Letters to the Editor

August 4, 2009

The following letter is in response to our article, How Long is the Long Run?, which appeared last week.

Dear Editor:

I enjoyed your article, “How Long is the Long Run.” I am once again reminded that researchers seem to have a permanent disregard for valuation in these kinds of analysis. The data is overwhelming that buying stocks at high PE ratios will lead to less than expected returns over 20-year time horizons.

Why is this data ignored? Probably because it is more difficult to set up the analysis and back-test actively managed portfolios that switch from stocks to bonds based on high and low valuations. If anyone runs the numbers it will become evident that actively managing in high and low PE environments is superior to a fixed 60-40, all stocks, or all bonds. Once again, the real issue is that everyone is looking for a portfolio construction solution that allows them to buy and hold. (sigh)

Thanks again for presenting great stuff!

Ken Solow
CFP, Chief Investment Officer
Pinnacle Advisory Group, Inc
Columbia, MD

The following letter is in response to our article, The Retirement Portfolio Showdown: Jeremy Siegel v. Zvi Bodie , which appeared two weeks ago.

Dear Editor:

The Retirement Portfolio Showdown" by Geoff Considine is a really excellent article. After reading it several times I have two questions that perhaps you can answer. They are:

1. What is the historic period used to compile the SPY and AGG statistics used in the simulation through May 2008?

2. Can you be more specific about what is included in the QPP portfolio (i.e. the percents in domestic equity, foreign equity, etc.)?

Thanks in advance for any help you can provide.

Anonymous:

Geoff Considine replies:

Dear Anonymous:

Thanks for your kind words! The exact constituents of th3 50/50 portfolio are described in this article (it is linked in the Advisor Perspectives article).

For all simulations, I used three trailing years of data which is the baseline that I use in all of my analyses-- I have published dozens of case studies using three trailing years of data for input and all baseline settings in QPP, except if I note otherwise. The fact that I use three years of data does not mean that the QPP projections will match that three-year period--they will not. QPP's forward-looking projections are derived from the trailing data, combined with the assumed equity risk premia plus a balance between risk and return that is derived from long-term statistics from capital markets.

You may also be interested in this article about the forward-looking projections:

Regards,

Geoff Considine, Ph.D.
Quantext, Inc.

The following letters are in response to Ted Wong's article, Moving Average: Holy Grail or Fairy Tale - Part 3, which appeared last week.

Dear Editor,

The following is a letter to the editor responding to a series of articles written by Theodore Wong titled "Moving Average: Holy Grail or Fairy Tale".

At Merriman, we've managed both buy and hold and timing portfolios for over two decades. Our timing models are mechanical trend-following systems and our real-time, performance is similar to the simulated results of the 6-month MAC system.

The study presented by Mr. Wong unfortunately suffers from multiple issues that overstate the case for timing versus buy and hold. There are many subtleties in using back-tested results and simulated indices to predict how a trading strategy may perform in the future. These subtleties, while small, can compound to produce what appear to be superior risk-adjusted returns.

For starters, the Shiller S&P 500 price index is calculated by taking the average of the daily closing prices of the S&P 500 in a given month. Using a trend-following timing model with such an average introduces an upward bias on returns because transactions are hypothetically made at the average price rather than the actual monthly closing price. When the index crosses a moving average to the upside, the closing (purchasing) price will typically be higher than the average monthly price. When the index crosses a moving average to the downside, the closing (selling) price will typically be lower than the average monthly price.

For instance, when the S&P 500 index fell below the moving average at the end of June 2008, the index closed the month at 1280. The monthly average price for June 2008 was 1341, which is 4.8% higher. Only with the benefit of a time machine could such a sale be made at the average price. I performed a quick study from 1951 to mid-2009, with a range of look back periods and found that buying and selling at the average price outperformed buying and selling at the closing price by about 2% a year. Mr. Wong's hypothetical results significantly overstate the performance of the MAC system because of this effect.

