

Stock Market Valuation and Mergers

A review of research that explores the link between valuation, activity and performance. **Christa H.S. Bouwman, Kathleen Fuller and Amrita S. Nain**

In recent years, few business topics have commanded as much research and media attention as mergers and acquisitions, perhaps because of the sheer volume of M&A activity: the value of U.S. merger activity equaled around 16% of GDP in 1999 (Bengt Holmstrom and Steven Kaplan, 2001), and the value of M&A worldwide reached a peak of \$3.5 trillion in 2000 (*Economist*, January 27, 2001).

Over the past 40 years, economic theory has provided many rationales — positive and negative — for why firms choose to engage in mergers and acquisitions. For example, acquirers may be seeking to improve efficiency or create market power, or be reacting to deregulation; in other cases, diversification or empire building may be the goal — possibly spurred by managerial hubris. Indeed, empirical research has shown that most of these theories can explain certain types of merger activity, though some theories appear to be more relevant for particular time periods. That is, the 1960s were characterized by diversifying mergers, the 1980s are referred to now as the decade of market discipline, and the 1990s were dominated by deregulation.

Much of the academic and anecdotal research has focused on this crucial question: Do mergers and acquisitions create value? Interestingly, the answer is not clear. Whether acquisitions create value depends on various factors: how value improvements are measured (using short-run or

long-run stock performance, or accounting measures of profit, efficiency and so on); the participant examined (bidder, target or the combined entity); the type of deal (tender offer versus merger, or diversifying versus focus-enhancing); the method of payment (cash versus stock versus mixed); the type of target (public, private or subsidiary); and the bidder's, the target's or the market's valuation.

Measures of Value Creation

There are three popular ways to measure whether mergers create value. The first measure — the short-run stock performance of the acquirer, the target or the combined entity surrounding the acquisition announcement — is the most widely used

in studies. Many view short-run stock performance as the most reliable evidence of value creation because in an efficient capital market, stock prices quickly adjust to new information and incorporate any changes in value that the acquisitions are expected to bring. Rather than consider-

ing actual stock returns occurring over a few days, these studies focus on abnormal returns. That is, they deduct the return investors could have earned by investing in the market as a whole.

The second measure of value creation is the long-run stock performance of the acquiring firm for three to five years after the acquisition announcement. Studies show that certain acquirers significantly underperform their peers in the long run,

thereby casting doubt on the conventional wisdom that stock prices adjust quickly and fully during the announcement period. Long-run studies also focus on abnormal performance, not relative to the market, but relative to nonacquiring peers of the acquiring firm. Abnormal performance is measured as the stock return of the acquirer minus the stock return of a nonmerging firm of similar size and market-to-book ratio as the acquirer.

The third way to measure value creation is to examine accounting measures of profitability — including return on equity or assets — and cash-flow performance. If acquisitions create value for shareholders, these gains should improve a firm's performance and profitability. Similar to the long-run stock performance measure, these studies address whether acquirers outperformed their peers, where peers are defined as nonacquiring firms in the same industry with similar size and profitability as the acquirer.

Winners and Losers in M&A

Based on short-run stock performance, target firm shareholders are the “big winners” in M&A, earning significant, positive abnormal returns. Acquiring firm shareholders are the “losers,” earning zero or negative abnormal returns. The combined entity seems to be slightly better off, suggesting that, on average, acquisitions do create shareholder value. Long-run stock performance studies suggest that acquiring firm shareholders are losers in the long run too: that is, acquirers underperform their nonacquiring peers three to five years after the acquisitions. However, this underperformance has been attributed to the smallest acquirers. Accounting studies show mixed results. Some studies find that acquirers outperform their peers, whereas others find equal or underperformance. Studies focusing on the type of acquisition find that ten-

