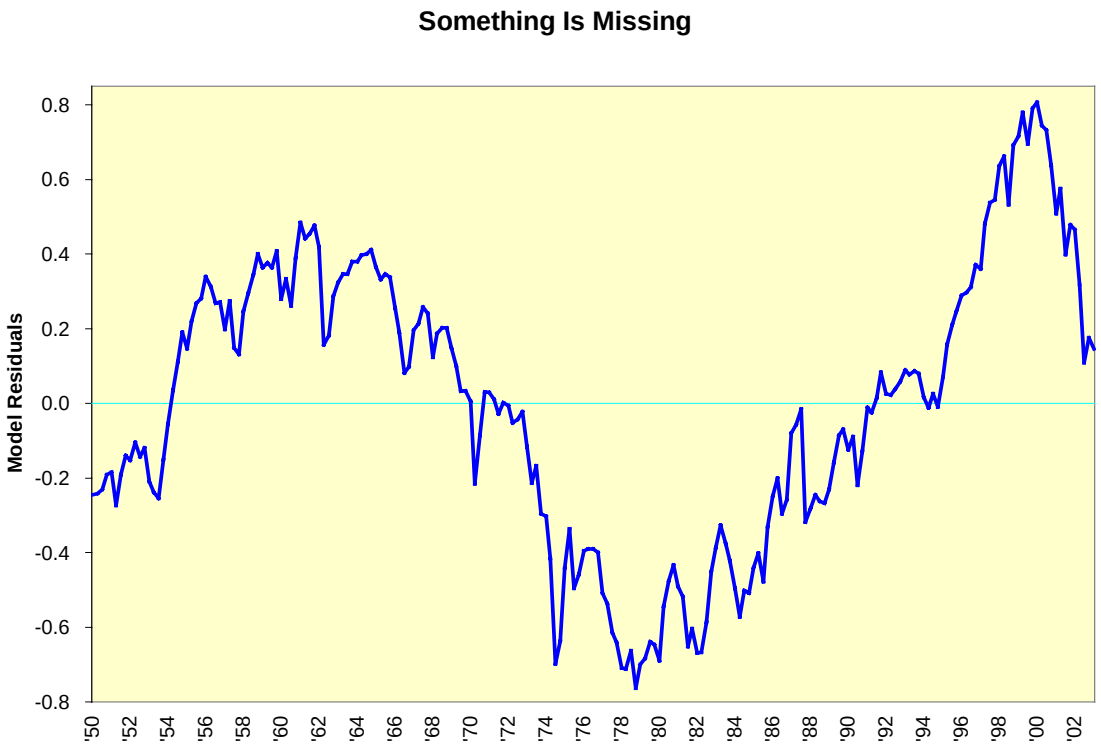
Finding The Missing Link Between Stocks And GDP

Famous advice is timeless. Phrases such as "Go west, young man," or "plastics" may not retain their original import, but would you counsel a modern-day successor to *The Graduate* with "nanotubes?" Peter Lynch's fame as the longtime manager of the Fidelity Magellan Fund was such that even though he retired from this role more than thirteen years ago he arguably remains the world's most famous mutual fund manager. Part of his fame is no doubt derived from his pithy aphorisms, such as "know what you own," and his trenchant observation that if you spend more than fifteen minutes per year thinking about the economy you have wasted your time.

I must, as an economist, reject this last observation, but in homage to Lynch's career I'll offer the following candidate for advice immortality: "Retire early."

