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Study Of Reason Behind Gold Price Fluctuations Over Last 5 Years In India

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Abstract: This study is focused on analysing the various factor that are responsible for fluctuations in gold price over the period of five years (1st of January 2019 to 31st of December 2023).Here gold price is considered to be the dependent variable and factors effecting considered individually, as independent variable which include crude oil price per barrel in the international market, forex (USD-INR), the average closing value of BSE SENSEX, GST rates, Gold tariff, Inflation rates and Repo rates taken in context of Indian economy and market. The factor taken into consideration are analysed in respect of gold price using descriptive statistics to know the variance between values, corelation to know nature of relationship and multiple linear regression analysis to the depth of relationship between the dependent and independent variables. The study will help understand how the considered variable brings forth changes in gold prices over time-being. The study will also help understand if international contingent or domestic ones have more significant impact on gold prices.

Key Words - Gold Prices, Price Fluctuations, Economic Factors, Crude Oil Prices, Multiple Linear Regression

I. INTRODUCTION

Gold has long been revered as one of the most valuable and enduring commodities throughout human history. Its remarkable physical properties, cultural significance, and economic role have cemented its place as a symbol of wealth, security, and status across civilizations. From the ancient Egyptians, who were the first to extensively mine and refine gold, to modern economies where it is still a cornerstone of investment portfolios, gold's allure is timeless. The metal's unique characteristics—its lustrous yellow colour, rarity, resistance to tarnishing, and malleability—have made it not only a prized possession but also a highly functional material across a multitude of industries.

Gold, scientifically known by its Latin name *Aurum*, with the chemical symbol Au and atomic number 79, has an atomic weight of approximately 196.96 atomic mass units. It is one of the densest metals, with a density of 19,300 kg per cubic meter, which adds to its sense of permanence and value. Gold melts at a relatively low temperature of 1,064.18°C, a characteristic that makes it particularly malleable and easy to shape, an important property for crafting intricate designs in jewellery and art. It is also a poor conductor of heat but an excellent conductor of electricity, which has led to its use in the electronics industry, especially in the production of high-end devices where durability and conductivity are essential.

Beyond its physical properties, gold has played an immensely important role in shaping human history. It has been a crucial part of the rise and fall of empires and the foundation of modern economies. Historically, gold has been considered a reliable store of value, a universal medium of exchange, and a measure of wealth. The fascination with gold is not just due to its beauty and rarity but also its enduring nature—it doesn't tarnish, corrode, or decay, making it an asset that endures for centuries. The precious metal has even been the catalyst for conflict throughout history. Gold has sparked wars and colonial conquests, with empires and nations vying to secure the vast reserves of gold found across the world. One of the most notable events in this regard is the California Gold Rush of the mid-19th century. When gold was discovered in California in 1848, it led to a massive migration of people from around the world, each hoping to strike it rich. The Gold Rush reshaped California's economy attracted a global influx of settlers and significantly influenced the broader development of the United States. However, it also led to tension, conflict, and exploitation, especially in relation to Indigenous peoples and the environment.

Gold has also played a pivotal role in the monetary systems of various nations. For centuries, the gold standard—a monetary system in which the value of currency is directly tied to a specific amount of gold—dominated global trade. The gold standard provided stability to economies, as governments could only issue as much currency as they held in gold reserves. This system fostered international trust and helped stabilize economies, especially during times of war or crisis. However, with the advent of more complex financial systems and the need for greater flexibility in monetary policy, many countries, including the United States, moved away from the gold standard in the 20th century. Despite this, gold remains an important reserve asset held by central banks around the world, offering a safe haven in times of economic volatility and inflation.

In India, gold holds not only economic value but also profound cultural and religious significance. Gold is deeply embedded in the country's heritage, with both symbolic and practical roles in various cultural and spiritual practices. It is traditionally associated with wealth, prosperity, and good fortune and is often used in religious rituals and ceremonies. India is one of the largest consumers of gold, particularly in the form of jewellery, which is an integral part of weddings, festivals, and other important life events. Gold is passed down through generations as family heirlooms, symbolizing continuity and security. In fact, Indian women are estimated to hold about 11% of the world's total gold reserves, primarily in the form of jewellery. This amounts to around 24,000 tons of gold, a reflection of the deep trust placed in the metal as the ultimate store of wealth. The significance of gold in Indian society is not just economic but also deeply spiritual, as it is seen as a sacred material that brings blessings and protection.

