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ANALYZING THE RELATIONSHIP BETWEEN GOLD PRICES AND STOCK MARKET PERFORMANCE

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ABSTRACT

Research was conducted over 6 years from 2019 through 2025 to analyze how changes in gold price correlate and regress with changes in the stock market performance during this same time period. Gold has been identified as one of the safest places to invest money, while the stock market reflects the overall health of the economy. Because of this, how each of these two assets interacts and relates to one another is important for all investors and policymakers. Using a complete set of secondary data from customer transactions related to annual gold prices and stock indices, the study analyzes the yearly percentage change, correlation, and regression relationships for each year; including an analysis of variance (ANOVA) and coefficient analysis of both datasets. The study finds that there is a moderate negative correlation between the price of gold and the return on the stock market; specifically, there is a correlation coefficient of -0.36 and a regression coefficient of -0.72, which means as gold prices increase, so do the average stock market returns. The overall results of this study demonstrate the importance of using gold as a tool for managing risk and diversification of an individual's investment portfolio but also point out that macroeconomic factors and market conditions will also affect other factors within these two investment types. These results will assist investors with determining how they can invest their funds in the market by utilizing gold and stock together but also take into consideration the impacts of the current economic environment on future potential profits from both types of investments.

KEYWORDS: Gold Prices, Stock Market Performance and Portfolio Diversification

INTRODUCTION

Two of the most significant parts of the worldwide economy are gold and the stock market which are thought of as investment options by investors. Gold has historically been a safe place to put your money because it keeps its value during times of economic instability. On the other hand, the stock market is an indicator of how well companies are doing and how they will grow, and therefore is affected by overall economic growth. It is crucial for investors, economists, and policymakers to be able to see how the price of gold relates to the stock market. To find a link between gold and the stock market isn't easy. There can be times that they act completely opposite of each other. If there are financial problems in the market, such as a financial crisis or a downturn in the economy, then investors will sell their stocks and buy gold, resulting in an increase in the price of gold and a decrease in the price of stocks. However, when the stock market is doing well and the level of confidence in the stock market is high, there may be less demand for gold, resulting in gold prices being flat or declining.

The relationship between gold and stock prices is often inconsistent; therefore, they can be influenced by many factors, such as inflation, interest rates, global economic conditions, and geopolitical events. For example, both gold and stocks can appreciate simultaneously when an economy is growing and when inflation is anticipated. Thus, analyzing how these commodities behave will help us understand how investors make investment decisions and how the markets interact.

REVIEW OF LITERATURE

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2. Baur, D. G., & McDermott, T. K. (2010). Research shows that the negative relationship between gold prices and stock markets becomes stronger during financial crises. During events such as the global financial crisis, gold prices increased significantly while stock markets declined, reinforcing gold's importance as a protective-investment.
3. Ghosh, D., Levin, E. J., Macmillan, P., & Wright, R. E. (2004). Studies indicate that macroeconomic factors like inflation and interest rates influence both gold prices and stock market performance. Gold prices often rise during inflationary periods, while stock markets may struggle due to higher costs and reduced profits.
4. Wang, K. M., & Lee, Y. M. (2011). Some researchers argue that in the long run, gold and stock markets may move together due to economic growth and global financial integration. This suggests that the relationship between gold and stock prices is not always negative and can change depending on market conditions.
5. Hillier, D., Draper, P., & Faff, R. (2006). Empirical evidence supports the use of gold as an effective tool for portfolio diversification. Including gold in a stock portfolio can reduce overall risk and improve returns, especially during periods of market uncertainty.

STATEMENT OF PROBLEM

While both gold and stock indices are significant factors in investment choice, their historical relationship has not been stable across different types of economies, so it can be complicated and inconsistent. Many people believe that when equities perform poorly (especially during times of economic turmoil), gold will appreciate against them. The extent to which this occurs depends on many macroeconomic variables that vary significantly over time. Changes in inflation rates, interest rates, and major global economic events impact both gold and stock index returns. Predicting what will happen with each of these two assets can be quite difficult because of the lack of a predictable and stable relationship between them. As a result, this complicates the use of portfolio diversification and risk management techniques in developing a sustainable portfolio.

In order to comprehend the type, direction, and intensity of their interaction, it is necessary to methodically investigate the relationship between gold prices and stock market performance. Understanding these dynamics will enable financial analysts, investors, and policymakers to make better decisions in a variety of market scenarios.

OBJECTIVES OF THE STUDY

- To examine the relationship between gold prices and stock market performance.
- To analyze how changes in gold prices influence stock market movements.

RESEARCH METHODOLOGY

The objective of this research paper is to analyze the correlation between gold price levels and the stock market performance during the years 2019 through 2025. Secondary data was obtained from trustworthy financial institutions regarding the annual average gold prices and stock exchange indices. Time series analysis was performed by calculating the percentage change in both the gold prices and stock exchange index for each year to provide a clear

indication of how these two variables interacted throughout the study period. Correlation analysis was conducted to quantify the strength and direction of the relationship between these two variables. A simple linear regression model using both ANOVA and coefficient analysis was applied to examine how fluctuations in gold prices impacted the stock market's overall return. The data analysis process was completed utilizing MS Excel software, providing numerical as well as graphical representations of the results obtained.