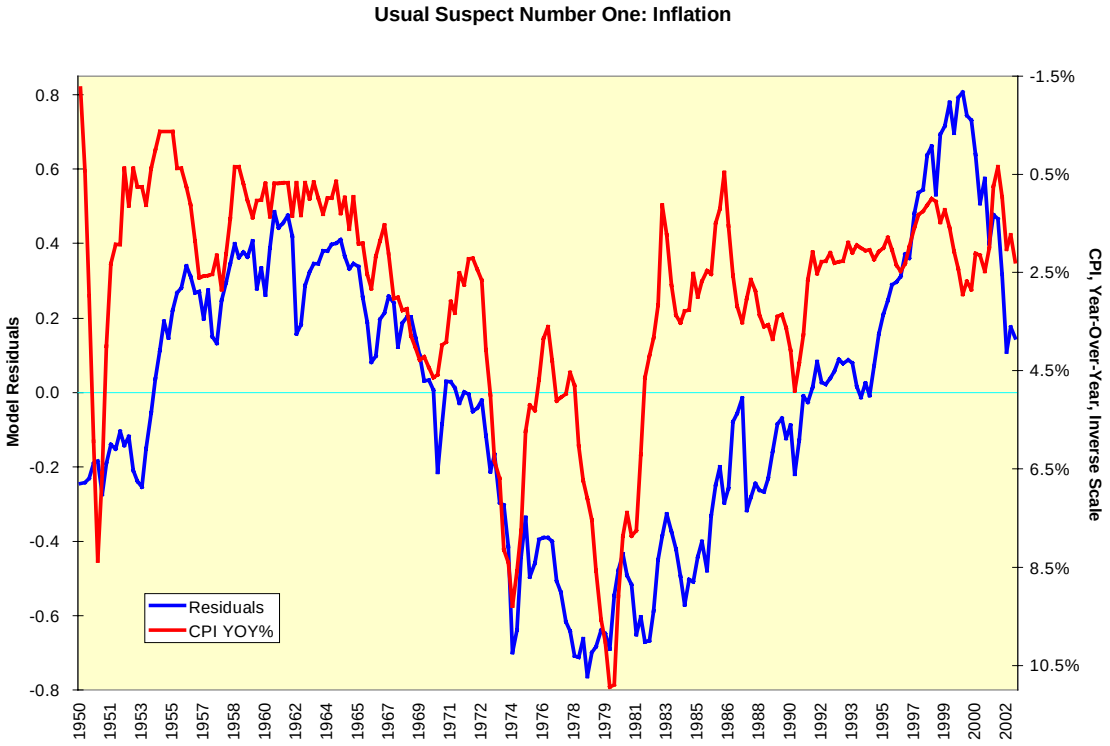
In Search Of The Lost Chord

I concluded last week's declamation of the stock market-GDP link with a chart of the residuals, or unexplained portion, of a model of inflation-adjusted total return on the S&P 500 based on inflation-adjusted GDP. These residuals were not the desired random, or white noise, process distributed trendlessly around zero, but rather a descriptive process in their own right. If we can model the series charted below successfully, we can learn which macroeconomic factors to follow for future stock market direction.



Step One is always to trust your eyesight. The most powerful computer around is still the one between your ears, and it is hard-wired to recognize visual patterns. Think about our tree-swinging ancestors who needed to guess where the next branch was. This is why the first step in investment analysis always should be a glance at the chart. As an added bonus, we can conclude from the above that successful chartists and most orangutans are really kindred spirits; that is today's contribution to the great and never-ending technical vs. fundamental debate.

What do our eyes tell us? The big dip between the mid-1960s and late 1970s coincides with rising inflation, while the succeeding move higher corresponded with disinflation. As we can see below, this is a pretty good start, but it has some gaping holes of its own. Sharp reductions in the CPI in 1975-1976 and the general disinflation of the 1980s did not pull stocks higher as we might expect. Moreover, the equity bubble of the 1990s and its subsequent bursting all took place within a narrow range of measured inflation. Let's keep the annualized CPI changes off to one side as one explanatory variable.



Q's You Can Use

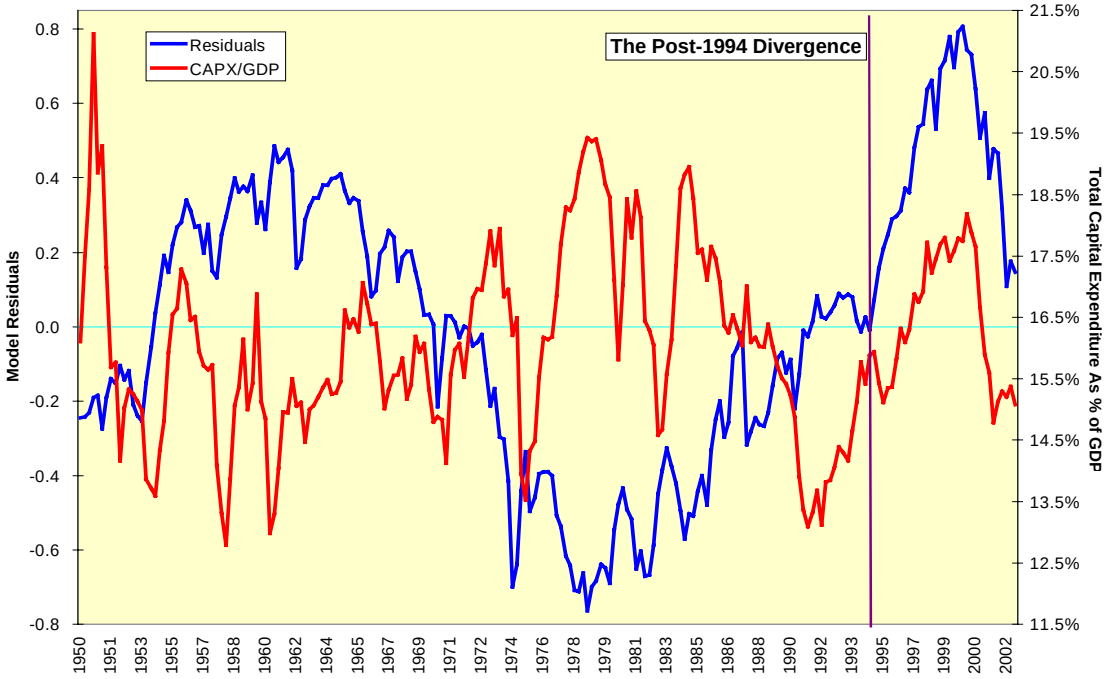
Once inflation is parsed out of the model, other market-derived variables such as long- and short-term interest rates, the shape of the yield curve and the exchange value of the dollar have to be excluded as well. All of these measures are too related, or collinear, to each other to be included simultaneously. Even worse, and as noted last week, we do not have long histories of free market prices for energy prices or currency exchange rates.

