



U. S. Securities and Exchange Commission
Washington, D. C. 20549 (202) 272-2650

News
Release

Stock Market Profits from Takeover
Activity Between 1981 and 1986:

\$167 Billion is a Lot of Money*

September 28, 1987

Joseph A. Grundfest
Commissioner, U.S. Securities and Exchange Commission

and

Bernard S. Black
Counsel to Commissioner Grundfest

*The views expressed in this research paper are those of the authors and do not necessarily represent those of the Commission, other Commissioners, or Commission staff.

Stock Market Profits from Takeover
Activity Between 1981 and 1986:

\$167 Billion is A Lot of Money*

Joseph A. Grundfest**
Bernard S. Black***

I. Introduction

Numerous academic studies have established that shareholders of target companies realize large percentage stock price gains from corporate takeovers. None of the prior studies has, however, systematically attempted to answer the question, "By how much has takeover activity increased shareholder wealth?"

This paper provides a partial response to that question. We conservatively estimate gains from three classes of takeover-related transactions: takeovers of public companies, divestitures, and leveraged recapitalizations. We estimate that shareholder wealth increased by at least \$167 billion (measured in nominal dollars) as a result of takeover activity between 1981 and 1986. Expressed in current (mid-1987) dollars, the estimated gain is \$184 billion. Had the \$167 billion in takeover gains been reinvested in short-term

*Kenneth Lehn, Chief Economist of the Securities and Exchange Commission, and James Zabala provided substantial research assistance, which we gratefully acknowledge. The views expressed herein are those of the authors only and do not necessarily represent the views of the Commission or its staff.

**Commissioner, Securities and Exchange Commission.

***Counsel to Commissioner Grundfest.

Treasury bills, it would have grown to \$209 billion by mid-1987. Table 1 summarizes our findings:

Table 1

Estimated Shareholder Profits
from Takeover Activity, 1981-1986

<u>Transaction Type</u>	<u>Gains to Shareholders (\$ billions)</u>		
	<u>Nominal Dollars</u>	<u>Current 1987 Dollars¹</u>	<u>If Reinvested in Treasury Bills²</u>
Takeovers of Public Companies . . . (1981-86, reported by W.T. Grimm)	\$139.8	\$154.2	\$176.8
Divestitures by Public Companies . . (1981-86, excluding spinoffs)	21.9	23.8	26.8
Leveraged Recapitalizations (1985-86, eight companies only)	5.3	5.5	5.8
TOTAL	\$167.0	\$183.5	\$209.4

A more complete estimate of shareholder gains from takeover activity in this period would require a number of upward adjustments to our estimate, and would also consider transactions not included in our analysis. These adjustments would probably produce a significantly higher estimate.

By way of comparison, Professor Michael Jensen, in separate, unpublished research, using assumptions that differ from ours, estimates total gains to selling firm shareholders

¹The conversion from nominal dollars to current dollars is based on the GNP deflator. See note 23 infra.

²This column assumes that the profits from takeover activity were reinvested in 13-week Treasury bills and the proceeds from maturing T-bills rolled over and reinvested until mid-1987. See note 24 infra.

at \$244 billion in nominal dollars between 1981 and 1986 (\$268 billion in mid-1987 dollars) and an additional \$57 billion between 1977 and 1980 (\$88 billion in mid-1987 dollars). In the aggregate, Professor Jensen suggests that takeovers may have increased shareholder wealth by \$400 billion (in current dollars) between 1977 and 1986.³ Professor Jensen's estimate is consistent in magnitude with the gains we report. That his estimate is larger than ours merely underscores the conservative nature of our methodology.

It is important, moreover, to recognize that our estimate, as well as Professor Jensen's, is likely to substantially understate the true gains from takeover activity because it excludes "the more important impact of the takeover, [which] may well be on those firms and managers who are not taken over, but who change their behavior as a result of the general deterrent threat of a takeover."⁴

This paper does not purport to analyze all of the costs and benefits of takeover activity. Indeed, critics of takeover activity have argued that the social consequences of takeovers cannot be measured by looking solely at stock market

³See Jensen, Disclosure Rules Harm Shareholders, app. (working paper, September 1987).

⁴Coffee, Shareholders Versus Managers: The Strain in the Corporate Web, 85 Mich. L. Rev. 1, 41 (1986). See also Jensen, The Takeover Controversy: Analysis and Evidence, 4 Midland Corp. Fin. J. 6, 19 (Summer 1986) (estimating stock price gains of \$3.2 billion from Arco's restructuring in 1985); R. Gilson, The Law and Finance of Corporate Acquisitions 4-8 (Supp. 1987).

profits. The real or perceived costs of takeovers independent of stock price effects (including, for example, the effect of takeovers on job formation and local communities) certainly should be explored and quantified. But whatever effects takeovers may have outside the capital markets, there are at least four factors related to estimates of market gains that warrant serious consideration even by those who criticize stock price studies. These factors strongly suggest that the substantial gains in shareholder wealth over the 1981-1986 period must, at a minimum, be considered as an important element in any cost-benefit analysis of takeover activity.

First, takeover gains are neither shredded nor burned. The after-tax proceeds to investors from takeover activity are recycled in the economy and become available for investment in other stocks, bonds, and financial instruments. To the extent that these proceeds are reinvested, takeovers do not deplete the pool of capital available for investment in productive assets. Moreover, to the extent that the rates of return available to investors as a result of takeover activity exceed pre-takeover rates of return on capital invested in target companies, takeover activity allows capital to be reallocated to higher-valued activities.

Second, takeover profits reflect the present value of expected underlying improvements in the return to capital invested in the target firm. These expected gains reflect in substantial part investor expectations that the acquired

businesses will be run more efficiently.⁵ As expected efficiency gains from the transactions are realized, additional capital becomes available for investment in productive assets.⁶ Thus, over the longer term, takeover activity increases the productivity of the U.S. economy.

Third, investors are not the only beneficiaries of efficiency gains. To mention only one indirect benefit, as the additional capital made available by efficiency gains is reinvested, new growth opportunities are realized throughout the economy and new jobs are created.

Finally, as noted above, the efficiency gains from takeover activity are likely to go far beyond those companies that are taken over. To ward off a real or perceived threat of a takeover, companies may restructure their operations, cut their costs, return excess cash to shareholders through dividends or stock repurchases, and take other efficiency-

⁵Investors value the returns to their contingent claims on a company's assets and earnings capacity, and not efficiency as such. There is not necessarily a dollar-for-dollar match between increased returns to invested capital and increased efficiency, but there is surely a strong correlation between the two.

