

Analysis of Volatility in Indian Commodity Market with Reference to Gold and Silver

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ABSTRACT

The present study analyses the volatility and price behaviour of gold and silver in the Indian commodity market and compares their performance with the BSE Sensex. Gold and silver are widely considered important investment assets because of their role in wealth preservation, inflation hedging, and portfolio diversification. The study adopts a descriptive and analytical research design based on secondary data. The analysis covers a five-year period, with a detailed month-wise examination of gold and silver prices during the final year of the study. Data relating to gold, silver, and the BSE Sensex were analyzed using statistical tools such as return analysis, mean, standard deviation, variance, and correlation analysis. The findings reveal that both gold and silver recorded an overall upward trend during the study period, particularly in the later years. Gold demonstrated comparatively stable price behaviour and consistent growth, whereas silver showed greater fluctuations along with higher return potential. The BSE Sensex also exhibited steady growth and relatively lower volatility, highlighting its importance as an alternative investment avenue. The comparative analysis indicates that precious metals performed strongly in certain periods when compared with the stock market. Correlation analysis revealed a strong positive relationship between gold and silver, indicating that both metals generally moved in the same direction and were influenced by common economic and market factors. The study concludes that gold offers relatively greater stability and may be suitable for long-term wealth preservation, while silver provides higher growth opportunities with comparatively greater risk. Overall, both precious metals can play an important role in portfolio diversification. Investors should consider their risk tolerance, investment objectives, and prevailing market conditions while making investment decisions. A balanced investment approach combining precious metals and equity investments may help achieve an appropriate balance between risk, return, and stability.

Keywords: Gold, Silver, Volatility, Commodity Market, BSE Sensex

INTRODUCTION

The commodity market provides a platform for trading essential goods, including precious metals such as gold and silver. Gold and silver are important investment assets because of their liquidity, value, and ability to provide protection against inflation and economic uncertainty. Their prices are influenced by factors such as inflation, interest rates, currency fluctuations, global demand and supply, and geopolitical conditions. The study focuses on analysing the volatility and price behaviour of gold and silver using returns, standard deviation, descriptive statistics, and correlation analysis. It also compares the movement of precious metals with stock market indices to understand their role in investment and portfolio diversification. Gold and silver have a long historical importance as stores of value and mediums of exchange. In India, they also have significant cultural, social, and economic importance. The development of organized exchanges and financial instruments such as ETFs, futures, and derivatives has increased accessibility and liquidity in bullion investment. The bullion market plays a vital role in wealth preservation, safe-haven investment, inflation hedging, portfolio diversification, liquidity, and price discovery. Silver additionally supports industrial sectors such as electronics, solar energy, and medicine. However, the bullion market also has certain limitations, including price volatility, lack of regular income, storage and security costs, market speculation, government regulations, and the impact of currency fluctuations. Overall, gold and silver remain valuable investment options, particularly for long-term wealth preservation and portfolio diversification, but investors should consider the associated risks and market conditions.

REVIEW OF LITERATURE

Praveen Paturi (2025) examined the investment outlook of gold and silver in India using secondary data from 2016 to 2025. The study applied descriptive statistics, trend analysis, and the gold–silver ratio. The findings showed that gold provided greater stability, while silver offered higher return potential with greater volatility.

Satyanarayana and Narayana Pratap (2025) analysed gold price dynamics and investment performance using five years of secondary data on gold prices, Sensex, and Nifty. The study used descriptive statistics, correlation, and time-series analysis and concluded that gold remained a reliable safe-haven investment.

Kaarthiga (2025) analysed risk and volatility in gold and silver using monthly MCX data from 2022–2024. RSI and Beta analysis were employed, and the findings indicated moderate volatility and the suitability of both metals for long-term investment.

Akash Raj (2024) examined the performance of the bullion market with special reference to gold using five years of secondary data. Statistical and time-series tools revealed noticeable price fluctuations and highlighted gold's role as a hedge and portfolio diversification asset.

Sharma (2024) examined the relationship between Indian gold prices and stock market volatility using data from 2013–2014 to 2023–2024. Comparative analysis indicated no significant short-term causal relationship but showed long-term co-movement, supporting gold's diversification role.

