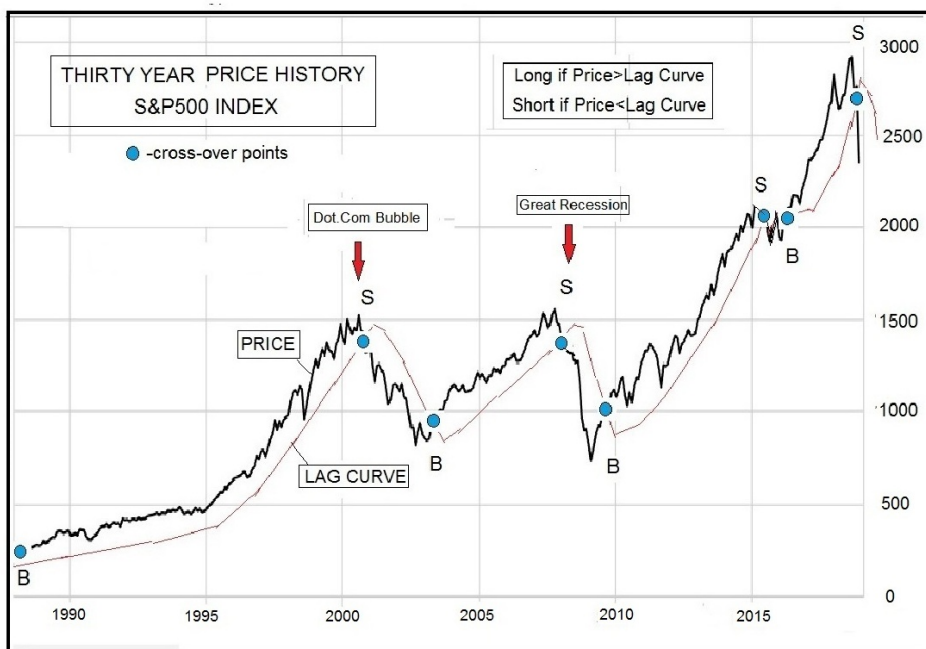


PROFITABLE RIDING OF THE S&P500 INDEX WAVES

Although stock indexes on a daily and weekly basis can be quite random, longer term historical views of stock indexes indicate trends both in the upward and downward directions. Using our price versus lag curve approach to successful investing discussed in several earlier articles on this web page, we show how one can metaphorically ride the waves of upward and downward movements of the S&P500 index. This index represents the broadest and most representative measure of the health of the overall US stock market. Our purpose in this article is to demonstrate how catching the long term time waves of this index allows one to have net positive returns by using the exchange traded funds of SPY for bull markets and SDS for bear phases. These funds are directly correlated with the S&P500.

We begin by looking at the long term (30 year) historical price behavior of the S&P500 Index. This looks as follows-



Superimposed in this price versus time graph is what I call a lag curve. This curve is constructed by eye and typically lies within $\pm 10\%$ of the price $P(t)$. Unlike a running average, the lag curve reacts much faster when market conditions change from bullish to bearish and visa versa. Note that the waves are non-periodic but clearly show maxima and minima. The blue circles indicate the point at which the market changes trend. We call these the cross-over points with B indicating a long position in the index and S a short position. One can catch the waves at any time but the optimum returns will occur at the cross-over points. The rule we follow is the simple one of being

Long when Price > Lag Curve and **Short when Price < Lag Curve.**

In the above graph we observe upward trends from 1985 through 2001, 2003 to 2007, 2009-2015, and 2016 to 2018. The downward trends occurred from 2001 to 2003, 2007 to 2009, 2015

to 216, and 2018-?. The local peak in 2001 was the beginning of the collapse of the dot.com bubble. The peak in 2007 was the beginning of the Great Recession generated by the housing bubble collapse a few years earlier, and the reversal we are seeing in 2018 may be the result by the Federal Reserve to reverse the extensive quantitative easing (money printing) which occurred earlier in the decade under Ben Bernanke. We don't know how long the latest downturn will last but we do know at the moment that the trend of the S&P500 is down putting us in a bear market. Since I am reluctant to take a short position because of the 500 point plus upticks possible during the latest downtrend, all my funds are presently sitting on the sideline collecting about a 3% taxable interest per year.

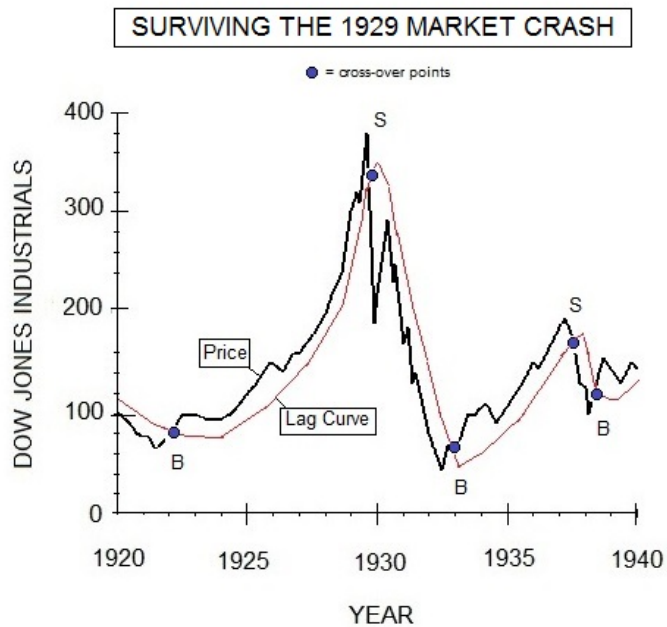
Catching the market trend changes precisely at the cross-over points would have produced an increase of about twenty times over the thirty year time period shown. Of this 3750 points are gained during the bull phases using SPY and 1450 points gained on the short sale side using SDS. That is, the net gain would be $5200/250=20.8$ times the original investment back in 1988 re-invested continually. This produces an effective gain of-

$$i=100\exp[(1/30)\ln(20.8)]=10.6\% \text{ per year}$$

In reality such an impressive return must be considered an upper limit since it neglects an investors ability to carry out the required transactions at precisely the cross-over points and the federal taxes which are going to be due every time one terminates a previous holding. Nevertheless, gaining just a fraction of this return will far outweigh any gains made by the buy and hold strategy followed by the majority of stock holders.

One of the drawbacks of the present approach to investing, as pointed out by some of my colleagues, is that one can never gain more than the market averages and that it fails to take fundamentals into account. My counter to these objections is that very few money managers consistently outperform the markets. Also the fundamentals are very well known to most investors and thus are already discounted by the present price of the index. Really big gains (such as picking the right individual stock) can not be achieved by the present approach but a consistent 10% return on ones funds is more than enough to stay well ahead of the game.

One final note. The present price-lag curve approach works over any long term price range. We show, for instance, the following historical data for the period 1920 to 1940-



Although this was before my time, if I had lived then I would not have been caught by the October 29th crash of the DJI. All my funds would have been out of any long position by early September of 1929 when the price first fell below the lag curve.

U.H.Kurzweg
 Dec.28, 2018
 Gainesville, Florida