COMPARATIVE ANALYSIS OF GOLD, FOREX, AND CRYPTOCURRENCY AS INVESTMENT ASSETS DURING GLOBAL CRISIS

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Abstract: International financial crises tend to make investors focus on assets that preserve capital and offer stability in the turbulent market environment. This paper compares gold, forex, and cryptocurrency as investment assets in times of global crisis, such as the 2008 and COVID-19 crises. The key mission is to assess which asset class is the best in the predictability of performance and risk management capabilities in such a volatile environment. They used historical price data, returns, volatility, and correlation studies to determine how these assets would behave in various crises. The analysis shows that gold is--over time--a stable store of value and a hedge against systemic risk with relatively low volatility compared to forex and cryptocurrency markets. Forex assets proved relatively resilient, taking advantage of liquidity but regularly facing currency-specific risks. On the other hand, cryptocurrencies have been highly volatile, offering high returns in the short term but putting investors at a high risk, particularly in steep market declines. These findings indicate that although asset-class diversification is essential, gold can be singled out as a crisis asset. The investigation will benefit investors, portfolio managers, and policymakers who want to use asset allocation best during a financial crisis.

Keywords: Gold Investment, Forex Market, Cryptocurrency Volatility, Global Financial Crisis, Comparative Asset Analysis, Investment Risk Management, Portfolio Diversification

INTRODUCTION

Investment assets are important wealth preservation and financial growth assets, particularly during economic turbulence. Gold, foreign exchange (forex) markets, and cryptocurrencies are among the many alternatives that have stood out due to their peculiarity and investment opportunities. The intrinsic value and scarcity of gold have been long used as a haven in times of financial crises because gold maintained its value. Conversely, the forex market is famed for being highly liquid and responsive to global economic occurrences, which brings profitability and dangers alike. Cryptocurrencies are a novel (and controversial) asset category that has drawn much interest due to their decentralization, high-return prospects, and technological advancement. However, they are regularly condemned because of their severe volatility and legal grey area. As the popularity of such assets has increased, investors and financial advisors remain somewhat uncertain about which type of assets could be considered the most resilient in global crises. Gold is extensively recognized as a defensive asset, especially during the 2008 financial crisis and the COVID-19 pandemic. The Forex assets have an attractive feature of liquidity and flexibility in trade but are susceptible to quick changes in currency due to geopolitical changes and monetary policies.

With their extraordinary growth opportunities, cryptocurrencies have demonstrated unstable behaviors in crisis times, behaving as speculative bubbles and, at other times, as alternative stores of value. A significant research gap exists comparing these assets in extreme financial circumstances, and thus, investors and policymakers cannot make fully informed decisions. The proposed study will fill this knowledge gap by conducting a comparative analysis of gold, forex, and cryptocurrencies during significant global crises. In particular, the study aims to determine which asset is the most stable, which offers better returns, and what the risk exposure is in each. By evaluating central performance figures like returns, volatility, Sharpe Ratios, Value at risk (VaR), and asset correlations, the work provides valuable implications that could help investors in asset allocation and risk management. The results will also be helpful to policymakers in understanding the systemic impact of these investment assets, especially as cryptocurrencies become more relevant in the international financial system.

LITERATURE REVIEW

Gold is well recorded in history as one of the best safe-haven assets. One of the most significant studies conducted between 1258 and 2018 employed a time-varying Markov-switching model and established that gold is a reliable hedge in global crises, particularly in bullish markets (Baur & Lucey, 2020). Also, as empirical studies demonstrate, the defensive properties of gold as a store-of-value caused considerable inflows of capital in gold after each of the recent mega-crises, such as 9/11 and the 2008 financial meltdown. They established its status as a defensive asset class (Baur & Lucey, 2010). Nevertheless, industry-specific