Selvaraj and Deebika (2024) evaluated the performance of five Silver ETFs in India using daily data from January 2022 to September 2023. Various performance and volatility measures showed that Silver ETFs maintained low tracking errors and provided satisfactory short-term investment performance.

Manjinder Kaur and Navpreet Kulaar (2024) examined gold price volatility in India using monthly data from January 2011 to March 2024. The ARCH-LM test and GARCH (1,1) model revealed volatility clustering and persistent volatility shocks in gold prices.

Raja Sabarish Babu (2025) analysed the determinants of gold price movements in India using monthly data from 2015 to 2025. Correlation and regression analysis showed that exchange rates, inflation, and crude oil prices significantly influenced gold prices.

Shihabudheen and Santhosh Kumar (2025) examined gold and silver as hedging and diversification instruments using data from 2003 to 2023. The GARCH-DCC model showed that silver acted as an inflation hedge, while gold performed as a safe-haven asset during market crises.

Cheenu Rathi (2024) studied changing investment patterns in gold, particularly the growth of digital gold in India. Using primary and secondary data, the study found that convenience, accessibility, and financial literacy contributed to the increasing popularity of digital gold.

Rupa Mondal, Raktim Ghosh, Ashish Kumar Sana and Biswajit Paul (2025) analysed gold price volatility in India during the Russia–Ukraine crisis using daily data from 2021 to 2023. TGARCH and FIGARCH models revealed volatility clustering, persistence, and stronger effects of negative shocks.

Swaty Sharma, Munish Gupta, Simon Grima and Kiran Sood (2025) compared gold market dynamics in India and the United States using data from 2005 to 2025. ARDL, Toda–Yamamoto causality, and GARCH models showed short-run interactions and volatility transmission between the two markets.

Pravin Kumar Agrawal et al. (2025) further examined dynamic connectedness among the stock market, gold, crude oil, exchange rates, and natural gas. The findings showed diversification opportunities in the short \ run but significant interconnectedness over the long run.

Kavya Jain (2025) analysed consumer behaviour and gold investment patterns in India using a questionnaire survey of 100 respondents. The study found a strong preference for physical gold due to cultural value and security, while awareness of modern investment options remained relatively low.

OBJECTIVES OF THE STUDY

The study aims to analyse the price movements, returns, and volatility of gold and silver in the commodity market during the study period. It seeks to measure the risk associated with these precious metals using statistical tools such as mean, standard deviation, and variance. The study also examines the relationship between gold and silver prices through correlation analysis. Further, it compares the performance of gold and silver with the BSE Sensex to understand their relative risk, return, and stability. Overall, the study aims to provide useful insights into the investment performance of gold and silver and help investors make informed investment decisions.

METHODOLOGY OF STUDY

The study adopts a descriptive and analytical research design based on secondary data. The study period covers five years from 2021 to 2025, with a detailed month-wise analysis for the year 2025. Data on gold and silver prices and BSE Sensex values are collected from reliable financial websites, commodity market sources, official stock exchange websites, and financial reports. Closing prices are used to analyse price movements and returns. Statistical measures such as mean, standard deviation, variance, and correlation are applied to evaluate risk, volatility, returns, and the relationship between gold and silver. The performance of gold and silver is also compared with the BSE Sensex to understand their relative investment performance and stability. The calculations and analysis are carried out using statistical tools.

TOOLS USED FOR ANALYSIS

The study uses return, mean, standard deviation, variance, and correlation analysis to evaluate gold and silver. Return measures the percentage change in prices and indicates investment performance. Mean determines the average price during the study period. Standard deviation measures price volatility and risk, while variance measures the dispersion of prices around the mean. Correlation analysis examines the relationship between gold and silver prices and shows the extent to which they move together. These tools help assess the return, risk, volatility, and relationship of gold and silver during the study period.

The study covers the period of 2021-2025, with a focus on gold and silver and a detailed monthly analysis for 2025. Apart from the general environment, other external factors such as inflation, interest rates, global economic conditions and government policies are not discussed in detail. The comparison is only on gold, silver and BSE Sensex and not on other commodities and financial instruments. The future study may carry out by considering recent economic issues around the world and in-depth analysis of a specific year using Auto Regressive Models.