Second, every stock market back-tester wants to apply today's trading costs, technology, and tax rates to yesterday's stock market. By neglecting these factors, the MAC strategy was not properly simulated. The additional implied assumption in the study was that the MAC system user also had the competitive advantage of no trading costs, an IRA account, and their own personal trading vehicle to implement the strategy, while everyone else had none of these advantages. Yet, now none of those competitive advantages exist.

Before the mid-1980s, when S&P500 futures were introduced, there was no convenient trading vehicle to implement the strategy. How would the MAC system be implemented before then? The costs associated with transacting 500 stocks at each crossover would have been prohibitively high. Prior to May 1975, brokerage commissions were fixed and very high. Bid/ask spreads were much higher than today. If managing a large amount of money with the MAC system, the effective spreads are even higher. There is a large body of literature estimating historical transaction costs; these studies should be consulted and simulated in the MAC study. See a paper by Joel Hasbrouk of NYU titled "Trading costs and returns for US equities: Estimating Effective Costs from Daily Data" for a start.

Investors and traders were no less clever in the past than we are now. Technical analysis, moving averages, and the Dow Jones Industrial Average have been around at least 100 years. Why was a moving average system not used extensively in the past, especially after the 1930s? My guess is that a number of smart traders threw the idea in the trash bin after running the numbers and accounting for actual implementation costs at the time.

Including T-bill returns, when the MAC system is in cash, will certainly enhance returns (about 1%/year). From a risk-adjusted performance comparison, most clients do not invest 100% of their portfolio in equities. Thus it's better to compare a MAC system with an equal-risk portfolio of stocks and intermediate-term bonds. After accounting for all the above factors, I expect the comparison will show the MAC system will at best be of similar risk-adjusted performance as a buy and hold portfolio.

Each year I see dozens of studies, whitepapers, and academic articles providing evidence of a timing system that beats the market using simulated data. Do any of these studies prove that markets aren't efficient? Not really; in my experience none ever add value in real time with a real trading vehicle. Once the barriers to implement a trading strategy collapse, actual results are always disappointing.

Ultimately, the real question is how do we expect a one-round-trip-per-year trend-following system to perform compared to the S&P 500 index over the long-term (the next 138 years)? The MAC system will definitely reduce risk and add enormous value in severe bear markets. The MAC system will definitely outperform buy and hold in secular bear markets, such as what we've experienced the last nine and a half years.

Do we expect the MAC system to outperform a buy and hold portfolio over the long-term? My expectation is that the MAC system will provide a similar risk-adjusted return as a 70% equity, 30% intermediate-term bond portfolio. The much more frequent whipsaw trades that occur in sideways and bull markets will offset the enormous gains created by the occasional side-stepping of a severe bear market.

Most clients in our timing programs psychologically need an approach that places them in cash when the market is crashing. Buy and hold will not work for them. Market timing allows these clients to have higher long-term equity exposure while also reducing the risk of panic selling near the market bottom. There's no question that timing adds value for our clients. Let's not overstate the case.

Dennis Tilley
Director of Alternative Investments
Portfolio Manager, Leveraged Global Opportunity Fund, L.P.
Merriman
Seattle, WA

Ted Wong replies:

Dennis,

When I started my series of articles critical of the buy-and-hold approach, I expected critical responses from indexed investing advocates in the buy/hold community. To my surprise, I received very little critiques (in fact zero) from them. So when I read your letter, I was surprised and delighted. There is no better critic of my writings than someone who employs both market timing and buy-and-hold practices in managing money.

First, I have tremendous respect for Paul Merriman and have read many of his excellent writings. His fair-and-balanced view on market timing vs. buy/hold is the best on the subject. I am equally impressed with your assessment of my articles. You touched on several important subtleties that would only surface during system implementation. I attribute your keen observations not only to your investment experience, but also to your engineering background. I believe that engineers have certain unique qualities enabling them to be more pragmatic and objective in discussing financial topics.

As I mentioned in Part 3, the MAC system was not meant to be a real trading system because of those subtleties you articulated. I purposely avoided in-sample/out-of-sample types of optimization because I didn't want to treat it as a trading system. I used MAC as an illustration of comparative analysis because it's simple, well-known, and based on sound engineering principles.