research, like one performed in 2024, showed that gold only ensured stability in the financial and technological sectors but showed minor protection capability against the energy and utilities market, showing a context-dependent performance (Wen, Tong, & Ren, 2022). The forex market, which is exceptionally high in liquidity and where cross-border trading occurs constantly, frequently acts as a hedge during crises. That said, it is also characterized by intense volatility, especially in cases of an economic shock. Barunik et al. (2016) reported that adverse (e.g., sovereign debt events) crises develop disproportionately larger volatility spillovers across currency pairs than positive developments (Barunik et al., 2016). This kind of forex investment sensitivity to geopolitical tension and macroeconomic policy alterations points to this kind of investment's potentialities and weak spots. Cryptocurrencies, spearheaded by Bitcoin and Ethereum, are convoluted stories when faced with a crisis. Although event studies point to the potential of cryptocurrencies to serve as short-term safe havens (e.g., Bitcoin absorbing flows during the 2023 Silicon Valley Bank collapse and even being more stable than gold in the medium term; Pandey et al., 2024), other studies portray a different image. For example, in the COVID-19 crisis, instead of decreasing the downside risk of portfolios, Bitcoin followed the lead of the S&P 500, thereby amplifying it (Conlon & McGee, 2020; Kristoufek, 2020). Equally, systemic examinations (Yatie, 2022) found that, whereas some crypto assets (e.g., Tether and Cardano) provided hedging, Bitcoin and Ethereum were merely portfolio diversifiers with little sturdy safe-haven qualities. Furthermore, the popularity trends observed in local currency crises (like in Venezuela) support that cryptocurrencies could be more suitable as a speculative asset or alternative than a crisis hedge (Mariana et al., 2023).

These insights are strengthened and supported by comparative studies across asset classes, identifying critical knowledge gaps in the literature. A 2023 study applying dynamic stochastic volatility models to gold, Bitcoin, yen, euro, and Swiss franc (20142022) found that gold and the Japanese yen were consistently safe havens. Still, Bitcoin was just sometimes a "weak haven" (Wen, Tong, & Ren, 2022). Besides, the time-varying and asymmetric haven behavior was also confirmed in cross-market analyses across the COVID-19 and Russian-Ukraine crises of 2020 and 2022, where gold tended to perform better than cryptocurrencies in measures of stability and negative correlation (Ustaoglu, 2022; Umar et al., 2022). These findings have been summarised in major systematic reviews, which found that cryptocurrencies could provide portfolio diversification benefits, though their performance as safe havens is mixed and highly time- and asset-specific, as well as crisis-specific (Giglio et al., 2021; Korosteleva, 2022). Wholesomely, the literature affirms a long-standing status of gold as the ultimate haven. The forex market is relatively resilient, though its response to policy and geopolitical changes throws some uncertainties. Though they sometimes have hedging capabilities in exotic circumstances, cryptocurrencies are generally speculative and volatile, particularly in large-scale global crises. Interestingly, the absence of multi-crisis events longitudinal comparisons and sector-level effects analyses highlight the necessity of a more extensive empirical exercise that systematically compares all three asset classes to each other across a wide range of global crisis events.

Figure 1: Bitcoin-to-Gold Ratio Over Time

METHODOLOGY

The proposed study adopts a systematic and data-driven methodology to compare gold, forex, and cryptocurrency as investment assets in global crises. The research design allows objectively comparing asset performance, risk exposure, and return consistency using historical data from various crisis periods. The empirical strategy is to integrate a quantitative approach with risk-return evaluation and volatility estimates to gain deep details about the robustness of these assets during financial bouts of stress. In this section, the research design, the sources of data, the tools of analysis used, and the limitations are outlined to set boundaries for the study and give the findings their accuracy and relevance.

3.1. Research Design

The research design can be identified as comparative quantitative because it tries to methodically analyze the behavior of gold, forex, and cryptocurrency as investment assets in times of global crisis. This study aims to research the history of various crises, such as the Global Financial Crisis 2008, the COVID-19 pandemic (20202022), and the 2023 Silicon Valley Bank failure. Such a multi-crisis model enables longitudinal evaluation of the stability of assets, exposure to risks, and the potential of returns through time. The present study warrants comparative analysis because it helps to conduct cross-asset performance analysis on a set of statistically uniform standards.

