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Do Fundamentals Really Drive the Stock Market?

In the second half of the 1990s, the S&P 500 Index more than tripled in value to an all-time high of almost 1,500. Previous unknowns, such as Amazon and AOL, became stock market superstars, along with a galaxy of other “New Economy” and dot-com entrants. Then the market crashed, and many stars flickered out. In the aftermath, people began to question whether long-held finance theories could really explain such dramatic swings in share prices. Some would even assert that stock markets lead lives of their own, detached from the basics of economic growth and business profitability. Should we abandon the discounted cash flow (DCF) valuations described in Chapter 3 and view the stock market as an arena where emotions rule?

We think not. Although some stocks, in some sectors, can be driven in the short term by irrational behavior, the stock market as a whole follows fundamental laws, grounded in economic growth and returns on investment. In fact, we were surprised at how well this simple, fundamental valuation approach has matched stock market price-to-earnings levels over the past 40 years.

This chapter presents empirical research that supports our view that return on capital, growth, and free cash flows drive value in the capital markets:

- Companies with higher returns and higher growth (at returns above the cost of capital) are valued more highly in the stock market.
- To value stocks, markets primarily focus on the long-term and not short-term economic fundamentals. Although some managers may believe that missing short-term earnings per share (EPS) targets always has devastating share price implications, the evidence shows

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that share price depends on long-term returns, not short-term EPS performance itself.

- Stock markets are perfectly capable of seeing the economic fundamentals behind accounting information. Therefore, managers should not be overly concerned with the implications of new accounting rules on options or goodwill.
- Stock market valuations correctly reflect underlying economic fundamentals, even when individual investors do not invest on the basis of the fundamentals. While we agree with proponents of “behavioral finance” that emotions can run away with parts of the market, such reactions do not last very long. In fact, we conclude the following for the U.S. and U.K. stock markets:
 - Overall, share price levels have reflected economic fundamentals quite well over the past four decades. The principles that drove share prices in the 1960s still remain valid today, despite significant economic ups and downs, industrial restructurings, and technological and other changes.
 - Market-wide price deviations from fundamentals can occur, but they are the exception, not the rule. In the late 1970s, prices were too low as investors were obsessed with high short-term inflation rates. In the late 1990s, market prices reached excessive levels that could not be justified by the underlying economic fundamentals.
- Market-wide price deviations are short-lived: Over the past four decades, the market corrected itself within a few years to price levels consistent with economic fundamentals.

Our studies indicate that, in most cases, managers can safely assume that share prices reflect the markets’ best estimate of intrinsic value. Therefore, managers should continue to make decisions based on discounted cash flow and economic profit. Even when the market undergoes a period of irrational behavior, as we explain in this chapter, smart managers can detect and perhaps exploit these market deviations.

SHAREHOLDER VALUE DRIVEN BY RETURN AND GROWTH

In examining the behavior of the stock market, we first must distinguish between what drives market valuation levels (such as market-value-to-capital ratios) and what drives total return to shareholders (TRS). Market valuation levels are determined by the company’s absolute level of long-term performance and growth, that is, expected revenue and earnings growth and return on invested capital (ROIC). TRS is measured by changes in the market valuation of a company over some specific time period and is driven by

changes in investor expectations for long-term future returns on capital and growth.

Valuation Levels Driven by Long-Term ROIC and Growth

In Exhibit 4.1, we show that the relative market value of a company, as measured by the market-value-to-capital ratio, is determined by the company’s growth and its spread of ROIC over the weighted average cost of capital (WACC). The vertical axis of this graph demonstrates that higher returns (for the same level of growth, as measured on the horizontal axis) lead to higher valuations. Also, when the return on invested capital exceeds the cost of capital, growth leads to higher value. When ROICs fall below the cost of capital, however, higher growth leads to lower valuations. These results, introduced in Chapter 3, are based on a two-stage variant of the key value driver formula (see Chapter 9 for details of the two-stage version underlying Exhibit 4.1).

Although Exhibit 4.1 is a theoretical model, the stock market supports its conclusions. In fact, the empirical results were similar when we compared the market-value-to-capital ratios of more than 500 of the largest U.S. listed companies versus their 10-year growth in sales and 10-year average return on invested capital (ROIC). We grouped the companies by sales

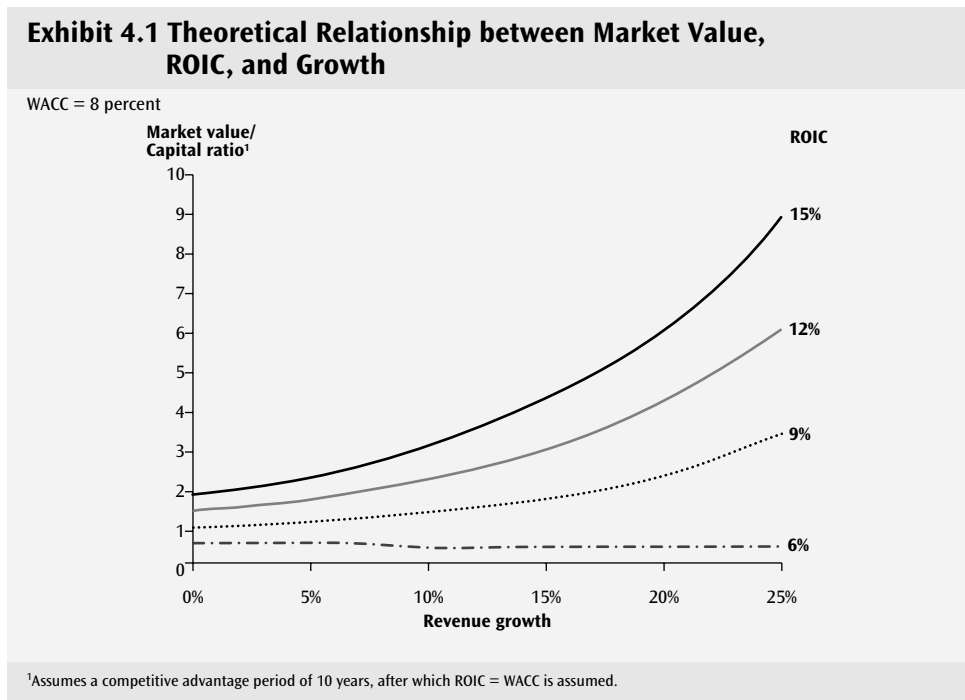
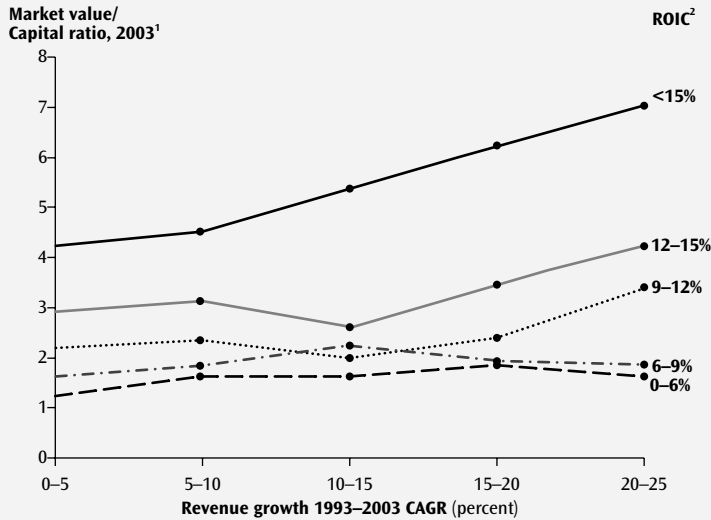


Exhibit 4.2 Empirical Relationship between Market Value, ROIC, and Growth

Sample of 563 North American companies



¹Defined as market value of operations divided by invested capital including goodwill.

²ROIC based on invested capital including goodwill.

growth and ROIC (e.g., companies with average sales growth between 5 percent and 10 percent and ROICs between 12 percent and 15 percent), calculating the average market-value-to-capital ratio for each group. Exhibit 4.2 shows the results of this analysis. Although the empirical results do not fit the theoretical model perfectly, they demonstrate that for any level of growth, higher returns lead to higher market-value-to-capital ratios. Indeed, the market seems to value companies based on revenue growth and ROIC.

We also tested these results by regressing the market-value-to-capital ratios against growth and ROIC. The results, shown in Exhibit 4.3, were compelling: ROIC and growth account for 46 percent of the variation in market-value-to-capital ratios. We then divided the full sample into five subgroups with similar ROICs. Within each subgroup, we regressed the market-value-to-capital ratios against growth and found, as theory would predict, that as ROIC increases, growth is increasingly related to value. Indeed, in the case of the high-ROIC subgroups, the slope of the regression line is positive and statistically significant. For the low-ROIC subgroups, it is almost flat or not significant. Thus, the empirical evidence shows that the stock market does not reward companies that pursue growth without covering their cost of capital.

