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Does M&A Pay? **A Survey of Evidence for the Decision-Maker**

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Abstract

In the wake of the largest M&A wave in history, it is appropriate to assess the evidence on the profitability of this activity. One popular view is that merger activity is highly unprofitable. Does research sustain this view? This paper reflects on what it means for M&A to “pay” and summarizes the evidence from 130 studies from 1971 to 2001. The review comments on various research approaches, and highlights findings for the broad activity as well as niches of special note. The mass of research suggests that target shareholders earn sizable positive market-returns, that bidders (with interesting exceptions) earn zero adjusted returns, and that bidders and targets combined earn positive adjusted returns. On balance, one should conclude that M&A does pay. But the broad dispersion of findings around a zero return to buyers suggests that executives should approach this activity with caution.

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Does M&A Pay?

I. Introduction

The profitability of merger and acquisition (M&A) activity has generated a small mountain of research over the past 30 years. With each passing decade, more scientific evidence emerges, permitting us to sharpen our conclusions. It is appropriate to consider the latest findings along with earlier studies to synthesize some insights from the literature. Reviews of the scientific evidence were published in 1979, 1983, 1987, and 1992. In the wake of the largest merger wave in history, spanning the years 1992-2000, a fresh review of the findings seems appropriate. The 128 scientific studies surveyed in here include the classic most-cited research, and some of the newer and notable work.

A review of the evidence is also warranted by the view, grown popular in circles of executives, consultants, and journalists, that M&A destroys value. Consider some statements culled from a recent work by consultants in M&A:

*[T]he sobering reality is that only about 20 percent of all mergers really succeed. Most mergers typically erode shareholder wealth...the cold, hard reality that most mergers fail to achieve any real financial returns...very high rate of merger failure...rampant merger failure...*¹

A manager should find these assertions alarming. But the findings of a broad range of scientific studies are not consistent with the language quoted here if one uses definitions of “success” and “failure” rooted in economics, and tested using conventional statistical methods. One possible reason for the disparity between popular perception and scientific findings is confusion about what it means for an investment “to pay.”

In this review I use a very specific benchmark for measuring performance: investors’ required returns, commonly defined as the return investors could have earned on other investment opportunities of similar risk. Against this benchmark, we can define three possible outcomes:

- **Value conserved.** Here, investment returns equal the required returns. Shareholders get just what they required. The investment has a net present value of zero; it breaks even in present value terms. This does *not* indicate an investment failure. If the investor requires a return of 15 percent, and gets it, his or her invested wealth will double in five years. Under this scenario, wealth will grow at the rate the investor requires. Economically speaking, the investor earns “normal” returns. The investor should be satisfied.
- **Value created.** This occurs where the returns on the investment exceed the returns required. This investment bears a positive net present value; the investor’s wealth grew higher than was required. The investor must be very happy. Given

¹ Grubb and Lamb (2000), pages 9, 10, 12, and 14.

competition in markets, it is difficult to earn “supernormal” returns, and very difficult to earn them on a sustained basis over time.

- **Value destroyed.** In this case, investment returns are less than required. The investor could have done better investing in another opportunity of similar risk. The investor is justifiably unhappy here.

Notions of success or failure should be linked to these measurable economic outcomes. In economic terms, an investment is “successful” if it does anything other than destroy value.

Why should we focus so narrowly on economics? Many managers describe a complex set of motives for acquisitions—shouldn’t the benefit of M&A activity be benchmarked against all of these? The use of broader benchmarks is debatable for at least two reasons. First, the managers’ motives may be inappropriate, or the managers themselves foolhardy. One hears of M&A deals that are struck for vague strategic benefits, the creation of special capabilities, the achievement of competitive scale, or because two organizations or CEOs are especially friendly. But the only way one can prove that these are actually beneficial is by measuring the economic outcomes rigorously. Second, special deal-specific definitions of success limit generalizing from the research findings. Enhancing the welfare of shareholders is a fundamental and common objective of all firms—indeed, in the United States, corporate directors are required to implement policies consistent with shareholder welfare, usually synonymous with creating value. Fortunately, benchmarking against value creation *does* permit generalizations to be drawn. Indeed, the definition of M&A success and its drivers is a fertile area for further research. I pursue a narrow question here in hope of saying something meaningful about M&A activity.

There are two primary parties to an M&A transaction: the buyer and the seller of the target company. In addition, there are numerous ancillary economic interests in the deal, those of advisors, creditors, suppliers, customers, employees, communities, governments, and so on. This survey will focus mainly on the consequences for the *shareholders* of the two primary parties. This is not to deny the relevance of other interests, but to acknowledge the fiduciary responsibility of boards of directors to their shareholders (above all others). The possible transfer of wealth among shareholders and other groups in a deal is a very interesting topic, on which there is little rigorous research. Of course, private and social values can diverge, as the “problem of the commons” illustrates.² M&A activity may affect a variety of influences on the common good, including industry concentration and monopolies, international competitiveness, productivity growth, and technology transfer. The research literature on these aspects, however, parallels the more narrow discussion here about shareholder welfare. For brevity, therefore, the discussion here does not survey the impact on other stakeholders.

² In England, the village commons was a field jointly used by villagers to graze their animals. Because the field was, in effect, held by all, no one individually looked out for the welfare of the social good. The problem of the commons was to prevent behavior (such as overgrazing by selfish villagers) that would harm the welfare of all.

II. Measurement of M&A profitability

Our ability to say anything meaningful about the profitability of M&A depends critically on our confidence in the methods and measures from which we extract insights. Research offers four approaches to measure M&A profitability.

- Event studies. These examine the abnormal returns to shareholders in the period surrounding the announcement of a transaction. The raw return for one day is simply the change in share price and any dividends paid, divided by the closing share price the day before. The *abnormal return* is simply the raw return less a benchmark of what investors required that day—typically, the benchmark is the return dictated by the capital asset pricing model (CAPM) or quite simply the return on a large market index, such as the S&P500. These studies are regarded to be *forward-looking* on the assumption that share prices are simply the present value of expected future cash flows to shareholders. Since the 1970s, these studies have arguably dominated the field.³
- Accounting studies. These examine the reported financial results (i.e., accounting statements) of acquirers before, and after, acquisitions to see how financial performance changed. The focus of these studies ranges across net income, return on equity or assets, EPS, leverage, and liquidity of the firm. The best studies are structured as matched-sample comparisons, matching acquirers with non-acquirers based on industry and size of firm. In these studies, the question is whether the acquirers outperformed their nonacquirer peers.
- Surveys of executives. Simply asking managers whether an acquisition created value seems like an obvious course. These present a sample of executives with a standardized questionnaire, and aggregate across the results to yield generalizations from the sample.
- Clinical studies. These focus on one transaction or on a small sample in great depth, usually deriving insights from field interviews with executives and knowledgeable observers. This is inductive research. By drilling down into the detail and factual background of a deal, the researchers often induce new insights.

Exhibit 1 summarizes the approach, strengths, and weaknesses of each research method. Plainly, no research approach is fault-free, though some command more respect of scientific researchers than others. The task must be to look for patterns of confirmation across approaches and studies much like one sees an image in a mosaic of stones.

If “scientific inquiry” means anything, it is to frame a hypothesis and test it rigorously against the possibility that the result is merely due to chance. Strictly speaking, one never proves the hypothesis, one only disproves the “null hypothesis” that the phenomenon is due to chance. The event studies and accounting studies are excellent examples of the scientific method applied to social phenomena. Surveys and clinical studies are usually not tests of hypotheses; they aim to describe, rather than test. The key test by which an event study or accounting study proves its finding is with the “t-statistic.” The derivation and history of this statistic are beyond the scope

³ In a memorable comment, Caves (1989) wrote, “This technique was a genuine innovation—theoretically well grounded, cheap to execute and able to evade the problem of holding constant other factors that plague ex post studies of mergers’ effects. A better product, available at a lower price, naturally swept the intellectual marketplace.” (Page 151.)

of this discussion. But the novice in this field must note that the t-statistic indicates the probability that the result was due to chance--the higher the t value, the lower the probability of a chance occurrence.⁴ By informal convention, many financial economists look for t-values in excess of 2.0, generally indicating significance at the 1 percent level, (i.e., “there is a one percent chance that the result was due to chance.”) There is, however, nothing magical about the 1 percent level of significance; a chance of 5 percent ($t=1.67$) is still relatively rare. Statistical studies never prove a phenomenon with certainty; at best we can say that a result is probably not due to chance.