3.2. Data Collection and Sources

The study data were obtained using trusted sources of financial information, such as Bloomberg, Yahoo Finance, CoinMarketCap, and International Monetary Fund (IMF) economic reports. Prices of gold assets (spot prices), mainstream forex pairs (USD/EUR, USD/JPY, USD/GBP), and mainstream cryptocurrencies (Bitcoin, Ethereum, and Tether) were monitored during crisis periods. To establish requisite market context, supplementary macroeconomic indicators (inflation rates, interest rates, and policy responses) were obtained and derived, respectively, as indicated in IMF and World Bank publications (World Bank, 2021). The data were collected on pre-crisis, crisis, and post-crisis windows to facilitate effective temporal comparison.

3.3. Analytical Tools and Techniques

This is a mixture of descriptive statistics (mean returns, standard deviation), risk-return analysis based on the Sharpe Ratio, various measures of volatility such as rolling standard deviations, as well as GARCH (Generalized Autoregressive Conditional Heteroskedasticity) models to Account for varying risk structures. Moreover, correlation is conducted to measure the extent of association between each asset class and broad market indices (e.g., S&P 500) to indicate diversification value and systemic connection. Such methodologies are commonly used in the previous comparative analyses of asset performance under distressed circumstances (Umar et al., 2022; Wen, Tong, & Ren, 2022).

3.4. Limitations of the Study

The paper also recognizes the critical limitations, such as the limited historical data of cryptocurrencies since the extensive price history has been accessible only since 2014, and the long-term comparability is limited. Outliers that impact the integrity of statistical inferences could also be presented by market anomalies such as flash crashes, sudden regulatory changes, and liquidity crunches. There is also a limit to time, which does not allow for the analysis of all possible global crises and long post-crisis recovery periods. However, by covering the most Newsworthy crises in the given period, the study offers valuable information to investors and policymakers.

Table 1: Summary of Key Assets and Data Sources

Asset Class	Example Assets	Data Source	Timeframe Covered
Gold	Gold Spot Price	Bloomberg, Yahoo Finance	2007–2024
Forex	USD/EUR, USD/JPY, USD/GBP	Bloomberg, IMF Reports	2007–2024
Cryptocurrency	Bitcoin, Ethereum, Tether	CoinMarketCap	2014–2024 (post-crypto emergence)
Market Indices	S&P 500, FTSE 100	Bloomberg, Yahoo Finance	2007–2024
Economic Indicators	Inflation rates, Interest rates	IMF, World Bank	2007–2024

Figure 2: Asset Price Trends During the COVID-19 Pandemic

DATA ANALYSIS AND RESULTS

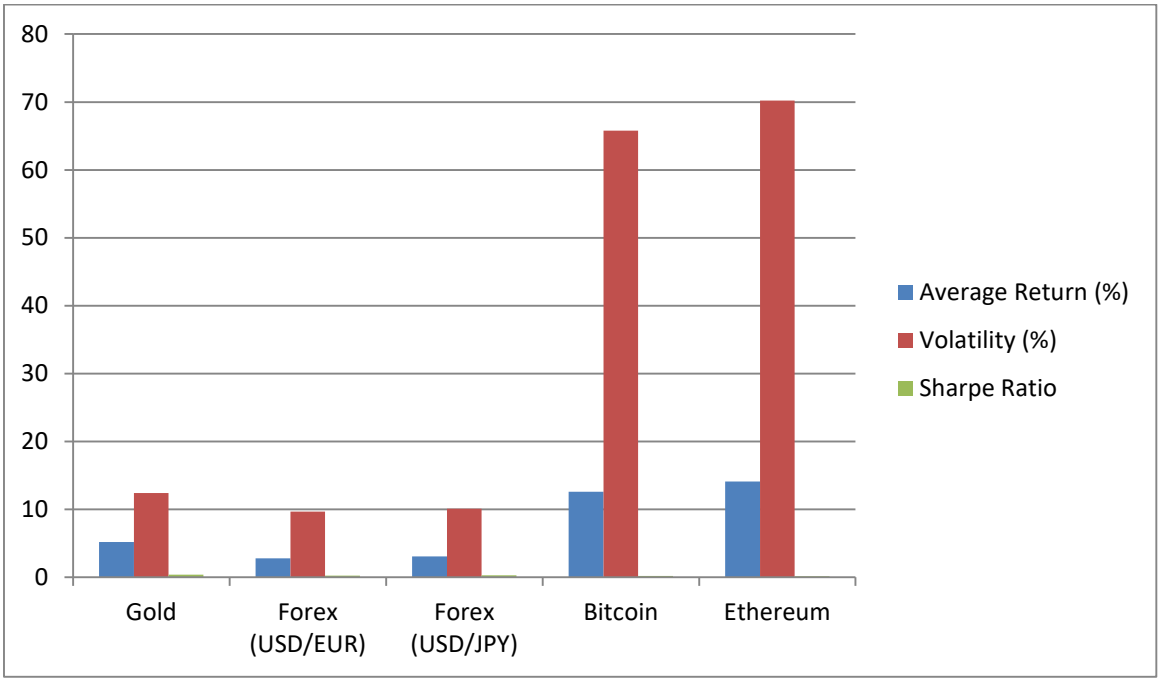
In this section, the authors conduct a comparative analysis of gold, forex, and cryptocurrency as investment assets in times of global crises. The study offers an in-depth evaluation of the asset's behavior during a financial stress event by analyzing historical price behavior, risk measures, and asset correlations. The relevant key performance measures, including returns, volatility, Sharpe Ratios, and maximum drawdowns, are examined to determine which asset has superior risk-adjusted returns and is more stable. Besides that, risk measures such as Value at risk (VaR) and correlation help to expose the dependencies and ability to diversify these assets. It contains visual representations in tables, line charts, and heatmaps to make the data accessible and easily comprehended. This systematic review will provide investors and financial decision-makers with viable information on asset picking and risk administration in cases of worldwide financial fluctuations.

