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Abstract

Employing an EVA style classification, we examine whether active investors (such as hedge funds and other long-short investors) can develop an alpha-generating strategy by classifying acquisitions based on the pre-acquisition EVA style quadrant of the acquirers. Over a recent ten-year period, the announcement evidence suggests that acquisitions across all style quadrants generate negative risk-adjusted returns: wherein the magnitude of economic gains from shorting acquirers is determined by EVA style characteristics; namely wealth creators or wealth destroyers. Moreover, we find that the potential for longing gains on targets of acquiring firms is also captured by EVA style.

JEL classifications: G11; G14; G34

Keywords: EVA; Acquisitions; EVA style of investing; Active investing; Alpha; Shorting (longing)

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During the 1990s and beyond, large U.S. industrial firms have deployed substantial capital resources in pursuit of strategic acquisitions. The aggregate average result of these acquisitions is that they destroy shareholder value for the owners of the acquiring firms. There is however, substantial cross-sectional variation in the announcement period returns of these acquiring firms. That being said, active investors (such as hedge funds[1] and other long-short investors) may be able to develop or fine tune alpha-generating investment strategies if they can distinguish "good" bidders (perhaps more aptly, *less* bad bidders) from "bad" bidders in strategic acquisitions.

In this paper we present a framework for classifying acquiring firms into wealth creators and wealth destroyers. We employ the EVA style analysis developed by Abate, Grant, and Stewart [2004] to classify all large acquirers completing acquisitions over the 1990-1999 period into one of four style quadrants based on their pre-acquisition style. We then examine the wealth effects that these firms experience upon acquisition announcement and analyze these wealth effects by style category. We find that the wealth effects vary by EVA style and event window, suggesting that investors will benefit to varying degrees from a policy of shorting all style categories of acquiring firms.

The remainder of the paper is organized as follows: In Section 2, we review the literature on acquisition wealth effects and EVA style analysis. Section 3 describes the data and method employed. Section 4 presents the empirical results for strategic acquirers (and their targets).

Section 5 examines the potential shorting (*and* longing) implications for active-minded investors around acquisition announcements. Section 6 discusses related EVA findings, while Section 7 summarizes and concludes the paper.

Returns Around Acquisitions and the EVA Style of Investing

Literature Review

It is well-established in the finance literature that acquiring firm shareholders, on average, gain little if any benefit from acquisitions, and often loose value. Target firm shareholders consistently gain value around acquisitions. These results are fairly consistent over time even though the motives for past waves of acquisition activity have varied. For example, acquisitions in the 1960s and 1970s were often motivated by the desire to diversify risk. In the 1980s, a large wave of acquisition activity was driven by the desire to eliminate inefficient diversification and create more focused companies. In the 1990s, a large wave of acquisitions was driven by more strategic considerations. These acquisitions were motivated by a search for strategic business combinations that would potentially produce scale and scope economies, international expansion, and operating efficiencies. Brunner [2002] provides a comprehensive review of the acquisition literature, supporting low and negative returns to acquiring firms across these waves of acquisitions.

A study of large strategic acquirers making acquisitions in the late 1990s by KPMG, finds that 53 percent of these firms complete failed acquisitions when looking at performance one year after the acquisitions. Moller, Schlingemann, and Stulz [2004, 2005] find that large acquirers tend to make value reducing acquisitions and that these firms in aggregate have destroyed value. They report that acquiring-firm shareholders lost 12 cents around acquisition

announcements per dollar spent, for a total loss of $240 billion from 1998 to 2001, compared to a $7 billion total loss for the 1980s. Large acquisitions were generally responsible for these losses.

While a number of possible explanations have been offered for why large acquirers continue to make value reducing acquisitions, the puzzle remains. Jensen [1986], in his free-cash flow hypothesis, argues that managers with free cash flow prefer to increase firm size through acquisitions rather than pay cash flow to shareholders. Roll [1986] argues that hubris may account for the value destruction, as overconfident bidders overpay for acquisitions in anticipation of overly optimistic synergistic benefits. Travlos [1987] finds that acquirers paying with equity lose more value than those financing acquisitions with cash. Lang, Stulz, and Walking [1989] and Servaes [1991] find higher target, bidder, and total returns around acquisitions when bidders have high-q ratios and targets have low-q ratios. Lang, Stulz, and Walkling [1991] find that bidder returns are negatively related to cash flow for low-q bidders but not for high-q bidders. McCardle and Visswanathan [1994] and Jovanovic and Braguinsky [2002] argue that firms make acquisitions when they have run out of internal growth opportunities. Dong, Hirshleifer, Richardson, and Teoh [2002] find that acquirers with higher valuations have lower announcement period returns. Moeller, Schlingemann, and Stulz [2004] provide a more detailed review of this literature.

Overall, the literature studying the wealth effects of acquisitions reports that acquiring firm shareholders do not earn positive returns. These results are robust over merger waves motivated by different factors, including the most recent wave of acquisitions that was largely motivated by strategic buyers. There is however substantial cross-sectional variation in the returns to acquiring firms and it is possible that these firms are comprised of good bidders and bad bidders, yielding different wealth effects. Investors (such as hedge funds) interested in

discerning the value created by good bidders and avoiding, or raising funds by shorting, bad bidders will be interested in analysis to distinguish good (or as we quipped, *less* bad bidders) from bad bidders.

EVA Style of Investing

Economic value added (EVA) is a metric that measures the fundamental ability (or lack thereof) of a firm to create shareholder value. EVA is a residual income measure that is positive if a company earns more than the cost of capital on its invested capital. Stewart [1991] and Grant [2003] provide a thorough description of EVA. A positive change in EVA results when the return on invested capital exceeds (is less than) the cost of capital and investment is positive (negative). Also, a negative change in EVA results when the return on invested capital is less than (greater than) the cost of capital and investment is positive (negative). Along these lines, firms may be classified into one of four EVA style quadrants. Wealth creators, firms with positive changes in EVA, will exhibit either a return on capital exceeding the cost of capital and positive investment, or a return on capital below the cost of capital and negative investment. Wealth destroyers, firms with negative changes in EVA, will exhibit either a return on capital less than the cost of capital and positive investment, or a return on capital exceeding the cost of capital and negative investment. Abate, Grant, and Stewart [2004], refer to this framework as an EVA style of investing. It is also described more fully in the Method section below.

We apply the EVA style analysis to examine three questions (shown below) related to strategic acquisitions by large acquirers. The first two questions pertain to whether acquisition returns are positive or negative when firms are pre-classified as value creators or value destroyers, while the third question addresses the more pertinent issue of whether active

investors can use EVA style analysis to discern abnormal return (alpha) opportunities on strategic acquirers (and their targets).

1) Do firms classified as wealth creators engage in value-creating acquisitions?

2) Do firms classified as wealth destroyers engage in value-destroying acquisitions?

3) Can EVA style classifications of acquirers (and targets) be used to discern varying degrees of investment reward (alpha)?

With these questions, we examine whether the type of value creation or destruction, i.e., return on capital relative to cost of capital and investment being positive or negative, are related to acquisition wealth effects, and whether or not the return differences have implications for active-minded investors.

Data and Methods

Data

We obtain data from the *2001 Stern Stewart Performance 1000* ranking of the 1,000 largest U.S. industrial firms by market value added (MVA) for the year ended 2000. We then match this list to a sample of acquisitions made by U.S. industrial firms over the period 1990-1999, obtained from the Securities Data Company (SDC) database. The merged list yields a sample of 484 U.S. industrial firms that acquired other firms over the period 1990-1999, and that have data available in the Stern Stewart database. We obtain stock return data from the Center for Research in Security Prices (CRSP) database. Each firm must have sufficient returns to estimate the market model.

Methods

As noted before, it is well established in the finance literature that acquiring firms earn low returns upon acquisition announcement and that these returns are often negative. Brunner [2002] provides a comprehensive review of this literature, while Moeller, Schlingemann, and Stulz [2004, 2005] provide recent evidence. While value creation by acquirers is questionable, there is significant cross-sectional variation in announcement period returns to acquiring firm shareholders. We examine whether the fundamentals of wealth creation of acquiring firms impact their acquisition wealth effects.

Economic value added (EVA)[2] is a well-known measure of economic profit or residual income. Positive EVA suggests that a firm is fundamentally creating value by earning more than its cost of capital. A firm's market value added (MVA) represents the difference between its market value of capital and its book value of capital. In principle, MVA is the present value of future EVA discounted at the WACC. Building on earlier research by Grant [1996], Abate, Grant, and Stewart [2004] find that 80% of wealth creating firms have jointly positive MVA- and EVA-to-capital ratios, suggesting that a firm's current EVA makes a contribution to its market value. They also find that 92% of wealth destroying firms have jointly negative MVA- and EVA-to-capital ratios, again suggesting a relation between current EVA and market value. Thus, EVA can be taken as reasonable proxy for wealth creation.