⁶The market's estimates of expected gains are not, of course, correct in every instance. The estimates may be low in some cases and high in others. If, however, the anticipated gains are not realized on average, then investors should learn from prior experience and bid down the price of acquirors to reflect the investors' revised expectations. In turn, acquirors may also reduce the premiums they are willing to pay. The observed stock price gains should therefore be an unbiased estimate, informed by the market's prior experience with takeovers, of the anticipated increases in future returns.

enhancing steps. These spillover gains from takeover activity cannot be readily quantified, but they are certainly large, and may well exceed the directly observable gains.

II. Takeovers of Publicly Traded Companies

A. Returns to Target Shareholders.

Numerous academic studies document the large wealth gains to target company shareholders from takeovers. These studies cover various samples of takeovers from the early 1960s through the present, and are remarkably consistent in showing substantial gains from takeovers.⁷ As we document in Part II.B, based on the best available evidence, these returns, on average, do not come at the expense of the bidder's common shareholders, nor do they come at the expense of holders of debt or preferred stock of the target or the bidder.

The most comprehensive single source on takeovers of U.S. companies from 1981 through the present is the annual report on merger and acquisition activity in the U.S. published by W.T. Grimm & Co.⁸ W.T. Grimm does not report dollar premiums,

⁷See generally Jensen & Ruback, The Market for Corporate Control: The Evidence, 11 J. Fin. Econ. 5 (1983); Jarrell, Brickley & Netter, The Market for Corporate Control: The Empirical Evidence Since 1980, J. Econ. Perspectives (forthcoming 1987); M. Bradley, A. Desai & E. Kim, Synergistic Gains from Corporate Acquisitions and Their Division Between the Stockholders of Target and Acquiring Firms (working paper, August 1987) (forthcoming in J. Fin. Econ.).

⁸W.T. Grimm & Co., Mergerstat Review (published annually). W.T. Grimm's database consists of "publicly announced formal transfers of ownership of at least 10% of a company's assets or equity where the purchase price is at least \$500,000 and where one of the parties is a U.S. company." Mergerstat Review 1986 at 1 n.* (1987).

either for individual deals or in the aggregate. However, it does report the total dollar value paid for common stock of publicly traded U.S. companies involved in takeovers, as well as the average percentage premium paid for those shares.⁹ The premium is measured relative to the market price five days prior to the first public announcement of the transaction.¹⁰ The average percentage premium is computed assigning equal weight to each transaction.

1. An Initial Estimate.

From the W.T. Grimm data, we can estimate the total dollar premiums paid to target company shareholders in takeovers of publicly traded U.S. companies between 1981 and 1986. To do so, we treat all takeovers in each year as a single transaction with a percentage premium equal to the average percentage premium for that year reported by W.T. Grimm. This estimate will be unbiased if transaction size and percentage premium are uncorrelated, and will be biased

Transactions are recorded as of the date announced, and not as of the date completed. Cancelled transactions are deducted from totals in the year in which the cancellation occurs.

⁹W.T. Grimm records under the category "publicly traded sellers" all acquisitions "of a controlling interest" in a public U.S. company. Mergerstat Review 1986 at 83 n.**. This is interpreted to mean that the buyer, after the transaction, owns 50% or more of the seller's common stock. Source: Telephone conversation with Alexandra Ladias, Director of Research, W.T. Grimm & Co. (Sept. 10, 1987).

¹⁰Mergerstat Review 1986 at 88 n.*. For contested takeovers, the premium is measured relative to the market price five days prior to public announcement of the first bid. Source: Telephone conversation with Alexandra Ladias, Director of Research, W.T. Grimm & Co. (June 11, 1987).

downward if larger transactions tend to involve higher percentage premiums.

Prior to 1981, W.T. Grimm did not collect all of the data needed to compute takeover premiums without making additional assumptions; thus, we are restricted to the 1981-1986 period. Our initial estimate of the total dollar premiums paid between 1981 and 1986, as shown in Table 2, is \$118.4 billion.

Table 2

Initial Estimate of Shareholder
Profits from Takeovers, 1981-1986

<u>Year</u>	<u>Amount Paid for Shares of Publicly Traded Sellers (\$ Millions)¹¹</u>	<u>Average Percentage Premium Paid Over Market Price¹²</u>	<u>Estimated Dollar Premium Paid for Shares of Publicly Traded Sellers (\$ Millions)¹³</u>
1981	\$ 56,569	48.0%	\$ 18,347
1982	31,502	47.4	10,130
1983	39,471	37.7	10,807
1984	82,731	37.9	22,738
1985	116,676	37.1	31,573
<u>1986</u>	<u>89,866</u>	<u>38.2</u>	<u>24,840</u>
Total	\$416,815	39.8% ¹⁴	\$118,435

¹¹Mergerstat Review 1986 at 9. Data for 1981 are from Mergerstat Review 1985 at 11 (1986).

¹²Mergerstat Review 1986 at 88.

¹³The dollar value of the premium for each year is calculated by subtracting the pre-announcement market value of the targets acquired in that year from the total amount paid for their stock. The pre-announcement market value equals the total amount paid (shown in the first column of Table 1) divided by one plus the average percentage premium paid (shown in the second column of Table 1).

¹⁴This percentage was calculated by weighting the percentage premium for each year by the amount paid in that year.

The average percentage gains reported in Table 2 are broadly consistent with academic studies of stock price reactions to tender offers. For example, Comment and Jarrell report an average blended premium for tender offers between 1981 and 1984 of 56.6% for any-and-all offers and 55.9% for two-tier offers, relative to the target's stock price on day -20 (the twentieth trading day preceding announcement of the offer).¹⁵ Similarly, Bradley, Desai & Kim report an average blended premium of 43.0% for tender offers between 1981 and 1984 in which both bidder and target were exchange-listed, relative to the target's stock price on day -6.¹⁶

¹⁵R. Comment & G. Jarrell, Two-Tier and Negotiated Tender Offers: The Imprisonment of the Free-Riding Shareholder, at table 3 (working paper, May 1987) (forthcoming in J. Fin. Econ.). All references in this paper to days are to trading days. Days are generally measured relative to the date of the public announcement of the relevant event (here the tender offer), which is defined as day 0.

¹⁶M. Bradley, A. Desai & E. Kim, supra note 7, at 8 n.4. See also Jensen & Ruback, supra note 7, at 12 (collecting earlier tender offer studies, the most recent of which find cumulative abnormal returns to targets of between 32% and 34%). The lower percentages reported in these studies can be partly explained by use of the cumulative abnormal returns methodology, which understates total returns when gains are realized over a multi-day period. For example, a 2% return on each of days 1-10, against a flat market, would produce a cumulative abnormal return of 20% but a total return of 24.3%. Thus, Bradley, Desai and Kim, supra note 7, at 8 n.4, found a mean cumulative abnormal return to targets between 1981 and 1984 of 35.3% from 5 days before the first bid to 5 days after the last bid, compared to a mean blended premium of 43.0%.

Studies of takeovers involving a merger, but no tender offer, tend to report lower percentage premiums. See Jensen & Ruback, supra note 7, at 12. The reason for this discrepancy is unclear.