The role of gold as an investment asset has evolved alongside the development of global financial markets. While it no longer serves as the foundation for currency systems, it remains an important asset class for investors, especially in times of economic uncertainty. Gold is often viewed as a hedge against inflation, currency devaluation, and market volatility, offering investors a safe store of value. Its price fluctuates based on a range of factors, including the price of crude oil, currency exchange rates (especially the USD-INR exchange rate), inflation, national economic policies, and central bank decisions. In India, gold prices are particularly sensitive to the movement of global crude oil prices, as oil imports form a significant part of India's import bill. Additionally, gold prices are influenced by the local economic environment, including GST rates, gold tariffs, and the prevailing repo rate set by the Reserve Bank of India (RBI). These variables are interconnected, and a comprehensive study of their relationship with gold prices is essential for investors seeking to understand the dynamics of gold as an asset in the Indian market.

Gold is available in the market in different forms, primarily distinguished by their purity levels. The most common types are 24k gold, which is 99.99% pure and regarded as the highest quality; 22k gold, which contains 91.67% pure gold and is often used in jewellery; 18k gold, with 75% purity, and 14k gold, which has 58.3% purity. Each type has its specific uses, with higher-purity gold being favoured for investment purposes, while lower-purity gold is more common in everyday jewellery and ornaments.

Gold continues to be a dominant force in both global economies and cultural traditions. Its enduring appeal lies in its multifaceted roles: as a tangible asset, a hedge against uncertainty, and a symbol of wealth and prosperity. For centuries, it has shaped civilizations, fostered economic growth, sparked wars, and driven exploration. In modern times, it remains an essential asset for investors, offering a unique combination of

safety, stability, and growth potential. Whether as a cultural artifact, an economic tool, or a financial asset, gold's value has stood the test of time, continuing to captivate and intrigue people around the world.

II. LITERATURE REVIEW

Isnin, M., & Zulfa, I. (2024). This study is conducted by author to understand the Predicted increase in gold price every year with impact on economic factors and the findings of this study is hat gold prices are expected to increase annually, significantly influenced by various economic factors such as inflation rates, currency fluctuations, and global economic conditions.

Khatri, H., & Chhikara, K. S. (2024). This study was conducted by authors to understand the factors influencing gold prices in India and identifies trends that highlight the interplay between economic indicators and market dynamics and findings of this research is fluctuations in gold prices are significantly affected by inflation rates, currency value, and global market trends, providing insights for investors and policymakers.

Gaywala, D., Bhadoriya, S., & Bhatt, M. (2024). This study was conducted by authors to understand the macroeconomic factors affecting gold prices in India and the findings of research is gold is the safest form of investment during period of economic uncertainty with factor of influence inflation rate, exchange rates and geopolitical concerns.

Chang, X. (2024). This study was conducted by the authors to understand the effects of inflation in gold price and its effect on financial market and the findings of this research is there is positive effect of fluctuations in gold price on financial market which help make more informed risk management strategies.

Kaya, A. (2023). This study was conducted by authors to understand the volatility and determinants of gold prices using the EGARCH model dynamics and findings of this research is macroeconomic factors such as interest rates and inflation significantly influence gold price fluctuations.

Andriyana, Y., Nalita, Y., Tantular, B., Mindra Jaya, I. G. N., & Falah, A. N. (2023). This study was conducted by authors to forecast global gold prices using a Bayesian nonparametric quantile generalized additive model and findings of this research is that this approach provides more accurate predictions compared to traditional forecasting methods by effectively capturing the nonlinear relationships in the data.

Mainal, S., Mohd Selamat, A. H., Abd Majid, N. D. S., & Noorzee, K. N. I. (2023). This study is conducted by author to understand the factors influencing the price of gold in Malaysia and findings of this research is indicators such as inflation, exchange rates, and global market trends, highlighting their significant impact on local gold price fluctuations.

