed by Lehn and Poulsen (1989). We define free cash flow as the bidder earnings before interest, taxes, and depreciation and amortization expenses at the end of the calendar year before the acquisition less interest expenses, taxes, preferred and common dividends ($FCF = EBITDA - Interest - Taxes - \Pr.dividends - Com.dividends$).

It is important to note Lang et al.(1991) and McCabe and Yooks' (1997) both caution that the Jensen (1986) theory applies to firms with high reinvestment levels, so testing the free cash flow hypothesis requires knowledge of bidders' investment opportunities.

2.3. Tobin's q

As we stated earlier, testing Jensen's (1986) free cash flow hypothesis requires knowledge of bidders' investment opportunities. Lang et al. (1991) use Tobin's q to distinguish between firms that have good and poor investment opportunities. The authors distinguish between firms that have positive NPV investment opportunities (q >1) and those that do not (q <1). Firms with high Tobin's q are expected to use their internally generated funds efficiently. Thus, for those companies, the acquisition of another company is a positive NPV project. If the acquisition is unexpected, its announcement should increase bidder returns. Furthermore, there should be no relations between bidding firm stock-price reaction and its cash flow.

On the other hand, firms with low Tobin's q do not have profitable investment opportunities. Hence, they should pay out cash to shareholders or invest in projects that have NPV equal to

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[1] Kahle and Walkling (1996) evaluate the power and specification of Compustat SIC code in financial research. The authors find that the Compustat's classification procedures for both NYSE/AMEX and Nasdaq firms are significantly more powerful than CRSP's classification.

zero. For low q firms, according to the free cash flow hypothesis, the bidding firm shareholders' wealth is inversely related to free cash flow.

Servaes's (1991) findings support Lang et al.'s (1991) argument. The analysis of the relation between takeover gains and the q ratios of targets and bidders for a sample of over 700 mergers and tender offers between 1972 and 1987 finds that target, bidder, and total returns are larger when targets have low q ratios and bidders have high q ratios.

Chung and Pruitt (1994) develop a simple formula for approximation of Tobin's q using basic financial and accounting information. Compared to the earlier calculations of q using Lindenberg and Ross (1981) more theoretical approach, the authors' methodology explains at least 96.6% of the variability of Tobin's q. Thus, following the Chung and Pruitt (1994) approach, we define Tobin's q of the acquiring company as the sum of the market value of equity, liquidating value of the company's outstanding preferred stock, and the value of the company's current liabilities minus its current assets plus the book value of long-term debt divided by the book value of total assets for the company at the end of the calendar year prior to the acquisition

$$q = \frac{MV + PS + Debt}{TA}.$$

As Lang et al. (1991) state, Tobin's q is an imperfect measure of investment opportunities since we observe its average value rather than its marginal value. This means some firms with good investment opportunities may be classified as those with bad opportunities and the results may be biased against the free cash flow hypothesis. Yet, based on the free cash flow hypothesis and to the level that q measures investment opportunities correctly we predict that firms with high cash flow and low q (less than one) are more likely to waste cash and engage in acquisitions that do not benefit shareholders. On the other hand, shareholders' returns of firms with high cash flow and good investment opportunities ($q > 1$) are unrelated to acquiring company's cash flow.

2.4. Size of the deal

The finance literature finds that the size of the target compared to the size of the bidder is an important determinant of bidder returns. For example, Asquith et al. (1983) find strong positive relations between target relative size and bidder cumulative abnormal returns in cash mergers. They argue the market reaction to cash-financed mergers is free of the negative effect of equity-financed acquisitions, thus, cash mergers provide a clearer view of the investment value of mergers. Jarrell and Poulsen (1989) and Han et al. (1998) also report positive relations between bidder returns and the tender offer size.

To control for the interactions between relative size and form of financing, we follow Lang et al. (1991) approach and compute the relative size of the target as the natural logarithm of target market (deal) value, as reported by the Securities Data Corporation (SDC), divided by the bidder market value 20 days before the announcement date ($DV = \ln \frac{(VT)}{(ACQMV)}$). We anticipate a positive size effect for cash mergers in related industries, and a negative relative size effect for unrelated acquisitions.

2.5. Financial Leverage

Several empirical studies examine the effect of changes in capital structure on bidder returns (e.g., Shrieves and Pashley, 1984; Bruner, 1988; Maloney et al.,1993). Cash transactions are often funded with debt and thus tend to increase bidders' financial leverage. Jensen and Smith (1985) note that leverage-increasing transactions typically result in bidder's positive abnormal returns while-leverage decreasing transactions (e.g., equity method of payment) result in acquiring company's negative abnormal returns. Smith and Kim (1994) examination of the combined effects of free cash flow and financial leverage on bidder and target stock returns finds bidder returns are more positive when associated with capital structure changes (increased use of debt) that mitigate the bidder agency cost of free cash flow.

