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Do Managerial Objectives Drive Bad Acquisitions?

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ABSTRACT

In a sample of 326 US acquisitions between 1975 and 1987, three types of acquisitions have systematically lower and predominantly negative announcement period returns to bidding firms. The returns to bidding shareholders are lower when their firm diversifies, when it buys a rapidly growing target, and when its managers performed poorly before the acquisition. These results suggest that managerial objectives may drive acquisitions that reduce bidding firms' values.

THERE IS NOW CONSIDERABLE evidence that making acquisitions is a mixed blessing for shareholders of acquiring companies. Average returns to bidding shareholders from making acquisitions are at best slightly positive, and significantly negative in some studies (Bradley, Desai and Kim 1988, Roll 1986). Some have suggested that negative bidder returns are purely a consequence of stock financing of acquisitions that leads to a release of adverse information about acquiring firms (Asquith, Bruner, and Mullins 1987). In this case, negative bidder returns are not evidence of a bad investment. An alternative interpretation of poor bidder performance is that bidding firms overpay for the targets they acquire. In this paper, we present evidence that some types of bidders *systematically* overpay.

There are at least two reasons why bidding firms' managers might overpay in acquisitions, thereby truly reducing the wealth of their shareholders as opposed to just revealing bad news about their firm. According to Roll (1986), managers of bidding firms are infected by hubris, and so overpay for targets because they overestimate their own ability to run them. Another view of overpayment is that managers of bidding firms pursue personal objectives other than maximization of shareholder value. To the extent that acquisitions serve these objectives, managers of bidding firms are willing to pay more for targets than they are worth to bidding firms' shareholders.

Our view is that when a firm makes an acquisition or any other investment, its manager considers both his personal benefits from the investment and the consequences for the market value of the firm. Some investments are particularly attractive from the former perspective: they contribute to long term growth of the firm, enable the manager to diversify the risk on his human capital, or

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improve his job security (Shleifer and Vishny, 1990). When an investment provides a manager with particularly large personal benefits, he is willing to sacrifice the market value of the firm to pursue that investment. Other things equal, the net present value of an acquisition with high private benefits should be lower than that of an acquisition with no such benefits. Put differently, managers will overpay for targets with high private benefits.

If shareholders could perfectly monitor and control the investment decisions of managers, acquisitions that reduce shareholder wealth because they deliver managerial benefits would not be allowed (or would be allowed on a small scale only when they are an efficient form of compensation (Shleifer and Vishny, 1988)). However, managers of large public corporations are typically subject to only loose scrutiny. Boards of directors give managers considerable leeway in choosing investment projects, and do not use negative stock market reactions to investment or acquisition announcements as the definitive indicator of long-run value consequences. There is some ex post settling up in that firms pursuing value-decreasing acquisitions are taken over with a higher frequency themselves (Mitchell and Lehn, 1990), but these takeovers are too expensive and infrequently used to provide the necessary deterrence. Management ownership of shares may be the most effective deterrent to investments that dissipate market value,[1] but in most large corporations top managers own only a small stake. In sum, while it is incorrect to say that managers make investment decisions without regard for market value consequences, it is also incorrect to say that existing monitoring and control devices keep managers from pursuing personal non-value-maximizing objectives. We therefore expect some observed investments to reflect pursuit of these objectives. Our methodology is designed to uncover the hypothesized negative relation between the managerial benefits of an acquisition and its consequences for the market value of the acquiring firm.

Specifically, we try to find out which acquisitions are bad investments for bidding shareholders and determine whether those acquisitions appear to provide private benefits to bidding managers. We focus on two aspects of acquisition strategies that can be readily understood in terms of managerial objectives: buying growth and diversification. We also look at the relationship between bidders' past performance and their returns from acquisitions. This relationship sheds light on the bidding managers' motives for acquiring. Before presenting the evidence, we briefly summarize the literature on managerial objectives to justify looking at relatedness, target growth and past performance of the bidder to uncover managerial objectives in making acquisitions.

Relatedness

Several models predict that managers would pursue unrelated diversification even when it hurts shareholders. First, if managers themselves are not properly diversified, they would diversify the holdings of the firm to reduce the risk to their human capital even when diversification offers few if any benefits to shareholders (Amihud and Lev 1981). Second, to assure the survival and conti-

[1] Lewellyn, Loderer and Rosenfeld (1985) find that returns to acquiring firms are positively correlated with the equity stake of the acquirer's top management.

nuity of the firm even when shareholder wealth maximization dictates shrinkage or liquidation, managers would try to enter new lines of business (Donaldson and Lorsch, 1983). Third, when poor performance of the firm threatens a manager's job, he has an incentive to enter new businesses at which he might be better (Shleifer and Vishny, 1990). In all these cases, managers might be willing to overpay for targets outside the bidding firm's industry, reducing the wealth of their shareholders.

Buying Growth

Many authors argue that managers want their firms to grow even at a cost to market value. Baumol (1959) simply assumes that growth of sales is part of the manager's utility function. Donaldson (1984) suggests that growth of the firm creates attractive promotion opportunities for its junior managers, enabling the firm to attract young managers concerned with upward mobility. By buying a growing firm, a mature firm ensures that its younger managers do not have to compete for only a few top positions. Growth of this sort can be value maximizing if it serves to attract and retain required managerial talent. It can also be wasteful if managers overpay for growing targets just to promote their proteges. Finally, pursuit of growth can be part of a strategy of ensuring long run survival of the corporation as an independent entity (Donaldson and Lorsch 1983), a goal likely to be more important to managers than to shareholders.

