

COMMODITY MARKET INTERACTIONS: EVALUATING GOLD AND SILVER PRICE MOMENTS AND THEIR CORRELATIONS

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Abstract

For thousands of years, precious metals have been widely used as stores of wealth and as a means of exchange. Many investors include gold and silver in their portfolios in a variety of ways, such as jewellery, bars, coins, and exchange-traded funds. Due to their role as safe-haven assets, gold and silver become a significant investment option during times of crisis, such as turbulence in the equities market, geopolitical unrest, and a weakening US currency. A valuable precious metal, gold is extremely vulnerable to geopolitical upheavals. Following unfavourable occurrences including economic slowdowns, debt crises, changes in macroeconomic policy, and an increase in the anticipated rate of deflation, demand for gold surges. The demonetisation process in India followed a similar pattern. Gold prices are highly volatile as a result of these events, which cause abrupt price swings. Silver, as an alternative to gold, has comparable volatility. In actuality, there is a strong positive link between the prices of gold and silver. However, because a change in the price of gold and silver is not proportionate, it is challenging to establish a directional causality when looking at the correlation of changes in daily prices. Since gold was extensively kept for investment purposes, it was thought that this new tendency was caused by silver's growing significance as an industrial metal. For the same reason, the price ratio of gold to silver tends to fluctuate. Adversities like significant wars, market crises, and economic downturns have historically resulted in high levels of this ratio. Silver's price is variable because it has less market liquidity than gold and its demand vary between industrial and financial applications. The study period involves the price movements of gold commodity from January 2021 to January 2023 and it is concluded that.

Keywords: Commodity Market, Nonagricultural Commodity, Gold, Silver, Stock Market.

INTRODUCTION

Stock Exchange:

A stock exchange is a venue for commercial transactions, such as the purchase and sale of stocks, bonds, debt instruments, commodities, currency, and so on. It is a division that offers stock brokers and investors "trading" services for the purpose of trading securities. An organized area where stock market participants gather to trade stocks or securities is called a stock exchange. It includes more than just buying and selling; it also includes services like stock issuance and redemption as well as dividend or income payments. Since there are currently no physical transactions, all activities are conducted over an electronic network, which facilitates quicker transactions and lowers costs.

What is Commodity and Commodity Market?

Commodity: Products that are traded on the authorized commodity exchange market are referred to as commodities. However, the products must be transferable and able to be moved from one location to another. Here, it is generally separated into two primary categories: soft (agricultural) and hard (non-agricultural) commodities. Soft commodities are agricultural products like coffee, corn, wheat, and sugar, while hard commodities are usually non-agricultural or natural resources like gold, silver, copper, and natural gas.

Commodity Market: A commodity market is a real or online marketplace dedicated to the buying, selling, and trading of primary or raw materials. Over 100 commodity goods are currently supported by more than 50 commodity markets worldwide. In this case, the merchants buy or sell the goods via a contract mechanism. This industry is now seeing significant growth and a high rate of return on investment.

Commodity Exchange: The organization or body corporate that grants licenses for future trading and establishes the rules and regulations to be adhered to in the commodity market is known as the commodity exchange. They also have the jurisdiction to regulate.

Types of Commodity Markets:

Commodities are typically traded in derivatives markets or spot markets. Spot markets, when buyers and sellers exchange tangible goods for prompt delivery, are sometimes known as physical markets or cash markets. Options, futures, and forwards are all part of the derivatives markets. Derivatives transactions with the spot market as the underlying asset include forwards and futures.

Regulators of Commodities Market in India :

Following are the National commodity exchanges :

- Multi Commodity Exchange of India (MCX) Mumbai,
- National Commodity and Derivative Exchange of India (NCDEX) Mumbai,
- National Multi Commodity Exchange of India (NMCE) Ahmedabad.
- Indian Commodity Exchange (ICEX), Gurgaon.
- Shariah Index
- Universal Commodity Exchange.