Trifts (1991) shows leverage changes to have significant impact on acquiring firm shareholders' wealth in addition to method of payment effect. Thus, following his approach, we include the percent change of total debt to total assets of successful bidders in our model. The change in leverage for firm i is measured as follows:

$(CHGLEV = [(TD_{post} / TA_{post}) / (TD_{pre} / TA_{pre})] -1$, where TD is total debt, TA is total assets and the subscripts pre and post refer to the time period of measurement from the annual financial statements prior to or following the merger year. We hypothesize that increases in leverage should positively affect bidder abnormal returns.

2.6. Taxes

An acquisition of one company by another may be ruled either taxable or tax-deferred. The Internal Revenue Code rules cash acquisitions as taxable whereas security exchanges are treated as tax-free (tax-deferred) transactions. First, at the personal level, if the market value of the compensation received by a stockholder in an acquired firm exceeds investor's tax basis in the stock, a gain will be recognized and personal taxes paid. Second, at the corporate level, the bidder is able to recognize an increase in the depreciation tax shield as it is allowed to step up the tax bases of some of the acquired assets if the fair market values of these assets exceed their tax bases. These two effects work in opposite directions, the first effect reduces the benefits of the acquired firm stockholders, whereas the second effect forces the acquiring firm to pay more for the target. Brown and Ryngaert (1991) suggest that the choice of acquisition mode and bidder's CARs are affected by changes in the tax code. For example, the Tax Reform Act of 1986 reduces the tax benefits of cash offers by eliminating benefits from stepping up the taxable basis of the target's assets; thus, authors speculate that stock offers become more common payment method after 1986. We include the Tax Reform Act of 1986 dummy variable in our regression analysis to account for the implications of the change in tax law.

3. Sample and methodology

We collect from the SDC US Mergers and Acquisitions (M&A) Database a list of successful cash mergers and tender offers for the US publicly traded bidders and targets, with initial announcements between January 1, 1980 and December 31, 2000. To be included in the sample, the following conditions must be satisfied:

1. The target and the bidder are publicly traded companies.
2. Acquiring companies are US firms listed on the NYSE, AMEX or NASDAQ market and they must have two hundred and five days of return data (around the announcement day) on the Center for Research in Security Prices (CRSP) file, and these companies must also be listed and have complete Compustat accounting data one year before and after the announcement day.
3. The transaction is completed. The bidder pays cash for the target firm and acquires all of the target shares.

Our requirements yield a sample of 144 successful offers. There are 67 related acquisitions and 77 unrelated acquisitions. For the whole sample, the mean market value of the acquirer is \$3.2 billion and the mean market value of the target is \$0.4 billion with the mean deal-to-value ratio of 0.451. The mean Tobin's q for the whole sample is 1.142, the mean free cash flow of the acquirer scaled by total assets is 0.091 and the mean change in leverage is 0.941. Hence the average firm in the sample is increasing its leverage after the acquisition. The mean total sales percentage of the acquiring company relative to the total industry sales is near 4.00% prior to the acquisition and only 4.10% post-acquisition. For related acquisitions the mean change is only 0.30%. Thus, the consequences on the industry of an increase in the acquiring firm's market power after the acquisition is essentially economically insignificant. Finally, the mean cash to total assets ratio for the whole sample is 11.3% and this is the only variable in which there is a significant difference across related and unrelated acquisitions.

In order to judge if shareholders are benefiting from these cash acquisitions, we calculate five day cumulative abnormal returns (CARS) using the market model based on the value

weighted CRSP market index. The returns are cumulated from day –2 to day +2 surrounding the announcement date as reported by SDC. The parameters for the market model are calculated from day –200 to day –60 prior to the acquisition announcement date.

Finally, similar to Lang et al. (1991), we employ weighted least squares (WLS) regression analysis to explain the factors affecting bidder's abnormal returns, and in the same fashion, the weights for the WLS regressions are equal to the inverse of the standard deviation of the market model residuals. The independent variables we include in the regressions are: the free cash flow of the acquirer scaled by total assets, a dummy variable equal to 1 in related acquisitions, a dummy variable equal to 1 if Tobin's q is greater than 1, the natural log of the deal-to-value ratio, the percent change in leverage for the acquiring firm, the tax dummy equal to 1 if the acquisition was prior to 1987, and the cash to total assets variable.

4. Results

Table 2 contains the five day cumulative abnormal returns. For the whole sample of 144 firms the cumulative abnormal return is not significant for cash acquisitions, however, when it is broken down by relatedness, the five day CAR is significantly positive at the 5% level for related acquirers.

To examine the returns more closely, we further stratify the sample according to Tobin's q, free cash flow, and firms classified as Jensen firms, which are those that have a Tobin's q less than 1 and free cash flow greater than the median of the sample. According to the above classifications, there are no significant abnormal returns for any of the sub-samples. However, when these classifications are further dissected by whether the acquisitions are related or unrelated, it appears to make a difference.

For related acquisitions and Tobin's $q < 1$, the CAR of 2.87% is positively significant at the 5% level. Similarly, when the sample is broken down into the 33 acquisitions which are related and the acquirer has FCF less than the median; the CAR of 2.82% is also positively significant at the 5% level. The same result holds for the related and non-Jensen firms, and finally, for unrelated and Jensen firms the CAR of –1.34% is also significantly different from zero at the 5% level. Thus, it appears that target and acquirer relatedness is the influential factor affecting the returns of bidding firms in cash acquisitions.

