



Predicting the Stock-Bond Correlation

Focus on relevant history, not just recent history

There are years where stocks and bonds rise or fall together, and there are years where they diverge. Investors build these assumptions into their portfolios, often relying on bonds to diversify against stock losses, for example. But despite the importance of these correlations for portfolio returns, they are often predicted very badly. The most common approach is to assume that what happened recently will persist into the near future. Unfortunately, this is rarely what happens.

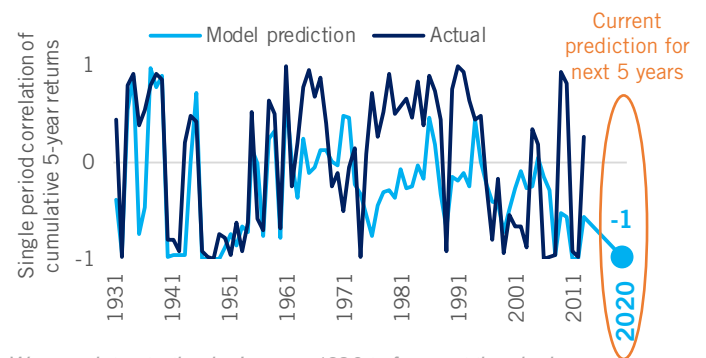
Consider 2013. The correlation of stocks and bonds in the five years prior was -61% , nearly the perfect opposite of the $+56\%$ correlation that occurred in the next five years. The recent past is too narrowly focused to anticipate these turning points. We propose a better way to predict the stock-bond correlation, focusing on relevant economic variables during relevant periods in history.

The correlation of longer-term stock and bond returns is likely to respond to fundamental factors that influence the gradual drift in their returns. With this in mind, we identify four predictive variables: economic growth, inflation, the relative yield of stocks and bonds, and the relative volatility of stock and bond yields. In the case of growth and inflation, we consider the path of their values over time, which adds a richer understanding of their recent trends and patterns of interaction. Rather than identifying historically relevant time periods anecdotally, we do so in a statistically rigorous way. We apply a novel regression technique, called Partial Sample Regression. This approach generates its predictions from a subset of observations that are most statistically relevant to the one we aim to predict, similar to the logic an investor might instinctively use.

Exhibit 1 shows the model's predictions and actual stock-bond correlations since 1931. These values represent the correlation of cumulative stock and bond returns over a five-year period. The model's predictions and realized outcomes are 63% correlated. This is meaningfully better than predictions based on the conventional approach, extrapolating from the correlation of monthly returns over the last five years, which are just 23% correlated with actual outcomes. As of mid-2020, the model projects a highly negative stock-bond correlation. This is not a prediction that stocks and bonds will diverge every day or month, but rather that they will diverge cumulatively over the coming years. For long-term investors, this suggests bonds will play a diversifying role over the next five years.

For more on this topic, see our 2021 [journal article](#): **"The Stock-Bond Correlation"** by Megan Czasonis, Mark Kritzman, and David Turkington, *The Journal of Portfolio Management*, Vol. 47, No. 3, February 2021.

Exhibit 1: Predicted and actual correlations
Correlations of cumulative 5-year stock and bond returns




We use data starting in January 1926 to forecast the single period five-year correlation beginning in January 1931 through December 2018, and we update the predictions annually. The current prediction is based on observed annual growth and inflation from 2016 through 2019 and yields as of May 2020. Because 2020 inflation and growth are not yet observable, we hypothesize potential growth rates ranging from 0% to -30% and inflation rates ranging from 2% to -2% . For all possible combinations, the predicted correlation is -1 . For more details on the methodology, please refer to the paper cited below.
Source: State Street Global Markets

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