2. An Adjusted Estimate.

The estimate of \$118.4 billion in shareholder profits, derived above from the W.T. Grimm data, is likely to understate substantially the total profits earned by target shareholders from takeovers of public companies. The estimate can be refined, however, to correct for some of the downward bias.

First, the average percentage premium reported by W.T. Grimm probably understates the dollar-weighted average, because, based on W.T. Grimm's own data, larger transactions tend to involve higher premiums. W.T. Grimm reports the median premium paid in each year broken down into four categories by size of transaction. For each year from 1981 through 1986, the median premium for the largest transactions (purchase price of \$100 million or more) exceeded the median premium for all transactions.¹⁷

To adjust for this source of understatement, we divided the takeovers of publicly traded U.S. companies in each year into those involving \$100 million or more and those involving less than \$100 million. For 1983 through 1986, we used the W.T. Grimm data to determine the dollar amount of takeovers in each category.¹⁸ For 1981 and 1982, for which W.T. Grimm did

¹⁷Mergerstat Review 1986 at 88, 90. The median percentage premium paid in transactions involving \$100 million or more exceeded the average for all transactions by 7.2% in 1981; 0.1% in 1982; 5.5% in 1983; 1.8% in 1984; 1.9% in 1985; and 2.3% in 1986.

¹⁸See Mergerstat Review 1986 at 10.

not compile the necessary data, we assumed that transactions of \$100 million or more represented 90% of the dollar value of all transactions. This assumption is reasonable because, for the 1983 through 1986 period, transactions of \$100 million or more represented 93.4% of the dollar value of all transactions.¹⁹

For each year, we then assumed that the average percentage premium for takeovers of \$100 million or more exceeded the average percentage premium for all takeovers (shown in Table 1) by the same amount that the median percentage premium for takeovers of \$100 million or more exceeded the median for all takeovers. We also recalculated the percentage premium for each year for transactions under \$100 million to ensure that the average percentage premium for all transactions in that year was consistent with Table 2. We then computed total gains to target company shareholders using the same procedure as in Table 2. As shown in Table 3, our revised estimate of gains to target shareholders from takeovers of public companies between 1981 and 1986 is \$123.5 billion.

¹⁹See Table 3.

Table 3

Revised Estimate of Shareholder
Profits from Takeovers, 1981-1986

<u>Year</u>	<u>Transactions of \$100 Million or More</u>			<u>Transactions Under \$100 Million</u>		
	<u>Amount Paid (\$ millions)</u>	<u>Average Percentage Premium</u>	<u>Estimated Dollar Premium (\$ millions)</u>	<u>Amount Paid (\$ millions)</u>	<u>Average Percentage Premium</u>	<u>Estimated Dollar Premium (\$ millions)</u>
1981	\$ 50,912	55.2%	\$ 18,108	\$ 5,657	43.8%	\$ 1,723
1982	28,352	47.5%	9,130	3,150	47.3%	1,012
1983	35,219	43.2%	10,625	4,252	34.1%	1,081
1984	78,613	39.7%	22,340	4,118	36.4%	1,099
1985	111,221	39.0%	31,206	5,455	35.9%	1,441
1986	82,122	40.5%	23,672	7,744	36.5%	2,071
<u>Total</u>	<u>\$386,439</u>	<u>42.6%</u>	<u>\$115,081</u>	<u>\$30,376</u>	<u>38.5%</u>	<u>\$ 8,427</u>

Average Percentage Premium for all Transactions 42.3%

Total Dollar Premium for all Transactions \$123,508 million

A second major source of understatement is that the percentage premium calculated by W.T. Grimm is based on the market price only five days before the initial public announcement. It does not capture the premium attributable to increases in stock prices that occur more than five days in advance of the initial public announcement. A recent study by the SEC's Office of the Chief Economist ("OCE") of tender offers for exchange-listed stocks between 1980 and 1985 found that the mean cumulative abnormal return from day -20 through day -6 equaled 24.7% of the mean cumulative abnormal return from day -5 through day +5.²⁰ Similarly, Keown & Pinkerton

²⁰See OCE, Stock Trading Before the Announcement of Tender Offers: Insider Trading or Market Anticipation (Feb. 24, 1987) ("Stock Trading Study"), at table 1.

found that the mean cumulative abnormal return for a sample of companies involved in mergers between 1975 and 1978 from day -25 through day -6 equaled 29.4% of the mean cumulative abnormal return from day -5 through day +5.²¹

To correct for this source of understatement, we estimated conservatively that, on average, the gain not captured by W.T. Grimm equaled 20% of the percentage gain they observed.²² We then recalculated the dollar premiums shown in Table 3, assuming that the actual percentage gains equaled 120% of the percentage gains listed in Table 3. The resulting estimate of total stock price gains from takeovers of public companies between 1981 and 1986 is \$139.8 billion, with a weighted average premium of 50.8%.

This estimate is expressed in nominal dollars. Converting the nominal dollar gains for each year to current (mid-1987) dollars using the price deflator for Gross National Product

²¹See Keown & Pinkerton, Merger Announcements and Insider Trading Activity: An Empirical Investigation, 36 J. Fin. 855, 859-60 (1981). M. Bradley, A. Desai & E. Kim, supra note 7, at table 3, found that cumulative abnormal returns to exchange-listed tender offer targets between 1962 and 1984 from day -20 through day -6 averaged 13.0% of the cumulative abnormal returns from day -5 through day +5. The lower fractional runup found by Bradley, Desai & Kim may reflect their inclusion of older transactions, for which pre-bid trading may have been less prevalent.

²²This figure is lower than the OCE estimate of 24.7% and Keown & Pinkerton estimate of 29.4%, although higher than the Bradley, Desai & Kim estimate of 13.0%. Since the Bradley, Desai & Kim data may be biased downward by the inclusion of older transactions, the 20% figure may be conservative.

produces a gain of \$154.2 billion.²³ As an alternative measure of the current value of shareholder gains, which allows for the time value of money, one could assume that the gains in each year were invested in the middle of that year in short-term, 13-week Treasury bills and the proceeds of maturing T-bills rolled over and reinvested until mid-1987. The reinvested gains would now total \$176.8 billion.²⁴

B. Returns to Other Securityholders.

The best available evidence from academic studies indicates that the gains to target shareholders are not, on average, offset by losses suffered by other securityholders.

1. Returns to Bidding Company Shareholders.

In the 1980s, shareholders in bidding companies appear, on average, neither to gain nor to lose as a result of takeovers. The most comprehensive data are compiled in a recent study by Jarrell and Poulsen of all tender offers from 1960 through 1985. They found no statistically significant average net-of-market return to bidding firms for the 1980-1985 period (the average return was -0.04% from day -10 through day +20).²⁵

²³The GNP deflator is published quarterly by the Commerce Department. See Council of Economic Advisers, Economic Indicators: August 1987, at 2 (Gov't Printing Office 1987).