Bhalerao, N. (2023). This study was conducted by the authors to understand the factors effecting gold price in Indian market and the findings of this research is a significant relationship seen between exchange rates, crude oil prices, BSE SENSEX and silver prices with gold price.

Sembakalakshmi, S. J., & Adhi Krishnaa, N. (2023). This study was conducted by the authors to understand the effect of fluctuation in gold prices on customer buying behaviour and the findings of this research is there is an inversely proportional relationship between change in gold prices and tendency of customer buying behaviour.

Hidmark, P., & Wijk, J. (2023). This study was conducted by the authors to understand the main driving force behind gold price and the findings of this research is that in US real yield (TIPS rate) and inflation rate are two main factors behind gold price.

Prof. Anitha B. M. D' Silva, Ms. Vaishnavi N., Ms. Bhoomika Bhat, & Mr. A. Raghavendra. (2023). This study was conducted by the authors to understand the impact of change in inflation rates on gold, silver and interest rates and the findings of this research is gold prices show weak correlation with inflation rates while silver prices show positive correlation, and interest rates show strong positive relation on it.

Changani, J. (2023). This study was conducted by the authors to understand the factors influencing gold prices movement from a time series perspective and the findings of this research is gold prices are significantly affected by economic indicators, currency value fluctuations and geopolitical events.

M, N., & Marisetty, N. (2023). This study was conducted by the authors to understand the various factors that influence gold prices in India and findings of this research is inflation, crude oil prices, BSE Sensex, exchange rates, and repo rate are key factors behind the change in gold prices in India.

Liya, A., Qin, Q., Kamran, H. W., Sawangchai, A., Wisetsri, W., & Raza, M. (2021). This research was conducted by author to understand the macroeconomic indicators influence gold price management and findings of this research is factors such as inflation, interest rates, and currency fluctuations significantly influence gold prices

Panchal, N. (2021). This study was conducted by the authors to understand the dynamic relationship between gold prices and stock market prices in context of Indian market and the findings of this research is during normal market condition gold price and stock market prices in India have negative correlation and during fall in market there is a positive correlation between the two variables.

Chai, J., Zhao, C., Hu, Y., & Zhang, Z. G. (2021). This study was conducted by the authors to understand the structural analysis and forecast of gold price returns and findings of this research is in USA crude oils return and VIX show gives positive impact on gold price returns, US dollar value having negative impact on gold price returns and SLT-ETS model being most accurate for gold price returns forecasting.

Hajiyani, A. A. (2021). This study was conducted by the authors to understand the accuracy of forecasting of gold prices in India using ARIMA model and findings of this research is ARIMA (1,1,1) model is most accurate in forecasting future gold prices in Indian market.

Shaikh, I., & Vallabh, P. (2021). This study was conducted by the authors to understand the impact of policy uncertainty on gold price in India and findings of this research is positive relation between policy uncertainty on gold price in India.

Robinson, Z. (2019). This research was conducted by author to understand the behaviour of gold prices using a structural VAR model and findings of this research is that gold prices are significantly influenced by macroeconomic variables such as interest rates and inflation.

Qian, Y., Ralescu, D. A., & Zhang, B. (2019). This study was conducted by the authors to understand the factors affecting global gold prices and findings of this research is dollar index, federal funds rate, exchange rate, oil price, and S&P 500 negatively impact gold prices, while the Consumer Price Index (CPI) has a positive effect on global gold prices.

Kaur, A., & Gupta, K. (2019). This study was conducted by the authors to understand the relationship between crude oil prices and gold prices in context of Indian market and findings of this study is there is a positive moderate correlation between gold prices and crude oil prices.

Cheng, Q., Jiao, J., Chen, H., & Xu, F. (2019). This study is conducted by author to understand the Application of impulse response method in identifying the causes of gold price fluctuation and findings of this research is that the impulse response method effectively identifies the key factors contributing to gold price fluctuations, revealing that macroeconomic variables such as interest rates and inflation have significant and varying impacts on gold prices over time.