Stock prices measure, or should measure, the expected return on capital. When prices are high and expected returns are low, we should expect new investment to fall and the return on existing capital stock to rise. The late Nobel laureate James Tobin created a measure now referred to as Tobin's Q, which is the ratio of the market value of capital to its replacement cost. A Q-statistic greater than 1.0 indicates stock prices are overvalued relative to the replacement cost of their underlying assets, and that leads to a surge in new stock issuance. This wave of new investment capital drives down returns and leads to both overcapacity and lower stock prices. If any of this sounds familiar, it should.

Unfortunately, Tobin's Q is not a number we can put on our quote screens. The New York Stock Exchange stopped publishing daily market capitalization data last November; the Nasdaq still publishes such a number. The sum of these two at the end of May was $12.1 trillion. But these include only listed stocks, and therefore ignore all other measures of investment capital. The replacement costs of all real capital assets is a lagging book value measure whose only virtue may lie in its consistency. The ratio of the two would arrive too late to be of use to anyone.

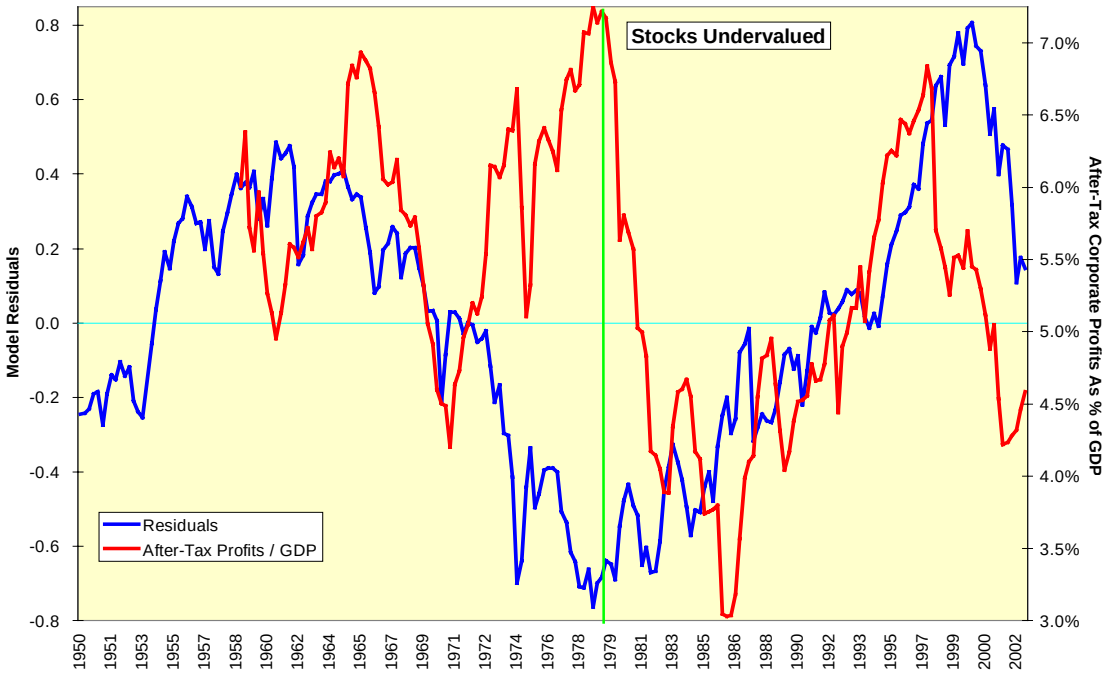
We can depict the mechanisms of Tobin's Q by taking the ratio of total capital expenditures to GDP and comparing it to our residual series. At the late 1970s trough in the residual series, a period corresponding to a low current return on financial assets, investment in real plant and equipment was high. After 1994, however, stock prices and capital investment rose and fell concurrently. The paper assets representing existing capital stock and investment in new and presumably more efficient capital stock rose and fell together instead of opposite one another.