Exhibit 4.3 Regressions of Market-Value-to-Capital with ROIC and Growth

	Dependent variable	Number of observations	R ²	Variable ₁	Slope ₁	t-Stat ₁	P-value ₁ ²
Full sample	MV/IC ¹	563	46%	ROIC	19.3	21.5	0%
				Variable ₂	Slope ₂	t-Stat ₂	P-value ₂
				Growth	2.0	3.4	0%

ROIC cohort	Dependent variable	Number of observations	Variable ₁	Slope ₁	t-Stat ₁	P-value ₁ ²
0 – 6%	MV/IC ¹	93	Growth	0.25	0.52	60%
6 – 9%	MV/IC ¹	146	Growth	0.76	0.82	41%
9 – 12%	MV/IC ¹	124	Growth	3.22	2.83	1%
12 – 15%	MV/IC ¹	61	Growth	2.14	1.43	16%
>15%	MV/IC ¹	139	Growth	7.99	3.18	0%

¹Defined as market value of operations divided by invested capital including goodwill.
²P-value represents the probability that the tested relationship does not hold, with a P-value of 5% used as the threshold of statistical significance.

On an industry level, we see the same pattern. An analysis of 130 European and U.S. publicly traded chemical companies between 1963 and 2001 showed that companies with higher sales growth achieved a higher market valuation only if they could generate returns above their cost of capital, which is close to the average ROIC in this industry (see Exhibit 4.4 on p. 74). The market penalized companies that attempted growth but earned returns below their cost of capital.

In another test, we applied discounted cash flow to estimate the value of the five leading companies in each of four industry sectors—pharmaceuticals, electric utilities, consumer goods and oil—that had different growth and profitability profiles. We developed forecasts based on long-term historical results and projections from the Institutional Brokers’ Estimate System (IBES) analyst consensus estimates.¹ We then discounted the cash flows at the weighted average cost of capital (WACC) for each company. Based on these forecasts, our estimates corresponded very closely to each company’s market-value-to-capital ratios for all of the industry sectors, as shown in Exhibit 4.5 on page 75.

Since expected future growth and returns for companies are not directly measurable, we cannot assert scientific proof for our claims. But these tests provide evidence that cash flow, led by the combination of revenue growth and return on capital, drives the value of companies.

¹Thomson Financial, Institutional Brokers’ Estimate System (IBES).

Exhibit 4.4 Value of Commodity Chemical Companies Driven by ROIC and Growth

Market value/Capital ratio, 2002¹

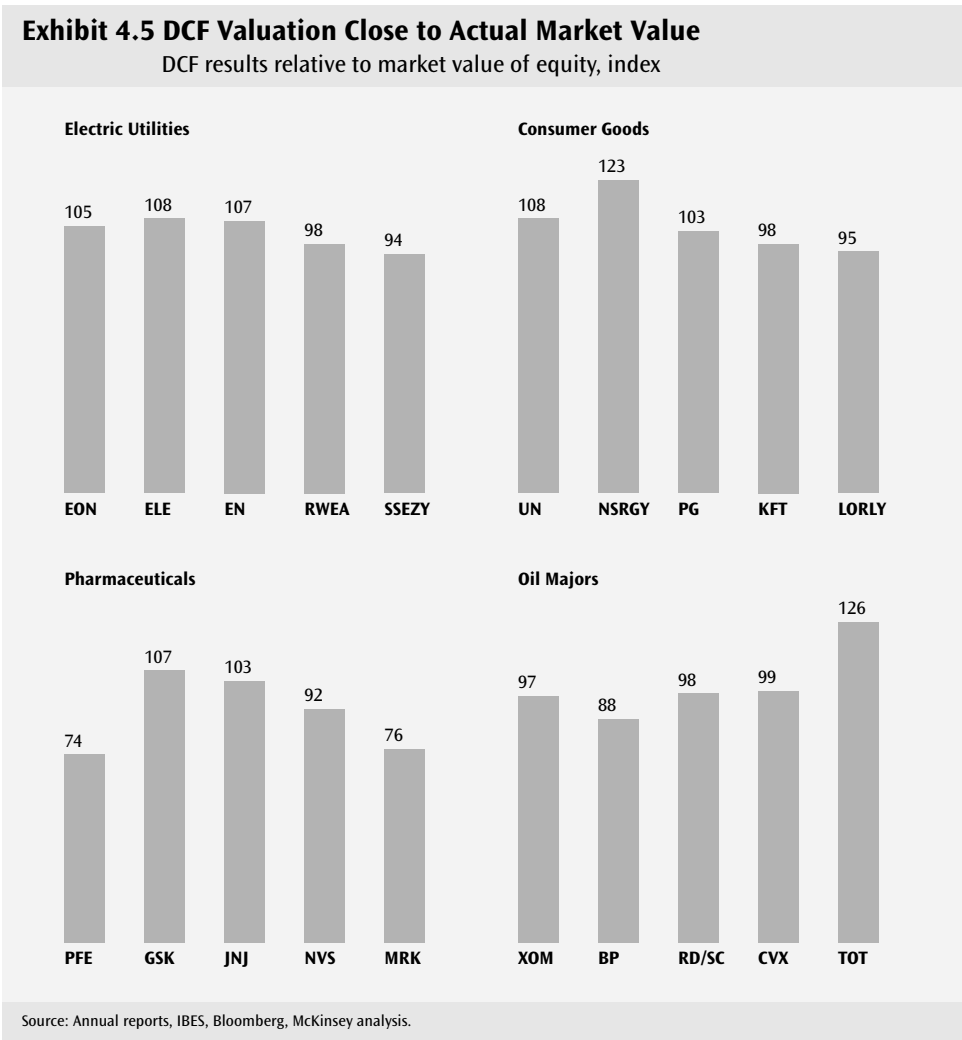
		Sales growth	
		Below average	Above average
ROIC	Above average	1.5	1.6
	Below average	1.3	0.5

¹June 2002 (based on Invested Capital 2001).
Source: T. Augat, E. Bartels, and F. Budde, "Multiple Choice for the Chemicals Industry," *McKinsey on Finance*, Number 8 (Summer 2003), pp. 1-7.

Changes in Expectations Drive Total Returns to Shareholders

In Chapter 3, we discussed how total returns to shareholders (TRS) are driven by performance against expectations and not absolute levels of performance. For example, on July 13, 2004, Intel reported a second-quarter net income of \$1.76 billion, almost double what it had reported for that period a year earlier. Nevertheless, Intel's share price declined by 11 percent on the day of the announcement, because its sales and margins, considered important indicators for long-term profitability in the sector, were below the market's expectations. Over horizons of 15 years and more, of course, TRS will be linked to earnings, because over the long term, earnings growth will track cash flows. Over shorter periods, however, performance against expectations should generally influence TRS more than the level of earnings and growth itself.

To test what drives TRS, we conducted a statistical analysis, correlating TRS with such traditional performance measures as cash flow and economic profit. We also correlated TRS with changes in cash flow expectations, using consensus earnings forecasts from IBES. As theory would suggest, there is a strong relationship between TRS and changes in performance expectations. However, there is almost no relationship between TRS and the various absolute cash flow or economic profit measures. Exhibit 4.6 on page 76 summarizes the results for the S&P 500 companies over the past 10 years. When we exclude the market bubble years of 1999 to 2001, the analysis shows that 18 percent of the TRS variation across the sample can be explained by the changes in investor expectations (as measured by the R^2 of



the regression), far greater than for absolute measures of cash flow and economic profit.

MARKET FOCUSES ON LONG TERM RATHER THAN SHORT TERM

Many managers believe that the stock market focuses too narrowly on near-term earnings, giving companies too little credit for long-term investments. But we disagree: A quick look at the high values for companies without any near-term earnings (such as in biotech or high-tech) indicates that the market indeed takes a long-term view. In September 2004, the stock market capitalization of Sirius Satellite Radio was \$4 billion. Yet as of that date, Sirius

Exhibit 4.6 Change in Expectations Is Key Driver of Total Return to Shareholders

S&P 500 companies, 1993–2003

	Adjusted R ² (percent)		Coefficient	t-Statistic	P-value ³
Expectations measure ¹	18.0	FY0	0.15	4.7	0%
		FY1	0.33	10.5	0%
		LTG	1.91	8.6	0%
Change in cash flow	8.0		0.32	13.5	0%
Actual cash flow ²	0.0		0.15	3.0	0%
Change in economic profit	1.5		0.08	5.1	0%
Actual economic profit ²	2.0		0.49	6.9	0%

¹Expectations measure is based on change in analyst consensus EPS forecast for running fiscal year (FY0), the following fiscal year (FY1) and change in analyst consensus 5-year growth expectation (LTG).

²Scaled based on actual revenues.

³P-value represents the probability that the tested relationship does not hold, with p-value of 5% used as the threshold of statistical significance.

Source: Datastream, Compustat, IBES, Bloomberg, McKinsey analysis.

had reported sales of only \$30 million and was still generating accounting losses. Why the large valuation? Investors believed Sirius would generate significant cash flows at some point in the future. More dramatically, in the late 1990s, the stock market's long-term view was certainly demonstrated in the ascent of Internet stocks, based on companies without concrete products, let alone profits. That time, the market was wrong; long-term earnings never materialized for many of these companies. Nonetheless, the market did not narrowly focus on near-term earnings when valuing these companies. (Chapter 23 describes the valuation of very high growth companies.)

