CHAPTER 8

THE WORST IS BEHIND YOU! THE CONTRARIAN STORY

The Last Rational Investor

Jack was a loner with little faith in human nature. He was convinced that the rest of the world was irrational and becoming increasingly so, and he felt that herd behavior was the rule rather than the exception. As he read about a sell off on a blue chip company after a an earnings report that fell short of expectations caused the stock to drop to $8 from its 52-week high of $45, he told himself that the stock could not go down much further. After all, the company had been around 50 years and had once been considered a market bell weather. He called his broker and bought 1000 shares at $8, convinced that it was only a matter of time before it bounced back. A few weeks later he checked the price again and the stock was down to $5, and he bought 1000 shares more, believing even more strongly that a rebound was just around the corner. Two months later, the stock had hit $2, and without a hint of self-doubt, Jack bought 1000 shares more and waited for his payoff. Four days later, the company announced that its CEO had resigned and that the stock had been delisted. The only consolation for Jack was that the stock price had finally hit zero and would not go down any further.

Moral: The crowd is more often right than wrong.

Guessing when a stock has hit bottom is the source of much talk on Wall Street and it is often the basis for investment strategies. Contrarian investors are often willing to buy a stock after a sustained price decline on the expectation of a rebound. Their belief is that a stock that has dropped 80 to 90% from its peak is much more likely to be a bargain to investors. In this chapter, you will explore the underpinnings of this strategy and any potential limitations. As you will see, bottom fishing can be lucrative but it can also be dangerous and only investors with the fortitude to withstand reversals succeed with it.

The Core of the Story

By their very nature, contrarians come in all forms. Some draw on investor psychology to make their judgments and others rely on their instincts. They all agree that the stocks that gone down the most over the recent past are often the best investments. At the risk of over simplifying the arguments used by contrarians, here are two:

- *It is always darkest before dawn.* The best time to buy a stock is not when good news comes out about it but after a spate of bad news has pushed the price down, making it a bargain. The story rests on the assumption that the average investor tends to over react

to news – good as well as bad – and that investors who are a little less driven by emotion (presumably you and I as contrarians) can take advantage of this irrationality. The story sells well, at least in the abstract, to those who have the least faith in human rationality. The assumption that investors over react ties in neatly with the widely held view that crowds are driven by emotion and can be swayed by peer pressure to irrational acts. This view is reinforced in financial markets by the bubbles in prices – from the South Sea Bubble in the 1600s to dot-com companies in the 1990s – that show up at regular intervals.

- *Lower priced stocks are cheaper*: There is another and less rational factor behind the contrarian story. Stocks that have gone down a lot often trade at low prices and there is a feeling among some investors that a lower priced stock is cheaper than one that is highly priced. Thus, a stock that has dropped from $ 30 to $ 3 looks cheaper on an absolute basis to many investors and penny stocks (stocks that trade at well below a dollar) are absolute bargains. The danger, of course, is that the value of this stock (which is what you should be comparing the price to) might have dropped from $35 to $1 during the same period.

The Theory

To understand the contrarian impulse, you first need to establish a link between prices and information. As new information comes out about a company, its stock price will undoubtedly move but by how much, and what would constitute an over reaction? This section begins by answering these questions. It then considers an alternative view, which is that prices are not predictable and follow a random walk; this would represent a rejection of the notion that markets over react to new information. The section closes with an examination of the psychological underpinnings of contrarian investing. In other words, what is it about human behavior that leads to over reaction in the first place?

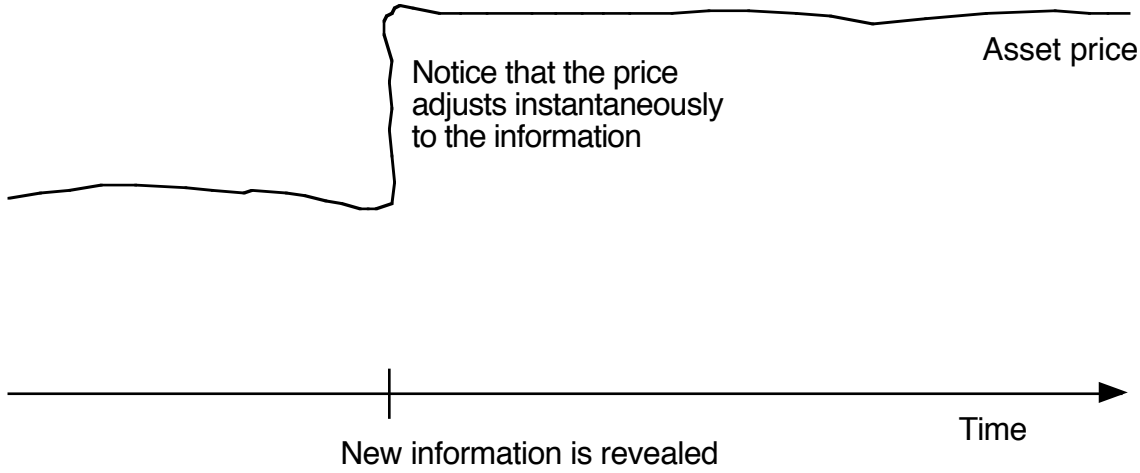
Information and Price

Any debate about whether markets over react to new information has to begin with a discussion of the relationship between prices and information. After all, in every market, new information will cause stock prices to move; unexpected good news will generally push up stock prices whereas unexpected bad news will cause prices to drop. If markets make mistakes in their assessments, the prices will be different from the true values of the underlying assets.

If you define market efficiency in terms of how much the price of an asset deviates from its 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 change 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, Figure 8.1 illustrates the impact of unexpectedly good news on the stock price in an efficient market.

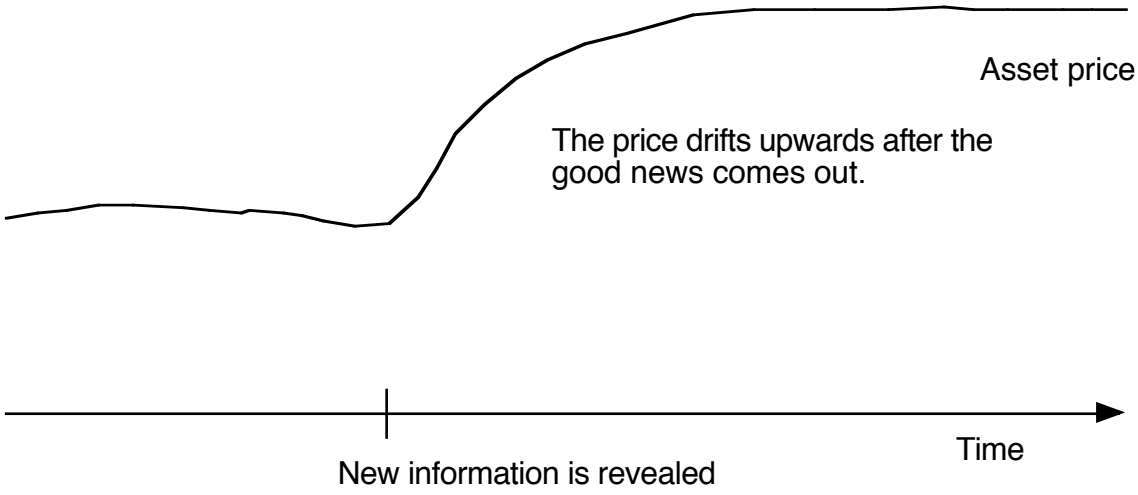
Figure 8.1: Price Adjustment in an Efficient Market



The key, though, is that it is not good news per se that causes the price to increase but unexpectedly good news. In other words, a company that reports a 20%growth in earnings may see its stock price go down if investors expected it to report a 30% growth in earnings, whereas a company that reports a 10% drop in earnings may see its stock price go up if investors expected earnings to drop by 20%.