²⁴See id. at 30 (reporting annual average Treasury bill rates). Each dollar of profit earned in 1981 would have grown to \$1.65 by mid-1987; each dollar of 1982 profit would have grown to \$1.47; each 1983 dollar to \$1.34; each 1984 dollar to \$1.23; each 1985 dollar to \$1.13; and each 1986 dollar to \$1.06.

²⁵G. Jarrell & A. Poulsen, Bidder Returns (working paper, 1987).

These results do not, of course, prove that there were no net dollar gains or losses to bidding company shareholders. Net gains could occur if large transactions were more likely to produce positive returns than small transactions, and net losses could occur if large transactions were more likely to produce negative returns. However, Jarrell & Poulsen's work suggests that net gains or losses, if any, are limited in size.

A study by Bradley, Desai and Kim of a smaller sample of 52 tender offers between 1981 and 1984 in which both buyer and seller were listed on the New York or American Stock Exchange (i.e., a subsample of the Jarrell and Poulsen sample) found significant negative returns to successful bidders, averaging -2.93% from 5 days before the first offer to 5 days after the last offer made by the bidder. However, the mean dollar stock gain of \$219 million that they observed for bidder and target combined was only slightly less than the mean dollar gain of \$234 million for the target alone.²⁶

There are no comprehensive data reported in the academic literature on returns in the 1980s to merger bidders (as opposed to the tender offer bidders studied by Jarrell & Poulsen). Individual studies covering earlier periods show both small positive and small negative returns to merger

²⁶M. Bradley, A. Desai & E. Kim, supra note 7, at table 2.

bidders. On average, the studies show approximately zero returns to merger bidders.²⁷

2. Returns to Holders of Debt and Preferred Stock.

The holders of debt and preferred stock of the target and the bidder may gain or lose in any individual takeover. Academic studies consistently show, however, that on average these securityholders either gain or do not lose from corporate mergers. Apparently, any losses in individual transactions due to increased leverage (and thus potentially greater risk) are offset by gains in other transactions due to reduced risk (because of diversification or expected increases in cash flow) or redemption of the securities at a premium to market. Overall, the results suggest that the protective covenants in debt and preferred stock instruments, while they permit losses in some individual cases, serve on average to protect the holders against losses from takeover activity.

²⁷See Jensen & Ruback, supra note 7, at 16-22 (studies of takeovers tend on average to show small positive returns, averaging 4%, to tender offer bidders and zero returns to merger bidders). Varaiya & Ferris, Overpaying in Corporate Takeovers: The Winner's Curse, Fin. Analysts J. 64, 66 fig. A (May-June 1987), report significant negative returns to successful bidders averaging -2.56% over a narrow window period around the announcement date for a sample of 96 mergers and tender offers between 1974 and 1983, thus continuing the trend for studies of bidder returns to show inconsistent results.

Roll, The Hubris Hypothesis of Corporate Takeovers, 59 J. Bus. 197, 201-02 (1986), notes that an observed zero return to bidders may consist of a negative investor reaction to the impending takeover and a positive information effect concerning the bidder's cash flow, but does not explain why a significant positive information effect should be expected.

For targets, Dennis & McConnell find statistically significant positive cumulative abnormal returns to holders of convertible preferred stock, convertible bonds, and nonconvertible preferred stock, and no significant returns to holders of nonconvertible bonds.²⁸

For bidders, Dennis & McConnell found significant positive cumulative abnormal returns to holders of convertible preferred stock, and no statistically significant returns to holders of convertible bonds, nonconvertible preferred stock and nonconvertible bonds.²⁹ Similarly, Asquith & Kim studied conglomerate mergers between 1960 and 1978 and found positive, but statistically insignificant, cumulative abnormal returns to holders of nonconvertible bonds of both bidder and target.³⁰

For leveraged buyouts, the area where losses to holders of preferred stock and bonds due to increased leverage and

²⁸Dennis & McConnell, Corporate Mergers and Security Returns, 16 J. Fin. Econ. 143, 155-59 (1986). Cumulative abnormal returns over the (-6, +6) window period averaged 11.75% for convertible preferred stock; 8.92% for convertible bonds; 12.97% for nonconvertible preferred stock; and -0.28% for nonconvertible bonds.

²⁹See id. at 167-170. Cumulative abnormal returns over the (-6, +6) window period averaged 4.56% for convertible preferred stock; 2.45% for convertible bonds; 0.29% for nonconvertible preferred stock; and -1.12% for nonconvertible bonds.

³⁰Asquith & Kim, The Impact of Merger Bids on the Participating Firms' Security Holders, 37 J. Fin. 1209 (1982). See also Eger, An Empirical Test of the Redistribution Effect in Pure Exchange Mergers, 18 J. Fin. & Quantitative Analysis 547 (1983) (nonnegative returns to holders of nonconvertible debt of both bidder and target in stock-for-stock mergers).

risk might seem most likely, two separate studies, one by Marais, Schipper & Smith and the other by Lehn & Poulsen, find positive net-of-market returns to holders of the target's convertible and nonconvertible preferred stock and convertible debt, and no losses, on average, to holders of the target's nonconvertible debt.³¹ Although significant losses were observed in a number of cases,³² these results refute the ad hoc impressions, expressed by some commentators, that losses predominate.³³

In sum, then, the gains to target company shareholders do not come at the expense of bidding company shareholders or other securityholders. These gains therefore represent net gains to all investors as a class.

C. Sources of Conservatism in the Estimate.

The total gain to shareholders of \$139.8 billion, estimated above, is conservative and likely to understate the

³¹L. Marais, K. Schipper & A. Smith, Management Buyouts and Securityholder Wealth Effects, at table 7 (Univ. of Chicago working paper, July 1987), found statistically significant cumulative abnormal returns of 6% for convertible debt, 8% for convertible preferred stock, and 10% for nonconvertible preferred stock; and 0% cumulative abnormal returns for nonconvertible debt. K. Lehn & A. Poulsen, Sources of Value in Leveraged Buyouts, at table 5 (working paper, Feb. 8, 1987), found positive net-of-market returns to holders of all four types of securities, but do not report the statistical significance of their results.

³²See L. Marais, K. Schipper & A. Smith, supra note 31, at 5.

³³See, e.g., McDaniel, Bondholders and Corporate Governance, 41 Bus. Law. 413, 452-55 (1986); Farrell, Takeovers and Buyouts Clobber Blue Chip Bondholders, Bus. Week, Nov. 11, 1985, at 113.

total profits earned by shareholders from merger and acquisition activity, for several reasons.

