

CHAPTER 10

INFORMATION PAYS: TRADING ON NEWS

Information affects stock prices. This undeniable fact is brought home every day as we watch financial markets react to announcements not only from individual firms but also from analysts following these firms and market mavens. When firms report better than anticipated earnings, stock prices go up, whereas announcements that contain bad news push the stock price down. Given this reality, any investor who is able to gain access to information prior to it reaching the market can buy or sell ahead of the information, depending upon whether it is good or bad news, and make a killing.

There is a catch, though. Information that has not yet been made available to markets is viewed as inside information, and trading on it can often be illegal. For any portfolio manager who wants to trade on information, there are three alternatives. One is to use the rumor mills that always exist in financial markets, screening the rumors for credibility (based upon the both the news in the rumors and the source of the rumors) and then trading on them. The other is to wait until the information reaches the market and then to trade on market reaction. Implicit in this approach is the assumption that markets react inappropriately to news items and that it is possible to take advantage of these mistakes. The third is to use private information and hope that you do not cross the line and break the law on insider trading.

In this chapter, we begin by considering the individuals who are most likely to have access to private information – insiders and analysts – and consider whether they use it to earn high returns. We then move on to consider information announcements made by firms – earnings and dividend announcements, acquisitions and investment announcements, for instance – and how markets react to that information and whether there is a possibility of profiting on information, by trading after the announcement. In the final part of the paper, we will consider the essential ingredients of a successful information-based trading strategy.

Information and Prices

No matter how markets are structured, the market price of an asset is an estimate of its value. Investors in the market make assessments of the price based upon their expectations for the future cash flows on the asset. They form these expectations using the information that is available to them and this information can arrive in different forms. It can be public information available in annual reports or filings with the SEC, or information available to one or a few investors. In this section, we will begin by drawing a distinction

between private and public information, and then considering how an efficient market should react to information.

Private and Public Information

While the steps in the pricing process – receive information, process the information to form expectations and trade on the asset – may be the same for all investors, there are wide variations across investors in how much information they have available, and how they process the information. Some investors have access to more information than others. For instance, an equity research analyst whose job it is to evaluate a stock as an investment will have access to more information about the firm than a small investor making the same decision. These differences in information are compounded by the different ways in which investors use the information to form expectations. Some investors build complex quantitative models, converting the information into expected earnings and cash flows, and then value investments. Other investors use the same information to make comparisons across traded investments. The net effect is that, at any point in time, investors will disagree on how much an asset is worth. Those who think that it is worth more will be the buyers of the asset, and those who think it is worth less will sell the asset. The market price represents the price at which the market clears, i.e, where demand (buying) is equal to supply (selling).

Let us now consider the relationship between price and value. In chapter 4, we argued that the value of an asset is the present value of the expected cash flows over its lifetime. The price of that asset represents the product of a process in which investors use the information available on the asset to form expectations about the future. The price can and usually will deviate from the value for three reasons. First, the information available may be insufficient or incorrect; then expectations based upon this information will also be wrong. Second, investors may not do a good job of processing the information to arrive at expectations. Third, even if the information is correct and investors, on average, form expectations properly, there might still be investors who are willing to trade at prices that do not reflect these expectations. Thus, an investor who assesses the value of a stock to be \$ 50 might still be willing to buy the stock for \$ 60, because he or she believes that it can be sold to someone else for \$ 75 later.

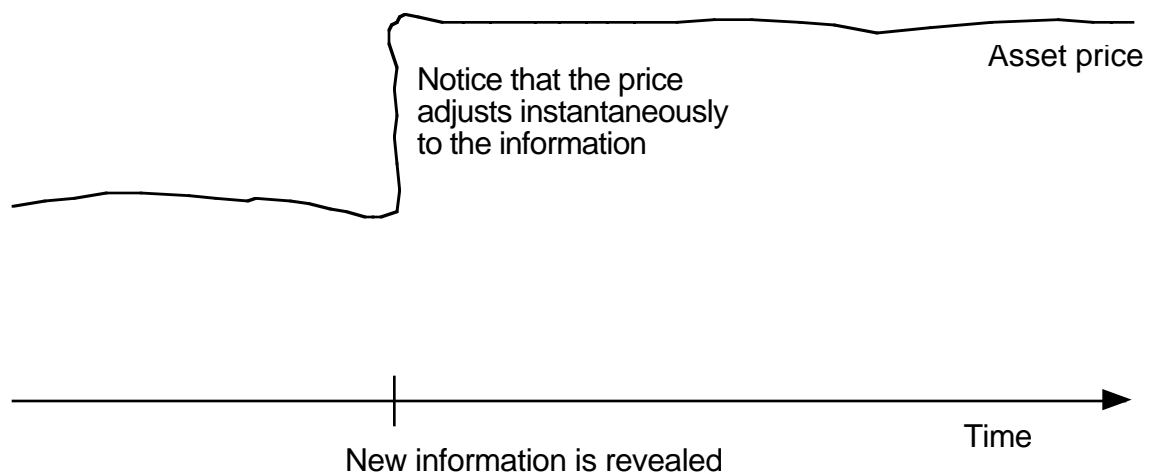
Information Efficiency: How stock prices react to news

One of the key questions we need an answer to before we examine whether to invest in new projects or how to finance them is whether markets are efficient. There are three ways of measuring or defining market efficiency. One is to look at how much and for how long prices deviate from true value. The second is to measure how quickly and completely prices adjust to reflect new information. The third is to measure whether some investors in

markets consistently earn higher returns than others who are exposed to the same amount of risk. It is the last definition that we used in chapter 6.

If we define market efficiency in terms of how much the price of an asset deviates from a firm's true value, the smaller and less persistent the deviations are, the more efficient a market is. Market efficiency does not require that the market price be equal to true value at every point in time. All it requires is that errors in the market price be unbiased, i.e., prices can be greater than or less than true value, as long as these deviations are random. Another way of assessing market efficiency is to look at how quickly and how well markets react to new information. The value of an asset should increase when new information that affects any of the inputs into value – the cash flows, the growth or the risk – reaches the market. In an efficient market, the price of the asset will adjust instantaneously and, on average, correctly to the new information, as shown in figure 10.1.¹

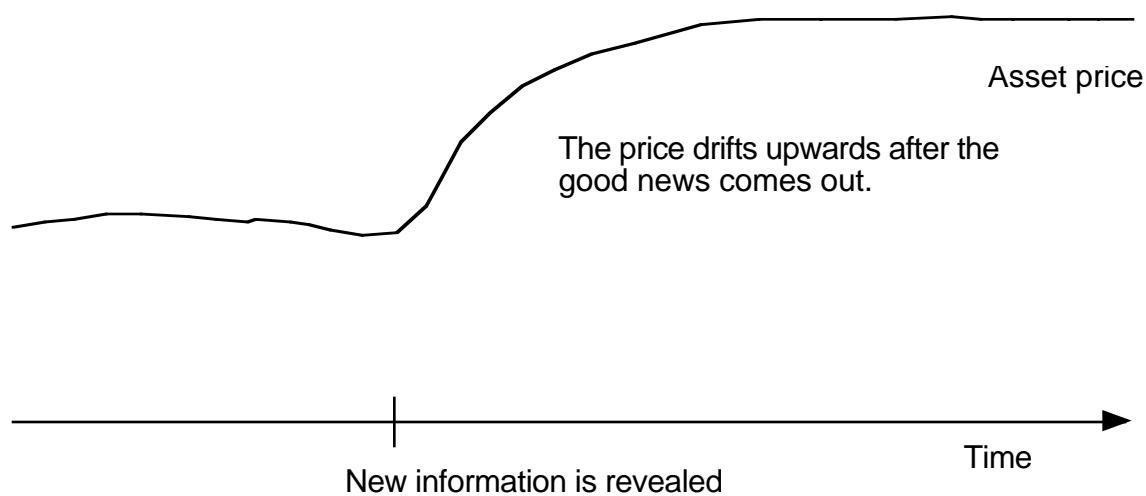
Figure 10.1: Price Adjustment in an Efficient Market



The adjustment will be slower if investors are slow in assessing the impact of the information on value. In figure 10.2, we show the price of an asset adjusting slowly to new information. The drift in prices that we observe after the information arrives is indicative of a slow learning market.

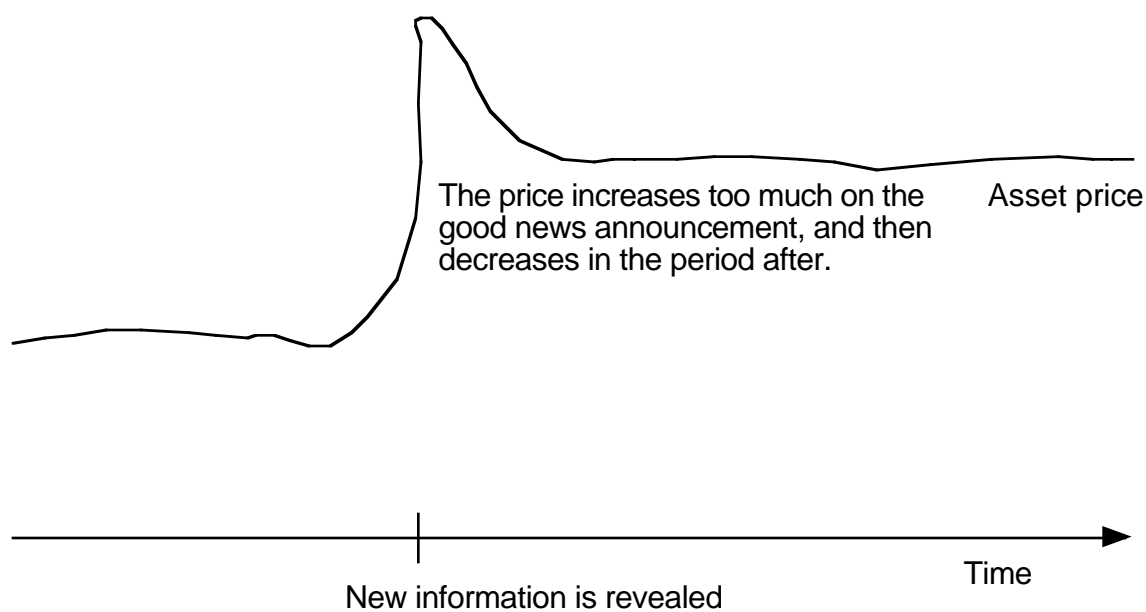
¹ Brown, Harlow and Tinic (1988) present a more sophisticated version of this test by allowing information to change both expectations about cash flows in the future and expectations of risk.

Figure 10.2 A Slow Learning Market



In contrast, the market could adjust instantaneously to the new information but overestimate the effect of the information on value. Then, the price of the asset will increase by more than it should, given the effect of the new positive information on value, or drop by more than it should, with negative information. Figure 10.3 shows the drift in prices in the opposite direction, after the initial reaction.

Figure 10.3: An Overreacting Market



Trading on Private Information

Do investors who have information that no one else has access to, i.e. private information, able to use this information to profit? While the answer seems obviously yes, it is very difficult to test whether they do. The reason for this is that the regulatory authorities, at least in the United States, specifically forbid trading in advance of significant information releases. Thus, insiders who follow the law and register their trades with the SEC are not likely to be trading on specific information in the first place. Notwithstanding this selection bias, we will begin by looking at whether insider buying and selling operate as signals of future price movements, since insiders may still have access to general information about the firm that outsiders do not. We will then look at the more difficult question of whether those who trade illegally on private information make excess returns. While this may seem like an impossible test to run, we can at least draw inferences about this trading by looking at trading volume and price movements prior to major news announcements.