Liu, D., & Li, Z. (2017). This study is conducted by author to understand the gold price forecasting and related influence factors analysis based on random forest and findings of this research is that the random forest model provides accurate forecasts of gold prices and identifies key influencing factors, such as economic indicators and market sentiment, demonstrating the model's effectiveness in capturing complex relationships in the data for better predictive performance.

Seshaiah, S. V., Sarma, I. R. S., & Tiwari, A. K. (2017). This study was conducted by authors to understand the gold market in India and its price determinant and findings of this research is that gold prices are primarily influenced by gold itself with negligible impact from oil prices, exchange rates, trade deficits, and fiscal deficits.

Balcilar, M., Gupta, R., & Pierdzioch, C. (2017). This study was conducted by authors to understand the relationship between gold prices and exchange rates and findings of this research is gold-price fluctuations can predict exchange-rate returns and volatility, while exchange-rate movements predict gold volatility but not gold returns.

Lucey, B. M., Sharma, S. S., & Vigne, S. A. (2016). This study was conducted by authors to understand the relationship between gold prices and inflation across the USA, UK, and Japan and findings of this research is while gold has historically provided protection against increases in money supply in the US and UK, its relationship with official inflation rates has varied significantly over time, particularly showing a break in the mid-1990s in the USA, with mixed results for Japan.

Mariyam, P. A. (2016). This study was conducted by authors to understand the persistent demand for gold in India despite rising prices and its impact on consumer purchasing decisions and findings of this research is a significant majority of respondents (63%) agreed that rising gold prices influence their buying decisions, yet most (52%) do not postpone purchases even when prices increase.

Bukowski, S. I. (2016). This study was conducted by authors to understand the main factors influencing gold prices in international markets, based on economic and financial theories and findings of this research is gold prices are significantly affected by the US$/EUR exchange rate, S&P 500 log returns, brent crude oil prices, and the yield-to-maturity of US 10-year Treasury bonds.

Shehnaz, S. R., & Kumar, S. S. (2016). This study was conducted by authors to understand the relationship between gold prices and the Nifty index and findings of this research is gold prices significantly influence the Nifty index.

Pierdzioch, C., Risse, M., & Rohloff, S. (2015). This study is conducted by author to develop a real-time boosting approach for forecasting gold price fluctuations, seeking to improve the accuracy of predictions by leveraging advanced statistical techniques and the findings of this research is that the boosting approach significantly enhances the forecasting accuracy of gold prices compared to traditional methods, demonstrating its effectiveness in capturing the dynamics of gold price movements and providing valuable insights for investors and policymakers.

III. RESEARCH GAP

Granularity of Data: Limited frequency of data collection (approximately yearly or half yearly intervals) may overlook short-term fluctuations in gold prices and influencing factors. Potential for missing significant trends or events that occur within shorter time frames. Therefore, this report has considered smaller time frames of 30 days period providing a better understanding of effect of independent variable on dependent variable.

Scope of Independent Variables: The study focused on a specific set of independent variables, potentially excluding other relevant factors. Therefore, this report has included all considerable independent variables.

Data Sources: Reliance on secondary data from various web domains raises concerns about the accuracy and reliability of the data. Potential bias in data collection due to the choice of sources, which may present information in a way that aligns with specific narratives. Therefore, this report has considered only reliable sources for data collection.

IV. RESEARCH METHODOLOGY

4.1 Hypothesis formulation

Null hypothesis: - There is no significant relationship between independent variables and dependent variable.

Alternative hypothesis: - there is significant relationship between independent variables and dependent variables.

4.2 Research design

A quantitative study utilizing descriptive and correlational analysis of secondary data from January 2019 to December 2023 to examine the relationship between gold prices and various economic factors in India through hypothesis testing and multiple linear regression analysis.

Quantitative Research: A research method that focuses on gathering numerical data and analysing it through statistical techniques to draw conclusions.

Descriptive Analysis: A method of analysing data to summarize and describe its main features, often using measures like averages and percentages.

Correlational Analysis: A statistical technique used to determine the relationship or association between two or more variables without implying causation.

Regression Analysis: A statistical method for modelling the relationship between a dependent variable and one or more independent variables to predict outcomes.

