The Rennie Quarterly Return

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Causation Versus Correlation

The Concise Oxford Dictionary defines correlation as "mutual relation between two or more things" and causation as "causing or producing an effect." Correlation and causation can be given precise mathematical definitions, but most people do not know mathematics, so settle for the dictionary definitions. It should be pretty clear even with these that correlation is not causation.

We hear things like "men who have beards are generally happier," i.e., beards and happiness are highly correlated. Does this mean that men should grow beards? Or, "red cars are involved in more accidents than any other color car," i.e., red cars are highly correlated with high accident rates. Should we ban red cars? Certainly not on both counts. One has to look behind the numbers to discover the reasons for the enhanced happiness (more happy men grow beards) or accidents (more flamboyant drivers prefer red cars.)

The causation versus correlation confusion is rampant in the investment industry. One of the sillier things bouncing around is that skirt hemlines and the stock market are positively correlated; they tend to go up and down together. Another is the Super Bowl Indicator which holds that stocks will rise over the coming year if the winning team can trace its roots back to the original NFL—and fall if that team's roots are in the old AFL.

Nuttiest of all, but statistically valid, is that the economic indicator which shows the highest correlation with the S&P 500 Index is butter production in Bangladesh.

Time to get serious.

Let's look at pure quantitative (quants) active equity managers who try to outperform the market using historical market data, correlations, algorithms and massive computer power. These quant funds take different approaches; the most common are valuation, momentum, and quality factors. A recent Morningstar article titled "Why Quant Funds Failed" recounts that three-fourths of the quant funds it studied trailed their peers over the three years ending July 28, 2010. It provides more details under the sub-heading "Why They've Stunk It Up." Its conclusion: past correlations did not translate superior future performance.

Many years ago, quants recognized that stock returns during the month of January were the highest in each year. This became "The January Effect" and investors piled in. Soon, more observant investors began buying in December to insure that they had optimum stock positions in January. These new December investments neutralized normal tax-loss selling changing December results. More importantly, the January Effect soon disappeared, as did the high correlation between January and high monthly returns.

For one to achieve superior returns, one must understand causal relationships. In spite of hundreds of data points (economic data, balance sheets, income statements, Fed policy, and regulation just to name a few), the one factor that causes stock prices to move up or down is corporate earnings growth. Certainly, steady high earnings growth may not translate to steady stock price growth on a daily, weekly or monthly basis. But, over longer periods, higher stock prices are inevitable.

Of course there are some short-term events which will cause stock price movements. For example, a drop in fuel prices causes airline stocks to go up. Likewise, a declining dollar causes exporters to do well. In both of these instances, however, stock prices will increase because earnings growth increases—we're back to the previous paragraph.

CNBC commentator Larry Ludlow likes to say that "earnings growth is the mother's milk of stocks." We would agree.

The purpose of this newsletter is to urge you to remain skeptical before you accept financial relationships as fact. While they are great for the media, most are, indeed, worthless.

Causality is what really counts.

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Our Two 

Insanity is doing the same thing over and over again and expecting different results.

Albert Einstein

Quarterly Trivia:

What percent of American households pay no federal income taxes?

45%(source-Tax Policy Center)