Insiders

The SEC defines an insider to be an officer or director of the firm or a major stockholder (holding more than 5% of the outstanding stock in the firm). Insiders are barred from trading in advance of specific information on the company and are required to file with the SEC when they buy or sell stock in the company. In this section, we will begin by looking at the relationship between insider trading and subsequent stock price changes, and then consider whether non-insiders can use information on insider trading to earn excess returns themselves.

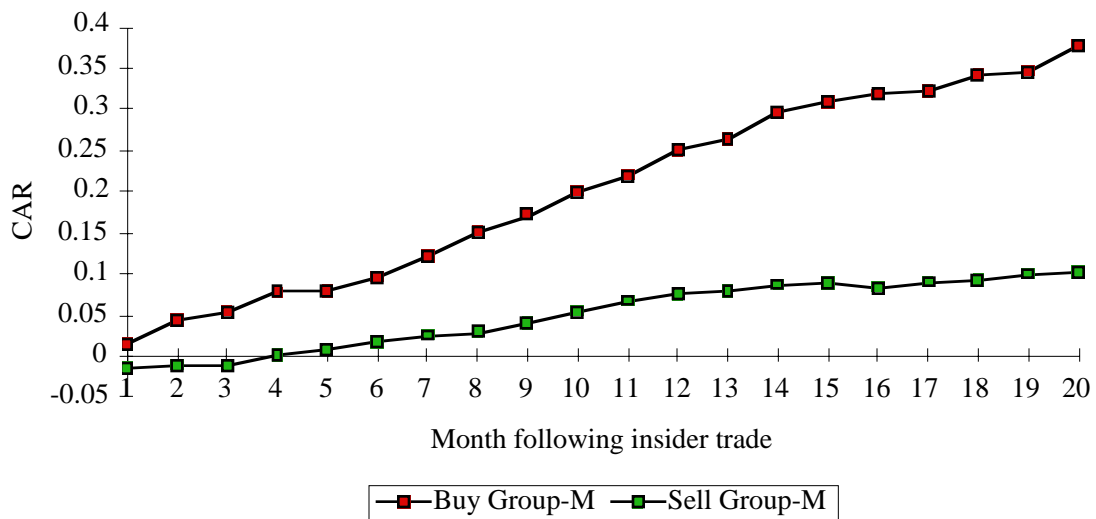
Insider Trading and Stock Prices

If it is assumed, as seems reasonable, that insiders have better information about the company, and consequently better estimates of value, than other investors, the decisions by insiders to buy and sell stock should signal future movements in stock prices. Figure 10.4, derived from an early study of insider trading by Jaffe, examines excess returns on two groups of stock, classified on the basis of insider trades. The "buy group" includes stocks where insider buys exceeded sells by the biggest margin, and the "sell group" includes stocks where insider sells exceed buys by the biggest margin.



Stocks with most insider holdings: Take a look at the 50 stocks with the highest insider holdings as a percent of outstanding stock.

Figure 10.4: Cumulative Returns Following Insider Trading: Buy vs Sell Group



Source: Jaffe

Studies since support this finding², but it is worth noting that insider buying is a noisy signal – about 4 in 10 stocks where insiders are buying turn out to be poor investments, and even on average, the excess returns earned are not very large. In a study in 1998, Lakonishok and Lee take a closer look at the price movements around insider trading. They find that firms with substantial insider selling have stock returns of 14.4% over the subsequent 12 months, which is significantly lower than the 22.2% earned by firms with insider buying. However, they find that the link between insider trading and subsequent returns is greatest for small companies and that there is almost no relationship at larger firms.

Can you follow insiders?

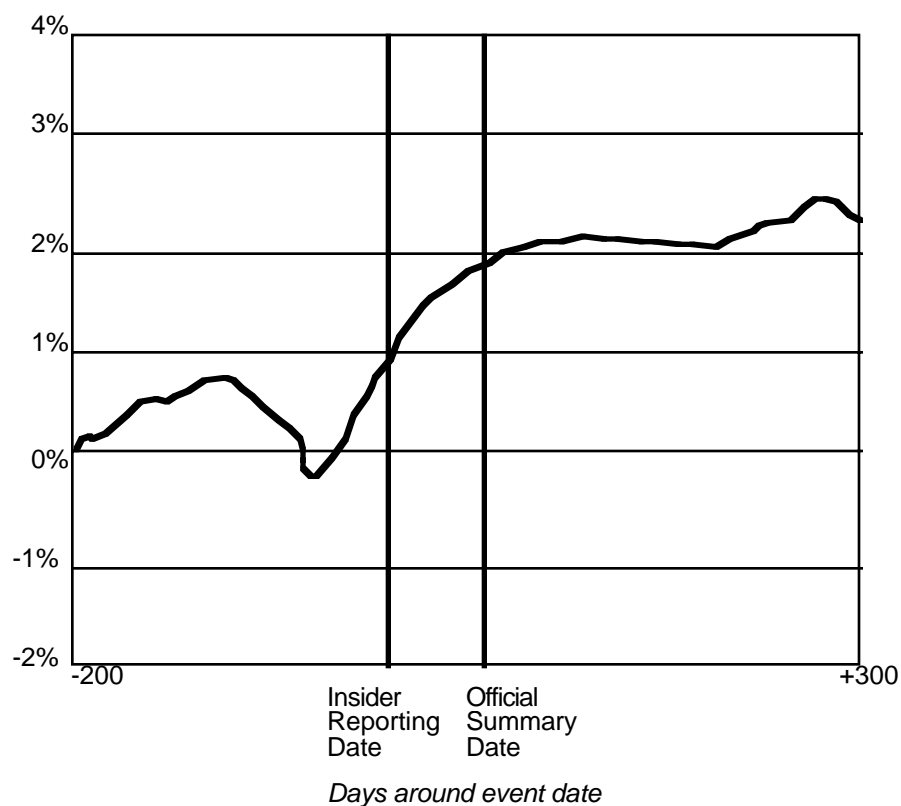
If insider trading offers advance warning, albeit a noisy one, of future price movements, can we as outside investors use this information to make better investment decisions? In other words, when looking for stocks to buy should we consider the magnitude of insider buying and selling on the stock? To answer this question, we first have to recognize that since the SEC does not require an immediate filing of insider trades, investors will find out about insider trading on a stock with a lag, of a few weeks or even a few months. In fact, until recently, it was difficult for an investor to access the public filings

² See Finnerty (1976), Seyhun (1986) and Rozeff and Zaman (1988)

on insider trading. As these filings have been put online in recent years, this information on insider trading has become available to more and more investors.

A study of insider trading examined excess returns around both the date the insiders report to the SEC and the date that information becomes available to investors in the official summary. Figure 10.5 presents the contrast between the two event studies.

Figure 10.5: Abnormal Returns around Reporting Day/ Official Summary Availability Day



Given the opportunity to buy on the date the insider reports to the SEC, investors could have marginal excess returns (of about 1%), but these returns diminish and become statistically insignificant, if investors are forced to wait until the official summary date. If you control for transactions costs, there are no excess returns associated with the use of insider trading information.³

Does this mean that insider trading information is useless? It may be so if we focus on total insider buying and selling but there may be value added if we can break down insider trading into more detail. Consider the following propositions:

- Not all insiders have equal access to information. Top managers and members of the board should be privy to much more important information and thus their trades

³ This is also the conclusion drawn by Seyhun (1986) and Rozeff and Zaman (1988).

should be more revealing. A study by Bettis, Vickrey and Vickery finds that investors who focus only on large trades made by top executives, rather than total insider trading may, in fact, be able to earn excess returns.

- As investment alternatives to trading on common stock have multiplied, insiders have also become more sophisticated about using these alternatives. As an outside investor, you may be able to add more value by tracking these alternative investments. For instance, Bettis, Bizjak and Lemmon find that insider trading in derivative securities (options specifically) to hedge their common stock positions increases immediately following price run-ups and prior to poor earnings announcements. In addition, they find that stock prices tend to go down after insiders take these hedging positions.

Illegal Insider Trading

None of the studies quoted above answer the question of whether insiders themselves make excess returns. The reporting process, as set up now by the SEC, is biased toward legal and less profitable trades, and away from illegal and more profitable trades. Though direct evidence cannot be easily offered for this proposition, insiders trading illegally on private information must make excess returns. To support this proposition, we can present three pieces of evidence.

- The first (and weakest) is anecdotal. When insiders are caught trading illegally, they almost invariably have made a killing on their investment. Clearly, some insiders made significant returns off their privileged positions. The reason that it has to be viewed as weak evidence, though, is because the SEC looks for large profits as one of the indicators of whether it will prosecute. In other words, an insider who trades illegally on information may be breaking the law but is less likely to be prosecuted for the act if he or she loses money.
- Almost all major news announcements made by firms are preceded by a price run-up (if it is good news) or a price drop (if it is bad news). Thus, you see that the stock price of a target firm starts drifts up before the actual takeover announcement, and that the stock price of a firm reporting disappointing earnings drops in the days prior to the earnings report. While this may indicate a very prescient market, it is much more likely that someone with access to the privileged information (either at the firm or the intermediaries helping the firm) is using the information to trade ahead of the news. In fact, the other indicator of insider trading is the surge in

- trading volume in both the stock itself and derivatives prior to big news announcements.⁴
- In addition to having access to information, insiders are often in a position to time the release of relevant information to financial markets. Knowing as they do that they are not allowed to trade ahead of this information, insiders often adjust information disclosure to make it less likely that they will be targeted by the SEC. One study⁵ find that insiders sell stock between 3 and 9 quarters before their firms report a break in consecutive earnings increases.⁶ They also find, for instance, that insider selling increases at growth firms prior to periods of declining earnings.

Using Insider Trading in Investment Decisions

As the information on insider trades has become more accessible, it has also become less useful. In addition, the spurt in the use of options in management compensation schemes has introduced a substantial amount of noise in the reporting system, since a large proportion of insider trades now are associated with managers exercising options and then selling a portion of their stock holding for liquidity and diversification reasons. For information on insider trading to pay off, you need to look beyond the total insider trading numbers at the insiders themselves, focusing on large trades by top managers at smaller, less followed firms. Even then, you should not expect miracles, since you are using publicly available information.

We believe that the real payoff comes from tracking illegal insider trading by looking at trading volume and bid-ask spreads. The relationship between trading volume and private information may provide an intuitive rationale for the use of some of the volume measures described in chapter 7 as technical indicators.

Tracking Insider Trading

Tracking what legal insiders are doing has become both easier and more timely. You can look at the filings made by companies on the SEC website (<http://www.sec.gov>). The insider trading information is available in forms 3, 4 and 144s. Many of the more popular financial web sites such as Yahoo! Finance report on recent insider transactions on individual companies. If you are willing to pay more, you can subscribe to services that consolidate the information and provide it to you.

⁴ It is for this reason that the SEC tracks trading volume. Sudden increases in volume often trigger investigations of insiders at firms.

⁵ See Ke, Huddart and Petroni (2002)

⁶ You generally face legal jeopardy when you sell in the quarter or two before the news announcement.