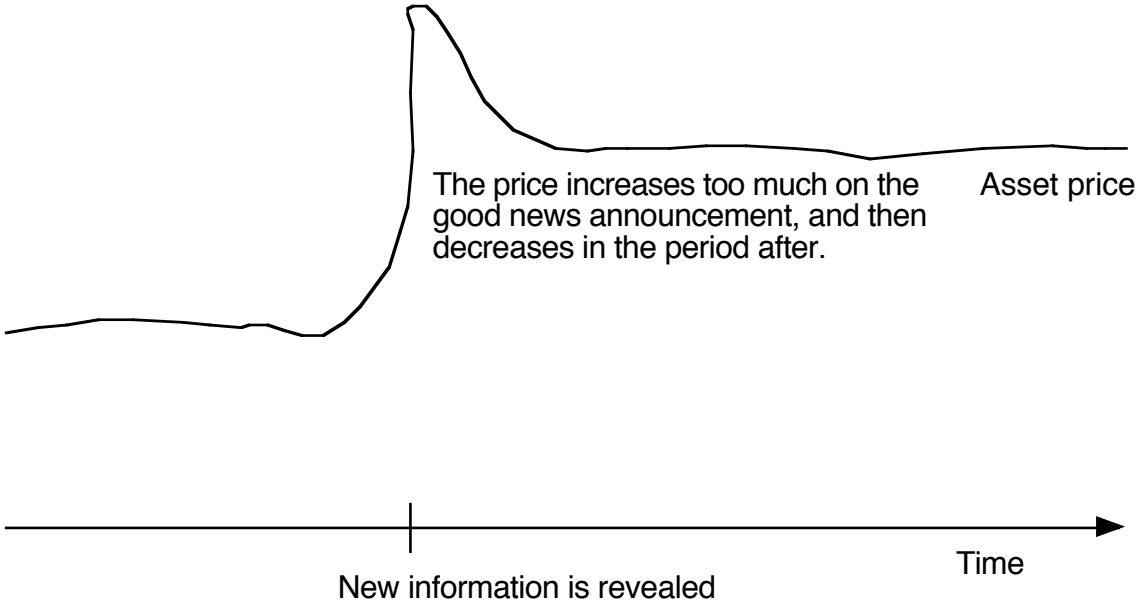
The adjustment will be slower if investors are slow in assessing the impact of the information on value. In Figure 8.2, the price of an asset adjusting slowly to good news is shown. The gradual increase in stock prices (called a price drift) that you observe after the information arrives is indicative of a slow learning market.

Figure 8.2 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 good news on value, or drop by more than it should, with bad news. Figure 8.3 shows the drift in prices in the opposite direction, after the initial reaction.

Figure 8.3: An Overreacting Market



Contrarian investors buy into this view of the world. They believe that investors are more likely to over react than to under react and that large price movements in one direction will be followed by price movements in the other. Hence, they hold the conviction that you

should buy stocks that have been knocked down the most in the market, since these are the stocks where prices are most likely to increase in the future.

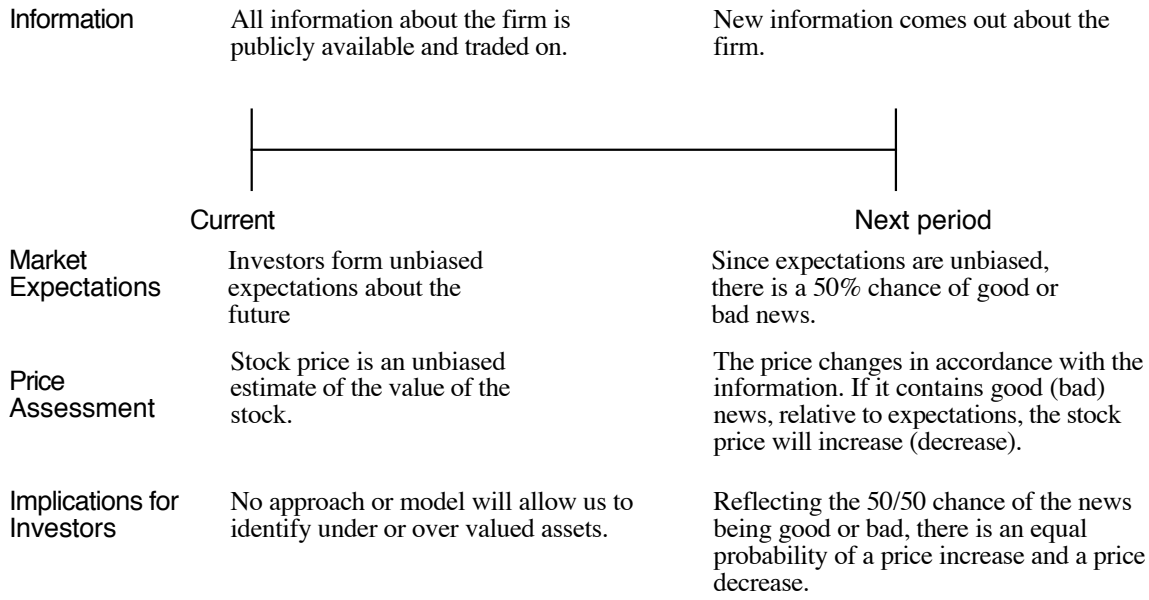
The Random Walk World

For four decades, academics have argued that investment strategies that are based upon the presumption that markets over react or under react are designed to fail because market prices follow a "random walk". In fact, Burton Malkiel's influential tome on investing, which outlines this argument most persuasively, is called "A Randon Walk down Wall Street".

To understand the argument for a random walk, you have to begin with the presumption that investors at any point in time estimate the value of an asset based upon expectations of the future, and that these expectations are both unbiased and rational, given the information that investors have at that point in time. Under these conditions, the price of the asset changes only as new information comes out about it. If the market price at any point in time is an unbiased estimate of value, the next piece of information that comes out about the asset should be just as likely to contain good news as bad.[1] It therefore follows that the next price change is just as likely to be positive as it is likely to be negative. The implication of course is that each price change will be independent of the previous one, and that knowing an asset's price history will not help form better predictions of future price changes. Figure 8.4 summarizes the assumptions.

[1] If the probability of good news is greater than the probability of bad news, the price should increase before the news comes out. Technically, it is the expected value of the next information release is zero.

Figure 8.4: Information and Price Changes in a Rational Market



While the random walk is not magic, there are two prerequisites for it to hold. The first is that investors are rational and form unbiased expectations of the future, based upon all of the information that is available to them at the time. If expectations are set too low or set too high consistently – in other words, investors are too optimistic or too pessimistic - information will no longer have an equal chance of containing good or bad news, and prices will not follow a random walk. The second is that price changes are caused by new information. If investors can cause prices to change by just trading, even in the absence of information, you can have price changes in the same direction rather than a random walk.

The Basis for Contrarian Investing

Why would markets over react to new information? If it happens consistently, the roots have to lie in human psychology. There are three reasons generally provided by students of human behavior:

- *Overweighting of most recent information*: Researchers in experimental psychology suggest that people tend to overweight recent information and underweight prior data in revising their beliefs when confronted with new information. Thus, a firm that reports bad earnings in the current period is excessively punished for that report even though its overall fundamentals may look good.
- *Panic*: Other researchers argue that a few investors tend to panic when confronted with new information, and that they take the rest of the market with them.
- *Inability to deal with complex information*: Proponents of this point of view argue that while markets do a reasonably good job of assessing the impact of simple

information (decreased earnings, for instance), they are not adept at assessing the impact of complex information (a major restructuring). In the latter case, markets may over react to the information because of their inability to process the news well.

If markets overreact, it follows that large price movements in one direction will be followed by large price movements in the opposite direction. In addition, the more extreme the initial price movement, the greater will be the subsequent adjustment. If markets overreact, the road to investment success seems clear. You buy assets when others are most bearish about the future and selling, and sell assets when other investors are most optimistic and buying. If your assumption about market overreaction is correct, you should make money as markets correct themselves over time.