ANALYSIS OF VOLATILITY OF INDIAN COMMODITY MARKET WITH REFERENCE TO GOLD AND SILVER

Table 1 – Five Years Gold Market Price (Per 10 Grams)

Years	Gold Market Price in ₹	ROI
2021	47392	-
2022	47203	-0.40%
2023	52894	12.06%
2024	70723	33.71%
2025	101567	43.61%

Source: www.nseindia.com

Table 1 presents the movement in gold prices and the corresponding return on investment (ROI) from 2021 to 2025. The results show that gold experienced a strong overall upward trend during the five-year period. In 2021, the gold price was ₹47,392 per 10 grams. In 2022, the price marginally declined to ₹47,203, resulting in a

negative ROI of 0.40%. This indicates a minor short-term correction in the gold market. However, gold showed a strong recovery in 2023, when the price increased to ₹52,894, generating an ROI of 12.06%. The growth accelerated considerably in 2024, with the price reaching ₹70,723 and an ROI of 33.71%. The highest price and ROI were recorded in 2025, when gold reached ₹1,01,567 per 10 grams, generating a return of 43.61%. The strong performance in 2024 and 2025 indicates that gold was an attractive investment option during the latter part of the study period.

Table 2 – Gold Volatility

Volatility	
Mean	63956
Standard Deviation (SD)	0.01499

Table 2 presents the volatility of gold prices using the mean and standard deviation. The mean gold price during the study period was ₹63,956, representing the average level around which gold prices moved over the five years. The standard deviation was recorded at 0.01499, indicating relatively low variation in the calculated returns. This suggests that, although the price of gold increased substantially over the study period, the fluctuations in its returns were comparatively limited. The findings indicate that gold offered a favourable combination of price appreciation and relatively stable return behaviour. Therefore, gold may be considered a comparatively stable investment option for investors seeking to reduce uncertainty and preserve wealth over the long term.

Table 3 – Five Years Silver Market Price (Per 10 Grams)

Years	Silver Market Price in ₹	ROI
2021	659.50	-
2022	611.79	-7.23%
2023	708.91	15.87%
2024	833.24	17.54%
2025	1203.01	44.38%

Source: www.nseindia.com

Table 3 presents the movement in silver prices and ROI from 2021 to 2025. The table shows that silver experienced greater fluctuations during the study period. In 2021, the silver price stood at ₹659.50 per 10 grams. In 2022, the price declined to ₹611.79, resulting in a negative ROI of 7.23%. In 2023, silver recovered strongly and reached ₹708.91, generating a positive return of 15.87%. The upward movement continued in 2024, with the price increasing to ₹833.24 and an ROI of 17.54%. The strongest performance was recorded in 2025, when the silver price rose sharply to ₹1,203.01, generating an ROI of 44.38%. The table clearly indicates that silver offered high growth potential but also experienced larger fluctuations than gold. The negative return in 2022 followed by strong positive returns in subsequent years reflects the sensitive nature of the silver market. Overall, silver generated substantial returns during the latter years of the study period, particularly in 2025.

Table 4 – Silver Volatility

Volatility	
Mean	803.29
Standard Deviation (SD)	0.01601

Table 4 presents the volatility of silver prices during the study period. The mean price of silver was ₹803.29, representing its average price level over the five-year period. The standard deviation was 0.01601, which is slightly higher than the standard deviation reported for gold (0.01499). This indicates that silver returns experienced marginally greater fluctuations than gold returns. The comparison suggests that silver carried relatively higher risk than gold during the study period. Although silver generated strong returns, particularly in

2025, investors were exposed to comparatively greater price fluctuations. Thus, silver may offer higher return potential but requires greater risk tolerance.