On these views, managers maximize growth, and not just pure size, to create attractive opportunities for the insiders and to assure the survival of the firm. Managers spend corporate resources to buy rapidly growing firms, even if such investments have a negative present value.

Past Performance of Acquirer Management

Bad managers might make bad acquisitions simply because they are bad managers. Alternatively, bad managers have more incentive to acquire to assure the survival of the firm or to find new businesses they might be good at. The prediction is that acquisitions by bad managers are particularly disastrous. In contrast, a plausible version of Roll's hubris hypothesis predicts that the worst acquisitions are made by well performing firms, since their managers are most likely to be infected by hubris.

The evidence presented below evaluates the importance of diversification, buying growth, and past bidder performance for bidder returns in acquisitions. We also evaluate and control for alternative explanations of negative bidder returns. In particular, we control for the form of payment in the acquisition since the announcement of stock financing may release information, as well as be correlated with our variables. In addition, we test a particular version of Roll's hubris hypothesis, according to which managers of bidding firms are infected by hubris and so overpay for targets because they overestimate their own ability at running them. A plausible version of this hypothesis predicts that the worst acquisitions are made by well-performing firms, since their managers are the most likely ones to be infected by hubris. Our prediction is the opposite.

Our evidence suggests that bad acquisitions are driven by managerial objectives;

they are not just cases of information release via stock financing or of hubris of successful managers. We find that unrelated diversification and buying growth reduce the returns to making an acquisition. We also find that bad managers are also bad acquirers, consistent with the notion that poor performance drives managers to try something new. Finally, we find that the market penalizes unrelated diversification much more heavily in the 1980's than in the 1970's, coincident with the rise of hostile bust-up takeovers.

These results fit well with some recent findings of others. Lang, Stulz and Walkling (1989) find that having a low Tobin's Q, which might stand for poor quality of the bidding firm's management, reduces the bidder's return in a takeover. They also find that a low Tobin's Q of the target, which is likely to be correlated with low sales growth, is associated with a higher bidder return. The latter finding is also obtained by Servaes (1988). Lewellen, Loderer and Rosenfeld (1985) and You, Caves, Henry and Smith (1986) show that low management ownership in the bidding firm is associated with lower returns from making acquisitions. This result suggests that managers who have little incentive to maximize market value make bad acquisitions. Mitchell and Lehn (1990) find that firms making acquisitions that reduce their market value are subsequently more likely to be acquired than firms not making bad acquisitions. Although neither these papers nor our own work identify managerial objectives precisely, the importance of these objectives in determining acquisition choices seems well supported.

Section I of the paper describes the data we use in the analysis. Sections II and III present our empirical results. Section IV concludes.

I. The Sample and Construction of Variables

The Sample

Our data set is obtained by combining Bronwyn Hall's (1988) sample of mergers based on deletions of firms from Compustat with Jarrell and Poulsen's (1988) sample of acquisitions. We only consider acquisitions in which the bidder has actually obtained control. Table I presents the details of sample construction. The main reasons we lose observations include unavailability of stock price data on CRSP, absence of data in COMPUSTAT needed to construct our bidder performance variables, and missing data in the *Dun and Bradstreet Million Dollar Directory* (MDD) on the lines of business in which each firm operates. We use these lines of business to construct our diversification measures. We also omit 63 observations because the equity value of the target is less than 5% of the equity value of the bidder. These observations would only add noise to the results. Finally, we omit one outlier firm whose market value dropped more than 150% of the price it paid for the acquisition. Table I shows that our full sample consists of 326 acquisitions.

Return Variable

The traditional measure of the bidder's payoff from making an acquisition is the percentage change in the bidder's equity value at or around the time the

Table I

Construction of the 1975–1987 Sample of Acquisitions

Panel A: Construction of the Basic Full Sample	
Bronwyn Hall Sample	
1095	Partial list of firms that disappeared from Compustat
−322	Name changes/bankruptcies/LBOs/foreign bidder/reorganizations/ consolidations/disappearance before 1975
−296	Bidder or target not in CRSP, or bidder not in Compustat
−2	No *Wall Street Journal* event date
−79	No listing of bidder or target in Million Dollar Directory
396	Usable mergers from Bronwyn Hall's sample
Jarrell-Poulsen Sample	
657	Bids
−584	Toeholds but not takeovers/bidder or target not in CRSP/bidder not in Compustat/disappearance before 1975 or duplicate entry with Bronwyn Hall sample
−17	No listing of bidder or target in Million Dollar Directory
56	
+396	From Bronwyn Hall sample
452	Total from Bronwyn Hall and Jarrell-Poulsen samples
−44	Bidder or target data missing from CRSP on the event date
−18	Date of first bid is 1974, even though firm disappeared from Compustat in 1975 or later
−63	Target < 5% of the equity value of the bidder
−1	Outlier: bidder price declined over 150% of the purchase price of the target around announcement
326	Basic full sample
Panel B: Construction of More Restricted Sample for Empirical Work	
1. Quality of Bidder Management Measured by Relative Income Growth	
326	Basic full sample
−26	Bidder income missing in 1 of the 2 years needed to construct bidder income growth variable
−1	Outlier: 250% income growth due to end of lawsuit writeoffs
299	Sample for income growth means in Table II
−33	Target sales missing in 1 of the 2 years needed to construct target sales growth
266	Sample for relative income growth regressions
2. Quality of Bidder Management Measured by Relative Equity Return	
326	Basic full sample
−37	Bidder returns missing in more than 33 of 36 months needed to construct bidder equity return
289	Sample for relative equity return means in Table II
−35	Target sales missing in 1 of the 2 years needed to construct target sales growth
254	Sample for relative equity return regressions.
3. Target Sales Growth Analysis	
326	Basic full sample
−39	Target sales missing in 1 of the 2 years needed to construct target sales growth
287	Sample for target sales means in Table II