Looking at the Evidence

The debate about whether markets over react to new information or follow a random walk will never be resolved with theoretical arguments. Both sides are entrenched in their views and are unlikely to be swayed by arguments from the other side. You can, however, look at the empirical evidence to see which hypothesis is more justified by the evidence. In this section, you will look at two sets of studies that may shed light on this question. The first group examines whether price changes in one period are related to price changes in prior periods and indirectly answer the question of whether markets reverse themselves over time. The second group tries to directly answer the question by examining whether investing in stocks that have gone down the most over a recent period is a worthwhile strategy.

Serial Correlation

If today is a big up day for a stock, what does this tell you about tomorrow? There are three different points of view. The first is that the momentum from today will carry into tomorrow, and that tomorrow is more likely to be an up day than a down day. The second is that there will be the proverbial profit taking as investors cash in their profits and that the resulting correction will make it more likely that tomorrow will be a down day. The third is that each day you begin anew, with new information and new worries, and that what happened today has no implications for what will happen tomorrow.

Statistically, the serial correlation measures the relationship between price changes in consecutive time periods, whether hourly, daily or weekly, and is a measure of how much the price change in any period depends upon the price change over the previous time period. A serial correlation of zero would therefore imply that price changes in consecutive time periods are uncorrelated with each other, and can thus be viewed as a rejection of the hypothesis that investors can learn about future price changes from past ones. A serial

correlation that is positive, and statistically significant, could be viewed as evidence of price momentum in markets, and would suggest that returns in a period are more likely to be positive (negative) if the prior period's returns were positive (negative). A serial correlation which is negative, and statistically significant, could be evidence of price reversals, and would be consistent with a market where positive returns are more likely to follow negative returns and vice versa. In other words, it would be consistent with the contrarian investing strategy described in this chapter.

From the viewpoint of investment strategy, serial correlations can sometimes be exploited to earn excess returns. A positive serial correlation would be exploited by a strategy of buying after stock prices go up and selling after stock prices go down. A negative serial correlation would suggest a strategy of buying after stock prices go down and selling after stock prices go up. Since these strategies generate transactions costs, the correlations have to be large enough to allow investors to generate profits to cover these costs. It is therefore entirely possible that there be serial correlation in returns, without any opportunity to earn excess returns for most investors.

The earliest studies of serial correlation all looked at large U.S. stocks and concluded that the serial correlation in stock prices was small.[2] One of the first in 1965, for instance, found that 8 of the 30 stocks listed in the Dow had negative serial correlations and that most of the serial correlations were close to zero. Other research confirms these findings – of very low correlation, positive or negative - not only for smaller stocks in the United States, but also for other markets. While these correlations may be statistically different from zero, it is unlikely that there is enough correlation in short-period returns to generate excess returns, after you adjust for transactions costs.

While most of the earlier analyses of price behavior focused on shorter return intervals, more attention has been paid to price movements over longer periods (six months to five-year) in recent years. Here, there is an interesting dichotomy in the results. When long term is defined as months rather than years, there seems to be a tendency towards positive serial correlation – stocks that have gone up in the last six months tend to continue to go up for the next six months, whereas stocks that have gone down in the last six months tend to continue to go down. The momentum effect is just as strong in the European

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[2] Alexander, S.S., 1964, *Price Movements in Speculative Markets: Trends or Random Walks*, in The Random Character of Stock Market Prices, MIT Press. Cootner, P.H., 1962, *Stock Prices: Random versus Systematic Changes*, Industrial Management Review, v3, 24-45. and Fama, E.F., 1965, *The Behavior of Stock Market Prices*, Journal of Business, v38, pp 34-105.. All three studies estimated serial correlation in stock prices. Given the difficulty of obtaining data, they worked with small samples over short periods.

markets, though it seems to be weaker in emerging markets.[3] What may cause this momentum? One potential explanation is that mutual funds are more likely to buy past winners and dump past losers, thus generating the price momentum.[4] Thus, there is no evidence to back up contrarian investing strategies when you look at shorter time horizons from a few days to a few months.

However, when long term is defined in terms of years, there is substantial negative correlation in returns, suggesting that markets reverse themselves over very long periods. Fama and French examined five-year returns on stocks from 1941 to 1985 and present evidence of this phenomenon.[5] They found that serial correlation is more negative in five-year returns than in one-year returns, and is much more negative for smaller stocks rather than larger stocks. Figure 8.5 summarizes one-year and five-years serial correlation by size class for stocks on the New York Stock Exchange.

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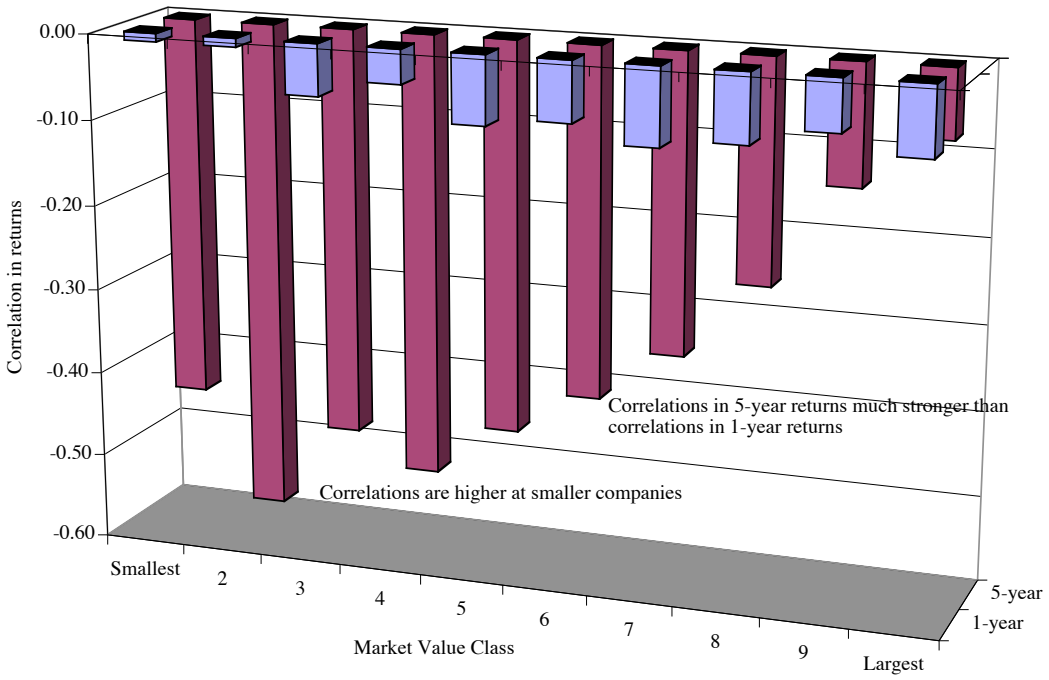
[3] Rouwenhorst, G.K., 1998, *International Momentum Strategies*, Journal of Finance, v53, 267-284. He studied 12 European markets and found evidence of momentum in each market. In 1999, he presented evidence of momentum in emerging markets. Bekaert,, G., C.B. Erb, C.R. Harvey and T.E. Viskanta. 1997, *What matters for emerging market equity investments*, Emerging Markets Quarterly (Summer 1997), 17-46. This study finds that momentum investing is not consistently profitable in emerging markets.

[4] Grinblatt, M., S. Titman and R. Wermers, 1995, *Momentum Investment Strategies, Portfolio Performance, and Herding: A Study of Mutual Fund Behavior*, American Economic Review, v85, 1088-1105..

[5] Fama, E.F. and K.R. French, 1992, *The Cross-Section of Expected Returns*, Journal of Finance, v47, 427-466.

Figure 8.5: One year and Five year Correlations: Market Value Class: 1941- 1985



Data from Fama/French. These are the average correlations in consecutive time periods for firms in each market value class (from smallest to largest).

With the smallest stocks, there is very strong evidence that extended periods of positive returns are followed by extended periods of negative returns and vice versa. This phenomenon has also been examined in other markets, and the findings have been similar. There is evidence stocks reverse themselves over long time periods.