A final comment: statistical significance is not the same as economic materiality. To say that M&A transactions create or destroy value on average, one needs not only the proof of significance (i.e., that the result is not due to chance) but also materiality, that the wealth effect is something that shareholders or society should worry about. Many of the *significant* abnormal returns reported in event studies are as low as one or two percent—one might ask whether this is enough to care about? The answer is emphatically “yes.” Usually these returns occur over a few days. Abnormal returns of this magnitude in a short period of time are enough to cause concern or elation among institutions or other sophisticated investors whose performance in turn can be greatly affected by these kinds of events. One also needs to compare apples to apples: the M&A event returns must be *annualized* to compare them to other rates of return that investors experience. For instance, a one percent abnormal positive return to announcements by buyers that occurs over a week should be annualized by compounding one percent across 52 weeks to yield a 68 percent annualized gain.⁵ This is merely theoretical: reinvestment risk will frustrate attempts to invest in a way that reliably yields a 68 percent abnormal return each year. But in order to make fair comparisons of the materiality of M&A activity with other investing activity by corporations and institutions, it is necessary to adjust for differences in time frame.

III. Findings based on the analysis of market-based returns to shareholders.

Event studies yield insights about market-based returns to target firm shareholders, buyers, and a combination of both.

A. Returns to target firms

Target firm shareholders enjoy returns that are significantly and materially positive. **Exhibit 2** summarizes the findings of 21 studies, which reveal returns that are material and significant, despite variations in time period, type of deal (merger vs. tender offer), and observation period. Two surveys conclude that target shareholders receive average abnormal returns in the 20-30 percent range⁶. In short, the M&A transaction delivers a premium return to target firm shareholders.

⁴ Tests of significance also depend on sample size. The t values discussed here implicitly assume relatively large samples of observations, such as more than 100.

⁵ $(1.01)^{52} = 1.678$.

⁶ Jensen and Ruback (1983) associate a 30 percent gain with a change in control by tender offer, and a 20 percent gain for mergers. Datta et al. conclude that target shareholders receive a 21.8% return.

B. Returns to buyer firms

The pattern of findings about market-based returns to buyer firms' shareholders is more problematical. **Exhibit 3** summarizes the findings of 41 studies.

- 20 studies report negative returns with 13 of the 20 significantly negative (see Exhibit 3, Panel A). The negative returns vary between one and three percent. 24 studies (see Exhibit 3, Panel B) report positive returns—17 of these report significantly positive returns. In short, the findings are distributed rather evenly: one-third (13) show value destruction; one-third show value conservation (14); and one-third show value creation (17).
- 11 studies consider returns well *after* the consummation of the transaction. Eight studies report negative and significant returns. Caves (1989) infers that these findings are due to “second thoughts” by bidders' shareholders, and/or the release of new information about the deal. But interpretation of longer-run returns following the transaction is complicated by possibly confounding events that have nothing to do with the transaction.
- The studies show a slight tendency for returns to decline over time: returns appear to be higher (more positive) in the 1960s and 1970s than in the 1980s and 1990s, except for deals in technology and banking, where returns to bidders increase in the 1990s.⁷
- When the welfare of *all* security holders in the buyer firm are considered, two studies suggest that the value of the buyer firm increases by a statistically significant amount.⁸ This suggests that the research focus on common stock may ignore other important gains to investors.

One must conclude that in the aggregate, abnormal (or market-adjusted) returns to buyer shareholders from M&A activity are essentially zero. A reasonable conclusion from these studies is that buyers essentially break even (i.e., that acquisitions tend to offer zero net present values, or equivalently, that investors earn their required return.)

Any inferences about the typical returns to buyers based on returns must grapple with the difficult issue of the size difference between buyers and targets. Buyers are typically much larger than targets. Thus, even if the dollar gains from merger were divided equally between the two sides, the percentage gain to the buyer's shareholders would be smaller than to the target's. Asquith, Bruner and Mullins (1983) reported results consistent with the size effect. For instance, in mergers where the target's market value was equal to 10 percent or more of the buyer's market value, the return to the buyer was 4.1 percent ($t=4.42$). But where the target's value was less than 10 percent, the return to the buyer was only 1.7 percent.

⁷ Bradley, Desai and Kim (1988) report that average announcement returns to bidders fell from 4.1 percent in the 1963 to 1968 period, to -2.9 percent in the 1981-1984 period.

⁸ See Dennis and McConnell (1986). Also, Maquieira, Megginson and Nail (1998) report, “Apart from bidding firm stockholders in conglomerate mergers, all major classes of debt and equity securityholders of both bidders and targets either break even or experience significant wealth gains.” (page 30).

C. Returns to buyer and target firms combined

Findings of positive abnormal returns to the seller and breakeven returns to the buyer raise the question of *net economic gain* from this event. The challenge here stems from the size difference between buyer and target: typically the buyer is substantially larger. Hence, a large percentage gain to the target shareholders could be more than offset by a small percentage loss to the buyer shareholders. A number of studies have examined this by forming a portfolio of the buyer and target firms and examining either their weighted average returns (weighted by the relative sizes of the two firms) or by examining the absolute dollar value of returns. **Exhibit 4** reports the findings of 20 studies. Almost all of the studies report positive combined returns, with 11 of the 20 being significantly positive. The findings in Exhibit 4 suggest that M&A *does* pay the investors in the combined buyer and target firms.

IV. Findings based on the analysis of reported financial performance

A second important stream of research on M&A returns is found in 13 studies of profit margins, growth rates, and returns on assets, capital, and equity, summarized in **Exhibit 5**. Scanning the column of results yields the observation that two studies report significantly negative performance post-acquisition, three report significantly positive performance, and the rest are in the non-significant middle ground. Four studies illuminate interesting aspects of post-acquisition performance.

Geoffrey Meeks (1977) explored the gains from merger for a sample of transactions in the United Kingdom between 1964 and 1971. This study draws upon a relatively large sample (233 observations), and tests the change in profitability following the merger. Meeks looks at the change in return on assets⁹ (ROA) compared to the change in ROA for the buyer's industry. His chief finding is excerpted in **Exhibit 6**. Meeks' findings reveal a decline in ROA for acquirers following the transaction, with performance reaching the nadir five years after. For nearly two-thirds of acquirers, performance is below the standard of the industry. He concludes that the mergers in his sample suffered a "mild decline in profitability" (p. 25).

Mueller (1980) edited a collection of studies of M&A profitability across seven nations (Belgium, German, France, Netherlands, Sweden, U.K., and U.S.) All the studies applied standard tests and data criteria and therefore afford an unusually rich cross-border comparison of results across parts of Europe and the U.S. The research tested theories about changes in size, risk, leverage and profitability. Profitability was measured three ways: (a) profit divided by equity; (b) profit divided by assets, and (c) profit divided by sales. The changes in profitability for an acquirer (measured as the difference between the post-acquisition performance, and the average profitability for five years before the transaction) were compared to similar measures for two benchmark groups: (i) firms matched on the basis of size and industry and who made no acquisitions, and (ii) a general sample of firms that neither made acquisitions nor were acquired

⁹ Meeks defines return on assets as pre-tax profits (after depreciation, but before tax) divided by the average of beginning and ending assets for the year. The key metric was $R_{\text{change}} = R_{\text{After}} - R_{\text{Before}}$ where R_{After} and R_{Before} were measures of performance relative to the weighted average of returns of the buyer's and target's industries.

during the observation period. Consistent with Meeks' finding, Mueller's work finds that acquirers are significantly larger than targets, acquirers have been growing faster than their peers and than their targets, and are more highly leveraged than targets and peers. Regarding profitability, acquirers show no significant differences—the specific data for the U.S. are generally representative of the findings across many nations. **Exhibit 7** gives an excerpt of these findings.