4.3 Data collection

Secondary data- data collected from various yet reputed and reliable web domains

4.4 Screening techniques

Manual screening- manually data was identified and collected for web page

4.5 Limitation

Not being able to input more granular data (significant gap in interval scale [30days approx.], which could have been reduced to 7 days(weekly) or daily bases.

4.6 Variable used

Dependent variable: Gold price- The dependent variable in this study is the price of gold, which is influenced by various economic factors. It serves as the primary focus of the analysis, with the aim of understanding how different independent variables affect its fluctuations.

Independent variable:

Crude oil/barrel price- This variable represents the market price of crude oil per barrel, which can impact gold prices due to the interconnectedness of energy costs and commodity pricing. Changes in crude oil prices can influence inflation and currency values, thereby affecting gold prices.

Forex- USD-INR- The exchange rate between the US Dollar and the Indian Rupee is crucial, as gold is often priced in Dollars. A weaker Rupee against the Dollar typically leads to higher gold prices in India, making this variable significant in the analysis.

Sensex Avg. Closing value- The BSE SENSEX is a stock market index that reflects the performance of major companies in India. Its average closing value serves as an indicator of market sentiment, which can influence investor behaviour towards gold as a safe-haven asset during market volatility.

GST implied over the considered period- The Goods and Services Tax (GST) rate applicable to gold transactions can affect its market price. Changes in GST rates can directly impact the cost of gold for consumers, influencing demand and pricing dynamics.

Gold Tariff upon import- This variable refers to the import duties imposed on gold, which can significantly affect its market price. Higher tariffs can lead to increased gold prices in the domestic market, impacting consumer purchasing behaviour.

National inflation rate- The inflation rate measures the rate at which the general level of prices for goods and services rises, eroding purchasing power. Higher inflation often leads to increased demand for gold as a hedge against currency devaluation, influencing its price.

Repo rates- The repo rate is the interest rate at which the central bank lends money to commercial banks. Changes in repo rates can affect liquidity in the economy and influence investment decisions, including those related to gold.

4.7. Techniques (tools) of analysis used

Descriptive statistics- This technique summarizes and describes the main features of the data collected, providing insights into the central tendency, variability, and distribution of the variables involved in the study.

Coefficient correlation- This technique summarizes and describes the main features of the data collected, providing insights into the central tendency, variability, and distribution of the variables involved in the study.

Multiple linear regression- This technique summarizes and describes the main features of the data collected, providing insights into the central tendency, variability, and distribution of the variables involved in the study.

4.8 Tools used for analysis

Microsoft Excel- Excel is a powerful spreadsheet software that was utilized for data organization, analysis, and visualization. It provides various functions and tools for performing statistical analyses, including descriptive statistics, correlation calculations, and regression modelling, making it suitable for this study.

4.9 Standard values

Correlation Coefficient: +1 means a perfect positive correlation, -1 means a perfect negative correlation, 0 means no linear correlation.

Multiple R (Correlation Coefficient): $R = 1$ indicates a perfect positive linear relationship. $R = 0$ indicates no linear relationship. $R = -1$ indicates a perfect negative linear relationship.

R-Squared (R^2): $R^2 = 0$ means the model explains none of the variability in the dependent variable. $R^2 = 1$ means the model explains all the variability in the dependent variable.

Significance F: A low significance F (typically less than 0.05) suggests that the model is statistically significant, meaning the independent variables significantly predict the dependent variable. A high significance F (greater than 0.05) suggests that the model is not statistically significant.

P value: A low p-value (typically less than 0.05) suggests that the predictor has a statistically significant relationship with the dependent variable. A high p-value (greater than 0.05) suggests that the predictor is not significant, and you may consider removing it from the model.

When to Accept or Reject Hypotheses: Reject H_0 (indicating a significant result) if: Significance F < 0.05 (for the overall model), or p-value for a predictor < 0.05 (for individual predictors). Fail to reject H_0 (indicating no significant result) if: Significance F > 0.05 (for the overall model), or p-value for a predictor > 0.05.

V. RESULT AND DISCUSSION

Objective: To know the descriptive statistics of the selected variables.

