Bullion Spot and Futures: Driving Forces Behind Indian Stock Market Shifts

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Abstract

The aim of the study is to analyse the impact of Bullion spot and futures prices on the Indian stock market indices. The study is based on Secondary data for the period 01.04.2013 to 30.09.2024. For the analysis of data, Correlation and Regression is used in the study. The findings of the study shows that BSE Sensex and Nifty 50 indices exhibit the highest fluctuation whereas Silver futures and Silver spot prices have the lowest fluctuation during the study period. Further there is a strong positive correlation between bullion spot and futures prices with Indian stock market indices. The study concludes that spot and futures prices of bullion specifically gold and silver are a strong determinant of Indian stock market.

Keywords: *Bullion, Gold, Silver, Spot prices, Futures prices, Nifty 50, BSE Sensex*

Introduction

The Indian stock market, one of the world's most dynamic financial markets, has undergone notable shifts throughout the years, driven by a range of factors that shape investor behaviour, regulatory actions and global economic trends. Among these factors, the interaction between commodities, particularly bullion markets and stock market performance has gained a lot of focus. Bullion, which includes gold and silver, has historically been considered as a store of value, an inflation hedge, and a safe haven during times of financial and geopolitical crisis. In India, where gold has substantial cultural and economic value, price changes of gold and silver in both spot and futures markets have far-reaching consequences not just for bullion traders but also the entire equity market.

The term "bullion spot and futures" encompasses two key components of the bullion market: the spot price, which represents the current market value of physical gold and silver for immediate delivery, and the futures contracts, which are financial agreements that allow traders to buy or sell these commodities at a predetermined price for delivery at a specified date in the future. Investors frequently regard the price of gold as a barometer of financial instability or economic uncertainty, with rising gold prices often signalling concerns about inflation, currency devaluation, or geopolitical tensions; as a result, investors may adjust their portfolios by reallocating capital into gold and other safe-haven assets, while reducing exposure to

riskier assets such as equities, in an attempt to safeguard their wealth during periods of heightened market volatility.

Review of Literature

P K Mishra, J R Das and S K Mishra (2010) attempted to analyse the causality relation that may run between domestic gold prices and stock market returns in India, for the period January 1991 to December 2009. The study considered stock market returns based on BSE 100 index. For the analysis of data, Granger causality and Vector error correction model is used. The results of the study infers that the Gold prices granger causes stock market returns and stock market returns also granger causes the gold prices in India during the study period.

Raman Preet Singh and Nawal Kishor (2014) studied the existence of unidirectional or bi-directional relationship between the gold price and Nifty Indices, using the Secondary data for the period 2002-2013. Augmented Dickey Fuller Test and Johansen Co-integration tests were applied in the study to find out whether the variables are stationary and whether there were any long-term relationships between them. Granger Causality test was used to test the causal relationship between the variables. The results of the Granger causality shows that Gold price does not granger cause Nifty indices and the Nifty indices does not granger cause the gold prices. Further the results of Johansen Co-integration test indicates that Gold and Nifty indices are not co-integrated.

N Raza, et al. (2016) examined the asymmetric impact of gold prices, oil prices and their associated volatilities on stock markets of emerging economies, using the monthly data for the period January 2008 to June 2015. For the analysis of data nonlinear ARDL approach is applied. The results of the study indicates that gold prices have a positive impact on stock market prices of large emerging BRICS economies and negative impact on the stock markets of Mexico, Malaysia, Thailand, Chile and Indonesia. Oil prices have a negative impact on stock markets of all emerging economies. Gold and oil volatilities have a negative impact on stock markets of all emerging economies in both the short and long run.

N Trabelsi, et al. (2021) examined the relationship between the returns of gold and seven sectoral indices in the Bombay Stock Exchange using daily data for the period January 2000 to May 2018. The study uses the Generalised autoregressive conditional heteroskedasticity model for the analysis of data and the results indicates that the changes in gold prices are significantly independent of the returns of the BSE sectoral indices. Further, gold can predict the future returns of the Consumer durables, Oil and Gas, and the FMCG stock indices.

Statement of the Problem

Despite the recognized significance of the bullion markets, particularly in terms of their role as safe-haven assets and indicators of economic uncertainty, there remains a notable gap in understanding the precise mechanisms through which fluctuations in bullion prices - whether the spot market, reflecting immediate trading values, or the futures market, forecasting future expectations - directly influence the performance of the Indian stock market. The problem under study is to examine how the driving forces originating from the bullion markets, specifically the fluctuations in spot and futures prices of gold and silver, manifest in the Indian stock market. In a rapidly developing market like India, where economic growth is accompanied by increasing market complexity and volatility, the unique interplay between the bullion markets and the broader equity market could provide critical insights for policymakers, investors, and economists, enabling them to better understand the underlying drivers of market shifts, anticipate potential risks and opportunities, and formulate more informed decisions and strategies that can effectively respond to changing market conditions, safeguard against economic disruptions, and enhance long-term investment stability and growth.

