# USE OF LAG CURVES TO STAY ON TH RIGHT SIDE OF A MARKET

Using my sixty plus years of experience of investing in stock markets, I have learned that predictions based on stock fundamentals or esoteric chart patterns are not a sure way to reap profits unless one happens to be in the right market be it bull or bear. The main thing one has learned is that markets fluctuate in price in an essentially unpredictable manner on a daily basis but often follow trends supported by both stock fundamentals such as estimated dividends and predicted earnings profit and chart patterns playing a positive role when longer time periods are involved. Also stocks and stock market averages such as the S&P500 correlate well with each other meaning one should be long a stock during bull markets defined by a stock market average and short during bear markets. This idea goes back to Charles Dow(1851-1902) who in the 1890s came up with the Dow Theory for stocks. In general it is essentially impossible to consistently outperform the market averages . Hence ETFs based on broad market averages have become the ideal investment tool in today's markets. Although one can't predict the future of stock, bond, and a commodity prices, one can see where an equity stands at the moment and what its trend is by the use of a lag curve based on a chosen time interval (window). It is our purpose here to show how lag curves may be used to say whether an equity is in a bull, neutral, or bear market and in which direction things are trending at the moment.

We begin our discussion by looking at a long term window giving the 20^+year price history of General Electric which is one of the most commonly held stocks. Its P(t) versus time curve compared with the S&P 500 stock index looks as follows-
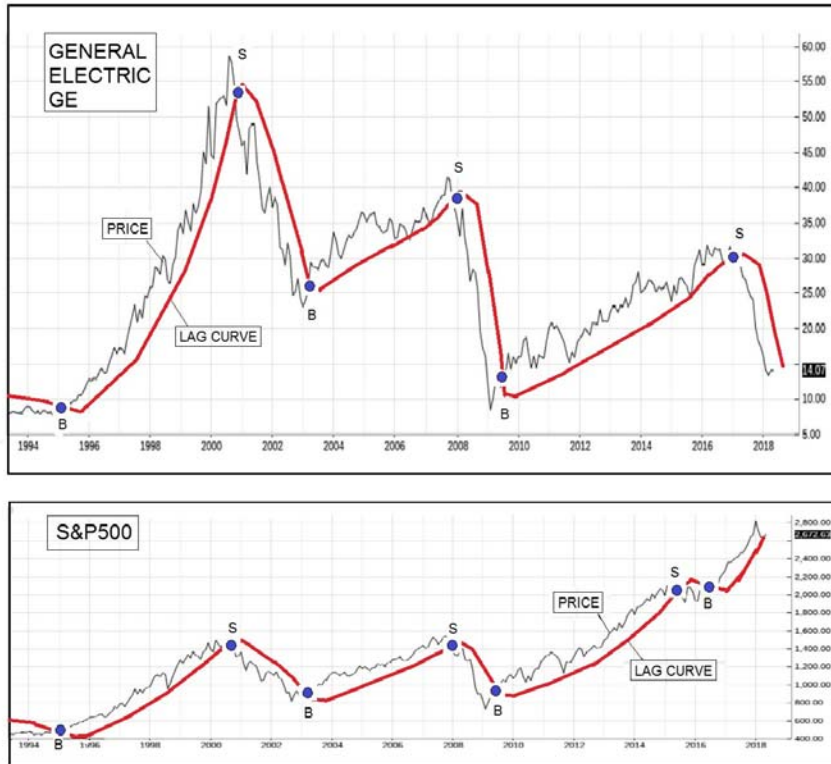
We see here the long term prices of both GE and $INX(S&P500) as obtainable from **barcharts.com.** To these curves we have added lag curves shown in red. Such lag curves are reminiscent of the standard running averages based a time period about $1/10^{th}$ to $1/20^{th}$ of the window time width, however they differ in several significant ways. First of all they are drawn in by eye not following any mathematical formula and secondly, unlike moving averages, follow prices much closer during turning points between uptrends and downtrends The transition points are marked by either B or S and separate bull from bear trends. The rather good correlation between bull and bear trends between GE and the S&P500 index is also noted. It has only been within the last few years or so that the two graphs have become uncorrelated suggesting that the overall market is due for a further sharp downturn or that GE will enter a new bull phase. Note that GE has been in a net downtrend for the past 17 years although it clearly also has had shorter term uptrends. For such a stock one can earn profits on both the long and short side of the market provided one's timing is right. Alternatively anyone following a buy and hold strategy would have seen the stock value decrease by 80% from its 2001($56/sh) peak to now($14/sh). I was fortunate to have sold all my inherited GE stock in late 2000 thanks to my price-lag curve strategy.

Using the long term time window of the S&P500($INX)as the overall market indicator, we can say that there is a -

BULL NARKET(uptrend) when P(t)>Lag Curve

and-

BEAR Market(downtrend) when P(t)<Lag Curve

The transition points from one market to the next are indicated by B indicating a time to buy and be long and S a time to sell and be short the S&P500 average. To follow these signals one can use the exchange traded fund (ETF) SPY which is designed to closely follow the S&P500 and has the advantage that it trades essentially as a stock, We have used this highly liquid and most active of all ETFs quite successfully over the last few years between the time of the Trump's election in Nov.2016 and January 2018 of this year.