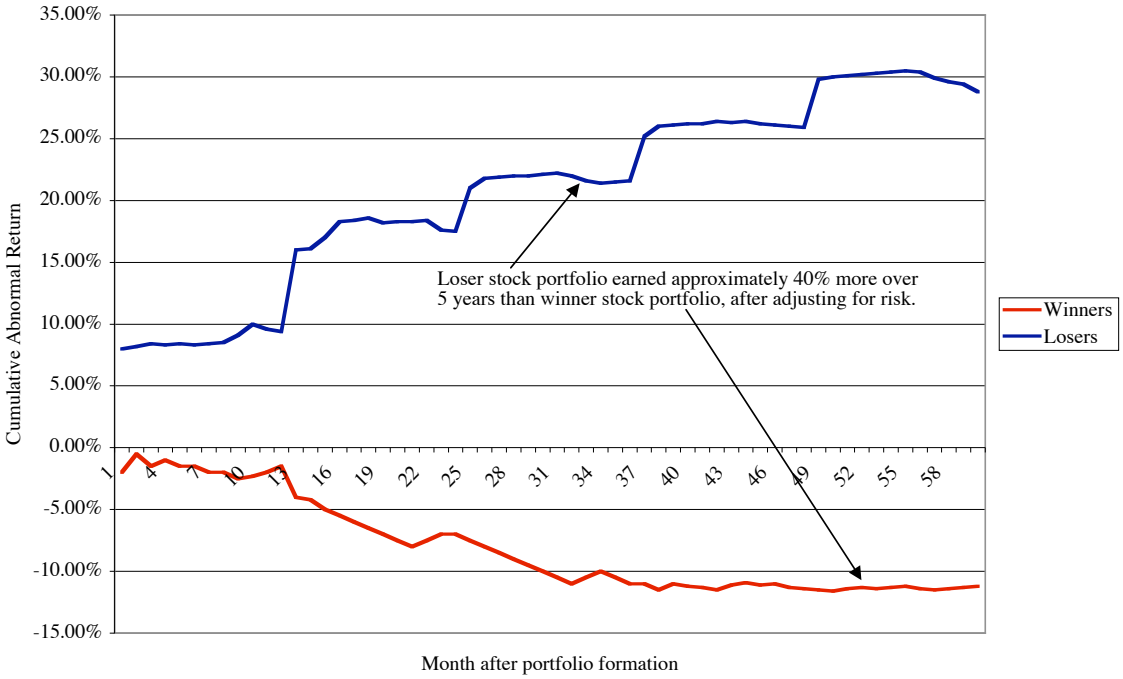
What are the overall implications for contrarian investing? The first and most important one is that you need to be a long-term investor for it to have any chance of working for you. The second is that it is more likely to pay off for smaller companies, in terms of market capitalization than larger companies.

Loser Stocks

How would a strategy of buying the stocks that have gone down the most over the last few years perform? To isolate the effect of price reversals on the extreme portfolios, a study constructed a winner portfolio of 35 stocks, which had gone up the most over the prior year, and a loser portfolio of 35 stocks, which had gone down the most over the prior year, at the

end of each year from 1933 to 1978,[6] The returns were estimated for the sixty months following the creation of the portfolios. Figure 8.6 graphs the returns on both the loser and winner portfolios:

Figure 8.6: Cumulative Abnormal Returns - Winners versus Losers



Data from a study by DeBondt and Thaler. The portfolios represent the 35 best performing stocks (winners) and the 35 worst performing stocks (losers) and the returns represent the cumulated return on both portfolios over the next 60 months.

This analysis suggests that an investor who bought the 35 biggest losers over the previous year and held for five years would have generated a cumulative return of approximately extra return of 30% over the market and about 40% relative to an investor who bought the winner portfolio.

This evidence is consistent with market overreaction and suggests that a simple strategy of buying stocks that have gone down the most over the last year or years may yield excess returns over the long term. Since the strategy relies entirely on past prices, you could argue that this strategy shares more with charting – consider it a long-term contrarian indicator - than it does with value investing.

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[6] DeBondt, W.F.M. & R. Thaler, 1985, *Does the Stock Market Overreact?*, Journal of Finance, v40, pp 793-805.

There are many, academics as well as practitioners, who suggest that these findings may be interesting but that they overstate potential returns on 'loser' portfolios for several reasons:

- There is evidence that loser portfolios are more likely to contain low priced stocks (selling for less than $5), which generate higher transactions costs and are also more likely to offer heavily skewed returns, i.e., the excess returns come from a few stocks making phenomenal returns rather than from consistent performance.
- Studies also seem to find loser portfolios created every December earn significantly higher returns than portfolios created every June. This suggests an interaction between this strategy and tax loss selling by investors. Since stocks that have gone down the most are likely to be sold towards the end of each tax year (which ends in December for most individuals) by investors, their prices may be pushed down by the tax loss selling.
- There seems to be a size effect when it comes to the differential returns. When you do not control for firm size, the loser stocks outperform the winner stocks, but when you match losers and winners of comparable market value, the only month in which the loser stocks outperform the winner stocks is January.[7]
- The final point to be made relates to time horizon. As noted in the section on serial correlation, while there may be evidence of price reversals in long periods (3 to 5 years), there is evidence of price momentum – losing stocks are more likely to keep losing and winning stocks to keep winning – if you consider shorter periods (six months to a year). An analysis[8] referenced earlier in support of price momentum identified how important time horizon for a loser stock strategy by tracking the difference between winner and loser portfolios by the number of months that you held the portfolios.[9] The findings are summarized in Figure 8.7:

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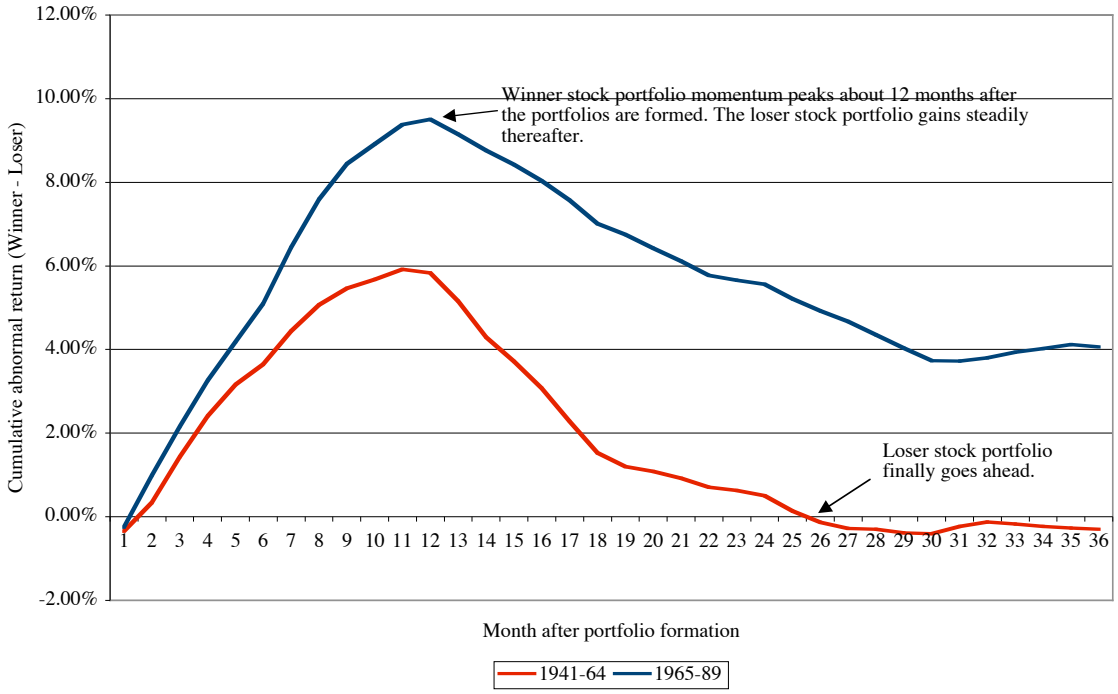
[7] Zarowin, P., 1990, *Size, Seasonality and Stock Market Overreaction*, Journal of Financial and Quantitative Analysis, v25, 113-125.

