

**PRESS RELEASE****Empirical Study Confirms Portfolio Diversification Benefits of Gold**

- **Gold's low or negative correlation with other major assets offers diversifying power across much of a long-term portfolio's risk spectrum**
- **Study employs most advanced statistical techniques and portfolio optimisation technologies**

**New York, 12 September, 2006:** The World Gold Council (WGC) today published the findings of a seminal, empirically-based study (Gold as a Strategic Asset, September 2006) confirming that gold can improve the risk-return profile of long-term institutional investment portfolios.

The percentage of gold held in the most efficient strategic portfolios would be similar to the weighting to small cap or emerging market stocks, according to the study conducted by the WGC and New Frontier Advisors (NFA), an institutional research and investment advisory firm. The study also concluded that gold adds diversifying power across much of a long-term portfolio's risk spectrum. Gold's diversification properties stem from its negative to low correlation with other major asset classes, including other commodities.

Empirical evidence indicates that as much as a 4 percent allocation of gold to a long-term institutional portfolio could be expected to provide strategic benefits – 1 to 2 percent for low-risk portfolios and 2 to 4 percent for balanced portfolios. There was evidence that the asset may stabilise riskier portfolios during declining financial markets and poor economic climates.

The NFA/WGC study builds on the pioneering Brinson et al studies conducted in 1986 and 1991, which found that 94 percent of pension fund performance is a function of risk policy, or asset allocation (in this case, the mix of stocks and bonds), while tactical allocation, or market timing, and security selection are negatively related to portfolio returns.

James E. Burton, Chief Executive of the World Gold Council said: "It is a widely held axiom among institutional investors, that long-term risk policy is the most crucial element of portfolio management. The groundbreaking research we have conducted, using the most advanced statistical techniques and portfolio optimisation technologies, demonstrates that gold can be a highly effective component of managing portfolio risk."

The extensive NFA/WGC study examined five cases, with varying asset classes, return assumptions and time periods used as inputs. The results indicated that the allocations to gold, although small, were statistically significant at the 10 percent level for most strategic asset allocations for the last thirty-two years of inflation adjusted historical risk-return data. The other study sets produced similar results. The study did not address tactical allocations, which would seek to take advantage of shorter term market trends and would normally be higher in a bull market.

**Study's Methodology**

Earlier studies about gold focused mostly on the returns of fully collateralised commodity futures. The NFA/WGC research includes an analysis of investment in a basket of commodities, but specifically addresses the question of whether gold warrants allocation apart from other commodities. Previous asset allocation studies on gold or other precious metals have evidenced diversification benefits. The new

research builds on such research by applying the leading edge Resampled Efficiency™ methodology pioneered by Richard and Robert Michaud of NFA, in addition to utilising conservative return assumptions to enhance the reliability of the study's results.

### **About the study's authors**

#### Richard O. Michaud:

Dr. Richard O. Michaud is president and chief investment officer of New Frontier Advisors LLC. Prior professional positions include: director, research and development, Acadian Asset Management; director, research and new product development, State Street Bank and Trust Co.; head, equity analytics, Merrill Lynch; director, quantitative investment services, Prudential Securities,.

Dr. Michaud is a Graham and Dodd Scroll winner for his work on portfolio optimisation and is an Editorial Board member of the Financial Analysts Journal and Journal of Investment Management. He has published two books: Efficient Asset Management: A Practical Guide to Stock Portfolio Optimisation and Asset Allocation, Oxford University Press 1998; Investment Styles, Market Anomalies, and Global Stock Selection, Association for Investment Management Research (AIMR) 1999.

Dr. Michaud holds a Ph.D. in mathematics from Boston University.

#### Robert O. Michaud:

Robert O. Michaud is managing director of research and development at New Frontier Advisors LLC. He holds a masters degree in mathematics from Boston University. Mr. Michaud and his father, Richard O. Michaud, are co-inventors of a patented optimisation and portfolio rebalancing method for improving the investment value of equity portfolios and asset allocations in practice.

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Katharine Pulvermacher is managing director of investment research and marketing at the World Gold Council. She holds a MSc in Economics (with distinction) from the University of London, where she has taught econometrics and finance. Ms. Pulvermacher is a regular speaker at conferences and seminars for institutional investors around the world.

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### **Notes to editors**

RE optimisation provides a more reliable and realistic framework for measuring the importance of assets in an optimised portfolio, in addition to providing statistical measures to estimate significance.

The study also employed the EM algorithm to provide a consistent and rigorous methodology for dealing with assets for which data is unavailable. The Ledoit estimator was used to improve the reliability of correlation estimates and optimisation results.

## **About New Frontier Advisors, LLC**

New Frontier Advisors, LLC is a Boston-based institutional research and investment advisory firm with an extensive background in quantitative research, consulting, and management. Founded by the inventors of the world's first broad spectrum, patented, provably effective portfolio optimisation process, the firm continues to pioneer new developments in asset allocation and portfolio selection. Based on cutting-edge practical economic theory, New Frontier's services help institutional investors worldwide select and maintain more effective portfolios.

## **About World Gold Council**

The World Gold Council (WGC), a commercially-driven marketing organisation, is funded by the world's leading gold mining companies. A global advocate for gold, the WGC aims to promote the demand for gold in all its forms through marketing activities in major international markets. For further information visit [www.gold.org](http://www.gold.org).

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