First, W.T. Grimm's data exclude any amounts paid by bidders in acquiring a "toehold" stake in the acquired company. Many toehold acquisitions will affect market price, and thus will involve payment by the bidder of a premium over the unaffected market price.³⁴

Second, W.T. Grimm's data exclude any gains to holders of convertible preferred stock or convertible debt of the target. While such securities are outstanding only in a minority of cases, they do, as discussed above, experience significant price gains in takeovers.

Third, W.T. Grimm's data exclude any gains to target shareholders from partial tender offers in which the bidder does not acquire a 50% or greater interest in the target. Such offers are typically at a significant premium to market.³⁵

Fourth, shares not acquired in a partial tender offer (without a second-step merger) typically continue to trade at

³⁴Stock Trading Study, supra note 20, at table 6, found that 95 of 167 tender offers were preceded by toehold acquisitions, averaging 10.9% of the target's outstanding shares. The study did not determine the amount of any premium paid in the toehold acquisitions.

³⁵See R. Comment & G. Jarrell, supra note 15, at table 5 (pure partial tender offers between 1981 and 1984 involved an average front-end premium of 35.4%).

a premium to the pre-offer price.³⁶ Any resulting gains to target shareholders are not included in the total reported above.

Fifth, the W.T. Grimm data discussed above do not include corporate divestitures, which may substantially boost stock prices but for which a percentage premium cannot be directly calculated. We discuss divestitures in more detail in Part III.

Sixth, the W.T. Grimm data, although they include leveraged buyouts, exclude corporate restructurings undertaken in response to takeover attempts. In these defensive restructurings, targets frequently implement the same types of changes that a successful bidder would make. These defensive actions often produce stock price gains, but the gains are not captured by the W.T. Grimm data. One class of such restructurings, leveraged recapitalizations,³⁷ is discussed, and stock price gains estimated, in Part IV.

³⁶See id. (mean back-end premium for pure partial tender offers of 14.5%).

³⁷Leveraged recapitalizations are similar to leveraged buyouts in practical effect except that public stockholders continue as equity investors in the recapitalized company. See, e.g., Lederman & Goroff, Recapitalization Transactions, 19 Rev. Sec. & Commodities Reg. 241 (1986); Public LBOs to the Rescue, Investment Dealers' Dig., Apr. 20, 1987, at 17; The New Way to Halt Raiders, N.Y. Times, May 29, 1987, at D1.

III. Divestitures

A. Percentage Gains.

Sales by U.S. companies of divisions or subsidiaries have increased substantially in recent years. Such "divestitures" catalogued by W.T. Grimm totaled \$192 billion between 1981 and 1986, as shown in Table 4. This total does not include "spinoffs" of a division or subsidiary to the public.³⁸

Table 4

Corporate Divestitures, 1981-1986

<u>Year</u>	<u>Number of Divestitures Over \$100 Million</u>	<u>Amount Paid in Divestitures (\$ Millions)³⁹</u>
1981	37	\$ 16,696
1982	37	16,050
1983	50	24,173
1984	83	29,379
1985	120	45,826
<u>1986</u>	<u>146</u>	<u>59,927</u>
Total	473	\$192,051

Many of these divestitures involve publicly traded U.S. sellers, buyers or both. By examining net-of-market stock price movements for the common stock of the sellers and buyers around the dates of divestiture announcements, we can determine whether investors value these companies more or less highly after a divestiture is announced.

³⁸W.T. Grimm defines divestitures as "sales of a product line, subsidiary or division." Mergerstat Review 1986 at 68.

³⁹Id. at 69.

Prior academic studies of stock price movements at the time of divestiture announcements find statistically significant price increases in the seller's stock of between 1.5% and 3% for samples restricted either to larger transactions or to transactions in which the price is announced.⁴⁰ However, none of these studies relies on data more recent than 1983. Divestitures have increased dramatically since then, both in the total dollar amount involved and the number of large transactions, as shown in Table 4. Also, none of the studies reports data sufficient to enable us to estimate dollar gains from divestitures.

⁴⁰See Klein, The Timing and Substance of Divestiture Announcements: Individual, Simultaneous and Cumulative Effects, 41 J. Fin. 685 (1986); Rosenfeld, Additional Evidence on the Relation Between Divestiture Announcements and Shareholder Wealth, 39 J. Fin. 1437 (1984); Linn & Rozeff, The Corporate Sell-Off, 2 Midland Corp. Fin. J. 17, 22-23 (Summer 1984); M. Vetsuypens, Corporate Asset Sales, Firm Risk and Claimholder Wealth (Southern Methodist Univ. working paper, July 1987).

Samples that are not restricted either to larger transactions or to transactions in which price is announced generally show smaller but still significant gains for sellers, generally between 0.7% and 2%. See Hite, Owers & Rogers, The Market for Interfirm Asset Sales: Partial Sell-offs and Total Liquidations, 18 J. Fin. Econ. 229 (1987); Jain, The Effect of Voluntary Sell-Off Announcements on Shareholder Wealth, 40 J. Fin. 209 (1985); Linn & Rozeff, supra at 23. But see Alexander, Benson & Kampmeyer, Investigating the Valuation Effects of Announcements of Voluntary Corporate Selloffs, 39 J. Fin. 503 (1984) (insignificant +0.32% return to sellers for 53 divestitures between 1964 and 1973).

For this report, we used a standard risk-adjusted cumulative abnormal returns methodology⁴¹ to study net-of-market stock price movements for four different window periods around the announcement date for the 50 largest divestitures for 1985 and the 50 largest divestitures for 1986, as reported by W.T. Grimm.⁴² These 100 transactions yielded 76 publicly traded U.S. sellers and 55 publicly traded U.S. buyers. After excluding (i) companies with confounding events (e.g., a simultaneous announcement by the seller of a divestiture and a stock repurchase program), (ii) sellers in government-mandated divestitures (which may have different return characteristics than voluntary divestitures), and (iii) companies without daily return data available in the stock price database compiled by the Center for Research in Security Prices (which covers all New York and American Stock Exchange companies), we obtained a final sample of 57 sellers whose divestitures totaled \$34.2 billion and 43 buyers whose purchases totaled \$22.9 billion.⁴³ For sellers, the average divestiture size

⁴¹For a detailed discussion of the methodology and underlying assumptions, see Brown & Warner, Using Daily Stock Returns: The Case of Event Studies, 14 J. Fin. Econ. 3 (1985); Brown & Warner, Measuring Security Price Performance, 8 J. Fin. Econ. 205 (1980).

⁴²See Mergerstat Review 1986 at 13-31; Mergerstat Review 1985 at 17-32.