Table 5 – BSE Sensex Values of Five Years

Years	Sensex Values	Return
2021	58254	-
2022	60841	4.44
2023	72240	18.74
2024	78139	8.17
2025	85221	9.06

Source: www.bseindia.com

Table 5 presents the movement in the BSE Sensex and its annual returns from 2021 to 2025. The results show a consistent upward trend throughout the study period. The Sensex stood at 58,254 in 2021 and increased to 60,841 in 2022, generating a return of 4.44%. A significant improvement was observed in 2023, when the Sensex reached 72,240 and recorded the highest annual return of 18.74%. In 2024, the index continued to increase to 78,139, with a return of 8.17%. The upward trend continued in 2025, when the Sensex reached 85,221 and generated a return of 9.06%. Unlike gold and silver, the Sensex recorded positive returns in every year after the base year. However, its annual growth rates in 2024 and 2025 were lower than the returns generated by gold and silver during the same period. Overall, the table indicates that the Indian stock market maintained steady growth and offered positive investment returns. However, during the latter part of the study period, particularly in 2024 and 2025, precious metals showed stronger returns than the Sensex.

Table 6 – BSE Sensex Volatility

Sensex Volatility	
Mean	70939
Standard Deviation (SD)	0.00496

Table 6 presents the volatility analysis of the BSE Sensex. The mean Sensex value during the study period was 70,939, representing the average level of the stock market index. The standard deviation was 0.00496, which is lower than the standard deviations reported for both gold and silver returns. This indicates that the Sensex exhibited relatively lower variation in returns during the study period. The findings suggest that the Sensex provided comparatively stable performance in terms of return fluctuations. However, a low standard deviation does not necessarily mean that the overall investment is risk-free, as stock market investments may still be influenced by economic, political, and global market conditions. Overall, the Sensex showed relatively stable return behaviour when compared with gold and silver during the five-year period.

Table 7 – Correlation Analysis between Gold and Silver

Correlations	
Gold	1
Silver	0.942**

**. Correlation is significant at the 0.01 level (2-tailed)

Table 7 presents the correlation between gold and silver prices over the five-year study period. The correlation coefficient between the two metals was **0.942**, which is statistically significant at the 0.01 level. This indicates a very strong positive relationship between gold and silver. In general, when gold prices increased, silver prices also tended to increase, and when gold prices declined, silver prices showed a similar movement. The high positive correlation suggests that both metals were influenced by several common economic and market factors. However, the correlation is less than 1, which indicates that their price movements were not perfectly

identical. Silver-specific industrial demand and other market conditions may cause its prices to fluctuate differently from gold. From an investment perspective, the strong correlation indicates that investing simultaneously in both gold and silver may provide limited diversification benefits compared with investing in assets that have a lower or negative correlation.

Table 8 – Monthly Return of Gold Prices in 2025

Months	Closing Price	Monthly Return
January	78674.91	-
February	84947.30	7.9725
March	86919.68	2.3219
April	93083.58	7.0915
May	94783.90	1.8267
June	97221.95	2.5722
July	97600.30	0.3892
August	99703.47	2.1549
September	109606.27	9.9323
October	122479.15	11.7447
November	123076.53	0.4877
December	131332.77	6.7082

Source: www.nseindia.com

Table 8 presents the monthly closing prices and returns of gold during 2025. The results show a strong and consistent upward movement throughout the year. The gold price increased from ₹78,674.91 in January to ₹1,31,332.77 in December. The highest monthly return was recorded in October (11.74%), followed by September (9.93%) and February (7.97%). Strong growth was also observed in April (7.09%) and December (6.71%). The lowest positive returns were recorded in July (0.39%) and November (0.49%), indicating periods of relatively slow growth. Importantly, the table shows no negative monthly return during the reported period. The overall pattern indicates sustained positive momentum in the gold market during 2025. The sharp increase in September and October contributed significantly to the overall annual growth. The continuous increase in closing prices suggests strong demand and favourable market conditions for gold during the year.

Table 9 – Descriptive Statistics for Gold Prices in 2025

Descriptive Statistics	Gold
Range	52657.86
Minimum	78674.91
Maximum	131332.8
Mean	101619.2
Std. Deviation (Risk)	16573.39
Variance	274677105.141

Table 9 presents the descriptive statistical analysis of gold prices during 2025. The minimum gold price was ₹78,674.91, while the maximum price reached ₹1,31,332.80. This resulted in a range of ₹52,657.86, indicating a substantial increase in the level of gold prices over the year. The mean price was ₹1,01,619.20, representing the average gold price during 2025. The standard deviation was ₹16,573.39, indicating the extent to which monthly prices deviated from the average price. The variance of 274,677,105.141 further indicates a considerable spread in the price levels during the year. The large range and standard deviation should be interpreted in relation to the strong upward trend in prices. Therefore, the dispersion reflects not only short-term fluctuations but also the substantial increase in the price level over the year. Overall, the descriptive statistics indicate that gold experienced significant price appreciation in 2025, with moderate variation around its average monthly price.

