

CHAPTER 8

MEANS AND MEAN REVERSION

Once you have a good base number set—whether that set is a simple dollar price or some sort of a ratio—one way to put the data into long-term perspective is with a mean, or arithmetical average.

The mean is simply the average of the data for a certain period of time. Figure 8-1 shows price to prior peak earnings from 1870 to September 2011, with the simplest mean line imaginable. Half the data points are above the line, and half below it.

With the exception of a short blip in 2008, we have been above the mean line almost continuously since the mid-1980s. Even since the 1950s, there have been more data points above the line than below it. This suggests that there may be a correction—or *mean reversion*—ahead.

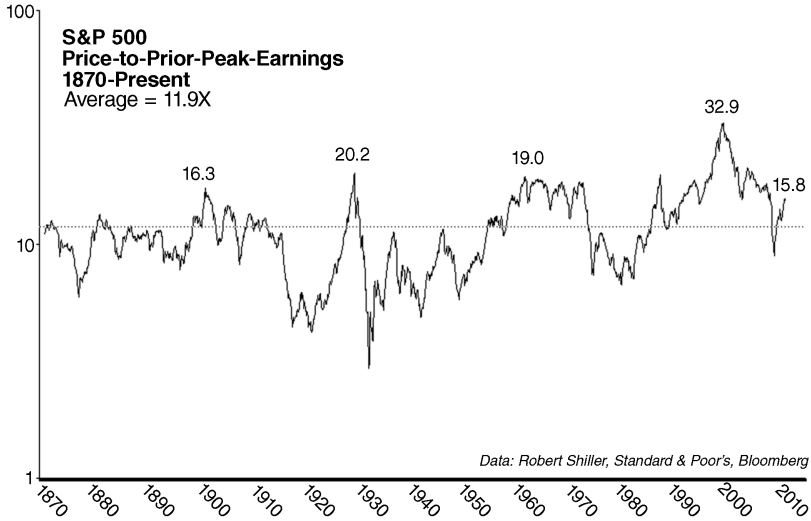
(See also the Home-on-the-Range chart in Figure 7-3.)

The length of time above the mean also may suggest a more fundamental shift—and one that investors need to be aware of.

Stocks have become a more “popular” investment, and here’s one reason for it:



Figure 8-1: Standard & Poor's 500 Index (S&P 500) Price to Prior Peak Earnings With Mean Line, 1870–Present.



Years ago, most individuals invested in themselves first. Back 150 years ago, they probably bought farmland. Later, they started a store, a tiny factory, or a service station.

Back then, the stock market was nothing more than a rich man's playground.

But gradually, very gradually, more and more workers gravitated toward paid employment by a third party, and “investments” went not to the businesses that people owned but to bets on the performance of third parties. At first, it was fixed-income investments, investments that generated a small but sure income, such as a savings account or equivalent. Or maybe it was a non-income-producing investment, such as buying



a home, fixing it up, living in it, and hoping that the price would rise.

Even in the early 1960s, the rate of public participation in the stock market was still low because stocks were expensive relative to salaries. And there were other kinds of investments: savings accounts that offered modest but real returns, house prices that appreciated, and so forth. But now those same investments offer little or uncertain returns.

And many more “average Joe” investors are desperate to save up for a long, expensive retirement.

Hence equities.

The average investor has gone from investing in himself to making an investment in something over which he has no control and little knowledge. And he chases the highest-return but highest-risk class of investment, the lowest claim in bankruptcy—equities.

So back to the chart.

Chasing high price/earnings (P/E) ratio stocks indicates an enthusiasm for stocks, but that enthusiasm may be propelled by a lack of credible alternatives, especially among small investors, whose alternative assets would include their family home and a savings account, neither of which has attractive rates of return at the moment.

In fact, stock prices may have become an alternate currency, in some cases, with more people parking shorter-term money there rather than in a bank.

On the other hand, too many desperate investors may be chasing too few credible stocks, causing a long-term inflation in stock prices.

It’s something to think about.