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Company	Price	Change	% Change	Volume	Market Cap	Dividend	Yield
CarA	214	9.6	4.5%	325	22%	22 1/2	+1%
CarSv	50	255	22%	25 1/2	25 1/2	25 1/2	+3%
Carson	3	248	2%	2%	2%	2%	+1%
CarlWal	24	1.3	28	327	18 1/2	18 1/2	+1%
CaseNG	36	5.4	22	144	18	17 1/2	+2%
CaseCp	20	0.8	5	2982	25 1/2	24 7/8	+2%
CashAm	.05	0.4	22	316	12 1/2	12 1/2	+4%
CatalI	8	149	2 1/2	2 1/2	2 1/2	2 1/2	+1%
CatWk	32	1237	54%	53%	53%	17 1/2	+1%
CatWk	58	1395	13 1/2	13 1/2	13 1/2	13 1/2	+3%
Caterpillr	1.20	2.5	11	16292	48 1/2	47 1/2	+1%
CavaliH	1.68	1.5	26	182	10 1/2	10 1/2	+1%
CedarF	1.304	4.8	326	26 1/2	25 1/2	26 1/2	+1%
Celestic gn	19	19 1/2	13%	13%	13%	13%	+1%
Cendant	19	19 1/2	13%	13%	13%	13%	+1%
Cendri pG	65	58	13%	13%	13%	13%	+1%
Censm pG	75	13	13%	13%	13%	13%	+1%
Centep	175	25	13%	13%	13%	13%	+1%
CentCo	20	0.4	13%	13%	13%	13%	+1%
Centox	16	0.4	13%	13%	13%	13%	+1%
CenSWall	74	6.1	13%	13%	13%	13%	+1%
CentEur	14	1	13%	13%	13%	13%	+1%
CentHud	2.16	5	13%	13%	13%	13%	+1%
CentMac	98	1	13%	13%	13%	13%	+1%
CentPha	65	1	13%	13%	13%	13%	+1%
CVFS	88	1	13%	13%	13%	13%	+1%
CentIns	12	1	13%	13%	13%	13%	+1%
CentBk	1.15	1	13%	13%	13%	13%	+1%
CentCan	1.15	1	13%	13%	13%	13%	+1%
CentTel	2	1	13%	13%	13%	13%	+1%
Champ	1	1	13%	13%	13%	13%	+1%
Compn	1	1	13%	13%	13%	13%	+1%
Chico	1	1	13%	13%	13%	13%	+1%

der offers (often hostile) create value for bidders, whereas mergers (friendly) do not; furthermore, diversification tends to destroy value, whereas focus conserves it.

Studies examining the method of payment show that cash acquisitions outperform stock acquisitions, both in the short run and in the long run. Hence, acquiring firm shareholders earn positive abnormal returns if the acquirer uses cash, and zero or negative abnormal returns if the acquisition is stock-financed. Though target firm shareholders earn positive returns in the short run regardless of method of payment, they fare even better absent equity financing.

Finally, the type of target purchased dramatically affects the acquirers' short-run returns. Bidders have negative returns when buying public targets but positive returns when buying private or subsidiary targets. When the bids are partitioned on method of payment (cash, stock or mixed), acquisitions of public targets result in zero returns for cash or mixed-payment offers but negative returns to acquirers offering stock. However, for private and subsidiary targets, acquirer returns are positive regardless of method of payment.

While much of the research to date has focused mainly on measuring merger gains and losses, there has been little exploration of how mergers actually create or destroy value.

The Valuation-Performance Link

Much of the recent research in M&A has sought to link the market valuations of individual companies, as well as overall stock market levels, with merger activity and performance.

The idea that stock prices affect merger activity is not new. It dates back at least to Ralph Nelson (1959), who noted that merger activity seems to boom when stock prices are high. Boyan Jovanovic

and Peter Rousseau (2001) confirmed this observation, showing that periods of high merger activity correlate with high market valuations. Further, during these merger waves, firms are more likely to use stock to undertake acquisitions. Recently, however, researchers have begun to explore whether market valuations affect the *performance* of mergers.

Numerous studies have shown that acquirers who pay with stock underperform their peers in the long run, whereas acquirers who pay cash outperform their peers. Kenneth Martin's work (1996) suggested such a link when he showed that acquirers using stock tend to have high market-to-book ratios and acquirers using cash have had low market-to-book ratios; numerous studies have shown that acquirers who pay with stock underperform, whereas acquirers who pay cash outperform.