EVA can be calculated as a firm's net operating profit after-tax (NOPAT) minus its invested capital (IC) times its weighted average cost of capital (WACC), or:

$$EVA = NOPAT - (ICxWACC) \qquad (1)$$

Rearranging, Equation 1 can be expressed as:

$$EVA = \left(\frac{NOPAT}{IC} - WACC \right) xIC \qquad (2)$$

and denoting NOPAT/IC as the return on invested capital (ROIC) as:

$$EVA = (ROIC - WACC) xIC \qquad (2a)$$

Note that ROIC – WACC shows the relation between return on capital and the cost of capital, or the EVA spread. Recognizing that the change in invested capital over a time period is a firm's investment for that period, the change in EVA due to investment (assuming spread constancy) may be expressed as:

$$\Delta EVA = (ROIC - WACC) x \Delta IC \qquad (3)$$

EVA is positive (negative) when a firm's return on invested capital exceeds (is less than) its cost of capital, i.e., when the EVA spread is positive (negative). Firms with positive EVA spreads create (destroy) value when they have positive (negative) investment. In turn, firms with negative EVA spreads create (destroy) value when they have negative (positive) investment characteristics.

Using this framework, we classify acquiring firms into four quadrants based on their EVA style characteristics; following the methodology in Abate, Grant, and Stewart [2004]. Firms are characterized as exhibiting either 1) Under Investment (positive EVA spread and negative change in invested capital), 2) Wealth-Creating Growth (positive EVA spread and positive change in invested capital), 3) Wealth-Destroying Growth (negative EVA spread and positive change in invested capital), or 4) Positive Restructuring (negative EVA spread and

negative change in invested capital). Classifications are based on values for the year prior to acquisition. Exhibit 1 shows a summary of the EVA style classifications.

Exhibit 2 reports the distribution of the 484 acquisitions by calendar year and by EVA style quadrant for the ten years, 1990-1999. The exhibit reports a substantial increase in the number of acquisitions over this decade. Not surprisingly, most of the acquisition activity in our sample occurs between 1995 and 1999. The highest number of large strategic acquisitions, 117, occurs in 1999.

We examine stock price reaction to the announcement of acquisitions using the Brown and Warner [1985] standard event-study method to compute the daily excess returns. We use a two-step procedure to compute the average daily abnormal returns with stock price data from CRSP. We report our results from using both the CRSP equal-weighted and value-weighted indexes as market proxies.

First, we estimate the parameters of a single-factor market model for each firm. We use the returns from day –255 to day –46 to estimate each firm's alpha and beta coefficients. Second, we compute the excess return by subtracting a firm's expected daily return from its actual return. We calculate the cumulative abnormal returns by summing the abnormal returns over the periods from day –1 to day 1, day -1 to 30, and day 1 to 30, where day 0 represents announcement of the acquisition. These abnormal returns are estimated for both the acquiring firms and for the corresponding target firms. They are estimated in total, and for each of the four EVA style quadrants of the acquiring firms.

Results

Overall Event Study Results

Exhibit 3 reports the overall event study results. The abnormal returns for the acquiring firms are negative and statistically significant for all three event windows. The returns are -1.14%, -2.57%, and -1.80% respectively for event periods -1,1, -1,30 and 1,30 respectively. The abnormal returns for the target firms are positive and statistically significant for all three event windows. The returns are 24.10%, 24.16%, and 5.11% respectively for event periods -1,1, -1,30 and 1,30 respectively. All results are significant at the 1% level. Overall, these results are consistent with prior results reported by Bruner [2002]. Notable for our study is that the cumulative returns are not only negative (positive) for acquiring firms (targets) around the immediate announcement date, but they are also negative (positive) for acquirers (targets) in the 30 trading day period thereafter. These results suggest overall shorting (and longing) gains by taking active positions in acquirers (targets) following the actual announcement date. In the next section, we take a closer look at the shorting gains on acquirers (and longing gains on targets) according to the EVA style of investing.

Event Study Results by EVA Style

Exhibit 4 reports the event study results by the acquiring firms' EVA style quadrants for both the acquiring and corresponding target firms. The announcement-period CARs for acquirers are negative for all event windows and all four quadrants. The CARs for days -1,1 range from -0.19% for the Under Investment firms to -1.26% for the Positive Restructuring firms, with Value-Creating Growth firms and Value-Destroying Growth firms having CARs of -1.19% and -1.18% respectively. All are statistically significant, except for the Under Investment CARs. Exhibit 5 presents these results in a graph. Interestingly, the CARs for days -1,30 are more negative and vary by style from the -1,1 CARs. Under Investing firms are the most

negative (-5.62%), followed by Positive Restructuring (-4.41%), Value-Destroying Growth (-3.33%), and Value-Creating Growth (-1.77%). All of these results are statistically significant. Exhibit 6 presents the -1,30 results. The CARs for days 1,30 are also notable with Under Investing firms at -5.34%, followed by Positive Restructuring (-4.14%), Value-Destroying Growth (-2.93%), and Value-Creating Growth (-0.73%). Exhibit 7 presents the 1, 30 results. All but Value-Creating Growth are statistically significant. While they are economically different, none of the style-quadrant CARs are statistically different from the other quadrants. Comparing the -1,1 and -1,30 returns by quadrant, the differences for Under Investment and Positive Restructuring are statistically significant.

These results show that acquisitions by strategic acquirers are seen as value destroying, regardless of whether the acquiring firms are value creators or value destroyers prior to the acquisition. Under Investing firms destroy the least amount of value in the initial days around the acquisition announcement, while Positive Restructuring firms destroy the most value. Value-Creating Growth and Value-Destroying Growth firms are in between, with very similar measures of value destruction. However, during the near term (days -1,30) the effects intensify and the relative wealth effects across style categories shift. Under Investing firms destroy the most value, followed by Positive Restructuring and Value-Destroying Growth firms, and finally Value-Creating Growth firms at a lower level of value destruction. These results seem driven by a continuing and intensifying value destruction effect in the 30 days after the acquisition announcements.

It is instructive to also look at the CARs for the corresponding target firms. These can be influenced by the premiums paid by the acquirers and the market's assessment of the value creation potential to the target firms. As shown in Exhibit 4, the announcement-period CARs for

the targets are positive for all event windows and all four quadrants. The CARs for days -1,1 range from 26.59% for the targets of Value-Creating Growth acquirers to 19.61% for the Value-Destroying Growth firms. Under Investing firms closely follow Value-Creating Growth, with CARs of 25.98%, while Positive Restructuring firms are close to Value-Destroying Growth at 20.46%. All are statistically significant. Exhibit 8 graphs the -1,1 target CARs. The CARs for days -1,30 are very similar. Under Investing firms are the most positive (27.64%), followed by Value-Creating Growth (26.94%), Positive Restructuring (21.80%), and Value-Destroying Growth (18.59%). All are statistically significant. Exhibit 9 shows the -1,30 CARs. The CARs for days 1,30, while statistically significant for all but Under Investing firms, are much lower, with Value-Creating Growth firms at 6.32% and Under Investing, Value-Destroying Growth, and Positive Restructuring firms at similar levels of 3.22%, 3.27%, and 3.82% respectively. Exhibit 10 shows the 1,30 target CARs. While the style-quadrant CARs are economically different, only the Value-Creating Growth and Value-Destroying Growth CARs are statistically different. Comparing the -1,1 and -1,30 returns by quadrant, none of the differences are statistically significant.

These results show that acquisitions by strategic acquirers are seen as value creating for the corresponding target firms, regardless of whether the acquiring firms are value creators or value destroyers. Under-Investing firms and Value-Creating Growth firms add the most value to targets in the days around the acquisition announcement, while Value-Destroying Growth and Positive Restructuring firms add similar amounts, but somewhat less than the other two styles. In the near term, (days -1,30) the effects, both absolute and relative, are very similar. The results are much weaker for the 30 days subsequent to the announcement, suggesting less value creation for targets after the announcement.

