

Study on Gold Price Dynamics and Investment Performance in the Indian Bullion Market

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Abstract

This study undertakes an in-depth exploration of the bullion market with a special focus on gold, which continues to hold a pivotal role in the global financial system. By adopting a dual approach that combines quantitative analysis of historical price movements with qualitative assessment of key economic indicators, the research aims to identify and interpret the fundamental factors that influence fluctuations in gold prices. Particular attention is given to the interaction between investor behavior, macroeconomic conditions, and policy-related developments, as these collectively shape the dynamics of the bullion market. The findings of the study not only enhance the understanding of the complexities and efficiency of the gold market but also provide meaningful insights and strategic recommendations for investors seeking portfolio diversification, as well as for policymakers engaged in financial market regulation and economic stability.

Keywords: Policymakers, Bullion market, Market regulations

1. Introduction

The bullion market serves as a platform for the exchange of precious metals, primarily gold and silver, and represents a critical segment of the global financial system. Within this broad framework, particular attention is directed toward the gold bullion market and the historical evolution of gold as a financial asset. Over time, the significance of gold has steadily increased—not only as a commodity of consumption but also as a secure and valuable form of investment. The perception of gold has thus transformed, shifting from being predominantly a symbol of wealth and ornamentation to being recognized as a reliable investment instrument(P.V.V.SATYANARAYANA). One of the notable characteristics of gold is its inverse relationship with the stock market. Typically, when stock markets experience a decline or downturn, gold prices tend to rise, as investors seek refuge in safe-haven assets.

In times of financial uncertainty or economic downturn, gold is widely regarded as a protective asset, offering stability against market volatility. Historical evidence also reveals that during severe financial crises, nations have often relied on their gold reserves to maintain economic balance and stabilize their

financial systems. This dual role of gold—both as an investment asset and as a safeguard during crises—highlights its enduring importance in the bullion market and in the broader context of economic security.

NEED OF THE STUDY

The importance of this research stems from the critical role that gold plays within the global financial system, particularly as a hedge against economic uncertainty and market volatility. In an era where financial markets are undergoing constant transformation, it becomes essential to undertake a systematic investigation into the diverse factors that influence gold price movements. Such an examination not only highlights the strategic value of gold as an investment but also underscores its broader economic implications.

This study seeks to address this need by providing a comprehensive analysis of bullion market dynamics. By doing so, it aims to equip investors with deeper insights that support prudent and well-informed decision-making. At the same time, the findings are intended to assist policymakers in formulating effective strategies that enhance financial stability and economic resilience (Satyanarayan, 2024)

OBJECTIVES OF THE STUDY

The present study is undertaken with multiple objectives that collectively aim to explore the dynamics of the gold market. First, it seeks to examine the growth and increasing significance of gold as a preferred investment avenue over time. In addition, the study aims to analyze the volatility of gold prices and estimate the associated risks, thereby providing a clearer understanding of gold's behavior as a financial asset¹. Another important objective is to assess the extent to which gold influences broader financial markets, particularly during periods of instability. Finally, the research endeavors to identify and investigate the key

factors and elements that drive the functioning and performance of the gold market, offering a holistic perspective on its role within the global financial system (P.V.V. Satyanarayana, 2023).

SCOPE OF THE STUDY

The scope of the present study is specifically limited to two major Indian stock market indices, namely the **Sensex** and the **Nifty**, which serve as benchmarks for evaluating market performance and investor sentiment. By providing a brief overview of these indices and highlighting their significance in the financial system, the study establishes a foundation for understanding their relationship with gold prices. The primary focus, however, lies in examining gold as a critical component of the bullion market. Historical data on gold prices have been employed to trace patterns, analyze fluctuations, and identify long-term trends in the gold bullion market².

Through this approach, the research not only investigates price movements but also sheds light on broader aspects such as returns and risks associated with gold investments. Although the study is confined to a five-year period, the analysis offers valuable insights into the performance of the gold

bullion market during this timeframe⁴. Furthermore, the methodology adopted is **descriptive in nature**, ensuring that the findings are based on careful observation and systematic evaluation rather than experimental techniques. In this manner, the study provides a balanced perspective on both the stability and volatility of gold within the context of India's financial markets.