5.1 Results of Descriptive Statics of Study Variables

Table 5.1: Descriptive Statics

Particular	Sample Size	Minimum	Maximum	Mean	Std. Deviation
Gold	60	2870.33	5426.382	4271.11	689.928
Crude oil	60	1403.55	9573.620	5515.54	1828.426
Forex	60	68.76	83.267	75.93	4.491
SENSEX	60	31255	65828	50173.25	10677.03
GST Rates	60	0.03	0.03	0.03	2.45E-17
Tariff Charges	60	0.075	0.15	0.104	0.0288
Inflation	60	0.21	0.078	0.055	0.0143
Repo Rates	60	0.4	0.065	0.051	0.0102

Table 5.1 displayed, Gold: - average value of data cell being 4271.11 in the given table and variance between two data cell is 639.9 showing huge difference between values. Crude oil: - average value of data cell being 5515.54 in the given table and variance between two data cell is 1828.42 showing huge difference between values. Exchange forex: - average value of data cell being 75.93 in the given table and variance between two data cell is 4.49 showing huge difference between values. Sensex: - average value of data cell being 50173.25 in the given table and variance between two data cell is 10677.03 showing huge difference between values. GST rates: - average value of data cell being 0.03 in the given table and variance between two data cell is 2.44911E-17 showing justifiable or near zero difference between values. Gold tariff: - average value of data cell being 0.104166667 in the given table and variance between two data cell is 0.028806289 showing justifiable difference between values. Inflation Rates: - average value of data cell being 0.055316667 in the given table and variance between two data cell is 0.014308338 showing justifiable difference between values. Repo rates: - average value of data cell being 0.051066667 in the given table and variance between two data cell is 0.010271924 showing justifiable difference between values.

5.2 Result of Correlation Coefficient

Objective: To analyse the correlation between selected variables.

Table 5.2: Correlation analysis

Particular	Gold Price
Gold Price	1
Crude oil	0.4837696
Forex	0.8681959
SENSEX	0.76639
GST Rates	-1.09E-15
Tariff Charges	0.3428916
Inflation	0.5118533
Repo Rates	0.0793337

Table 5.2 displayed gold price with crude oil- 0.483769647 value showing weak positive correlation between variables. Gold price with Exchange rates- 0.868195850951667 value showing very strong positive correlation between variables. Gold price with Sensex- 0.756638971 value showing very strong positive correlation between variables. Gold price with GST rate- -1.09198E-15 value showing weak negative correlation between variables. Gold price with gold tariff- 0.342891635 value showing weak positive correlation between variables. Gold price with inflation rate- 0.511853345 value showing moderate positive

correlation between variables. Gold price and Repo rates- 0.079333738 value showing weak positive correlation between variables.

5.3 Result of Multiple Linear Regression Analysis

Objective: To examine the selected factors' impact on gold prices in India via multiple linear regression.

Table 5.3.1: Regression Statics

Regression Statics	Value
Multiple R	0.974173576
R Square	0.949014156
Adjusted R Square	0.924374249
Standard Error	164.3678818
Observation	60

Table 5.3.1 displayed Multiple R- 0.974173576 value of correlation coefficient shows very strong positive linear relationship between dependent variable and selected independent variables. R square- 0.949014156 value shows that approx. 95% of variation in dependent variable can be explained by selected independent variable Adjusted R square- 0.924374249 value shows that if unnecessary predictors are penalized 92.4% of variance can be explained by selected independent variables. Standard Error- 164.3678818 value shows that data point deviate more from the regression line.

Table 5.3.2: ANOVA Values

ANOVA					
Particular	DF	SS	MS	F	Significance F
Regression	7	26652187.6	3807455.371	164.4173689	3.72E-33
Residual	53	1431890.431	27016.80058	-	-
Total	60	28084078.09	-	-	-

Table 5.3.2 displayed F-statistic: 164.41 value is very large, indicating that used regression model explains a significant portion of variance in dependent variable. Significance F: 3.72×10^{-33} as p value is very small and less the 0.05 thus null hypothesis can be rejected, and alternate hypothesis can be accepted.