Similar investment approaches also work for any stock , bond, or commodity by comparing its price history with its own lag curve. In most instances the lag curve will also correlate well with a lag curve based on a broad average involving that commodity. Thus I can tell that house prices are rising or falling in my neighborhood by looking at the Philadelphia Housing Index ($HGX). Likewise I can tell that world crude oil prices are presently in a bulltrend since the WTI (West Texas Crude) price P(t) first penetrated s 5 year lag curve on the upside in late 2017. A consequence of this is that we will all be paying higher gas punp prices for the immediate future.

We next examine the behavior of stocks in more detail at their turning points B or S. Longer term windows of 20 years or so tend to be a bit slow in indicating when such points first occur. For example, a shorter time window of six months gave a clear sell signal for SPY on January 28 of this year while the longer term 20 year window for the S&P500 chart was still trending toward a sell point . This means one should first of all look at the long term window for a stock average or individual stock and act on it only if confirmed by the shorter six month window. One must considering pulling out of a long position should the shorter time window indicate a reverse condition characterized by having the lag curve being crossed from uptrend to downtrend. A short term(6month)graph showing S&P500 and its ETF counterpart SPY follows-
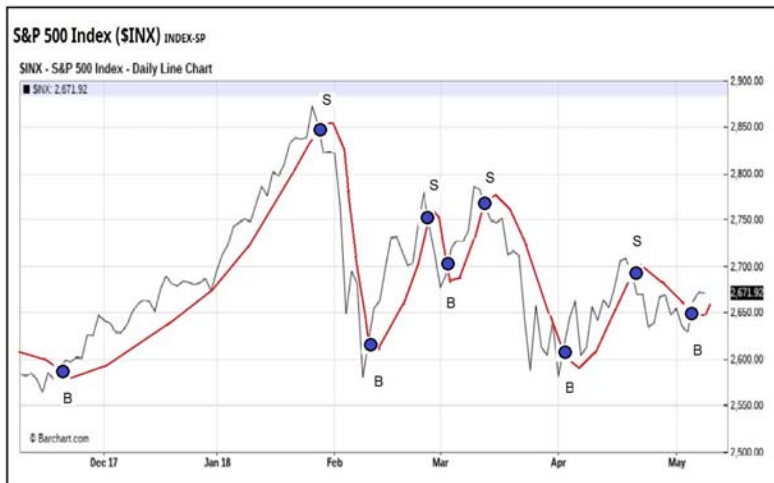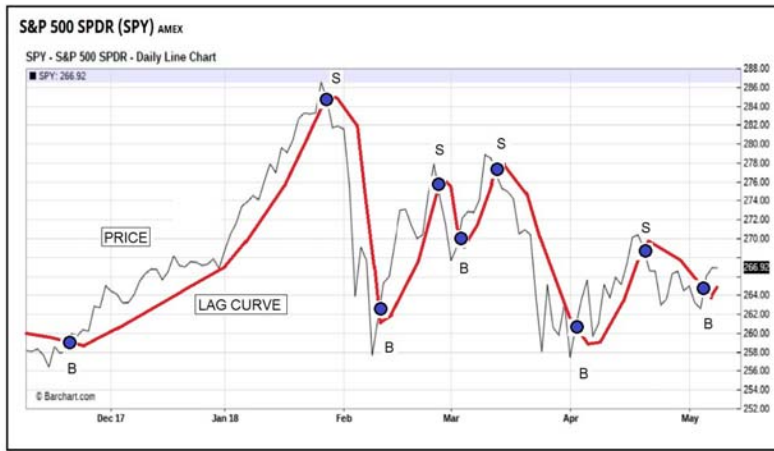
 We see that the S&P 500 Index and the SPY ETF are virtually identical giving buy and sell signals at the same points in time. Furthermore they both show a sell signal on January 28th of this year. I used this point to cash in my long holdings of SPY with a good profit. The chart shows rather wild fluctuations in price after that time not suited for longer term holding. The main point is that the price of SPY remains lower by some 7% from its January 28 peak. Note that the longer term window of twenty years has not yet given a sell signal even by today's date of May 6th indicating that the shorter term window with a half year time span is the one to use for trend detection be it S or B.

We have shown that one can predict uptrends and or downtrends at any point in time by use of a price versus a lag curve for any stock or other commodity. Both long and short time windows should be used to determine when a change from a bull (B) to a bear market(S) or visa versa has occurred. The main point is that this approach allows one to

sell near price highs and buy near market bottoms. Very much , as suggested in the book "Battle of Investment Survival" by Gerald Loeb(1899-1974). One should never just buy and hold but rather have an "ever liquid account" by being in a commodity only if the price is in an uptrend and be short only as long as the stock remains in a downtrend. The use of lag curves using long and short term time windows is the only tool required to carry out such a successful investment program.

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