Overall, these results show that strategic acquisitions by large acquirers in the 1990s produce, on average, negative abnormal returns to acquiring firm shareholders of -1.14% and -2.57% for days -1,1 and -1,30 respectively, while target firm shareholders earn positive abnormal returns of 24.10% and 24.16% for these periods. When the acquirer returns are segmented into four EVA style categories, Under Investing firms experience the lowest level of short-term value reduction (-0.19%), while Positive Restructuring firms lose the most value (-1.93%). However, the value reduction continues in the 30 days subsequent to the acquisitions, with Under Investing firms losing the most value (-5.62%) and Growth-Creating Value firms losing the least (-1.77%) and Positive Restructuring and Growth-Destroying-Value firms in between, losing -4.41% and -3.33% respectively.[3] Under Investing and Growth-Creating Value firms make acquisitions with higher target abnormal returns, suggesting that they pay higher premiums and/or engage in acquisitions that create more target value. Growth-Destroying Value and Positive Restructuring firms make acquisitions with lower target returns. These results are consistent with Lang, Stulz, and Walking [1989, 2001] and Servaes [1991] in that the Value-Creating-Growth firms, likely to be high MVA and high q, create the most value.

Implications for Active Investors

Shorting (and longing) Opportunities

We now turn to the active investing implications of our stock market findings on large strategic acquirers and their targets. We begin with the acquirers. Since the cumulative abnormal returns in Exhibit 5 across all event windows and EVA styles are negative, this pervasive value destruction finding suggests that it is best for active investors to short them all. In economic terms, the shorting opportunity across strategic acquirers varies in magnitude by EVA style;

reinforcing our contention that style classifications matter not only for shareholders when assessing the magnitude of value destruction in acquiring firms, but also for active investors (notably, *event-driven* hedge funds) seeking profitable trading opportunities around the announcement of corporate acquisitions.

As shown in Exhibit 7, the EVA style analysis reveals that shorting opportunities are the highest among Under Investing firms, as the cumulative residuals are negative at the time of the acquisition announcement and then fall precipitously during the 30 trading days following the announcement. This suggests that investors underestimate the extent of value destruction by Under Investing firms in their assessment at the announcement date. Moreover, shorting opportunities are clearly evident in the Value-Destroying Growth firms as well as in the Positive Restructuring firms, as the cumulative abnormal returns are negative at the time of acquisition announcement and in the 30 trading days thereafter. On the other hand, shorting opportunities are least available among Value-Creating Growth firms as their cumulative residuals are negative at the acquisition announcement date, but they change only slightly in the post announcement period. This suggests limited shorting opportunities for investors around acquisition announcements by wealth creating firms.

The fact that the cumulative abnormal returns are generally negative in the EVA styles following the acquisition announcement suggests that either the market is inefficient in pricing corporate acquisitions, or there is other unforeseen negative information or common risk factors that impact post-announcement returns. These factors can lead to varying degrees of shorting opportunities, particularly for hedge fund investors who are likely to use leverage to magnify the expected gains from shorting acquirers, both at the time of the acquisition announcement and in the 30 trading days thereafter. With respect to targets, Exhibit 10 shows that a continuing post-

announcement effect is evident in the post-announcement returns; varying in magnitude of positive residuals by EVA style classifications for wealth creator and wealth destroyer acquirers. Specifically, longing opportunities on target firms are available across the four EVA style categories. This is particularly the case for the targets of (1) Value-Creating Growth acquirers; where the potential for significant value creation goes directly to target firm shareholders, and (2) the targets of Under-Investing acquirers; where, due to limited-to-declining organic growth opportunities these firms are forced to diversify or "pay up" in a misguided attempt to recapture the growth glory days.[4] Although the reasons may differ as to why firms become acquirers, the CAR results show economic gains to target firm shareholders *and* active-minded investors who distinguish targets by EVA style.

Related EVA Results

We have also investigated post-announcement EVA happenings to explain the negative returns to large strategic acquirers. Our regressions (not shown) indicate that returns on invested capital and EVA spreads decline subsequent to acquisitions for most EVA styles. Exhibit 11 captures the negative EVA spread changes for Under-Investing, Value-Creating Growth, and Value-Destroying Growth acquirers; whereby EVA spreads for these acquirers decline by -1.09%, -4.31%, and -1.49% respectively in the year following an acquisition. At -4.31%, the post-announcement decline in EVA spread is especially poignant for the Value-Creating Growth acquirers. If correct, this suggests that firms with higher levels of pre-acquisition EVA lose more economic profit than low-EVA firms when they engage in acquisitions; perhaps, in a perverse view, because they can better "afford" to.

In contrast, the EVA spread changes for Positive Restructuring acquirers are reflective of an interesting empirical anomaly. As shown in Exhibit 11, we find that the EVA spread of Positive Restructuring firms actually increases (by 85 basis points on average) in the year following an acquisition. Moreover, Exhibit 12 shows that some 60% of Positive Restructuring firms increased their EVA spread in the year following an acquisition, while the spread improvement is only about 25% for Under-Investing and Value-Creating Growth acquirers. Although the Positive Restructuring firms are apparently moving in the right direction–with positive economic profit momentum–the large negative abnormal returns observed in our study for this EVA style reinforce an earlier contention by Grant [1996, 2003]. He argues that risky troubled companies face an "abundance" of adverse managerial noise such that their positive restructuring efforts falls on investors deaf ears.[5]

Summary and Conclusion

While numerous prior studies have examined returns to acquiring firm shareholders upon the announcement of acquisitions, including the recent wave of strategic acquisitions, the negative wealth effects to these firms remains a puzzle. As with others, we are left with the more fundamental question of why do corporate bidders (strategic or otherwise) become "bidders" in the first place? That being asked, our study suggests that active investors (hedge funds and other long-short investors) seeking to develop alpha-generating investing strategies from shorting acquiring firms (and longing target firms) can benefit from methods that distinguish wealth-creating from wealth-destroying firms. We employ the EVA style analysis developed by Abate, Grant, and Stewart [2004] to classify acquirers into one of four style categories based on the sources of pre-acquisition wealth creation or destruction. We then examine the wealth effects to

large strategic acquirers, seeking to distinguish "good" (now aptly *less* bad acquirers) from "bad" acquirers based on these pre-acquisition style classifications.

Our event study and EVA style results are consistent with the literature in that while pursuing returns from strategic acquisitions, active-minded investors should consider shorting them all. Our contribution shows that shorting opportunities for investors vary in magnitude by EVA style; reinforcing our contention that style classifications matter not only for shareholders when assessing the magnitude of value destruction in acquiring firms but also for active investors seeking profitable trading opportunities around the announcement of corporate acquisitions. Moreover, we find that the economic potential for longing opportunities in targets of strategic acquirers is also captured by EVA style characteristics of wealth creator and wealth destroyer acquirers.

Regarding the three questions that we raised at the outset, the joining of EVA style analysis with the more traditional event study analysis leads us to say "no" to the first question, while answering the second and third questions in the affirmative. We find that 1) wealth creating firms (prior positive EVA) do not create value through strategic acquisitions; although they appear to destroy the least amount of shareholder value, 2) wealth destroying firms (prior negative EVA) destroy value via corporate acquisitions; although a stock market anomaly seems present in the pricing of restructuring acquirers that are trying to turn a negative EVA situation around, and 3) varying degrees of shorting (and longing) opportunities on large strategic acquirers (and targets) are potentially economically available to active investors using the EVA style of analysis.

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Exhibit 1–EVA Style Quadrants

Description of EVA investment styles following the method of Abate, Grant, and Stewart [2004]. Firms are classified as Under Investment (positive EVA spread and negative change in invested capital), Wealth-Creating Growth (positive EVA spread and positive change in invested capital), Wealth-Destroying Growth (negative EVA spread and positive change in invested capital), or Positive Restructuring (negative EVA spread and negative change in invested capital). EVA spread is calculated as return on invested capital (net operating profit after tax divided by invested capital) minus weighted average cost of capital. Classifications are based on values for the year prior to acquisition.