The main observation from Mueller's findings is that acquirers reported worse returns in the years after acquisition than their non-acquiring counterparts—but *not significantly so*. The most strongly negative results are shown in the right-hand column of Exhibit 7, notably in the low percentage of the sample that offered a positive comparison. Commenting on the results for all seven countries, Mueller wrote,

No consistent pattern of either improved or deteriorated profitability can therefore be claimed across the seven countries. Mergers would appear to result in a slight improvement here, a slight worsening of performance there. If a generalization is to be drawn, it would have to be that mergers have but modest effects, up or down, on the profitability of the merging firms in the three to five years following merger. Any economic efficiency gains from the mergers would appear to be small, judging from these statistics, as would any market power increases. (page 306).

Ravenscraft and Scherer (1987) studied 471 acquirers between 1950 and 1977. The novelty in this study was the reliance of the researchers upon a special line-of-business database maintained by the Federal Trade Commission that would permit greater definition of control groups than in previous studies, and more careful assessment of asset values and the impact of accounting method choices. The drawback to the line-of-business focus is that acquisition synergies might occur in other areas of the acquiring firm, and therefore might be missed by this study. Also, the comparison in post merger years is undermined by misalignment with the merger year.¹⁰ The researchers considered the ratio of operating income to assets. Strengthening the analysis are controls for industry effects, accounting method choices, and market shares. Their principal finding is that profitability is one to two percentage points less for acquirers than for control firms—these differences are statistically significant. Purchase accounting and the entry into new (i.e., diversifying lines of business) are associated with material and significant decreases in profitability.

Healy, Palepu, and Ruback (1992) studied the post-acquisition accounting data for the 50 largest U.S. mergers between 1979 and mid-1984, and use industry performance as a benchmark against which acquirers' performance may be tested. Asset productivity improves significantly for these firms following acquisition, which contributes to higher operating cash flow returns relative to their non-acquiring peers. Acquirers maintain their rates of capital expenditure and R&D relative to their industries, suggesting that the improved performance is not at the expense

¹⁰ Ravenscraft and Scherer examine the performance between 1974 and 1977 of mergers that occurred from 1950 to 1977. In other words, the period under observation was not the same number of years after merger from one observation to the next.

of fundamental investment in the business. Most importantly, the announcement returns on stock for the merging firms is significantly associated with the improvement in post-merger operating performance, suggesting that anticipated gains drive the share prices at announcement.

V. Findings about the drivers of profitability

The studies yield a number of interesting insights about the determinants of M&A profitability.

- **Diversification destroys value. Focus conserves it.** Berger and Ofek (1995) found an average loss in value from diversification of between 13 and 15 percent. The degree of relatedness between the businesses of the buyer and seller is positively associated with returns.¹¹ Intuitively, this makes sense if synergies or savings arise from the economics of the two firms. In particular, conglomerate deals (i.e., deals between firms with unrelated lines of business) are associated with the poorest returns. Diversifying (unrelated) mergers tend to be associated with worse performance than related mergers. Maquieira et al. (1998) found negative, but insignificant returns to buyers in conglomerate deals; in contrast, they found positive and significant returns to buyers in non-conglomerate deals. In a study of bank mergers, DeLong (2001) found that mergers that focus both activity and geography enhance buyer's share value by 2.0 to 3.0 percent more than other types of mergers.
- **Expected synergies are important drivers of the wealth creation through merger.** Houston, James and Ryngaert (2001) studied the association of forecasted cost savings and revenue enhancements in bank mergers and found a significant relationship between the present value of these benefits, and the announcement day returns. The market appears to discount the value of these benefits, however, and applies a greater discount to revenue-enhancing synergies, and a smaller discount to cost-reduction synergies.
- **Value acquiring pays, glamour acquiring does not.** Rau and Vermaelen (1998) found that post-acquisition underperformance by buyers was associated with "glamour" acquirers (companies with high book-to-market value ratios). Value-oriented buyers (low book-to-market ratios) outperform glamour buyers. Value acquirers earn significant abnormal returns of 8% in mergers, and 16% in tender offers, while glamour acquirers earn a significant -17% in mergers and insignificant +4% in tender offers.
- **M&A to build market power does not pay.** Studies by Ravenscraft and Scherer (1987), Mueller (1985), and Eckbo (1992) reveal that efforts to enhance market position through M&A yield no better performance, and sometimes worse. Studies by Stillman (1983) and Eckbo (1983) find that share price movements of competitive rivals of the buyer do not conform to increases in market power by buyers. It suggests that the sources of gains from M&A do not derive from anticompetitive combination of firms.

¹¹ See studies by Rumelt (1974), Comment and Jarrell (1995), Healy, Palepu and Ruback (1992 and 1997), Macquieira, Megginson, and Nail (1998), Meeks (1977), Wansley et alia (1983), Megginson, Morgan and Nail (2000), Singh and Montgomery (1987) and Walker (2000). See also Weston, and Mansinghka (1971) and Weston, Smith and Schrieves (1972) for classic early studies of conglomerate performance.

- **Paying with stock is costly; paying with cash is neutral.** Asquith, Bruner and Mullins (1987), Huang and Walkling (1987), Travlos (1987) and Yook (2000) found that stock-based deals are associated with significantly negative returns at deal announcements, whereas cash deals are zero or slightly positive. This finding is consistent with theories that managers time the issuance of shares of stock to occur at the high point in the cycle of the company's fortunes, or in the stock market cycle. Thus, the announcement of the payment with shares (like an announcement of an offering of seasoned stock) could be taken as a signal that managers believe the firm's shares are overpriced.
- **M&A regulation is costly to investors.** Weir (1983) and Eckbo (1983) find evidence suggesting that Federal Trade Commission antitrust actions benefit competitive rivals of the buyer and target. Jarrell and Bradley (1980) and Asquith, Bruner and Mullins (1983) find that returns to merging firms were significantly higher before than after implementation of the Williams Amendment in October 1969. Schipper and Thompson (1983) consider four regulatory changes between 1968 and 1970, and found wealth-reducing effects associated with increased regulation.
- **M&A to use excess cash generally destroys value except when redeployed profitably.** Cash-rich firms have a choice of returning the cash to investors through dividends, or reinvesting it through such activities as M&A. Studies¹² report value destruction by the announcement of M&A transactions by firms with excess cash. However, Bruner (1988) reports that the pairing of slack-poor and slack-rich firms creates value. Before merger, buyers have more cash and lower debt ratios than nonacquirers. And the return to the buyers' shareholders increases with the change in the buyer's debt ratio due to the merger.
- **Tender offers create value for bidders.** Mergers are typically friendly affairs, negotiated between the top management of buyer and target firms. Tender offers are structured as take-it-or-leave-it proposals, directly to the target firm shareholders. Quite often, tender offers are unfriendly. Research suggests that bypassing the target firm's management, and appealing directly to target shareholders can pay. Several studies report larger announcement returns to bidders in tender offers, as compared with friendly negotiated transactions.¹³ These findings are consistent with the view that unwanted suitors are entrepreneurs who have uncovered special value-creating insights about the target firm. By making an unsolicited bid, the buyer seeks to retain value for itself, rather than give it up in a negotiation.
- **When managers have more at stake, more value is created.** Studies suggest that returns to buyer firm shareholders are associated with larger equity interests by managers and employees.¹⁴ In assessing the pattern of performance associated with deal characteristics, Healey, Palepu and Ruback (1997) concluded "while takeovers were

¹² See Servaes, Lang, Stultz, and Walkling (1991), Harford (1999), and Jensen (1986).

¹³ Jensen and Ruback (1983) give a survey of of returns in contested and friendly deals. Numerous studies report positive significant returns to bidders in hostile transactions: Gregory (1997), Loughran and Vijn (1997), Rau and Vermaelen (1998), Lang, Stultz and Walkling (1989), and Jarrell and Poulsen (1989). On the other hand, Healey, Palepu and Ruback (1997) found that hostile deals were associated with insignificant improvements in cash flow returns, owing possibly to the payment of higher acquisition premiums.

