



CUBIC ASSET MANAGEMENT, LLC

2013 2nd Quarter Stock Market Commentary

A BAD CASE OF APOPHENIA

"If you work hard and become successful, it does not mean you are successful because you worked hard, just as if you are tall with long hair it doesn't mean you would be a midget if you were bald."

- Lemony Snicket

A 2008 study in Great Britain found that drivers wearing coats were involved in a disproportionate share of traffic accidents. The researchers hypothesized that wearing a coat inhibited the drivers' movements, leading some members of Parliament to propose legislation prohibiting taxi drivers from wearing coats while working. The bill was ultimately withdrawn when it was pointed out that drivers tended to wear raincoats when it was raining, and that this was the principal factor leading to both more accidents and more coat wearing. The legislation made about as much sense as banning the use of windshield wipers, since their use while driving was also correlated with more accidents.

This is a classic example of correlation without causation. Correlation refers to the tendency of two variables to move proportionally in the same direction. Intuitively, it is natural to assume that when things are highly correlated, one is causing the other, but the previous example shows this need not be the case. They might both be caused by something else. Even worse, there might be no reason at all for the correlation. For example, forty-four per cent of people in the United States have dyed their hair at some time. But among self-professed vegetarians, that figure soars to sixty-seven per cent. This useless fact is one of hundreds of similar tidbits from a wonderful blog by Sean Gallagher (correlated.org), who each day publishes his findings from the previous day's survey. Where else could one discover that forty-nine per cent of people prefer reading fiction to non-fiction, but a much higher sixty-three per cent feel that way among people who prefer deep-dish pizza.

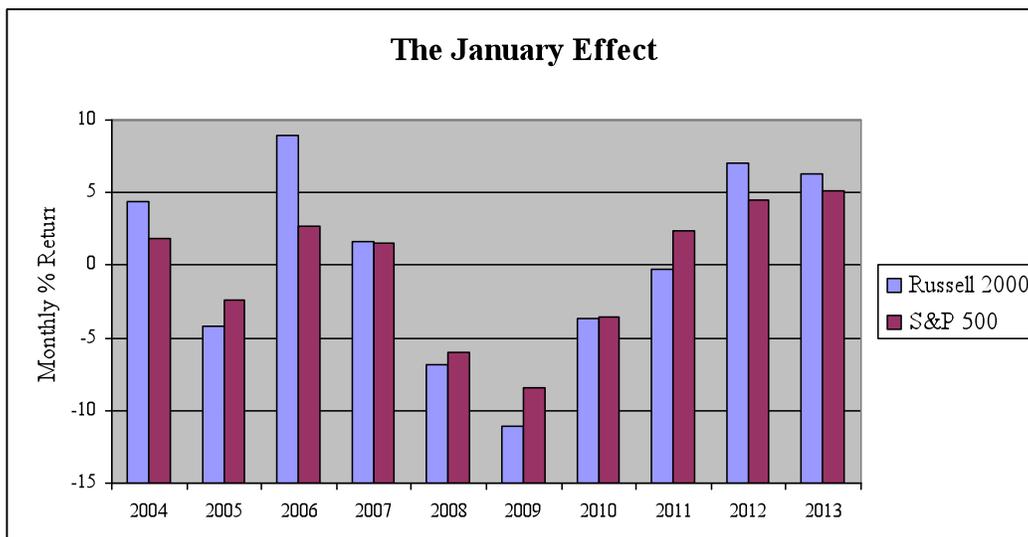
Wall Street traders are notorious for seeking out correlations which might offer an edge. Probably the best known correlation is the so-called Super Bowl Indicator. This was first observed by the sports writer Leonard Koppert, who noticed in the mid-1970s that every time a team from the original American Football League (now the American Football Conference) won the Super Bowl, the stock market declined that year, while if one of the original National Football League teams was victorious, the market rose. This indicator was 100% accurate at the time of its "discovery", and has maintained an accuracy rate of over 80%. However, since a particular football league winning a Super Bowl and the Dow Jones Industrials have no logical connection, there is no reason to think it will work as a forecaster of bull and bear markets, any more than the fact that a graph of oil production in the United States and the popularity of Creedence Clearwater Revival both show a peak in 1970 followed by a gradual decline should be taken as a predictor of the likelihood of American energy dependence.

And then, of course, there is the Hemline Indicator, which posits that the stock market rises as hemlines do, and plummets when longer styles are in fashion. At least this has the hint of plausibility, since both might be seen as symptoms of an upbeat outlook. Unfortunately, though, the hemline indicator has been extensively studied, and debunked. It has as much validity as the belief of some Iranian clerics that revealing clothing on women causes earthquakes. Most recently, Marjolein van Baardwijk and Philip Hans Franses of the Erasmus School of Economics examined the lengths of skirts that appeared in the French fashion magazine *L'Officiel* every month from 1921-2009. They found that skirt lengths "have no predictive ability for the state of the economy."

Such spurious correlations are illustrations of the phenomenon known as "apophenia," the perception of patterns in random data. It is the basis for most conspiracy theories. The subtype of apophenia illustrated above is sometimes referred to as the "clustering illusion", the cognitive bias that random events which occur in clusters are not really random.

Some stock market correlations do have a compelling logical basis. Consider, for example, the "January Effect." This is a trading rule based upon the observation that small-cap stocks generally outperform the broad market in January. The reasoning is that many individual investors tend to disproportionately own small company stocks, and moreover they tend to sell their losers near calendar year-end in order to harvest tax losses. Institutional investors sell those same stocks in order to window-dress their year-end reports. Those same securities get purchased in January as year-end bonus money flows into the market. In theory, investors should be able to profit from this effect by buying small-cap stocks in late December and selling them the following month. The January Effect was first written about in 1942 by investment banker Sidney B. Wachtel, who observed that since 1925, small company stocks had outperformed the broader market in the month of January, with most of the disparity occurring before the middle of the month. When combined with the four-year presidential cycle, historically the largest January Effect occurred in year three of a president's term.