	Quadrant I: Under Investment	Quadrant II: Wealth-Creating Growth	Quadrant III: Wealth-Destroying Growth	Quadrant IV: Positive Restructuring
EVA Spread (Return on Invested Capital minus Weighted Average Cost of Capital)	> 0	> 0	< 0	< 0
Investment (Change in Invested Capital)	< 0	> 0	> 0	< 0

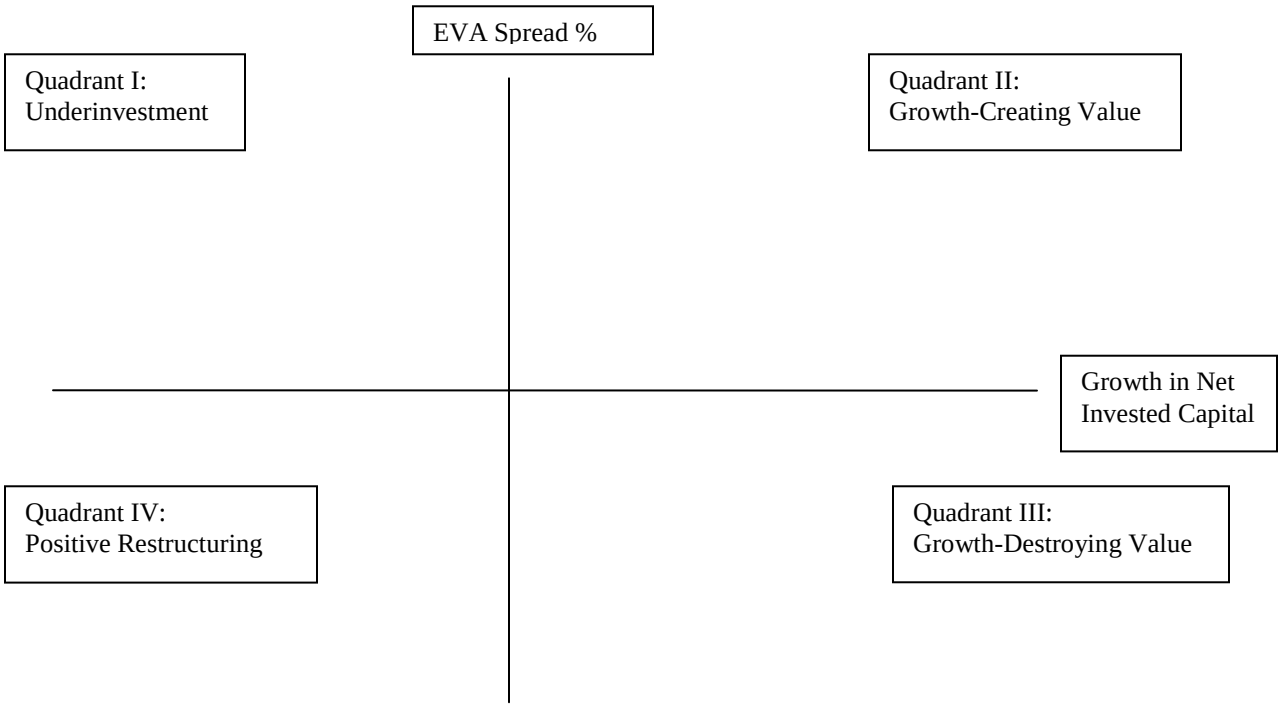
EVA Spread %
Quadrant I:
Underinvestment
Quadrant II:
Growth-Creating Value
Growth in Net
Invested Capital
Quadrant IV:
Positive Restructuring
Quadrant III:
Growth-Destroying Value

Exhibit 2–Yearly Distribution of Acquisitions by EVA Style

Distribution by year of 484 acquisitions completed 1990-1999 by acquiring firms with data included in the Stern Stewart Performance 1000. Firms are classified as Under Investment (positive EVA spread and negative change in invested capital), Wealth-Creating Growth (positive EVA spread and positive change in invested capital), Wealth-Destroying Growth (negative EVA spread and positive change in invested capital), or Positive Restructuring (negative EVA spread and negative change in invested capital). EVA spread is calculated as return on invested capital minus weighted average cost of capital. Classifications are based on values for the year prior to acquisition.

Year of adoption	Under Investment	Wealth-Creating Growth	Wealth-Destroying Growth	Positive Restructuring	Total
1990	1	9	0	0	10 (2.07%)
1991	0	8	8	1	17 (3.51%)
1992	0	2	4	1	7 (1.45%)
1993	1	7	5	4	17 (3.51%)
1994	0	17	9	3	29 (5.99%)
1995	3	21	16	3	43 (8.88%)
1996	1	43	13	4	61 (12.60%)
1997	2	49	27	3	81 (16.74%)
1998	8	64	28	2	102 (21.07%)
1999	6	68	34	9	117 (24.17%)
Total	22 (4.55%)	288 (59.50%)	144 (29.75%)	30 (6.20%)	484 (100%)

Exhibit 3–Cumulative Abnormal Returns: Acquiring and Target Firms

Announcement-period returns for 484 acquisitions completed 1990-1999 by acquiring firms with data included in the Stern Stewart Performance 1000. Results are shown for acquiring firms and the corresponding target firms. Note that returns were not available on the CRSP tapes for one target firm. *Z*-statistics are shown in parentheses.

	Acquiring Firms	Target Firms
Number of Observations	484	483
CAR -1,1	-1.14% (-5.338)***	24.10% (95.787)***
CAR -1,30	-2.57% (-3.852)***	24.16% (30.448)***
CAR 1,30	-1.80% (-2.827)***	5.11% (6.883)***

Exhibit 4–CAR for Acquiring and Target Firms by EVA Style

Announcement-period returns for 484 acquisitions completed 1990-1999 by acquiring firms with data included in the Stern Stewart Performance 1000. Firms are classified as Under Investment (positive EVA spread and negative change in invested capital), Wealth-Creating Growth (positive EVA spread and positive change in invested capital), Wealth-Destroying Growth (negative EVA spread and positive change in invested capital), or Positive Restructuring (negative EVA spread and negative change in invested capital). EVA spread is calculated as return on invested capital (net operating profit after tax divided by invested capital) minus weighted average cost of capital. Classifications are based on values for the year prior to acquisition. Results are shown for acquiring firms and the corresponding target firms. Note that returns were not available on the CRSP tapes for one target firm. *Z*-statistics are shown in parentheses.

	Under Investment	Wealth-Creating Growth	Wealth-Destroying Growth	Positive Restructuring	Total
Acquiring Firms	N=22	N=288	N=144	N=30	N=484
CAR -1,1	-0.19% (-0.110)	-1.19% (-3.796)***	-1.18% (-3.279)***	-1.26% (-2.418)**	-1.14% (-5.338)***
CAR -1,30	-5.62% (-1.783)*	-1.77% (-2.163)**	-3.33% (-2.143)**	-4.41% (-2.548)**	-2.57% (-3.852)***
CAR 1,30	-5.34% (-1.805)*	-0.73% (-0.970)	-2.93% (-1.980)**	-4.14% (-2.464)**	-1.80% (-2.827)***
Target Firms	N=22	N=287	N=144	N=30	N=483
CAR -1,1	25.98% (25.727)***	26.59% (82.836)***	19.61% (38.716)***	20.46% (21.281)***	24.10% (95.787)***
CAR -1,30	27.64% (9.350)***	26.94% (26.020)***	18.59% (12.158)***	21.80% (7.225)***	24.16% (30.448)***
CAR 1,30	3.22% (1.491)	6.32% (5.944)***	3.27% (2.878)***	3.82% (1.676)*	5.11% (6.883)***

Exhibit 5—Acquirer's CARs, Days -1, 1

Announcement-period returns for 484 acquisitions completed 1990-1999 by acquiring firms with data included in the Stern Stewart Performance 1000. Firms are classified as Under Investment (positive EVA spread and negative change in invested capital), Wealth-Creating Growth (positive EVA spread and positive change in invested capital), Wealth-Destroying Growth (negative EVA spread and positive change in invested capital), or Positive Restructuring (negative EVA spread and negative change in invested capital). EVA spread is calculated as return on invested capital minus weighted average cost of capital. Classifications are based on values for the year prior to acquisition.