Table 3 through Table 7 present the results for the WLS regressions attempting to explain factors affecting bidders' abnormal returns in cash acquisitions. Table 3 displays the results for the whole sample of 144 firms. We also include cash as an explanatory variable in the regression analysis, since a firm may have considerable liquid assets to finance a cash acquisition even though their free cash flow may be low or even negative. Following Lang et al. (1991), we use the liquid assets (cash and short term securities) two years prior to the acquisition offer divided by the firm's total assets to proxy the cash explanatory variable. Our findings, similar to Limmack and McGregor (1995), demonstrate that the relationship between bidders' CARs and the degree of the target and acquiring firm relatedness is positive and significant at the 5% level[1].

To test more specifically Jensen's (1986) free cash flow hypothesis, we further break the sample down into regressions by relatedness, Tobin's q, relatedness and Tobin's q, and by the median free cash flow. Table 4 contains the results for the regressions by related and unrelated acquisitions. For the related acquisitions, free cash flow, Tobin's q and change in leverage are not significantly different from zero, however, the deal-to-value ratio is significantly positive in two of three regressions. Thus, we conclude that synergy building bidders' CARs are positively related to the deal-to-value ratio.

The examination of the determinants of unrelated bidders' returns shows that in four out of six regressions, the free cash flow variable is significantly negative. Hence, the empirical evi-

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[1] In unreported regressions, similar results hold when the actual Tobin's q number is used in place of the Tobin dummy variable.

dence suggests that investors may see free cash flow is being wasted in diversifying acquisitions, in other words, they view it as a rather unprofitable investment[1].

From our previous discussion in section 2, we would expect bidders with substantial cash flow and a low Tobin's q to experience the lowest abnormal returns, since those are the firms that have the greatest agency cost of free cash flow. In Tables 5 and 6, we divide our sample by the acquiring firms' Tobin's q and their relatedness. The evidence in Table 5 indicates that relatedness is significantly positive for bidders with low Tobin's q. We believe that investors view related ac-quisitions as less wasteful.

Further evidence on the importance of distinguishing firms with high cash flow and low q from those with high cash flow and high q is provided in Table 6. Once again, in general, free cash flow does not appear to be an important factor; however, the deal-to-value ratio clearly takes cen-ter stage. For the acquisitions that are related with Tobin's $q > 1$, the relative size of the merger is significantly positive at the 5% level, and for the acquisitions that are unrelated with Tobin's $q < 1$, the relative size of the merger is significantly negative at the 5% level. Clearly, investors are pun-ishing those acquirers who are not seen as having good investment opportunities for diversifying, and rewarding those who are seen as having good investment opportunities and acquiring firms in their own industry.

Finally, in Table 7, we present the results of the regression analysis broken down into two sub-samples by whether the acquirer has free cash flow greater than the median value or less than the median value. For the sub-sample of acquiring companies with free cash flow less than the median, relatedness is once again significantly positive for all regressions using the Tobin's q dummy. We observe similar relations between bidders' CARs and relatedness for the sub-sample of acquiring companies with free cash flow greater than the median. Moreover, deal-to-value is significantly negative in six out of eight regressions, once again, suggesting that the market is pun-ishing acquiring companies for wasting free cash flow. We find change in leverage is significantly positive in four out of four regressions in our sub-sample, collaborating previous empirical find-ings that an increase in financial leverage has positive and statistically significant impact on ac-quiring firm shareholders' wealth in cash acquisitions. Thus, we conclude that bidders that commit free cash flow to debt service decrease the related cash flow agency cost and increase sharehold-ers' wealth. The regressions in Table 7 support Jensen's (1986) free cash flow hypothesis[2] for re-latedness decreasing acquisitions.

5. Conclusion

Previous research on bidders' returns during cash acquisitions has generally found that for firms with poor investment opportunities (Tobin's $q < 1$) the returns to bidders are negatively re-lated to free cash flow. In contrast, our results suggest that it is the type of acquisition (related or unrelated) which dominates the bidders' returns. In support of this statement: 1) in nearly all regressions with the CARS as the dependent variable, we find that the relatedness dummy is posi-tive and statistically significant; and 2) we observe that when the sample of cash acquisitions is divided by Tobin's q and by related or unrelated acquisitions the free cash flow variable is signifi-cantly negative for unrelated acquisitions only and it is not dependent on q. Furthermore, we find that the deal-to-value ratio is generally significantly negative for unrelated acquisitions and sig-nificantly positive for related acquisitions. Overall, our results suggest that it is not Tobin's q and free cash flow of the acquirer which are the main determinants of the returns to cash bidders, but rather whether the target is in the same industry as the acquirer.

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[1] From this point on we no longer include the tax dummy in the regression results as it is insignificant in all cases and does not affect the overall results.