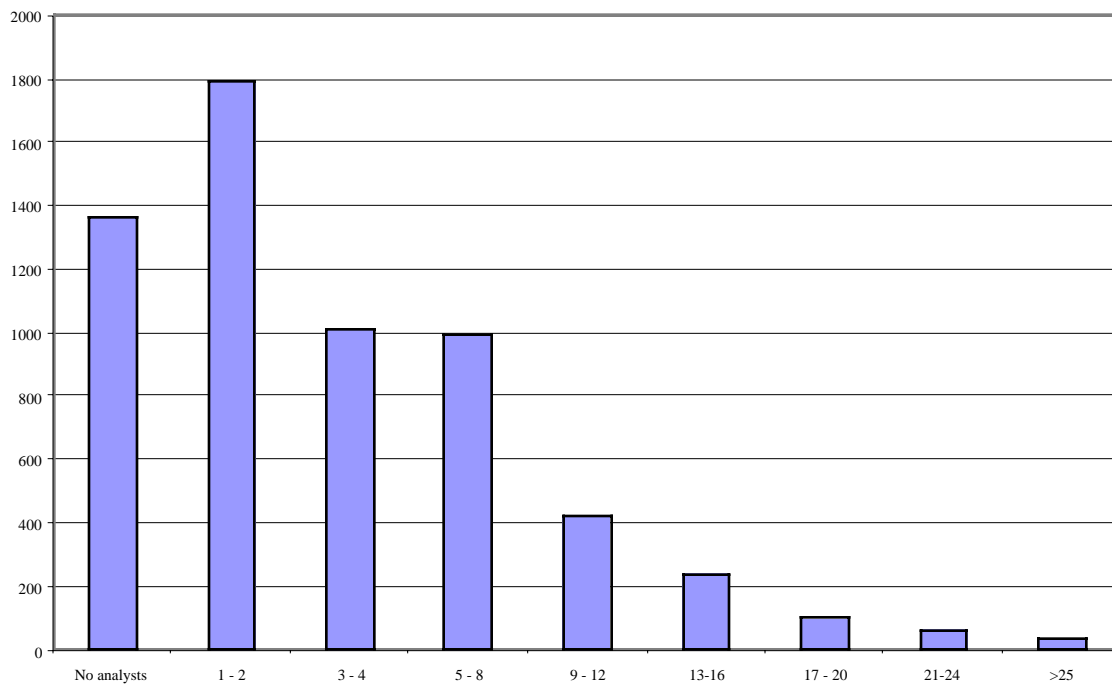
Analysts

Analysts clearly hold a privileged position in the market for information, operating at the nexus of private and public information. Using both types of information, analysts make earnings forecasts for the firms that they follow, and issue buy and sell recommendations to their clients, who trade on its basis. In this section, we will consider where there is valuable information in these forecasts and recommendations and whether incorporating them into investment decisions leads to higher returns.

Who do analysts follow?

The number of analysts tracking firms varies widely across firms. At one extreme are firms like GE, Cisco and Microsoft that are followed by dozens of analysts. At the other extreme, there are hundreds of firms that are not followed by any analysts. Figure 10.6 shows the divergence across firms in the United States, in terms of the number of analysts following them.

Figure 10.6 : Number of analysts estimating earnings per shar: U.S. firms in January 2001



Source: Value Line

Why are some firms more heavily followed than others? These seem to be some of the determinants:

- *Market Capitalization*: The larger the market capitalization of a firm, the more likely it is to be followed by analysts.
- *Institutional Holding*: The greater the percent of a firm's stock that is held by institutions, the more likely it is to be followed by analysts. The open question, though, is whether analysts follow institutions or whether institutions follow analysts. Given that institutional investors are the biggest clients of equity research analysts, the causality probably runs both ways.
- *Trading Volume*: Analysts are more likely to follow liquid stocks. Here again, though, it is worth noting that the presence of analysts and buy (or sell) recommendations on a stock may play a role in increasing trading volume.

Sell Side and Buy Side Analysts: A Primer

There are thousands of financial analysts who try to value stocks and most of them toil anonymously. The analysts who receive the most attention are the sell-side analysts who work for investment banks. Their research is primarily for external consumption and their roles are complex. They interact with the firms they research and sell their research to portfolio managers and individual investors. Buy side analysts, on the other hand, work for money management companies like Fidelity. Their research is intended primarily for internal consumption and is designed to help portfolio managers pick better stocks.

Why does it matter? Sell side equity research may have a higher profile than buy-side research but it is also buffeted by far more conflicts of interest and bias. The fact that the investment banks that churn out the research do not have to invest in the stocks that they recommend should give pause to individual investors who intend to follow these recommendations. In addition, sell side analysts have to spend substantially more time selling than buy side analysts do.

I. Earnings Forecasts

Analysts spend a considerable amount of time and resources forecasting earnings per share both for the next quarter and for the next financial year. Presumably, this is where their access to company management and private information should generate an advantage. Thus, when analysts revise their forecasts upwards or downwards, they convey information to financial markets and prices should react. In this section, we examine how markets react to analyst forecast revisions and whether there is potential for us as investors to take advantage of this reaction.

The Information in Analyst Forecasts

There is a simple reason to believe that analyst forecasts of growth should be better than using historical growth rates. Analysts, in addition to using historical data, can avail themselves of other information that may be useful in predicting future growth.

1. Firm-specific information that has been made public since the last earnings report: Analysts can use information that has come out about the firm since the last earnings report, to make predictions about future growth. This information can sometimes lead to significant re-evaluation of the firm's expected earnings and cash flows.

2. Macro-economic information that may impact future growth : The expected growth rates of all firms are affected by economic news on GNP growth, interest rates and inflation. Analysts can update their projections of future growth as new information comes out about the overall economy and about changes in fiscal and monetary policy. Information, for instance, that shows the economy growing at a faster rate than forecast will result in analysts increasing their estimates of expected growth for cyclical firms.

3. Information revealed by competitors on future prospects: Analysts can also condition their growth estimates for a firm on information revealed by competitors on pricing policy and future growth. For instance, a negative earnings report by one telecommunications firm can lead to a reassessment of earnings for other telecommunication firms.

4. Private information about the firm: Analysts sometimes have access to private information about the firms they follow which may be relevant in forecasting future growth. This avoids answering the delicate question of when private information becomes illegal inside information. There is no doubt, however, that good private information can lead to significantly better estimates of future growth. In an attempt to restrict this type of information leakage, the SEC issued new regulations preventing firms from selectively revealing information to a few analysts or investors. Outside the United States, however, firms routinely convey private information to analysts following them.

5. Public information other than earnings: Models for forecasting earnings that depend entirely upon past earnings data may ignore other publicly available information that is useful in forecasting future earnings. It has been shown, for instance, that other financial variables such as earnings retention, profit margins and asset turnover are useful in predicting future growth. Analysts can incorporate information from these variables into their forecasts.

*The Quality of Earnings Forecasts*⁷

If firms are followed by a large number of analysts and these analysts are indeed better informed than the rest of the market, the forecasts of growth that emerge from analysts should be better than estimates based upon either historical growth or other publicly available information. But is this presumption justified? Are analyst forecasts of growth superior to other estimates?

The general consensus from studies that have looked at short-term forecasts (one quarter ahead to four quarters ahead) of earnings is that analysts provide better forecasts of earnings than models that depend purely upon historical data. The mean relative absolute error, which measures the absolute difference between the actual earnings and the forecast for the next quarter, in percentage terms, is smaller for analyst forecasts than it is for forecasts based upon historical data. Two other studies shed further light on the value of analysts' forecasts. A study⁸ in 1978 examine the relative accuracy of forecasts in the *Earnings Forecaster*, a publication from Standard and Poors that summarizes forecasts of earnings from more than 50 investment firms. This study measured the squared forecast errors by month of the year and computed the ratio of analyst forecast error to the forecast error from time-series models of earnings. It found that the time series models actually outperform analyst forecasts from April until August, but underperform them from September through January. The authors of the study hypothesize that this is because there is more firm-specific information available to analysts during the latter part of the year. The other study by O'Brien (1988) compares consensus analyst forecasts from the Institutions Brokers Estimate System (I/B/E/S) with time series forecasts from one quarter ahead to four quarters ahead. The analyst forecasts outperform the time series model for one-quarter ahead and two-quarter ahead forecasts, do as well as the time series model for three-quarter ahead forecasts and do worse than the time series model for four-quarter ahead forecasts. Thus, the advantage gained by analysts from firm-specific information seems to deteriorate as the time horizon for forecasting is extended. Dreman and Berry examined analyst forecasts from 1974 to 1991 and found that in more than 55% of the forecasts examined, analyst estimates of earnings were off by more than ten percent from actual earnings.⁹ One

⁷ Sell side analysts work for brokerage houses and investment banks and their research is offered to clients of these firms as a service. In contrast, buy side analysts work for institutional investors and their research is generally proprietary.

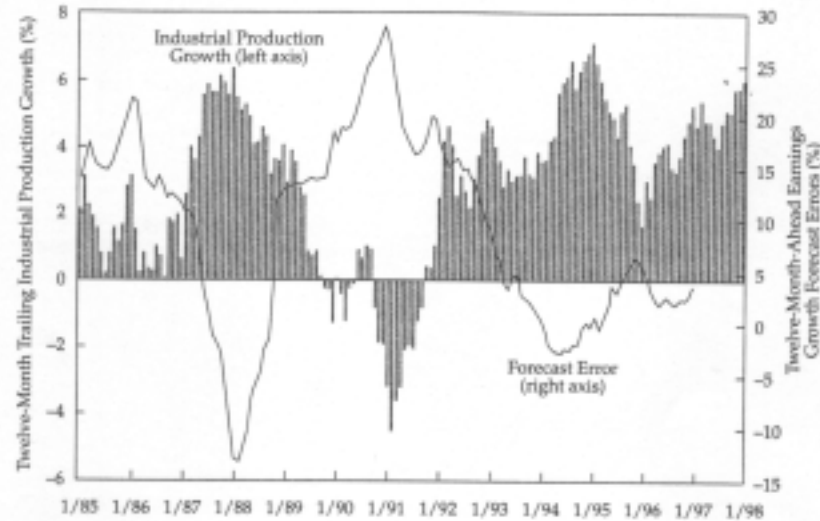
⁸ See Crichfield, Dyckman and Lakonishok (1978).

⁹ Dreman, D.N. and M. Berry, 1995, *Analyst Forecasting Errors and their Implications for Security Analysis*, *Financial Analysts Journal*, May/June, pg 30-41.

potential explanation given for this poor forecasting is that analysts are routinely over optimistic about future growth. A study in 1988 by Chopra finds that a great deal of this forecast error comes from the failure of analysts to consider large macroeconomic shifts. In other words, as figure 10.7 indicates, analysts tend to overestimate growth at the peak of a recovery and under estimate growth in the midst of a recession.¹⁰ Higgins (1998) compares analyst forecast errors across seven countries and suggests, not surprisingly, that analysts are more accurate and less biased in countries that mandate more financial disclosure.

¹⁰ Chopra, V.K., 1998, Why so much error in analyst forecasts?, *Financial Analysts Journal*, Nov-Dec, pg 35-42.

Figure 10.7: Earnings Forecast Errors and Economic Growth



There is little evidence to suggest that analysts provide superior forecasts of earnings when the forecasts are over three or five years. An early study by Cragg and Malkiel compared long-term forecasts by five investment management firms in 1962 and 1963 with actual growth over the following three years to conclude that analysts were poor long term forecasters. This view was contested in 1988 by Vander Weide and Carleton who found that the consensus prediction of five-year growth in the I/B/E/S was superior to historically oriented growth measures in predicting future growth.

There is an intuitive basis for arguing that analyst predictions of growth rates must be better than time-series or other historical-data based models simply because they use more information. The evidence indicates, however, that this superiority in forecasting is surprisingly small for long-term forecasts and that past growth rates play a significant role in determining analyst forecasts.