Many managers complain, however, that the markets are increasingly sensitive to short-term earnings surprises. As a result, what some call the "EPS game" has emerged, in which corporations try to meet short-term EPS targets at almost any cost, for fear of missing analysts' expectations. Underscoring this, more than three-quarters of the financial executives in a recent survey said they would forgo economic value creation to avoid missing earnings targets and suffering the associated market reactions.²

Missing short-term EPS targets by itself does not lead to lower share prices. In many cases, however, investors have only short-term results by which to gauge long-term corporate performance. In these cases, they interpret the most recent EPS performance as an omen of long-term performance declines and/or loss of management credibility, so the missed target will lower a company's share prices. But if management can convince the market

²J. Graham, C. Harvey, and S. Rajgopal, "The Economic Implications of Corporate Financial Reporting" (*Journal of Accounting and Economics*, forthcoming).

Exhibit 4.7 Long-Term Performance Expectations Drive Share Price

Abnormal return on 137 announcements of fiscal year earnings for 2002 by US companies, percent

		Actual EPS 2002 relative to expected EPS for 2002—"short-term surprise"	
		Lower	Higher
Change in expected EPS for 2004—"change in long-term expectations"	Positive	2.3	3.6
	Negative	(4.1)	1.0

Source: Datastream, IBES, McKinsey analysis.

that poor short-term earnings will not affect long-term profitability or growth, then the share prices need not fall. Exhibit 4.7 shows the share price reaction to the profit announcements of 137 U.S. companies in 2002.³ There was no negative share price impact when undershooting earnings did not affect the outlook for longer-term business profitability. But when there was a clear indication of effect on long-term profit expectations, the share price had a strong negative reaction. Reactions had nothing to do with *short-termism* but involved real changes in long-term prospects.

In the pharmaceutical industry, announcements relating to products under development can affect share prices far more than quarterly earnings announcements. This makes sense: Product and pipeline development is a much better indicator of the long-term growth and profitability of pharmaceutical companies than short-term earnings. Markets understand this well, and as Exhibit 4.8 shows on page 78, prices react strongly to pipeline announcements, even when there is no impact on current earnings.

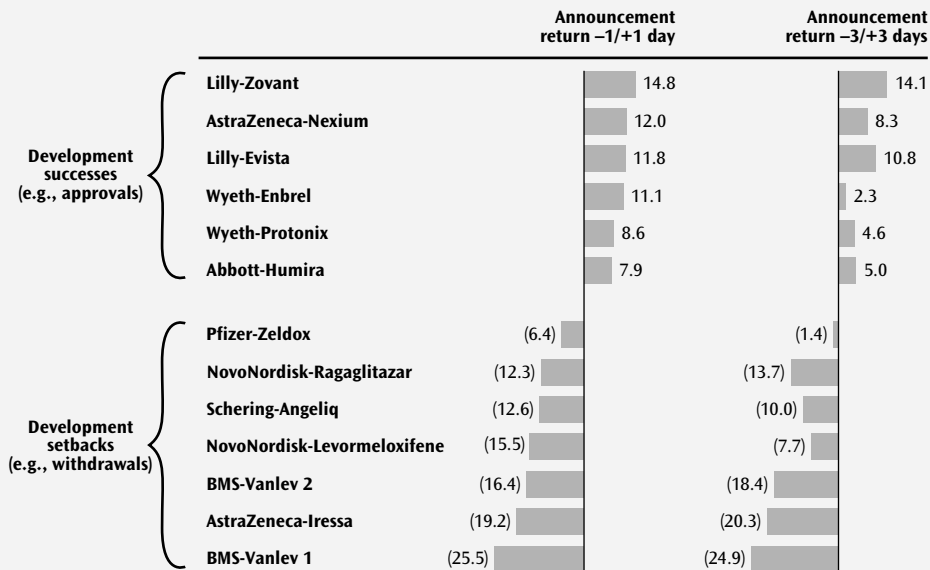
When a high-profile company misses an earnings target, it makes headlines, but the impact of short-term earnings on share prices should not be overstated. In an examination of a large sample of quarterly earnings announcements by U.S. companies between 1992 and 1997, earnings surprises explained less than 2 percent of share price volatility in the four weeks surrounding announcements.⁴ In fact, more than 40 percent of companies with

³The sample includes selected companies from the S&P 500 Index for which the change in reported EPS and expected EPS was at least 2 percent.

⁴W. Kinney, D. Burgstahler, and R. Martin, "Earnings Surprise 'Materiality' as Measured by Stock Returns," *Journal of Accounting Research*, 40(5) (December 2002): 1297-1329.

Exhibit 4.8 Market Reaction to Pharmaceutical Product Announcements

Abnormal returns percent, 1998–2003



Source: Datastream, Factiva, McKinsey analysis.

a positive (or negative) earnings surprise actually had a negative (or positive) return. This underscores our conclusion that short-term earnings do not drive share prices.

Share prices are determined by long-term cash flows. To test the stock market's time horizon, we examine how much of a company's share price is accounted for by expected cash flows over the next several years. For a subset of S&P 500 companies, dividends expected in the first five years explained less than 9 percent of the market value, on average (see Exhibit 4.9), another illustration of the market's long-term view. Whether considering biotechs or the largest blue chips, investors value long-term cash flows.

The academic literature also finds evidence confirming the long-term view of stock markets:

- In general, stock markets reward R&D and advertising initiatives despite their negative impact on short-term earnings.⁵ However, for companies with a weak outlook for future value creation from growth, the

⁵See, for example, K. Chauvin and M. Hirschey, "Advertising, R&D Expenditures and the Market Value of the Firm: Mergers and Acquisitions," *Financial Management*, 22 (1993): 128–140; and R. C. Graham and K. D. Frankenberger, "The Contribution of Changes in Advertising Expenditures to Earnings and Market Values," *Journal of Business Research*, 50 (2001): 149–155.

Exhibit 4.9 Present Value of Expected Dividends¹ for Selected S&P 500 Companies

	Present value of dividends expected over the next five years \$	Share price \$	Dividends as percentage of stock price (percent)
Abbott Laboratories	4.97	43.59	11.4
Boeing	3.38	42.14	8.0
Campbell Soup	3.23	26.80	12.1
Dow Chemical	6.66	41.57	16.0
Eli Lilly	6.73	70.33	9.6
Ford Motor Co	1.90	16.00	11.9
Gillette	3.36	36.73	9.2
Hewlett-Packard	1.52	22.97	6.6
International Business Machines	3.04	92.68	3.3
Johnson & Johnson	4.80	51.66	9.3
Kellogg	5.26	38.08	13.8
Lockheed Martin	3.07	51.40	6.0
McDonald's	1.98	24.83	8.0
New York Times	2.92	47.79	6.1
Occidental Petroleum	5.45	42.24	12.9
PepsiCo	3.20	46.62	6.9
Rohm & Haas	4.23	42.71	9.9
Sears Roebuck	4.61	45.49	10.1
Texas Instruments	0.40	29.38	1.4
United Parcel Service	4.73	74.55	6.3
Wal-Mart Stores	1.82	53.05	3.4
Average			8.7

¹Assuming 7% growth in dividends during next 5 years. Cost of equity based on risk free rate of 4.3%, market risk premium of 5.0% and Bloomberg beta. Source: Bloomberg, McKinsey analysis.

stock market typically shows a negative price reaction. Further supporting our belief that the stock market has a sophisticated long-term view, investors reward R&D spending only if companies are expected to create value from it.⁶

- Announcements of capital expenditure increases and strategic investments usually boost share prices, even though such moves typically depress current cash flow and earnings.⁷ For capital expenditures, growth opportunities are critical in explaining the stock market's

⁶S. Szewczyk, G. Tsetsekos, and Z. Zantout, "The Valuation of Corporate R&D Expenditures: Evidence from Investment Opportunities and Free Cash Flow," *Financial Management*, 25(1) (1996): 105-110.

⁷See, for example, J. R. Woolridge, "Competitive Decline and Corporate Restructuring," *Journal of Applied Corporate Finance*, 1 (1988): 26-36; and J. J. McConnell and C. J. Muscarella, "Corporate Capital Expenditure Decisions and the Market Value of the Firm," *Journal of Financial Economics*, 14(3) (1985): 399-422.

reaction. The market reacts far more favorably, the better the prospects for value-creating growth.⁸

- Stock markets generally react positively to write-offs of bad investments despite their impact on short-term earnings. For example, restructuring write-offs (as opposed to restructuring cash costs) are positively received, and the price reaction is especially strong if the corporation is losing money and has recently changed management.⁹

MARKETS SEE FUNDAMENTALS BEHIND ACCOUNTING INFORMATION

We have shown how market valuations are driven by economic fundamentals such as long-term return on capital and growth, which in turn drive long-term cash flows. Yet many managers remain obsessed with reported earnings, arguing that earnings are the key driver of share prices. Does the market respond primarily to surface accounting numbers, or does it dig down more deeply? As the following examples demonstrate, the market does indeed dig beneath reported earnings—right down to the underlying economic fundamentals.