[2] In unreported regressions, we break the sample by median free cash flow and relatedness and find that for the acquisitions in which free cash flow is greater than the median level and the relatedness is decreasing, the deal-to-value variable is significantly negative and for relatedness increasing acquisitions, it is significantly positive. We find similar results when the cash variable is included in the regressions.

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Appendix

Mean and Median Estimates of Bidder Returns and Other Variables

Related acquisitions are those in which the acquirer and target have the same two digit (or greater) SIC code according to the Compustat database. Unrelated acquisitions are those in which the acquirer purchases a target outside its own two digit SIC code. Tobin's Q is calculated using the Chung and Pruitt (1994) estimation method which is the approximate $Q = (MV+PS+DEBT)/TA$ where MV is the market value of equity, PS is the liquidating value of preferred stock, debt is the value of the company's current liabilities minus its current assets plus the book value of long term debt, and TA is the book value of total assets of the company. FCFACQ is the free cash flow of the acquirer calculated using Lehn and Poulsen's (1989) definition which is operating income before depreciation less interest expense, taxes and preferred and common dividends. The free cash flow is then standardized by dividing by total assets. CHGLEV is the change in leverage of the acquirer which is calculated as the ratio of $[(TD_{post} / TA_{post}) / (TD_{pre} / TA_{pre})] - 1$. The next ratio, DEALVAL, is the deal to value ratio of the acquisition which is $VT / ACQMV$ where VT is the cash value of the acquisition and ACQMV is the acquirer's market value 20 days prior to the acquisition announcement day. CASH corresponds to cash and short term securities from the financial statements two years prior to the acquisition announcement day scaled by total assets. SALESPCT and SALESPCT2 is the acquirer's total sales percentage of the industry in the year prior and after the acquisition announcement, respectively. MKTPOWER is the change in sales percentage. (*, ** indicate significance at the 10% and 5% level for t-tests of mean differences).

		FIRMS		
Difference	All	Related	Unrelated	of Means
Number	144	67	77	
Mean Tobin's Q	1.142	1.018	1.250	-0.232
Median	0.789	0.803	0.761	
Mean FCFACQ	0.091	0.087	0.095	-0.008
Median	0.074	0.074	0.074	
Mean CHGLEV	0.941	0.925	0.955	-0.030
Median	0.085	0.096	0.072	
Mean DEALVAL0	.451	0.514	0.397	0.116
Median	0.147	0.195	0.123	
Mean CASH	0.113	0.089	0.134	-0.044**
Median	0.067	0.054	0.077	
Mean SALESPCT	0.040	0.036	0.043	-0.007
Median	0.013	0.010	0.018	
Mean SALESPCT2	0.041	0.039	0.045	-0.006
Median	0.013	0.012	0.014	
Mean MKTPOWER	0.002	0.003	0. 002	0.001
Median	0.000	0.001	0.000	
Mean ACQMV (000,000's)	3170.099	3508.937	2875.266	633.671
Median (000,000's)	807.452	503.400	1167.005	
Mean VT (000,000's)	398.368	373.342	420.144	46.802
Median (000,000's)	121.100	120.200		122.000
Acquisitions Prior to 1987	72	26	46	
Acquisitions in 1987 and after	72	41	31	

Table 2

Five Day Cumulative Abnormal Returns

Five day cumulative abnormal returns (day –2 to day +2 surrounding the announcement date) are calculated using the market model with a value weighted index and parameters calculated from day –200 to day –60 prior to the acquisition announcement date. Related acquisitions are those in which the acquirer and target have the same two digit (or greater) SIC code according to the Compustat database. Unrelated acquisitions are those in which the acquirer purchases a target outside its own two digit SIC code. Tobin's Q is calculated using the Chung and Pruitt (1994) estimation method which is the approximate Q = (MV+PS+DEBT)/TA where MV is the market value of equity, PS is the liquidating value of preferred stock, debt is the value of the company's current liabilities minus its current assets plus the book value of long term debt, and TA is the book value of total assets of the company. FCFACQ is the free cash flow of the acquirer calculated using Lehn and Poulsen's (1989) definition which is operating income before depreciation less interest expense, taxes and preferred and common dividends. The free cash flow is then standardized by dividing by total assets. Jensen type firms are those with Tobin's q <1 and FCFACQ greater than the median FCFACQ. (* indicates the abnormal return is different from zero at the 5% level of significance).