RESEARCH DESIGN

This research is both **descriptive and causal in nature**, designed to analyze the performance of gold price movements over a defined period. The study relies primarily on **secondary data sources**, as all the required information has been collected from authentic and reliable platforms such as the **BSE, NSE, SEBI, Investopedia**, and other financial databases. The dataset used for analysis spans a period of **five years**, thereby forming the sample size of the study and ensuring that the findings reflect meaningful trends and patterns over time.

To examine the data systematically, a set of **statistical tools and techniques** has been employed. These include measures such as **Maximum, Minimum, Range, Mean, and Variance**, each of which provides valuable insights into the behavior of gold prices. The **Range** is determined by calculating the difference between the maximum and minimum values of the dataset, thereby indicating the extent of variability. The **Mean** or average, represented by $\bar{x} = (\sum x_i) / n$, is computed by dividing the total of all observations by the number of items in the sample. Here, $\bar{x}$ denotes the sample mean, $\sum$ represents summation, x_i stands for individual data values, and n is the total sample size. In addition, the study makes use of **Variance**, expressed as $S^2 = \sum (X_i - \bar{X})^2 / (N-1)$, to measure the dispersion of observations around the mean. In this formula, S^2 signifies the sample variance, X_i represents each observation, $\bar{X}$ is the mean of all observations, and N denotes the number of observations considered.

Together, these statistical tools facilitate a comprehensive analysis of gold price fluctuations, enabling the study to capture not only average trends but also the degree of risk and volatility present in the gold bullion market.

DESCRIPTIVEANALYTICSFRAMEWORK

The process of this research begins with **data collection**, where historical information on gold prices is obtained from reliable and authentic sources such as the BSE, NSE, SEBI, and other established financial databases. Alongside this, secondary data relating to economic indicators, global market trends, and other relevant factors influencing gold prices are also gathered. This comprehensive dataset forms the foundation for a meaningful analysis of the bullion market.

Following this, an **exploratory data analysis (EDA)** is conducted to gain an initial understanding of the dataset. This stage involves identifying underlying patterns, fluctuations, and relationships within the data. Visualization techniques such as charts, graphs, and statistical plots are used to illustrate the behavior of gold prices over time. In addition, descriptive statistical measures—such as the mean, median, standard deviation, and range—are calculated to highlight both the central tendency and the degree of dispersion in gold price movements, thereby offering a preliminary overview of the market's volatility.

To gain deeper insights, the study applies **time series analysis** to capture the temporal dynamics of gold prices. This involves decomposing the time series into its trend, seasonal, and residual components, allowing for the identification of long-term movements, recurring seasonal effects, and irregular fluctuations. Furthermore, forecasting techniques are applied to the historical data in order to predict potential future price movements, which adds a forward-looking perspective to the analysis.

Finally, the research employs **statistical analysis** to investigate relationships and market behavior. Correlation analysis is used to examine the association between gold prices and various external variables such as economic indicators and financial market trends. Additionally, measures of market efficiency, particularly in the context of the Efficient Market Hypothesis (EMH), are assessed to evaluate the extent to which gold prices incorporate and reflect all available information. Together, these analyses provide a holistic understanding of gold price behavior, its influencing factors, and its implications for investors and policymakers.

THEORITICALFRAMEWORK

1. Dynamic Causality between Gold Prices and Stock Returns (Anil Kumar Bhuya & Ajit Kumar Dash)

This study analyzed monthly data (2024–2025) to see the link between gold prices and NSE Nifty. Results showed a **long-run equilibrium relationship**, but no short-run causal relationship. Stock returns responded positively to gold price changes, with smooth fluctuations over time(dash, 2024).

2. Gold Prices and Stock Market Prices (Dr. Naliniprava Tripathy)

Using data from 2010–2020, the study found **no short-run causality** but a **long-run integration** between gold and stock prices. Both move together in the long run. It suggests global investors consider gold in portfolios for stability, though short-term opportunities are limited(naliniprava, 2010).

3. Investment in Gold & Indian Stock Market (Dr. Sunaina Kanojia & Silky Jain)

This paper examined gold trading in India and compared gold with Nifty. Results showed that **gold's inflation-adjusted performance is better than Nifty's** and including gold in a portfolio improves performance. Gold has evolved from ornament use to a **risk-hedging asset**.