[8] Jegadeesh, N. and S. Titman, 1993, *Returns to Buying Winners and Selling Losers: Implications for Stock Market Efficiency*, Journal-of-Finance; 48(1), 65-91.

[9] The definition of winner and loser portfolios is slightly different in this study, relative to the one graphed in figure 8.6. The portfolios were created, based upon returns over the six months prior to the creation of the portfolios.

Figure 8.7: Differential Returns - Winner versus Loser Portfolios



Data from a study by Jegadeesh and Titman. The cumulative difference in returns between winner and loser portfolios is tracked month by month for each period.

There are two interesting findings in this graph. The first is that the winner portfolio actually outperforms the loser portfolio in the first 12 months after the portfolios are created. The second is that while loser stocks start gaining ground on winning stocks after 12 monthly, it took them 28 months in the 1941-64 time period to get ahead of them and the loser portfolio does not start outperforming the winner portfolio even with a 36-month time horizon in the 1965-89 time period. The payoff to buying losing companies depends very heavily on whether you have to capacity to hold these stocks for long time periods.

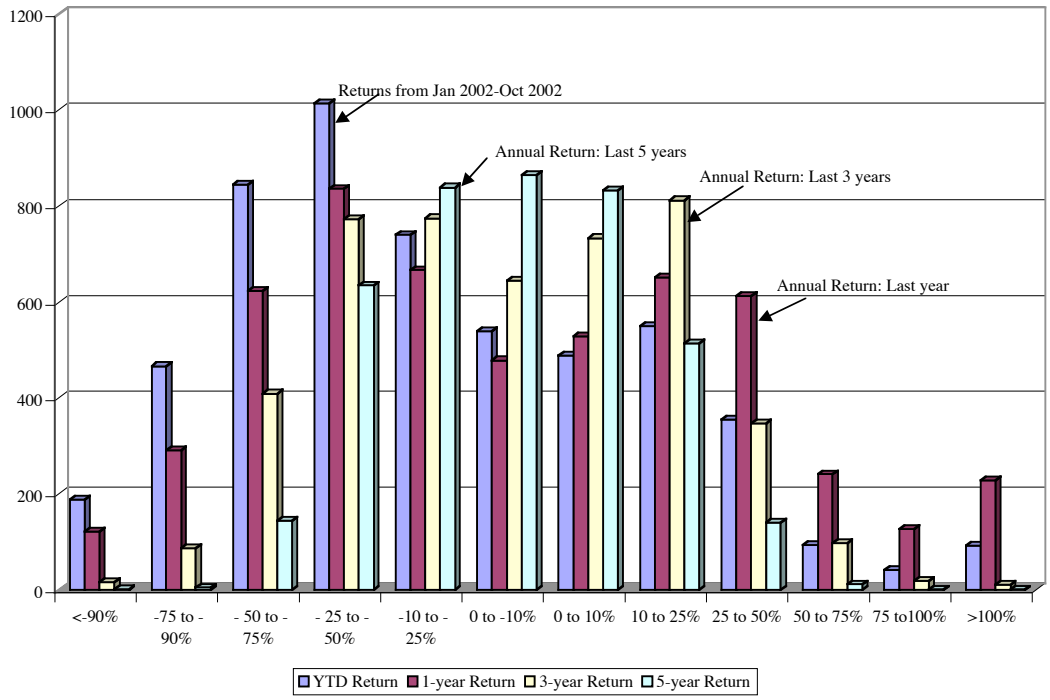
Crunching the Numbers

How much does a stock have to go down for it to be categorized a "loser stock"? The answer will vary depending upon the time period that you look at the market. In a period of rising stock prices, a 40% drop in the stock price may qualify a stock to be a "loser". However, in a period where the entire market is down 15 or 20%, a drop of 80% or more may be necessary for a stock to drop to the bottom of the scale. In this section, you will look at the distribution of returns across stocks in the market as well as significant differences in returns across sectors.

Across the Market

To identify stocks that are the worst performers in the market in any period, you have to make two judgments. The first relates to the length of the period that you will use to compute returns. The worst performers over the last year may not be the worst performers over the last six months or the last five years. The second factor that will affect your choices is what you define as the market. The worst performers in the S&P 500 may not even make the list if you were looking at the worst performers across all equity markets in the United States. In Figure 8.8, the distribution of annualized returns across all listed stocks in the United States is presented for four different time periods – January through October 2002 (9 months), October 2001 to October 2002 (1-year), October 1999 to October 2002 (3 years) and October 1997 to October 2002 (5 years).

Figure 8.8: Distribution of Historical Returns



Data from Value Line. The number of stocks with annual returns that fall into each return class is graphed.

Note that the overall stock market had negative returns over each of the time periods and the distribution reflects this. More stocks have negative than positive returns and this tendency is accented when you look at the shorter time periods (9 month, 1 year) because markets did far worse during these shorter periods.

The other interesting point is the magnitude of the negative returns earned by some stocks. It should be enduring testimony about the riskiness of stocks that some stocks lost

90% or more of their value in nine months (as did about 200 stocks between October 2001 and October 2002). One reason the number of stocks that have negative returns of this magnitude drop off with the longer time periods is because stocks that lose more than 90% of their value year after year generally cease to trade.

The Sector Effect

As markets move up and down, there are entire sectors that go up and down by much more or less than the market. This is sometimes because of fundamentals – individual sectors can do much better or worse than the overall economy – and sometimes because of investor psychology; keep in mind the rush to new economy companies in the last 1990s and away from them in early 2001. Why might this matter? If you have a strategy of buying stocks that have gone down the most over a period and some sectors do far worse than others, your portfolio, for better or worse, will be over-represented with stocks from those sectors.

As with individual stocks, the best and worst sectors shift depending upon the time period that you look at returns. In Table 8.1, the sectors that did the best and worst during the 12 month period from October 2001 to October 2002 are listed.

Table 8.1: Best and Worst Performing Sectors: Oct 2001-Oct 2002

Industry Name	*1-year Return*	*Industry Name*	*1-year Return*
Household Products	22.86	Power	-73.07
Recreation	23.79	Wireless Networking	-48.25
Auto Parts	25.35	Cable TV	-45.51
Thrift	25.79	Telecom. Equipment	-40.62
Trucking/Transp. Leasing	26.26	Semiconductor Cap Eq	-40.24
Homebuilding	28.91	Drug	-35.47
Hotel/Gaming	29.96	Telecom. Services	-32.55
Furn./Home Furnishings	35.37	E-Commerce	-28.67
Retail Building Supply	37.13	Biotechnology	-26.25
Precious Metals	157.10	Electrical Equipment	-23.01

The best performing sector was precious metals, which was borne upwards by the increase in gold prices during the period. The contrast between the ten best and worst performing sector returns is striking, with the best performing sectors all showing returns greater than 20% while stocks in the worst performing sectors dropped by more than 20% over the same period.

If you extend the period to five years from October 1997 to October 2002, the worst performing sectors are technology and telecommunication, where you would have lost on average more than 18% a year each year for the five years. It is worth noting that these were the high-flying sectors of the market boom of the 1990s and would have undoubtedly ranked at the top if you had considered a prior five-year period. Table 8.2 lists the best and worst performing sectors from October 1997 to October 2002.

Table 8.2: Best and Worst Performing Sectors – Oct 1997- Oct 2002

Industry Name	*Total Return 5- year*	*Industry Name*	*Total Return 5-Year*
Canadian Energy	3.82	Wireless Networking	-27.44
Bank (Canadian)	4.59	Internet	-22.47
Thrift	4.64	Telecom. Services	-22.30
Bank	4.78	Telecom. Equipment	-22.03
Bank (Midwest)	5.27	Computer & Peripherals	-21.30
Electric Utility (East)	6.64	Coal	-20.91
Pharmacy Services	7.05	Steel (Integrated)	-19.63
Tobacco	7.27	Computer Software & Svcs	-19.51
Retail Building Supply	8.29	Semiconductor	-19.38
Water Utility	15.05	Healthcare Info Systems	-18.30

If you were a contrarian, constructing a portfolio of loser stocks in October 2002, you should not be surprised to see technology and telecommunication companies dominating the list.