Sample	#	CAR	T-Value
All	144	0.0078	0.601
Related	67	0.0186	2.375*
Unrelated	77	-0.0015	-1.390
Tobin < 1	90	0.0115	0.442
Tobin > 1	54	0.0018	0.410
Related and Tobin < 1	41	0.0287	2.519*
Related and Tobin > 1	26	0.0026	0.649
Unrelated and Tobin < 1	49	-0.0029	-1.706
Unrelated and Tobin > 1	28	0.0010	-0.056
FCFACQ < Median FCF	72	0.0144	0.860
FCFACQ > Median FCF	72	0.0012	-0.017
Related and FCFACQ < Median FCF	33	0.0282	2.047*
Related and FCFACQ > Median FCF	34	0.009	1.320
Unrelated and FCFACQ < Median FCF	39	0.0027	-0.704
Unrelated and FCFACQ > Median FCF	38	-0.0060	-1.270
Non-Jensen Firms	108	0.0106	1.200
Jensen Firms	32	0.0018	-0.679
Related and non-Jensen Firms	50	0.0196	2.197*
Related and Jensen Firms	16	0.0171	1.105
Unrelated and non-Jensen Firms	58	0.0029	-0.402
Unrelated and Jensen Firms	16	-0.0134	-2.065*

Table 3

Factors Explaining Bidder Shareholder Wealth Effects for the Whole Sample

The bidder abnormal return is the cumulative abnormal return estimated from two days prior to the acquisition announcement date recorded by the SDC Mergers and Acquisition Database to two days after the announcement date. TD is the tax dummy equal to 1 if the acquisition effective date was prior to 1987. Related acquisitions are those in which the acquirer and target have the same two (or greater) digit SIC code according to the Compustat database; unrelated acquisitions are those in which the acquirer purchases a target outside its own two digit SIC code (the relatedness dummy variable is 1 for related and 0 for unrelated acquisitions). Tobin's Q is calculated using the Chung and Pruitt (1994) estimation method which is the approximate Q = (MV+PS+DEBT)/TA where MV is the market value of equity, PS is the liquidating value of preferred stock, debt is the value of the company's current liabilities minus its current assets plus the book value of long term debt, and TA is the book value of total assets of the company. The Tobin dummy is 1 for Tobin's Q $\geq$ 1 and 0 otherwise. FCFACQ is the free cash flow of the acquirer calculated using Lehn and Poulsen's (1989) definition which is operating income before depreciation less interest expense, taxes and preferred and common dividends. The free cash flow is then standardized by dividing by total assets. CHGLEV is the change in leverage of the acquirer which is calculated as the ratio of $[(TD_{post} / TA_{post}) / (TD_{pre} / TA_{pre})] - 1$. The next ratio, DEALVAL, is the natural log of deal to value ratio of the acquisition which is VT / ACQMV where VT is the cash value of the acquisition and ACQMV is the acquirer's market value 20 days prior to the acquisition announcement day. CASH corresponds to cash and short term securities from the financial statements two years prior to the acquisition announcement day scaled by total assets. All regressions are estimated using weighted least squares with the weights equal to the inverse of the standard deviation of the market model residual. (*,** indicate significance at the 10% and 5% level of significance respectively. P-values are in parentheses).

	Regressions							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Intercept	-0.002 (0.864)	-0.002 (0.891)	-0.009 (1.418)	-0.002 (0.864)	0.000 (0.996)	0.002 (0.938)	0.001 (0.949)	-0.00 (0.987)
TD	-0.003 (0.815)	-0.002 (0.858)	0.002 (0.882)	-0.002 (0.830)	-0.002 (0.841)	-0.003 (0.820)	-0.004 (0.715)	-0.004 (0.705)
Relatedness dummy	0.020 (0.024)**	0.020 (0.026)**	0.019 (0.031)**	0.020 (0.026)**	0.020 (0.026)**	0.019 (0.037)**	0.019 (0.036)**	0.019 (0.036)**
FCFACQ	-0.049 (0.183)	-0.049 (0.188)		-0.050 (0.191)	-0.047 (0.239)	-0.055 (0.190)	-0.059 (0.148)	-0.060 (0.118)
FCFACQ if q<1		-0.019 (0.839)	-0.024 (0.795)		-0.038 (0.791)	-0.038 (0.799)	-0.020 (0.894)	
Tobin dummy				0.000 (0.972)	-0.002 (0.860)	-0.002 (0.912)	0.001 (0.968)	0.002 (0.820)
DEALVAL						0.002 (0.858)	0.005 (0.534)	0.005 (0.488)
CHGLEV						-0.001 (0.160)	-0.001 (0.131)	-0.002 (0.129)
CASH						0.000 (0.993)		
Adjusted R-squared	0.0196	0.0129	0.0076	0.0126	0.0059	-0.0029	0.0088	0.0159
P-value for F-test	0.1487	0.2371	0.2828	0.2404	0.3405	0.4801	0.3279	0.2394

