

Using The Past To Predict The Future

By: Paul Owens

How often have you heard the phrase “past performance is not an indicator of future results” when looking at historical returns? I’ll bet it’s often. Yet despite this, we continue to use historic data, and often the most recent year’s results, to influence our asset mix allocations. Why is this?

In the absence of other information, there is an implicit assumption that last year’s investment winner will continue to be tomorrow’s winner. The underlying concept, called ‘performance persistence’, is logically flawed and can lead to real problems.

Highest Return

We examined December 31 annual Canadian dollar total returns for 12 asset classes for 10 years starting in 2000. It showed that emerging markets equity went from the highest return asset class to the lowest return and back to the highest in 2007, 2008 and 2009 respectively. Similarly, the S&P/TSX went from third best to 11th and jumped back to second best over the same period.

In other words, asset class returns aren’t consistent from year to year. So using yesterday’s winners to predict future winners doesn’t guarantee good performance or lower volatility.

To smooth out short-term gyrations caused by looking at just the most recent year’s results, performance is often examined over a longer time frame, say three years. Sounds like a good idea.

However, this leads to another mathematical problem known as ‘end-date sensitivity.’ The condition arises when the performance of an asset class varies significantly depending on which end-date is selected.

Let’s examine this further. Looking at 2008 and 2009 year ends, the DEX Universe bond index significantly outperformed the S&P/TSX Composite equity index in each of the two three-year periods. Logically, sponsors who feel the best performing asset class will continue to deliver strong performance might thereby increase their Canadian bond allocation and decrease Canadian equities. However, sponsors who feel today’s big winners are tomorrow’s losers (and vice versa), something known as ‘reversion to the mean,’ would adopt an overweight position in Canadian stocks and underweight Canadian bonds under this scenario.

But had sponsors used five-year averages as of 2008 and 2009 instead of three, they would have had conflicting results. In 2008, the five-year Canadian bond returns beat Canadian stocks, but just a mere 12 months later, the results were reversed.

So what happens if we look at returns over a longer period, say 10 or 25 years?

Again, using year-end 2008 and 2009 data, we find that the 10-year returns for the DEX Universe bond index outperformed the S&P/TSX Composite stock index. The same was true for the 25 year period ending 2008. However, 12 months later in 2009, the results were reversed; Canadian stocks beat Canadian bonds, albeit by a narrow margin of just 10 basis points.

These results clearly demonstrate that identifying tomorrow’s winners based on yesterday’s winners will always be a function of the end-date used and the number of years considered.

Fraught With Difficulties

What, if anything, can we draw from all this?

To start, using past returns to predict future performance is fraught with difficulties. Even smoothing the data by using multi-year returns and applying it to asset allocation can produce painful surprises.

So any analysis using past performance becomes dependent on the choice of end-date and the averaging

method applied. Those who understand the math know this can produce numbers that may justify whatever asset allocation they believe to be appropriate.

In making decisions about long-term asset mix policy, we suggest that sponsors shouldn't concentrate on short term historical returns.

Long-term returns are probably more appropriate since they capture several different economic cycles. Even these can be difficult to interpret since the performance is still a function of the end-date.

Let's acknowledge that asset mix decisions will always be somewhat subjective and a function of the sponsor's investment beliefs. Those beliefs might include some strongly held views about important matters such as performance persistence or reversion to the mean.

Either way, forecasting future performance and asset mix allocation based on past performance has some major limitations. ■

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