Market Reaction to Earnings Forecast Revisions

In chapter 7, we considered the price momentum strategies where investors buy stocks that have gone up the most in recent periods, expecting the momentum to carry forward into future periods. You could construct similar strategies based upon earnings momentum. While some of these strategies are based purely upon earnings growth rates, most of them are based upon how earnings measure up to analyst expectations. In fact, one strategy is to buy stocks where analysts are revising earnings forecasts upwards, and hope that stock prices follow these earnings revisions. A number of studies in the United States seem to conclude that it is possible to use forecast revisions made by analysts to earn excess returns. In one of the earliest studies of this phenomenon, Givoly and Lakonishok created

portfolios of 49 stocks in three sectors, based upon earnings revisions, and reported earning an excess return on 4.7% over the following four months on the stocks with the most positive revisions. Hawkins, in 1983, reported that a portfolio of stocks with the 20 largest upward revisions in earnings on the I/B/E/S database would have earned an annualized return of 14% as opposed to the index return of only 7%. In another study, Cooper, Day and Lewis report that much of the excess returns is concentrated in the weeks around the revision – 1.27% in the week before the forecast revision, and 1.12% in the week after, and that analysts that they categorize as leaders (based upon timeliness, impact and accuracy) have a much greater impact on both trading volume and prices. In 2001, Capstaff, Paudyal and Rees expanded the research to look at earnings forecasts in other countries and concluded that you could have earned excess returns of 4.7% in the U.K, 2% in France and 3.3% in Germany from buying stocks with the most positive revisions.

Potential Pitfalls

The limitation of an earnings momentum strategy is its dependence on two of the weakest links in financial markets –earnings reports that come from firms and analyst forecasts of these earnings. In recent years, we have become increasingly aware not only that of the capacity of firms to manage their earnings but also to manipulate them using questionable accounting ploys. At the same time, we have discovered that analysts' forecasts are biased not only by their closeness to the firm they follow but also because of their investment banking relationships.

Even if the excess returns persist, you also need to consider why they might exist in the first place. To the extent that analysts influence trades made by their clients, they are likely to affect prices when they revise earnings. The more influential they are, the greater the effect they will have on prices, but the question is whether the effect is lasting. One way you may be able to earn higher returns from this strategy is to identify key analysts and build an investment strategy around forecast revisions made by them, rather than looking at consensus estimates made by all analysts.

Finally, you should recognize that it is a short-term strategy that yields fairly small excess returns over investment horizons ranging from a few weeks to a few months. The increasing skepticism of markets towards both earnings reports from firms and forecasts by analysts bodes ill for these strategies. While forecast revisions and earnings surprises by themselves are unlikely to generate lucrative portfolios, they can augment other more long-term screening strategies. One way you may be able to earn higher returns from this strategy is to identify key analysts who are both independent and influential and build an

investment strategy around forecast revisions made by them, rather than looking at consensus estimates made by all analysts.

II. Analyst Recommendations

The centerpiece of analyst reports are the recommendations that they make on stocks. You would expect stock prices to react to analyst recommendations, when they are made, if for no other reason than for the fact that some investors follow these recommendations. In this section, we consider some key empirical facts about analyst recommendations first and then consider how markets react to them. We close with an analysis of whether investors who use these recommendations to make investment decisions can make money off them in the short and the long term.

The Recommendation Game

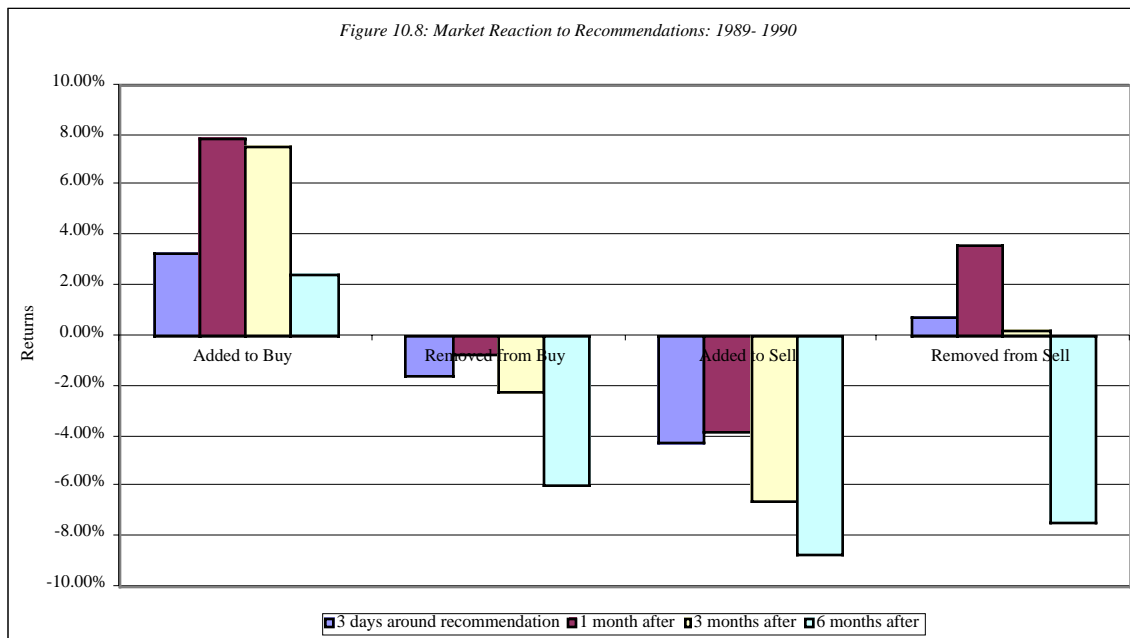
There are three empirical facts that need to be laid on the table about recommendations before we start examining how markets react to them.

- If we categorize analyst recommendations into buy, sell and hold, the overwhelming number are buy recommendations. In 2001, for instance, buy recommendations outnumbered sell recommendations 7 to 1, but that was actually a drop from the late 1990s, where sell recommendations were often outnumbered by more than 25 to 1.
- Part of the reason for this imbalance between buy and sell recommendations is that analysts often have many more layers beyond buy, sell and hold. Some investment banks, for instance, have numerical rating systems for stocks where stock are classified from 1 to 5 (as is the case with Value Line) whereas others break buy and sell recommendations into sub classes (strong buy, weak buy). What this allows them to do is not only rate stocks more finely, but also to send sell signals without ever saying the word. Thus, an analyst downgrading a stock from a strong buy to a weak buy is sending a sell signal on the stock.
- As with earnings forecasts, there is herd behavior when it comes to recommendations. Thus, when one analyst upgrades a stock from a weak buy to a strong buy, there tends to be a rush of other analyst upgrades in the following days.

The Market Reaction to Recommendations

How do markets react to recommendations made by analysts? A study by Womack examined the stock price response to buy and sell recommendations on the day of the recommendation and in the weeks following. While both buy and sell recommendations affect stock prices, sell recommendations affect prices much more than buy recommendation. This should not be surprising when you remember that buy

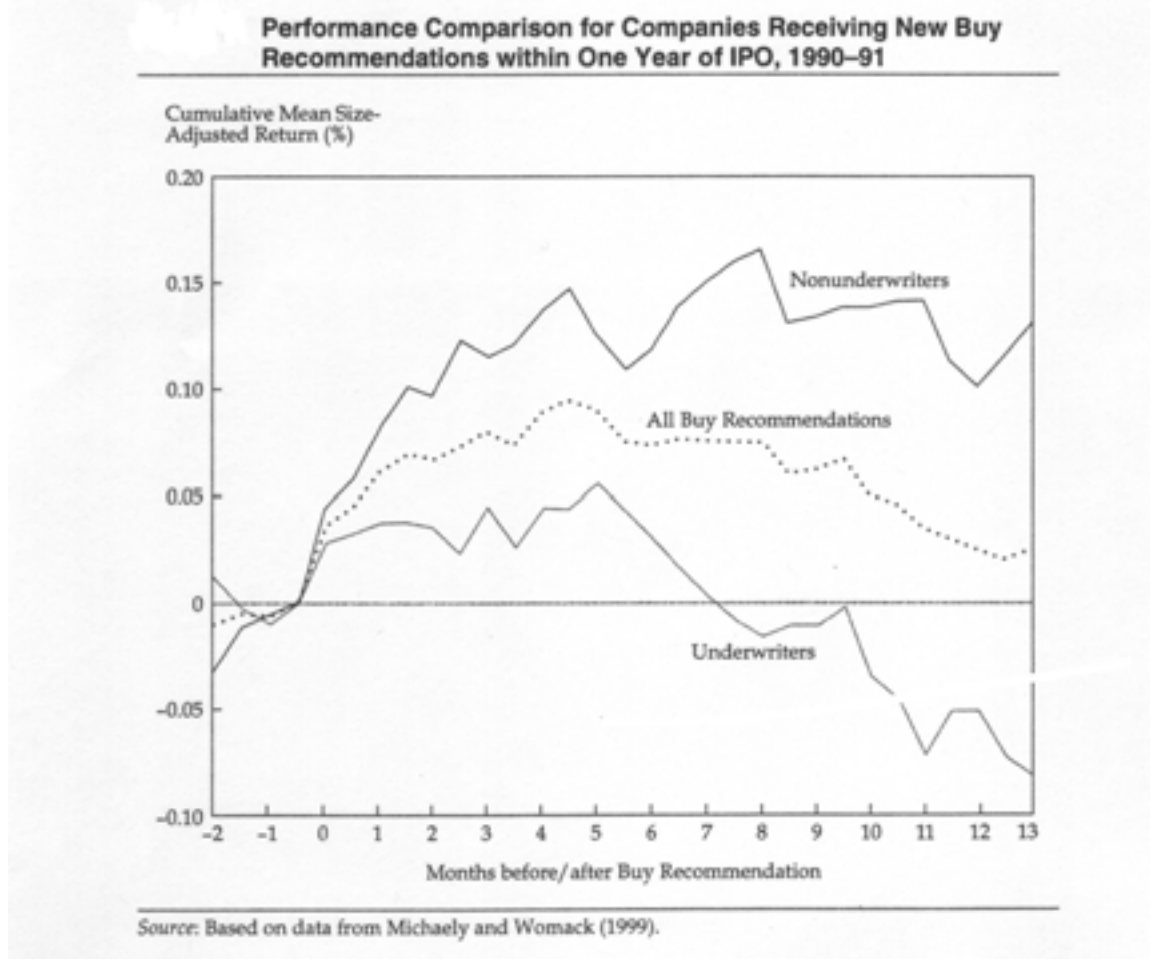
recommendations vastly outnumber sell recommendations. Interestingly, this study also documents that the price effect of buy recommendations tends to be immediate and there is no evidence of price drifts after the announcement, whereas prices continue to trend down after sell recommendations. Figure 10.8 graphs his findings. Stock prices increase by about 3% on buy recommendations whereas they drop by about 4% on sell recommendations at the time of the recommendations (3 days around reports). In the six months following, prices decline an additional 5% for sell recommendations, while leveling off for buy recommendations.



Source: Womack

One of the key issues that equity research analysts were confronted with in the aftermath of the bursting of the dot-com bubble is the extent to which recommendations were perceived to be driven not by views on the stock itself but as cheerleading for investment banking business done by the firms followed by the analysts. Michaely and Womack test this proposition¹¹ by looking at the stock price performance of buy recommendations after initial public offerings and comparing recommendations made by analysts who work for the underwriters on these offerings and recommendations from analysts who do not. Their findings are summarized in figure 10.9:

¹¹ Michaely, R. and K.L. Womack, Conflicts of Interests and the Credibility of Underwriter Analysts Recommendation, *Review of Financial Studies*, Winter, 635-686.