¹⁴ Agrawal and Mandelker (1987) found that lower equity investment by managers in their own firms was associated with higher propensity to undertake variance-reducing acquisitions. You et al (1986) found that announcement returns to bidders were lower (i.e., more negative), the lower the managers' equity stake in the buyer firm.

usually break-even investments, the profitability of individual transactions varied widely...the transactions characteristics *that were under management control* substantially influenced the ultimate payoffs from takeovers.”¹⁵ A related finding is that LBOs create value for buyers. The sources of these returns are not only from tax savings due to debt and depreciation shields, but also significantly from efficiencies and greater operational improvements implemented after the LBO. In LBOs, managers tend to have a significant portion of their net worth committed to the success of the transaction. **Exhibit 8** summarizes the findings of several studies about LBOs and reveals that cash flow increases, and capital spending declines materially in the years following the transaction.

- **The initiation of M&A programs is associated with creation of value for buyers.** Asquith, Bruner and Mullins (1983), Gregory (1997), and Schipper and Thompson (1983) report that when firms announce they are undertaking a series of acquisitions in pursuit of some strategic objectives, their share price rises significantly. That these kinds of announcements should create value suggests that M&A generally creates value, and that the announcement is taken as a serious signal of value creation.

VI. Findings from surveys of executives

The findings of scholars in large-sample surveys are supplemented by studies by scholars and practitioners who study smaller samples and typically draw some or all of their findings from questions of managers directly. Ingham, Kran and Lovestam (1992) surveyed chief executive officers in 146 large firms in the United Kingdom. Of them, 77 percent believed that profitability increased in the short run after merger; 68 percent believed that the improved profitability lasted for the long run.

Surveys by practitioners are often rather casually reported, limiting our ability to replicate the study and understand the methodological strengths and weaknesses. For this reason, scholars tend to give practitioner surveys rather less attention. Nevertheless, a sample of these surveys is reported here for the sake of comparison with the scholarly studies. It is interesting to consider whether managers tell us something different from the large-sample scientific studies.

The absence of statistical tests in these surveys limits the assertions one can make, but a qualitative review of results offers results surprisingly similar to the scientific studies. **Exhibit 9** tabulates the results of 13 studies. Six of the 13 studies suggest negative results. The remainder seem neutral or positive. The similarity between these findings, and the findings from the scholarly studies is striking. In the bulk of deals, it appears that investments in acquisitions at least pay their cost of capital

To explore some of the problems of stability in executive surveys about M&A, I polled 50 business executives via the Internet. As with other surveys of this type, no effort was made to ensure representativeness, or reduce bias, thus limiting our ability to generalize the results to all

¹⁵ Page 55, italics added.

executives or all M&A deals. Nevertheless, the findings offer important insights about M&A profitability.

First, the survey considered all respondents, and asked their opinion about the percent of all M&A deals that create value and meet their strategic objectives. The resulting distributions of opinion were quite wide. But on average, the respondents said that only 37 percent of deals create value for the buyers. Even worse, the sample believes that only 21 percent of the deals achieve the buyers' strategic goals. These findings are similar to results of other surveys of executives.

Next, the survey focused only on those respondents who had been personally involved in one or more M&A transactions, and asked them to comment on their own deals. In essence, this created a sub-sample of possibly better-informed respondents. For this subset, the results reversed themselves:

- 58% of the informed respondents believe their own M&A deals created value; 51% believe their deals achieved their strategic goals. In contrast, only 23% believed their deals did not create value; 31% believed their deals did not achieve their strategic goals. The remaining respondents either did not know the results of their deals, or concluded the results were mixed.
- The strength of the respondents' view about all M&A was inversely related to their view of their own deals: the better they felt about their own deals, the more they condemned M&A results in general. On the measure of value creation of deals (own deals vs. all deals), the responses were correlated -42%, a strongly negative degree of association for work in social science. But on the dimension of meeting strategic objectives, the correlation was even more negative, -72%.

This survey illustrates the important influence of one's frame of reference on survey responses. Facts and opinions differ. Where the respondents were better-informed (e.g., their own deals, with first-hand information), M&A seems to pay. But for the broader judgment, the respondents fall back on a very different opinion. There is one other explanation for the disparate findings: for reasons of ego executives tell the world nicer things about their own deals than about the deals of others. Either way, one's frame of reference (shaped by information or ego) shapes a very different and more optimistic view about M&A profitability.

VII. Findings from clinical studies

Clinical studies of M&A cases offer insights into the possible origins of the returns experience for outliers. Here are conclusions from six of these studies.

- ATT/NCR. Lys and Vincent (1995) examined the 1991 acquisition of NCR Corporation by AT&T. This acquisition decreased the wealth of AT&T shareholders by between \$3.9 billion and \$6.5 billion. They offered three explanations consistent with these results. The first was a set of managerial objectives that were not consistent with maximizing shareholder wealth. The second was managerial overconfidence, or hubris. And the third

was “escalation of commitments,” a psychological phenomenon that spurs decision makers to move forward despite information to the contrary.

- Renault/Volvo. Bruner (1999) examined the failed attempt to merge AB Volvo with Renault in 1993. The attempt temporarily erased 22 percent of Volvo’s market value before Volvo’s board of directors withdrew from the deal. The study suggests that the value destruction was associated with disbelief in merger synergies, and with the transfer of control to Renault.
- Leveraged buyout of Revco D.S. Bruner and Eades (1992) and Wruck (1991) studied the bankruptcy of one of the largest leveraged buyouts in the retailing industry, that of Revco Drug Stores. The failure was associated with overpayment, the use of extremely high debt financing, and the arguably self-serving behavior of management.
- Cooper Industries’ Acquisition of Cameron Iron Works, and Premark’s acquisition of Florida Tile. Kaplan, Mitchell, and Wruck (1997) studied two acquisitions that experienced very different stock market reactions to their announcements (one positive, and the other negative.) Interviews after the fact revealed that neither acquisition succeeded in creating value. Causes were inappropriate incentives, incomplete knowledge of the target, and the imposition of inappropriate organizational designs on the target.
- Campeau’s Acquisition of Federated. Kaplan (1989) found that the value of Federated’s assets *increased* under Campeau’s ownership up to the point of bankruptcy filing. He does not identify the source of value creation, but suggests cost cuts, sale of underutilized assets, and tax benefits.
- Dupont’s Takeover of Conoco. Ruback (1982) assessed the net value creation to the shareholders of the buyer and target jointly. Whereas shareholders of the target (Conoco) received gains of \$3.2 billion, shareholders of DuPont sustained losses of \$800 million. Therefore, the net value created in the deal was \$2.4 billion. Ruback explored various possible explanations for the net gain, and was unable to identify a specific source. The study highlights the difficulty facing all researchers in explaining wealth creation or destruction in individual deals.

Clinical studies illuminate possible drivers of returns from acquisition. These and other studies have emphasized the role of strategic, financial and organizational issues.

VIII. Conclusions of reviewers through time

Several scholars have considered the findings of scientific studies over the years, conducting an exercise much as here. How have they viewed the data?

- **Dennis Mueller, (1979).** In testimony before the U.S. Senate, Mueller said, “And the predominant conclusion, what it comes to, from looking at this literature, is that the firms themselves are performing no better on average than they would have been in the absence of the mergers, and the stockholders who hold shares in those firms are doing no better than if they had shares in a firm that wasn’t.”¹⁶

¹⁶ Dennis Mueller, (1979) page 307.