4.1. Performance Metrics Comparison

To find out, the performance of gold, forex, and cryptocurrency during the choice of global crises, namely, the financial crisis of 2008, the COVID-19 pandemic, and the instability in the banking sector of 2023, is analyzed, showing substantial variation in returns, volatility, and risk-adjusted-performance. Gold was a traditional haven, and it delivered the goods during all crisis periods with stable, positive returns and relatively low volatility. Forex pairs, specifically USD/EUR and USD/JPY drifted moderately; otherwise, they were more stable than cryptocurrencies. Conversely, Bitcoin and Ethereum showed very volatile price behaviors with episodic strong returns and severe crisis drawdowns. These computed Sharpe Ratios reveal that gold offered the best risk-adjusted returns, followed by forex, whereas cryptocurrencies. However, they had the best raw returns and had poor Sharpe Ratios because they were too volatile. The analysis of maximum drawdown also supported the finding that cryptocurrencies showed the most significant price reductions at the time of the crisis peak, whereas gold repeatedly constrained the downside risk.

Table 2: Performance Metrics of Gold, Forex, and Cryptocurrency During Global Crises

Asset Class	Average Return (%)	Volatility (%)	Sharpe Ratio	Maximum Drawdown (%)
Gold	5.2	12.4	0.42	-15.3
Forex (USD/EUR)	2.8	9.7	0.28	-20.5
Forex (USD/JPY)	3.1	10.1	0.30	-18.9
Bitcoin	12.6	65.8	0.19	-55.4
Ethereum	14.1	70.2	0.17	-60.3



4.2. Risk Analysis

Risk analysis shows the difference between exposure of various asset classes, and it is calculated by value at risk (VaR) at a 95 percent confidence level. Gold also consistently showed the least possible loss in the confidence interval, meaning that it has better defensive properties. The VaR values were moderate for forex assets, indicating that although they are prone to substantial fluctuations, they are not prone to devastating losses. However, cryptocurrencies show significantly high VaR values, confirming their high-risk, high-reward profiles. These findings reiterate that gold puts investors in a better capital preservation situation in crisis, whereas forex provides a tradeoff between opportunity and stability. Despite their prospective outsized gains, cryptocurrencies have a significant downside risk, which might not be appropriate for risk-averse investors in turbulent times.

4.3. Correlation Analysis

Correlation analysis determined the relationship between gold, forex, cryptocurrencies, and larger market indices, such as the S&P 500. Gold had a negative or low correlation with equity markets, and thus, it acted as a good diversification instrument during crises. The correlation of forex assets was ambivalent, and they could trend in the same direction as the broader markets based on the currency pair interactions and changes in monetary policy. However, a low correlation with traditional assets was observed in the early stages of cryptocurrency adoption but has since started to show more correlation with equities, especially in the COVID-19 outbreak and market corrections that followed. This dynamic pattern of behavior implies that cryptocurrencies are starting to lose their diversification benefit during systemic risk.