⁴³We excluded only transactions with confounding events in the (-1, 1) window period, to correspond with our use of this window to calculate dollar price gains (see Table 7). Divestiture dollar values are the initially announced values, which differ in some cases from the price actually paid when the transaction closed.

was \$601 million, and the average ratio of divestiture size to the market value of the seller's common stock (the "divestiture to market value ratio") was 32.4%. For buyers, the average price paid was \$533 million and the average divestiture to market value ratio was 52.5%.⁴⁴

We estimated the covariance (beta) of each firm's returns with the returns on a market portfolio from day -140 through day -21, using the Standard & Poor's 500 stock index as the market index. Where an announcement or a story indicating a probable sale was reported in the Wall Street Journal, we generally used that as the event date for the seller, and used the later announcement of the actual sale (or a story identifying a probable buyer) as the event date for the buyer.⁴⁵ The market value of the common stock of the sellers and buyers (hereinafter, "market value") was measured as of day -21.

The results for our sample are reported in Table 5.

⁴⁴The raw data underlying the figures we report are available from the authors upon request.

⁴⁵Where the Wall Street Journal story appeared on a Tuesday, Wednesday, Thursday or Friday, we assumed that there was a wire service story or press release on the preceding day, and used the preceding day as the event date. In several cases, where the date of a reported probable sale involved a confounding event for the seller, we used the later announcement identifying the buyer as the event date for both buyer and seller.

Table 5

Cumulative Abnormal Returns
on Divestiture Announcements

(t-statistics in parentheses)⁴⁶

	<u>Time Window</u>			
	<u>-1 to +1</u>	<u>-5 to +5</u>	<u>-10 to +10</u>	<u>-20 to +20</u>
Sellers (n = 57)	3.04% (t = 4.48)	2.62% (t = 3.12)	2.62% (t = 2.66)	3.69% (t = 2.28)
Buyers (n = 43)	0.74% (t = 0.81)	0.66% (t = 0.69)	1.06% (t = 0.89)	1.03% (t = 0.65)

As Table 5 shows, cumulative abnormal returns for sellers average 3.04% for the narrow (-1, +1) window. This result is significantly different from zero at the 0.99 confidence level. We find significant positive returns for the other three window periods as well. Cumulative abnormal returns for buyers are positive but are not significantly different from zero for any of the window periods. No significant price run-ups for sellers or buyers were observed prior to day -1.⁴⁷

⁴⁶The t-statistics are measured relative to the null hypothesis of no cumulative abnormal returns.

⁴⁷The lack of observable run-up prior to day -1 is somewhat surprising, both because significant run-up is observed for acquisitions of public companies and because divested operations are often "shopped" to a number of buyers before a sale is announced, which enhances the opportunity for a news leak. Perhaps the small percentage returns for divestitures generally, coupled with the lengthy shopping process, leads to any pre-announcement run-up being buried in the "noise" of price variations due to other causes.

The results for sellers and buyers are confirmed by examining the sign (positive or negative) of the net-of-market return for each company. As shown in Table 6, 42 of the 57 sellers (74%) showed positive net-of-market price changes over the narrow (-1, +1) window. This result is significantly different from zero at the 0.99 confidence level. Slightly more than half of the buyers show negative returns in the (-1, +1) window period, but this result is not significant and is reversed in the (-5, +5) window period.

Other studies of divestitures show mixed results on pre-announcement run-up. Compare Klein, supra note 40, at 688 (no evidence of run-up prior to day -2, which corresponds roughly to our day -1), and Jain, supra note 40, at 216 (same), with S. Linn & M. Rozeff, The Effect of Voluntary Divestiture on Stock Prices: Sales of Subsidiaries, at table 3 (Univ. of Iowa working paper, February 1985), Hite, Owers & Rogers, supra note 40, at 240, M. Vetsuypens, supra note 40, at table 2, Hearsh & Jaima, Voluntary Corporate Divestitures and Value, Fin. Mgmt. 10, 14 (Spring 1984), and Rosenfeld, supra note 40, at 1442 (all observing run-up, although statistical significance is not always reported).

Table 6

**Positive Price Changes
on Divestiture Announcements**

(percentages and z-statistics in parentheses)⁴⁸

	<u>Time Window</u>			
	<u>-1 to +1</u>	<u>-5 to +5</u>	<u>-10 to +10</u>	<u>-20 to +20</u>
Sellers	42/57 (74%) (z = 4.06)	35/57 (61%) (z = 1.77)	37/57 (65%) (z = 2.36)	37/57 (65%) (z = 2.36)
Buyers	20/43 (47%) (z = -0.46)	22/43 (51%) (z = 0.15)	28/43 (65%) (z = 2.08)	23/43 (53%) (z = 0.46)

The positive results for sellers are generally consistent with prior studies. Moreover, prior research by Vetsuypens indicates that these gains do not come at the expense of holders of the seller's debt or preferred stock.⁴⁹

The positive but statistically insignificant results for buyers should be contrasted with the significant positive cumulative abnormal returns to buyers, ranging from 0.3% to 2.1%, found in several prior studies of divestitures.⁵⁰ The

⁴⁸The z-statistics are measured relative to the null hypothesis that 50% of the price changes will be positive and 50% negative.

⁴⁹See M. Vetsuypens, supra note 40.

⁵⁰See Rosenfeld, supra note 40, at 1446 (bidder returns of 2.10%, compared to seller returns of 2.76%); Jain, supra note 40, at 218-19 (bidder returns of 0.34%, compared to seller returns of 0.70%); Hite, Owers & Rogers, supra note 40, at 240 (bidder returns of 0.83%, compared to seller

results for buyers are consistent, however, with the generally small or zero returns observed for bidders in acquisitions of entire companies. Our results suggest that the market for divested operations is relatively competitive, so that buyers find it difficult to earn abnormal returns.⁵¹

B. Dollar Gains.

The percentage stock price change for each public seller can be multiplied by the seller's market value, and the results summed, to estimate dollar gains to sellers. The results are shown in Table 7. The estimate of \$5.9 billion based on price changes over the narrow (-1, +1) window is probably the most reliable because it minimizes the effects of noise and potential confounding events.⁵²

Dollar returns to buyers, similarly calculated, are positive but statistically insignificant for all four window periods. For the (-1, +1) window, they equal \$310 million,

returns of 1.66%). But see Jaima & Hearsh, The Wealth Effects of Voluntary Selloffs: Implications for Divesting and Acquiring Firms, 8 J. Fin. Research 227, 243 (1985) (positive but insignificant returns to buyers).

⁵¹For buyers, purchase price was significantly and positively correlated with percentage stock price gains over the (-1, +1) window ($r = 0.33$; $t = 2.22$). Thus, our data suggest that the large size of the divestitures we studied does not explain our failure, compared to other studies, to observe significant positive price changes for buyers.

⁵²References below to dollar gains from divestitures are to gains measured over the (-1, +1) window, unless a different window is specified.

with $t = 0.23$.⁵³ Accordingly, for purposes of this paper, we will assume that dollar returns to buyers are zero.