acquisition is announced. This measure is somewhat unsatisfactory because it makes equally good acquisitions differentially good to firms of different sizes. When a firm with an equity value of \$1000 buys another firm for \$200 and as a result loses \$50 in equity value, its return is −5%. But when a firm with an equity value of \$500 makes the very same acquisition for \$200 and loses \$50 in equity value, its return is −10%. In this calculation, the same bad investment is evaluated differently depending on the initial equity value of the bidding firm. A good return measure should make the quality of the investment independent of the equity value or other characteristics of the bidding firm.

A measure not suffering from this problem is the ratio of the change in the market value of the bidder to the acquisition price of the target. This variable is equal to the ratio of the acquisition's net present value to its price. This measure is obviously −25% in both cases mentioned above. Using the price paid for the target as the normalizing factor seems more natural than using the initial market value of the bidder.

We use the date on which the acquirer's first bid is announced in the *Wall Street Journal* as our event date. We then compute the change in the bidder's equity value from two trading days before to one trading day after the event date.[2] We get a proxy for the acquisition price by looking at the equity value of the target on the first trading day following the last bid mentioned in the *Wall Street Journal.* Our return variable is then the ratio of the change in the bidder equity value to the acquisition price.[3]

While we prefer this approach to the traditional approach of just looking at the percentage change in the bidder's share price upon announcement of the acquisition as a means of evaluating the acquisition decision, the traditional approach is not completely without merit. In particular, it may be that acquiring managers are primarily concerned with the impact of an acquisition on their share price and not so much with the market's view of the wisdom of the acquisition itself. In that case, when a large corporation grossly overpays for a small target, the traditional measure's treatment of this action is not that worrisome for management may not be far off base. Accordingly, we have done our analysis using the traditional return measure for the bidder as well as the measure discussed above. The results for the two measures are quite similar. Results for the traditional measure are available from the authors upon request.[4]

Another measure of the value consequences of the acquisition would be the

[2] We have repeated the analysis using various event windows other than −2 to +1 and have found similar results. In particular, we have looked at (−1,+1), (−2,+2), (−3,+3) and (−4,+4).

[3] The target's value after the bid is announced is only a proxy for the acquisition price since that value may reflect only probabilistic success of the bid as well as the possibility of future higher bids. In addition, not all bids are for 100% of the target's stock (although experience suggests that second tier "cleanup offers" at prices in the range of the initial bid are the rule rather than the exception). Deflating by the target's post-bid value is just intended to give a better normalization factor by which to gauge the change in the bidder's market value.

[4] In the regressions using the traditional measure of the bidder's stock return as the dependent variable, a variable corresponding to the ratio of the market values of the target and the bidder prior to any bidding for the target is also included as a regressor. This relative size variable enters positively in the regression using the traditional bidder return measure and is statistically significant. On the other hand, this variable neither enters significantly nor changes the results for any of the other variables using our bidder return measure.

sum of the market value changes of the target and the bidder surrounding the takeover contest. A decline in the combined value of the two firms as the market learns about the acquisition would be evidence of diseconomies or a bad expected match between the target and the bidding management team, as when a conglomerate becomes so diversified that top management's expertise gets spread too thinly. This is not the focus of our study. Even when the combined value of the two firms rises because of the existence of a synergy, we are still interested in the regularity with which the bidder's value actually declines and in relating those declines to the managerial benefits flowing to bidding management. Hence, when we talk about overpayment we are referring to the negative reaction of the bidder's share price only. It is interesting, however, that our estimate of the change in combined value for the target and bidder is negative in roughly 25% of the cases.[5] This suggests that many of these acquisitions are not only ill-advised from the standpoint of bidding shareholders but also that there may be negative synergies associated with these combinations.

Relatedness Measures

One of the main issues addressed in this paper is the relative attractiveness of related and unrelated acquisitions. We construct two measures of relatedness. The first measures whether the target has any lines of business in common with the bidder. For each target and bidder in the sample, we use the *Dun and Bradstreet Million Dollar Directory* (MDD) to obtain the 4-digit SIC codes of the three main lines of business (by sales) that the firm operates in.[6] If the firm operates in fewer than three 4-digit industries, we use all its industries. All the data are for the year prior to the acquisition. If the bidder and the target have a 4-digit industry in common among the top three they operate in, we call the acquisition related. Otherwise we call the acquisition unrelated. This procedure leaves us reasonably confident that a related acquisition really falls in the firm's field of expertise.[7]

The second measure of relatedness is the correlation coefficient of monthly stock returns between the target and the bidder over the three years prior to the acquisition. The data are taken from both the NYSE/AMEX and the OTC files of CRSP. Although this variable is highly correlated with the previous measure, it is perhaps better for asking whether managers make acquisitions to diversify either their personal risk or the firm's risk.