Following are the regional commodity exchanges:

- Bikaner Commodity Exchange Ltd., Bikaner
- Bombay Commodity Exchange Ltd., Vashi, Bombay
- Chamber of commerce, Hapur
- Central India Commerce Exchange Ltd. Gwalior
- Cotton Association of India, Mumbai
- East India Jute & Hussain Exchange Ltd. Kolkata
- First Commodities Exchange of India Ltd., Kochi
- Haryana Commodities Ltd., Sirsa
- India Pepper & Spices Trade Association Cochin (IPSTA)
- Meerut Argo Commodity Exchange Co. ltd. Meerut
- National Board of Trade (NBOT), Indore
- Rajkot Commodity Exchange Ltd., Rajkot
- Rajdhani Oils & Oilseed Exchange ltd., Delhi
- Surendranagar Cotton oil & Oilseeds Association Ltd., Surendranagar
- Spices & Oilseeds Exchange Ltd. Sangli
- Vijay Beopar Chamber Ltd., Muzaffarnagar

LITERATURE REVIEW

Bose(2008) studied the Indian commodity futures market in order to judge whether prices indicate efficient functioning of the market or otherwise, particularly as this market is less developed compared to the financial derivatives markets, being constrained by its chequered history with many policy reversals. Using the available notional price indices for the commodity market we find that multi-commodity indices, which have higher exposure to metals and energy products, with clear and efficient price dissemination in national and international markets, behave like the equity indices in terms of efficiency and flow of information.

Bhusari(2015) concluded that level of speculation in the agriculture commodity and the crude oil markets has remained relatively constant in percentage terms as prices have risen. Studies in agriculture and crude oil markets have found that speculators tend to follow trends in prices rather than set them. When demand for a commodity is higher than the supply, its price increases, and vice versa. There is always some imbalance between the two when it comes to commodities, which results in constantly fluctuating prices.

Mukherjee(2011) studied that in long history of trading in commodities and related derivatives, agricultural commodity market has seen several developments between two extreme scenarios, protection of the essential commodity market through government intervention and the opening up of the sector and getting the necessary protection through market based instruments like commodity futures contract and besides the availability of several committee reports and research studies favouring the utility of futures contract on commodities, a further attempt has been made to re-validate the positive impact of futures trading on agricultural commodity market in India.

Kumar (2012) concluded that investing in commodities as an asset is always good for long term. The price movements are more predictable, purely based on demand and supply of that commodity, unlike in other markets where price manipulations are very much possible, hence the investor is fixed. The recent attempt by the Government to permit Multi-commodity National levels exchanges has indeed given it, a shot in the arm.

Commodity includes all kinds of goods. Futures trading are organized in such goods or commodities as are permitted by the Central Government.

Hariharan & Reddy(2018) studied that there are certain issues like instability of commodity prices which has been a major concern to the producers as well as the consumers. In India, more than 70% of populations depend on agricultural commodities. Commodity futures markets are a part and parcel of a program for agricultural liberalization. There is a need for liberalization in the sector. Futures markets are an instrument for achieving that liberalization. The study was carried out with respect of all six National level commodity exchanges in India namely NMCE, Ahmadabad; MCX, Mumbai; NCDEX, Mumbai; ICEX, Mumbai; ACE, Ahmadabad; and UCX, Mumbai. These exchanges are playing very important role in the trading activities in India.

Kandoi(2020) concluded that Investing in Commodity market requires time, knowledge and constant monitoring of the market. Overall performance of gold and silver indicates the low returns for short term investment and high returns for long term investments. In current scenario no individual is interested in investing in only one avenue they are interested in investing in other avenues like Gold and silver which is more trending from past few years.

RESEARCH METHODOLOGY

3.1 NEED FOR STUDY:

Commodity markets are places where raw and primary products are traded. They are divided into two categories: hard and soft. Hard commodities are usually non-agricultural or natural resources (such as gold, silver, copper, and natural gas), while soft commodities are agricultural commodities (such as coffee, sugar, wheat, and corn). The challenge for market participants is to predict how the price of the commodity will move and to decide when to enter and exit the market to maximize profit. Because gold, silver, copper, natural gas, and crude oil are more sensitive than other commodities, their predictions are precise, so it is necessary to examine the current performance of non-agricultural commodities in the Indian commodity market.

3.2 OBJECTIVES OF STUDY:

- To study the price movements of gold and silver commodity.
- To study and analyze the commodity market of selected Non-agricultural product i.e., gold and silver.
- To examine the price correlation between gold and silver in the commodity market

3.3 SAMPLE SIZE: The sample consists of two commodities (gold & silver) from MCX.

3.4 DATA COLLECTION: Online publication, BSE websites, Research Journals etc. (purely secondary data)

3.5 STUDY PERIOD: The study period is of three years covering from 2021 to 2023.

3.6 SOURCES OF DATA: Main source of data is MCX, BSE to obtain historical prices.

3.7 STATISTICAL TOOLS AND INDICATORS USED:

- Correlation

TABLE-1

MONTHLY CLOSING PRICES OF GOLD FUTURES CONTRACT			
	Year 2023	Year 2022	Year 2021
DEC	63203	55017	48099
NOV	62605	52480	47606
OCT	60940	50322	47635
SEP	57105	50094	46323
AUG	59374	50414	47120
JUL	59568	51426	47846
JUN	58211	50517	46839
MAY	60163	50855	48821
APR	59919	51754	46737
MAR	59402	51585	44637
FEB	55756	50760	45736
JAN	57242	47686	49096