A Portfolio of Losers

To construct a portfolio of loser stocks, you first need to choose a period over which you will estimate returns. While you can make a case for returns over longer time periods, much of the empirical research is built around returns over one year. In keeping with this, the 300 worst performing stocks in the United States between October 2001 and October 2002 were selected. In a preview of a potential problem with this strategy, 166 of these stocks traded at prices less than a dollar. Since the transactions costs of buying these stocks is likely to be very high, only the 134 stocks that traded for more than a dollar were included in the portfolio and they are summarized in Table 8.3. As anticipated, the sectors that were identified as the worst performing sectors in Table 8.2 are over represented in this portfolio.

Table 8.3: Loser Stocks (October 2001 to October 2002)

Company	*Symbol*	*Company*	*Symbol*	*Company*	*Symbol*
VerticalNet Inc.	VERT	Actuate Corporation	ACTU	Metris Cos.	MXT
Nucentrix Broadband Networks	NCNX	Mail-Well Inc.	MWL	Concurrent Computer	CCUR
Genzyme Molecular Oncology	GZMO	MIIX Group Inc	MHU	Medarex Inc.	MEDX
Golf Trust of America	GTA	Harmonic Inc.	HLIT	CuraGen Corp	CRGN
Bell Canada Intl	BCICF	EntreMed Inc	ENMD	Sprint PCS Group	PCS
Antenna TV S A	ANTV	Biomira Inc.	BRA.TO	Nanometrics Inc	NANO
Beta Oil and Gas Inc	BETA	Broadwing Inc.	BRW	ClearOne Commmunications Inc	CLRO
Data Systems & Software	DSSI	EMCORE Corp.	EMKR	SmartForce ADR	SKIL
Biotime Inc.	BTX	Optical Cable Corp	OCCF	CryoLife Inc.	CRY
Nortel Networks	NT	SuperGen Inc	SUPG	Alcatel ADR	ALA
Childtime Learning Ctrs	CTIM	Global Thermoelectric Inc.	GLE.TO	Stellent Inc	STEL
Digital Lightwave	DIGL	Corning Inc.	GLW	Aquila Inc.	ILA
Openwave Systems	OPWV	Beverly Enterprises	BEV	Providian Fin'l	PVN
Medwave Inc	MDWV	MIPS Technologies Inc	MIPS	Emisphere Tech. Inc.	EMIS
Tumbleweed Communications	TMWD	Artesyn Technologies Inc	ATSN	RSA Security	RSAS
Conexant Systems	CNXT	WHX Corp.	WHX	ABIOMED Inc.	ABMD
Cygnus Inc.	CYGN	Rite Aid Corp.	RAD	Powerwave Techn.	PWAV
Vitesse Semiconductor	VTSS	Alpha Hospitality Corp	ALHY	ILEX Oncology	ILXO
Classica Group Inc	TCGI	Calpine Corp.	CPN	HEALTHSOUTH Corp.	HRC
3DO Co.	THDO	Sanmina-SCI Corp.	SANM	Championship Auto Racing	MPH
Ventiv Health Inc	VTIV	Novadigm Inc	NVDM	Magnum Hunter Resources	MHR
AES Corp.	AES	ANADIGICS Inc.	ANAD	Biopure Corp	BPUR
ACT Teleconferencing	ACTT	Bioject Medical Tech	BJCT	Cell Therapeutic	CTIC
Corvas Intl Inc.	CVAS	BroadVision Inc.	BVSN	PerkinElmer Inc.	PKI
Student Advantage Inc	STAD	Aphton Corp.	APHT	TriQuint Semic.	TQNT
Amer. Tower 'A'	AMT	Solectron Corp.	SLR	AMR Corp.	AMR
Atlas Air Inc	CGO	Iona Tech PLC ADR	IONA	Med-Design Corp	MEDC
Miller Exploration	MEXPD	Titan Pharm Inc	TTP	Administaff Inc	ASF
Williams Cos.	WMB	Quantum Corporation	DSS	National Service Ind.	NSI
KeyTronicEMS Co.	KTCC	UAL Corp.	UAL	PDI Inc.	PDII
Sapient Corp.	SAPE	Tesoro Petroleum	TSO	Fleming Cos.	FLM
Electroglas Inc.	EGLS	Zarlink Semiconductor Inc.	ZL	DVI Inc.	DVI
CNET Networks	CNET	Pharmacyclics	PCYC	Cubist Pharm Inc	CBST
SatCon Technololgy	SATC	GlobespanVirata Inc.	GSPN	Microsemi Corporation	MSCC
KANA Software Inc	KANA	Covansys Corp.	CVNS	Amdocs Ltd.	DOX
InterVoice Inc.	INTV	Crown Castle Int'l	CCI	AmeriCredit Corp.	ACF
Genome Therapeutics Inc.	GENE	Starbase Corp	SBAS	Neose Technologies	NTEC
Hollywood Mediacorp	HOLL	Collins & Aikman Corp.	CKC	Footstar Inc.	FTS
Pegasus Communications	PGTV	Hemispherx Biopharma Inc	HEB	El Paso Corp.	EP
Atmel Corp.	ATML	Western Wireless 'A'	WWCA	ImClone Systems	IMCL
DuraSwitch Inds Inc	DSWT	Quanta Services	PWR	Sepracor Inc.	SEPR
SIPEX Corp.	SIPX	Kulicke & Soffa	KLIC	VeriSign Inc.	VRSN
Elan Corp. ADR	ELN	Amkor Technology	AMKR	Allmerica Financial	AFC
Factory 2-U Stores Inc	FTUS	Gemstar-TV Guide	GMSTE	EPCOS AG	EPC
Razorfish Inc	RAZF	CyberOptics	CYBE	Polycom Inc.	PLCM
DMC Stratex Networks Inc	STXN	Lumenis Ltd	LUME	Genesis Microchip Inc	GNSS
SpectRx Inc	SPRX	Vical Inc.	VICL	CSG Systems Int'l	CSGS
Dusa Pharmaceuticals	DUSA	PLX Technology Inc	PLXT	Electronic Data Sys.	EDS
Visible Genetics Inc	VGIN	Commerce One Inc.	CMRC	Power Corp.	POW.TO

The Rest of the Story

While loser stocks seem to earn above-average returns if held for long periods, there are clear dangers with this investment strategy. The first is the proliferation of low priced stocks in the portfolio results in high transactions costs for investors. The second is that loser stocks may be exposed to more risk, both in terms of price volatility and in terms of high financial leverage – loser stocks tends to have higher debt ratios. The third is that negative returns usually happen for a reason. If that reason, whether it be poor management or a loss of market share, is not fixed, there may be no catalyst for prices to increase in the future.