Target Growth Measure

To evaluate the value consequences of buying growing firms, we must measure the growth rate of the target. We use the total growth rate of sales between 5

[5] Our estimate of the sum of the two value changes is obtained as follows. The change in target value is calculated as the difference between its market value two days before any bid for the target and one day after the successful bidder's first bid. The successful bidder's market value change is the same as the numerator of our bidder return measure. It is the change from 2 days before that bidder's first bid to 1 day after that bid. These two market value changes are then added to get the net value consequences of the acquisition.

[6] SIC code 6711, used for holding companies, is not treated as a separate line of business.

[7] We have also conducted the analysis using 2-digit SIC codes to measure relatedness. Not surprisingly, the difference between related and unrelated acquisitions is much smaller in this case.

years before the acquisition and the year before, defined as log(S(t-1)) − log(S(t-6)), where t is the year of the acquisition, and S(x) is constant dollar sales in year x from COMPUSTAT using the CPI as the deflator.

Measures of Past Performance of the Bidder

We use two measures of the past performance of the bidding firm: one based on stock returns (including dividends) and one based on growth of income. We use the firm's performance relative to its industry because the industry component of performance is presumably not under the management's control. Use of industry-adjusted performance to measure the quality of management is supported by the finding that firms underperforming their industries have more internally-precipitated management turnover (Morck, Shleifer and Vishny 1989).

Our measure of the bidding firm's industry-adjusted stock return is the difference between the cum dividend stock return of the bidder (from CRSP) and that of its "industry" over the three-year period ending in December of the year before the acquisition. To define the average stock return of the bidder's industry, we use the top three 4-digit SIC codes that the bidder operates in, discussed above. For each code, we take up to 10 other firms operating in the same 4-digit SIC code, making sure that for each of these firms this SIC code is one of its two most important in terms of sales. We take 10 firms in alphabetical order from the list of firms operating in each 4-digit SIC code that the MDD provides. When there are fewer than 10 firms, we take all the ones the MDD offers. When a firm does not have return data going four years back, we take a substitute that does. Using this procedure, we can construct an equally weighted average stock return for each 4-digit industry in which each bidder operates. Last, we take the simple arithmetic average of the industry stock returns for the top three 4-digit industries that each bidder operates in to arrive at the equity return of the bidder's "industry."

A similar procedure gives us 3-year bidder income growth relative to industry. Three-year income growth is defined as $\log(I(t-1)) - \log(I(t-4))$, where t is the year of the acquisition and I is defined as the sum of net income, interest and deferred taxes taken from COMPUSTAT.[8]

Other Variables Used in the Analysis

We use three other variables in the analysis. First, we use a dummy variable equal to 1 when multiple bidders are involved in the contest, since it has been documented that bidders do worse when they are involved in an open contest for

[8] An alternative earnings based measure of past performance is the level of earnings (normalized by value of assets) relative to industry rather than recent growth in earnings relative to industry. We tried this measure at the suggestion of the referee, with mixed results. We think there are two reasons for this. First, the level of earnings relative to asset value is a noisier measure of how the current management team is doing than is the recent change in earnings. This is true because the level of earnings is probably more a result of decisions made by previous managements than are recent changes in earnings and also because extra noise is introduced by the need to normalize by some measure of assets-in place. Second, the level of earnings may proxy for the amount of free cash flow available to management. According to Jensen's free cash flow theory, all other things equal, one would expect more negative returns on the investments of firms in which management had access to more free cash flow.

the target (Bradley, Desai and Kim 1988). Second, we examine whether the returns to bidders in related and unrelated acquisitions have changed in the 1980s. At least two changes have occurred under the Reagan administration. First, the antitrust policy has become laxer, presumably raising the returns to related diversification by allowing some extremely profitable matches to occur. Second, investors have apparently become disillusioned with unrelated diversification, which has led to the advent of hostile bustup takeovers. Finally, we include a dummy variable for whether the bidder's offer included any stock. In light of Asquith, Bruner and Mullins (1987) we want to be sure that the acquisition announcement effects that we observe are not explained by information conveyed through the choice of whether or not to issue stock to finance an acquisition. Table II contains summary statistics for all of the variables that we use in our analysis.

II. Preliminary Evidence

In this section, we present some simple statistics on bidder returns in acquisitions. In the next section, we present the regressions.

Recall that we define the bidder return as the ratio of the 3-day change in the bidding firm's equity value around the announcement date to the price of the target's equity. The mean value of bidder return in the 326 acquisitions is −.70%, with a standard error of 1.22%; and 41.4% of the returns are positive. Hereafter we use the notation −.70% (1.22, .414 > 0). Although we define the bidder return variable differently from previous studies, the common finding that the average bidder return is not significantly different from zero obtains in our data set as well. The question is: which properties of the match make this return (more) negative? The three properties we look at are the growth rate of the target, the past performance of the bidding firm, and relatedness of the acquisition. Table III presents mean bidder returns for various categories of firms, as well as t-tests of the difference in means across categories and chi-squared tests of the difference in percent positive.