Monthly closing prices of gold futures contract

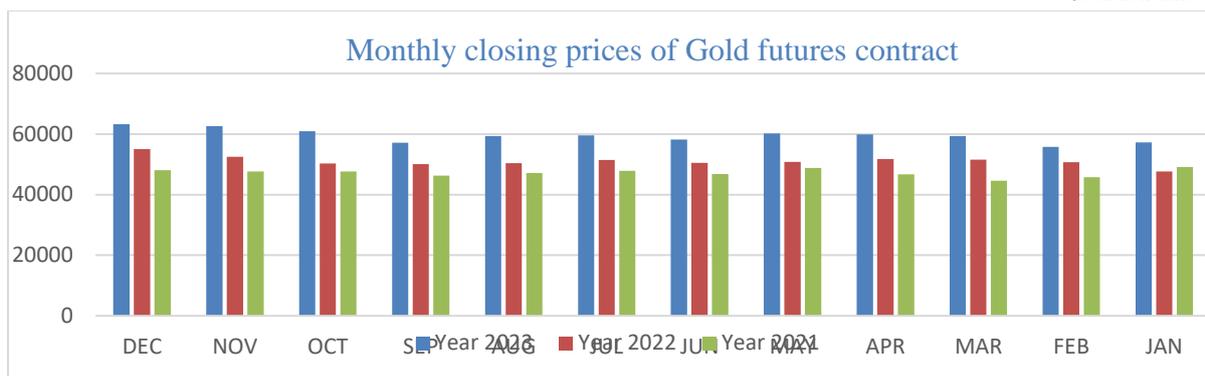


Figure:1

The table above presents the monthly closing prices of gold futures contracts from December 2021 to December 2023. By examining the data, we can observe trends and fluctuations in the prices over this three-year period.

For the year 2021 it can be seen that prices were around 48,000 rupees, but from year 2022 from February prices have increased. In the year 2023 prices have increased to 63,000 rupees i.e. 30% comparing to year 2023. From the year 2021 to 2023 monthly closing prices of gold show increase in prices of gold.

TABLE-2

MONTHLY CLOSING PRICES OF SILVER FUTURES CONTRACT			
	Year 2023	Year 2022	Year 2021
DEC	74430	69413	62660
NOV	75772	62240	61646
OCT	71669	57678	64534
SEP	69857	56858	59617
AUG	74143	52561	62916
JUL	75427	58370	67847
JUN	68935	58330	68135
MAY	72102	61125	71898
APR	74071	63556	67524
MAR	72218	67487	63814
FEB	63783	64920	67261
JAN	68829	60976	69706

Monthly closing prices of Silver futures contract



Figure:2

The table above presents the monthly closing prices of Silver futures contracts from December 2021 to December 2023. By examining the data, we can observe trends and fluctuations in the prices over this three - year period.

For the year 2021 it can be seen that prices were around 62,000 rupees, but from year 2022 from December prices have increased. In the year 2023 prices have increased to 75,000 rupees i.e. 20% comparing to year 2023. From the year 2021 to 2023 monthly closing prices of silver shows increase in prices of silver.

Correlation Analysis: Gold vs. Silver

	<i>Gold</i>	<i>Silver</i>
Gold	1	
Silver	0.64720071	1

The correlation matrix between Gold and Silver prices is summarized as follows:

- The correlation coefficient is 0.647 between Gold and Silver, The value indicates moderate to strong positive correlation which indicates that price of Gold and Silver tend to move in the same direction over the period of time.
- A perfect positive correlation would have a coefficient of 1, however a coefficient of 0.647 indicates that there is significant co-movement between the two metals despite the imperfect link

TURES CONTRACT

CONCLUSION

Although they are generally aligned, silver can still offer risk-reducing advantages in a precious metals-focused portfolio. The positive correlation of 0.647 between gold and silver indicates a significant, albeit not absolute, link in their price movements, which is probably driven by common market and economic factors like inflation expectations, currency strength, and investor sentiment toward precious metals. With rising volatility and price levels in recent years, this analysis sheds light on how the gold and silver futures market has changed over time.

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