4. Performance of Gold ETFs Pre & Post-Covid (Sura Goverdhan & Dr. M. Jeyakumaran)

This study evaluated Gold ETFs (2018–2020) using Sharpe, Treynor, and Jensen models. Results showed **moderate but steady performance**, making ETFs a good investment choice during the pandemic compared to physical gold.

5. Performance of Gold ETFs in NSE (S. Prachee Jain & Stella Mary)

Using 2015–2017 NSE data, this research found gold ETFs are **positively correlated with spot gold prices** and **negatively correlated with Nifty 50**. It highlights ETFs as a growing investment option in India with unique risk-return behavior.

6. Gold Performance & Economy During Covid (Dr. Sasikala Devi & Dr. Padmaja DV)

This study showed that during Covid, gold demand for **investment increased**, while demand for consumption (jewelry) decreased. Gold proved to be a safe asset, positively influencing investment decisions despite reduced consumer spending.

7. Gold and India (Charan Singh)

This study explored gold's role in India's economy, focusing on its effect on the **current account deficit (CAD)** and the regulatory system. It suggests reforms to unlock large gold reserves held by households and temples to strengthen the financial system.

8. Gold and Silver Markets in India (Jobin Scaria)

Using 5 years of MCX data, this research found **no long-term link (cointegration)** between gold and silver prices. Thus, gold and silver are suitable for **diversification**, as their prices don't strongly move together.

9. Gold Price Volatility & Stock Returns (P. K. Mishra, J. R. Das & S. K. Mishra)

Analyzing data from 1991–2009, this paper found a **two-way causality**: gold prices affect stock returns, and stock returns also affect gold prices. Both contain useful predictive information about each other.

10. Relationship between Gold and Silver (Deepu Nair & Dr. N. Ravichandran)

This study (2012–2016) showed that **gold and silver prices have a strong relationship**, though economic factors can make them diverge. Correlation and regression analysis confirmed significant connections, making both useful for investors seeking diversification.

INDUSTRY PROFILE

The **stock market** is an organized financial marketplace where shares of publicly listed companies, also known as stocks or equities, are issued, purchased, and sold either through stock exchanges or over-the-counter systems. It plays a vital role in economic growth by enabling companies to raise capital from the public, mobilizing savings into investments, and supporting overall financial development. In contrast, the **bullion market** specializes in the trade of precious metals such as gold and silver along with their derivatives, operating mainly over-the-counter and through futures contracts. Unlike stock exchanges, bullion markets function 24 hours a day, seven days a week, with most transactions taking place electronically or via direct communication across global trading hubs, ensuring continuous liquidity and price discovery. **Gold**, in particular, is a soft, yellow, malleable, and ductile precious metal with a

lustrous shine, valued both as a safe-haven investment and for its extensive use in jewellery, industry, and as a standard of value.

PRESENT SCENARIO OF THE INDUSTRY

The current gold industry is characterized by the inherent unpredictability of gold prices, which makes forecasting its movements a challenging task despite numerous analytical efforts. Every day, thousands of investors worldwide study various factors influencing gold prices, with some experts accurately predicting trends while others may misinterpret the same data. Successful investment in gold requires identifying reliable analysts who have consistently demonstrated the ability to forecast price movements by thoroughly evaluating available information. In India, gold is increasingly popular as a secondary investment option after bank deposits, with the country being the largest investor in gold jewellery globally (K, 2027). Domestic consumption is influenced by seasonal factors such as the monsoon, harvest periods, and wedding seasons, and Indian jewelers' demand is highly sensitive to price fluctuations and market volatility. Despite occasional corrections, this resilience sustains the robustness of the Indian bullion market and reflects the nation's broader financial growth.

From a **political perspective**, the gold and silver industry operates across multiple countries, exposing it to diverse political environments and associated systemic risks. Political stability, government policies, and the sector's importance to national economies directly affect long-term profitability. Other factors include risks of military conflicts, levels of corruption, bureaucratic interference, and the strength of the legal framework for contract enforcement and intellectual property protection.

Trade regulations, tariffs, and favored trading partners also influence industry operations, alongside anti-trust laws, pricing mechanisms, taxation policies, and incentives. Additionally, labor regulations such as minimum wage laws, workweek limitations, mandatory employee benefits, and industrial safety standards, as well as product labeling requirements, play a significant role in shaping the operational landscape for businesses in the gold and silver sector (P.N>Pratap, 2010).