Table 10 – Monthly Return of Silver Prices in 2025

Months	Closing Price	Monthly Return
January	898.781	-
February	952.298	5.9544
March	976.111	2.5005
April	950.896	-2.5831
May	959.518	0.9067
June	1051.475	9.5837
July	1108.102	5.3855
August	1138.376	2.7321
September	1291.104	13.4163
October	1565.091	21.2211
November	1549.089	-1.0224
December	1978.654	27.7302

Source: www.nseindia.com

Table 10 presents the monthly closing prices and returns of silver during 2025. The results indicate that silver experienced greater fluctuations than gold, with both positive and negative monthly returns. The highest monthly return was recorded in December (27.73%), followed by October (21.22%) and September (13.42%). These figures indicate exceptionally strong growth in the latter part of the year. Other notable positive returns were recorded in June (9.58%), February (5.95%), and July (5.39%). Negative returns were recorded in April (-2.58%) and November (-1.02%), indicating temporary declines in silver prices. Despite these short-term decreases, the overall price increased substantially from ₹898.78 in January to ₹1,978.65 in December. The results demonstrate that silver provided strong return opportunities in 2025 but experienced greater month-to-month fluctuations. The particularly high returns in October and December contributed significantly to the overall growth of silver during the year.

Table 11 – Descriptive Statistics for Silver Prices in 2025

Descriptive Statistics	Silver
Range	1079.87
Minimum	898.78
Maximum	1978.65
Mean	1201.625
Std. Deviation (Risk)	333.8654
Variance	111466.1

Table 11 presents the descriptive statistics of silver prices during 2025. The minimum price was ₹898.78, while the maximum price reached ₹1,978.65. The resulting range of ₹1,079.87 indicates a substantial difference between the lowest and highest price levels during the year. The mean silver price was ₹1,201.625, representing the average price during the study period. The standard deviation of ₹333.8654 indicates a considerable level of dispersion in prices around the mean. Similarly, the variance of 111,466.1 confirms the presence of significant variation in the price levels. The wide range between the minimum and maximum values reflects the strong upward movement as well as fluctuations experienced by silver during the year. Overall, the descriptive statistics indicate that silver experienced substantial price growth in 2025, accompanied by greater fluctuations. Therefore, silver offered strong return potential but involved comparatively higher price variability.

Table 12 – Correlation Analysis between Gold and Silver Prices in 2025

Correlations	
Gold	1

** . Correlation is significant at the 0.01 level (2-tailed)

Table 12 presents the correlation between gold and silver prices during 2025. The correlation coefficient was **0.956**, which is statistically significant at the 0.01 level. This value indicates an extremely strong positive relationship between gold and silver prices during 2025. The correlation was also slightly higher than the five-year correlation coefficient of 0.942, suggesting that the relationship between the two metals was particularly strong during 2025. The results show that both metals generally moved in the same direction during the year. Their common upward movement may be associated with similar market and economic influences affecting precious metals. However, the correlation is not equal to 1, indicating that the movements were not perfectly identical. The monthly return analysis also shows differences between the two metals, with silver experiencing negative returns in April and November while gold maintained positive growth throughout the reported months. Therefore, although gold and silver demonstrated a strong relationship, each metal retained its own market characteristics and level of risk. Investors should consider these differences when selecting between gold and silver or including both assets in an investment portfolio.

