

ANALYSIS ON RELATIONSHIP AND EFFECT OF GOLD PRICE ON BSE SENSEX INDEX IN INDIA

Dr. Mukeshkumar C. Ajmera*

ABSTRACT

An attempt has been made by researcher to study the relation between gold price and its effect on Sensex of BSE. The researcher has selected secondary data. The time for the data is 2015 to 2025. The researcher has used statistical tools like correlation, regression and descriptive statistics. The correlation between gold price and BSE Sensex has been positive and significant. Whereas Regression shows R value indicates very strong and positive relation between gold price and Sensex value. R Square 94.4% shows fluctuation caused by gold price. It is concluded that gold price influences BSE Sensex.

KEYWORDS: BSE Sensex, Gold Price and Regression and Correlation.

Introduction

Gold is a most preferable investment option due to its safety, high liquidity and inflation bearing capacity and profitable return. It can be invested in many forms like in Jewellery, gold exchange-traded funds, gold funds, sovereign gold bond, coins, and bars. The most important point is, how to invest in gold, there are two ways to invest in gold, one is conventional way to buy gold in physical forms like Jewellery, coins and billions and artifacts. In Morden age, another option in gold investment is Gold ETF (Gold Exchanged Traded Funds) and Gold Funds. In India, another option for investment is stock market investment especially in varies profitable stocks; there are two major index in India, BSE SENSEX and NSE Nifty.

Sensex (Stock Exchange Sensitive Index, it shows performance of Bombay stock Exchanges stocks. it is a benchmark index in India, it has 30 companies in it, investors can earn good stock return by investing in Stock market. Both market gold and stock have greater influence on Indian economy.

Review of Literature

Sowmya Jakkampudi(2018), In this research paper, researcher tested a causal relationship between gold price and Sensex, whereas she used various statistical tools like simple time series analysis and augmented Dickey fuller unit root test, and finally, she has used Granger causality test for find a casual relationship between two variables, result of study indicates that there is no casual relationship found during the study period.

* Assistant Professor in Commerce, Shri Sadgurudev Shri Ranchhoddasji Bapu Mahila Home Science College Lt. Meenaben Jayantilal Kundaliya English Medium Mahila Commerce College, Rajkot, Gujarat, India.

Nikhita Dinesh Hedge, and Neetha Mahadev (2024), In this research paper, they have taken a research topic: the relationship between the Indian gold market and BSE SENSEX and Nifty 50. The researcher used statistical techniques like descriptive statistics, correlation analysis, regression modelling and ARIMA forecasting. The results of the study found that negative correlation between variables during the study period, and ARIMA test statistics found short-term forecasts for the gold market and Indian stock market, BSE Sensex and Nifty 50.

Shivam Aggrawal (2024), In this research paper, the researcher used statistical tool correlation coefficients for measuring relationship between gold price and Stock market performance and another side return analysis through graph shown the magnitude, inside and direction of return before and after each event, the finding of research suggest the behaviour of stock market and gold price during the different conditions and events.

Zankhana Atodaria, and Karan Karnawat (2024), under this research paper they have used Pearson correlation matrix to test the correlation between the variables, they found there is no relationship between two variables during the study period. They have taken two variables Sovereign Gold Bond and Sensex & Nifty during the study period.

Nilam Panchal(2021), Under this research paper, she used two variables gold price and stock market index nifty-50 for stock market price in India and, for measuring relationship between two variables during the study period. This study is based on secondary type of data; date period is from January 2018 to May 2021. She has taken normal period and turbulent period (Corona First Phase) for study, under this study statistical tools like correlation coefficient t-test, and Regression analysis has been used, she finds negative correlation between two variables in normal time period and positive correlation in turbulent time period, under Regression analysis for forecasting, gold price outperformed the forecasted range, it gets momentum from 2020 during the global crises, period of corona.