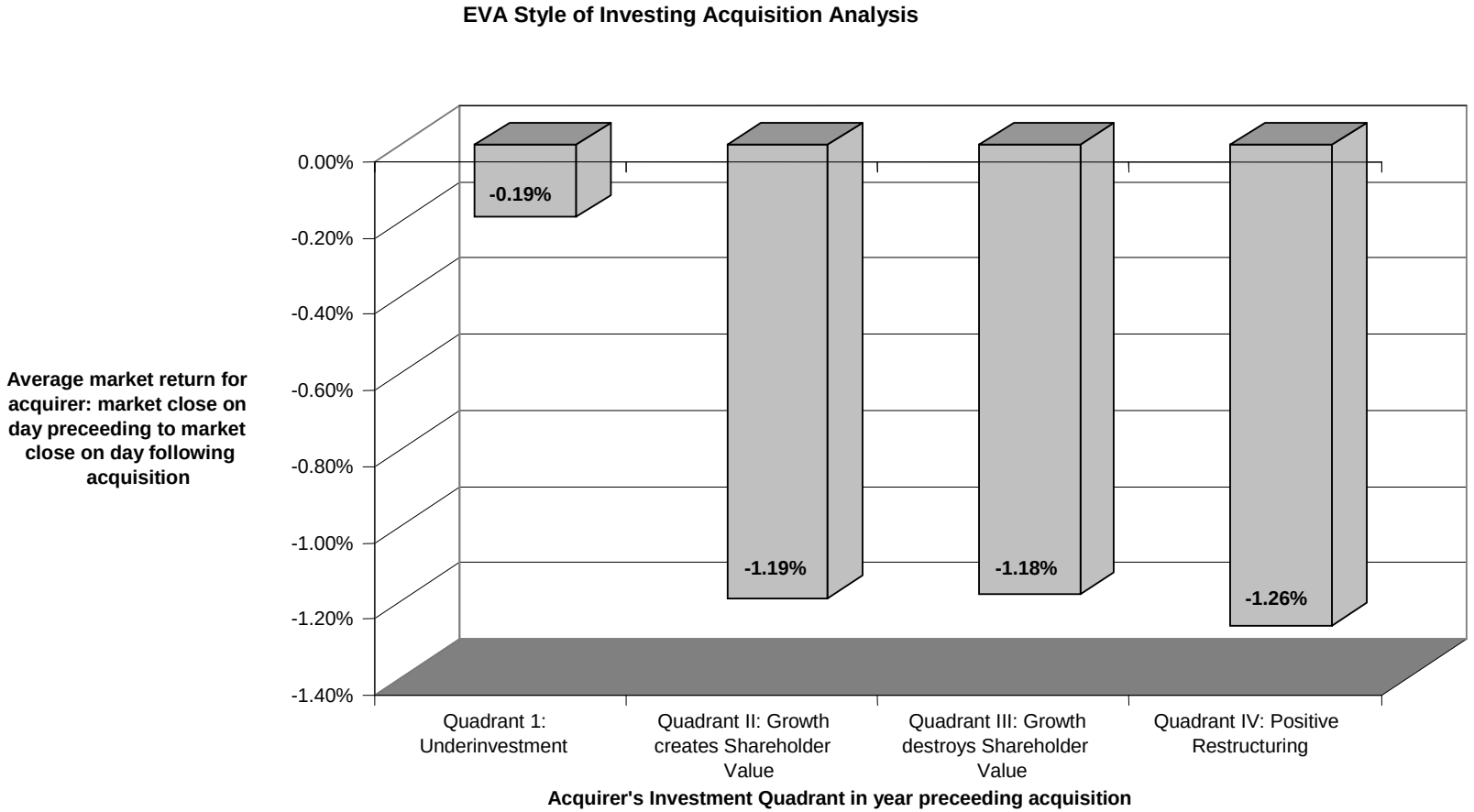

Exhibit 6—Acquirer's CARs, Days -1, 30

Announcement-period returns for 484 acquisitions completed 1990-1999 by acquiring firms with data included in the Stern Stewart Performance 1000. Firms are classified as Under Investment (positive EVA spread and negative change in invested capital), Wealth-Creating Growth (positive EVA spread and positive change in invested capital), Wealth-Destroying Growth (negative EVA spread and positive change in invested capital), or Positive Restructuring (negative EVA spread and negative change in invested capital). EVA spread is calculated as return on invested capital minus weighted average cost of capital. Classifications are based on values for the year prior to acquisition.

EVA Style of Investing Acquisition Analysis

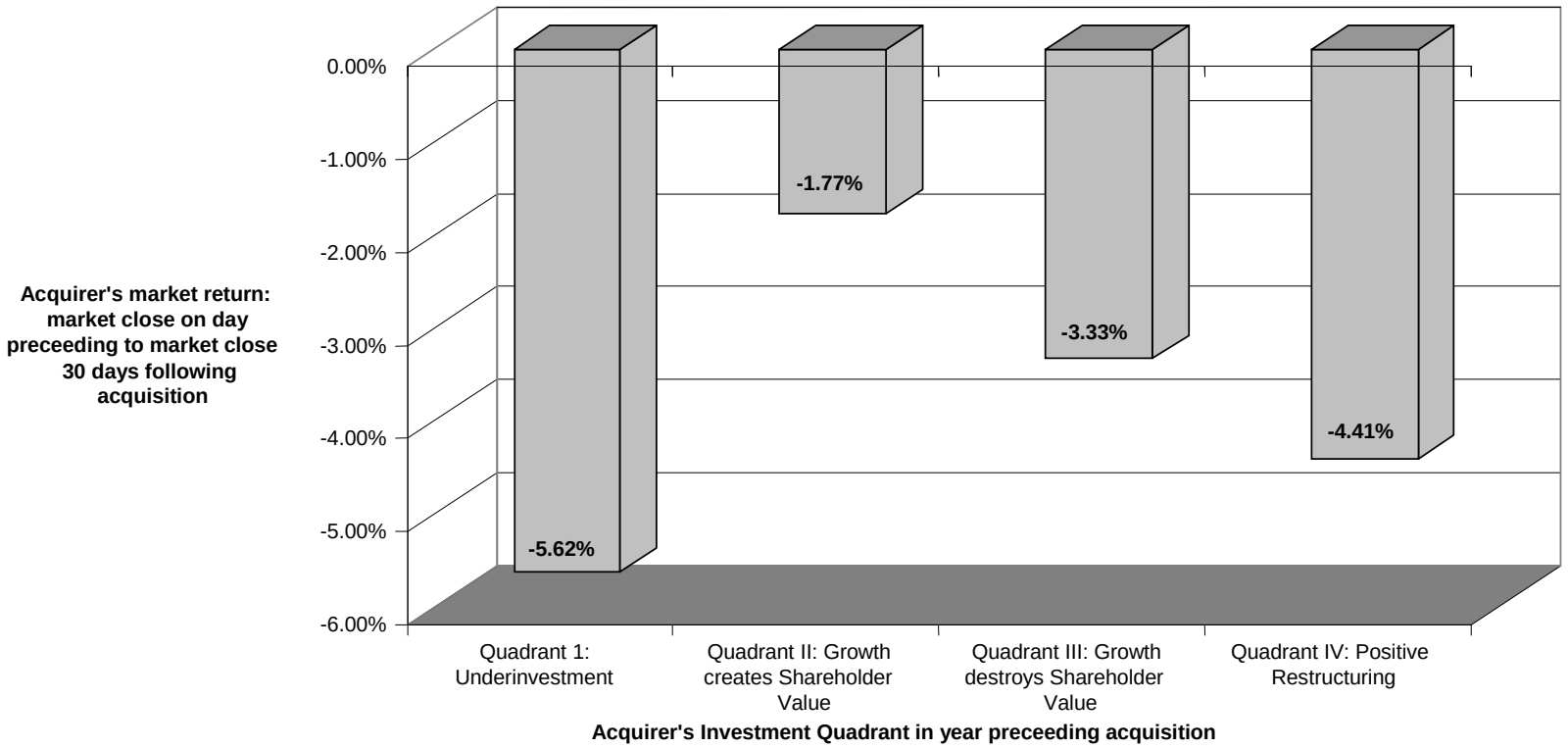

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Exhibit 7—Acquirer's CARs, Days 1, 30

Announcement-period returns for 484 acquisitions completed 1990-1999 by acquiring firms with data included in the Stern Stewart Performance 1000. Firms are classified as Under Investment (positive EVA spread and negative change in invested capital), Wealth-Creating Growth (positive EVA spread and positive change in invested capital), Wealth-Destroying Growth (negative EVA spread and positive change in invested capital), or Positive Restructuring (negative EVA spread and negative change in invested capital). EVA spread is calculated as return on invested capital minus weighted average cost of capital. Classifications are based on values for the year prior to acquisition.