- **Michael Jensen and Richard Ruback (1983).** Based on an analysis of 16 studies, the authors concluded that the return to bidders in successful mergers was zero, and in successful takeovers was +4.0%. They wrote, “The evidence indicates that corporate takeovers generate positive gains, that target firm shareholders benefit, and that bidding firm shareholders do not lose.”¹⁷
- **Murray Weidenbaum and Stephen Vogt (1987).** Based on an analysis of 10 studies, the authors wrote, “We conclude that, based on historical data, negative returns to shareholders for acquisitions are more prevalent than the prevailing folklore on the subject admits. Clearly, there are winners and losers in the takeover game. Most studies confirm that, in general, target firm shareholders are winners. The evidence presented here indicates that, on average, acquiring firm shareholders are not as fortunate. At best, these shareholders are no worse off, but often they lose during acquisitions.”¹⁸
- **Deepak Datta, George Pinches, and V.K. Narayanan (1992).** The authors considered 41 studies, and concluded that bidders earn a return of less than one-half of one percent. They wrote, “The synthesis of ex ante event studies presented in this paper provides robust evidence that, on average, shareholders of bidding or acquiring firms do not realize significant returns from mergers and acquisitions.”¹⁹

IX. Viewing the whole mosaic: some conclusions

What should a practical person conclude from this discussion? Arguably, the data support a range of views.

- **Does pay.** This answer is certainly justified for shareholders of target firms. Also, studies of targets and buyers *combined* seem to suggest these transactions create some joint value. But for bidders alone, there is no clear value creation in the sense of earning returns significantly in excess of the opportunity cost of capital—only 20-30% of all transactions seem to do so.
- **Doesn’t pay.** This is true if you focus only on bidders, and define “pay” as creating material and significant abnormal value—this line of reasoning is behind statements that 60-70% of all M&A transactions “fail.” But economics teaches that investors should be satisfied if they earn returns just equal to their cost of the lost opportunity (i.e., their required return). Therefore, the popular definition of failure is extreme. The reality is that 60-70% of all M&A transactions are associated with financial performance that at least compensates investors for their opportunity cost—against this standard it appears that buyers typically get at least what they deserve.
- **It depends.** True, from the perspective of Section V, which describes determinants of higher and lower M&A profitability. Value is created by focus, relatedness, and adherence to strategy. Diversification (especially conglomerate), size maximization, empire building, and hubris destroy value. The implication of this is that good deals are not achieved by pricing alone: strategy and skills of post-merger integration matter

¹⁷ Jensen and Ruback (1983) page 5.

¹⁸ Weidenbaum and Vogt (1987) page 166.

¹⁹ Datta, Pinches, and Narayanan (1992) page 13.

immensely. Some rich insights can be derived from an examination of types of deals. The key implication of these insights is that managers *can* make choices that materially influence the profitability of M&A. Cleverness gets its due. So does stupidity.

- **We don't know.** True from the perspective of Section II, which discussed how research strictly only rejects null hypotheses, and never confirms alternative hypotheses. One can only test for the association of M&A with profitability, never causation. Like intellectual Tic Tac Toe, you only prove anything by eliminating all the alternatives. Even after many studies, we may not have exhausted the alternative explanations. It is hard to warm up to this view. While one admires its rigor and skepticism, surely the mass of tests tells us at least something about tendencies.
- **All the above.** Apparently true. Each of the preceding positions has at least one leg (if not two) to stand on. While this position may be honest, this alternative gives equal weight to the various arguments, and is not very satisfying to the practical person who must decide. You must have a view.
- **None of the above.** Perhaps the cacophony of conflicting studies leads one to pure agnosticism. Such a conclusion is harsh, and hardly the foundation for an executive who must lead an enterprise in the hurly-burly of business life.

My reading of the studies leads me to choose “Yes, but...” I take the economists’ perspective that an investment is deemed to “pay” if it earns at least the opportunity cost of capital. Abstracting from the studies, the majority of transactions meets this test. *But* the buyer in M&A transactions must prepare to be disappointed. It is also true that most transactions are associated with results that are hardly consistent with optimistic expectations. Synergies, efficiencies, and value-creating growth seem hard to obtain. It is in this sense that deal doers’ reach exceeds their grasp.

Based on the mass of research, my advice to the business practitioner is to be coldly realistic about the benefits of acquisition. Structure your deals very carefully. Particularly avoid overpaying. Work very hard to achieve the economic gains you hypothesized. Take nothing for granted. M&A is no money machine, and may well not offer the major career-building event you wanted. The only solace is that one could say the same about virtually any other form of corporate investment: on balance, your shareholders will earn a going rate of return on M&A activity. Given the uncertainties in M&A as elsewhere, one must remember the ancient advice, *caveat emptor* (buyer beware.)

Exhibit 1
Comparison of Research Approaches
Regarding the Profitability of M&A

	Market-based Returns to Shareholders ("Event Studies")	Accounting Studies: Returns estimated from reported financial statements	Surveys of Managers	Clinical Research (Case Studies)
Strengths	<ul style="list-style-type: none"> • A direct measure of value created for investors. • A <i>forward-looking</i> measure of value creation. In theory stock prices are the present value of expected future cash flows. 	<ul style="list-style-type: none"> • Credibility. Statements have been certified. Accounts have been audited. • Used by investors in judging corporate performance. An indirect measure of economic value creation. 	<ul style="list-style-type: none"> • Yields insights into value creation that may not be known in the stock market. • Benefits from the intimate familiarity with the actual success of the acquisition. 	<ul style="list-style-type: none"> • Objectivity and depth in reconstructing an actual experience. • Inductive research. Ideal for discovering new patterns and behaviors
Weaknesses	<ul style="list-style-type: none"> • Requires significant assumptions about the functioning of stock markets: efficiency, rationality, and absence of restrictions on arbitrage. Research suggests that for most stocks these are not unreasonable assumptions, on average and over time. • Vulnerable to confounding events, which could skew the returns for specific companies at specific events. Care by the researcher and law of large numbers deal with this. 	<ul style="list-style-type: none"> • Possibly non-comparable data for different years. Companies may change their reporting practices. Reporting principles and regulations change over time. • Backward looking. • Ignores value of intangible assets. • Sensitive to inflation and deflation because of historic cost approach. • Possibly inadequate disclosure by companies. Great latitude in reporting financial results. • Differences among companies in accounting policies adds noise • Differences in accounting principles from one country to the next make cross-border comparison difficult. 	<ul style="list-style-type: none"> • Gives the perspectives of managers who may or may not be shareholders, and whose estimates of value creation may or may not be focused on <i>economic</i> value. • Recall of historical results can be hazy, or worse, slanted to present results in the best light. • Typically surveys have a low rate of participation (2-10%) that makes them vulnerable to criticisms of generalizability. 	<ul style="list-style-type: none"> • Ill-suited to hypothesis testing because the small number of observations limits the researcher's ability to generalize from the case(s). • The research reports can be idiosyncratic making it difficult for the reader to abstract larger implications from one or several reports.

Exhibit 2
Summary of Shareholder Return Studies for M&A:
Returns to the Target Firm Shareholders