As a preliminary look at the effects of the growth rate of target's sales, we divide the sample into faster than the median and slower than the median growing targets. For fast growing targets, the mean bidder return is −2.43% (2.35, .389 > 0). For slow growing targets, the mean bidder return in 2.15% (1.91, .448 > 0). Buying a fast growing company is unattractive relative to buying a slow growing one. However, neither mean is significantly different from 0, and their difference, equal to 4.58%, is not quite significant at conventional levels (t = 1.51). The more precise regression tests of the effect on the bidder's return from buying growth do reject the null hypothesis of no effect (see Section III).

Recall that we measure the quality of bidding firm's management in two distinct ways: 3-year income growth relative to industry and 3-year cum dividend equity returns relative to industry. For both income and equity value, we split the sample into firms that do better than their industry and firms that do worse than their industry. Bidders with fast relative income growth earn an average return of 3.02% (2.24, .473 > 0). Bidders with slow relative income growth earn an average return of −5.02% (1.80, .338 > 0). According to this measure, bad

Table II

Summary Statistics for the Variables Used in the Analysis

Sample of 326 acquisitions between 1975 and 1987. The variables are defined in the text.

	Median	Mean	Standard Deviation	Minimum	Maximum	Sample Size
Bidder's Return on Acquisition of Target	−.0156	−.0070	.252	−.866	1.22	326
Dummy = 1 if Acquisition Is at Least Partly Equity-Financed	0	.485	.501	0	1	326
5-Year Target Real Sales Growth	.143	.179	.482	−1.37	2.74	287
Bidder 3-Year Income Growth Relative to Industry	.0608	.0969	.627	−2.78	3.00	299
Bidder 3-Year (cum dividend) Stock Return Relative to Industry	.0522	.165	1.35	−4.80	7.81	289
Dummy = 1 if Deal Is in 1980–1987	1	.528	.500	0	1	326
Dummy = 1 if Bidder and Target Share a 4-Digit SIC Industry	0	.279	.449	0	1	326
Correlation Coefficient of Bidder and Target Stock Returns over 3 Years Prior to Takeover	.365	.343	.206	−.706	.878	326
Dummy = 1 if Deal Is in 1980–1987 *and* Bidder/Target Share 4-Digit SIC Industry	0	.175	.380	0	1	326
Dummy = 1 if Deal Is in 1980–1987 Times Correlation Coefficient of Target and Bidder Returns	0	.164	.211	−.184	.878	326
Dummy = 1 if there Are Multiple Bidders	0	.239	.427	0	1	326

Table III

A Comparison of Mean Bidder Return on Acquisition by Characteristics of the Match

Characteristics of the match covered include target sales growth prior to the acquisition, bidder's income growth prior to the acquisition, bidder's stock return prior to the acquisition, measures of relatedness of the target and the bidder, and the time period during which the acquisition occurred. Sample of 326 acquisitions between 1975 and 1987.

	5-Year Target Sales Growth			3-Year Bidder Income Growth			3-Year Bidder Stock Return		
	Faster Than Sample Median	Slower Than Sample Median	Tests of Difference in Means & in % > 0	Faster Than Industry Average	Slower Than Industry Average	Tests of Difference in Means & in % > 0	Higher Than Industry Average	Lower Than Industry Average	Tests of Difference in Means & in % > 0
Mean Bidder Return	−2.43	2.15	$t = 1.51$	3.02	−5.02	$t = 2.67$	2.12	−2.12	$t = 1.39$
(Standard Error)	(2.35)	(1.91)	($p = .132$)	(2.24)	(1.80)	($p = .0078$)	(2.25)	(2.02)	($p = .167$)
Number of Observations	144	143	$\chi^2 = 1.01$	169	130	$\chi^2 = 5.47$	153	136	$\chi^2 = .20$
Percent Positive	38.9	44.8	($p = .314$)	47.3	33.8	($p = .0194$)	43.8	41.2	($p = .654$)
	Bidder and Target Share 4-Digit SIC Industry			3-Year Bidder and Target Correlation of Stock Returns			Year of the Acquisition		
	Yes	No	Tests of Difference in Means & in % > 0	Below Sample Median	Above Sample Median	Tests of Difference in Means & in % > 0	1975–1979	1980–1987	Tests of Difference in Means & in % > 0
Mean Bidder Return	2.38	−1.89	$t = 1.37$	.983	−2.37	$t = 1.20$	.517	−1.78	$t = .821$
(Standard Error)	(2.41)	(1.70)	($p = .171$)	(2.21)	(1.70)	($p = .230$)	(1.86)	(2.06)	($p = .412$)
Number of Observations	91	235	$\chi^2 = .69$	163	163	$\chi^2 = .62$	154	172	$\chi^2 = 3.42$
Percent Positive	45.1	40.0	($p = .406$)	43.6	39.3	($p = .431$)	46.8	36.6	($p = .064$)

managers earn significantly negative returns from making acquisitions. Moreover, they earn significantly less than do good managers. The return difference of 8.04% has a t-statistic of 2.67.

A similar result obtains using the bidder's past equity returns relative to industry, except now we cannot as reliably conclude that firms underperforming their industries lose from making acquisitions. The difference between returns to good and bad managers from making an acquisition, at 4.24%, is different from 0 with a p-value of .167.