Definition—Regression to the Mean/ Mean Reversion

The mean is nothing more than an average, a constantly changing number that reflects a mathematical point where there are an equal number of data points above and below the calculated number.

Many analysts say that the market ultimately “reverts to the mean” as if the mean had some kind of magnetic attraction; where the market should be. But the market hardly ever stops at the mean. It oscillates between extremes of fear on the downside and greed on the upside, and it rarely stops right at the mean. The market always swings like a pendulum from periods of pessimism to periods of optimism, and it is always prone to extremes at both ends. Investors should be worried much more about how far the pendulum will swing than where the mean is.

Let’s say, using round numbers, that the P/E ratio is in a range between 5 and 25. So the mean is 15. So let’s say that the P/E ratio peaked at 25 but is now 15. Voilà. Should we be happy? No. If the P/E ratio stopped when it got to 15, then the mean wouldn’t be 15. The extremes would be 25 and 15, and the mean would be 20. For the mean to be 15, there have to be as many data points below the mean as above it.

The scary thing about this is that analysts are always reassuring people when the market has regressed or returned to the mean. But the mean is meaningless in assessing stock prices. Stock prices are what they are on any given day. They do not respect mathematical calculations of where they should hang



around in the middle. In fact, they are likely to be moving quickly in one direction or the other.

This is very important to consider today.

During the 1990s, valuations were above average, and returns were outsized. During 2000 to 2010, valuations have been correcting toward more normal rates of return but have not yet reached the other extreme.

People say, “Aha! We have regressed to the mean.” And what they think they are saying is that valuations are now reasonable, and the implication is that they could stay that way.

These people couldn’t be more wrong.

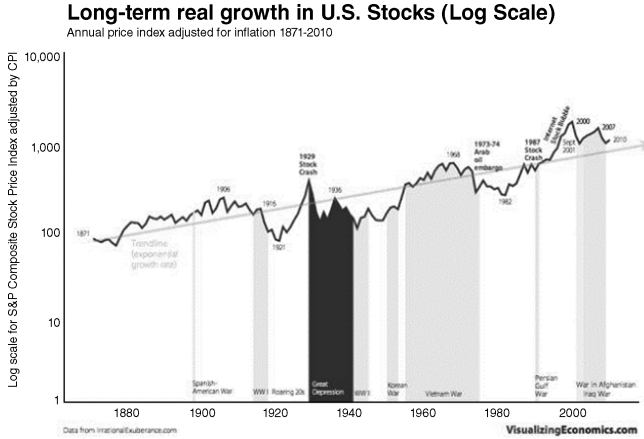
At this particular time, having gone through a period of extreme optimism in the 1990s, the issue is, How far is the pendulum likely to swing the other way? History suggests that it is likely to swing, eventually, to a period of pessimism and that since the 2000–2007 period, the general public investor, as opposed to hedge fund traders, high-frequency computers, and so on, has become less and less enchanted with stocks. Even though the market has been doing reasonably well since 2009, the numbers suggest that the equal but opposite extreme has yet to be seen.

Frank Peluso, my favorite cycles analyst, has compared market cycles to the swings of a pendulum. The market starts down, accelerates, reaches its maximum point of acceleration, then decelerates, and finally ends at an extreme on the other side.

So the concept of cycle analysis is this: Where is the pendulum in its arc? Is it accelerating or decelerating? Frank applied the same methodology to stock prices.



Figure 8-2: S&P 500 Long-Term Inflation-Adjusted Real Growth Since 1871 on a Log Scale.



The mean, though, lies somewhere near the point of maximum acceleration. If you think about that for a while, you'll understand why the mean is not the magic stopping place that Wall Street strategists would have you think it is.

I published the chart in Figure 8-2 showing long-term real growth and stock prices early in 2011. It's another reversion-to-the-mean chart; it shows you not only the peaks and troughs but also the least-squares trend line and how stock prices oscillate around that. (A *least-squares trend line* is the straight line for which the sum of the squares of the deviations is minimized and is used instead of the mean when the data generally are rising or falling rather than flat.) Here, too, the takeaway is that the least-squares trend line is a midpoint—not a stopping place.