Table 4

Factors Explaining Bidder Shareholder Wealth Effects By Relatedness

The bidder abnormal return is the cumulative abnormal return estimated from two days prior to the acquisition announcement date recorded by the SDC Mergers and Acquisition Database to two days after the announcement date. Related acquisitions are those in which the acquirer and target have the same two digit (or greater) SIC code according to the Compustat database. Unrelated acquisitions are those in which the acquirer purchases a target outside its own two digit SIC code. Tobin's Q is calculated using the Chung and Pruitt (1994) estimation method which is the approximate $Q = (MV+PS+DEBT)/TA$ where MV is the market value of equity, PS is the liquidating value of preferred stock, debt is the value of the company's current liabilities minus its current assets plus the book value of long term debt, and TA is the book value of total assets of the company. The Tobin dummy is 1 for Tobin's $Q \geq 1$ and 0 otherwise. FCFACQ is the free cash flow of the acquirer calculated using Lehn and Poulsen's (1989) definition which is operating income before depreciation less interest expense, taxes and preferred and common dividends. The free cash flow is then standardized by dividing by total assets. CHGLEV is the change in leverage of the acquirer which is calculated as the ratio of $[(TD_{post} / TA_{post}) / (TD_{pre} / TA_{pre})] - 1$. The next ratio, DEALVAL, is the natural log of deal to value ratio of the acquisition which is $VT / ACQMV$ where VT is the cash value of the acquisition and ACQMV is the acquirer's market value 20 days prior to the acquisition announcement day. CASH corresponds to cash and short term securities from the financial statements two years prior to the acquisition announcement day scaled by total assets. All regressions are estimated using weighted least squares with the weights equal to the inverse of the standard deviation of the market model residual. (*,** indicate significance at the 10% and 5% level of significance respectively. P-values are in parentheses).

	Unrelated Regressions					
	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	-0.001 (0.849)	0.001 (0.905)	-0.008 (0.549)	-0.015 (0.923)	-0.000 (0.991)	-0.002 (.912
FCFACQ	-0.082 (0.096)*	-0.082 (0.101)	-0.098 (0.067)*	-0.085 (0.121)	-0.098 (0.077)*	-0.098 (0.091)*
FCFACQ if $q<1$		-0.053 (0.659)	0.066 (0.717)	-0.001 (0.997)	-0.000 (0.997)	-0.004 (0.982)
Tobin Dummy			0.016 (0.384)	0.009 (0.658)	0.010 (0.613)	0.009 (0.668)
DEALVAL				-0.010 (0.321)	-0.005 (0.613)	-0.005 (0.631)
CHGLEV					-0.002 (0.201)	-0.002 (0.225)
CASH						-0.001 (0.862)
Adjusted R-squared	0.0408	0.0305	0.0274	0.0274	0.0363	0.0214
P-value for F-test	0.0780*	0.1534	0.1990	0.2226	0.1961	0.2981
	Related Regressions					
Intercept	0.011 (0.191)	0.010 (0.307)	0.029 (0.114)	0.008 (0.680)	0.008 (0.682)	0.019 (0.502)
FCFACQ	-0.009 (0.870)	-0.008 (0.883)	0.019 (0.736)	0.237 (0.670)	0.021 (0.713)	0.012 (0.842)
FCFACQ if $q<1$		0.027 (0.845)	-0.186 (0.402)	-0.083 (0.705)	-0.080 (0.719)	-0.089 (0.699)
Tobin Dummy			-0.027 (0.222)	-0.010 (0.650)	-0.009 (0.679)	-0.011 (0.658)
DEALVAL				0.028 (0.036)**	0.028 (0.037)**	0.023 (0.118)
CHGLEV					-0.000 (0.760)	-0.001 (0.727)
CASH						0.003 (0.691)
Adjusted R-squared	0.0104	-0.0045	0.0037	0.0575	0.0435	-0.0101
P-value for F-test	0.2659	0.4457	0.3826	0.1225	0.1907	0.5062

Table 5

Factors Explaining Bidder Shareholder Wealth Effects By Tobin's Q

The bidder abnormal return is the cumulative abnormal return estimated from two days prior to the acquisition announcement date recorded by the SDC Mergers and Acquisition Database to two days after the announcement date. Related acquisitions are those in which the acquirer and target have the same two (or greater) digit SIC code according to the Compustat database. Unrelated acquisitions are those in which the acquirer purchases a target outside its own two digit SIC code (the relatedness dummy variable is 1 for related and 0 for unrelated acquisitions). Tobin's Q is calculated using the Chung and Pruitt (1994) estimation method which is the approximate $Q = (MV+PS+DEBT)/TA$ where MV is the market value of equity, PS is the liquidating value of preferred stock, debt is the value of the company's current liabilities minus its current assets plus the book value of long term debt, and TA is the book value of total assets of the company. The Tobin dummy is 1 for Tobin's $Q \geq 1$ and 0 otherwise. FCFACQ is the free cash flow of the acquirer calculated using Lehn and Poulsen's (1989) definition which is operating income before depreciation less interest expense, taxes and preferred and common dividends. The free cash flow is then standardized by dividing by total assets. CHGLEV is the change in leverage of the acquirer which is calculated as the ratio of $[(TD_{post} / TA_{post}) / (TD_{pre} / TA_{pre})] - 1$. The next ratio, DEALVAL, is the natural log of deal to value ratio of the acquisition which is VT / ACQMV where VT is the cash value of the acquisition and ACQMV is the acquirer's market value 20 days prior to the acquisition announcement day. CASH corresponds to cash and short term securities from the financial statements two years prior to the acquisition announcement day scaled by total assets. All regressions are estimated using weighted least squares with the weights equal to the inverse of the standard deviation of the market model residual. (*,** indicate significance at the 10% and 5% level of significance respectively. P-values are in parentheses).

