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A Study on Speculative Behaviour of Gold Metal Commodity

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Abstract: ***Speculation in commodity market is an important indicator that affects the prices of the commodities. Speculation is known as the purchase of a good for resale, or for temporary sale of a good with the purpose of repurchasing it later by hoping that earning profit from an interceding price change. Normally, excessive speculation in commodity market pushes up the prices and speculation create more fluctuations in prices. In this background, the studies focus on trend of speculation in gold future returns and also assess the short – run relationship between Gold futures returns and Speculative ratio. The data have been obtained from the MCX website. The statistical and econometric tools, such as, descriptive statistics, OLS Regression Model and Granger causality tests have been applied to analyze the data. The result of the study reveals that, time trend affects the speculation and there is no short run relationship between Gold futures returns and Gold Speculative ratio. Hence, it is proved that speculation is independent of futures price.***

Keywords: Gold Commodity, Speculation, Granger Causality

I. INTRODUCTION

Speculation plays an important role in the gold metal commodity. Due to speculation, the gold futures price has increased during the study period. The increase in futures price causes low demand, then it causes equilibrium price to fall, and the quantity supplied will also get reduced. The speculators will benefit from this price fall and try to hold the commodity for resale at a later date, which creates artificial demand. This artificial demand causes prices to rise and the speculators sell the commodity they hold to get profit from rise in prices. The speculators are known as risk accepting individuals who accept the price risks from more hedgers who dislike the risks. The trader, who dislikes the risk, holds the commodity may hedge in a forward or futures market for delivering the commodities at a defined price currently. This cycle continues in our economic market and thus motivates us to study the speculative behaviour of gold metal commodity.

II. REVIEW OF LITERATURE

For the past few years, researchers concerted on number of issues in commodities market with particular priority in pricing.

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Senthil, Amit Kar, Mathur and Girish Jha (2014) in their study on "price volatility in agricultural commodity futures - an application of GARCH Model" have analyzed the extent of volatility in spot prices, which is due to futures trading by applying. Generalized Autoregressive Conditional Hetroscedasticity (GARCH) Model. The data have been collected from National Commodity and Derivatives Exchange (NCDEX) for the agricultural commodities such as - maize, soybean, cotton seed oilcake, castor, palm oil, cumin, chilli and mustard. From the result, it has been revealed that the reduction in futures trading is the reason for reduction in price volatility [1]. Robles, Torero and Brawn (2009) in their study on "When speculation matters" have analyzed the role of financial speculation in the behavior of agriculture commodity prices in the recent years. The variables, such as, volume of futures contracts traded, futures long and short position and Index traders net position have been taken for the study. The results of the study reveal that the speculative activity has been identified as a source of increasing agricultural commodity prices [2]. Chari and Lawrence Christiano (2019) in their study on "Financialization in Commodity Markets" have analyzed the relationship between increase in trading activity and spot price behavior. The data, such as, Aggregative price index, Commodity Indices, open interest, Volume of trade, Futures returns and stock returns have been collected from CFTC database. The results of the study have revealed that the financialization is not at all impacted by the changes in spot price[3].

A. Objectives of the study

1. To study the trend of speculation in gold futures returns.
2. To analyze the short run relationship between gold futures returns and speculative ratio.

B. Sources of the Data

The data for the study consists of futures daily price and daily speculation of Gold Commodity for the period from 2012 – 13 to 2019-2020, which has been obtained from MCX (Multi Commodity Exchange) website.

C. Methodology of the Study

The study is descriptive in nature. The statistical tools, such as, descriptive statistics and OLS regression Model have been applied to know the trend of speculation in gold future and the econometric tool, namely, Granger Causality tests has been applied to analyze the short-run relationship between gold futures returns and speculative ratio.

III. ANALYSIS AND RESULTS

Table 1 presents the descriptive statistics of Gold Futures Speculative ratio.

TABLE 1. Descriptive Statistics

Particulars	Speculative ratio
Mean	299.5236
Median	29.51721
Maximum	443.1512
Minimum	2.456224
Standard Deviation	33.05122
Skewness	3.600088
Kurtosis	19.12783
Jarque-Bera	18405.81
Probability	0.00000
Observations	2206

Source: Computed

The descriptive statistics of speculative ratio of gold future reveals that the average amount of speculation of the gold future market is 299.5236 and the maximum amount of speculation has reached to 443.1512. The standard deviation is 33.05122 which show the lower deviation with a positive skewness value of 3.600088. The kurtosis value of 19.127831 and the p value (0.000) of Jarque – bera test reveal the distribution is not normal as having more variations. Hence, it is proved that the range of occurrence of speculation in the gold commodity market has increased in a unpredictable way.