Relative-Strength Line

Basically, you want to own a stock that's doing two things: (1) going up (the price on the stock chart) and (2) going up more than the market (the relative-strength line on the chart). David Keller, managing director of research for Fidelity Investments in Boston and the person who manages Fidelity's technical analysis team, said during a Boston Society of Security Analysts presentation in 2010 that "I never look at a chart that doesn't have a relative-strength line on it." I don't either; it's that important!

Relative-strength lines can show the stock versus either the broad market or a sector grouping. Naturally, the more restrictive the grouping, the closer the relative-strength line will track the stock.

Momentum Measures/Oscillators

Some technicians use a dizzying array of momentum measures and oscillators to verify or refute one another, but you really need only one of each to know what's going on with the momentum and overbought/oversold situations.

Momentum is the speed at which prices (or other data) are changing—the rate of change of the data, if you will. If a stock is gaining momentum, it is going up at a faster rate than before, and if it is losing momentum, it's going up at a slower rate. *Overbought* and *oversold*, meanwhile, are terms that refer to whether a stock has gone up or down too much too fast and is probably due for some sort of corrective move. Finally, an oscillator is simply the plot of the difference between the price (or



some other data point) and either a previous price or a moving average; the higher the oscillator, the further above the previous price or moving average is the current price or data point.

As an example, I'll use a 20-day trading period, which is approximately a month. If you chart the rate of change of a stock price over a 20-day period—a 20-day oscillator—you will find that it peaks at the very beginning of a bull market because prices go up most rapidly at the very beginning of a bull market. Gradually, the price goes up less and less rapidly, and your oscillator's line will work gradually lower. At some point, it will fall to zero, which tells you that the price has stopped going up and is now going sideways. And the oscillator then will continue going lower until, at the end of the bear market, it will be at its most negative level.

An oscillator thus tends to go from the maximum low at the end of a bear market to the maximum high at the beginning of a bull market; then work its way gradually lower until the end of the next bear market. The problem in a bear market, of course, is knowing where that maximum low is because things always can get worse than you think. People who say "The market has gone down so much, it's got to be a buy" always can get caught by the fact that the market can go down even farther and be even more of a buy. This is what happened in 2008. So, although you can use an oscillator to tell you that prices have gone down at a rate similar to the rate they declined at the end of the last bear market, you can't use it to pinpoint the end of the bear market. Low oscillator readings simply mean that one precondition for the bear market being over has been met, and it is time to be looking for a bear market bottom—even if such a bottom does not materialize at that particular hour.



On the flip side, meanwhile, looking at how high the oscillator gets at the beginning of a move will tell you how strong and how durable the move is. If the advance is extraordinarily powerful, it generates what I call *breakaway momentum*, which I'll discuss in just a minute.

There are literally hundreds of oscillators in use among the technical fraternity, and discussing the differences between them and their myriad interpretations is beyond the scope of this book. (If you're interested in learning more about oscillators, the Appendix has a number of suggestions for you.) All that long-term investors really need to know, though, are (1) Is the stock's price gaining or losing momentum? and (2) Is the stock's price overbought or oversold?

(Remember the 90/10 rule!)

Breakaway Momentum

Downside momentum usually peaks at the end of a decline as prices cascade into a primary low. On the upside, though, momentum peaks at the beginning of an advance and then dissipates gradually as the advance goes on, and the more powerful the momentum at the move's beginning, the stronger is the overall move. *Really* strong momentum is found only at the beginning of a *really* strong move—a new bull market or a new intermediate up-leg within a bull market. I coined the term *breakaway momentum* in the 1970s to describe this really powerful upside momentum.