You and I agree that market timing adds value both in financial and emotional terms in secular bear markets. The 6-month MAC returns about 1% higher than that of buy/hold over 138 years. If I subtract 2% from this margin due to the difference between average vs. actual price (according to Dennis' research), MAC would underperform buy/hold by 1%. When I talked to many financial planners, they would be glad to give up a couple of percentage points in ROI if they could sidestep major bear markets for their clients.

I agree that I should not overstate the case. The theme of my articles is not that the MAC system can beat buy/hold in CAGR, but rather in risk-adjusted return. I hope that message is clear.

Ted Wong

Dear Mr. Wong:

I have enjoyed and appreciated the rigor of your three articles examining the advantages associated with a moving average trading strategy. You have made some very valuable contributions by questioning the popular theology of buy-and-hold investing. I would encourage a similar examination of using a moving average system with bonds and/or a small set of investable assets. My research indicates that beating the S&P 500 total return is relatively easy on an absolute and risk-adjusted basis.

I really appreciate the *Advisor Perspectives* newsletter. In a world of "junk" newsletters, it is consistently an island of valuable information!

Thank you again for you contributions!

Sincerely,

Timothy J. Mowrey, CFP®, AAMS
Mowrey Investment Management
Raleigh, NC

Ted,

I read your latest piece. One thing I talk about when discussing active management is that the "world of finance" tends to focus on diversifiable or non-systematic risk. Generally during bull markets it works. However, in bear markets, correlations move quickly toward one, which greatly reduces the advantages of diversification. Active management gives equal, if not more, focus on systematic risk. In the grand scheme of risk, systematic risk is considerably the larger of the two.

Greg Morris
Chief Technical Analyst
Stadion Money Management
Watkinsville, GA

Ted Wong replies:

Greg,

You are absolutely correct. Someone did a study awhile back (I don't recall who) showing that over 70% of the price movement of a typical NYSE listed stock is tied to the direction of the overall market. Yet, analysts spend all their energy plowing through voluminous financial statements and calculating correlation coefficients just to control the 30% non-systematic risk. The random walk doctrine misled people to forgo the

management of the 70% non-diversifiable risk. Anyone who tries to manage the 70% market risk is called market timers - a term synonymous to con artists if not outright criminals.

Ted

Mr. Wong,

Great job on the articles – the explanation is clear and concise. I will enjoy sharing them with my clients.

Couple this with truly active management, and you have the makings of a great portfolio.

Thanks,

Matt Armistead, CIMA, CFPÒ
Camelback Wealth Management, LLC
Phoenix, AZ 85016

Hi Ted,

I just read Part 3 and enjoyed it very much. Several months ago I started building my own spreadsheet and I am using daily S&P500 data from MSN Money back to 1960. My results are similar to yours but I am still working out some kinks.

Here's what I am working on now:

1. My daily analysis provides too many buy/sell transactions. I'm looking into using hysteresis so that buys are triggered at a different point than sells, thereby hopefully lowering the number of transactions. There are often signals that last for only one day or three days. This isn't efficient. On the other hand, I wonder if using one-month intervals results delaying the buy/sell signal and losing the opportunity to get in or out of the market quickly.

2. I have analyzed decade by decade from 1960 and find that the optimum performance for each decade requires slightly different lengths of EMA. My research will continue.

3. My analysis also looks at the difference between what I call a long-term EMA and short-term EMA. For example, for the current decade, the 180-day EMA provides a rate of return of 1.46% versus -3.17% for buy-and-hold. However, if I use the

trigger of 180-day EMA minus 20-day EMA, the rate of return increases to 4.28% vs -3.17% for buy-and-hold.