Note that stock prices for recommendations made by non-underwriters do significantly better than the market, but the stocks recommended by underwriters (in those stocks) tend to do poorly. While this may seem obvious, many investors in the late nineties deliberately overlooked the connections between analysts and the firms that they analyzed and paid a significant price for it.¹²

Potential and Perils of Analyst Recommendations

Can you make money off analyst recommendations? The answer seems to be yes, at least in the short term. Even if there were no new information contained in

¹² In June 2002, Merrill Lynch agreed to pay \$ 100 million to settle with New York State, after the state uncovered emails sent by Henry Blodgett, Merrill's well know internet analyst, that seemed to disparage stocks internally as he was recommending them to outside clients. The fact that many of these stocks were being taken to the market by Merrill added fuel to the fire. Merrill agreed to make public any potential conflicts of interest it may have on the firms followed by its equity research analysts.

recommendations, there is the self-fulfilling prophecy created by clients who trade on these recommendations, pushing up stock prices after buy recommendations and pushing them down after sell recommendations.¹³ If this is the only reason for the stock price reaction, though, the returns are not only likely to be small but could very quickly dissipate, leaving you with large transactions costs and little to show for them.

To incorporate analyst recommendations into an investment strategy, you need to adopt a more nuanced approach. You should begin by identifying the analysts who are not only the most influential but also have the most content (private information) in their recommendations. In addition, you may want to screen out analysts where the potential conflicts of interest may be too large for the recommendations to be unbiased. You should invest based upon their recommendations, preferably at the time the recommendations are made.¹⁴ Assuming that you still attach credence to the views of the recommending analysts, you should watch the analysts for signals that they have changed or are changing their minds. Since these signals are often subtle, you can easily miss them.

Finding the best analysts

How does one go about finding the best analysts following a stock? Do not fall for the hype. The highest profile analysts are not always the best and some analysts are notorious for self promotion. The best sources of information on analysts tend to be outside services without an axe to grind. The Wall Street Journal has a special section on sell-side equity research analysts, where it evaluates analysts on the quality of their recommendations and ranks them on that basis. There are a few online services that track equity research forecasts and recommendations and report on how close actual earnings numbers were to their forecasts.

There are qualitative factors to consider as well. Analysts who have clear, well thought out analyses that show a deep understanding of the businesses that they analyze should be given more weight than analysts who make spectacular recommendations based upon facile analysis. Most importantly, good analysts should just as willing to stand up to the management of companies and disagree with them (and issue sell recommendations).

¹³ This can be a significant factor. When the Wall Street Journal publishes its Dartboard column, it reports on the stocks being recommended by the analysts its picks. These stocks increase in price by about 4% in the two days after they are picked but reverse themselves in the weeks that follow.

¹⁴ This might not be your choice to make since analysts reveal their recommendations first to their clients. If you are not a client, you will often learn about the recommendation only after the clients have been given a chance to take positions on the stock.

Trading on Public Information

Most of us do not have access to private information about firms, but we all share access to public information about a firm. Some of this public information takes the form of periodic earnings reports and dividend announcements, made four times every year by most firms in the United States and less frequently elsewhere, and some of it is news made by the firm when it announces that it is taking over another firm (or being taken over) or making a major investment or divestiture. In some cases, the information comes from a regulatory authority governing the firm's fortunes, as is the case when the FDA announces that it has approved (or not approved) a drug for treatment. In each of these cases, we would expect the stock price to react to the news contained in the announcement. If the market reaction is appropriate, there is little that we can do to make money off the news, but if the market reaction is not, we may be able to exploit it with specific trading strategies.

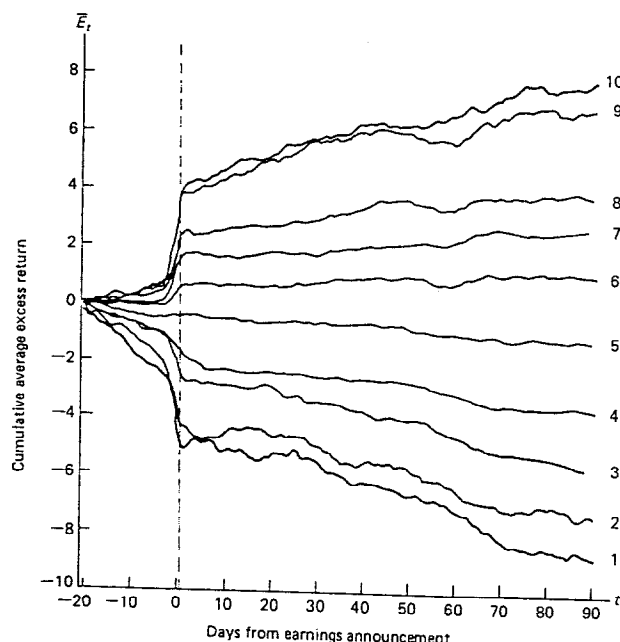
Earnings Announcements

When firms make earnings announcements, they convey information to financial markets about their current and future prospects. The magnitude of the information, and the size of the market reaction, should depend upon how much the earnings report exceeds or falls short of investor expectations. In an efficient market, there should be an instantaneous reaction to the earnings report, if it contains surprising information, and prices should increase following positive surprises and down following negative surprises.

Earnings Surprises and Price Reaction

Since actual earnings are compared to investor expectations, one of the key parts of an earnings event study is the measurement of these expectations. Some of the earlier studies used earnings from the same quarter in the prior year as a measure of expected earnings, i.e., firms that report increases in quarter-to-quarter earnings provide positive surprises and those that report decreases in quarter-to-quarter earnings provide negative surprises. In more recent studies, analyst estimates of earnings have been used as a proxy for expected earnings, and compared to the actual earnings. Figure 10.10 provides a graph of price reactions to earnings surprises, classified on the basis of magnitude into different classes from 'most negative' earnings reports (Group 1) to 'most positive' earnings reports (Group 10).

Figure 10.10: Price Reaction to Quarterly Earnings Report



The evidence contained in this graph is consistent with the evidence in most earnings announcement studies -

- (a) The earnings announcement clearly conveys valuable information to financial markets; there are positive excess returns (cumulative abnormal returns) after positive announcements and negative excess returns around negative announcements.
- (b) There is some evidence of a market reaction in the days immediately prior to the earnings announcement which is consistent with the nature of the announcement, i.e., prices tend to go up on the days before positive announcements and down in the days before negative announcements. This can be viewed either as evidence of insider trading, information leakage or as a consequence of getting the announcement date wrong¹⁵.
- (c) There is some evidence, albeit weak, of a price drift in the days following an earnings announcement. Thus, a positive report evokes a positive market reaction on the announcement date, and there are mildly positive excess returns in the days and

¹⁵ The Wall Street Journal or COMPUSTAT are often used as information sources to extract announcement dates for earnings. For some firms, news of the announcement may actually cross the news wire the day before the Wall Street Journal announcement, leading to a misidentification of the report date and the drift in returns the day before the announcement.

weeks following the earnings announcement. Similar conclusions emerge for negative earnings reports.

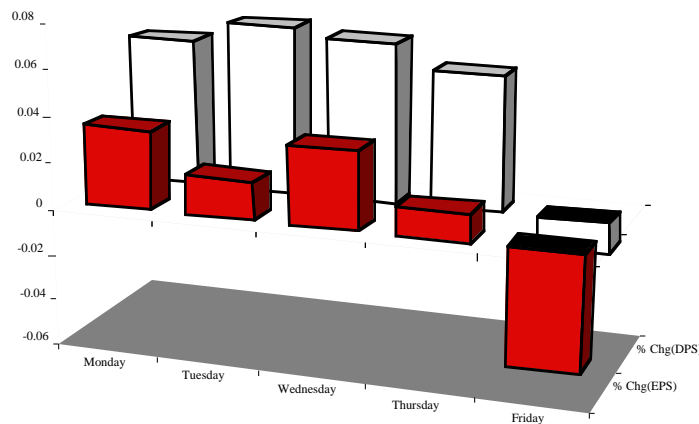
While the study quoted above looked at all earnings announcements, there are studies that indicate that the returns associated with earnings surprises are more pronounced with some types of stocks than with others. For instance,

- A study of value and growth stocks found, instance, that the returns in the three days around earnings announcements were much more positive for value stocks (defined as low PE and PBV stocks) than for growth stocks across all earnings announcements – positive as well as negative. This suggests that you are much more likely to get a positive surprise with a value stock than with a growth stock, indicating perhaps that markets tend to be overly optimistic in their expectations for growth companies.
- Earnings announcements made by smaller firms seem to have a larger impact on stock prices on the announcement date and prices are more likely to drift after the announcement.

Earnings Delays and Price Reaction

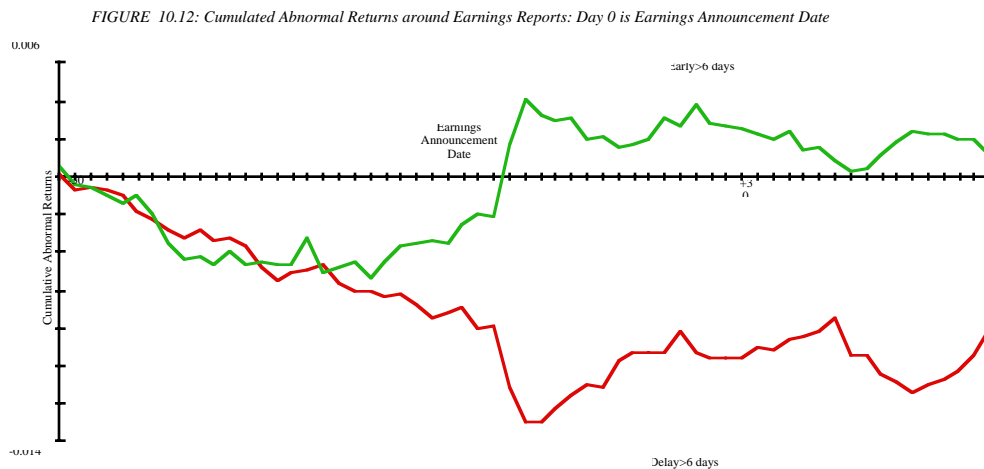
The management of a firm has some discretion on the timing of earnings reports and there is some evidence that the timing affects expected returns. A study of earnings reports, classified by the day of the week that the earnings are reported, reveals that earnings and dividend reports on Fridays are much more likely to contain negative information than announcements on any other day of the week. This is shown in figure 10.11.

Figure 10.11: Earnings and Dividend Reports by Day of the Week



Announcements made on Friday are more likely to contain bad news – earnings drops and dividend cuts - than announcements on any other day of the week, and a significant number of these announcements come out after close of trading on Friday. This may provide an interesting link to the weekend effect described in chapter 7.

There is also some evidence that earnings announcements that are delayed, relative to the expected announcement date,¹⁶ are much more likely to contain bad news than earnings announcements which are early or on time. This is graphed in Figure 10.12.



Earnings announcements that are more than six days late, relative to the expected announcement date, are much more likely to contain bad news and evoke negative market reactions than earnings announcements that are on time or early. It may be worth the while of investors who build their investment strategy around earnings announcements to keep track of expected earnings announcement dates.

