

# EVALUATING THE RESEARCH ON HISTORICAL PERFORMANCE

By James B. Cloonan

While all honest research helps to shed light on successful approaches, you must be aware of the weaknesses of different research methods so that you can place the results in the proper perspective. In addition, you have to face the reality that, in some cases, flawed research might be used intentionally to lead people astray.

Claims about the performance of different stock investment theories are constantly being thrown about. Sometimes it is in the promotion of an investment letter or mutual fund, sometimes in a research summary of a variety of approaches.

AAII frequently summarizes the leading investment theories, and in *Computerized Investing* and *Stock Investor* we provide formulas for different approaches and sample results over various time periods. "Stock Strategy Performance: The Winners and Losers in 2001," by John Bajkowski [January 2002 *AAII Journal*; available in the Stock Screens area of our Web site] presents the results of different screens for the year 2001.

While this research can be of value, it is also important to realize its limitations so that you can place the results in the proper perspective.

As an investor, what you really want to know is how a specific investment approach is going to perform in the context of your own portfolio in the future. Obviously, this information is not going to be available. But you can look at performance research and see if it provides any insight into how the strategy might perform in the future.

How can you tell if the research is truly insightful?

There are a number of factors that will influence the accuracy of historical research in estimating the future. You should carefully examine each one when reviewing claims of investment performance.

### ***Is there a rational underlying theory?***

There are millions of events happening simultaneously in the world at the same time the stock market is trading. If you run thousands of correlations, you are bound to find events that appear to be strongly correlated to stock performance, but are simply correlated due to chance. The theories relating to football scores and future market behavior fall into this category and are coincidence, not a true relationship. A true causal relationship will have a rationale.

### ***Over how long a period was the historical research conducted?***

There are all kinds of strategies that perform well in some markets, but few that work in many different markets. It is important that a test covers at least two economic cycles, and includes both bull and bear markets. Use eight to 10 years as a minimum for a serious evaluation of any investment strategy.

### ***Was the test performed going forward or going back?***

There are several ways to test an investment strategy. First, you can develop a theory and then test it over an eight- to 10-year period. This is the best way, because it eliminates the possibility of data mining. Data mining occurs when you backtest, using the results to formulate a theory. You can always find some theory that explains past data just by refining it enough until you find strong correlations, but these are likely to be meaningless and nonviable in the future. For instance, I pointed out in one of my columns a couple of years ago

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(“The Election Cycle and Next Year’s Stock Market,” January 2000 *AAII Journal*), that, since World War II, the market had never been down in an election year. Shortly thereafter, election-year 2000 was down 10%.

An advantage of testing forward is that you get to see and deal with survivorship bias. A frequent mistake that occurs with backtesting is that the researcher takes stocks that exist at the end of the test period and traces them through the previous periods—say eight years. This approach ignores all the stocks that existed eight years earlier, but no longer exist at the end of the period. This can cause a significant bias.

#### ***Were the assumptions realistic?***

This may be the most serious area of distortion. ‘Simplifying assumptions’ often don’t simplify, they distort. For instance, since the beginning of options trading, there has been research ‘demonstrating’ all kinds of strategies that would provide the opportunity for great gains with minimal or no loss exposure. The examples were all based on closing prices. The problem, however, is that the strategies all involved complicated transactions, and yet in the research the

bid/ask spreads (the difference between buy and sell price at any given time) were not taken into account—in practice they would eat up all the potential profit. To be at all realistic, research on options strategy performance should use the bid price for sales and the ask price for buys for each of the options over the same time period.

As an example, in John Bajkowski’s January 2002 *AAII Journal* article, the Joseph Piotroski strategy, which uses accounting approaches to establish additional value, was the best-performing screen among those that we track. Simulations of his approach, as well as his own research, showed returns in excess of those expected based on the risk level of the strategy. Closer inspection, however, shows that those excess returns came primarily from choosing the smallest micro-cap stocks, using the closing price as the assumed purchase price. However, micro-cap stocks typically have very high bid/ask spreads, and the spread is frequently available for only 100 shares. Even rebalancing the portfolio only once a year and buying 500 shares results in all of the excess profit vanishing. To fairly evaluate theories, the investor must make any simulation realistic in terms of execution prices.

## **A FORWARD-LOOKING TEST**

The AII Beginner’s Portfolio was formed, in part, because of the problems associated with historical research. I felt a going-forward test of a theory with real portfolio problems was necessary. And based on all the positive evidence about micro-cap stocks and value investing, I thought that would be the best strategy to test. [The Beginner’s Portfolio was most recently discussed in the August 2001 *AAII Journal*; available in the AII Web archives.]

Now that the Beginner’s Portfolio is in its 10th year, we can say that many of the problems of testing the theory have been avoided. But we must still acknowledge the reality that the world can change and micro-cap stocks might perform differently in the future. We have, however, avoided many of the problems of theory testing discussed here.

While all honest research helps to shed light on successful approaches to stock portfolio management, you must be aware of the weaknesses of different research methods.

In addition, you have to face the reality that, in some cases, flawed research might be used intentionally to lead us astray. ♦

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- “Stock Strategy Performance: The Winners and Losers in 2001”
- “The Election Cycle and Next Year’s Stock Market”
- “The AII Beginner’s Portfolio: An Annual Performance Review”