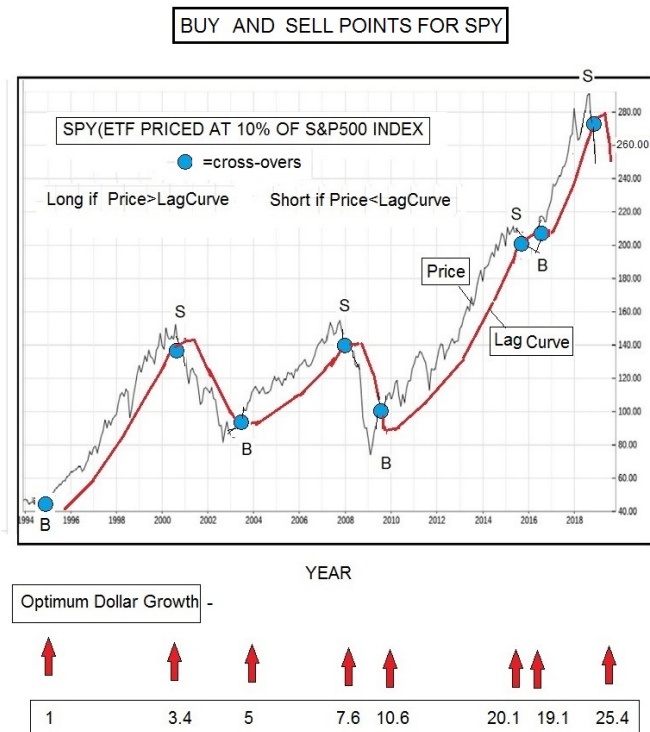


## HOW DOES ONE OPTIMIZE RETURNS ON THE EXCHANGE TRADED FUND SPY

Of all the hundreds of exchange traded funds, the fund SPY consistently has the highest value of the product of price  $P(t)$  times daily volume  $V(t)$ . This makes it highly liquid and thus an ideal vehicle for stock traders and investors. It's price  $P(t)$  equals one-tenth of the S&P 500 Index and thus follows the stock market averages precisely. Because SPY contains hundreds of individual stocks it is less affected by a sudden downturn of any individual stock. We have been using low commission and low expense ratio SPY as a trading vehicle for about a decade with considerable positive return. It is our purpose in this article to show how one can trade this fund successfully using the price-lag curve approach described below.

We begin by showing a twenty-four year price history of this ETF fund originally founded in 1993-



A buy and hold policy over this time period would have increased the value of one's portfolio from 45 to 280 or 6.22 times the original investment. This yields a compound interest rate  $i$  of-

$$(1 + i) = (6.22)^{1/24} \quad \text{or} \quad i = 7.93\%$$

This is not a bad rate of return, but after taxes and the increases in the cost of living (the CPI in 1994 was 148.2 and in 2018 it stands at 250.5) it looks a little less so. What we realized years

ago is that a buy and hold approach is not an optimum strategy for maximum returns since there can be periods such as 1929-32, 2000-2003, 2008-2011, and possibly the present 2018-? where there are large price reversals from which it might require years to recover.

Our approach to stock investments (as shown in the above graph) uses a strictly technical approach involving the interaction of a long term price history (5 to 20 years) of SPY versus a drawn in lag curve  $\lambda(t)$ . The lag curve is constructed by eye and differs from a standard running average in that it reacts faster at turning points. Typically  $P(t)$  and  $\lambda(t)$  will be found to differ from each other by about plus or minus 10%. The points where the two quantities become equal occurs at the indicated blue circles. We call these the cross-over points. It is at these points where the appropriate long or short positions should be taken for an optimum return on one's capital. We follow the simple rules-

**be long when  $P(t) > \lambda(t)$       and      be short when  $P(t) < \lambda(t)$**

which must always be adhered to. Following these rules exactly would have increased \$1 worth of SPY to \$22.3 in the past 24 years. Now, admittedly no one will be as nimble as required for such actions, but nevertheless the return is far superior to any buy and hold strategy. A big advantage of ETFs such as SPY over individual stocks is that they distribute the risk by holding a multitude of stocks and that they have equivalent counterparts which when bought acts essentially as setting a short on the particular ETF being considered. For SPY we have the counterpart SDS as the investment vehicle when  $P(t) < \lambda(t)$ . In my own transactions I tend to stay with SPY during times when  $P(t) > \lambda(t)$  and sit out the time collecting interest when a bear market is in effect. This cuts the gain in the period 1994-2018 approximately in half to around 12 times considering the interest earned on the idle money sitting in the portfolio. This is still better than a buy and hold policy. Also I don't use margin in my transactions or leveraged versions of SPY because of the added risk.

The above approach applied to stocks, bonds, and ETFs over an investment career now extending 60 years has worked out well for me allowing a consistent return on invested capital. At the moment I am sitting out a bear market which has been in effect since early October of this year. I do not know when the next buy signal will occur, but when it does I will be right back in there. Note that I do not make use of fundamentals in my transactions. This is because these are mostly already factored into stock prices (except for earnings surprises). Unlike many TV pundits such as Jim Kramer of CNBC, I am not a perma-bull. I am bullish when  $P(t) > \lambda(t)$  and bearish when  $P(t) < \lambda(t)$ .

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