EVA Style of Investing Acquisition Analysis

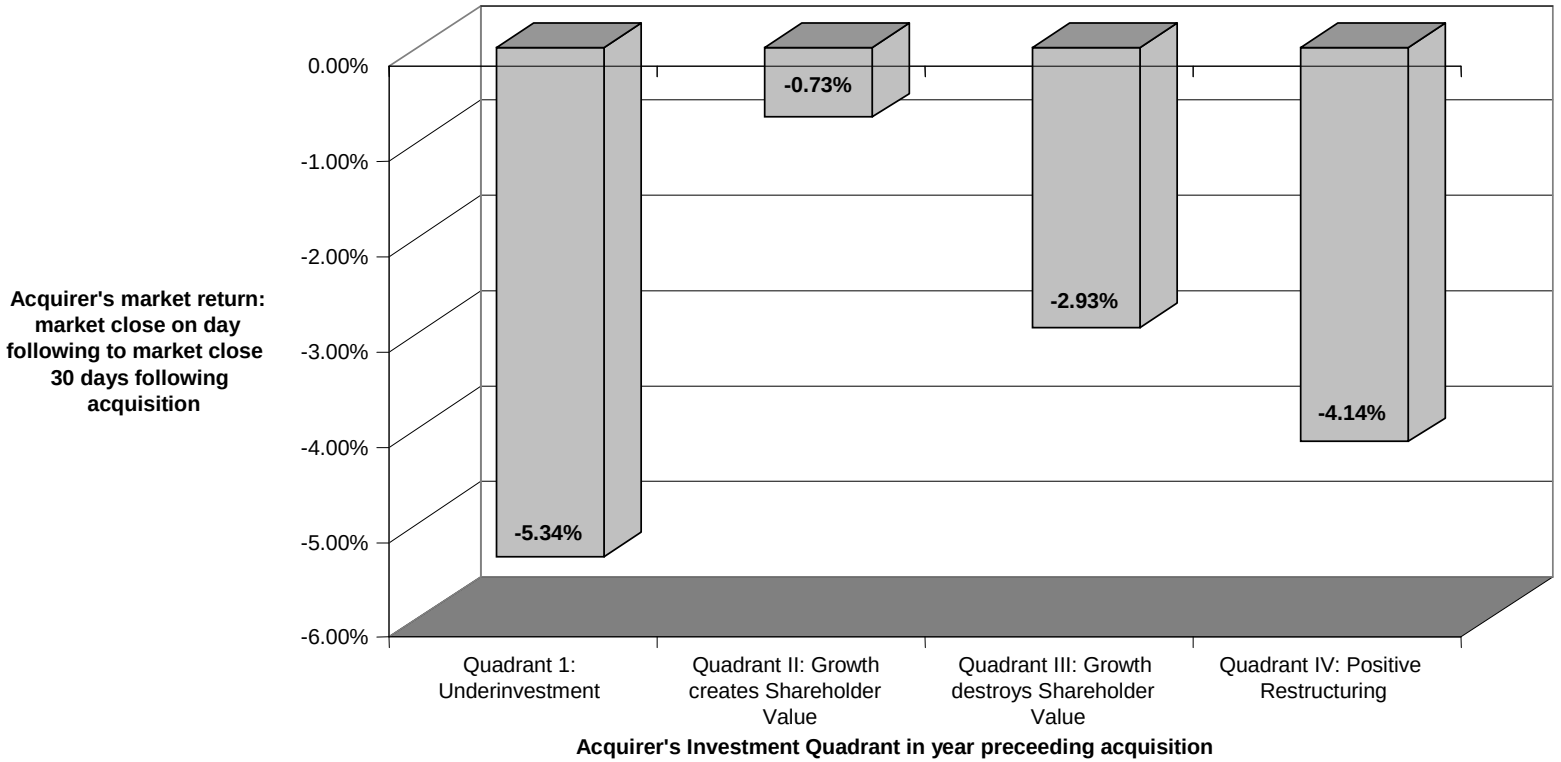


Exhibit 8—Target's CARs, Days -1, 1

Announcement-period returns for 484 acquisitions completed 1990-1999 by acquiring firms with data included in the Stern Stewart Performance 1000. Firms are classified as Under Investment (positive EVA spread and negative change in invested capital), Wealth-Creating Growth (positive EVA spread and positive change in invested capital), Wealth-Destroying Growth (negative EVA spread and positive change in invested capital), or Positive Restructuring (negative EVA spread and negative change in invested capital). EVA spread is calculated as return on invested capital minus weighted average cost of capital. Classifications are based on values for the year prior to acquisition. Note that returns were not available on the CRSP tapes for one target firm.

EVA Style of Investing Acquisition Analysis

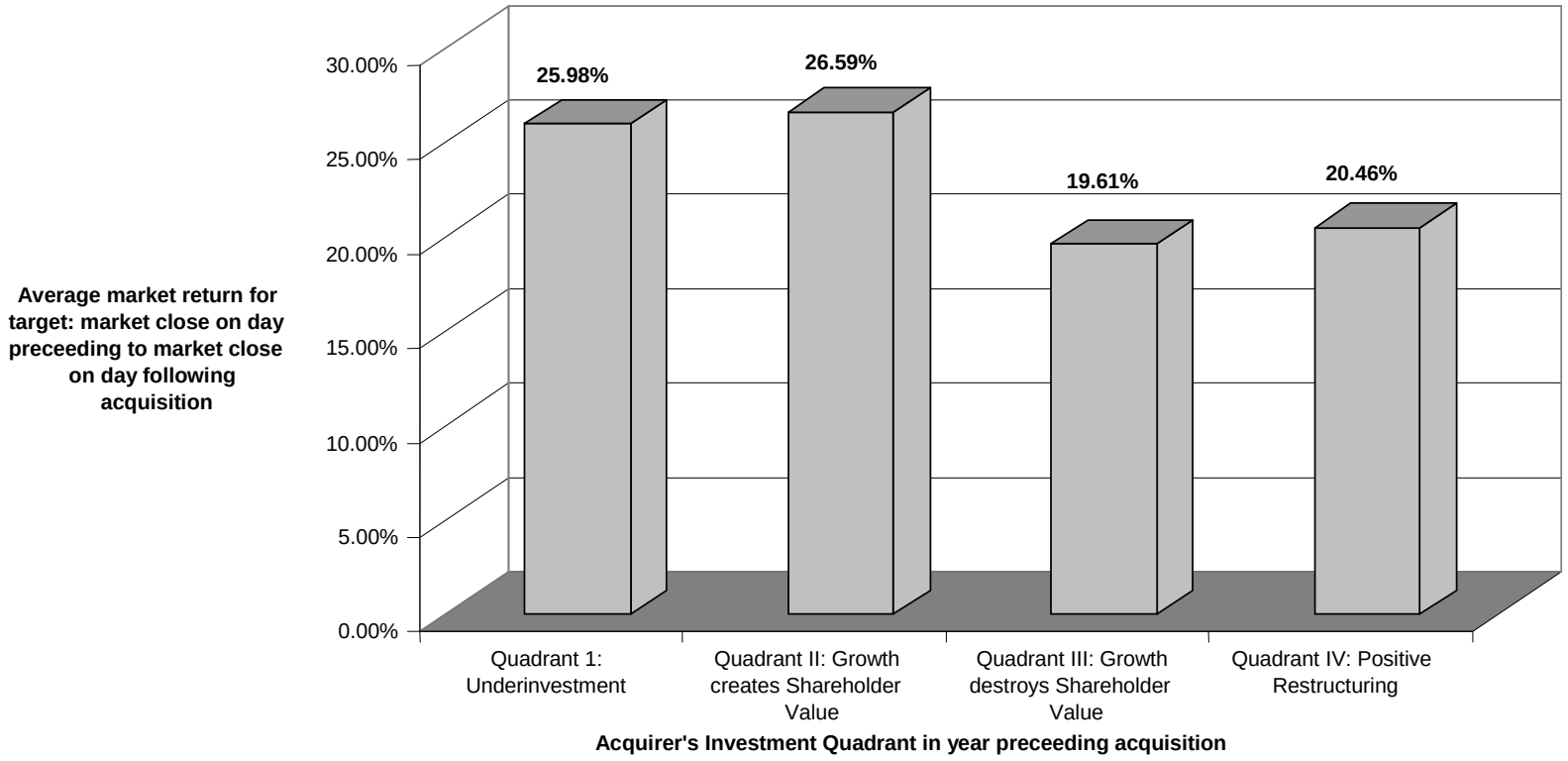


Exhibit 9—Target's CARs, Days -1, 30

Announcement-period returns for 484 acquisitions completed 1990-1999 by acquiring firms with data included in the Stern Stewart Performance 1000. Firms are classified as Under Investment (positive EVA spread and negative change in invested capital), Wealth-Creating Growth (positive EVA spread and positive change in invested capital), Wealth-Destroying Growth (negative EVA spread and positive change in invested capital), or Positive Restructuring (negative EVA spread and negative change in invested capital). EVA spread is calculated as return on invested capital minus weighted average cost of capital. Classifications are based on values for the year prior to acquisition. Note that returns were not available on the CRSP tapes for one target firm.