Breakaway momentum (some people call it a *breadth thrust*) occurs when 10-day total advances on the New York Stock



Table 8-1: Breakaway Momentum Since 1945

<i>Date</i>	<i>A/D Ratio</i>	<i>Date</i>	<i>A/D Ratio</i>
July 14, 1949	2.07	January 14, 1976	2.53
November 20, 1950	2.01	August 26, 1982	2.68
January 26, 1954	2.01	October 13, 1982	2.09
January 24, 1958	2.00	January 23, 1985	1.972
July 12, 1962	2.37	January 15, 1987	2.36
November 12, 1962	2.50	February 5, 1991	2.17
January 18, 1967	2.13	January 6, 1992	1.974
December 7, 1970	2.12	March 23, 2009	2.22
December 8, 1971	1.98	July 23, 2009	2.17
January 14, 1975	2.46	September 16, 2009	2.32

Exchange (NYSE) are greater than 1.97 times 10-day total NYSE declines. It is a relatively uncommon phenomenon; Table 8-1 shows the 20 times this has occurred since World War II (an average of once every 3½ years).

How is breakaway momentum typically achieved? It's not easy. Usually, three things have to happen. First, we need a very strong advance at the outset of the 10-day period. Typically, this requires an advance/decline (A/D) ratio in the area of 2,800 to 500 on the first day, 2,500 to 700 on day 2, and 2,050 to 1,050 on days 3 and 4. This creates a cumulative ratio of 2.69 to 1, which is well above the 1.97 threshold. The very strong advances on the first two days followed by still-positive breadth on the next two days are a formidable achievement, but the next one is even tougher. Markets never go straight up, and *the real trick in achieving*



breakaway momentum is to keep declines limited during the inevitable corrections that occur in any 10-day period. In order to keep declines limited during corrections, the corrections must be minimal; often this occurs when intraday declines abort before the close, and a big-breadth deficit turns into just a narrow one by day's end. Breadth during the "correction days" (days 5 and 6), then, should be no worse than 1,400 to 1,700. Although this pushes the cumulative ratio down to 1.84, this is a far from insurmountable deficit. The final element needed to get breakaway momentum is a second strong advance during days 7 through 10—not quite as strong as the initial advance but not too far behind it either. If, for example, the market generates breadth during days 7 through 10 of 2,500 to 700, 2,300 to 800, 2,100 to 1,000, and 1,900 to 1,200, the 10-day breadth totals are 21,000 and 10,400. This generates a 10-day breadth ratio of 2.02—breakaway momentum!

The real trick in generating breakaway momentum, then, is not a lot of advances: *It's a lack of declines.* If the market stages a strong two-day advance, for example, it *must* maintain very positive breadth days for a couple of days afterward (days 3 and 4 and 9 and 10) to keep the 10-day declines to a minimum. Also, declines must be kept to a minimum during the "normal" correction in the middle of the 10-day period; declines can exceed advances during those two days, but not by much, or it will be impossible for the market to generate the two advances needed to offset every decline.

And just to illustrate the linkage between the economy and the stock market, which is a leading economic indicator: The stock market very often generates breakaway momentum three months



before the end of a recession (as later determined by the National Bureau of Economic Research, the arbiter of such things).

Selling Climaxes

The stock market goes up the fastest at the beginning of a move—but it goes down the fastest at the end of a decline. This often results in what is called a *selling climax*, where prices fall more and more rapidly until they finally hit bottom and then rebound just as rapidly for a short time—all on extremely heavy volume. The market then tries to stabilize via a process called *testing the low* as the initial sharp but relatively short-lived rebound is followed by a series of lurches to the downside where the averages try to hold above the climactic low. The initial test usually occurs three to four days afterward, and a more thorough—and more traumatic—test often takes place three to four weeks afterward. If selling pressure, as measured by such things as volume and the number of new lows, does not exceed the level it reached during the selling climax, the test is likely to be successful; if not, the market hasn't reached its final bottom yet.

Tests of prior lows are extremely traumatic to live through. During the initial decline, investors watch numbly to see just how low the market will go, but during the testing process—when the news is inevitably at its worst—there is a great fear of “Here we go again.” It is only when the market holds above its climactic low (or, in its perverse way, slightly undercuts it before reversing back to the upside, which happens a lot) that the fears can be laid to rest.