Table 5.3.3: Intercept Table

	Coefficients	Standard Error	T Stat	P-Value
Intercept	-4204.006757	562.3293619	-7.476057701	7.7331E-10
Crude oil	0.010667466	0.026185123	0.407386503	0.685364958
Forex	106.9603187	11.41897352	9.366894357	7.87165E-13
SENSEX	0.020896611	0.004882096	4.280253669	7.86175E-05
GST Rates	0	0	65535	Not Available
Tariff Charges	7146.119687	1150.361441	6.212064687	Not Available
Inflation	1978.793342	2133.300172	0.927573798	0.357833755
Repo Rates	-31488.35262	3508.938726	-8.973753912	3.22205E-12

Table 5.3.3 displayed values as Intercept: -4204.01, Crude Oil: 0.01067 (Not statistically significant), Forex (USD-INR): 106.96 (Highly significant), SENSEX: 0.02090 (Highly significant), Gold Tariff: 7146.12 (Highly significant), Inflation Rate: 1978.79 (Not statistically significant), Repo Rate: -31488.35 (Highly significant).

Table 5.3.4: Brief of which independent variable supporting which hypothesis

Serial Number	In favour of null hypothesis	In favour of alternate hypothesis	Not defined
1.	Crude oil with gold	Forex with gold	GST rate
2.	Inflation rate with gold	Sensex with gold	Gold tariff
3.	-	Repo rate	-

Table 5.3.4 displayed that crude oil and inflation rate support null hypothesis via rejecting alternate hypothesis and forex, SENSEX and repo rate support alternate hypothesis via rejecting null hypothesis whereas GST rate and Gold Tariff doesn't provide with P-value therefore their acceptance and rejection of either hypothesis cannot be determined reasoned because of repetitive or same value in data set.

5.4 Findings

Gold Prices Fluctuate Significantly: Over the last five years, the price of gold in India has varied a lot, with an average price of around ₹4271 per gram. The lowest price was about ₹2870, and the highest was around ₹5426. This shows that gold can be a risky investment because its price can change dramatically. Impact of Crude Oil Prices: There is a weak connection between gold prices and crude oil prices. This means that when oil prices go up or down, it doesn't have a strong effect on gold prices. Strong Connection with Currency Exchange Rate: The value of the Indian Rupee compared to the US Dollar (USD) has a very strong impact on gold prices. When the Rupee weakens (meaning it takes more Rupees to buy a Dollar), gold prices tend to go up. This is because gold is often priced in Dollars, so a weaker Rupee makes gold more expensive in India. Stock Market Influence:The performance of the BSE SENSEX, which is a major stock market index in India, also has a strong positive relationship with gold prices. When the stock market does well, gold prices tend to rise as well. Gold Tariffs Matter: The tariffs (taxes) on gold imports also play a significant role. Higher tariffs can lead to higher gold prices in the market. The study found that changes in these tariffs can significantly affect how much gold costs. Inflation and Repo Rates: Inflation (the rate at which prices for goods and services rise) and repo rates (the interest rate at which the central bank lends money to commercial banks) have some influence on gold prices, but their impact is not as strong as the other factors mentioned.

5.5 Recommendation

For Investors: Monitor Currency Trends: Investors should keep an eye on the USD-INR exchange rate. A weakening Rupee could signal rising gold prices, making it a good time to invest. Watch the Stock Market: Since gold prices are positively correlated with the stock market, investors should consider the performance of the BSE SENSEX when making decisions about gold investments.

For Policymakers: Consider Tariff Adjustments: Policymakers should evaluate the impact of gold tariffs on market prices. Adjusting tariffs could help stabilize gold prices and make it more accessible to consumers. Inflation Management: Keeping inflation in check can help maintain stable gold prices. Policymakers should focus on economic policies that control inflation rates.

For Consumers: Timing Purchases: Consumers looking to buy gold should consider timing their purchases based on market trends, especially when the Rupee is strong against the Dollar or when gold prices are lower due to market conditions.

For Researchers: Further Studies: More research could be conducted to explore the relationship between gold prices and other economic indicators, such as global market trends and geopolitical events, to provide a more comprehensive understanding of gold price dynamics.

VI. ACKNOWLEDGEMENT

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