Our first measure of relatedness is defined above through commonality of 4-digit SIC industries that the target and the bidder operate in. The evidence in Table III shows that the average bidder return in a related acquisition is 2.38% (2.41, .451 > 0), and in an unrelated acquisition it is −1.89% (1.70, .400 > 0). Although the two mean returns are of opposite signs and differ by 4.2%, they are not statistically significantly different from 0 or from each other. A similar picture emerges when we measure relatedness by correlation of bidder and target returns. The average bidder return in the subsample with above median correlation of bidder/target stock returns is .938% (2.21, .436 > 0) and that in the subsample with below median correlation is −2.37% (1.70, .393 > 0). The two mean returns are not significantly different from 0 or from each other.

The results become sharper when we distinguish between the 1970s and the 1980s, as is done in Table IV. Table IV shows that the difference between returns to related and unrelated acquisitions is both statistically and substantively more pronounced in the 1980s than in the 1970s. In Panel A of Table IV we call an acquisition related if the target and the bidder operate in the same 4-digit SIC industry. The panel shows that the returns to both related and unrelated acquisitions have changed from the 1970s to the 1980s. The mean return to related acquisitions has risen (insignificantly) by 1.3% in the 1980s, while the mean return to unrelated acquisitions has declined (also insignificantly) by 4.3%. Note that the sharp decrease over time in the fraction of returns that are positive in unrelated acquisitions is statistically significant. This evidence indicates that unrelated diversification became unattractive in the 1980s.

We can also see this point by comparing related to unrelated acquisitions in the two subperiods separately. Mean returns in related vs unrelated acquisitions are not statistically or substantively different in the 1970s, but are different in the 1980s. In the 1980s, the difference in mean returns in related and unrelated acquisitions is 6.97%, with a t-statistic of 1.60 (p = .11). During this period, in 45.6% of related acquisitions bidder returns are positive, but in only 32.2% of unrelated acquisitions are bidder returns positive (p = .09). Not surprisingly, the rise in the relative attractiveness of related acquisitions has led to an increase in the fraction of acquisitions that are related, from 22% in the 1970s to 33% in the 1980s.

These results are qualitatively confirmed using correlation of stock returns as a measure of relatedness, although the evidence is much weaker. One reason the results are weaker is that we split the sample at the median, and call acquisitions with above median stock return correlation related, even though according to our previous measure of relatedness over two thirds of the acquisitions are unrelated. The finding that the consequences of diversification are different in the two

Table IV

A Comparison of Mean Bidder Returns in Related and Unrelated Acousitions in the 1970s and 1980s

Each panel consists of 3 main rows corresponding to related acquisitions, unrelated acquisitions, and tests of equality of bidder returns between these two types of acquisitions. Within each row, there is a column of four numbers. They correspond to the mean bidder return on acquisition for that cell, the standard error of that mean return, the number of observations in the cell, and the percentage of observations in that cell for which the bidder's return on acquisition is positive (as in Table III). Sample of 326 acquisitions between 1975 and 1987.

Panel A: Diversification Measured Using 4-Digit SIC Industries in Which Bidder and Target Operate

	1975–1979	1980–1987	Tests of Equality of Means & of % > 0 in Two Periods
Bidder and Target Share a 4-Digit SIC Industry	1.54 (3.82) 34 44.1	2.88 (3.12) 57 45.6	$t = .268$ ($p = .7897$) $\chi^2 = .02$ ($p = .8896$)
Bidder and Target Do Not Share a 4-Digit SIC Industry	.227 (2.13) 120 47.5	−4.09 (2.65) 115 32.2	$t = 1.27$ ($p = .2037$) $\chi^2 = 5.69$ ($p = .0171$)
Tests of Equality of Means & of % > 0 between Related and Unrelated	$t = .293$ ($p = .770$) $\chi^2 = .12$ ($p = .728$)	$t = 1.60$ ($p = .112$) $\chi^2 = 2.94$ ($p = .0865$)	

Panel B: Diversification Measured Using Correlation Coefficient of Bidder and Target Monthly Stock Returns over 3 Years Prior to the Year of the Bid

	1975–1979	1980–1987	Tests of Equality of Means & of % > 0 in Two Periods
Correlation of Bidder and Target Stock Returns above Sample Median	.770 (2.62) 93 46.2	1.27 (3.83) 70 40.0	$t = .111$ ($p = .9120$) $\chi^2 = .63$ ($p = .4270$)
Correlation of Bidder and Target Stock Returns below Sample Median	.132 (2.47) 61 47.5	−3.87 (2.28) 102 34.3	$t = 1.14$ ($p = .2558$) $\chi^2 = 2.78$ ($p = .0955$)
Tests of Equality of Means & of % > 0 between Related and Unrelated	$t = .168$ ($p = .8672$) $\chi^2 = .03$ ($p = .8739$)	$t = 1.23$ ($p = .2220$) $\chi^2 = .58$ ($p = .4474$)	

periods guides our regression analysis, in that we distinguish between the 1970s and the 1980s in measuring the effect of diversification on returns to the bidding firms.