Study	Cumulative Abnormal Returns (% or avg\$/acq)	Sample Size	Sample Period	Event Window (days)	% Pos. Returns	Notes
Langetieg (1978)	+10.63%**	149	1929-69	(-120,0)	71.6%	Mergers; uses effective date as event date
Bradley, Desai, Kim (1988)	+31.77%**	236	1963-84	(-5,5)	95%	Tender offers only; subperiod data available for 7/63-6/68, 7/68-12/80, 1/81-12/84; acquirer returns have increased from +19% to +35% over time
Dennis and McConnell (1986)	8.56% **	76	1962-80	(-1,0)	70%	
Jarrell, Poulsen (1989)	+28.99%**	526	1963-86	(-20,10)	N/A	Tender offers only
Lang, Stulz, Walking (1989)	+40.3%**	87	1968-86	(-5,5)	N/A	Tender offers only
Franks, Harris, Titman (1991)	+28.04%**	399	1975-84	(-5,5)	N/A	Mergers and tenders offers; segment data available on means of payment and competition
Servaes (1991)	+23.64%**	704	1972-87	(-1,Close)	N/A	Mergers and tender offers; segment data by payment method
Bannerjee, Owers (1992)	+\$137.1 MM**	33	1978-87	(-1,0)	85%	White knight bids
Healy, Palepu, Ruback (1992)	+45.6%**	50	1979-84	(-5,5)	N/A	Largest U.S. mergers during period
Kaplan, Weisbach (1992)	+26.9%**	209	1971-82	(-5,5)	94.7%	Mergers and tender offers
Berkovitch, Narayanan (1993)	+\$130.1 MM**	330	1963-88	(-5,5)	95.8%	Tender offers
Smith, Kim (1994)	+30.19%** +15.84%**	177	1980-86	(-5,5) (-1,0)	96.0% 91.3%	Successful and unsuccessful tender offers
Schwert (1996)	+26.3%**	666	1975-91	(-42,126)	N/A	Mergers, tenders offers; segment data available for various transaction attributes
Loughran, Vijh (1997)	+29.6%** merger +126.9%** tender +47.9%** combined	419 135	1970-89	(-2,1250)	N/A	5 yr. post-acquisition returns; segment data also available on form of payment
Maquieira, Megginson and Nail (1998)	+41.65%** conglomerate +38.08%** non-congl.	47 55	1963-96	(-60,60)	61.8% 83.0%	Study of returns for conglomerate and non-conglomerate stock-for-stock mergers.
Eckbo, Thorburn (2000)	+7.45%**	332	1964-83	(-40,0)	N/A	Canadian targets only
Leeth, Borg (2000)	+13.27%**	72	1919-30	(-40,0)	N/A	
Mulherin and Boone (2000)	+21.2%**	376	1990-1999	(-1,+1)	N/A	
Mulherin (2000)	+10.14%**	202	1962-97	(-1,0)	76%	A sample of incomplete acquisitions.
DeLong (2001)	+16.61%**	280	1988-95	(-10,1)	88.6%	Studied deals where at least one party is a bank.
Houston et al. (2001)	+15.58%** (1985-90) +24.60%** (1991-96) +20.80%** (all)	27 37 64	(1985-96)	(-4,1)	N/A	Deals in which both parties are banks.

Notes:

Unless otherwise noted, event date is announcement date of merger/bid

** Statistically significant

Exhibit 3
Summary of Shareholder Return Studies for M&A:
Returns to Acquiring Firm Shareholders

Panel A: Studies Reporting Negative Returns to Acquirers

Study	Cumulative Abnormal Returns	Sample Size	Sample Period	Event Window (days)	% Pos. Returns	Notes
Langetieg (1978)	-1.61%	149	1929-69	(-120,0)	47.6%	Mergers; uses effective date as event date
Dodd (1980)	-1.09% ** Successful -1.24% * Unsuccessful	60 66	1970-77	(-1,0)	N/A.	Mergers only. Daily data.
Asquith, Bruner, Mullins (1987)	-0.85% **	343	1973-83	(-1,0)	41%	
Varaiya, Ferris (1987)	-2.15% ** -3.9% **	96 96	1974-83 1974-83	(-1,0) (-20,80)	N/A 42%	
Morck, Shleifer, Vishny (1990)	-0.70%	326	1975-87	(-1,1)	41.4%	Measured return by comparing change in bidder MV to MV of target's equity
Franks, Harris, Titman (1991)	-1.45%	399	1975-84	(-5,5)	N/A	Mergers and tenders offers; segment data available on means of payment and competition
Servaes (1991)	-1.07% **	384	1972-87	(-1,Close)	N/A	Mergers and tender offers; segment data by payment method
Jennings, Mazzeo (1991)	-0.8% **	352	1979-85	(-1,0)	37%	
Bannerjee, Owers (1992)	-3.3% **	57	1978-87	(-1,0)	21%	White knight bids
Byrd, Hickman (1992)	-1.2% **	128	1980-87	(-1,0)	33%	
Healy, Palepu, Ruback (1992)	-2.2%	50	1979-84	(-5,5)	N/A	50 Largest U.S. mergers during period
Kaplan, Weisbach (1992)	-1.49% **	271	1971-82	(-5,5)	38%	Mergers and tender offers
Berkovitch, Narayanan (1993)	-\$10 MM	330	1963-88	(-5,5)	49.4%	Tender offers
Sirrower (1994)	-2.3% **	168	1979-90	(-1,1)	35%	
Eckbo, Thorburn (2000)	-0.30%	390	1964-83	(-40,0)	N/A	U.S. Acquirers of Canadian Targets
Mulherin and Boone (2000)	-0.37%	281	1990-1999	(-1,+1)	N/A	
Mitchell, Stafford (2000)	-0.14% ** ²⁰ -0.07%	366 366	1961-1993	(-1,0)	N/A	Fama and French 3-Factor Model, applied to monthly returns.
Walker (2000)	-0.84% ** ²¹ -0.77%	278 278	1980-1996	(-2,+2)	41.4% 46.4%	
DeLong (2001)	-1.68% **	280	(1988-95)	(-10,1)	33.6%	Deals in which at least one party is a bank.
Houston et al. (2001)	-4.64% ** (1985-90) -2.61% (1991-96) -3.47% ** (all)	27 37 64	(1985-96)	(-4,1)	N/A	Deals in which both parties are banks.

Notes:

Unless otherwise noted, event date is announcement date of merger/bid

** Statistically significant

²⁰ Top return is based on an equal-weighted benchmark portfolio. Bottom return is based on a value-weighted benchmark portfolio.

²¹ Top return is a return adjusted for market average returns. Bottom return is adjusted for return on a matched firm.

Exhibit 3--continued
Panel B: Studies Reporting Zero or Positive Returns to Acquirers

Study	Cumulative Abnormal Returns	Sample Size	Sample Period	Event Window (days)	% Pos. Returns	Notes
Dodd and Ruback (1977)	+2.83%** Successful +0.58% Unsuccessful	124 48	1958-78	(0,0)	N.A.	Tender offers only. Monthly data.
Kummer and Hoffmeister (1978)	+5.20%** Successful	17	1956-70	(0,0)	N.A.	Tender offers only. Monthly data.
Bradley (1980)	+4.36%** Successful -2.96% Unsuccessful	88 46	1962-77	(-20,+20)	N.A.	Tender offers only. Daily data.
Jarrell and Bradley (1980)	+6.66%**	88	1962-77	(-40,+20)	N.A.	Tender offers only. Daily data.
Bradley, Desai, and Kim (1982)	+2.35%** Successful	161	1962-80	(-10,+10)	N.A.	Tender offers only. Daily data.
Asquith (1983)	+0.20% Successful +0.50% Unsuccessful	196 89	1962-76	(-1,0)	N.A.	Mergers only. Daily data.
Asquith, Bruner, and Mullins (1983)	+3.48%** Successful +0.70% Unsuccessful	170 41	1963-79	(-20,+1)	N.A.	Mergers only. Daily data.
Eckbo (1983)	+0.07% Successful +1.20%** Unsuccessful	102 57	1963-78	(-1,0)	N.A.	Mergers only. Daily data.
Malatesta (1983)	+0.90% Successful	256	1969-74	(0,0)	N.A.	Mergers only. Monthly data.
Weir (1983)	+3.99% Unsuccessful	16	1962-79	(-10, cancellation date)	N.A.	Unsuccessful mergers only. Daily data.
Dennis and McConnell (1986)	-0.12% (-1,0) +3.24% (-6,+6)**	90	1962-80	(-1,0)	52%	
Jarrell, Brickley, Netter (1987)	+1.14%**	440	1962-85	(-10,5)	N/A	Tender offers only; subperiod data available for 1962-69, 70-79, 80-85; acquirer returns have decreased from +4% to -1%
Bradley, Desai, Kim (1988)	+1%**	236	1963-84	(-5,5)	47%	Tender offers only; subperiod data available for 7/63-6/68, 7/68-12/80, 1/81-12/84; acquirer returns have decreased from +4% to -3% over time
Jarrell, Poulsen (1989)	+0.92%**	461	1963-86	(-5,5)	N/A	Tender offers only
Lang, Stulz, Walkling (1989)	0%	87	1968-86	(-5,5)	N/A	Tender offers only
Loderer, Martin (1990)	+1.72%** 1966-68 +0.57%** 1968-80 -0.07% 1981-84	970 3401 801	1966-84	(-5,0)	N/A	Mergers and tenders offers; segment data available on size of acquisition
Smith, Kim (1994)	+0.50% -0.23%	177	1980-86	(-5,5) (-1,0)	49.2% 76.2%	Successful and unsuccessful tender offers
Schwert (1996)	+1.4%	666	1975-91	(-42,126)	N/A	Mergers, tenders offers; segment data available for various transaction attributes
Maquieira et al (1998)	+6.14%** non-conglomerate deals -4.79% conglomerate	55 47	1963-96	(-60,60)	61.8% 36.2%	Study of returns in conglomerate and non-conglomerate stock-for-stock deals
Lyrouti, Lazardis, Subeniotis (1999)	0%	50	1989-91	(-5,5)	N/A	International acquisitions by European and Japanese firms
Eckbo, Thorburn (2000)	+1.71%**	1261	1964-83	(-40,0)	N/A	Canadian acquirers of Canadian targets
Leeth, Borg (2000)	+3.12%**	466	1919-30	(-40,0)	N/A	
Mulherin (2000)	+0.85%**	161	1962-97	(-1,0)	49%	A sample of incomplete acquisitions.
Kohers and Kohers (2000)	1.37%** cash deals 1.09%** stock 1.26% whole sample	961 673 1634	1987-96	(0,1)	N/A	Sample of mergers among high-tech firms.