It is true, however, that share prices will move when companies report higher or lower earnings if the accounting results reflect unexpected changes in underlying cash flows. This may occur with the availability of additional information, perhaps as a consequence of an accounting disclosure, such as a goodwill impairment—if the adjustment reveals lower benefits than expected from past acquisitions. Similarly, the change from last-in-first-out (LIFO) to first-in-first-out (FIFO) inventory accounting can swing share prices, not because of the change in reported earnings, but because of the tax implications of the move.

In addition, fraud or the manipulation of accounting information can cause shares to rise above the real value of the corporation. But markets can be fooled only so long. Sooner or later, cash flows must justify the share price.

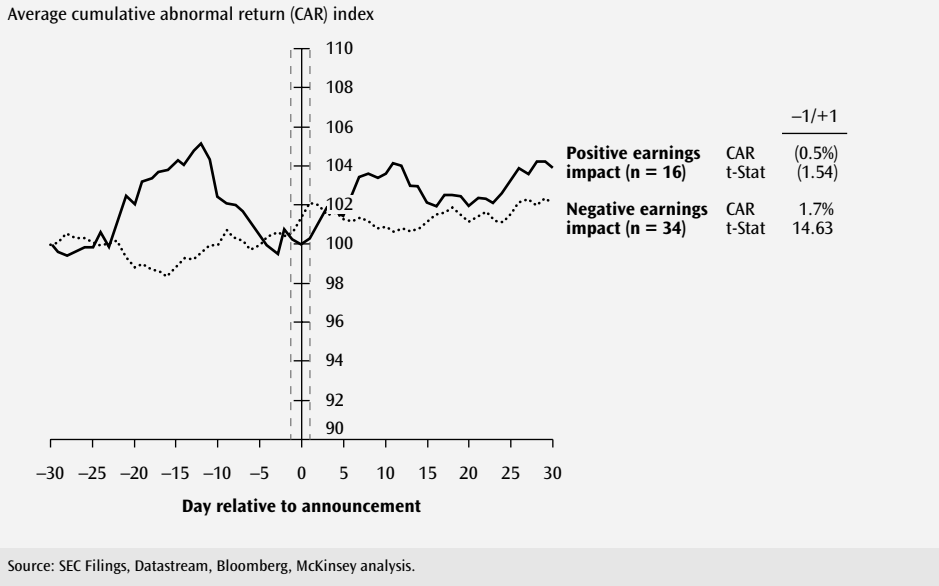
Different Accounting Standards Do Not Lead to Different Values

Stock markets do not take reported earnings at face value. Evidence comes from companies that report different accounting results for different stock markets. Non-U.S. companies that have securities listed in the United States, for example, are required to report equity and net profit under U.S.

⁸T. J. Brailsford and D. Yeoh, "Agency Problems and Capital Expenditure Announcements," *Journal of Business*, 77(2) (2004): 223–256.

⁹P. K. Chaney, C. E. Hogan, and D. C. Jeter, "The Information Content of Restructuring Charges: A Contextual Analysis" (working paper, Nashville, TN: Vanderbilt University, 2000).

Exhibit 4.10 No Clear Impact of U.S. GAAP Reconciliations



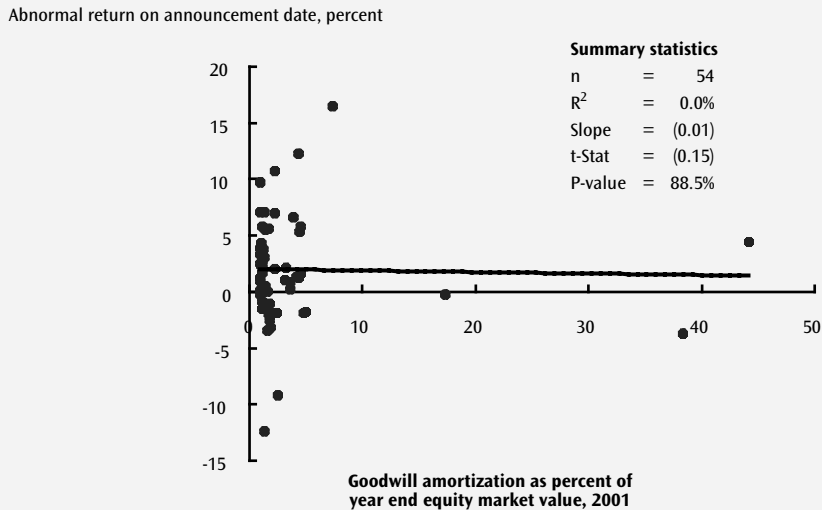
Generally Accepted Accounting Principles (GAAP), which can differ significantly from the equity and net profit reported under their domestic accounting standards. If stock prices are truly based on reported earnings, which would investors choose—the earnings reported under U.S. GAAP or domestic accounting standards? To the market, it doesn't matter. The market is not interested in accounting choices; investors care about underlying performance.

To prove the point, we analyzed a sample of 50 European companies that began reporting reconciliations of equity and profit to U.S. GAAP after obtaining U.S. listings between 1997 and 2004. The differences between net income and equity under U.S. and local accounting standards were often quite large: In more than half of the cases, the deviation was more than 30 percent. Many executives probably worried that lower earnings under U.S. GAAP would translate directly to a lower share price. But this was not the case. As shown in Exhibit 4.10, even though two-thirds of the companies in our sample reported lower earnings following U.S. disclosure, the stock market reaction to their disclosure was positive. Evidently, increased disclosure outweighed any artificial accounting effects.

Treatment of Goodwill Does Not Affect Share Price

Since 2001 under U.S. GAAP and 2005 under International Financial Reporting Standards (IFRS) goodwill is no longer amortized on the income statement according to fixed schedules. Instead, companies must write off

Exhibit 4.11 No Consistent Market Reaction to SFAS-142 Goodwill Announcement



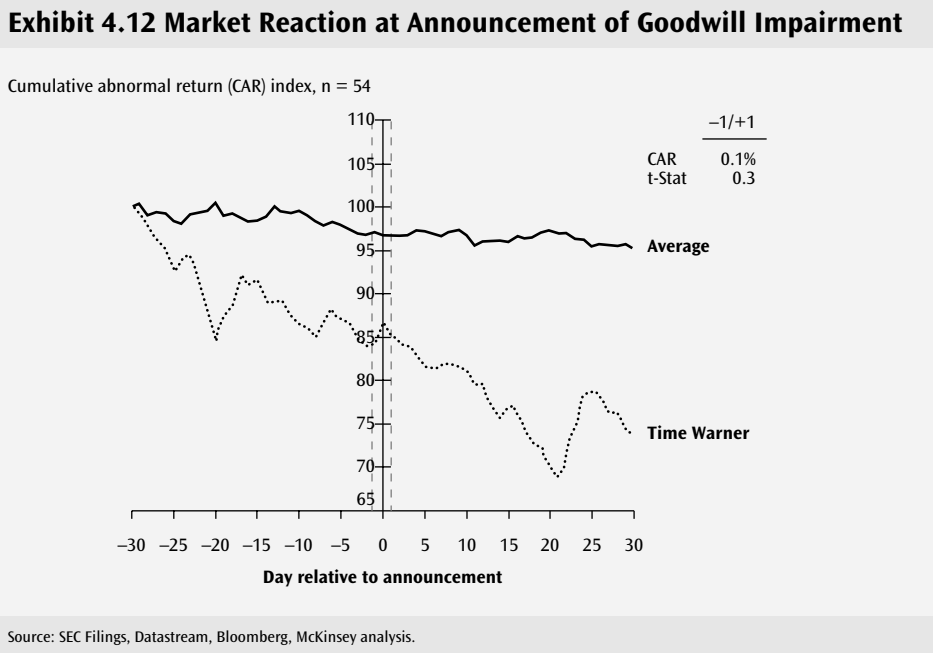
Source: Datastream, McKinsey analysis.

goodwill only when the goodwill is impaired based on business valuations by independent auditors. What effect did changes in accounting for goodwill have on share prices? To answer this question, we looked at this accounting change's impact on share price in two ways.

First, we investigated the share price reactions for companies that stopped amortizing significant amounts of goodwill. These companies would show an increase in reported EPS after this change, since goodwill amortization was no longer charged to the income statement. We analyzed the share price reaction for a sample of 54 U.S. companies with significant goodwill on the day of the announcement in July, 2001 that goodwill amortization in the United States would be abolished.¹⁰ The implied increase in EPS for these companies boosted initial share prices on average, but within two weeks, the prices had returned to normal. Obviously, the market realized that the accounting treatment of goodwill amortization does not affect cash flows. Furthermore, as shown in Exhibit 4.11, the initial share price reaction was not related to the relative amount of goodwill amortization for these companies, and for about a third of the sample the share price actually declined on announcement.

We also looked at 54 companies in the United States and Europe that wrote off significant amounts of impaired goodwill against their profit

¹⁰ The sample consists of selected U.S. companies for which annual goodwill amortization was at least 1 percent of the market capitalization.



since January 2002.¹¹ In this case, as shown in Exhibit 4.12, we did not find a statistically significant drop in share prices on the day of the write-off announcement. Why? The markets already had anticipated the lower benefits from past acquisitions and had reduced the stock price by an average 35 percent in the six months preceding the write-off announcement.