Objectives of the Study

- To study the relationship between spot prices of bullion commodities and select stock market indices.
- To study the relationship between futures prices of bullion commodities and select stock market indices
- To study the impact of spot prices of bullion commodities on select stock market indices.
- To study the impact of futures prices of bullion commodities on select stock market indices.

Hypotheses

- Ho_1: There is no significant relationship between spot prices of bullion commodities and select stock market indices.
- Ho_2: There is no significant relationship between futures prices of bullion commodities and select stock market indices.
- Ho_3: There is no significant impact of spot prices of bullion commodities on select stock market indices.
- Ho_4: There is no significant impact of futures prices of bullion commodities on select stock market indices.

Research Methodology

This study is analytical in nature.

Sources of Data

The study is based on Secondary Data. Data on Futures and Spot prices of Gold and Silver is collected from the website of Multi Commodity Exchange. Data on Nifty 50 index and BSE Sensex is collected from the official websites of National Stock Exchange and Bombay Stock Exchange respectively.

Period of the study

The period of the study is twelve years from 01.04.2013 to 30.09.2024 based on the availability of data.

Tools for Analysis

For the analysis of the collected data, statistical tools like descriptive statistics, correlation and regression is used in the study.

Analysis and Interpretation

Table 1: Descriptive Statistics

Variable	Mean	Minimum	Maximum	Std. Dev.	C.V.
Gold futures	39606	24677	75718	13363	0.337
Gold spot	39506	24562	75402	13283	0.336
Silver futures	51139	33170	96162	14798	0.289
Silver spot	50590	32872	94181	14669	0.291
Nifty 50	12236	5285	26216	4939.8	0.404
BSE Sensex	40736	17906	85836	16531	0.406

Source: Computed from Secondary data using SPSS

The above table shows the descriptive statistics of the variables used in the study. BSE Sensex exhibits the highest Coefficient of Variation of 0.406 followed by Nifty 50 with value 0.404 indicating high fluctuation during the study period. Silver futures prices exhibit the lowest Coefficient of Variation of 0.289 followed by Silver spot prices with value 0.291 indicating low fluctuation during the study period.

Table 2: Correlation between Bullion spot and futures prices and stock market indices

Ho_1: There is no significant relationship between spot prices of bullion commodities and select stock market indices.

Ho_2: There is no significant relationship between futures prices of bullion commodities and select stock market indices.

Correlations

	Gold futures	Gold spot	Silver futures	Silver spot	Nifty 50	BSE Sensex
Gold futures	1					
Gold spot	.999**	1				
Silver futures	.946**	.950**	1			
Silver spot	.937**	.945**	.997**	1		
Nifty 50	.928**	.931**	.870**	.872**	1	
BSE Sensex	.932**	.935**	.874**	.876**	.997**	1
**. Correlation is significant at the 0.01 level (2-tailed).						

Source: Computed from Secondary data using SPSS

Table 2 exhibits the correlation matrix between bullion commodities spot and futures prices and the select stock market indices. There is a significant positive correlation between Gold futures prices and gold spot prices, Silver futures prices, Silver spot prices, Nifty 50 index and BSE Sensex with coefficient values 0.999, 0.946, 0.937, 0.928, and 0.932 respectively. There is also a significant positive correlation between Gold spot prices and Silver futures prices, Silver spot prices, Nifty 50 index and BSE Sensex with coefficient values 0.950, 0.945, 0.931, and 0.935 respectively. It is evident from the table that there exists a significant positive correlation between Silver futures prices and Silver spot prices, Nifty 50 index and BSE Sensex with coefficient values 0.997, 0.870, and 0.874 respectively. It is also evident from the table that there exists a significant positive correlation between Silver spot prices and Nifty 50 index and BSE Sensex with coefficient values 0.872 and 0.876 respectively. Hence the null hypothesis can be rejected at 1 percent level of significance. So, it is concluded that there is a significant relationship between bullion spot and futures prices and select stock market indices.

Regression analysis for Bullion spot and futures prices on Nifty 50 Index

Ho_3: There is no significant impact of spot prices of bullion commodities on select stock market indices.

Table 3: Model Summary for Bullion spot and futures prices on Nifty 50 Index

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.937[a]	.879	.879	1718.339
a. Predictors: (Constant), Silver spot, Gold futures, Silver futures, Gold spot				

Source: Computed from Secondary data using SPSS

Table 3 depicts the model summary for Bullion spot and futures prices on Nifty 50 Index. R value of 0.937 indicates a strong positive relationship between Bullion spot and futures prices and Nifty 50 Index. R square value of 0.879 represents that 87.9 per cent changes in Nifty 50 index can be explained by Bullion spot and futures prices in India. The Adjusted R square of 0.879 indicates that the model has predictive value.