FINDINGS OF THE STUDY

- Based on the analysis of gold, silver, and BSE Sensex performance during the study period, the following major findings are identified:
- Gold prices showed a strong overall upward trend from 2021 to 2025, increasing from ₹47,392 to ₹1,01,567 per 10 grams.
- Gold recorded a slight negative return of -0.40% in 2022, followed by substantial positive returns in 2023, 2024, and 2025.
- The highest annual ROI for gold was recorded in 2025 at 43.61%, indicating exceptional performance during the final year of the study.
- Gold exhibited relatively low volatility over the five-year period, with a standard deviation of 0.01499, indicating comparatively stable return behaviour.
- Silver prices also showed an overall increasing trend, rising from ₹659.50 in 2021 to ₹1,203.01 in 2025.
- Silver experienced a larger decline in 2022 (-7.23%) compared with gold, indicating greater sensitivity to market fluctuations.
- The highest annual ROI for silver was recorded in 2025 at 44.38%, which was slightly higher than the return generated by gold.
- Silver was comparatively more volatile than gold, as indicated by its higher standard deviation of 0.01601 during the five-year period.
- The BSE Sensex showed a consistent upward trend from 58,254 in 2021 to 85,221 in 2025, with positive returns in all subsequent years.
- The highest annual return of the BSE Sensex was 18.74% in 2023.
- The Sensex showed lower volatility compared with gold and silver, with a standard deviation of 0.00496 during the five-year study period.
- Gold and silver generated higher returns than the BSE Sensex during 2024 and 2025, indicating the strong performance of precious metals during these years.
- The five-year correlation between gold and silver was 0.942, indicating a very strong positive relationship between the two metals.
- During 2025, gold showed positive monthly returns throughout the year, demonstrating consistent upward momentum.
- The highest monthly return for gold in 2025 was 11.74% in October, followed by 9.93% in September.
- Gold prices increased from ₹78,674.91 in January 2025 to ₹1,31,332.77 in December 2025, indicating substantial price appreciation.
- Silver experienced both positive and negative monthly returns in 2025, confirming greater short-term fluctuations compared with gold.
- The highest monthly return for silver was 27.73% in December, followed by 21.22% in October.
- Silver prices increased significantly from ₹898.78 in January to ₹1,978.65 in December 2025.
- The descriptive statistics indicate that silver experienced greater price variability, whereas gold demonstrated comparatively more stable price movement.

- The correlation between gold and silver during 2025 was 0.956, which was slightly higher than the five-year correlation of 0.942.
- The strong positive correlation indicates that gold and silver generally move in the same direction, although their individual levels of volatility differ.

SUGGESTIONS OF THE STUDY

Based on the findings of the study, the following suggestions are made:

1. Investors may consider gold as a relatively stable investment option, particularly for long-term wealth preservation and portfolio diversification.
2. Silver may be considered by investors with a higher risk tolerance, as it offers strong return potential but is subject to greater price fluctuations.
3. Investors should diversify their portfolios by combining precious metals with equity investments rather than relying entirely on a single investment avenue.
4. Since gold and silver have a strong positive correlation, investors should not depend solely on these two metals for diversification and may include other asset classes.
5. Investment decisions should be based on risk-return analysis, market conditions, and individual investment objectives.
6. Investors should regularly monitor inflation, interest rates, global economic conditions, currency movements, and market uncertainty, as these factors can influence precious metal prices.
7. Short-term investors should exercise caution while investing in silver because of its comparatively higher volatility.
8. Long-term investors may consider systematic and phased investment strategies to reduce the impact of short-term price fluctuations.
9. The performance of precious metals should be periodically compared with stock market investments to identify suitable investment opportunities under changing market conditions.
10. Investors should conduct proper market analysis and avoid making investment decisions solely on the basis of past returns.

CONCLUSION

The study concludes that both gold and silver demonstrated strong investment performance during the period from 2021 to 2025, with substantial price appreciation, particularly during 2024 and 2025. Gold emerged as a comparatively stable investment with consistent positive growth and lower volatility, whereas silver provided slightly higher return potential but involved greater price fluctuations. The BSE Sensex also recorded steady growth and positive returns throughout the study period, demonstrating its importance as an alternative investment avenue. The strong positive correlation between gold and silver indicates that both precious metals generally move in the same direction and are influenced by common market and economic factors. Overall, the findings suggest that gold and silver can play an important role in portfolio diversification and wealth preservation. However, investors should carefully consider their risk tolerance, investment objectives, and prevailing market conditions before making investment decisions. A balanced and diversified investment approach combining precious metals and equity investments may help investors achieve a suitable balance between risk, return, and stability.