How would you have fared based upon this observation? Not too well lately. The chart below displays the percentage return for the month of January over the past decade on the S&P 500 index, a measure of large-cap stock performance, together with the return on the Russell 2000, the principal benchmark for small-caps. A quick glance shows that, contrary to the prediction of the

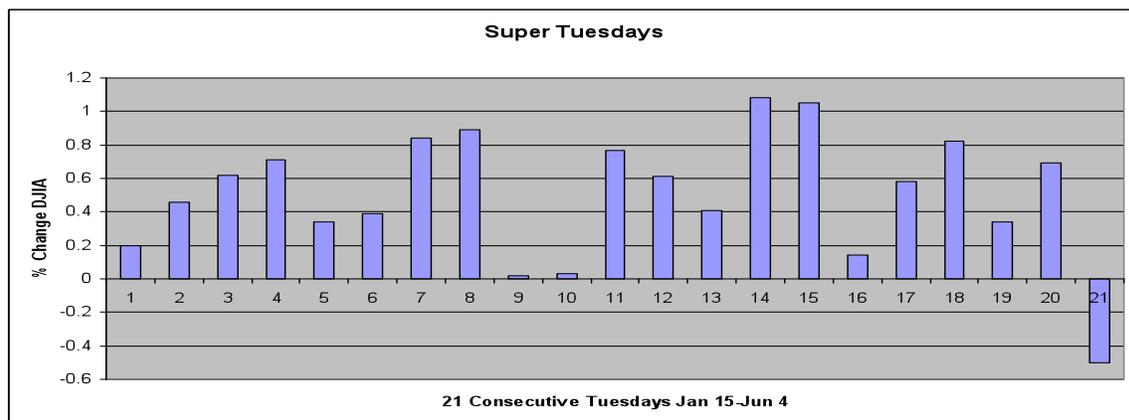


January Effect, small-caps trailed in three of the past five Januarys, and five of the past ten. This is what you might expect if their relative performance was random, rather than a reliable trading rule.

Another rule which has some intuitive appeal is the well known exhortation to "Sell in May and go away." This is based upon data showing that investment returns for the six month period from November through the end of April have tended to be much higher than those for the six month period from May through the end of October. For the sixty year period 1950-2010, the total return from November to April was roughly 8.1% per year, while the corresponding figure for the May to November period was a much smaller 2.6%. The logic supporting this disparity is that the performance in the winter months is bolstered by seasonal contributions to pension and 401(k) plans, while trading in the summer is lackluster because many traders are on vacation. But it is important to note that while performance in May-October has been well below that of November-April, it is still positive. Thus, anyone who sells in May will, on average, have less than someone who stays fully invested, unless the cash return exceeds the market return. Given the fact that interest rates are currently near zero, it would seem that an expected return of 2.6% for half a year is much more attractive. As an interesting side-note, there have been three other periods when short-term interest rates have been below 1%: 1934-1947, 1953 and mid 2003-4. During those years the market returned an average of 8.3% for the May-October period, higher than the November-April return.

But most importantly, the adage was based upon data collected over a sixty year period. Now that the saying is a part of traditional Wall Street wisdom, it no longer seems to apply. On average, it has not worked for the past decade.

Another trading rule with a much shorter provenance was brought to investors' attention on CNBC's morning show, Squawk Box. On April 30 co-host Becky Quick announced that viewers would be well advised to buy stocks that day, since, as she pointed out, the market always goes up on Tuesdays. Sure enough, the market closed with a small gain that day, after opening sharply lower. This extended its string of consecutive winning Tuesdays to a remarkable 16 weeks. It was followed by additional gains on each of the following four Tuesdays, earning that day the sobriquet of Super Tuesday. A remarkable 79% of the increase in the Dow Jones Industrials over



that period occurred on Tuesdays. But this pattern became self-defeating. On Monday, June 3, the market was trading slightly higher throughout the day, until shortly before the close, when a rush of buying occurred. Traders drove the average up 138 points in a matter of minutes,

apparently to position themselves for the next day's anticipated rally. The next day saw the string ended, since there was no fundamental reason for it to continue. It was simply a statistical artifact.

Recognizing a nonexistent pattern (or a false positive) is known as a type I error in cognition. It forms the basis of most (if not all) superstitions. A type II error is not recognizing a real pattern (a false negative). Evolutionarily, we seem to be hard wired to favor type I errors. In a 2008 paper in the *Proceedings of the Royal Society B*, "The Evolution of Superstitious and Superstition-like Behaviour," Harvard University biologist Kevin R. Foster and University of Helsinki biologist Hanna Kokko demonstrated that whenever the cost of believing a false pattern is real is less than the cost of not believing a real pattern, natural selection will favor the false positive. For example, believing that the rustle in the grass is a dangerous predator when it is only the wind does not cost much, but believing that a dangerous predator is the wind may cost an animal its life. Thus, there is a benefit for believing that most patterns are real.

For individuals, the lesson is that investments should not be selected based upon simplistic trading rules derived from correlations without causation. Rules like "Sell in May and go away," or "Stocks always rise on Tuesdays," are self-defeating. Once the patterns are identified and become widely known, traders will try to position themselves in advance, destroying the very pattern they are attempting to benefit from. Instead, they should be based upon fundamentals. After all, shares in a company which are purchased substantially below the intrinsic value of the business, creating a margin of safety, can be bought with impunity on any day of the week, or month of the year.