Table 4: ANOVA table for Bullion spot and futures prices on Nifty 50 Index

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	60776019198.716	4	15194004799.679	5145.821	.000[b]
	Residual	8376776403.182	2837	2952688.193		
	Total	69152795601.898	2841			
a. Dependent Variable: Nifty 50						
b. Predictors: (Constant), Silver spot, Gold futures, Silver futures, Gold spot						

Source: Computed from Secondary data using SPSS

The above table 4 represents the ANOVA table for Bullion spot and futures prices on Nifty 50 index. It is evident from the table that p value is significant at 5 per cent level and hence it can be concluded that the regression model is significant. So the dependent variables (Bullion spot and futures prices) can reliably predict the dependent variable (Nifty 50 index).

Table 5: Coefficients table for Bullion spot and futures prices on Nifty 50 Index

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1055.257	120.396		-8.765	.000
	Gold futures	.576	.074	1.562	7.798	.000
	Gold spot	-.180	.076	-.484	-2.358	.018
	Silver futures	-.663	.042	-1.994	-15.719	.000
	Silver spot	.621	.043	1.852	14.487	.000
a. Dependent Variable: Nifty 50						

Source: Computed from Secondary data using SPSS

Table 5 describes the Coefficient table for Bullion spot and futures prices on Nifty 50 index. It is evident from the table that p value is significant at 5 per cent level and hence the null hypothesis is rejected. So, it is concluded that, there is a significant impact of Bullion spot and futures prices on Nifty 50 index.

Regression analysis for Bullion spot and futures prices on BSE Sensex

Ho_4: There is no significant impact of futures prices of bullion commodities on select stock market indices.

Table 6: Model Summary for Bullion spot and futures prices on BSE Sensex

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.941[a]	.886	.886	5584.869

a. Predictors: (Constant), Silver spot, Gold futures, Silver futures, Gold spot

Source: Computed from Secondary data using SPSS

The above table represents the model summary for Bullion spot and futures prices on BSE Sensex. R value of 0.941 indicates a strong positive relationship between Bullion spot and futures prices and BSE Sensex. R square value of 0.886 represents that 88.6 per cent changes in BSE Sensex can be explained by Bullion spot and futures prices in India. The Adjusted R square of 0.886 indicates that the model has predictive value.

Table 7: ANOVA table for Bullion spot and futures prices on BSE Sensex

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	685559142324.645	4	171389785581.161	5494.890	.000[b]
	Residual	88425794166.621	2835	31190756.320		
	Total	773984936491.267	2839			
a. Dependent Variable: BSE Sensex						
b. Predictors: (Constant), Silver spot, Gold futures, Silver futures, Gold spot						

Source: Computed from Secondary data using SPSS

The above table 7 describes the ANOVA table for Bullion spot and futures prices on BSE Sensex. It is evident from the table that p value is significant at 5 per cent level and hence it can be concluded that the regression model is significant. So the dependent variables (Bullion spot and futures prices) can reliably predict the dependent variable (BSE Sensex index).

Table 8: Coefficients table for Bullion spot and futures prices on BSE Sensex

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-4036.586	391.380		-10.314	.000
	Gold futures	2.005	.240	1.623	8.346	.000
	Gold spot	-.682	.248	-.548	-2.754	.006
	Silver futures	-2.176	.137	-1.955	-15.869	.000
	Silver spot	2.044	.139	1.820	14.669	.000
a. Dependent Variable: BSE Sensex						

Source: Computed from Secondary data using SPSS

Table 8 displays the Coefficient table for Bullion spot and futures prices on BSE Sensex index. It is evident from the table that p value is significant at 5 per cent level and hence the null hypothesis is rejected. So, it is concluded that, there is a significant impact of Bullion spot and futures prices on BSE Sensex.

Findings

- BSE Sensex and Nifty 50 indices exhibit the highest fluctuation during the study period.
- Silver futures and Silver spot prices have the lowest fluctuation during the study period.
- Gold spot and futures prices show a positive relationship with Nifty 50 and BSE Sensex indices.
- Silver spot and futures prices have a positive relationship with Nifty 50 and BSE Sensex indices.
- Gold spot and futures prices significantly impact the Nifty 50 and BSE Sensex indices.
- There is a significant impact of Silver spot and futures prices on • Nifty 50 and BSE Sensex indices.

Conclusion

The study delves into the intricate relationships between bullion markets, specifically gold and silver, and the Indian stock market. The findings of the study highlights that the dynamics of bullion prices play a pivotal role in the overall stock market movements in India. The study reveals a significant correlation between bullion spot and futures prices and the Indian stock market, indicating that changes in bullion prices, whether through immediate spot transactions or future contract speculations, directly influence market trends, thus highlighting the interconnectedness of these markets and their collective impact on equity market movements in India. Further, the study reinforces that bullion markets are a critical driver of fluctuations in Indian stock market, underscoring the importance for investors, analysts, and policymakers to closely monitor shifts in bullion prices and market trends, as these dynamics significantly impact the overall performance of the Indian equity markets.

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