4. If this analysis works for the S&P500, shouldn't it work for small cap, international, and perhaps even bonds? Could all the indices be analyzed to create buy/sell signals for large value, large growth, small value, small growth, international, commodities, real estate, and bonds? Each asset class would be fine-tuned separately, thereby providing a framework to allow reallocation from one asset class with a sell signal to another asset class with a strong buy signal? If correlations are not 1.0 across all asset classes, perhaps moving out of large cap and into small cap allows the portfolio to continue to participate in different segments of the stock markets. If correlations are high, then move out of all asset classes and into cash.

5. I've included dividends and money market rates in my analysis but have not addressed taxes. With the buy/sell signals happening at short intervals, it is rare to sell at long-term capital gains rates and normally requires paying taxes at short-term capital gains rates.

One of the benefits of using an EMA strategy is the behavioral finance factor. Even if the EMA returns are the same or slightly lower than buy-and-hold, there are many instances where the client does not have to bear the psychological pain of living through the severe downturns. By avoiding most of the downturn, the advisor can tell the client that they are safely invested in cash or at least not invested in the asset class that is getting destroyed. This pain of loss, affecting people three times as much as the enjoyment of gain, shouldn't be underestimated.

Keep up the good work and thank you for challenging the status quo.

Take care,

Anonymous

Ted Wong replies:

Dear Anonymous,

Thank you for sharing your research results.

Many folks are using asymmetrical buy and sell setups and triggers. Although for the long run, the markets have a positive bias to the upside, these B/S rules will be different for bull and bear markets. In bull markets, the price series look like a long ramp moving up slowly then correcting abruptly. In bear markets, the ramp is flipped: slow and long slides followed by sudden rallies. Not only must you use different parameters in the buy

and sell rules, you may have to know if you are in a bull or bear phase of the market and adjust parameters accordingly.

Echoing to what you discovered, I found that each decade has a different optimum moving average length. This means that you cannot apply the best EMA length from the last decade to the next decade and expect good results. In fact, I did an extensive analysis in which I calculated the highest CAGR in every month by looking back at a fixed period (from 6, 12, 36, to 120 months) to determine the optimum EMA length. I then used that optimum EMA lengh every month walking forward to calculate my MAC signals. The net results of this fancy approach over138 years were no better than the simple 6-month EMA Crossover. It's because the personality of the SP500 in each decade is different - or each year for that matter.

Your suggestion to reallocate money from an asset class with a fresh sell signal to another asset class with a buy signal makes good sense. I know that some active investment firms, such as Fidelity Select Portfolios, are using similar switching strategies on sector funds.

One of the challenges of such an approach is a timing mismatch. Let’s say that when asset A gets a sell signal, several other asset classes may already have buy signals in place for a while. Buying an asset class with an “old” buy signal must be evaluated. Why is this important? When buy/sell parameters were developed and optimized, it was assumed that one executed the signals on the same or the next day. With delayed executions, the trading system is no longer optimized. Back-testing signals with undefined delays could also be tricky! Finally, you have to develop rules to select which fund to buy from among those with buy signals in place.

As for other indexes and asset classes, my experience has been that each index has its own personality and changes with time as well. You cannot simply use the same set of rules optimized for one index, say the S&P 500, to trade other indexes.

Good luck to you on your continuing research.

Best,

Ted

Mr. Wong,

I enjoyed reading parts 1,2, and 3 of your articles, which were very interesting and educational. Have you reviewed the 10-month and 12-month EMA/SMA for the S&P 500?

The longer term SMA would produce fewer sells and buys, reduce whipsaws and improve tax efficiency. What are your thoughts on the longer term SMAs? Would the MAC also apply to other asset classes, i.e. real estate, commodities, gold, and International Indexes such as the EAFE?

Great article,

Lyle Watts
Huntsville, AL

Ted Wong replies:

Hi Lyle,

Thank you for your interest and comments.

I evaluated EMA with length from 2 to 23 months and reported in Part 1. As you said, the tradeoff between returns and holding period affects tax considerations. But even with the shortest 2-month MAC, the average holding period is 1.1 years, which qualifies for long-term cap gain tax rates.

MAC is a trend following rule-based tool, so it should work for any time series if major trends prevail. But one must fine tune the system for each index because of its unique personality.

Ted