A. Valarmathi, .S. Umamaheswari, and M. Raja Lakshmi (2023), In this research paper they have given focus on Portfolio problems and under this research paper; they have taken variables like Gold Price and BSE500 of Bombay Stock Exchange and NSE500 of National Stock Exchange in India. It is based on Secondary data; it collected during the period January 2000 to May 2018. They have used, Descriptive Statistics, Correlation, and Regression analysis, Unit Root Test, Johansen Co-Integration Test and Granger Causality Test. They found positive correlation between variable under Correlation, Under Regression Analysis found the positive impact of Gold price changes on movement of stock market but impact is low due to many factors, gold price is one of them, Under Unit Root Test variables are non-stationary and Johansen Co-Integration Test found the gold price and Stock market In India are not moving together they moving independently in their direction, and co-integration was not found during the study period, found not granger cause during the study period in Granger Causality Test, they also explained about future implications for investor and Risk Management.

Research Methodology

This study's research methodology includes Statistical tools, Research Problem, Data Collection, analysis of chosen variables, Study period and analysis of Data and its interpretation. This study is on relationship and effect of Gold price on BSE SENSEX index (Yearly Sensex Closing Price) in India, whereas a study period is taken from 2015 to 2025, in which yearly Sensex closing and average annual gold price (24 karat per 10 grams) has been taken, and secondary data has been used and average annual gold price (24 karat per 10 grams) data has been collected from website, www.bankbazaar.com and BSESENSEX closing price data collected from website www.bseindia.com. Under this Study, for analysis of research problem different Statistical tools (Pearson Correlation, Descriptive analysis, Regression and Anova Test) through SPSS Software have been used during the study period.

Objectives of the Study

- To Study the Correlation ship between two variables during the study period.
- To analysis the effect of Gold Price on BSESENSEX index during the Study Period,

Hypothesis of Study

The Researcher has framed the following hypothesis for the study.

H₀: There is no Correlation between Gold Prices and BSESENSEX during the Study period.

H₁: There is a Correlation between Gold Prices and BSESENSEX during the Study period.

H₀: There is no Effect of Gold Prices on BSESENSEX during the Study period.

H₁: There is an Effect of Gold Prices on BSESENSEX during the Study period.

Data Analysis & Interpretation

Table: 1 Gold Price and BSESENSEX Price during the Study Period.

Years	Gold Price (Average annual)(Rs)	Sensex Closing Price (Yearly)
2015	26,343.50	26117.54
2016	28,623.50	26626.46
2017	29,667.50	34056.83
2018	31,438.00	36068.33
2019	35,220.00	41253.74
2020	48,651.00	47751.33
2021	48,720.00	58253.82
2022	52,670.00	60840.74
2023	65,330.00	72240.26
2024	77,913.00	78139.01
2025	88,400.00	81721.08

Source: www.bankbazaar.com, www.bseindia.com

Table-1 shows average annual gold price and Sensex closing price from 2015 to 2025, whereas gold price constantly increased from Rs. 26,343.50 to Rs.88400 during the study period, 2015 to 2025, on the other side BSE Sensex closing price yearly also increased from 26117.54 to 81721.08, during the study 2015 to 2025.

Table 2: Correlations^b

		Gold Price Average Annual	Sensex Closing price(Yearly)
Gold Price Average Annual	Pearson Correlation	1	.972**
	Sig. (2-tailed)		.000
Sensex Closing price(Yearly)	Pearson Correlation	.972**	1
	Sig. (2-tailed)	.000	
**. Correlation is significant at the 0.01 level (2-tailed).			
b. Listwise N=11			

Table-2 shows correlation between average Annual gold price and Sensex closing price (Yearly). The correlation is 0.972 which is also significant at 10% level of significance. It means that Gold price is perfectly correlated with Sensex price.

Table 3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.972 ^a	.944	.938	5045.587697143001000

a. Predictors: (Constant), Gold Price Average Annual

Table-3 shows model summary which consists of R value 0.972, R-Square value 0.944 and Adjusted R value 0.938. R value indicates very strong and positive relation between gold price (Average annual) and Sensex value. R Square 94.4% shows fluctuation caused by gold price. Adjusted R Square shows 93.80% variance is still explained by independent variable which confirms that model is very strong.

Table 4: ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	3880182010.887	1	3880182010.887	152.415	.000 ^b
Residual	229121596.886	9	25457955.210		
Total	4109303607.773	10			

a. Dependent Variable: Sensex Closing price(Yearly)

b. Predictors: (Constant), Gold Price Average Annual

Table-4 indicates ANOVA test for dependent and independent variable. The P-Value 0.05 and A value is 0.000 which is less than P. value which shows significant effect. Thus, ANOVA test shows strong relationship between gold prices (Average Annual) and Sensex Closing Price (Yearly).