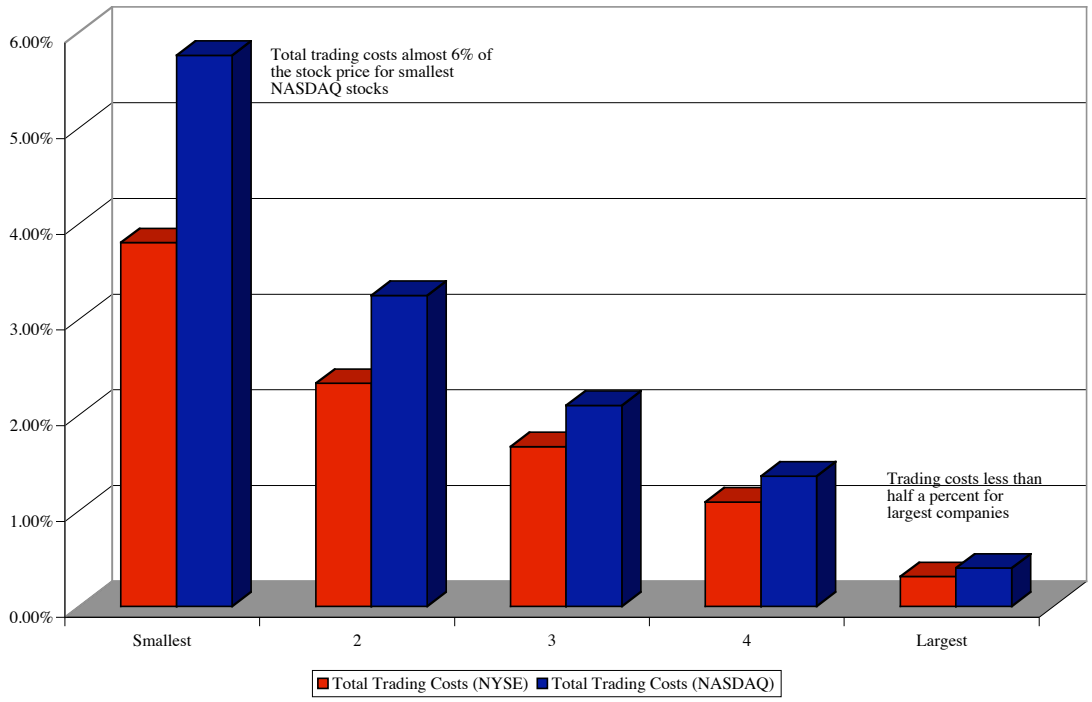
Transactions Costs

The first and perhaps biggest problem with a strategy of investing in loser stocks is that many of these stocks trade at low prices. The transactions costs associated with buying and selling these stocks is high for at least three reasons:

- The bid-ask spread in these stocks is high, relative to the stock price. Thus, a bid-ask spread of 50 cents would be only 1% of the price for a $ 50 stock but would be 20% of a stock trading at $2.50.
- The commissions and other fixed trading costs also rise as a percent of the investment as the stock price drops. The brokerage commissions will be substantially higher if you buy 10,000 shares at $ 2 per share than if you buy 1,000 shares at $ 20 per share.
- As stock prices drop, institutional investors tend to flee, reducing volatility and trading volume and increasing the transactions costs further.

Though the portfolio of stocks in table 8.3 was constrained to include only stocks that trade at more than a dollar, the average stock price of stocks in that portfolio is only $3.36 whereas the average stock price in the rest of the market is more than $26. In addition, the market capitalization of loser stocks is much lower at $ 388 million than the average market capitalization of stocks in the rest of the market, which is about $1.7 billion. The combination of low stock prices and small market capitalizations will push up transactions costs when constructing this portfolio. Figure 8.9 provides a measure of the magnitude of the trading costs you face with small market cap companies as opposed to large ones.

Figure 8.9: Total Trading Costs by Market Capitalization



Data from a study by Kothare and Laux. These costs include brokerage commissions, price impact and the bid-ask spread.

The total trading costs, including the bid-ask spread and commission costs, can amount to more than 5% of the stock price for companies in the smallest market capitalization class. The costs will undoubtedly be even larger if these are low priced stocks.[10]

What should the minimum price be when creating this portfolio? If you adopt a cut-off of $5 for the stock price, only 26 of the 147 companies in the portfolio survive. They are listed in Table 8.4:

Table 8.4: Loser Stocks trading at more than $ 5 per share

Company Name	*Ticker Symbol*	*Industry*	*Stock Price*
DVI Inc.	DVI	MEDSERV	$6.30
Power Corp.	POW.TO	FINANCL	$36.85
Footstar Inc.	FTS	RETAILSP	$7.56
Electronic Data Sys.	EDS	SOFTWARE	$13.72
National Service Ind.	NSI	DIVERSIF	$5.75

[10] Kothare, M. and P.A. Laux , 1995, *Trading Costs and the Trading Systems for NASDAQ stocks*, Financial Analysts Journal, March/April 1995.

Fleming Cos.	FLM	FOODWHOL	$6.14
Sepracor Inc.	SEPR	DRUG	$7.81
Neose Technologies	NTEC	BIOTECH	$7.52
ImClone Systems	IMCL	DRUG	$7.79
Allmerica Financial	AFC	INSPRPTY	$8.14
CSG Systems Int'l	CSGS	INDUSRV	$11.39
El Paso Corp.	EP	GASDIVRS	$7.61
AMR Corp.	AMR	AIRTRANS	$5.15
PDI Inc.	PDII	INDUSRV	$5.91
Administaff Inc	ASF	HUMAN	$5.42
PerkinElmer Inc.	PKI	INSTRMNT	$5.00
EPCOS AG	EPC	ELECTRNX	$9.28
Polycom Inc.	PLCM	TELEQUIP	$9.85
Amdocs Ltd.	DOX	INDUSRV	$6.93
Cubist Pharm Inc	CBST	DRUG	$6.83
TriQuint Semic.	TQNT	SEMICOND	$5.07
Genesis Microchip Inc	GNSS	ELECTRNX	$9.87
Microsemi Corporation	MSCC	ELECTRNX	$6.85
VeriSign Inc.	VRSN	INTERNET	$7.91
AmeriCredit Corp.	ACF	FINANCL	$6.98
Med-Design Corp	MEDC	MEDSUPPL	$5.23

Volatility and Default Risk

Stocks that have dropped substantially over the last year are often riskier than other stocks. One reason is that at lower stock prices, volatility increases[11]. The second is that sudden and precipitous declines in stock prices often increase financial leverage and default risk.[12]

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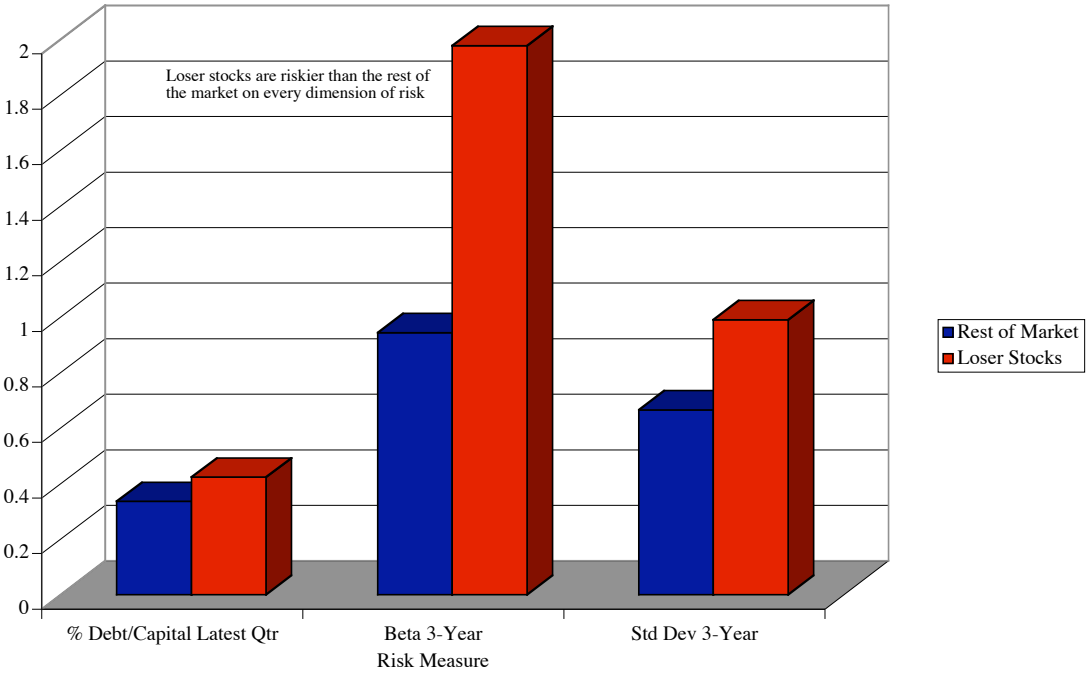
[11] A stock trading at $ 2 a share will generally have higher percent volatility in prices and returns than a stock trading at $ 20 a share. There is no theoretical reason for this but it remains an empirical reality.

