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Q&A
July 2006

Bob Greer Discusses Ibbotson Associates Study on 'Strategic Asset Allocation and Commodities'

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Mr. Greer is a Senior Vice President and Real Return product manager. He joined PIMCO in 2002, previously having been associated with JPMorgan Chase and Daiwa Securities as a developer and product manager of commodity indexes. Mr. Greer has over twenty-two years of investment experience with real return products, including not only commodities, but also real estate and inflation-linked bonds. He has written about these subjects in several investment journals and publications, and most recently published The Handbook of Inflation Hedging Investments in 2005. He holds a bachelor's degree in math and economics from Southern Methodist University and an MBA from the Stanford University Graduate School of Business.

PIMCO recently commissioned a study on the role of commodities in strategic asset allocation by Ibbotson Associates. In the interview below, Bob Greer, PIMCO's product manager for the CommodityRealReturn Strategy, discusses the Ibbotson study and why PIMCO commissioned it. To download a PDF of the full Ibbotson study, please click here.

Q: Why did PIMCO commission a study on strategic asset allocation and commodities?
Greer: Over the years, considerable research has been done regarding the reasons for investing in commodities and how to gain exposure to the commodity sector. However, there has been little research regarding the optimal size of an allocation to commodities. Our clients often ask us how much they should allocate to the commodity sector, and we wanted an independent analysis to fill this gap in the research. We commissioned Ibbotson Associates to conduct the research because Ibbotson is an independent and highly regarded expert on asset allocation. PIMCO provided Ibbotson with access to data and with access to our own published research, but the analysis and conclusions in the study are entirely those of Ibbotson Associates. The results of the study are available to the industry as a whole because the industry needed this thorough analysis.

Q: Before we discuss Ibbotson's conclusions, can you tell us a little about the methodology used in the study?
Greer: To analyze the historical performance characteristics of commodities, Ibbotson created a composite commodity index from four existing commodity indexes. By using a composite index, they were better able to represent the inherent returns from commodities as an asset class without being unduly influenced by any bias that might occur in a single index.

First, Ibbotson used efficient frontier analysis to evaluate the historical effect of including commodities in a strategic asset allocation opportunity set that also included Treasury bills, TIPS, U.S. bonds, international bonds, U.S. stocks, and international stocks. Next, Ibbotson used historical data and their own internal analysis to project future returns from commodities based on three different methods—the Capital Asset

Pricing Model, the building-blocks method, and a combination of these two methods. Ibbotson then used these future return projections to determine the optimal size of a commodity allocation in a conservative portfolio, a moderate portfolio and an aggressive portfolio.

Q: What did Ibbotson conclude regarding the historical role of commodities in strategic asset allocation?
Greer: Historically, Ibbotson found that commodities have provided high returns, diversification, a hedge against inflation and an improved risk/return profile in strategic asset allocation.

Ibbotson studied annual return data from 1970 to 2004. Over that 35-year period, commodities provided the highest return of any asset class in the study, including U.S. equities. Commodities also had a negative correlation to the other asset classes in the study, and tended to produce relatively high returns when traditional assets performed poorly and superior returns from commodities were needed most. For example, over the 35-year period covered in the Ibbotson study, there were eight years when U.S. equities produced negative total returns. During those eight years, commodities as measured by Ibbotson's composite index provided the highest return of any of the other assets included in the study. Commodities also had the highest return during the two years that U.S. bond returns were negative.

Because commodities produced high returns with low correlations to other assets, the Ibbotson study found that including commodities in a strategic asset allocation opportunity set produced returns that were significantly higher at any given level of risk relative to returns when commodities were excluded from the opportunity set. Over the common range of portfolio risk, a standard deviation range of approximately 2.4% to 19.8%, the average improvement in historical return at each risk level was approximately 133 basis points, and the maximum improvement was 188 basis points.

Finally, the study found that commodities were positively correlated to both the rate of inflation and to changes in the rate of inflation, supporting the notion that commodities provide a hedge against inflation and can provide real purchasing power. In fact, during the period of the study when inflation was high, from 1970 to 1981, commodities far outperformed other asset classes.

Q: And what did Ibbotson conclude regarding the optimal size of an allocation to commodities going forward?
Greer: As I mentioned previously, Ibbotson projected future commodity returns using three different methods: the capital asset pricing model, the building-blocks method and a combination of the first two methods.

The optimal allocation to commodities varied depending on the method. At the 10% standard deviation level—a moderate risk level similar to a standard portfolio of 60% stocks and 40% bonds—the optimal allocation to commodities ranged from about 22% using the capital asset pricing model to as large as 28.9% using the building-blocks method. Even at the conservative 5% risk level, optimal allocations to commodities were relatively large, ranging from about 9% up to nearly 14%.

Regardless of the method used in projecting future commodity returns, portfolios that included commodities in the opportunity set were also more efficient than those that excluded commodities, based on the Sharpe Ratio.

Q: Aren't the optimal commodity allocations suggested by the Ibbotson study surprisingly large?

Greer: Yes, the optimal commodity allocations suggested by the Ibbotson study are large and will likely come as a surprise to many investors, so Ibbotson took the study one step further. Although the return projections that Ibbotson used to determine the optimal commodity allocation are quite reasonable and well below historical commodity returns, Ibbotson conducted the same analysis using very conservative return projections for commodities to see how that would affect optimal allocations to commodities. Ibbotson reduced the expected return on commodities to 2% above the return on Treasury bills, which dramatically reduced the expected return on commodities in each of the three models.

Even after this significant decrease in expected returns, optimal commodity allocations remained relatively large. For the moderate risk portfolios, the allocation remained above 11% in all three models. And note that Ibbotson did not even allow for the possibility that higher returns might be achieved by using something other than passive Treasury bills as collateral.

Q: So, do you really expect clients to invest 11% or more of their portfolios in commodities?

Greer: I think that's highly unlikely. "Maverick risk" or organizational constraints will in most cases keep the allocation in single digits. But the study provides independent support for the idea that a zero allocation to commodities is too low. This comes from a firm that is not allied with any particular commodity index, with any particular asset manager, or with any provider of commodity products. They are highly regarded experts in asset allocation. Their analysis, which we wanted to provide to the industry, may give some investors the additional support they need in order to bring this important asset class into their portfolio.

actual performance record, these results do not do not reflect actual trading, liquidity constraints, fees, and/or other costs. Monte Carlo simulation and back tested results do not represent actual performance and are generally prepared with the benefit of hindsight. There are numerous other factors related to the markets in general or the implementation of any specific investment strategy, which cannot be fully accounted for in the preparation of simulated or forecasted results and all of which can adversely affect actual results. In addition, references to future results should not be construed as an estimate or promise of results that a client portfolio may achieve.

The Efficient frontier models represented in the report are bound by the data sets and date ranges used in those models. Different time periods or data sets may produce different results. Past performance is no guarantee of future results. Certain assumptions were made in this analysis, which have resulted in the returns detailed herein, changes to the assumptions may have an impact on any returns detailed. Transaction costs (such as commissions or other fees) are not included in the calculation of returns reflected in this document. If these fees and charges were included the performance results would be lower.

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