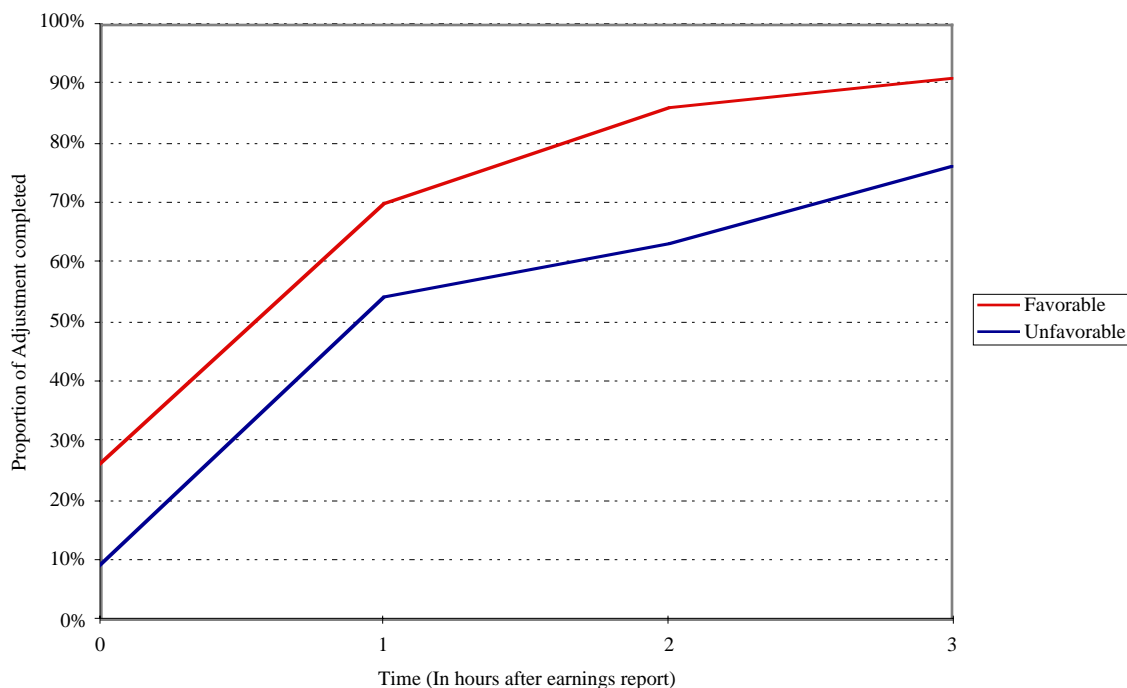
Intraday Price Reaction

Studies have examined the speed with which prices react to earnings announcements in the same day. There, the evidence is mixed. Woodruff and Senchack examined price adjustment by transaction after favorable (surprise > 20%) and unfavorable (surprise < -20%)

¹⁶ Firms in the United States tend to be consistent about the date each year that they reveal their quarterly earnings. The delay is computed relative to this expected date.

earnings reports, and reported the proportion of the eventual adjustment that has occurred by the hour after the earnings report for each category.

Figure 10.13 : Price Adjustment by Hour after Earnings Report



Source: Woodruff and Senchack

As Figure 10.13 illustrates, approximately 91% of the eventual adjustment occurs within three hours of the report for the most positive earnings surprises, while only 76% of the eventual adjustment occurs during the same period for the most negative earnings announcements. This would seem to indicate that markets are much more efficient about assessing good news than bad news. If nothing else, this also illustrates the importance of trading promptly after an earnings announcement. Investors who wait to read about the announcement the next day or even later in the day will find that the bulk of the adjustment has occurred by the time they trade.

Earnings Quality

In recent years, the strategy of investing on earnings surprises has come under some pressure because firms have learnt to play the earnings game. In fact, some firms like Microsoft, Intel and Cisco developed a reputation during the 1990s of being able to consistently beat analyst expectations. While they were rewarded with higher valuations, markets also began building into expectations the capacity of these firms to beat expectations. The earnings reported by these firms were compared not to analyst forecasts

but to whispered earnings that were usually set higher than analyst forecasts, based upon past experience. Thus, Intel could report earnings per share of 57 cents, higher than the analyst forecast of 55 cents, but still see its stock price drop because the whispered earnings estimate for the firm was 58 cents.

As firms play the earnings game, the quality of earnings has also diverged across companies. A firm that beats earnings estimates because it has more efficient operating should be viewed more favorably than one that beats estimates because it changed the way it valued inventory. Does the market distinguish appropriately between the two? The evidence seems to indicate that it does not, at least on the date of the announcement, but that it eventually corrects for poor quality earnings. In a study of this phenomenon in 2001, Chan, Chan, Jegadeesh and Lakonishok examined firms that reported high accruals – i.e. the difference between accounting earnings and cash flows and argued that firms report high earnings without a matching increase in cashflow have poorer quality earnings. When they tracked a portfolio composed of these firms, they discovered that the high accrual year was usually the turning point in the fortunes of this firm, with subsequent years bring declining earnings and negative stock returns.

Can you make money off earnings announcements?

Financial markets get much of their firm-specific information from earnings announcements, and there are collectively thousands of earnings announcements each year. There are some portfolio managers whose investment strategies are based primarily or largely upon trading on or after these announcements. One strategy is to buy stocks that report large positive earnings surprises, hoping to benefit from the drift. The evidence indicates that across all stocks, the potential for excess returns from buying after earnings announcements is very small and may very well be non-existent after transactions costs.

How would you refine this strategy to harvest higher returns? You could draw on the empirical evidence and concentrate only on earnings announcements made by smaller, less liquid companies where the drift is more pronounced. In addition, you can try to direct your money towards companies with higher quality earnings surprises by avoiding firms with large accruals (i.e. , firms that report increasing earnings and decreasing cashflows).

Your potential for large returns is greatest if you can forecast which firms are most likely to report large positive earnings surprises and invest in those firms prior to their earnings announcements. Impossible, without insider information, you say. Not quite. You may be able to use a combination of quantitative techniques (time series models that forecast next quarter's earnings based upon historical earnings) and trading volume (insiders do

create blips in the volume) to try to detect these firms. Even if you are right only 55% of the time, you should be able to post high excess returns.

Buy on the rumor, sell on the news

While Wall Street adages should always be taken with a grain of salt, they usually have a kernel of truth to them. This particular one on rumor and news has particular relevance when we look at how prices run up before the news announcement and how little is left on the table after the announcement. An investor who has access to high quality gossip (if that is not an oxymoron) may be able to buy stocks before good news comes out and sell before bad news. But high quality gossip is difficult to come by, especially on Wall Street, where there a dozen false news stories that circulate for every true one.

Acquisitions

The announcements that usually carry the most significance for value are acquisition announcements, simply because of the scale of acquisitions, relative to other investments. Acquisitions are important not only because they affect values substantially but also because they occur often enough in the market to provide the basis for an investment strategy. In this section, we will begin with an analysis of how the announcement of an acquisition affects the market price of the target and acquiring firm on the day of the acquisition, follow up by looking at the post-acquisition performance (operating and stock price) of the acquiring firm and conclude with the question of whether there is anything in this process that can be exploited by an investor for gain.

The Acquisition Date

The big price movements associated with acquisitions occur around the date the acquisition is announced and not when it is actually consummated, though the latter may occur several months later. While much of the attention in acquisitions is focused on the target firms, we will argue that what happens to the acquiring firm is just as interesting, if not more.

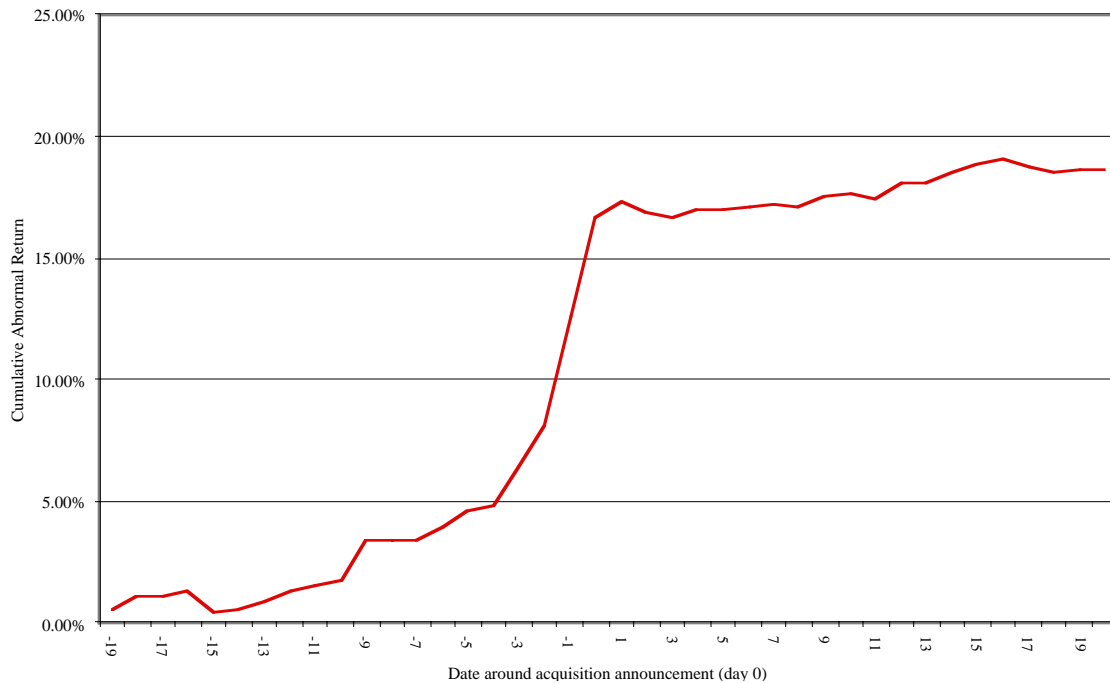
Target Firms

The evidence indicates that the stockholders of target firms are the clear winners in takeovers — they earn significant excess returns¹⁷ not only around the announcement of the acquisitions, but also in the weeks leading up to it. In 1983, Jensen and Ruback reviewed 13 studies that look at returns around takeover announcements and reported an average excess

¹⁷ The excess returns around takeover announcements to target firms are so large that using different risk and return models seems to have no effect on the overall conclusions.

return of 30% to target stockholders in successful tender offers and 20% to target stockholders in successful mergers. In 1988, Jarrell, Brickley, and Netter examined the results of 663 tender offers made between 1962 and 1985 and noted that premiums averaged 19% in the 1960s, 35% in the 1970s and 30% between 1980 and 1985. The price behavior of a typical target firm in an acquisition is illustrated in figure 10.14, from one of the studies,¹⁸ summarizes the target firm stock price in the 10 days before, the day of and the 10 days after an acquisition announcement.

Figure 10.14: Cumulative Excess Return to Target Company Stock

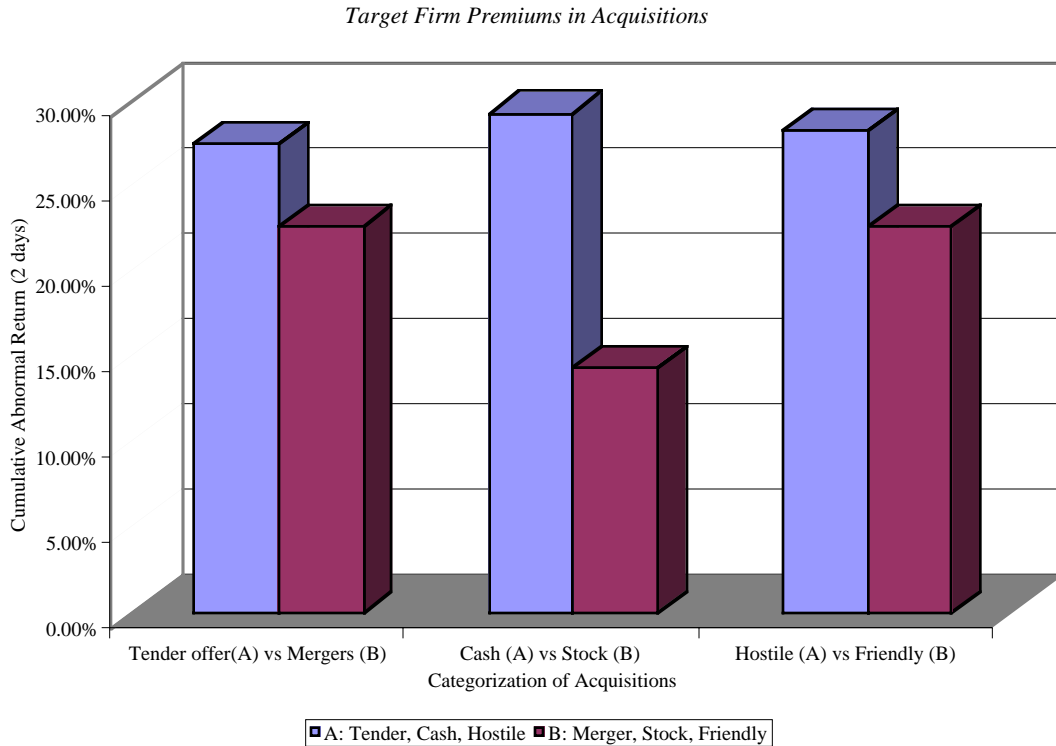


Note that about half the premium associated with the acquisition is already incorporated in the price by the time the acquisition is announced. This suggests that information about acquisitions is leaked to some investors who trade on that information. On the acquisition date, there is a decided jump in the stock price but little evidence of drift thereafter.

