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Topic of Research- Microstructure of Organised Commodity Markets in India

Findings

The results indicate that there is robust market activity and heightened investor interest in gold and silver. The trend indicates that there is a likely upward increase in prices which hints that investors likely to trade in silver as a commodity increases the scope of volatility and preference over the other commodities.

In the current study, to test the relationship between market value and a number of lots of selected commodities, unit root test has been used, which simply means that a time series has a constant mean and variance over time. Unit root analysis has been conducted for the gold and silver lots and values to find the stationarity using ADF tests. For analysis, the natural log values have been computed to remove the size effect. The initial results indicate that both the gold and silver series are non-stationary [H_1 : The market value and number of lots of selected commodities data sets are not stationary at level is rejected]. For further testing for volatility, the first difference has been computed and unit root analysis is re-conducted. Both the gold and silver data series sets become stationary at first difference.

The Johansen technique by Johansen and Juselius (1992) is used to determine the number of co-integrated vectors against every specified number of non-stationary variables that are of the same order since the data is classified as a time series. The hypothesis H_2 that there is no co-integration between market value and number of lots of selected commodities is rejected. For both the silver and gold series, there is at least one co-integrating equation at trace. Gold series are stationary and do not exhibit a long-term trend. A long-term relationship is found between the selected gold series, suggesting that a variable change due to the corresponding changes in the other variable over time [H_3 : There is no long-run connection between market value and number of lots of selected commodities is rejected].

Hypothesis H_4 , that there is no volatility persistence in the selected commodity data series is rejected. GARCH test results reveal that both Gold Lots and Market Values exhibit volatility

persistence, indicating that past volatility influences the current volatility. However, only Gold Lots shows significant volatility, signifying that shocks in past residuals have a significant impact on its volatility. The conditional correlation is in constant terms indicating that there is a significant volatility spillover effect from the past residuals to the current volatility of Market Values for Gold. GARCH test results for Silver Lots and Market Values suggest the presence of volatility persistence. This implies that past volatility has a significant impact on current volatility, and volatility shocks have a lasting effect on the future volatility of these series.

The study has analyzed the relationship between long-run causality between market value and the number of lots of gold and silver. For this, the Granger Causality Test has been used. To determine whether there is any potential predictive capability of one indication for the other, Granger-causality analysis has been used. There is a unidirectional relationship between gold and silver lots and market values evident from Granger Causality Analysis. The results reject the null Hypothesis (H_5) There is no volatility spillover between market value and the number of lots of selected commodities. The dynamics in the silver market are high compared to gold suggesting that the silver market is more volatile and high frequency affects the prices of silver. The silver lots and market values co-integrated and there is a long-term and short-term causality between silver lots and market values. However, the conditional correlation is in constant terms indicating that there is a significant volatility spillover effect from the past residuals to the current volatility of Market Values for Silver.

Hypothesis (H_6) states there is no structural break between selected time series data sets. The results indicate that the CUSUM graph for Gold finds structural breaks in 2013 and 2019 for gold market value and in 2012 structural breaks occurred for silver market values. The period just before the demonetization exhibited a spike in the volatility of market lots and values in the series of gold. The period just before the demonetization does not exhibit any spike in the volatility of market lots or values in the series of silver. The government has introduced various restrictions after the announcement of demonetization due to which the extreme volatility is not observed after the announcement compared to the researcher's study of the structural breaks for the whole sample period 2006 to 2023. The results reject Hypothesis H_7 that demonetization has no impact on the price discovery and price volatility of selected commodities is *not rejected* for Silver but rejected for Gold.