For example, Time Warner announced on January 7, 2002, that it would write off \$54 billion in goodwill. Time Warner's stock returns, plotted in Exhibit 4.12, show that the share price actually moved up somewhat on the day of the announcement, relative to major market indexes. However, Time Warner's stock had already lost as much as 37 percent over the six months prior to the announcement. Thus, despite significant changes in reported earnings caused by the changes in accounting from goodwill, there was no immediate impact on share price. The markets looked through current earnings to the underlying long-term cash flow.

Given overwhelming evidence that in the past the stock market looked beyond goodwill amortization when assessing pooling versus purchasing accounting for mergers and acquisitions, these findings should come as no surprise.¹² In fact, goodwill amortization as such never mattered—neither when it showed up in the financial statements nor when it disappeared.

¹¹ The sample comprises selected U.S. and European companies with a market capitalization of at least \$500 million and an impairment charge of at least 2 percent of market capitalization.

¹² See, for example, E. Lindenberg, and M. Ross, "To Purchase or to Pool: Does It Matter?" *Journal of Applied Corporate Finance*, 12(2) (Summer 1999): 32–47.

Accounting for Employee and Management Stock Options Is Irrelevant for Market Value

In the debate over whether employee stock options should be expensed in the income statement, much of the concern has centered on whether the negative earnings impact will drive stock prices lower. From a capital market perspective, the answer is clear: As long as investors have sufficient information on the amount, terms, and conditions of the options granted, new expensing rules will not drive down share prices. In fact, according to a recent study, companies that voluntarily began expensing their employee options *before* it became mandatory experienced positive share price reactions when they announced their intentions to expense options, despite the negative impact on reported earnings.¹³ The price reaction was especially strong when companies said they were expensing their options to boost transparency. The same researchers found that when sufficient information about the options is disclosed, the stock market includes the options values in its valuation of the companies—even when these values are not explicitly expensed in the income statement.¹⁴

We came to a similar conclusion after examining 120 U.S. companies that began voluntarily expensing their stock options in their income statements between July 2002 and May 2004. There was no negative share price impact around the disclosure of earnings; instead, share prices rose on the announcement day. Furthermore, as shown in Exhibit 4.13, there is no relation between the net income impact from option expensing and the abnormal returns during the days surrounding the new policy's announcement. In this case, the market already had the relevant information on the option plans and was not confused by a change in reporting policy.

LIFO/FIFO Inventory Reporting Does Not Influence Share Prices (But the Tax Impact Does)

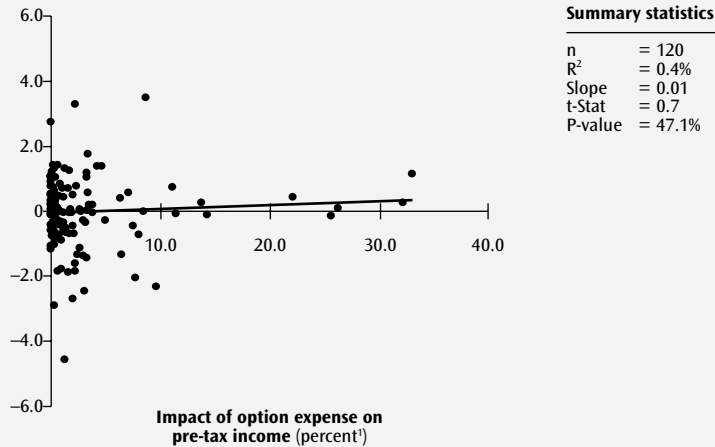
A classic example of how cash flow matters more than profits can be seen in the impact that different inventory accounting methods have on these two measures. For instance, during periods when prices are rising, changing from FIFO to LIFO can decrease accounting profits yet lead to higher free cash flows. As prices rise, the LIFO inventory method results in lower earnings than the FIFO method, since the cost of goods sold is based on more recent, higher costs. Lower pretax earnings mean lower income taxes. Since the pretax cash flow is the same regardless of the accounting method, LIFO accounting leads to a higher after-tax cash flow than FIFO accounting, despite the lower reported earnings.

¹³ D. Aboody, M. Barth, and R. Kasznik, "Firms' Voluntary Recognition of Stock-Based Compensation Expense," *Journal of Accounting Research*, 42(2) (December 2004): 251–275.

¹⁴ D. Aboody, M. Barth, and R. Kasznik, "SFAS No. 123 Stock-Based Compensation Expense and Equity Market Values," *Accounting Review*, 79(2) (2004): 251–275.

Exhibit 4.13 Voluntary Option Expensing Has No Impact on Share Price

Abnormal return on announcement date, percent



¹Defined as the absolute value of option expense divided by the pre-tax earnings before option expense.
Source: SEC Filings, Datastream, Bloomberg, McKinsey analysis.

Any manager improperly focused solely on earnings would argue that switching from FIFO to LIFO will result in lower share prices as investors react to lower reported earnings. Yet research shows that switching from FIFO to LIFO actually lifts share prices. This is due to increased cash flow, as the DCF model predicts. After adjusting for movements in the broad market and other contemporary effects, companies switching to LIFO experienced significant increases in share prices, whereas firms switching to FIFO saw share prices decline (see Exhibit 4.14 on p. 86). In fact, one study found that the larger the reduction in taxes following the switch to LIFO, the greater the share price increase attributed to the change.¹⁵

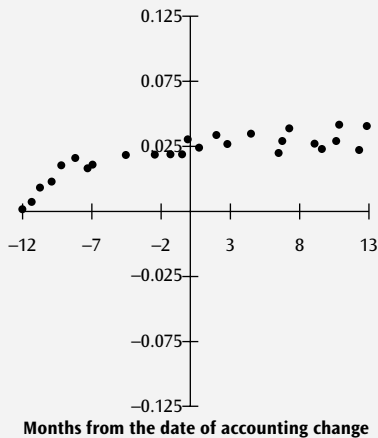
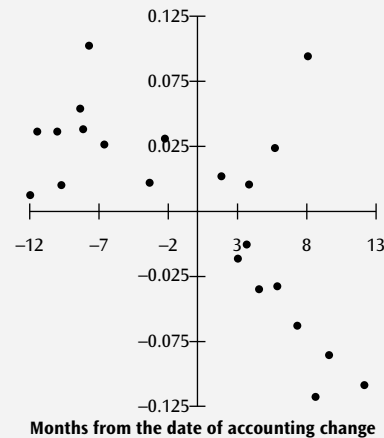
SIGNIFICANT DEVIATIONS FROM INTRINSIC VALUE ARE RELATIVELY RARE AND SHORT-LIVED

When managers make good strategic decisions based on DCF analyses, the financial markets will reward them by setting stock prices according to their company's economic fundamentals. This relationship helps the manager put the company's resources to their best use—and create maximum value for shareholders. Remember, a volatile stock price does not mean

¹⁵G. Biddle and F. Lindahl, "Stock Price Reactions to LIFO Adoptions: The Association between Excess Returns and LIFO Tax Savings," *Journal of Accounting Research*, 20(2) (1982): 551–588.

Exhibit 4.14 Effect of Inventory Accounting Change on Share Value

Cumulative abnormal return, percent

110 firms switching to LIFO**22 firms switching from LIFO**

Source: S. Sunder, "Relationship Between Accounting Changes and Stock Prices: Problems of Measurement and Some Empirical Evidence," *Empirical Research in Accounting: Selected Studies*, 1973.

prices do not reflect intrinsic value. For instance, the share price of a biotech company may have reflected its economic fundamentals several years ago, but today the stock may be selling for much less if the company failed to commercialize its products.

Also, while random deviations from intrinsic value can occur in stocks from time to time, managers are still best off assuming that the market will correctly reflect the intrinsic value of their decisions. What managers must be alert to, however, are systematic deviations from intrinsic value, especially those that can affect strategic financial decisions, such as whether and when to issue new shares or pursue acquisitions.

But is there really evidence for such systematic deviations in stock markets? Since the seminal article by Werner DeBondt and Richard Thaler in 1985,¹⁶ some finance academics and practitioners have argued that stock markets are *not* efficient—that they do not necessarily reflect economic fundamentals.¹⁷ According to this "behavioral" point of view, significant and lasting deviations from intrinsic value occur in market valuations.¹⁸ To be

¹⁶ W. DeBondt and R. Thaler, "Does the Stock Market Overreact?" *Journal of Finance*, 40(3) (1985): 793–805.

¹⁷ We loosely define efficient markets here as markets reflecting economic fundamentals.

¹⁸ For an overview of behavioral finance, see N. Barberis and R. Thaler, "A Survey of Behavioral Finance," in *Handbook of the Economics of Finance*, edited by G. M. Constantinides et al. (Boston, MA: Elsevier Science, 2003): 1054–1123; and J. Ritter, "Behavioral Finance," *Pacific-Basin Finance Journal*, 11(4) (September 2003): 429–437.

sure, behavioral finance offers some valuable insights, chief among them that markets are not always right because market imperfections prevent rational investors from correcting mispricing by irrational investors. We cannot disagree with that. But how often do these deviations arise, and are they so significant that they should affect how managers make their financial decisions? Significant deviations from intrinsic value are rare, and markets revert to the economic fundamentals rapidly enough that managers should continue to base their decisions on DCF analyses.