EVA Style of Investing Acquisition Analysis

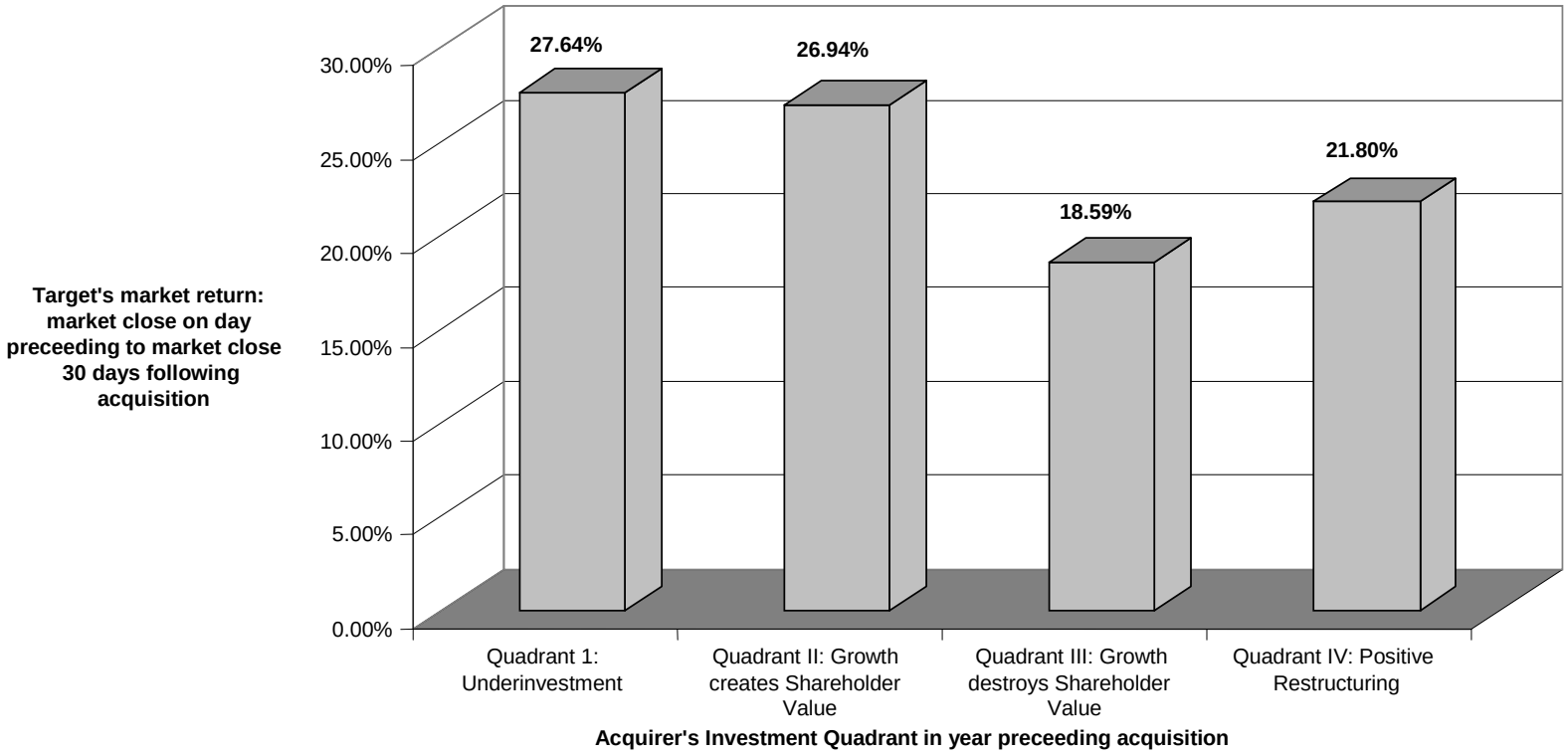


Exhibit 10—Target's CARs, Days 1, 30

Announcement-period returns for 484 acquisitions completed 1990-1999 by acquiring firms with data included in the Stern Stewart Performance 1000. Firms are classified as Under Investment (positive EVA spread and negative change in invested capital), Wealth-Creating Growth (positive EVA spread and positive change in invested capital), Wealth-Destroying Growth (negative EVA spread and positive change in invested capital), or Positive Restructuring (negative EVA spread and negative change in invested capital). EVA spread is calculated as return on invested capital minus weighted average cost of capital. Classifications are based on values for the year prior to acquisition. Note that returns were not available on the CRSP tapes for one target firm.

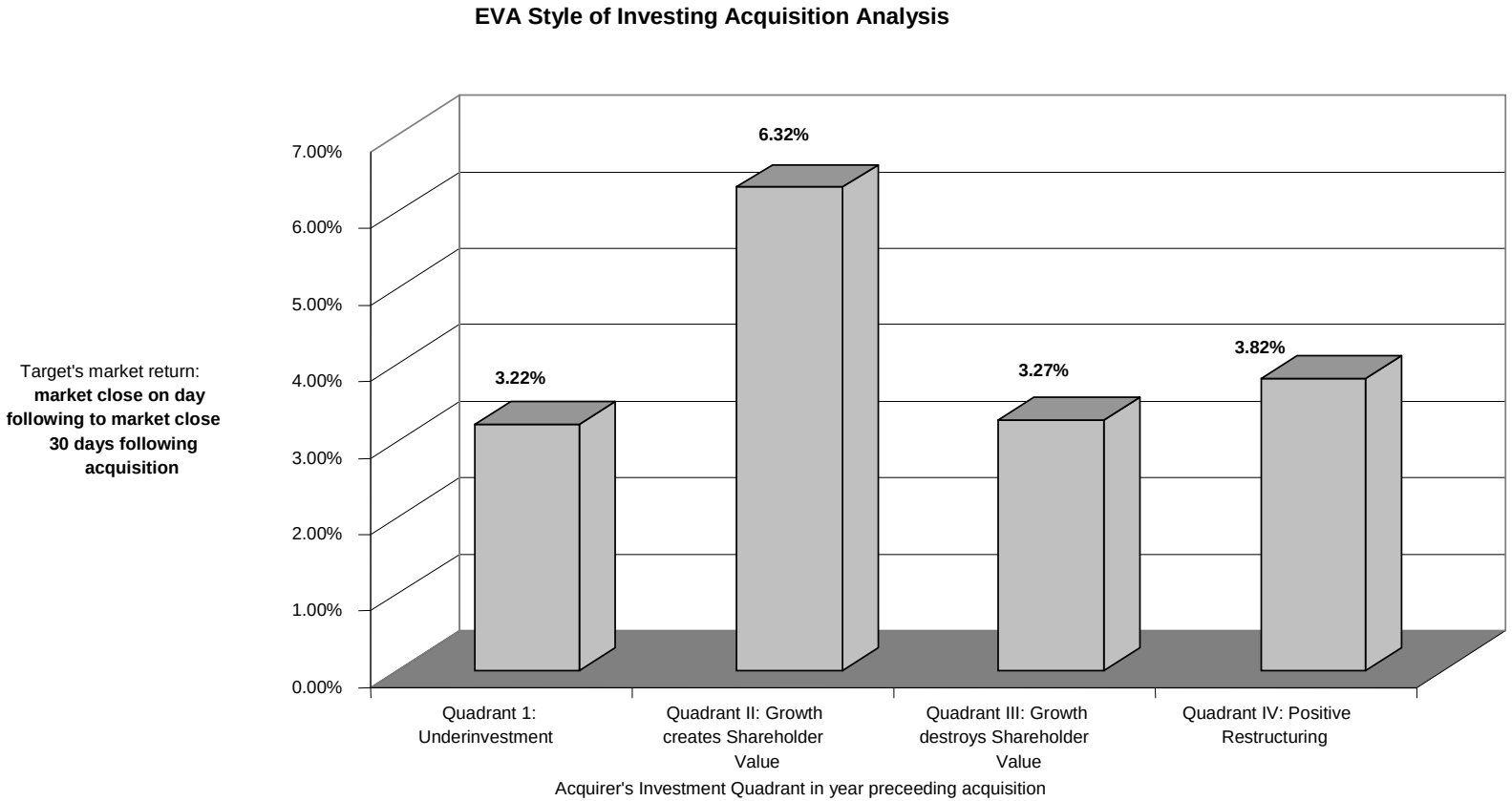


Exhibit 11—Acquirer's Change in EVA Spread: Year Preceding-to-Year Following Acquisition

Announcement-period returns for 484 acquisitions completed 1990-1999 by acquiring firms with data included in the Stern Stewart Performance 1000. Firms are classified as Under Investment (positive EVA spread and negative change in invested capital), Wealth-Creating Growth (positive EVA spread and positive change in invested capital), Wealth-Destroying Growth (negative EVA spread and positive change in invested capital), or Positive Restructuring (negative EVA

spread and negative change in invested capital). EVA spread is calculated as return on invested capital minus weighted average cost of capital. Classifications are based on values for the year prior to acquisition.