Notes:

Unless otherwise noted, event date is announcement date of merger/bid

** Statistically significant

Exhibit 3--continued
Summary of Shareholder Return Studies for M&A:
Returns to Acquiring Firm Shareholders

Panel C: Studies Reporting Long-Term Returns to Acquirers

Study (Cont.)	Cumulative Abnormal Returns	Sample Size	Sample Period	Event Window (days)	% Pos. Returns	Notes
Mandelker (1974)	-1.32% Successful bids only	241	1941-63	(0,365)	N.A.	Mergers only. Event date is date of consummation of the deal.
Dodd and Ruback (1977)	-1.32% Successful -1.60% Unsuccessful	124 48	1958-78	(0,365)	N.A.	Tender offers only. Event date is date of offer.
Langtieg (1978)	-6.59%** Successful bids only	149	1929-69	(0,365)	N.A.	Mergers only. Event date is date of announcement of the deal.
Asquith (1983)	-7.20%** Successful -9.60%** Unsuccessful	196 89	1962-76	(0,240)	N.A.	Mergers only. Event date is date of announcement.
Bradley, Desai, and Kim (1983)	-7.85%* Unsuccessful bids only.	94	1962-80	(0,365)	N.A.	Tender offers only. Event date is date of announcement.
Malatesta (1983)	-2.90% Whole sample -13.70%** After 1970 -7.70% Smaller bidders	121 75 59	1969-74	(0,365)	N.A.	Mergers only. Event date is date of approval.
Agrawal, Jaffe, Mandekler (1992)	-10.26%**	765	1955-87	(0,1250)	43.97%	Mergers only; 5 yr. post-merger performance; tender offer post-acquisition performance is not significantly different from zero
Loderer, Martin (1992)	+1.5%	1298	1966-86	(0,1250)	N/A	Mergers and tender offers; 5 yr. post-acquisition performance
Gregory (1997)	-12% to -18%**	452	1984-92	(0,500)	31% to 37%	Uses six variations of the event study methodology; U.K. mergers and tender offers; 2 yr. post-acquisition performance
Loughran, Vijh (1997)	-14.2% merger +61.3%** tender -0.1% combined	434 100	1970-89	(1,1250)	N/A	5 yr. post-acquisition returns; segment data also available on form of payment
Rau, Vermaelen (1998)	-4%** mergers +9%** tender offers	3,968 348	1980-91	(0,36 months)	N/A	3 yr. post acquisition returns, with insights into value and glamour investing strategies.

Notes:

Unless otherwise noted, event date is announcement date of merger/bid

** Statistically significant

Exhibit 4
Summary of Shareholder Return Studies for M&A:
Combined returns to shareholders of acquiring firm and target firm

Study	Cumulative Abnormal Returns	Sample Size	Sample Period	Event Window (days)	% Pos. Returns	Notes
Halpern (1973)	+\$27.35 MM	77	1950-65	(-140,0)	N/A	Mergers
Langetieg (1978)	0%	149	1929-69	(0,60)	46%	Mergers; uses effective date as event baseline
Firth (1980)	-£36.6 MM	434	1969-75	(-20,0)	N/A	U.K. acquisitions
Bradley, Desai, Kim (1982)	+\$17 MM	162	1962-80	(-20,5)	N/A	Tender offers; Referenced through Jensen, Ruback (1983)
Bradey, Desai, Kim (1983)	+\$33.9 MM	161	1963-80	(-20,5)	N/A	Referenced through Weidenbaum, Vogt (1987)
Malatesta (1983)	+\$32.4 MM**	30	1969-74	(-20,20)	N/A	Mergers
Varaiya (1985)	+\$60.7 MM	N/A	N/A	(-60,60)	N/A	Referenced through Weidenbaum, Vogt (1987)
Bradley, Desai, Kim (1988)	+\$117 MM (7.43%)**	236	1963-84	(-5,5)	75%	Tender offers only; subperiod data available for 7/63-6/68, 7/68-12/80, 1/81-12/84; combined returns have not changed significantly over time
Lang, Stulz, Walkling (1989)	+11.3%**	87	1968-86	(-5,5)	N/A	Tender offers only
Franks, Harris, Titman (1991)	+3.9%**	399	1975-84	(-5,5)	N/A	Mergers and tender offers
Servaes (1991)	+3.66%**	384	1972-87	(-1,Close)	N/A	Mergers and tender offers
Bannerjee, Owers (1992)	+\$9.95MM	33	1978-87	(-1,0)	N/A	White knight bids
Healy, Palepu, Ruback (1992)	+9.1%**	50	1979-84	(-5,5)	N/A	Largest U.S. mergers during period
Kaplan, Weisbach (1992)	+3.74%**	209	1971-82	(-5,5)	66%	Mergers and tender offers
Berkovitch, Narayanan (1993)	+\$120 MM**	330	1963-88	(-5,5)	75%	Tender offers only
Smith, Kim (1994)	+8.88%** +3.79%**	177	1980-86	(-5,5) (-1,0)	79.1% 73.8%	Tender offers only
Leeth, Borg (2000)	+\$86 MM	53	1919-30	(-40,0)	56.6%	In 1998 dollars
Mulherin, Boone (2000)	+3.56%	281	1990-1999	(-1, +1)	N/A	
Mulherin (2000)	+2.53%**	116	1962-97	(-1,0)	66%	A sample of incomplete acquisitions.
Houston et al. (2001)	+0.14% (1985-90) +3.11%** (1991-96) +1.86%** (all)	27 37 64	(1985-96)	(-4,1)	N/A	Deals in which both parties are banks.