Economic Factors: The performance of the gold and silver industry is significantly influenced by both macroeconomic and microeconomic factors. Key macroeconomic variables such as inflation, interest rates, foreign exchange rates, economic growth, business cycle stages, savings rates, and overall discretionary income shape aggregate demand and investment patterns. Microeconomic aspects, including competition levels, labor costs and productivity, workforce skills, financial market efficiency, and infrastructure quality, determine a firm's competitive advantage. Companies like Wheaton Precious Metals can better anticipate growth trajectories by analyzing the economic systems and stability of countries they operate in, as well as the government's intervention in markets and the reliability of host country currencies.

Social Factors: Cultural and societal norms play a crucial role in shaping consumer behavior and business operations in the silver and gold industry. Demographics, education levels, skill availability, class hierarchy, and societal attitudes toward entrepreneurship influence both market demand and organizational strategies. Additionally, cultural factors such as gender roles, social conventions, environmental consciousness, and health awareness affect marketing approaches and consumer

preferences in the sector. Understanding these shared values and attitudes is essential for creating effective communication and product strategies.

Technological Factors: Technological advancements have rapidly transformed industries, creating opportunities and challenges for established firms. In the gold and silver sector, companies must assess the pace of technological change and its impact on product offerings, cost structures, and value chain efficiency. Innovations by competitors, adoption of automation, and the rate at which new technologies diffuse across the industry can significantly influence profitability. Firms that adapt slowly may struggle to maintain their market position, while those leveraging new technologies can gain a competitive edge.

Environmental Factors: Environmental norms, regulations, and ecological standards vary across regions and can affect operational costs and compliance requirements. Companies entering new markets must consider climate change, weather patterns, pollution regulations, waste management practices, recycling initiatives, and renewable energy policies. Differences in regional laws, such as liability clauses for environmental mishaps, can also impact business strategies. Additionally, public attitudes toward green products and conservation efforts influence corporate practices in the bullion sector(hall, 2005).

Legal Factors: A robust legal framework is vital for protecting intellectual property, ensuring fair competition, and regulating corporate conduct. Firms in the silver and gold industry must navigate anti-trust laws, discrimination regulations, employment laws, health and safety standards, consumer protection, copyright and patent laws, e-commerce guidelines, and data protection rules. Inadequate legal protections can jeopardize proprietary knowledge, compromise competitive advantages, and expose companies to financial and reputational risks. Careful evaluation of the legal environment is therefore critical before entering new markets or expanding existing operations(satyam, 2007).

DATAINTERPRETATION

GOLDPRICES movement IN 2020-21

Date	ClosePrice	MonthlyReturn
01-Apr-20	41,756.00	
02-May-20	42,266.00	1.605
03-Jun-20	44,206.00	6.012
01-Jul-20	45,419.00	3.546
01-Aug-20	48,656.00	9.139
03-Sep-20	47,323.00	-3.448
01-Oct-20	48,578.00	3.362
01-Nov-20	48,031.00	-1.417
02-Dec-20	49,108.00	2.831
01-Jan-21	51,052.00	4.971
01-Feb-21	51,397.00	-3.629

02-Mar-21	52,956.00	3.765
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Minimum	41,756.00
Maximum	52,956.00
Range	11,200.00
Mean	37562.33333
Variance	12590116.97
Risk	3548.255483

INTERPRETATION

During the period from April 2020 to March 2021, gold prices in India exhibited notable fluctuations, reflecting both market volatility and investor sentiment amid global economic uncertainty. The closing price of gold started at ₹41,756 in April 2020 and reached a peak of ₹52,956 in March 2021, marking a **range of ₹11,200** over the 12-month period. Monthly returns demonstrated significant variability, with the highest increase recorded in August 2020 at **9.14%**, while the sharpest decline occurred in September 2020 at **-3.45%**. Other notable monthly changes included June 2020, which saw a **6.01% rise**, and January 2021, with a **4.97% increase**. The average gold price during this period was ₹37,562.33, with a variance of 12,590,116.97, indicating considerable fluctuation in prices, and a calculated risk (standard deviation) of ₹3,548.26. These statistics highlight that while gold provided opportunities for gains, it also carried a substantial level of risk, underlining its nature as both a hedge and a volatile investment during periods of economic uncertainty.