Key Conditions for Market Deviations

In our interpretation of behavioral finance, markets fail to reflect economic fundamentals under three conditions:

1. *Irrational investor behavior.* “Irrational” investors do not process all available information correctly when forming expectations on the stock’s future performance. Studies of the investment behavior of professional fund managers and analysts show various forms of such irrationality. For example, individual investors overreact and attach too much importance to recent events and results, so they overprice companies with strong recent performance. Also, individuals are overly conservative in updating expectations, so they underprice stocks that have released positive news on earnings.
2. *Systematic patterns of behavior across different investors.* If individual investors decided to buy or sell without consulting economic fundamentals, the impact on share prices would be limited. Only when they behave irrationally also in a systematic way (i.e., when large groups of investors share particular patterns of behavior) should persistent price deviations occur. Behavioral finance theory argues that patterns of overconfidence, overreaction, and overrepresentation are common to many investors, and such groups can be large enough to prevent a company’s share price—at least for some stocks, some of the time—from reflecting underlying economic fundamentals.
3. *Limits to arbitrage in financial markets.* If there are enough rational investors in a market, and there are no barriers to arbitrage, systematic patterns of irrational behavior can be exploited, and they will not have lasting effects on market valuations. In reality, such arbitrage is not always possible. Transaction costs and risks are involved in setting up and running the arbitrage positions.

Assume that a company’s share price has dramatically increased over the past few months because the company surprised the market with better-than-expected results. Based solely on this strong recent performance,

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investors might believe this company will continue to exceed market expectations and thus start bidding for shares. According to behavioral finance theory, many investors will demonstrate this type of myopic behavior, creating upward pressure on the share price.

As long as a sufficient number of investors can identify and take short positions against overpricing on the part of these myopic investors, the share price will return to its fundamental level. In practice, however, this may not be the case; the costs, complexity, and risks involved in setting up a short position may be too high for those who invest on economic fundamentals. One example is so-called "noise trader" risk. It is uncertain how long price deviations will persist, and whether they will increase before finally disappearing. If for some reason investors focused on fundamentals abandon their positions before the share price returns to its fundamental value, they would incur a loss.

When the preceding three conditions all apply, behavioral finance predicts that pricing biases in financial markets can be both significant and persistent.

Some well-known examples of such market deviations can help us understand whether, if, or how these conditions should change our perspectives on how finance theory applies to real-world decision making by corporate managers.

Market Overreaction and Underreaction, Reversal and Momentum

Over the past decade two well-known patterns of price deviations in stock markets have received considerable attention in academic studies: short-term momentum and long-term reversal in share prices. Reversal means that high-performing stocks of the past years typically become low-performing stocks over the next few years.¹⁹ Momentum is a phenomenon in which positive returns for stocks over the past several months are typically followed by several months of continued positive returns.²⁰ The literature on behavioral finance offers several explanations for these price patterns, but the debate remains far from settled.

Some behaviorists argue reversal is caused by investor overreaction: Investors put too much weight on companies' recent performance. When companies have performed well in recent years, investors are inclined to extrapolate that success into the future. As a result, share prices increase too much, and when cash flows fail to meet projections, investors adjust their expectations, bringing on a reversal. The winning stocks of the past

¹⁹ First documented by DeBondt and Thaler, "Does the Stock Market Overreact?"

²⁰ See, for example, N. Jegadeesh and S. Titman, "Returns to Buying Winners and Selling Losers: Implications for Stock Market Efficiency," *Journal of Finance*, 48(1) (1993): 65–92; and N. Jegadeesh and S. Titman, "Profitability of Momentum Strategies: An Evaluation of Alternative Explanations," *Journal of Finance*, 56(2) (2001): 699–720.

become low-performing stocks of the future. The same effect may also be responsible for well-known patterns such as the low returns some companies demonstrate following their IPOs and seasoned offerings.²¹ Typically, companies issuing new stock previously demonstrated strong business performance, which in turn provides a reason to exploit a favorable track record and issue stock.²²

Next, momentum can be explained by systematic underreaction: Overly conservative investors are too slow in adjusting their expectations after new information becomes available. Investors may underestimate the true impact of earnings changes, divestitures, share repurchases, and so on.²³ The result is that stock prices do not instantaneously react to good or bad news. This could give rise to short-term momentum in stock returns in which stocks that have outperformed the market as a whole for several months continue to do so over the next couple of months.

But academics are still debating whether irrationality among investors is truly what drives the long-term reversal and short-term momentum patterns found in stock returns. Eugene Fama and Kenneth French,²⁴ for example, believe that long-term reversals can be explained by risk premiums driven by market-to-book ratio and size. These can be interpreted as indicators of liquidity or distress risk, in addition to the traditional market or beta risk.²⁵ In Chapter 10, we discuss how such additional risk premiums can affect the cost of capital.

Similarly, short-term momentum in share price returns is not necessarily driven by irrational investors. Profits from these patterns are relatively limited after deducting transaction costs.²⁶ Thus, these small momentum biases could exist even if all investors were rational.

Furthermore, behavioral finance cannot yet explain why investors overreact under some conditions (such as IPOs) and underreact in others (such

²¹ See, for example, J. Ritter, "The Long Run Performance of Initial Public Offerings," *Journal of Finance*, 46(1) (1991): 3–28; T. Loughran and J. Ritter, "The New Issues Puzzle," *Journal of Finance*, 50(1) (1995): 23–51; and B. Dharan and D. Ikenberry, "The Long-Run Negative Drift of Post-Listing Stock Returns," *Journal of Finance*, 50(5) (1995): 1547–1574.

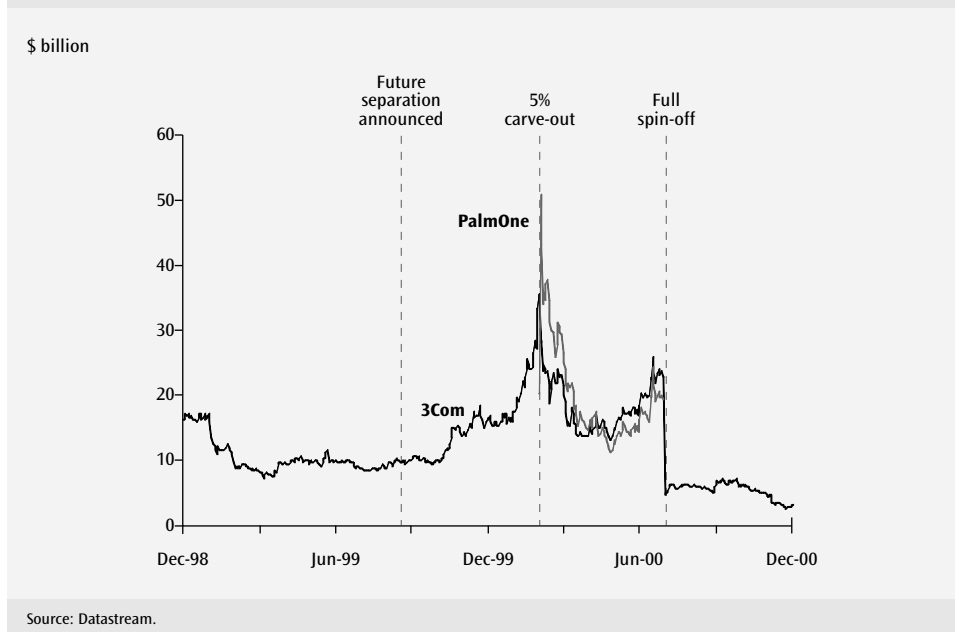
²² E. Fama, "Market Efficiency, Long-Term Returns, and Behavioral Finance," *Journal of Financial Economics*, 49(3) (1998): 283–306.

²³ Documented by V. Bernard and J. Thomas, "Evidence That Stock Prices Do Not Fully Reflect the Implications of Current Earnings for Future Earnings," *Journal of Accounting and Economics*, 3(4) (1990): 305–340; J. Lakonishok and T. Vermaelen, "Anomalous Price Behavior around Repurchase Tender Offers," *Journal of Finance*, 45(2) (1990): 455–478; and H. Desai and P. Jain, "Long-Run Common Stock Returns Following Stock Splits and Reverse Splits," *Journal of Business*, 70(3) (1997): 409–433.

²⁴ E. Fama and F. French, "Multifactor Explanation of Asset Pricing Anomalies," *Journal of Finance*, 51(1) (1996): 55–84.

²⁵ See, for example, J. Cochrane, *Asset Pricing* (Princeton: Princeton University Press, 2001): ch. 20.

²⁶ Cochrane, *ibid.*, argues that momentum can be explained by a very small autocorrelation in stock returns combined with high volatility and that momentum predictability is too small to be exploited when transaction costs are taken into account.

Exhibit 4.15 Market Value of 3Com Compared to the Value of PalmOne Ownership by 3Com

as earnings announcements). Fama considers this puzzle a further indication that markets are efficient: There is no systematic way to predict when markets will over- or underreact.²⁷ Across all studies, the expected value of an abnormal return is therefore probably still zero. This would imply that managers should still make their decisions based on traditional DCF analyses and efficient-market assumptions.