Table- 5 Coefficients								
	Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	6024.863	3961.943		1.521	.163	-2937.675	14987.401
	Gold Price Average Annual	0.932	0.076	0.972	12.346	0.000	0.761	1.103

a. Dependent Variable: Sensex Closing price(Yearly)

Table-5 indicates Coefficient value. The constant value is 3024.863 which means that when gold price is zero, estimated Sensex price will be 6024.863. Gold price Coefficient is 0.932 which means that for every 1 unit increase in gold price, The Sensex is increased by 0.932 units on an average. T-Value is 12.346 and P value is 0.05 and significant value is 0.000 which means that the effect of gold price is highly significant.

Findings and Suggestions

Under Table-1, study found the increasing trend of both variables (Average Annual Gold Price and BSE sensex closing price (Yearly) during the study period 2015 to 2025. In Table-2, found perfect and positive correlation between two variables, it was 0.972 and also found significant at 10 % significant level. The regression model in table-3 found R value 0.972, R-Square value 0.944 and Adjusted R Value 0.938, and R value shows very strong and positive relation gold price & Sensex closing price, R square value 94.4% shows variation caused by gold price, and R Square shows 93.80% variance comes due to independent variable, that means model found very strong and there is found gold price effect on BSESENSEX Index (Sensex Closing Price) during the study. Under table-4, ANOVA test for dependent and independent variable, where as P-Value found 0.05 and A value found 0.000 which is less than P. value which indicates significant effect. ANOVA test shows relationship between gold prices and sensex closing price. In last data analysis table-5, found coefficient value of variables, whereas constant value is 3024.863, which indicates estimated sensex price will be 6024.863. Gold price Coefficient found 0.932, which means every 1 unit increase in gold price, the sensex will increase by 0.932 units on an average. In T-Value found 12.346, P value found 0.05 and significant value found 0.000, which indicates that the effect of gold price is highly significant during the study period.

Suggestions

It is suggested that the gold price is effective variable, and it can be considered for investment in Stock market in India because it has perfect and positive correction during the study period, and gold price has positive effect on BSEsensex during the Study period, It is also suggestion for investor to consider other factors like Government Policies, Politics, Natural Disasters, GDP rate, Inflation and Interest rate, Policy of SEBI and RBI, financial Factors, Foreign Investment policies, Global economic-Political events, Natural Disasters and Calamities, Performance of companies and effect of Global diseases.

Conclusion

From the above data analysis, it is concluded that the correlation between gold price and BSE Sensex has been positive and significant. Whereas Regression shows R value indicates very strong and positive relation between gold price and Sensex value. R Square 94.4% shows fluctuation caused by gold price. It is concluded that gold price influences BSE Sensex.

References

1. A. Valarmathi, S. Uma Maheswari, and M. Raja Lakshmi (2023), A Study on Dynamic Relationship between Gold Price and Stock Market Price in India, Journal of Survey in Fisheries Sciences, Page No-6529-6539.
2. Nilam Panchal(2021), A study on dynamic relationship between gold price and stock market price in India, Towards Excellence: An Indexed, Refereed & Peer Reviewed journal of Higher Education, Volume-13, Issue no-2, June-2021, Page No-341 to 353.

3. Zankhana Atodaria, and Karan Karnawat (2024), Gold and the India Stock Market: Evidence from BSE&NSE. Mukd Shabd Journal, Volume XIII, Issue XII, December-2024, Page No-201-215.
4. Nikhita Dinesh Hedge, and Neetha Mahadev (2024), A Study on Relationship between Indian Gold Market and BSE Sensex, Nifty 50. International Journal of Creative Research Thoughts, Volume- 12, Issue- 9, September 2024, Page No-677 to 687.
5. Shivam Aggrawal (2024), An Analytical Study on Gold Prices and its Impact on Stock Market. International Journal of Research Publication and Reviews, Volume-5, April-2024, Page No-2000-2008.
6. Sowmya Jakkampudi (2018), Causal Relationship between Gold Price and SENSEX. International Journal of Management, Technology and Engineering, Volume 8, Issue XII, December-2018, Page No-3070-3075.
7. www.bankbazaar.com
8. www.bseindia.com.