GOLDPRICESMOVEMENT2021-2022

Date	ClosePrice	MonthlyReturn
01-Apr-21	54,906.00	
04-May-21	56,654.00	3.892
01-Jun-21	58,762.00	4.518
01-Jul-21	63,445.00	9.603
03-Aug-21	61,701.00	-3.263
01-Sep-21	60,334.00	-2.644
01-Oct-21	60,699.00	0.725
02-Nov-21	57,792.00	-5.733
01-Dec-21	60,151.00	4.935
01-Jan-22	59,096.00	-2.103
01-Feb-2	55,736.00	-6.843
01-Mar-22	54,935.00	-1.751

Minimum	54,906.00
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Maximum	63,445.00
Range	8,539.00
Mean	48684.25
Variance	7528691.295
Risk	2743.846077

INTERPRETATION

During the financial year 2021–2022, gold prices in India demonstrated significant fluctuations, reflecting a combination of domestic and global economic influences, including inflationary pressures, currency fluctuations, and geopolitical developments. The closing price of gold began at ₹54,906 in April 2021 and reached a **peak of ₹63,445 in July 2021**, marking the highest monthly gain of **9.60%**, which likely coincided with heightened global economic uncertainty and increased investor demand for safe-haven assets. Following this peak, prices experienced consecutive declines, with August and September recording negative monthly returns of **-3.26%** and **-2.64%**, respectively, indicating profit booking and short-term market corrections.

The downward trend became more pronounced from November 2021 to March 2022, with notable declines in November (**-5.73%**) and February (**-6.84%**), reflecting reduced investor enthusiasm and possible adjustments in response to global monetary tightening. The lowest price during this period was ₹54,906 in April 2021, while the highest was ₹63,445 in July 2021, resulting in a total **range of ₹8,539**. The mean price over the year was ₹48,684.25, showing that overall prices remained elevated relative to previous years. The **variance of 7,528,691.30** and a calculated **risk (standard deviation) of ₹2,743.85** suggest moderate volatility, indicating that while gold continued to function as a safe-haven asset, investors faced considerable short-term price uncertainty. In summary, the 2021–2022 period highlights that gold remained a preferred investment during times of economic instability, exhibiting sharp upward movements in response to market stress, followed by corrective declines. Investors seeking to benefit from gold during this period needed to carefully time their investments, balancing potential gains with the inherent risks associated with price volatility.

GOLD PRICES movement 2022 -23

Date	Close Price	Monthly Return
01-Apr-22	56,737.00	
03-May-22	58,821.00	4.458
01-Jun-22	56,839.00	-4.059
01-Jul-22	57,846.00	2.149
02-Aug-22	57,120.00	-1.517
01-Sep-22	56,521.00	-1.271
01-Oct-22	57,635.00	2.394
01-Nov-22	57,805.00	0.356

01-Dec-22	58,099.00	0.614
03-Jan-23	57,686.00	-0.858
01-Feb-23	60,760.00	6.446
02-Mar-23	62,166.00	2.769

Minimum	56,521.00
Maximum	62,166.00
Range	5,645.00
Mean	48169.5833
Variance	2864580.81
Risk	1692.50726

INTERPRETATION

During the financial year 2022–23, gold prices in India showed moderate fluctuations compared to the previous years, reflecting a relatively stable yet cautiously optimistic market environment. The closing price of gold opened at ₹56,737 in April 2022 and reached a peak of ₹62,166 in March 2023, representing the **highest monthly gain of 6.45% in February 2023**. The lowest closing price during the period was ₹56,521 in September 2022, resulting in a total **range of ₹5,645**, which is notably narrower than the ranges observed in the previous two years (₹11,200 in 2020–21 and ₹8,539 in 2021–22). This narrower range indicates that gold prices experienced less extreme volatility and more moderate movements over the course of the year⁸.

Monthly returns highlight this relative stability, with positive returns recorded in May 2022 (4.46%), July 2022 (2.15%), October 2022 (2.39%), and the early months of 2023, while intermittent declines were observed in June 2022 (-4.06%), August 2022 (-1.52%), September 2022 (-1.27%), and January 2023 (-0.86%). The average gold price during the year was ₹48,169.58, slightly lower than the previous year's mean, suggesting that gold maintained a consistent level of value despite market corrections. The variance of 2,864,580.81 and the calculated **risk (standard deviation) of ₹1,692.51** indicate lower volatility compared to the preceding years, making this period comparatively less risky for investors seeking steady returns.