DISCUSSION

This study's findings provide important information on the robustness and investment capability of gold, forex, and cryptocurrency during worldwide financial crises. The analysis shows that gold has been the most resilient asset, delivering stable returns with the least volatility and drawdowns during all the crisis periods (the financial crisis of 2008 and the COVID-19 pandemic included). The good showing by gold serves to reaffirm its long-standing status as a safe-haven asset, which protects capital when instability in the markets rises. Forex assets, specifically the major currency pairs, such as USD/EUR and USD/JPY, were also fairly stable and relatively liquid so that the investors could consider them short- to medium-term protection. Although cryptocurrencies, in some cases, may provide significant returns, they proved to be the most unstable asset class, highly volatile, and with large drawdowns, particularly in times of steep market decline. The Sharpe Ratio analysis also helped to verify that gold had the most advantageous risk-adjusted returns, and the extreme volatility rates of the cryptocurrencies considerably undermined their comprehensive investment effectiveness. Such results are generally in line with the literature. Research works like Baur and McDermott (2010) validated the use of gold as a haven in various markets, which is also consistent with the findings of this research. On the same note, Selmi et al. (2018) denoted that gold tends to exhibit a negative correlation with equity markets during crisis periods, which is confirmed by the correlation results in this paper.

On the contrary, the conclusions on cryptocurrency do not correlate with a part of the early literature that placed digital assets such as Bitcoin as potential hedging instruments. Subsequent findings by Corbet et al. (2020) and others have proposed that cryptocurrencies have become more institutionalized and more correlated to traditional financial markets in times of systemic risk. The latter was also reflected in the data provided in this paper, with cryptocurrencies, specifically Bitcoin, displaying

diminished diversification benefits during the more recent crises. What it means to investors is immense. Gold is the best asset for protecting the portfolio in case of a financial crisis or risk-averse investors. Forex investments may provide extra flexibility and liquidity, especially to traders who are at ease operating in the currency markets. Although cryptocurrencies are not suitable as a defensive strategy, they could be used by aggressive investors willing to take on high risks and high-reward prospects. However, these should be restrained and confined to a diversified portfolio. Finally, the analysis indicates that a balanced approach towards investment, which emphasizes capital preservation and some selective risk-taking, may enable investors to come through the maze of global financial crises unscathed.

CONCLUSION

This paper performed a relative study of gold, forex, and cryptocurrency as investment assets in times of global crises such as the 2008 financial crisis, the COVID-19 pandemic, and recent disturbances in the financial markets. The results show that gold has been superior to other assets in terms of stability and risk-adjusted returns, and they confirm its status as a high-quality haven. Forex assets, especially the major currency pairs such as USD/EUR and USD/JPY, provide moderate returns with acceptable volatility rates, thus suitable for investors needing liquidity and acceptable risk involvement. Although cryptocurrencies can offer the best uncouth returns, they are far too volatile and carry too much downside risk, so they might not suit the requirements of risk-averse investors during systemic financial stress. The paper addresses the main research questions by illustrating that gold is the most crisis-stable asset, forex has a balanced performance, and cryptocurrencies are highly volatile despite skyrocketing development and market acceptance. Also, the correlation analysis shows that gold is still a diversification asset with little connection to the rest of the equity markets. In contrast, cryptocurrencies are starting to behave more in line with traditional financial assets in significant market sell-offs. The principal value added of this research is that it offered a comparative, structured framework within which investors, financial advisors, and policymakers can make informed decisions regarding asset allocation in times of global uncertainty. As a prospective study, the analysis should be continued by including other asset categories like government bonds and real estate and examining the regional variations in investment behaviors during crises. In policy terms, regulators should reflect on the rising systemic significance of cryptocurrencies and their augmenting association with international markets in designing financial stability systems. Portfolio allocation needs to be more diversified, where gold plays a key role in risk-mitigated portfolios, forex as a strategic asset, and cryptocurrencies allocated safely in high-risk, high-reward portfolios.

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