	Tobin's Q < 1			Tobin's Q > 1		
	(1)	(2)	(3)	(1)	(2)	(3)
Intercept	-0.010	0.010	-0.004	0.018	0.012	-0.006
	(0.486)	(0.475)	(0.815)	(0.418)	(0.593)	(0.809)
FCFACQ	-0.104	-0.105	-0.083	-0.062	-0.048	-0.030
	(0.444)	(0.437)	(0.555)	(0.144)	(0.254)	(0.599)
DEALVAL	-0.003	-0.003	0.001	0.004	0.003	-0.027
	(0.482)	(0.477)	(0.889)	(0.465)	(0.558)	(0.370)
Relatedness Dummy	0.030	0.029	0.026	0.009	0.009	0.011
	(0.013)**	(0.012)**	(0.027)**	(0.499)	(0.517)	(0.464)
CHGLEV	0.000		-0.000	-0.002		-0.002
	(0.943)		(0.840)	(0.089)*		(0.148)
CASH			0.000			-0.003
			(0.943)			(0.652)
Adjusted R-squared	0.0202	0.0315	-0.0015	0.0004	-0.0399	-0.0187
P-value for F-test	0.2433	0.1502	0.4452	0.2433	0.7491	0.5407

Table 6

Factors Explaining Bidder Shareholder Wealth Effects By Relatedness and Tobin's Q

The bidder abnormal return is the cumulative abnormal return estimated from two days prior to the acquisition announcement date recorded by the SDC Mergers and Acquisition Database to two days after the announcement date. Related acquisitions are those in which the acquirer and target have the same two (or greater) digit SIC code according to the Compustat database. Unrelated acquisitions are those in which the acquirer purchases a target outside its own two digit SIC code. Tobin's Q is calculated using the Chung and Pruitt (1994) estimation method which is the approximate $Q = (MV+PS+DEBT)/TA$ where MV is the market value of equity, PS is the liquidating value of preferred stock, debt is the value of the company's current liabilities minus its current assets plus the book value of long term debt, and TA is the book value of total assets of the company. The Tobin dummy is 1 for Tobin's $Q \geq 1$ and 0 otherwise. FCFACQ is the free cash flow of the acquirer calculated using Lehn and Poulsen's (1989) definition which is operating income before depreciation less interest expense, taxes and preferred and common dividends. The free cash flow is then standardized by dividing by total assets. CHGLEV is the change in leverage of the acquirer which is calculated as the ratio of $[(TD_{post} / TA_{post}) / (TD_{pre} / TA_{pre})] - 1$. The next ratio, DEALVAL, is the natural log of deal to value ratio of the acquisition which is VT / ACQMV where VT is the cash value of the acquisition and ACQMV is the acquirer's market value 20 days prior to the acquisition announcement day. CASH corresponds to cash and short term securities from the financial statements two years prior to the acquisition announcement day scaled by total assets. All regressions are estimated using weighted least squares with the weights equal to the inverse of the standard deviation of the market model residual. (*,** indicate significance at the 10% and 5% level of significance respectively. P-values are in parentheses).

	Related and Tobin's < 1			Related and Tobin's > 1		
	(1)	(2)	(3)	(1)	(2)	(3)
Intercept	0.029 (0.215)	0.041 (0.066)*	0.023 (0.522)	0.041 (0.046)*	0.037 (0.058)*	-0.10 (0.783)
FCFACQ	-0.160 (0.499)	-0.117 (0.619)	-0.107 (0.663)	0.011 (0.800)	0.017 (0.694)	0.027 (0.641)
DEALVAL	0.005 (0.535)	0.010 (0.204)	0.019 (0.284)	0.0126 (0.034)**	0.012 (0.039)**	0.033 (0.393)
CHGLEV	0.028 (0.2180		0.018 (0.461)	-0.001 (0.437)		-0.001 (0.682)
CASH			0.004 (0.657)			-0.003 (0.817)
Adjusted R-squared	0.0595	0.0453	0.0060	0.0729	0.0879	-.1549
P-value for F-test	0.1829	0.1944	0.4063	0.2335	0.1689	0.8892
	Unrelated and Tobin's < 1			Unrelated and Tobin's > 1		
	(1)	(2)	(3)	(1)	(2)	(3)
Intercept	-0.026 (0.084)*	-0.024 (0.085)*	-0.003 (0.856)	0.007 (0.804)	-0.035 (0.923)	0.032 (0.305)
FCFACQ	-0.091 (0.547)	-0.098 (0.512)	-0.073 (0.657)	-0.138 (0.026)**	-0.089 (0.215)	-0.084 (0.425)
DEALVAL	-0.009 (0.033)**	-0.009 (0.033)**	-0.008 (0.414)	-0.005 (0.502)	-0.003 (0.742)	-0.053 (0.362)
CHGLEV	0.0000 (0.715)		0.001 (0.914)	-0.014 (0.001)**		-0.014 (0.003)**
CASH			-0.000 (0.990)			0.004 (0.692)
Adjusted R-squared	0.0824	0.0997	-0.0231	0.3383	-0.0159	0.3199
P-value for F-test	0.0964*	0.0499**	0.5704	0.0069**	0.4778	0.0235**