This suggested link between firm valuation and merger performance was established more directly by Raghavendra Rau and Theo Vermaelen (1998). They compare the performance of "glamour firms" (those with the highest market-to-book ratios at the time of the acquisition announcement) with that of "value stocks" (firms with the lowest market-to-book ratios). Because the glamour firms have typically performed well in the past (high stock returns and high growth in earnings and cash flow), the authors hypothesize that the stock market overextrapolates positive past performance when assessing acquisitions and management overestimates its own abilities. Therefore, merger activity is often value-destroying and such glamour firms indeed underperform their peers in the long run.

Evidence of the Link

Christa Bouwman, Kathleen Fuller and Amrita Nain (2003) have found that the level of the stock market when the acquisition is announced — as proxied by the

price/earnings (P/E) ratio of the S&P 500 index — affects the short-term and long-term merger performance. The short-term effects are positive for acquisitions announced in high-valuation markets and negative for those undertaken in low-valuation markets. In the longer term, however, the high-valuation acquirers underperform and low-valuation acquirers outperform their peers. This pattern holds regardless the method of payment. Thus, it is not always true that paying with cash is good for acquiring firms' shareholders. A recent study by the Boston Consulting Group (Jeffrey Kotzen, Chris Neenan, Alexander Roos and Daniel Stelter, 2003) provides supporting evidence: Acquisitions that take place during periods of below-average economic growth — as measured by GDP growth of less than 3.1% — create more shareholder value than strong-economy acquisitions. The strong performance of low-valuation acquirers and weak-economy acquirers suggests that they are not distracted by short-run market reactions, but instead focus on business fundamentals and true potential synergies.

Two recent articles suggest that the root cause of such links between valuation and performance may be misvaluation by the market. Andrei Shleifer and Robert Vishny (2002) have suggested that inefficient capital markets and differences in managers' time horizons drive merger activity. They posited, therefore, that stock acquisitions are undertaken by managers of overvalued firms to offset what they know will be negative long-run returns, thereby acting in the best interests of their long-term shareholders. However, as these bidders seek to pay with overvalued shares, only target companies that are themselves overvalued would find such bids acceptable. On the other hand, undervalued acquirers do not want to pay with *undervalued* shares and therefore use cash.

Matthew Rhodes-Kropf and S. Viswanathan (2002) have suggested that merger activity is higher during stock market booms because more targets accept acquirer bids. The authors argued that

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companies know whether they are overvalued or undervalued, but do not know whether such misvaluation is due to a marketwide or firm-specific component. In an overvalued market, companies tend to underestimate the former and overestimate the latter; the reverse happens when the market is undervalued. Therefore, a target company is more likely to accept an offer in overvalued markets.

Recent research offers empirical support for these misvaluation theories: Rhodes-Kropf, David Robinson and Viswanathan (2003) have found that overvalued acquirers buy less-overvalued

targets and that stock acquirers are more overvalued than cash acquirers; Ming Dong, David Hirshleifer, Scott Richardson and Siew Hong Teoh (2003) have found that when the stock market is overvalued, the value of takeover activity (as a percentage of market capitalization) is greater and that stock is more likely to be used as payment.

The conclusion of these various research streams is that stock prices matter: Firm and market valuation clearly affect the intensity of merger activity and the subsequent performance of mergers. Although some studies argue that firm

and market misvaluation drives the results, more research must be done to carefully establish the causation and to determine if other measures of misvaluation, such as the level of insider sales and earnings manipulation through accruals, deliver similar results. Nevertheless, the key implication for managers is abundantly clear: Be wary of acquisitions made when market or firm valuations are high, and be optimistic about acquisitions when valuations are low.

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Referenced Research

Bouwman, C.H.S., K. Fuller and A.S. Nain, "The Performance of Stock-Price Driven Acquisitions," *working paper*, University of Michigan and University of Georgia (2003).

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Suggested Reading

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Shows that deregulation accounts for half of all merger activity in the 1990s, and provides an overview of winners and losers in the merger game.

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Reviews 14 informal studies and 100 academic articles on M&A, dating from 1971 to 2001. Argues that enhanced corporate governance explains merger waves in the 1980s and 1990s and explains why the governance mechanisms that were used differ markedly.