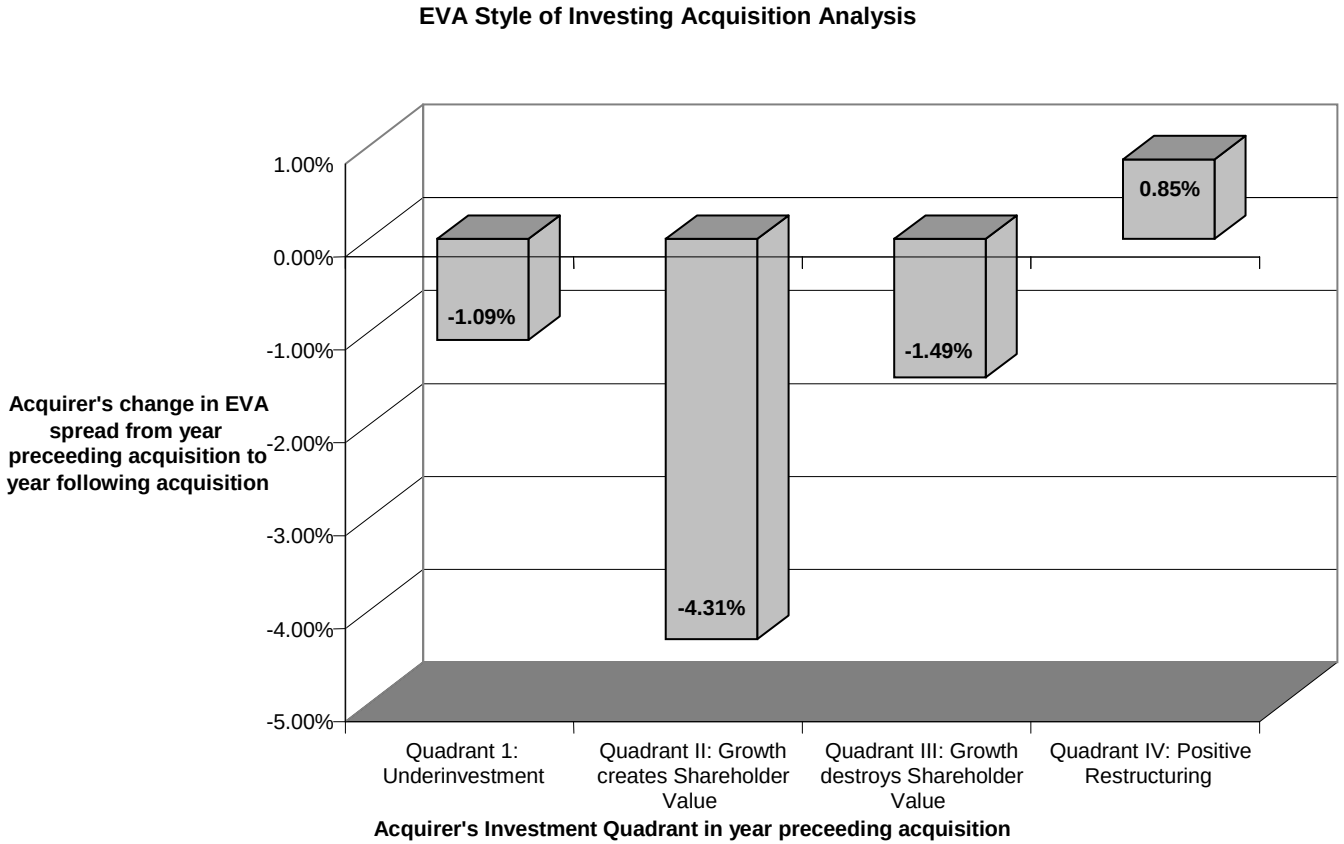
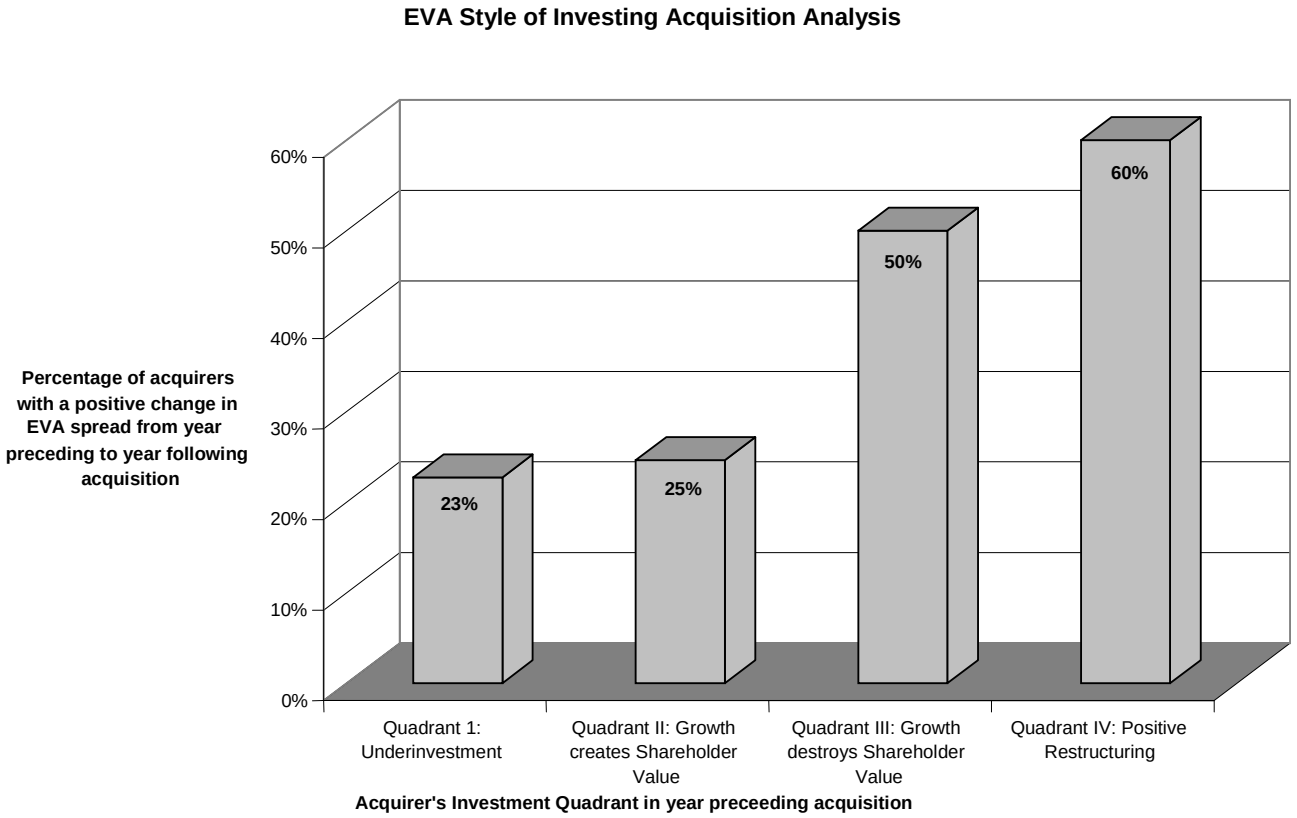


Exhibit 12—Percentage Change in Acquirer's EVA Spread: Year Preceding-to-Year Following Acquisition

Announcement-period returns for 484 acquisitions completed 1990-1999 by acquiring firms with data included in the Stern Stewart Performance 1000. Firms are classified as Under Investment (positive EVA spread and negative change in invested capital), Wealth-Creating Growth (positive EVA spread and positive change in invested capital), Wealth-Destroying Growth (negative EVA spread and positive change in invested capital), or Positive Restructuring (negative EVA spread and negative change in invested capital). EVA spread is calculated as return on invested capital minus weighted average cost of capital. Classifications are based on values for the year prior to acquisition.



[1] Among hedge funds, our EVA-based, acquisition-return findings are most relevant to the *event-driven* (E.D.) style of hedge fund investing.
[2] EVA® is a registered trademark of Stern Stewart & Co.
[3] We qualify this negative commentary about "Positive Restructuring" firms in a later section; whereby, we find that the risk-adjusted stock prices of Positive Restructuring firms decline around the acquisition announcement date even though these firms demonstrate an improvement in their economic profit (EVA) outlook.
[4] We thank James Abate for pointed commentary on problematic acquirers in the Under-Investing quadrant.
[5] Such an EVA risk effect on troubled firms is recently validated by Zaima [2008].