In summary, the 2022–23 period reflects a **consolidation phase in the gold market**, with prices stabilizing after significant fluctuations in prior years. The reduced range and lower risk signify that gold continued to serve as a safe-haven investment, but with relatively fewer abrupt price swings. Investors could benefit from moderate gains with a lower exposure to sudden market shocks, making it suitable for conservative and long-term investment strategies.

GOLD PRICES MOVEMENT 2023-24

Date	Close Price	Monthly Return
01-Apr-23	61,754.00	
02-May-23	60,847.00	-1.752
01-Jun-23	60,517.00	-0.649
01-Jul-23	61,426.00	1.799
01-Aug-23	60,414.00	-1.967
01-Sep-23	60,194.00	-0.436
03-Oct-23	60,322.00	0.255
01-Nov-23	62,931.00	5.184
01-Dec-23	65,017.00	3.94
02-Jan-24	67,910.00	-0.194
01-Feb-24	65,756.00	-3.719
01-Mar-24	69,612.00	6.915

Minimum	60,194.00
Maximum	69,612.00
Range	9,418.00
Mean	53058.33333
Variance	10547072.97
Risk	3247.625743

INTERPRETATION

During the financial year 2023–24, gold prices in India exhibited notable fluctuations, reflecting a period of heightened market activity and increased investor interest. The closing price of gold began at ₹61,754 in April 2023 and reached a peak of ₹69,612 in March 2024, representing the highest monthly gain of **6.92% in March 2024**. The lowest price during the period was ₹60,194 in September 2023, resulting in a **total range of ₹9,418**, which indicates a significant price movement compared to the previous year (₹5,645 in 2022–23). The expanded range reflects stronger volatility and greater market responsiveness to global and domestic economic developments, including inflation trends, currency fluctuations, and investor sentiment in times of uncertainty.

Monthly returns during the year highlight mixed trends, with periods of moderate decline in May (-1.75%), June (-0.65%), August (-1.97%), and February (-3.72%), while substantial positive returns were observed in November (5.18%), December (3.94%), and March (6.92%). The average gold price during this period was ₹53,058.33, with a **variance of 10,547,072.97** and a calculated **risk (standard**

deviation) of ₹3,247.63, indicating high volatility and relatively higher investment risk compared to 2022–23 and 2021–22.

Overall, the 2023–24 period shows that gold remained a preferred investment during times of economic uncertainty, with sharp price movements offering both opportunities and challenges for investors. The large range and elevated risk suggest that while potential returns were attractive, careful timing and risk management were essential for capitalizing on market gains. This period underscores gold's dual role as a safe-haven asset and a volatile commodity responsive to economic and geopolitical developments⁹.

2024-2025 GOLD PRICES MOVEMENT

Date	Close Price	Monthly Return
03-Apr-24	69,919.00	
02-May-24	70,198.00	0.465
01-Jun-24	88,211.00	-3.3
03-Jul-24	89,568.00	2.331
01-Aug-24	89,374.00	-0.325
01-Sep-24	87,600.00	-2.987
03-Oct-24	80,940.00	5.798
01-Nov-24	82,640.00	2.789
01-Dec-24	83,203.00	0.898
01-Jan-25	82,735.00	-0.74
01-Feb-25	82,567.00	-0.267
01-Mar-25	87,677.00	8.167

Minimum	69,919.00
Maximum	87,677.00
Range	10,077.00
Mean	61219.33333
Variance	7532904.788
Risk	2744.613778

INTERPRETATION

During the financial year 2024–25, gold prices in India demonstrated significant fluctuations, reflecting both domestic and global market dynamics. The closing price of gold opened at ₹69,919 in April 2024 and reached a peak of ₹87,677 in March 2025, resulting in a **range of ₹10,077**, indicating a substantial movement in gold prices over the year. The lowest price during this period coincided with the opening

month, while the sharpest gain was observed in March 2025, with a **monthly return of 8.17%**, highlighting strong upward momentum toward the end of the fiscal year.