If we categorize acquisitions based upon how the acquiring firm pays for them, we find that the stock prices of target firms tend to do much better on the announcement of cash-based acquisitions (where the acquirer uses cash only to pay for the acquired company's stock) than stock based acquisitions. We also find that the premiums in hostile

¹⁸ See Dennis and McConnell, 1986, Corporate Mergers and Security Returns, Journal of Financial Economics, v16, 143-188.

acquisitions are larger than the premiums on friendly mergers and that the premium on tender offers is slightly higher than the premium on mergers. Figure 10.15, extracted from one study¹⁹, provides an illustration of the magnitude of the differences:



Source: Huang and Walkling

Some attempts at takeovers fail, either because the bidding firm withdraws the offer or because the target firm fights it off. Bradley, Desai, and Kim(1983) analyzed the effects of takeover failures on target firm stockholders and found that, while the initial reaction to the announcement of the failure is negative, albeit statistically insignificant, a substantial number of target firms are taken over within 60 days of the first takeover is failing, earning significant excess returns (50% to 66%).

Bidding Firms

The effect of takeover announcements on bidder firm stock prices is not as clear cut as it is for target firms. Jensen and Ruback report excess returns of 4% for bidding firm stockholders around tender offers and no excess returns around mergers. Jarrell, Brickley and Netter, in their examination of tender offers from 1962 to 1985, note a decline in excess

¹⁹ See Huang and Walkling (1987), "Acquisition Announcements and Abnormal Returns". *Journal of Financial Economic*, v19, 329-350.

returns to bidding firm stockholders from 4.4% in the 1960s to 2% in the 1970s to -1% in the 1980s. Other studies indicate that approximately half of all bidding firms earn negative excess returns around the announcement of takeovers, suggesting that shareholders are skeptical about the perceived value of the takeover in a significant number of cases.

When an attempt at a takeover fails, Bradley, Desai and Kim (1983) report negative excess returns of 5% to bidding firm stockholders around the announcement of the failure. When the existence of a rival bidder is figured in, the studies indicate significant negative excess returns (of approximately 8%) for bidder firm stockholders who lose out to a rival bidder within 180 trading days of the announcement, and no excess returns when no rival bidder exists.

Considering the evidence, it is quite clear that bidding firm stockholders often do not share the enthusiasm that managers in these firms have about mergers and acquisitions. While managers would argue that this is because they are not privy to the information that is available only to insiders, we will see in the next section that many mergers fail and that stockholders are perhaps more prescient than managers.

After the Acquisition

Many studies examine the extent to which mergers and acquisitions succeed or fail after the firms combine. These studies generally conclude that mergers often fail to deliver on their promises of efficiency and synergy, and even those that do deliver seldom create value for the acquirers' stockholders.

McKinsey and Co. examined 58 acquisition programs between 1972 and 1983 for evidence on two questions: (1) Did the return on the amount invested in the acquisitions exceed the cost of capital? (2) Did the acquisitions help the parent companies outperform the competition? They concluded that 28 of the 58 programs failed both tests, and six failed at least one test. In a follow-up study²⁰ of 115 mergers in the U.K. and the U.S. in the 1990s, McKinsey concluded that 60% of the transactions earned returns on capital less than the cost of capital, and that only 23% earned excess returns. In 1999, KPMG examined 700 of the most expensive deals between 1996 and 1998 and concluded that only 17% created value for the combined firm, 30% were value neutral and 53% destroyed value²¹.

²⁰ This study was referenced in an article titled "Merger Mayhem" that appeared in Barrons on April 20, 1998.

²¹ KPMG measured the success at creating value by comparing the post-deal stock price performance of the combined firm to the performance of the relevant industry segment for a year after the deal was completed.

A study²² looked at the eight largest bank mergers in 1995 and concluded that only two (Chase/Chemical, First Chicago/NBD) subsequently outperformed the bank-stock index. The largest, Wells Fargo's acquisition of First Interstate, was a significant failure. In an incisive book on the topic in 1996 titled "The Synergy Trap", Sirower took a detailed look at the promises and failures of synergy and drew the gloomy conclusion that synergy is often promised but seldom delivered.

The most damaging piece of evidence on the outcome of acquisitions is the large number of acquisitions that are reversed within fairly short time periods. Mitchell and Lehn note that 20.2% of the acquisitions made between 1982 and 1986 were divested by 1988. In a study published in 1992, Kaplan and Weisbach found that 44% of the mergers they studied were reversed, largely because the acquirer paid too much or because the operations of the two firms did not mesh. Studies that have tracked acquisitions for longer time periods (ten years or more) have found the divestiture rate of acquisitions rises to almost 50%, suggesting that few firms enjoy the promised benefits from acquisitions do not occur. In another study,

Takeover-based Investment Strategies

There are three broad classes of investment strategies that can be constructed around takeovers. The first and most lucrative, if you can pull it off, is to find a way to invest in a target firm before the acquisition is announced. The second is to wait until after the takeover is announced and then try to take advantage of the price drift between the announcement date and the day the deal is consummated. This is often called risk arbitrage and we will take a closer look at it in the next chapter. The third is also a post-announcement strategy, but it is a long-term strategy where you invest in firms that you believe have the pieces in place to deliver the promised synergy or value creation.

Pre-announcement Investing

Looking at the stock price reaction of target firms both immediately prior to and immediately after the acquisition announcement, it is quite clear that the real money to be made in acquisitions comes from investing in firms before they become targets rather than after. Absent inside information, is this doable? There may be a way, and the answer lies in looking at firms that typically become target firms.

²² This study was done by Keefe, Bruyette and Woods, an investment bank. It was referenced in an article titled "Merger Mayhem" in Barrons, April 20, 1998.

Research²³ indicates that the typical target firm in a hostile takeover has the following characteristics:

(1) It has under performed other stocks in its industry and the overall market, in terms of returns to its stockholders in the years preceding the takeover.

(2) It has been less profitable than firms in its industry in the years preceding the takeover.

(3) It has a much lower stock holding by insiders than do firms in its peer groups.

Other studies also provide tantalizing clues about typical target firms. Lang, Walkling and Stulz find, for instance, that stocks that trade at low market values, relative to their replacement costs (a low Tobin's Q) are much more likely to be taken over than firms that trade at high market values. The odds of being taken over also increase if the firm has a smaller market capitalization, does not have shares with different voting classes and anti-takeover amendments on its books.

There are two ways in which we can use the findings of these studies to identify potential target firms. The first is to develop a set of screens that incorporate the variables mentioned above. You could, for instance, invest in firms with market capitalizations below \$ 5 billion, with low insider holdings, depressed valuations (low price to book ratios) and low returns on equity. The second and slightly more sophisticated variant is to estimate the probability of being taken over for every firm in the market using statistical techniques.²⁴

Post-announcement Investing

In this strategy, you buy companies after acquisitions or mergers are completed because you believe that they will be able to deliver what they promise at the time of the merger – higher earnings growth and synergy. As we noted in the earlier section on synergy, it shows up in relatively few mergers. Can we identify those mergers that are most likely to succeed and invest only in those? Again, the clues may lie in history.

Some studies find improvements in operating efficiency after mergers, especially hostile ones²⁵. In a study in 1992, Healy, Palepu, and Ruback found that the median post-

²³ This research was also referenced in chapter 8. A paper by Bhidé examines hostile takeovers and their aftermath.

²⁴ A probit, for instance, resembles a regression but estimates probabilities based upon specified independent variables. In this case, you could run a probit across firms in the market using the variables identified by earlier studies – low ROE, poor stock returns and low market cap – as independent variables. You will get as output the probability of being taken over for each firm in the market. You could follow up by constructing a portfolio of stocks where this probability is highest.

²⁵ A study by Healy, Palepu and Ruback (1989) looked at the post-merger performance of 50 large mergers

acquisition cash flow returns improve for firms involved in mergers, though 25% of merged firms lag industry averages after transactions. In 1999, Parrino and Harris examined 197 transactions between 1982 and 1987 and categorized the firms based upon whether the management is replaced (123 firms) at the time of the transaction, and the motive for the transaction. They find that

- On average, in the five years after the transaction, merged firms earned 2.1% more than the industry average.
- Almost all this excess return occurred in cases where the CEO of the target firm is replaced within one year of the merger. These firms earned 3.1% more than the industry average, whereas firms, whereas when the CEO of the target firm continued in place the merged firm did not do better than the industry

In addition, a few studies examine whether acquiring related businesses (i.e., synergy-driven acquisitions) provides better returns than acquiring unrelated business (i.e., conglomerate mergers) and come to conflicting conclusions with no consensus.²⁶ Nail and Megginson examined 260 stock swap transactions and categorized the mergers as either a conglomerate or a ‘same-industry’ transactions. They found no evidence of wealth benefits for either stockholders or bondholders in conglomerate transactions. However, they did find significant net gains for both stockholders and bondholders in the case of mergers of related firms.

Finally, on the issue of synergy, the KPMG study of the 700 largest deals from 1996 to 1998 concludes the following:

- Firms that evaluate synergy carefully before an acquisition are 28% more likely to succeed than firms that do not.
- Cost-saving synergies associated with reducing the number of employees are more likely to be accomplished than new product development or R&D synergies. For instance, only a quarter to a third of firms succeeded on the latter, whereas 66% of firms were able to reduce headcount after mergers.

Considering all the contradictory evidence contained in different studies²⁷, we conclude that:

from 1979 to 1983 and concluded that merged firms improved their operating performance (defined as EBITDA/Sales) relative to their industries.

²⁶ Michel and Shaked (1984) and Duofsky and Varadarajan (1987) find that diversification-driven mergers do better than synergy-driven mergers, in terms of risk-adjusted returns. Varadarajan and Ramanujam (1987) find that the latter do better in terms of return on equity.

²⁷ Some of this evidence is anecdotal and is based upon the study of just a few mergers.

- Mergers of equals (firms of equal size) seem to have a lower probability of succeeding than acquisitions of a smaller firm by a much larger firm²⁸.
- Cost saving mergers, where the cost savings are concrete and immediate, seem to have a better chance of delivering on synergy than mergers based upon growth synergy.
- Acquisition programs that focus on buying small private businesses for consolidations have had more success than acquisition programs that concentrate on acquiring publicly traded firms.
- Hostile acquisitions seem to do better at delivering improved post-acquisition performance than friendly mergers.

