

## **MODELING VOLATILITY SERIES: WITH REFERENCE TO GOLD PRICE**

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The recent global financial crisis has highlighted the need for financial institutions to find and implement appropriate models for risk measurement. There was a particular interest of investors to increase their positions in the gold market as the risk in equity and bond markets was increasing.

This study evaluates the effectiveness of various volatility models with respect to modeling and forecasting market risk in the gold future market by taking the last trading price of Gold futures from January 1992 to December 2013 with 6173 observations. The Gold futures volatility is modeled and forecasted using GARCH-class models with long memory and fat-tail distributions, by considering an ARMA model as the conditional returns. Our results reveal that ARMA(1,1) model provides best results for the conditional returns. Among the linear and non-linear GARCH-class models, EGARCH and FIEGARCH models provided best results for in-sampling forecasting. Moreover, EGARCH model gives bit of higher performance than FIEGARCH model under model diagnostic tests. Furthermore, future price volatilities of Gold are forecasted using EGARCH and FIEGARCH models. It was found that long memory effect is significant. Forecasting accuracy of GARCH-class models are compared with different distributions of innovations. The results indicate that the GARCH model with skew t-distribution outperform those with normal distribution. For speculations and noise traders in the futures market, both linear and nonlinear models should be taken into account.