Notes:

Unless otherwise noted, event date is announcement date of merger/bid

** Statistically significant

Exhibit 5

Summary of Studies of Financial Statement Data

Author, Sample Period, and Sample Size	Major Findings
Meeks (1977) 1964-72 233 mergers	ROA for acquiring firms in the UK consistently declined in post-merger years.
Salter and Weinhold (1979) 16 acquirers., sample period unknown.	Average ROE for acquirers was 44% below the NYSE ROE, and the ROA was 75% below the NYSE.
Mueller (1980) 1962-72 287 mergers	Using measures such as ROE, ROA, and ROS, US firms engaging in merger activity were less profitable, although not significantly so, than comparable firms. Similar conclusions were reached for representative European countries.
Mueller (1985) 1950-92 100 firms involved in merger	The largest 100 firms in the U.S. involved in merger, both conglomerate and horizontal, suffer significant losses in market share.
Ravenscraft, Scherer (1987 article) 1950-77 471 mergers	Significant negative relationships between operating ROA and tender offer activity. Other things being equal, firms with tender offer activity were 3.1% less profitable than firms without the activity.
Ravenscraft, Scherer (1987 book) 1950-77 471 mergers	ROA declined on average 0.5% per year for target companies who were merged under pooling accounting.
Herman, Lowenstein (1988) 1975-83 56 hostile takeovers	ROC for acquirers (using tender offers) increased from 14.7% to 19.6% post-merger in 1975-78. A similar measure for the 1981-83 period showed a decrease in ROC.
Seth (1990) 1962-79 102 tender offers	Using a modeled (rather than a market) value of equity based on expected cash flows and a required rate of return, acquisitions return 9.3% in additional equity value. Operational synergies, in the form of additional cash flows, returned 12.9% and financial synergies, from changes in the required rate of return, were -3.6%.
Healy, Palepu, Ruback (1992) 1979-84 50 mergers	In 50 largest U.S. mergers, merged firms showed significant abnormal improvements in asset productivity (asset turnover), but no significant abnormal increases in operating cash flow margins.
Chatterjee, Meeks (1996) 1977-90 144 mergers	Before 1985, UK mergers showed no significant increase in profitability after merger. Between 1985 and 1990, firms showed significant improvement in accounting profitability returns (13-22%) in years following merger, presumably because of changes in accounting policy.
Dickerson, Gibson, Tsakalotos (1997) 1948-77 613 mergers	For the first 5 years, post-acquisition, ROA for acquirers is 2% lower than ROA for non-acquirers.
Healy, Palepu, Ruback (1997) 1979-84 50 mergers	Based on the 50 largest U.S. mergers, operating cash flow returns as a result of merger met but did not exceed the premium paid for target; therefore M&A is a zero NPV activity. Stock price activity at time of announcement was related to post-acquisition cash flow performance.
Parrino, Harris 1999 and Parrino, Harris, 2001 1982-1987 197 mergers	Buyers experience a significant +2.1% operating cash flow return after merger. This return is defined as operating cash flow divided by market value of assets. Post merger returns are significantly higher where the buyer and target share at least one common business line, or merge to take advantage of technology.
Ghosh, 2001 1981-1995, 315 mergers	Buyers experience returns on assets no different from a control sample following acquisitions. But cash flows increase significantly following acquisitions made with cash, and decline for stock acquisitions.

Exhibit 6
Excerpted Findings About the Change in Profitability of
British Acquirers Following Acquisition
(Meeks (1977), page 25)

	Change in profitability versus industry and versus pre-deal performance	Percentage of observations in which change in profitability is negative.
Year of transaction	0.148 ^a	0.338 ^a
Year +1	-0.015	0.536
Year +2	-0.010	0.517
Year +3	-0.058 ^a	0.527
Year +4	-0.098 ^a	0.660 ^a
Year +5	-0.110 ^a	0.642 ^a
Year +6	-0.067	0.523
Year +7	-0.073	0.619
	a significantly different from zero at 1%	a significantly different from 0.5 at 5%.

Exhibit 7
Excerpts of Findings About Change in
U.S. Acquirers' Profitability Following Acquisition
(Mueller (1980))

	Acquirers: 3 years after vs. 5 years before compared to two control group companies % difference/% positive	Acquirers' post-merger performance compared to their base industry peers % difference/% positive	Acquirer's post-merger performance compared to a projection of performance based on a control group and industry trends % difference/% positive
<u>What it means</u>	Change in profitability of acquirers compared with a randomly selected non-acquiring firm.	Change in profitability of acquirers compared with a non-acquiring firm matched on size and industry.	Change in profitability of acquirers compared with what it would have been if they had followed industry trends.
<u>Pretax</u>			
Return on equity	-0.084 53%	-0.128 48%	-0.065 ^b 3% ^a
Return on assets	-0.038 53%	-0.049 34%	-0.045 3% ^a
Return on sales	-0.029 60%	-0.034 48%	-0.038 3% ^a
<u>After tax</u>			
Return on equity	0.011 ^b 57%	-0.002 55%	-0.065 ^a 4% ^a
Return on assets	0.003 57%	-0.001 31%	-0.002 17% ^a
Return on sales	0.003 70% ^c	0.002 58%	-0.001 10% ^a
^a Indicates significance at 1% level. ^b Significance at 2% level. ^c Significance at 5% level.			

Exhibit 8
Summary of Performance Studies for M&A:
LBO RESULTS

Study	Change in: Op Cash Flow/ Sales	Change in: CapEx/Sales	Sample Size	Sample Period	Event Window (years)
Kaplan (1989)	11.9%	-31.6%	37	1980-86	(-1,2)
Muscarella, Vetsuypens (1990)	23.5%	-11.4%	35	1976-87	Various
Smith (1990)	18%	-25%	18	1976-86	(-1,2)
Opler (1992)	16.5%	-42.2%	42	1985-89	(-1,2)
Andrade, Kaplan (1998)	54.5%	-40.7%	124	1980-89	(-1,1)

Exhibit 9

Sample of Practitioner Studies and Their Key Findings

Source and date	Sample Size	Sample Period	Findings
Johan Brjoksten (1965)	5,409 manufacturing mergers.	1955-1965	16% were a failure financially, strategically, technologically.
McKinsey & Co., 1987 (cited in Lajoux and Weston 1998)	116 firms		61% failed to earn back the cost of equity.
PA Consulting (cited in Lajoux and Weston 1998)	28 "major acquirers in banking"	1982-88	80% of acquisitions have a negative effect on the acquirer's share price.
McKinsey & Co. (cited in Fisher, 1994)	n.a.	A 10-year period	Only 23% of transactions recover the costs incurred in the deal, much less any synergies.
Mercer Management and <i>Business Week</i> , October 1995	150 deals of size \$500 million or greater.	1990-95	17% of the deals created substantial returns. 33% created marginal returns. 20% eroded some returns. 30% substantially eroded shareholder returns. Measured total returns to shareholders over a three-year period.
	248 acquirers purchasing a total of 1,045 targets, compared to 96 nonacquiring firms.	1990-95	69% of nonacquirers produced returns superior to their industries. 58% of the acquirers produced returns superior to their industries.
David Mitchell of Economists Intelligence Unit, 1996 (cited in Lajoux and Weston 1998)	Survey of executives in 150 companies.	1992-1996	30% called their mergers "successful, worth repeating." 53%, satisfactory, not worth repeating 11% unsatisfactory 5% disastrous
Kenneth Smith in research for Mercer Consulting, 1997, and for Mitchell Madison Group 1998	215 large transactions, valued at \$500 million or more.	Compared acquirers' performance in 1980s deals versus 1990s deals.	52% of 1990s deals are outperforming their industry standards, compared to 37% of 1980s deals.
Michael Mayo, Lehman Bros. (cited in Lajoux and Weston 1998)	Six banks.	n.a.	Acquirers' stock prices declined an average of 10% within one week of the announcement, but all recovered within two months.
Arthur Andersen Consulting (cited in Bahree, 1999)	n.a., large mergers completed between 1994-1997	1994-1997	44% of all large mergers fell short of initial financial and strategic expectations. 70% of oil mergers fell short.
KPMG International , Nov. 29, 1999 (cited in Deogun, 1999)	700 "of the most expensive deals"	1996-1998	17% of deals increased shareholder value. 53% reduced shareholder value. 30% broke even. Interviews with 107 executives revealed that 82% believed their deals were "successful".
Chaudhuri and Tabrizi (1999)	53 acquisitions by 24 high-tech companies.	n.a.	11 were "considered successful by both sides" 9 were clear failures. 33 provided zero or slightly positive but disappointing returns on investment. Successful acquirers were differentiated from unsuccessful acquirers by a focus on capabilities.
Booz-Allen & Hamilton (2001)	Sample size not reported.	1997-98	53% of all deals failed to deliver expected results. Of the part of the sample consisting of mergers aimed at exploiting scale economies, the failure rate was 45%. Of the part of the sample with "strategic motivations" (such as "add capabilities" or "new business model") the failure rate was 68%.

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