Table 7

Estimate of Seller Price Gains
from Selected Divestitures, 1985-1986

(t-statistics in parentheses)⁵⁴

<u>Window Period</u>	<u>Dollar Value of Divestitures (\$ Millions)</u>	<u>Dollar Value of Stock Price Gains (\$ Millions)</u>	<u>Total Stock Gains as Percentage of Total Divestiture Value</u> ⁵⁵
-1 to +1	\$34,230	\$5,871 (t = 3.01)	17.2%
-5 to +5	34,230	\$7,041 (t = 2.31)	20.6%
-10 to +10	34,230	\$9,540 (t = 2.32)	29.9%
-20 to +20	34,230	\$7,233 (t = 2.02)	21.1%

The dollar gains reported in Table 7 could, in theory, be skewed by random variations in the stock prices of a few large capitalization sellers. More formally, the "long tail" of the observed distribution of dollar gains (skewness = 4.24 for the (-1, +1) window) means that the t-statistics, which are reliable only when the underlying population is normally

⁵³Gains to buyers were \$1.75 billion for the (-5, +5) window (t = 1.48); \$1.78 billion for the (-10, +10) window (t = 0.67); and \$2.76 billion for the (-20, +20) window (t = 0.98).

⁵⁴The t-statistics are measured relative to the null hypothesis of no net-of-market dollar gains.

⁵⁵By way of comparison, the mean ratio of dollar gain to divestiture price for the 57 sellers was 11.3% (t = 3.04).

distributed, must be interpreted with caution. The sensitivity of the reported values to random variation is suggested by the variation in estimated gains (from a low of \$5.9 billion to a high of \$9.5 billion) across the four window periods.

We take some comfort, however, in three observations. First, the high percentage of positive price changes (74% positive) for sellers over the (-1, +1) window period suggests that the divestiture announcements were, in most cases, the principal news over the window period. Large random variations in price would have tended to produce a greater number of negative cumulative abnormal returns. Second, the ratio of the seller's stock price gain to the divestiture size showed few outliers (max = 1.18; min = -0.70). There were no cases where the dollar gain or loss substantially exceeded the divestiture size. Third, each of the dollar totals reported in Table 7 is an unbiased estimate of the actual gain, and the \$5.9 billion estimate for the (-1, +1) window was the smallest gain observed for any of the four window periods.

The dollar gain can also be estimated by multiplying the mean percentage gain to sellers (3.037%) by the total market capitalization of the sellers (\$244.1 billion), to obtain a total dollar gain of \$7.4 billion, also larger than our base estimate of \$5.9 billion. This estimate, which is analogous to the estimate in Part II of gains from takeovers, is

relatively insensitive to random price movements in a few large-capitalization companies.⁵⁶

In sum, the 57 sampled transactions in 1985 and 1986, with total dollar value of \$34.2 billion, produced stock market gains to sellers estimated at \$5.9 billion, or 17.2% of the dollar value of the divestitures. The 17.2% gain, as a percentage of the price paid in the divestitures, corresponds to a 20.8% premium over the pre-transaction value of the divested operations to the seller.

The observed stock price gains are consistent with an increase in value for the divested operations as a result of the divestiture transaction.⁵⁷ The existence of stock gains cannot, by itself, conclusively prove that the divested

⁵⁶The estimate will be biased downward if divestitures by larger companies are more profitable (in percentage terms) than divestitures by smaller companies. The significant positive correlation ($r = 0.57$; $t = 5.15$) between the seller's market value and the ratio of dollar gain to divestiture value suggests that this estimate is, in fact, biased downward.

⁵⁷The positive correlation between divestiture value and dollar gain ($r = 0.52$; $t = 4.55$) suggests that the divested operations are more valuable to the buyer than the seller. This result could be explained by synergy between the buyer and divested unit, improved management of the divested operations by the buyer, or both. The positive correlation between the seller's market value and the ratio of dollar gain to divestiture value ($r = 0.57$; $t = 5.15$) suggests that divestitures also lead, at least in part, to an expectation of increased value for the seller's remaining businesses. Such increases should be a more important consideration for sellers with larger market values, who tend to have a smaller divestiture to market value ratio ($r = -0.31$; $t = -2.45$). This result could be explained by expectations of improved management by the seller of its remaining operations, which is a motive frequently stated by sellers to explain divestitures, by the expectation of additional value-increasing divestitures in the future, or both.

operations are more valuable to the buyer than to the seller, or that divestitures enable sellers to operate their remaining businesses more efficiently. A positive price effect for sellers could reflect, for example, market reaction to new information about the value of the divested operations. On the other hand, divestiture announcements could also indicate that the divested operations were less valuable than investors had believed. However, for the relatively large buyers, sellers, and divestitures that we studied, there is little reason to believe that analysts systematically underestimate or overestimate the value of the divested operations to the seller. Thus, price signalling effects are unlikely to explain much, if any, of the observed price movements.⁵⁸

C. Sources of Conservatism in the Estimate.

The estimated gains to sellers of \$5.9 billion show the substantial value attributable to these transactions. Moreover, our estimate is likely to understate substantially aggregate gains from divestitures, for several reasons.

First, the divestitures reported in Table 5 represent only 17.8% of the total dollar value of divestitures in the 1981-1986 period as reported by W.T. Grimm. If one makes the plausible assumptions that (i) the gains to sellers for all

⁵⁸Hite, Owers & Rogers, supra note 40, at 242, report that sellers give up all of the announcement gains if the divestiture is subsequently cancelled. Although cancellations may suggest unforeseen problems with the operations proposed to be divested, the price reversal may also suggest that the market had properly valued the operations in the seller's hands prior to the initial divestiture announcement.

divestitures, as a percentage of the dollar value of the divestiture transactions, equal 15% (this percentage is 17.2% for the sample),⁵⁹ and (ii) the percentage of divestitures by dollar value involving publicly traded U.S. sellers equals the percentage of 76% observed for the sample, then the total gains to the seller's shareholders for all divestitures by publicly traded U.S. companies between 1981 and 1986 would equal \$21.9 billion.⁶⁰

Measured in current (mid-1987) dollars, this total is \$23.8 billion. If the profits had been reinvested until mid-1987 at the 13-week Treasury bill rate, they would total \$26.8 billion.

Second, in some cases, a company announces a planned divestiture (or a divestiture program) some time before it announces a divestiture transaction or transactions. At the time of the first announcement, the market will incorporate that plan into the seller's stock price, based on investor

⁵⁹The 15% figure is arbitrary, but is believed to be reasonable for the purpose of extrapolating from the sampled transactions to all divestitures in the 1981-1986 period. Divestiture value was moderately correlated with the ratio of dollar gain to divestiture value ($r = 0.33$; $t = 2.57$), suggesting that smaller divestitures were relatively less profitable. However, large transactions account for the bulk of the dollar value of divestitures. Divestitures of \$100 million or more accounted for 79% of the dollar value of all divestitures recorded by W.T. Grimm between 1983 and 1986. See Mergerstat Review 1986 at 9-10.