Usual Suspect Number Two: Capital Investment



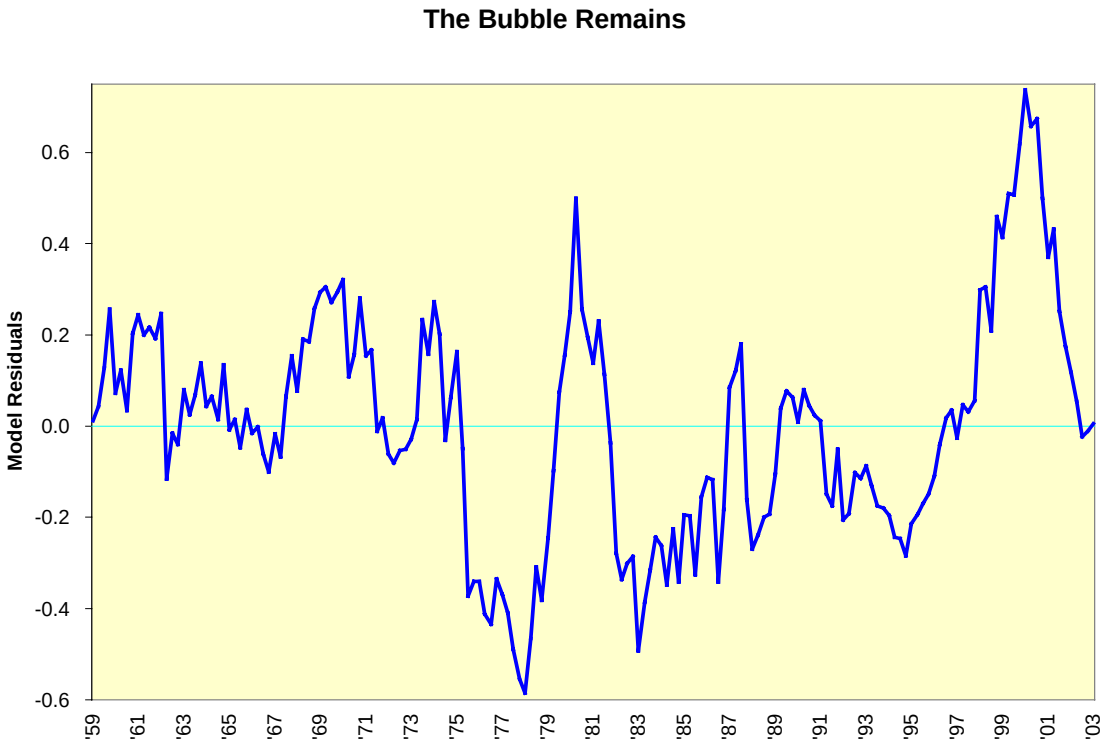
Such have-our-cake-and-eat-it-too behavior could be justified if after-tax corporate profits were rising as a percentage of GDP. They were, and significantly so, from 1986 through the onset of the Asian crisis at the end of the third quarter in 1997. But the loss of global customers and the cannibalistic competition from new domestic investment lowered this profitability precipitously all the way until the end of the first quarter of 2002, the very time at which the bottom dropped out of stocks.

Usual Suspect Number Three: Corporate Profits



Summing It Up

If we throw all of these measures into the econometric pot, the model improves somewhat, but the late 1990s equity bubble remains in the chart. Let's coin a phrase and call it irrational exuberance. The good news is the stock market / GDP relationship was at fair value at the end of March 2003; the market's second quarter rally has no doubt pushed us back into slight overvaluation at this point.



What will we need to carry us higher? Over the past half-century, we cannot demonstrate stable causal links between total return on stocks and GDP, after-tax profitability, capital expenditures or inflation. All of the usual suspects are hereby released on their own recognizance. The best model is the least satisfying and most circular one: Stocks will rise so long as people are willing to own them, and nothing more. An orangutan would agree.