Other Announcements

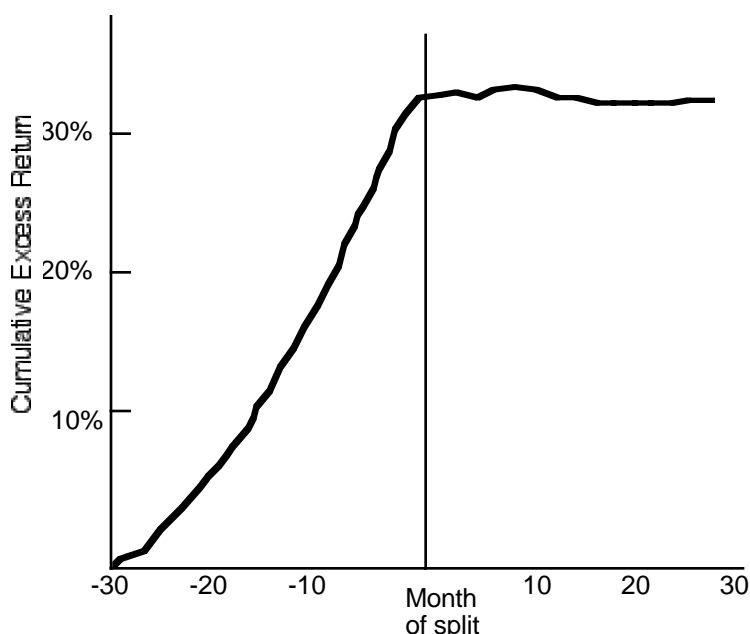
While earnings and acquisition announcements may offer the best opportunity for trading profits for investors trading on information, the market reacts to other announcements made by firms as well.

Stock Splits

A stock split increases the number of shares outstanding, without changing the current earnings or cash flows of the firm. As a purely cosmetic event, a stock split should not affect the value of the firm or of outstanding equity. Rather, the price per share will go down to reflect the stock split, since there are more shares outstanding. One of the first event studies by Fama, Fisher, Jensen and Roll (Figure 10.16) examined the stock price reaction to 940 stock splits between 1927 and 1959 by cumulating excess returns in the 60 months around the actual split date.

²⁸ This might well reflect the fact that failures of mergers of equal are much more visible than failures of the small firm/large firm combinations.

Figure 10.16 : Market Reaction to Stock Splits



Source: Fama, Fisher, Jensen and Roll

On average, their study found that stock splits tended to follow periods of excess returns; this is not surprising, since splits typically follow price run-ups. They also found no evidence of excess returns around the splits themselves, suggesting that the splits were neutral events. One of the limitations of the study was its use of monthly return rather than daily returns. More recent studies that look at the daily price reaction to stock splits find a mild positive effect – stock prices go up when splits are announced. One study that looked at all two for one stock splits between 1975 and 1990 estimated that stock prices increase, on average, 3.38% on the announcement of a stock split and that the announcement effect is much greater for small stocks (10.04%) than for large stocks (1.01%).²⁹ Researchers attribute this to a signaling effect – i.e. that only companies that expect their stock prices to go up in the future will announce stock splits.

In recent years, a few studies have pointed out that stock splits may have an unintended negative effect on stockholders by raising transactions costs. For instance, the bid-ask spread³⁰, which is one component of the transactions costs, is a much larger percentage of the price for a \$ 20 stock than it is for a \$40 stock. Copeland (1979)

²⁹ Ikenberry, Rankine and Stice (1996) report that stocks that split continue to earn excess returns in the two years after the split – 7.93% in the first year and 12.15% in the second year.

³⁰ The bid-ask spread refers to the difference between the price at which a security can be bought (the ask price) or the sold (the bid price) at any point in time.

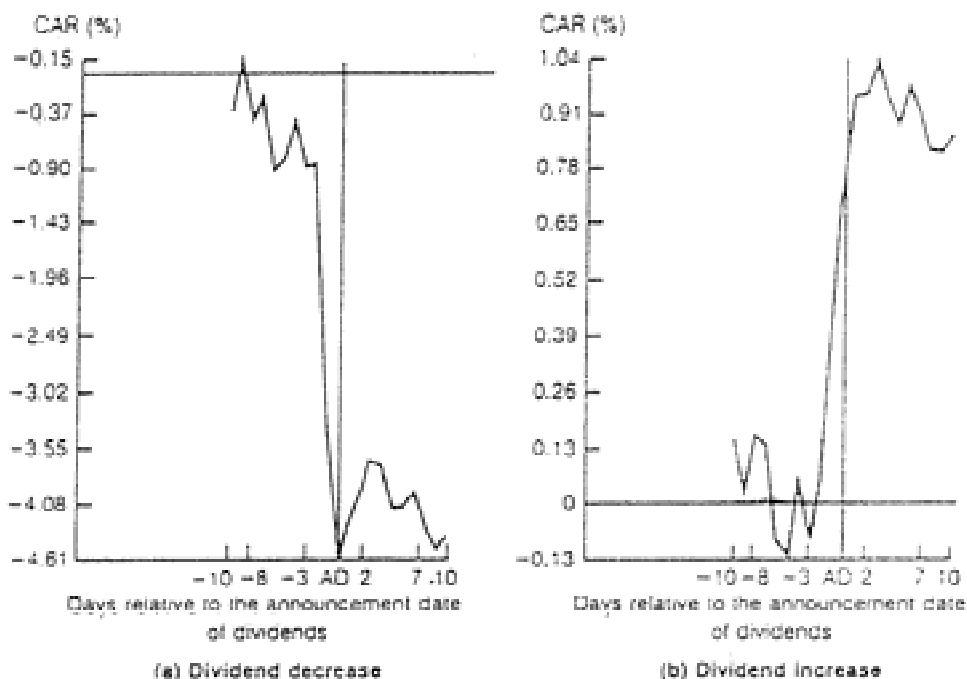
chronicles the increase in transactions costs and the decline in trading volume following splits. This additional cost has to be weighed off against the potential signaling implications of a stock split; investors may view a stock split as a positive signal about future prospects. This may explain the small positive returns some researchers have found around stock split announcement dates.³¹

Dividend Changes

Financial markets examine every action a firm takes for implications for future cash flows and firm value. When firms announce changes in dividend policy, they are conveying information to markets, whether they intend to or not. An increase in dividends is generally viewed as a positive signal, since firms that make these commitments to investors must believe that they have the capacity to generate these cash flows in the future. Decreasing dividends is a negative signal, largely because firms are reluctant to cut dividends. Thus, when a firm takes this action, markets see it as an indication that this firm is in substantial and long-term financial trouble. Consequently, such actions lead to a drop in stock prices. The empirical evidence concerning price reactions to dividend increases and decreases is consistent, at least on average, with this signaling theory. Figure 10.17 summarizes the average excess returns around dividend changes for firms.

³¹ See Charest (1978) and Grinblatt, Masulis and Titman (1984).

Figure 10.17: Excess Returns around Announcements of Dividend Changes



Source: Aharony and Swary

On average, stock prices go up when dividends are increased and go down when dividends are decreased, though the price reaction to the latter seems much more intense – a drop of more than 4.5% on dividend decreases and an increase of only about 1% on dividend increases.

While the price change on the dividend announcement itself might not offer opportunities for investors (unless they have access to inside information), another study by Michaely et al.) looked at the price drift after dividend changes are announced. He found that prices continue to drift up after dividend increases and drift down after dividend decreases for long periods. Investors may be able to take advantage of this drift and augment returns on their portfolios.

Implementing an Information-based Investment Strategy

If you decide to center your investment strategy around information releases – earnings reports, acquisition announcements or other news – you have to recognize that it is much more difficult to deliver the returns on an actual portfolio than it is in a hypothetical portfolio. To succeed at this strategy, you have to

- *Identify the information around which your strategy will be built:* Since you have to trade on the announcement, it is critical that you determine in advance the

information that will trigger a trade. To provide an example, you may conclude that your best potential for returns comes from buying small companies that report earnings that are much higher than expected. However, you have to go further and specify what constitutes a small company (market cap less than \$ 1 billion? \$ 5 billion?) and by how much the actual earnings need to beat expectations (10% higher than expectations? 20% higher than expectations?). This is necessary because you will not have to the time for analysis after the report comes out.

- *Invest in an information system that will deliver the information to you instantaneous:* Many individual investors receive information with a time lag – 15 to 20 minutes after it reaches the trading floor and institutional investors. While this may not seem like a lot of time, the biggest price changes after information announcements occur during these periods.
- *Execute quickly:* Getting an earnings report or an acquisition announcement in real time is of little use if it takes you 20 minutes to trade. Immediate execution of trades is essential to succeeding with this strategy.
- *Keep a tight lid on transactions costs:* Speedy execution of trades usually goes with higher transactions costs, but these transactions costs can very easily wipe out any potential you may see for excess returns, especially because you will be trading a lot (as with any short-term strategy).
- *Know when to sell:* Almost as critical as knowing when to buy is knowing when to sell, since the price effects of news releases may begin to fade or even reverse after a while. Thus, if you buy firms after positive earnings announcements, you have to determine when you will sell their stock at the time you buy it. While this may seem to take away your flexibility, the alternative of holding on to stocks too long, hoping that they will go up can be even more damaging.

If you consider the requirements for success – immediate access to information, and instantaneous and cheap execution – it is not surprising that information-based investing was for long profitable only for institutional investors. In recent years, however, online access to information and trading has made it feasible for individual investors to join the party. This is a mixed blessing, though, since the more investors trade on information, the less returns there are from these strategies.

Conclusion

As investors, we all dream of receiving that important news release ahead of the market and making lucrative profits on it. Information is the key to investment success, and this chapter explores the possibility of acquiring and using information to augment portfolio

returns. We began by looking at how market prices move in response to information, and noted that in an efficient market, the price reaction to new information is instantaneous. In such a market, investing in an asset after the information has been released is a neutral strategy. In an inefficient market, you can make money after the information is released, buying after good news, if it is a slow learning market, or selling after good news, if it is an overreacting market.

To examine whether it is possible to use information profitably, we first looked at the two groups of individuals most likely to have access to privileged or private information. Insiders in firms, especially top managers, clearly know more about their firms than investors in markets. Insider trading does seem to provide a signal of future price movements – insider buying seems to precede stock price increases and selling seems to occur ahead of price drops – but the signal is noisy and the returns are small. This may, however, reflect the fact that the really profitable insider trades – the illegal ones – are never filed with the SEC. Equity research analysts also have access to information that most other investors do not have and reflect this information in earnings forecasts and recommendations. Here again, while upwards revisions in earnings and buy recommendations generally precede stock price increases and downward revisions and sell recommendations precede poor stock price performance, the returns are surprisingly small. The difficulty that both insiders and analysts have in converting information to returns should be a cautionary note to any investor considering an information-based investment strategy.

In the second part of the chapter, we looked at earnings reports, acquisition announcements and other firm-specific announcements. These announcements affect prices significantly – positive (negative) earnings reports are associated with price increases (decreases), target company stock prices jump on acquisition announcements and stock prices generally increase when there are stock splits or dividend increases. Unless you can anticipate these news releases, though, this price increase cannot be translated into a large profit. There does seem to be some evidence of a price drift after earnings announcements, and there are investors who try to take advantage of this drift by buying after positive earnings reports and selling after negative reports. To succeed with information based trading, you have to be selective and disciplined in your investment choices and efficient in your execution.

Lessons for Investors

To be a successful trader on information, you need to:

1. Find a reliable source of information: It goes without saying that good information is the key to success with any information-based trading strategy. (To stay on the right side of the law, make sure that your reliable source is not an insider.)
2. Have a clearly defined strategy for trading on information: Since you will have to trade quickly, you will not have the time after information comes out to assess and analyze it. You will need to make a pre-judgment on when you will be trading.
3. Be disciplined: Don't deviate from your trading strategy and stick to the time horizon that you have chosen for yourself. Holding on to a stock for a few days more hoping to recoup your losses can make a bad situation worse.
4. Control your trading costs: Since you will be trading frequently and immediate execution is key, your trading costs can be large. As the funds at your disposal increase, the price impact you have as you trade can be substantial.