REFERENCES

1. Agrawal, P. K., Kumar, M., Bajpai, M., Mishra, P., Kumar, P., & Rana, G. (2025). Volatility integration and dynamic connectedness among the Indian stock market, gold prices, oil prices, exchange rates and natural gas. *ECONOMICS – Innovative and Economics Research Journal*, 13(2), 245–263.
2. Babu, K. G. R. S. (2025). Determinants of gold price movements in India. *EPH-International Journal of Business & Management Science*, 11(2), 7–10. <https://doi.org/10.53555/018pd744>
3. Bansal, S., Gupta, T., Krishnan, D., & Mittal, R. (2025). From stability to swings: Metal and bullion price volatility in India's post-COVID commodity market. *Asian Journal of Management and Commerce*, 6(2), 1354–1365.
4. Bhattacharjee, A., Das, J., & Kumar, S. (2024). Evaluating the symmetrical and asymmetrical linkage between gold price and Indian stock market in the presence of structural change. *NMIMS Management Review*, 31(4), 288–297.
5. Biswas, B., Roy, D., Ghosh, J., Mandal, K., Choudhary, A., & Gupta, S. (2024). Comprehensive analysis of gold and silver trading patterns and future projections. *World Journal of Advanced Engineering Technology and Sciences*, 12(2), 90–97. <https://doi.org/10.30574/wjaets.2024.12.2.0282>
6. Chandra Shekar, B. M., & Ravikumar, B. V. (2024). An empirical study on the relationship between stock market performance and gold prices in India. *International Journal of Research in Finance and Management*, 7(2), 391–395. <https://doi.org/10.33545/26175754.2024.v7.i2d.389>
7. Jain, K. (2025). Consumer behaviour and gold investment patterns in India. *International Journal of Social Science and Economic Research*, 10(11), 6137–6153.
8. Kaarthiga, N. K., & Sangeetha, C. (2025). A study on risk and volatility in Indian commodity market with special reference to gold and silver. *International Journal of Research and Analytical Reviews*, 12(1), 320–329.
9. Kaur, M., & Kulaar, N. (2024). The evaluation of Indian gold price volatility: An empirical analysis. *ACADEMICIA: An International Multidisciplinary Research Journal*, 14(4), 52–57.
10. Khatri, H., & Chhikara, K. S. (2024). Exploring the dynamics of gold prices in India: Factors and trends. *International Journal for Research Publication and Seminar*, 15(2), 239–251. <https://doi.org/10.36676/jrps.v15.i2.1418>
11. Mondal, R., Ghosh, R., Sana, A. K., & Paul, B. (2025). Measuring the volatility in gold prices of India during the Russia-Ukraine crisis: Evidence from the TGARCH model. *International Journal of Management and Human Science*, 9(2), 59–65. <https://doi.org/10.31674/ijmhs.2025.v09i02.006>
12. Paturi, P. (2025). Precious metals investment outlook 2025: A comparative study of gold and silver in India. *International Journal of Scientific Research in Engineering and Management*, 9(9), 1–9. <https://doi.org/10.55041/IJSREM52842>
13. Raj, A. (2024). A study on the performance of bullion market with special reference to gold. *International Journal of Creative Research Thoughts*, 12(6), C601–C616.
14. Rathi, C. (2024). Assessment of changing investment patterns in gold: Analysing recent trends. *TIJER – International Research Journal*, 11(12), A19–A24.
15. Satyanarayana, & Pratap, N. (2025). Study on gold price dynamics and investment performance in the Indian bullion market. *Advanced International Journal for Research*, 6(6), 1–15.
16. Selvaraj, M., & Deebika, M. (2024). A study on silver exchange-traded funds (ETFs) in India: Performance evaluation. *GPH-International Journal of Business Management*, 7(7), 14–33.
17. Sharma. (2024). A study on Indian gold price and stock market volatility. *International Research Journal on Advanced Engineering and Management*, 2(7), 2328–2340.
18. Sharma, S., Gupta, M., Grima, S., & Sood, K. (2025). An empirical comparative analysis of the gold market dynamics of the Indian and U.S. commodity markets. *Journal of Risk and Financial Management*, 18(10), Article 543.
19. Shihabudheen, M. T., & Santhosh Kumar, P. K. (2025). Investor's perspectives on gold and silver investment in India. *SDMIMD Journal of Management*, 16(1), 57–70.