A) Regression Analysis

Regression Analysis measures the strength of the relationship between dependent variable and independent variable. From the regression analysis, it is possible to ascertain the influence of time on the speculation of commodity market. i.e, the variations in the speculation from April 2012 to march 2020 has been ascertained.

Regression Analysis of Gold Futures Speculative ratio

The following null hypothesis has been framed to find, whether the time trend has a significant influence on Speculative ratio.

Null Hypothesis: The time trend does not affect speculative ratio

TABLE 2. The table 2 shows the results of the regression analysis of Speculative ratio

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	31100.77	501.6319	61.99919	0.000
@TREND	-11.5194	0.393992	-29.2375	0.000
R-squared	0.279464	F-statistic		854.833
Adjusted R-squared	0.279137	Prob(F-statistic)		0.000

Source: Computed

The result of regression analysis of gold speculative ratio for the period 2012 – 13 to 2019-2020 has been presented in the table 2. The gold futures Speculative ratio is the dependent variable and the time trend is the independent variable. The t-test value parallel to trend coefficient (-29.2375) and its p value (0.000) represents the rejection of null hypothesis. The R square value is 0.279464 represents that the model is not fit. The p value (0.000) of F statistics represents the rejection of null hypothesis. It is concluded that the time trend affects the speculative ratio.

B) Unit root test of Speculative ratio

The following null hypothesis has been framed to find, whether the speculative ratio is stationary or not stationary.

H_0 : The speculative ratio of gold futures is non stationary

H_1 : The speculative ratio of gold futures is stationary

Table 3. The table given below shows the results Unit root test

Variables	ADF			PP			S/NS
	Level I(0)	t-Statistic	P Value	Level I(0)	Adj t-Statistic	P Value	
Speculative ratio	-2.86265	-26.0787	0.000	-2.86265	-255.18	0.000	S

Source: Computed

The table 3 reveals the results of Unit root test of Gold futures speculative ratio. The t statists (-26.0787) and p value(0 .000) of Augmented Dickey fuller test and the t statistics(-255.18) and the p value (0.000) of Phillips-Perron test explores to reject the null hypothesis and to accept the alternate hypothesis. Hence, it has been proved that the series of speculative ratio is stationary to apply econometric model.

c) Granger Causality Tests

Granger Causality tests has been done to examine whether the Gold futures returns and **Speculative ratio** granger causes each other at different lags

The following null hypothesis has been framed to find the existence of relationship between Gold Futures Returns and Speculative ratio .

H_{oa}= Returns (Futures Returns) does not granger cause SPR (Speculative Ratio)

H_{ob}= SPR (Speculative Ratio) does not granger cause returns (Futures Returns)

Table 4. The table given below shows the results of Granger Causality tests

Lags	Particulars	F statistics	P value	Significance Status
2	Futures returns does not granger cause SPR	0.51058	0.6002	Non Significant
	SPR does not granger cause futures returns	0.98668	0.373	Non Significant
3	Futures returns does not granger cause SPR	0.49369	0.6867	Non Significant
	SPR does not granger cause futures returns	2.45498	0.0614	Non Significant
4	Futures returns does not granger cause SPR	0.49454	0.7398	Non Significant
	SPR does not granger cause futures returns	1.67165	0.1538	Non Significant
5	Futures returns does not granger cause SPR	0.97851	0.4294	Non Significant
	SPR does not granger cause futures returns	1.0717	0.374	Non Significant

Source: Computed

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The F value and P value of Granger Causality tests reveals that there is no any bi – directional or uni – directional relationship between the two variables till 5th lag. Since, all the values are more than 0.05, which proves that there is no short run relationship between speculative ratio and futures returns. The increase or decrease in speculation does not have any impact on the futures price.

IV. RESULTS AND DISCUSSION

As most of the trade in the commodity market is based on the speculation, the speculative ratio provides the extent of speculation in the commodity futures market. The result from the descriptive statistics of speculative ratio indicates that the speculation in the gold commodity market has increased during the study period. Normally, the occurrence of speculation will affect the price of the commodities. This has been tested by Granger Causality tests by taking the relationship between speculative ratio and gold futures returns. The result of the granger causality reveals that the speculation does not determine the futures returns**.**

V. CONCLUSION

The Speculative ratio in the commodity market has shown a mixed trend, the range of speculation of the gold commodity futures has increased in an unpredictable way during the study period. The speculation changes according to the time. It is concluded that even though the time trend affects the speculation, there is no short run relationship between Gold futures returns and Gold Speculative ratio. Hence, it is proved that speculation is independent of futures price.

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