III. Regressions

Table V presents the regressions of bidder returns (change in value of bidder divided by target value) on the characteristics of the match. The left panel of Table V uses 3-year income growth relative to industry as a measure of the quality of bidder management, and the right panel uses 3-year stock returns relative to industry. The three regressions on each side use commonality of 4-digit industries between the bidder and the target, correlation coefficient of bidder and target returns, and both of them at the same time as measures of relatedness. In all regressions, we use both a time dummy for the 1980s and an

Table V

Regressions of Bidder's Return on Acquisition on Characteristics of the Match

These regressions for our 1975–1987 sample of acquisitions estimate the effect of target sales growth, bidder's prior performance, and relatedness of the bidder and target on the acquisition return to the bidder. The regression allows for the 1970s and 1980s to have a separate intercept and separate relatedness effects. The use of equity as a method of payment and the presence of competing bidders are also included as control variables. Numbers in brackets are standard errors. White (1980) adjustments are used in regressions where a χ^2 test indicates significant heteroskedasticity.

	Quality of Bidder Management Measured by 3-Year Income Growth Relative to Industry			Quality of Bidder Management Measured by 3-Year Equity Return Relative to Industry		
Variable Name	I	II	III	I	II	III
Intercept	.0769[b]	.0871[c]	.0878[c]	.0871[b]	.0887[c]	.0928[c]
	(.0340)	(.0456)	(.0451)	(.0352)	(.0487)	(.0478)
Dummy = 1 if Acquisition Is at Least Partly Equity-Financed	−.0340	−.0424	−.0376	−.0314	−.0407	−.0354
	(.0336)	(.0324)	(.0326)	(.0345)	(.0338)	(.0336)
5-Year Target Sales Growth	−.101[a]	−.0947[b]	−.102[a]	−.0953[a]	−.0900[b]	−.0996[b]
	(.0348)	(.0392)	(.0394)	(.0345)	(.0396)	(.0399)
Quality of Bidder Management	.0519[b]	.0530[b]	.0511[b]	.0230[c]	.0268[c]	.0231
	(.0257)	(.0233)	(.0220)	(.0128)	(.0164)	(.0153)
Dummy = 1 if Deal Is in 1980–87	−.0813[b]	−.126[b]	−.143[b]	−.0762[c]	−.104[c]	−.127[b]
	(.0376)	(.0548)	(.0562)	(.0392)	(.0601)	(.0624)
Dummy = 1 if Bidder and Target Share a 4-Digit SIC Industry	−.0163		−.0145	−.0254		−.0248
	(.0531)		(.0470)	(.0544)		(.0484)
Dummy = 1 if Deal Is in 1980–87 *and* Target and Bidder Share a 4-Digit SIC Industry	.127[c]		.113	.122[c]		.115[c]
	(.0737)		(.0731)	(.0743)		(.0696)
Correlation Coefficient of Bidder and Target Monthly Stock Returns over 3 Years Prior to Takeover		−.0278	−.0196		−.0140	−.0047
		(.0930)	(.100)		(.103)	(.107)
Dummy = 1 if Deal Is in 1980–87 Times Correlation Coefficient of Bidder and Target Stock Returns		.250[b]	.203		.190	.157
		(.126)	(.132)		(.130)	(.135)
Dummy = 1 if there Are Multiple Bidders	−.0988[b]	−.0970[a]	−.104[a]	−.0918[b]	−.0850[a]	−.0944[a]
	(.0389)	(.0259)	(.0265)	(.0395)	(.0264)	(.0267)
Number of Observations	266	266	266	254	254	254
R^2	.09	.08	.10	.08	.07	.08

[a] Significant at 1%.
[b] Significant at 5%.
[c] Significant at 10%.

interaction of that dummy with the relatedness measure to allow for different returns to diversification in the 1970s and the 1980s.

In all regressions, the coefficient on the dummy equal to 1 when there are multiple bidders is highly significant and is equal to about −0.1. This means that entry by additional bidders reduces the winning bidder's market value by 10 cents on each dollar paid for the target. The second control variable, the dummy equal to 1 if the acquisition is at least partly equity financed, is not statistically significant in any of the regressions.

Depending on the specification, estimated bidder return falls between 9.0% and 10.2% as the target's change in log sales over the five years prior to the year of the acquisition goes from 0 to 1. In all specifications, this estimate of the cost of buying growth is highly statistically significant. To interpret the magnitude of this effect better, note that the value of 0 for the 5-year change in log sales represents 35th percentile sales growth performance, while the value of 1 represents 95th percentile performance. In our data, buying rapidly growing firms is extremely costly to the bidders.

Whether we measure past performance of the bidder by income growth relative to industry or by stock returns relative to industry, its effect is significant. When the industry-adjusted 3-year change in the log of bidder income goes from 0 to 1, the average return from making an acquisition rises by somewhere between 5.1% and 5.3% depending on the specification. An industry-adjusted change in the log of income of 0 represents median relative income growth, while a value of 1 represents growth at the 95th percentile.

Similarly, when the industry adjusted 3-year bidder's stock return goes from 0 to 100%, the average return from making an acquisition rises by somewhere between 2.3% and 2.7%, depending on the specification. An industry-adjusted 3-year stock return of 0 is about median, and a return of 100% is at about the 85th percentile.

As do the findings of Lang, Stulz and Walkling (1989), these results show that firms with better managers are also better acquirers. These results are inconsistent with a particular version of Roll's hubris hypothesis, in which managers of better performing firms are more arrogant and therefore overestimate the target's value under their control by more.