Figure 8-3: DJIA 1998 Bottom.

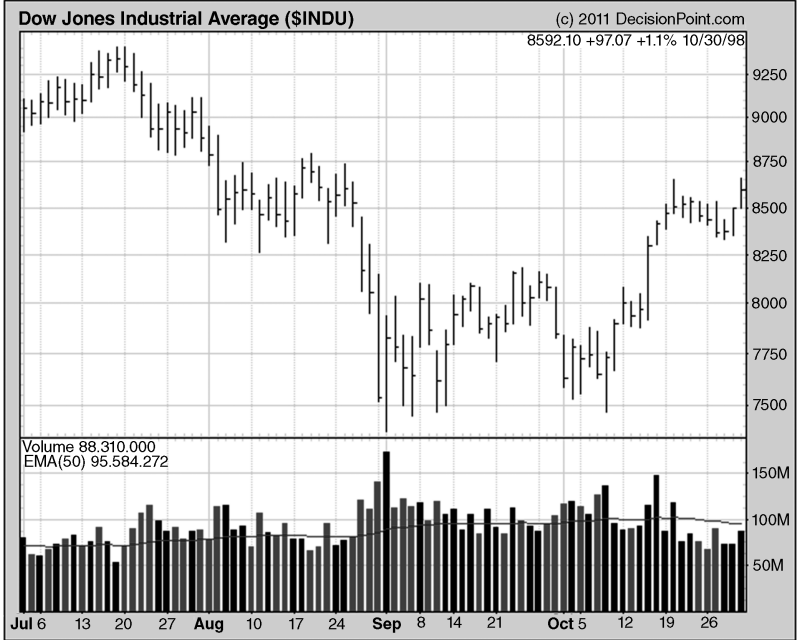


Chart courtesy of DecisionPoint.com

A successful testing process, in fact, is quite similar to what someone goes through after a big night of drinking: The initial low is equivalent to the first huge burst of vomiting, and subsequent lows are equivalent to lesser and lesser upchucks. Ideally, in fact, the testing process ends up with the market getting a case of the dry heaves: It retches and retches, but there's nothing left to come up.

Figure 8-3 is a chart of the 1998 bottom in the Dow Jones Industrial Average (DJIA) from DecisionPoint.com and is a very good illustration of a climactic low in the market and the subsequent testing process.



Caveat on Indexes

A lot of people think that the Standard & Poor's 500 Index (S&P 500), the reference index that virtually all professionals use, is a static index. They couldn't be more wrong! Indexes change over the years, and some of them change more than others. Most often they change to reflect fundamental changes. Big indexed companies merge and go out of business; tiny basement startups take off and become powerhouses that an index cannot ignore.

So, over time, an index may approximately reflect a representative group of the same types of companies. In the short run, though, the timing for exactly when companies are added or subtracted may create anomalies, and an index's price may be very misleading.

During the dot-com bubble, for example, the prices of tech stocks weren't the only thing that tanked. They took the S&P Index with them.

S&P noticed after some of the dot-com stocks had gone up a lot that they had gone up a lot. And so S&P added them to the S&P average only after they had already gone up a lot and were at exceedingly high prices. Yahoo!, to cite but one example, had gone from under a dollar in December 1996 to \$87 in December 2000, when S&P added it to the S&P 500. It rose to \$125 during the next three weeks and then slid all the way down to \$4 in mid-2001. The problem, of course, was that the S&P 500 ended up getting virtually no benefit from the dot-com stock whatsoever on the way up; after Yahoo! (YHOO) was added to the index, it went up just another 38 points in three weeks. Then YHOO fell 121 points during the next year



and a half—and the S&P 500 suffered through every single one of those 121 points on the way down.

Yahoo! was hardly the only dot-com stock that was added to the S&P 500 then, and those stocks ended up creating a horribly negative bias. Because the S&P 500 added a lot of dot-com stocks close to their peaks, the average had a much heavier dot-com weighting on the way down than it did on the way up.