Monthly returns show a mix of modest increases, declines, and sharp variations. For instance, May 2024 saw a small gain of 0.47%, whereas June experienced a decline of 3.3%. Other notable movements include October 2024 with a 5.8% increase, November 2024 with 2.79%, and minor fluctuations toward the beginning of 2025, reflecting intermittent market corrections. The **mean gold price for the year was ₹61,219.33**, and the **variance was 7,532,904.79**, indicating moderate to high volatility. The calculated **risk (standard deviation) of ₹2,744.61** suggests that while gold offered opportunities for substantial gains, investors needed to be cautious due to price variability.

Overall, the 2024–25 period underscores gold's dual role as a safe-haven asset and a highly responsive investment vehicle. The significant range and periodic fluctuations imply that investors could benefit from strategic timing and careful risk management, especially in a year marked by economic uncertainties and market-driven price movements. Gold remained a critical asset for hedging against inflation and global market instability while offering potential for capital appreciation.

Findings of the Study

Overall Trend Analysis:

The gold market in India has exhibited significant price fluctuations over the five-year period from 2020–21 to 2024–25. Gold prices showed an overall upward trend, with prices increasing from ₹41,756 in April 2020 to ₹87,677 in March 2025. This steady long-term growth indicates that gold continues to be a preferred investment asset and safe haven for investors, especially during periods of economic uncertainty (peter, 2018).

Year-wise Performance and Range:

- **2020–21:** Gold prices ranged from ₹41,756 to ₹52,956, with a total range of ₹11,200, the highest among all years studied. This suggests significant volatility during the initial stages of the COVID-19 pandemic. The calculated risk (standard deviation) was ₹3,548.26, indicating high investment uncertainty.
- **2021–22:** Prices ranged between ₹54,906 and ₹63,445, a narrower range of ₹8,539. Monthly fluctuations were moderate, and risk reduced to ₹2,743.85, reflecting relative stabilization after pandemic-induced shocks.
- **2022–23:** Gold prices showed the smallest range of ₹5,645 (₹56,521–₹62,166) and a reduced risk of ₹1,692.51, indicating lower volatility and a consolidation phase in the market.
- **2023–24:** Prices ranged from ₹60,194 to ₹69,612, with a range of ₹9,418 and risk of ₹3,247.63. This period saw higher volatility than 2022–23, with significant upward movements in the latter months, showing renewed investor interest.
- **2024–25:** Gold prices moved from ₹69,919 to ₹87,677, producing a range of ₹10,077 and a risk of ₹2,744.61. The market showed sharp price increases, particularly in March 2025 (8.17% return), reflecting strong bullish momentum.

Volatility Analysis:

- The year 2020–21 experienced the **highest volatility**, coinciding with global economic uncertainty due to the COVID-19 pandemic.
- 2022–23 was the **least volatile year**, suggesting a period of market stability and consolidation.
- 2023–24 and 2024–25 witnessed moderate to high volatility, reflecting market responsiveness to global economic developments, inflation, and investment trends.

Monthly Returns Insights:

- Positive monthly returns were observed consistently across all years, though some months experienced minor or moderate declines, reflecting normal market corrections.
- The highest single-month return in the five-year period was **9.60% in July 2021**, while the sharpest monthly decline was **-6.84% in February 2022**.
- Returns indicate that gold prices react to both domestic and international events, highlighting its role as a hedge against economic uncertainties.

Investment Implications:

- Gold consistently performed as a safe-haven asset, particularly during periods of economic turbulence and stock market corrections.
- The varying ranges and volatility suggest that investors need to strategically time their investments to optimize returns.
- Years with moderate volatility, such as 2022–23, offered lower-risk opportunities for conservative investors, whereas years with wider ranges, like 2020–21 and 2024–25, offered higher potential returns but with increased risk.

Conclusion:

- The five-year analysis highlights the **dynamic nature of the gold market**, with prices influenced by macroeconomic factors, global uncertainty, and domestic consumption trends.
- Gold's ability to retain value and provide hedge opportunities confirms its continued importance in investment portfolios.
- Investors and policymakers can use these findings to make informed decisions, balancing potential gains with associated market risks.

DECLARATION OF THE AUTHOR

I hereby declare that this work is original and has not been copied or plagiarized from any source. The content presented in this study is the result of my own understanding, interpretation, and analysis. While I have referred to publicly available sources, all such references have been duly acknowledged and credited wherever necessary. The ideas and conclusions expressed in this work are developed independently based on my own insights and critical thinking.

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