⁶⁰The calculation is total divestiture value (\$192.1 billion), multiplied by the percentage of publicly traded U.S. sellers (76%), multiplied by the average gain to the seller's shareholders as a percentage of divestiture value (15%) = \$21.9 billion.

estimates of the sale price, but discounted to reflect uncertainty over whether and at what price a sale will take place, as well as the expected delay until the sale is completed. The subsequent announcement of an actual transaction is also likely to have a price impact, because the divestiture becomes more certain and the price is often known. Thus, neither event date will fully capture the gain to the seller.⁶¹ Also, in the common case where a divestiture is announced prior to completion, stock price gains around the announcement date will understate the total gains because investors will discount the seller's stock price to reflect the risk that the transaction will not be completed, or will be completed at a lower price.

Third, W.T. Grimm does not report divestitures for which no price is publicly reported, nor does it report "spinoffs" (the sale to the public of some or all of the equity in a subsidiary). Sales where no price is reported may produce gains for sellers, buyers or both.⁶² Moreover, academic

⁶¹See Hite, Owers & Rogers, supra note 40, at 240 (finding significant positive returns to sellers around both dates).

⁶²Two prior studies specifically examined divestiture announcements where no price was reported. Linn & Rozeff, supra note 40, at 22, found cumulative abnormal returns to sellers averaging 0.49% (they do not report whether this change was statistically significant); Klein, supra note 40, at 689, found no statistically significant price changes for such announcements.

studies show that spinoffs produce significant positive cumulative abnormal returns to the seller's shareholders.⁶³

Fourth, we have excluded any gains to buyers of divested operations. While these gains were not statistically significant for our sample, they were positive and other studies have found significant positive returns to buyers.

Fifth, the W.T. Grimm database is not fully comprehensive. For 1985, we checked W.T. Grimm's list of divestitures of \$100 million or more against the roster of completed transactions published quarterly by Mergers & Acquisitions magazine. Mergers & Acquisitions listed 15 divestitures for 1985 over \$100 million, totalling \$5.1 billion, not listed by W.T. Grimm either for 1985 or for 1984. Similar omissions by W.T. Grimm may have occurred in other years as well.

IV. Leveraged Recapitalizations

Corporations often undertake restructurings of various types in response to an actual or perceived threat of a takeover. Such restructurings frequently involve the same types of changes that a successful bidder would make after a takeover. These defensive actions often produce stock price gains that are excluded from the estimates of gains from takeovers and divestitures developed above.

⁶³See Hite & Owers, Security Price Reactions Around Corporate Spin-Off Announcements, 12 J. Fin. Econ. 409 (1983); Miles & Rosenfeld, The Effects of Voluntary Spin-Off Announcements on Shareholder Wealth, 38 J. Fin. 1597 (1983); Rosenfeld, supra note 40; Schipper & Smith, Effects of Recontracting on Shareholder Wealth: The Case of Voluntary Spin-Offs, 12 J. Fin. Econ. 437 (1983).

In this part, we estimate stock price gains from leveraged recapitalizations, one small but significant class of such restructurings. A leveraged recapitalization of a public company involves the payment to shareholders, in cash, debt securities or preferred stock, of a large percentage of the pre-transaction market value of the company's equity. After the recapitalization, the shareholders continue to own equity in the company but the market value of that equity is substantially reduced. As in leveraged buyouts ("LBOs"), the company becomes highly leveraged and management's percentage equity interest generally increases substantially. LBOs, however, involve the purchase of the shareholders' entire equity interest, while leveraged recapitalizations, by definition, involve payment for only part of the equity interest. Leveraged recapitalizations are often, although not always, undertaken in response to an actual or potential threat of a hostile takeover.

We define a transaction as a leveraged recapitalization if it involved payment to shareholders (whether by extraordinary dividend, self-tender or merger with a shell corporation) of value equal to or greater than the residual value of the company's shares after the transaction. Using this restrictive definition, which excludes many defensive recapitalizations, we were able to identify eight public companies that successfully undertook leveraged recapitalizations in the

1985-1986 period.⁶⁴ Table 8 describes the net-of-market price movements for these eight companies, calculated for the window period beginning 20 days prior to the earlier of (i) initial announcement of an actual or potential hostile bid or (ii) a recapitalization proposal,⁶⁵ and ending one day after the final recapitalization proposal was announced.

Table 8

Net-of-Market Price Changes on
Leveraged Recapitalization Announcements⁶⁶

<u>Year</u>	<u>Number of Transactions</u>	<u>Average Percentage Gain</u>	<u>Dollar Gains (\$ Millions)</u>
1985	3	30.5%	\$2,566
1986	<u>5</u>	<u>31.6</u>	<u>\$2,762</u>
Total	8	31.2%	\$5,328

The aggregate dollar gain to shareholders from these transactions, based on the (initial announcement -20, final announcement +1) window period, was \$5.3 billion. The average percentage premium over the pre-transaction market price was

⁶⁴The companies are Colt Industries, FMC Corp., Goodyear, Holiday Corp., Multimedia Inc., Owens-Corning Fiberglass, Phillips Petroleum and Union Carbide.

⁶⁵The 20-day period allows us to capture the pre-bid price runup often observed in corporate takeovers. See Stock Trading Study, supra note 20.

⁶⁶A binomial test based on the signs of the individual returns (all positive) indicates significance at the .99 confidence level.

31.2%. In current (mid-1987) dollars, the gain is \$5.5 billion. If the gains had been reinvested until mid-1987 at the 13-week Treasury bill rate, they would equal \$5.8 billion.

It is possible that some of these gains to shareholders are offset by losses to holders of preferred stock or debt. We did not study returns to these security holders, but the absence of losses to holders of preferred stock or debt in leveraged buyouts⁶⁷ suggests that the consequences of this omission are probably not significant.

V. Total Stock Market Gains

This paper estimates stock price gains between 1981 and 1986 from three takeover-related sources: takeovers of public companies, divestitures and leveraged recapitalizations. A conservative estimate of gains from takeovers of public companies in this period is \$139.8 billion. A conservative estimate of stock price gains from divestitures is \$21.9 billion. Finally, we estimate stock price gains from eight leveraged recapitalizations in 1985 and 1986 at \$5.3 billion. Overall, we conservatively estimate total stock market gains from these three sources at \$167 billion. In current (mid-1987) dollars, the total is \$184 billion. If the profits had been reinvested at the 13-week Treasury bill rate, they would have totaled \$209 billion by mid-1987.

One hundred and sixty-seven billion dollars (or \$184 billion, or \$209 billion), by any reasonable standard, is a

⁶⁷See Part II.B.2 supra.

lot of money. These results demonstrate the substantial shareholder value created by mergers and acquisitions and strongly suggest that these transactions can lead to an increase in the efficiency with which the underlying businesses are run.