This is why the S&P 500 can be very misleading. People tend to think of it as a static index—something that is etched in stone. But you may be surprised to learn how actively managed it is; S&P's stock selection committee made over 300 changes in the S&P 500 between 2000 and 2009.

There is another problem, too.

The S&P stock selection committee wields enormous power on Wall Street because every time it adds a stock to the index, all the index funds have to buy it. And every time S&P deletes a stock, the index funds have to sell it. And so, when S&P finally came around and decided that, in the case of the dot-com stocks, they were underrepresented after they had made a big run-up and added some of them to the S&P 500, the index funds were forced to buy the darn things even though they'd already gone so far up that no bona fide long-term investor would touch them with a 10-foot pole.

So the S&P 500 is not something that is etched in stone—not by a long shot! It changes quite a bit. And those changes often detract rather than add to the performance because S&P's stock selection committee very often is late in its selections; the committee reacts to moves that have already taken place. And so the stocks finally take on representation in the



index after they have already had a move—after it is too late for them to help the S&P on the upside—but they still can make a big impact on it on the downside.

Anecdote—The Cathedral of Charts

I was very privileged a couple of years ago to be treated to a tour of Fidelity’s chart room, the reference area for financial markets at one of the biggest institutional investors in the world (Figure 8-4). Displayed on the walls are charts of all kinds, from interest rates through overseas markets to a very long-term chart of the U.S. stock market going all the way back to 1779. (The latter chart has several pre-S&P and Dow Jones series, such as the Cleveland Trust Index, that have been spliced together. Intriguingly, the source of the pre-1832 data is labeled “Confidential Source,” which has led me to all sorts of strange speculations with regard to the actual source. Was it a seance with someone from that era, a scroll from a tomb, or what?)

Only long-term charts are displayed in the chart room; no Elliott waves or stochastic oscillators there. In one area, charts of major U.S. groups dating from 1990 are grouped together; in another, charts of all overseas markets are similarly grouped. I found the effect to be truly inspirational—in every sense of the word. I couldn’t help but get a very long-term perspective on the financial markets while quietly studying the charts, as a number of



fund managers did during my visit. You find yourself contemplating them as you would contemplate great works in a museum. “Cathedral of Charts” alludes to one of the great wonders of the investing world and therefore is deeply respectful, not comedic, and the term *Chart Room* is capitalized intentionally.

Figure 8-4 shows a rare glimpse inside the “Cathedral of Charts” during one of my visits. I am deeply appreciative to David Keller, managing director of research for Fidelity Investments in Boston, shown in the picture with me, for giving me permission to include this picture in this book.

At the time of my visit in early 2010, I was struck by the incredible and unprecedented broadness of the global bull market that showed no signs of becoming more selective yet.

Figure 8-4: Walter Deemer Inside the “Cathedral of Charts.”



As usual, though, life is not that simple, and I was reminded of one of the many great experiences I've had during my career. It was back when I spoke at the Conference on Technical Analysis in Cambridge, England, in mid-September 1974. My topic was the U.S. market; another speaker, David Fuller, addressed the British market, and a third covered every other market in the world. That third speaker was Adrian Shrikker, the media-dubbed "Chartist Pope," who followed the world's stock markets from his base in Luxemburg.

Mr. Shrikker showed us stock chart after stock chart in markets ranging from continental Europe all the way to the Pacific Rim. After this had gone on for quite a long time, a delegate finally raised his hand. "Mr. Shrikker, you have shown us a great many charts of stocks in downtrends. Could you now show us some stocks in an uptrend?"

Mr. Shrikker, who was not very tall in the first place, drew himself up to his full height and said, in forceful tones that I will never forget, "No . . . no, I cannot do that. There is no stock in the world that is in an uptrend!"

The six-year global bear market ended three weeks later.

(In fairness, I should say that some charts—and Mr. Shrikker—turned positive soon after the upcoming bottom. The moral thus may be that even though everything is bullish or bearish and therefore can't get any better or any worse, one must wait for the first signs of change before fading the unanimous evidence.)

