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Asset Allocation with Inflation-Protected Bonds

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Securities (commonly known as TIPS)in 1997. Such bonds, generically known as

indexed bonds, have long been a topic of interest to the investment community and government policymakers. Advocates of indexed bonds have argued the benefits of such bonds to retirees and other investors who are vulnerable to inflation risk. Somewhat surprisingly, limited work has been done on the impact of the availability of indexed bonds on investors' asset allocation decisions. Should investors hold a different mix of stocks and bonds in the presence of indexed bonds than otherwise?

Although long historical time series of stock and conventional bond prices are available, the same is not true for indexed bonds in the United States. Therefore, we began the study reported in this article by constructing a monthly time series of hypothetical zero-coupon indexed bond prices as if the bonds had been available since the 1950s. These prices were calculated each month by discounting the real payoff to the hypothetical indexed bond by the relevant real rate of interest. The interest rate was estimated by subtracting a forecast of inflation from the corresponding nominal bond yield. The forecasts (measures of expected inflation) were obtained from time-series regression models. Returns were then computed from the hypothetical indexed bond prices.

Based on the hypothetical indexed bond returns, we found that these bonds provide considerable diversification benefits for investors. Data from 1953 through 2000 indicate that the real returns estimated for indexed bonds are virtually uncorrelated with stock returns whereas the nonindexed bonds exhibit positive correlation near 0.4.
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In the asset allocation analysis, we examined the weights on indexed bonds, conventional Treasury bonds, and a value-weighted stock market index in a mean–variance efficient portfolio (i.e., a portfolio that maximizes expected return for a given level of risk) when a riskless asset is available. The investment horizon was one year. The hypothetical indexed bond returns were combined with the historical returns on conventional bonds and stocks to estimate return standard deviations and correlations. Interestingly, using real returns, we found no role for conventional bonds unless the inflation risk premium exceeds 55 bps.

We also analyzed actual indexed bond data for 1997 through July 2003 to see whether the initial U.S. experience has been anything like our model-based predictions. The recent data confirm the suggestion of substantial diversification benefits to be had from adding TIPS. The volatility of TIPS returns has, in fact, been much lower than that observed in our historical simulation. Using the recent data to estimate risks and correlations, we again found that an efficient portfolio should give considerable weight to indexed bonds. This conclusion held for a wide range of scenarios for expected returns.

Indexed bonds dominated the efficient "tangency" portfolio in the absence of any inflation risk premium, and even with a risk premium of 50 bps, the allocation to indexed bonds exceeded that of conventional bonds. Although we do not recommend that an i ... ort, we do think inc

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