Table 7

Factors Explaining Bidder Shareholder Wealth Effects by Free Cash Flow

The bidder abnormal return is the cumulative abnormal return estimated from two days prior to the acquisition announcement date recorded by the SDC Mergers and Acquisition Database to two days after the announcement date. Related acquisitions are those in which the acquirer and target have the same two (or greater) digit SIC code according to the Compustat database. Unrelated acquisitions are those in which the acquirer purchases a target outside its own two digit SIC code (the relatedness dummy variable is 1 for related and 0 for unrelated acquisitions). Tobin's Q is calculated using the Chung and Pruitt (1994) estimation method which is the approximate Q = (MV+PS+DEBT)/TA where MV is the market value of equity, PS is the liquidating value of preferred stock, debt is the value of the company's current liabilities minus its current assets plus the book value of long term debt, and TA is the book value of total assets of the company. The Tobin dummy is 1 for Tobin's Q $\geq$ 1 and 0 otherwise). FCFACQ is the free cash flow of the acquirer calculated using Lehn and Poulsen's (1989) definition which is operating income before depreciation less interest expense, taxes and preferred and common dividends. The free cash flow is then standardized by dividing by total assets. CHGLEV is the change in leverage of the acquirer which is calculated as the ratio of $[(TD_{post} / TA_{post}) / (TD_{pre} / TA_{pre})] - 1$. The next ratio, DEALVAL, is the natural log of deal to value ratio of the acquisition which is VT / ACQMV where VT is the cash value of the acquisition and ACQMV is the acquirer's market value 20 days prior to the acquisition announcement day.   All regressions are estimated using weighted least squares with the weights equal to the inverse of the standard deviation of the market model residual. (*,** indicate significance at the 10% and 5% level of significance respectively. P-values are in parentheses).

	Regressions for FCFACQ < Median FCFACQ							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Intercept	-0.007 (0.640)	-0.011 (0.464)	-0.008 (0.401)	-0.009 (0.340)	-0.013 (0.507)	-0.016 (0.437)	-0.012 (0.445)	-0.011 (0.489)
Relatedness	0.025 (0.076)*	0.027 (0.060)*	0.025 (0.071)*	0.027 (0.048)**	0.019 (0.175)	0.021 (0.144)	0.019 (0.161)	0.022 (0.115)
FCFACQ	-0.021 (0.933)	0.036 (0.884)			0.021 (0.934)	0.093 (0.706)		
DEALVAL	0.008 (0.359)	0.006 (0.465)	0.008 (0.336)	0.006 (0.471)	0.011 (0.226)	0.009 (0.320)	0.011 (0.221)	0.008 (0.347
Tobin dummy	-0.017 (0.289)	-0.020 (0.204)	-0.017 (0.286)	-0.021 (0.184)				
Tobin's Q					0.003 (0.892)	-0.002 (0.936)	0.002 (0.895)	-0.002 (0.909)
CHGLEV	-0.001 (0.230)		-0.001 (0.224)		-0.002 (0.166)		-0.002 (0.149)	
Adjusted R-squared	0.0139	0.0070	0.0286	0.0213	-0.0028	-0.0172	0.0120	-0.0044
P-value for F-test	0.3333	0.3679	0.2273	0.2461	0.4550	0.5844	0.3305	0.4568
	Regressions for FCFACQ > Median FCFACQ							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Intercept	-0.011 (0.330)	-0.003 (0.791)	-0.011 (0.284)	-0.005 (0.585)	-0.007 (0.499)	-0.000 (0.979)	-0.007 (0.469)	-0.002 (0.840
Relatedness	0.017 (0.133)	0.020 (0.083)*	0.017 (0.126)	0.019 (0.103)	0.019 (0.099)*	0.021 (0.063)*	0.019 (0.090)*	0.019 (0.088)*
FCFACQ	-0.001 (0.992)	-0.051 (0.239)			-0.001 (0.989)	-0.051 (0.282)		
DEALVAL	-0.045 (0.074)*	-0.029 (0.225)	-0.045 (0.038)*	-0.040 (0.071)*	-0.052 (0.038)**	-0.035 (0.127)	-0.052 (0.022)**	-0.042 (0.061)*
Tobin dummy	0.012 (0.296)	0.010 (0.379)	0.012 (0.283)	0.006 (0.589)				
Tobin's Q					0.003 (0.617)	0.003 (0.613)	0.003 (0.584)	-0.000 (0.984)
CHGLEV	0.032 (0.072)*		0.032 (0.031)**		0.030 (0.088)*		0.030 (0.043)**	
Adjusted R-squared	0.0727	0.0403	0.0865	0.0344	0.0607	0.0327	0.0747	0.0302
P-value for F-test	0.0872*	0.1711	0.0490**	0.1739	0.1177	0.2056	0.0686*	0.1947