Persistent Mispricing in Carve-Outs and Dual-Listed Companies

One type of market deviation often suggested to support the validity of behavioral finance is the mispricing of carve-outs and dual-listed companies (see Chapter 16 for more details on carve-outs). A well-documented example is the relative pricing of 3Com versus Palm after the Palm carve-out in March 2000. 3Com had floated 5 percent of its subsidiary Palm in anticipation of a complete spin-off within nine months. Yet immediately after the Palm carve-out, the market capitalization of Palm was higher than the entire market value of 3Com, implying that 3Com's other businesses had negative value (see Exhibit 4.15). Given the size and profitability of their other businesses, this observation clearly implies mispricing. So why did rational investors not exploit

²⁷ E. Fama, "Market Efficiency, Long-Term Returns, and Behavioral Finance," *Journal of Financial Economics*, 49(3) (1998): 283–306.

the mispricing by going short in Palm shares and long in 3Com shares? They could not, because the free float of Palm shares was too small after the carve-out: 95 percent of all shares were still held by 3Com. Establishing a short position in Palm would have required borrowing the shares from a Palm shareholder. As the share supply via short sales increased steadily over the months following the carve-out, the mispricing gradually decreased.²⁸

Additional cases of mispricing for parent companies and their carved-out subsidiaries have been documented.²⁹ These cases involve similar difficulties in setting up short positions to exploit price differences. This in turn allows mispricing to persist for several weeks or months until the spin-off takes place or is abandoned. These examples expose price differences that appear to be inconsistent with efficient markets (at least in the sense that relevant price information was not quickly and correctly processed). In all cases, however, these price differences resolved within several months.

Another classic example is the price disparity between the shares of Royal Dutch Petroleum and Shell Transport & Trading (T&T), which are separately traded in the Amsterdam and London stock markets, respectively. These twin shares are entitled to a fixed 60:40 portion of the dividends of the combined Royal Dutch/Shell Group. Thus, one would expect that the prices of the Royal Dutch and Shell T&T shares would be priced in a fixed ratio of 60:40.

Over long periods, however, this has not been the case.³⁰ In fact, for several similar twin-share structures (such as Unilever and Reed-Elsevier), there have been prolonged periods of mispricing, as shown in Exhibit 4.16 on page 92. This phenomenon occurs because, for some reason, investors prefer one of the twin shares over the other and are prepared to pay a premium. The arbitrage opportunity from going short in the overpriced share and going long in the underpriced share is not exploited by rational investors. Not only have such price differentials persisted, they have sometimes been as large as 30 percent. One explanation is that because of noise trader risk, the arbitrage opportunity around dual-listed stocks is actually a risky strategy.³¹ Arbitrage investors cannot be sure that prices will converge in the near term; the price gap could even widen.

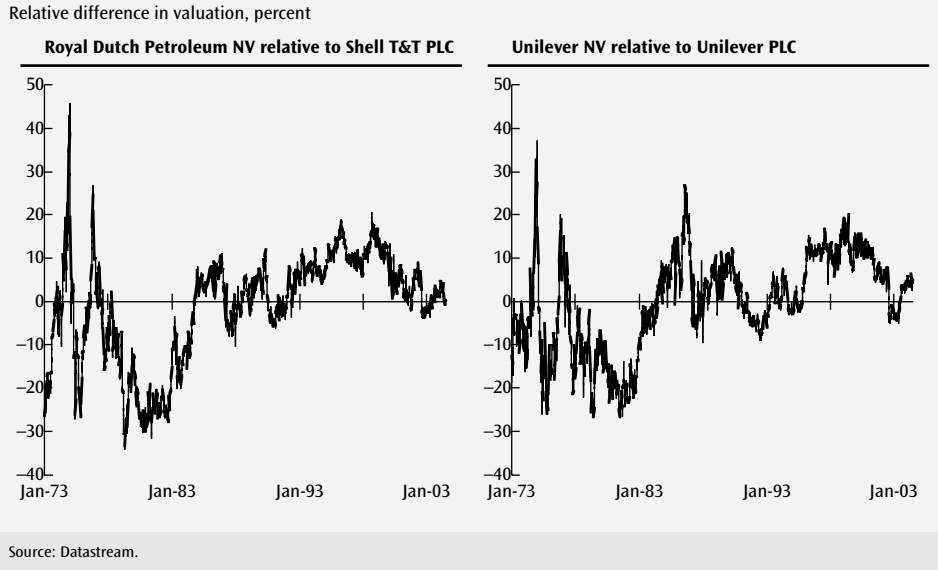
Does this indict the market's ability to price? We do not think so. In recent years, the price differences for Royal Dutch and stocks with similar

²⁸ See J. Cochrane, "Stocks as Money: Convenience Yield and the Tech-Stock Bubble" (NBER working paper no. 8987, National Bureau of Economic Research, 2002).

²⁹ O. Lamont and R. Thaler, "Can the Market Add and Subtract? Mispricing in Tech Stock Carve-Outs," *Journal of Political Economy*, 111(2) (2003): 227-268; and M. Mitchell, T. Pulvino, and E. Stafford, "Limited Arbitrage in Equity Markets," *Journal of Finance*, 57(2) (2002): 551-584.

³⁰ K. Froot and A. Perold, "Global Equity Markets: The Case of Royal Dutch and Shell," Harvard Business School Case 9-296-077; and K. Froot and E. Dabora, "How Are Stock Prices Affected by the Location of Trade?" *Journal of Financial Economics*, 53(2) (1999): 189-216.

³¹ A. de Jong, L. Rosenthal, and M. van Dijk, "The Limits of Arbitrage: Evidence from Dual-Listed Companies" (EFA 2004 Maastricht Meetings paper no. 4695).

Exhibit 4.16 Share Price Disparity of Dual-Listed Companies

underlying Anglo-Dutch corporate structures all appear to have shrunk. Furthermore, some of these twin-share structures have disappeared as the corporations formally merged, as Royal Dutch and Shell T&T did on October 28, 2004, in announcing the unification of their shares. The disappearance of price differences upon such unification announcements underlines the importance of noise trader risk. As soon as a formal date was set for definitive price convergence, arbitrageurs stepped in to correct any difference.³² It also underlines the argument that mispricing occurs under special circumstances only—and is by no means a common or long-lasting phenomenon.

Markets and Fundamentals: The Bubble of the 1990s

So do markets reflect economic fundamentals? We believe they do. To verify this conclusion, we estimated the intrinsic valuation level for the U.S. stock market as a whole, based on economic fundamentals, using an equity DCF valuation model. This model is an extended, two-stage version of the value driver formula first presented in Chapter 3 (see Chapter 9 for more details).³³ By using a two-stage model, we could accommodate

³²See de Jong, Rosenthal, and van Dijk, "The Limits of Arbitrage: Evidence from Dual-Listed Companies." (Note 31).

³³In the standard value driver formula, we just replace ROIC with return on equity and WACC with cost of equity to obtain the market-to-book ratio of equity instead of invested capital.

both long-term economic fundamentals and short-term fluctuations in key value drivers.

To analyze the valuation levels for the stock market as whole, we forecast each key value driver, such as return on equity (ROE) and growth using economic fundamentals of the entire U.S. economy. For the first stage of the model, we used the actual return on equity, GDP growth, and cost of equity for the year in which we applied the model. In the second stage of the valuation model, we used long-term fundamental values as estimates for the ROE, growth, and cost of equity. Long-term return on equity and growth in the U.S. economy have been remarkably stable for the past 40 years, despite some deep recessions and periods of strong economic growth. The median return on equity for all U.S. companies has been a stable 12 to 15 percent. Long-term gross domestic product (GDP) growth for the U.S. economy has been about 3 percent per year in real terms since 1945.³⁴ When measured using five- or seven-year rolling averages, it has not deviated significantly from that level in any subperiod. In a separate analysis, we estimated that the inflation-adjusted cost of equity since 1962 has been fairly stable at about 6½ to 7 percent.³⁵ Using the two-stage DCF valuation model, we estimated the price-to-earnings and market-to-book ratios for the U.S. stock market for each year between 1962 and 2003 (see Exhibit 4.17 on page 94).³⁶ We did a similar analysis for the U.K. stock market and obtained similar results.

Overall, we were surprised by how well this simple, fundamental valuation model fits the stock market's price-to-earnings levels over the past three decades, despite periods of extremely high economic growth in the 1960s and 1990s, as well as periods of low growth and high inflation in the 1970s and 1980s. Over the long term, the stock market as a whole appears to follow the simple, fundamental economic laws discussed in Chapter 3: Value is driven by returns on capital, growth, and—via the cost of capital—interest rates.

This has led us to three important conclusions: First, by and large, the stock markets in the United States and the United Kingdom have been fairly priced and have oscillated around their intrinsic price-to-earnings ratios. The intrinsic P/E ratio was typically near 15, with the exception of the high-inflation years of the late 1970s and early 1980s, when it was closer to 10.