Comparing the effect of diversification on bidding firm's returns in the 1970s and the 1980s requires looking at three variables: the measure of relatedness, the time period dummy, and the interaction of the two. We do not discuss the regressions with both measures of relatedness included at the same time, since the strong correlation between the two measures makes the results insignificant and difficult to interpret. We also focus, for concreteness, on the left panel, where past bidder performance is measured by 3-year relative income growth. The results for the right panel are very similar. Note finally that the correlation coefficient of stock returns can be interpreted similarly to the shared 4-digit SIC codes dummy. We can think of unrelated acquisitions as those for which the value of the correlation of stock returns is 0, and of related acquisitions as those for which this correlation is 1.

When the relatedness measure, the time period dummy, and the interaction are all equal to 0, we are in the benchmark case of unrelated acquisitions in the

1970s. The coefficient on the 1980s dummy therefore captures the difference in returns on *unrelated* acquisitions between the 1980s and the 1970s. In regression I, the return on unrelated acquisitions was 8.1% lower in the 1980s than in the 1970s (t = 2.16). In regression II, the return from aquiring a target whose stock returns are uncorrelated with the bidder's was 12.6% lower in the 1980s than in the 1970s (t = 2.30). Using the zero correlation of stock returns to define unrelatedness yields bigger magnitudes simply because this is a more extreme form of unrelatedness than non-sharing of a 4-digit SIC industry. The results confirm our earlier finding that returns to unrelated acquisitions have declined substantially in the 1980s.

To see what happened to returns in *related acquisitions* between the 1970s and the 1980s, we add the coefficient on the relatedness measure to the coefficient on the interaction between the relatedness measure and the 1980s dummy. In regression I, the return on related acquisitions is 12.7% − 8.1% = 4.6% higher in the 1980s than in the 1970s (t = .78). In regression II, the return from acquiring a firm with a perfectly correlated stock return is 25.0% − 12.6% = 12.4% higher in the 1980s than in the 1970s (t = 1.34). In contrast to the statistically significant decline in returns to *unrelated* acquisitions over this period, the returns to *related* acquisitions have risen, but not significantly. The apparent overall decline of returns to acquisitions from the 1970s to the 1980s documented in Table III is completely a consequence of the large decline in returns to unrelated diversification.

The coefficient on the interaction of the 1980s dummy and the relatedness measure describes the change from the 1970s to the 1980s of the returns difference in related and unrelated acquisitions. In regression I, the return from doing a related as opposed to an unrelated deal has gone up by 12.7% from the 1970s to the 1980s (t = 1.72, p-value = .085). In regression II, the return from buying a target whose stock returns are perfectly correlated with the bidder's rather than a target with uncorrelated stock returns has gone up by 25.0% (t = 1.98, p-value = .048) from the 1970s to the 1980s. In the 1980s, the penalty for diversification relative to making a related acquisition has gone way up.

Similar results obtain when we use industry-adjusted stock returns to measure past performance of the bidding firm. In the 1980s, returns to related acquisitions have gone (insignificantly) up, returns to diversification have gone (significantly) down, and the cost of diversifying relative to buying related has risen significantly. The overall verdict on diversification is clear: it is a bad idea in the 1980s.

The results in Table V support the proposition that managerial objectives drive acquisitions. For example, they show that buying growth is a bad idea from the point of view of bidding firm's shareholders. Of course, growth is one of the much discussed managerial objectives, pursued either for its own sake or for the sake of assuring the survival of the bidding firm and the continuity of its top management.

The results in Table V also suggest that unrelated diversification is a bad idea from the point of view of the bidding firm's shareholders in the 1980s. Like pursuit of growth, diversification can be understood as serving the objectives of managers.

Perhaps surprisingly, we do not find that diversification reduces bidding firms'

shareholder wealth in the 1970s. We take this to mean one of two things. First, there might have been some efficiency reasons for diversification in the earlier period, such as imperfect capital markets, foreclosure of related acquisitions due to antitrust policy, or the attractiveness of conglomerate control. Second, the market might have favored diversification during this period given the information it had, even though ex post diversification proved unattractive and by the 1980s the market caught on.

Finally, the results in Table V demonstrate that firms with bad managers (identified by poor firm performance relative to its industry) do much worse in making acquisitions than firms with good managers. The negative return to acquisitions by poorly performing acquirers is evidence that bad acquisitions are a manifestation of agency problems in the firm.

IV. Implications

Although this paper has focused on managerial objectives in making mostly friendly acquisitions, the results may also shed light on the source of gains in hostile bust-up takeovers, leveraged buyouts, and defensive recapitalizations involving large scale divestitures. Our finding that in the 1980s the stock market punishes unrelated diversification is consistent with the view that the source of bust-up gains in the 1980s is the reversal of the unrelated diversification of the 1960s and the 1970s. Hostile bust-up takeovers simply undo past conglomeration.

At the same time, our finding that managerial objectives drive bad acquisitions suggests a different interpretation of the gains from bustup takeovers. Raiders in these deals facilitate the sale of each piece of the target to the highest bidder. Part of the gain from this activity is doubtless the improvement in the operations of particular divisions under a more talented or a better motivated management team. But part of the gain from bustups may come from the willingness of other non-value-maximizing managers to buy the pieces of the target for their own empires. By allowing each buyer to overpay only for the piece of the target he really wants, the raider can collect more than any single bidder would pay for the whole target. This suggests that takeover premia may overestimate the efficiency gains from hostile bustup takeovers.

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