[12] Consider a company with $ 1 billion in debt and $ 1 billion in equity. If the value of equity drops by 80%, you will generally see this company's debt ratio increase from 50% to a much higher value, since the debt value will not drop as much as equity. In fact, if the debt value does not change, the debt ratio will become 83.33%.

In Figure 8.10 you can see the contrast on three measures of risk – beta, standard deviation in stock prices and debt to capital ratios– between the firms in the loser portfolio and the rest of the market:

Figure 8.10: Loser Stocks versus Rest of the Market: Risk Measures



Data from Value Line. The average beta and standard deviation over the previous 3 years and the book debt to capital ratio is presented for loser stocks and the rest of the market.

On all three measures on risk, but especially on the price-based measures (beta and standard deviation), loser stocks are far riskier than stocks in the rest of the market.

You could screen the 26 stocks that made it through the price screen ($5 or higher) for excessive risk. In fact, if you do include constraints that stocks with annual standard deviations that exceed 80% (which would eliminate firms in the top 25% in terms of this measure), betas than exceed 1.25 and market debt to capital ratios less than 80%, only three firms remain and they are listed in Table 8.5:

Table 8.5: Loser Stocks with price>$5 and reasonable risk exposure

Company Name	*Stock Price*	*Standard Deviation*	*Beta*	*Debt/Capital*
Power Corp.	$36.85	50.07%	0.64	16.43%
Electronic Data Sys.	$13.72	55.03%	1.24	41.81%
Footstar Inc.	$7.56	50.53%	0.10	47.95%

The dramatic drop off in the number of stocks in the portfolio when you impose minimum price limits and risk constraints suggests that a loser stock strategy may be difficult to put into practice even for believers in its contrarian roots.

Catalysts for Improvement

The final and perhaps most difficult factor to consider when buying loser stocks is whether the underlying problems that caused the negative returns have been remedied. While you may not be able to probe the internal workings of each of the firms that you consider for your portfolio, you can look for actions that improve the odds for success:

- *Change in Management*: You could, for instance, check to see if the management of the firm has changed recently. Presumably, a new management team will be more inclined to admit to mistakes made in the past and to fix them.
- *Restructuring Actions*: You could also screen for recent restructuring decisions made by the firm including divestitures and acquisitions that change the business mix.
- *Activist Investors*: Managers at firms in trouble often need pressure brought on them by activist investors; pension funds and individual investors often take positions in troubled companies and push for change. The presence of one or more of such investors at a firm can be viewed as a promising sign.
- *Survival*: To fix problems that may be long term and structural, firms need time as their ally. They are more likely to get this time if the threat of financial default does not hang over their heads. Restricting your holdings to companies that have manageable debt loads, in addition to acting as a risk screen, also increases the odds of survival.
- *Trends in profitability*: While the long term trends in profitability for loser stocks are likely to be negative, you may be able to find positive signs in short term trends. You could, for instance, invest only in companies that have reported positive earnings in the last quarter. While one quarter does not make for a turn-around, it may signal that the company has put some of its troubles behind it.

Lessons for Investors

Buying stocks just because they have gone down in the recent past may look like a winning strategy on paper but there are significant associated risks. If you are a prudent investor, with a long time horizon and a contrarian investment philosophy, you should want to buy loser stocks with controllable transactions costs and limited exposure to risk. To achieve these goals, you could consider screening all U.S, stocks for the following:

- *Past Returns*: Only stocks in the bottom quartile in terms of returns over the last year will be considered for this portfolio. This is a much more relaxed screen than the one used earlier in the chapter (where the 500 stocks with the most negative returns out of 7000) were picked. However, it will then allow for stricter screens for risk and transactions costs.
- *Transactions Costs*: To reduce the overall transactions costs on the portfolio, only stocks that trade at prices greater than $5 are considered.
- *Risk*: Stocks with standard deviations greater than 80%, betas greater than 1.25 or debt to capital ratios that exceed 50% are eliminated from the sample. The first two operate purely as risk screens and the last one is a screen for both risk and survival.
- *Catalyst for improvement*: Only stocks that report positive earnings in the most recent quarter and increased earnings over the prior period are considered for the overall portfolio. The rationale is that stocks that are making money are not only less risky but also have more freedom to make the changes that need to be made to become healthy companies.

The resulting portfolio of 20 stocks, obtained by screening all U.S. companies in January 2003 is listed in the appendix.

Conclusion

There are many contrarian investors who believe that buying stocks that have done badly in the recent past is a good strategy. This strategy is predicated on the belief that investors over react to new information and push down stock prices too much after bad news (a bad earnings announcement, a cut in dividends) and up too much after good news. The empirical evidence seems to bear out this belief. Studies indicate that stocks that have gone down the most over a recent period generate high returns if held for long periods. However, these stocks also tend to trade at low prices and transactions costs are high with this strategy. These stocks are also riskier than average.

If you want to succeed with this strategy, you have to begin with a long time horizon and a strong stomach for volatility. You will have to construct your portfolio with care to reduce your exposure to both transaction costs and risk. You will often find yourself losing before you begin winning. Even then, this is not a foolproof or a riskless strategy.

Appendix: Loser Stocks trading at more than $ 5 and with limited exposure to risk and default

Company Name	*Ticker Symbol*	*Industry Name*	*Stock Price*	*Total Return 1-Year*	*Beta 3-Year*	*Std Dev 3-Year*	*EPS Latest Qtr*	*Market debt to capital*
Almost Family Inc	AFAM	Medical Services	6.56	-55.23%	0.07	56.66%	0.12	46.85%
Ambassadors Intl Inc	AMIE	Industrial Services	9.18	-57.17%	0.4	52.76%	0.02	0.22%
BJ's Wholesale Club	BJ	Retail Store	15.52	-58.50%	0.73	37.70%	0.38	8.40%
CAE Inc.	CAE.TO	Aerospace/Defense	5.18	-55.19%	1.21	60.03%	0.11	40.56%
Convergys Corp.	CVG	Industrial Services	12.59	-59.59%	1.12	46.25%	0.34	5.06%
Crawford & Co. 'B'	CRD/B	Financial Svcs. (Div.)	5.05	-55.55%	0.32	56.68%	0.11	21.48%
Cytyc Corp.	CYTC	Medical Supplies	10.81	-60.92%	0.95	66.52%	0.11	0.00%
Enzon Inc.	ENZN	Drug	17.8	-70.29%	1.01	60.11%	0.29	33.46%
Fab Industries	FIT	Textile	8.9	-55.22%	0.22	49.33%	0.19	0.71%
Footstar Inc.	FTS	Retail (Special Lines)	9.42	-77.76%	-0.05	51.38%	0.69	42.70%
Kendle Intl Inc	KNDL	Medical Services	8.52	-56.35%	0.52	65.58%	0.16	12.71%
Ohio Art Co	OAR	Recreation	17	-55.96%	0.19	59.26%	1.18	31.05%
On Assignment	ASGN	Human Resources	7.5	-62.91%	1.17	61.87%	0.14	0.00%
QLT Inc.	QLT.TO	Drug	12.33	-66.91%	1.11	71.34%	0.13	0.00%
SRI/Surgical Express Inc	STRC	Medical Supplies	5.02	-64.56%	-0.33	65.68%	0.05	40.78%
Tenet Healthcare	THC	Medical Services	18.22	-58.11%	-0.38	46.65%	0.68	30.45%
THQ Inc.	THQI	Entertainment Tech	12.2	-58.99%	0.68	67.04%	0.12	0.00%

TRC Cos.	TRR	Environmental	13.99	-60.61%	0.67	66.06%	0.26	11.72%
Vans Inc.	VANS	Shoe	5.06	-55.42%	0.52	51.73%	0.3	7.64%
Veritas DGC Inc	VTS	Oilfield Svcs/Equip.	7.65	-57.30%	1.21	64.72%	0.05	34.93%