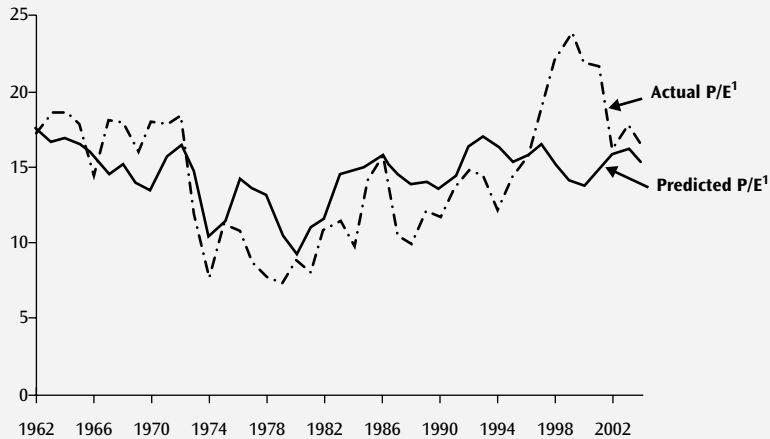
Second, the late 1970s and late 1990s did indeed produce significant deviations from intrinsic value. In the late 1970s, as investors were obsessed

³⁴For the U.S. economy, corporate earnings as a percentage of GDP have been remarkably constant over the past 40 years at around 6 percent.

³⁵For estimates of the inflation-adjusted cost of equity for the stock market as a whole, see Chapter 10 and M. Goedhart, T. Koller, and Z. Williams, "The Real Cost of Equity," *McKinsey on Finance*, 5 (Autumn 2002): 11–15.

³⁶See M. Goedhart, T. Koller, and Z. Williams, "Living with Lower Market Expectations," *McKinsey on Finance*, 8 (Summer 2003): 7–11.

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Exhibit 4.17 Estimating Fundamental Market Valuation Levels

¹Twelve-month forward-looking price-to-earnings ratio.
Source: IBES, McKinsey.

with high short-term inflation rates, the market was probably valued too conservatively. Based on long-term real GDP growth and returns on equity, the stock market should not have dropped to a P/E level of 7. The other obvious deviation occurred in the late 1990s, when the market valuation rose to a P/E ratio near 25. Such a level for the 12-month forward-looking P/E ratio could not be justified by a long-term real GDP growth of 3 percent and returns on equity of 12 to 15 percent.

Finally, when such deviations occurred, the stock market corrected itself within a few years to its intrinsic valuation level. Thus, although market valuations can apparently be wrong from time to time—even for the stock market as a whole—market valuations return to values justified by economic fundamentals.

When analyzing the relative valuation for the stock market as a whole, keep in mind that during the market bubble of the late 1990s, a limited number of companies with extremely large market capitalizations and extremely high multiples had an enormous impact on the (weighted average) price-to-earnings ratio for the S&P 500 (see Exhibit 4.18). The 12-month trailing P/E ratio for the S&P 500 was about 30 in 1999, whereas the average P/E ratio for almost 95 percent of the constituent companies was only 23. This difference in P/E ratios emerged during the boom of the late 1990s and disappeared by 2001.

Most of these large-capitalization companies with high P/E ratios were clustered in just three sectors: technology, media, and telecommunications

Exhibit 4.18 Impact of Largest Stocks on Overall Market Valuation

	1980	1990	1999	2001
P/E of 30 largest companies	9	15	46	28
P/E of remaining companies	9	15	23	24
P/E for S&P overall	9	15	30	25

Note: Twelve-month trailing price-to-earnings ratios.
Source: Compustat, McKinsey analysis.

(TMT). In most other U.S. sectors, P/E ratios were significantly lower. Thus, the American stock market bubble of the late 1990s was largely driven by the valuation of the so-called TMT sectors. To illustrate how aggressively investors were valuing the share prices of some of these TMT stocks, we analyzed the value of the 10 highest market capitalization U.S. technology companies. At the end of 1999, these 10 companies had a combined market capitalization of \$2.4 trillion, annual revenues of \$240 billion, and net income of \$37 billion, resulting in an aggregate price-earnings ratio of 64 times. We built a simple DCF model to estimate what performance would be required to justify that market value. For investors to earn an 11 percent return, these companies would have needed to grow their revenues to approximately \$2.7 trillion by 2014 and their net income to about \$450 billion. To put this in perspective, assuming that GDP grows at a healthy rate from 1999 through 2014 and corporate profits remain a stable share of GDP (as they have for at least the past 80 years), the total corporate profits of all U.S. companies would be about \$1.3 to \$1.5 trillion by 2014. So these 10 companies would need to earn about one-third of all the profits earned by all U.S. companies.

One would expect rational investors to try to exploit these cases of likely mispricing. But setting up a short position in overpriced stocks is not always easy, and can be costly and risky. The risk arises because although some investors may have recognized, for example, that these companies were overpriced, it was far from clear when this mispricing would disappear. An investor with a short position in these companies would need sufficient liquid assets to maintain the position and patiently sit through possible periods of even deeper mispricing. We know of one experienced investor who set up a short position on an overvalued high-tech stock only to abandon that position at a considerable loss when the share

price continued to increase. Just three months after this investor exited his short position, the share price plummeted.

Fundamentals Prevail

The empirical evidence in this chapter demonstrates that stock markets largely reflect economic fundamentals. To be sure, markets can sometimes be off, but such situations do not last. Sooner or later, the market will revert to fundamental levels.

In the vast majority of cases, the deviations are quickly traded away (think of how accurately call options, futures, and other derivatives are priced relative to the underlying stocks, interest rates, or currency rates). While in certain cases, these deviations might persist for months or even years, there ultimately will be sufficient liquidity from rational investors for stock prices to revert to their intrinsic value. In the examples of Royal Dutch/Shell, Unilever, and Reed-Elsevier twin shares, the price differentials decreased significantly or even disappeared. In the 3Com/Palm example, the mispricing disappeared after two months. In the market bubble of the 1990s, the deviation from intrinsic value corrected itself in about three years.

In the end, market value reverts to levels justified by the underlying economic fundamentals—and why not? Irrational investors may cause stock prices to deviate temporarily from intrinsic value, but prices are driven by rational investors with deep pockets, who recognize economic fundamentals because they are focused on the long-term potential of stocks to generate cash dividends.

IMPLICATIONS OF MARKET (IN)EFFICIENCY FOR CORPORATE MANAGERS

Some managers point to evidence of the stock market's inefficiencies to justify a belief that the market behaves irrationally. As evidence, these managers offer the inefficiencies that academics cite, and make the case that arguments supporting the discounted cash flow approach do not square with the real world. Although markets can indeed be inefficient, in the sense that prices sometimes deviate from fundamentals, this does not make discounted cash flow valuation superfluous.

For investors, market deviations may represent an opportunity to make money depending on the practical difficulties and risks of setting up an arbitrage position. Once these inefficiencies become known, however, they usually disappear, and the search is on for new ones.³⁷ Evidence suggests

³⁷ See, for example, S. Ross, "Neoclassical Finance, Alternative Finance and the Closed End Fund Puzzle," *European Financial Management*, 8(2) (2002): 129–137.

that no investment fund has been able to systematically outperform the market as a whole over the past 35 years.³⁸ Thus, it appears that the market inefficiencies are not frequent or significant enough to provide investors with systematic excess returns over longer periods.

Paradoxically, given such market deviations, it is even more important for corporate managers and investors to understand the true, intrinsic value of companies. This allows them to exploit any market deviations—if and when they occur. Here are some examples of how corporate managers can benefit from intrinsic value deviations by better timing the implementation of strategic decisions.

- Issuing additional share capital at times when the stock market is attaching too high a value to the company's shares relative to intrinsic value
- Repurchasing company shares when the stock market underprices relative to the intrinsic value
- Paying for acquisitions with shares instead of cash when the stock market overprices the shares relative to intrinsic value
- Divesting particular businesses at times when trading and transaction multiples in that sector are higher than can be justified by underlying fundamentals

Two caveats are important to note in these examples. First, we would not recommend basing a decision to issue or repurchase stock, divest or acquire businesses, or settle in cash or shares for transactions exclusively on a perceived difference between market value and intrinsic value. Instead, these decisions should be grounded in a sound strategic and business rationale that is expected to create value for shareholders. Market deviations are more relevant as tactical considerations regarding the timing and execution details of such decisions—that is, when to issue additional capital or how to pay for a particular transaction.

Second, managers should be critical of analyses claiming to find such market deviations for their company's shares. After careful analysis, most of the alleged deviations that we have come across in our client experience turned out to be insignificant or even nonexistent. Market deviations are typically rare and short-lived. Thus, the evidence for deviations should be compelling before managers act on it. They should be significant in both size and duration, given the cost and time to execute strategic decisions.

As long as your company's share price will eventually return to its long-run, intrinsic DCF value, you should use the DCF approach for strategic

³⁸ M. Rubinstein, "Rational Markets: Yes or No? The Affirmative Case," *Financial Analyst Journal*, 57(3) (2001): 15–29.

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decisions. What matters is the long-term behavior of your company's share price, not whether it is 5 or 10 percent undervalued this week. For strategic business decisions, the evidence strongly suggests that the market uses the DCF approach and reflects intrinsic value. Managers who use the DCF approach to valuation, with their focus on increasing long-term free cash flow, ultimately will be rewarded with higher share prices. The evidence from the market is conclusive. Devoting naive attention to accounting earnings or systematically ignoring price signals by the stock market too often leads to value-destroying decisions.