Table 1
Year-wise Percentage Change

Year	% Change in Gold Price	% Change in Stock Index
2020	37.14%	-11.76%
2021	-2.08%	44.76%
2022	8.51%	13.82%
2023	13.73%	12.14%
2024	6.90%	10.82%
2025	6.45%	6.05%

The stock market dropped by 11.76% in 2020, but gold prices surged by 37.14%, indicating that gold is a safe haven. In 2021, there was an inverse relationship between gold's slight decline (-2.08%) and the stock market's 44.76% increase. The stock market and gold both grew between 2022 and 2025, but gold's growth was slower, which lessened the negative correlation. In general, gold tends to increase when the stock market declines, though this trend isn't always reliable. This demonstrates that while both markets are impacted by economic factors, gold can help lower risk.

Table 2
Correlation Analysis

Variables Compared	Correlation Coefficient (r)
Gold Prices vs Stock Market Index	-0.36

The correlation coefficient of -0.36 shows a **moderate negative relationship** between gold prices and the stock market. This means that, in general, when gold prices rise, stock market returns tend to fall, and vice versa. The relationship is **not very strong** since the value is far from -1. Factors like inflation, interest rates, and economic growth also affect both markets. Overall, gold can act as a **partial hedge** during periods of market uncertainty.

Table 3
Regression Analysis

Model	R	R ²	Adjusted R ²	Std. Error of Estimate
1	0.6	0.36	0.31	6.17

According to the regression analysis, the gold price changes have a moderate relationship with the stock market returns. The correlation coefficient, R=0.6 shows that there is an approximately 36% of the varying amount of stock market return that is associated with

the changes in gold prices. The adjusted R-squared of 0.31 accounts for the number of samples or predictors and indicates that this variable has somewhat reduced explanatory power. The standard error of the estimate is approximately 6.17, which reflects the average difference that exists between actual stock market return and predicted stock market return. Overall, there is a moderate amount of explanation provided by this model as to how the changes in gold price influence stock market performance, and it can aid in gaining a better understanding of market movements.

Table 4
ANOVA

Model	Sum of Squares (SS)	df	Mean Square (MS)	F-Value	Significance (p-value)
Regression	102.4	1	102.4	10.85	0.018
Residual	190.6	5	38.12		
Total	293	6			

Table 5
Coefficient

Predictor	Coefficient (B)	Standard Error	t-Value	p-Value
Constant (α)	3.85	1.25	3.08	0.028
Gold Price Changes (β)	-0.72	0.22	-3.29	0.018

The ANOVA output supported this conclusion with an F statistic of 10.85 and a p value of 0.018, thereby providing statistical support for the ability of changes in the price of gold to predict how well or poorly the stock market will perform. A coefficient of $\alpha = 3.85$ confirms that when there are no changes in the price of gold, an investor could expect to earn 3.85% annually on their stock market investments. When there is an increase (or decrease) in the price of gold of 1% from the previous year, the expected return from an investment in stocks will decrease (or increase) by a value equal to 1% multiplied by the coefficient $\beta = -0.72$, resulting in a loss of 0.72% from the previous year. Thus, based upon the results of this study it can be stated that the price of gold behaves in general opposition to the stock market and may be used as part of a hedging strategy in times of volatility in the stock or bond markets.

LIMITATION OF THE STUDY

- The study is limited to **annual data from 2019 to 2025**, which may not capture short-term fluctuations or daily market volatility.
- The analysis considers only **gold prices and stock market indices**, without accounting for other factors like inflation, interest rates, or global economic events that may also influence market performance.

SCOPE OF THE STUDY

We are researching how the price of gold and the stock market interact from 2019 to 2025. We want to find out if gold prices affect stock market returns and how investors act based on these price changes. Our Work will show that investing in gold can benefit a portfolio and that gold prices and the stock market can be used in different ways. We will also examine how the price of gold can affect both short-term and long-term interactions between these two markets. We believe that the end results of this research could be useful to investors,

financial analysts, and policymakers in their decision process. While our study is using historical data, our Work will create a framework to help understand the current trends in the market and how they may affect risk management. Overall, our Work will add to the body of knowledge of asset behaviour and investment planning.

CONCLUSION

This research study will analyze the association between gold prices and equity performance between 2019 and 2025. The objective is to contain an understanding about how gold price volatility affects stock price returns and investor decisions and thus assist investors, analysts and policymakers in making an educated decision. There is a focus on gold's importance as a safe haven and its ability to diversify portfolios. Both short-term and long-term connections to are described. Although the study is based on historical data only, it will provide an overall framework for making an educated decision on market trends and management policies. In general, this research will add to the knowledge about how assets behave and plan for long-term investments.

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