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The Behaviour of Gold Prices During Periods of Economic Uncertainty

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Abstract. Gold is generally regarded as a safe-haven asset, but its price behavior differs in the different phases of a crisis. This paper investigates the co-movement of gold prices with economic policy uncertainty, market risk sentiment, and key financial market variables using monthly data from January 2006 to December 2025 and compares gold price performance during the 2008 global financial crisis and the 2020 COVID-19 pandemic. Descriptive statistics, trend comparison and case analysis are used to investigate the variations of the Global Economic Policy Uncertainty Index (GEPU), VIX, the US Dollar Index, the US 10-year real interest rate and the S&P 500 Index. The analysis reveals that gold prices do not always move together with risk indicators. Gold might be under some pressure at first as the US dollar strengthens and liquidity pressures build up in the early stages of a crisis, but gold prices may rise again as real interest rates fall and the financial market environment changes. Gold's function as a safe-haven asset was phased and conditional in both crises.

Keywords: Gold Prices, Economic Uncertainty, Risk Sentiment, Safe-Haven Assets, Financial Markets

1. Introduction

Gold has the properties of a commodity, a currency and a financial asset and has been long considered as an important tool for hedging value and diversifying risk [1]. The 2008 global financial crisis and the 2020 COVID-19 pandemic both caused extreme volatility in financial markets and widespread economic uncertainty, and gold prices also experienced large adjustments during these periods. However, an immediate rise in gold prices is not seen with a sharp rise in market risk. This phenomenon implies that the safe-haven properties of gold may be jointly influenced by the type of risk, market liquidity and financial conditions.

This paper addresses three questions: First, what are the co-movement patterns between gold prices and the GEPU and VIX indices in phases during the period 2006-2025? What was the similarity and difference in gold price performance in the first phase and subsequent phases of the 2008 global financial crisis and the 2020 COVID-19 pandemic? Third, what phased changes did the US Dollar Index, the US 10-year real interest rate, and the S&P 500 Index show during these two crises, and what was the temporal relationship between these indicators and the trend in gold prices? To answer these questions, this paper applies a methodology that combines analysis of long-term

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monthly data with comparative case studies. It brings gold prices together with the GEPU, VIX, US Dollar Index, US 10-year real interest rates and the S&P 500 Index into a single descriptive analytical framework. This paper attempts to gain a better understanding of the phased manifestation of safe-haven properties of gold and its relationship with financial market conditions by comparing these two crises of different nature.

2. Literature review

2.1. Gold as a conditional safe-haven asset

Gold's safe-haven properties are a central theme in research on financial asset allocation and risk management. The existing literature has mainly addressed the question of whether gold can offer investors a hedge against stock market downturns and extreme shocks in financial markets. Baur and Lucey [2] distinguish between hedging assets and safe-haven assets. Hedging assets are assets with low or negative correlation with other assets in normal market conditions, whereas safe-haven assets are assets that are mainly effective in providing protection when the stock market experiences extreme negative shocks. This finding demonstrates that the gold performance in normal market conditions does not necessarily support the safe haven properties in the crisis periods. The safe haven properties of gold should be analyzed according to the specific market environment. Baur and McDermott's cross-country study also points to the fact that the safe haven role of gold is country and market specific and its hedging ability is not equally pronounced across all economies or across all time periods [3]. This finding implies that gold's safe-haven function may be influenced by factors such as market structure, economic conditions and the nature of the crisis.

2.2. Economic uncertainty, risk sentiment, and financial conditions

In addition to the basic properties of safe-haven assets, the previous literature examines the mechanisms of changes in gold prices from the perspectives of economic policy uncertainty, investor sentiment and financial market conditions. Bilgin et al. examined the relationship between different uncertainty indices and gold prices, and Chai Gao et al. took into account the dynamic effect of gold prices on economic policy uncertainty shocks [4, 5]. The studies provide a basis for understanding the relationship between uncertainty and gold prices and suggest that this relationship may vary depending on the source of uncertainty, market conditions and the period of study.

Another important perspective to explain gold price fluctuations is the risk perception of investors. Qadan and Yagil investigated the relationship between panic sentiment and gold prices. Liang Chao et al. examined the effect of investor attention on the volatility of gold prices in China [6, 7]. Such studies extend the analytical scope from macroeconomic uncertainty to the behavior of market participants, showing that the understanding of gold prices requires not only the external economic environment but also the attention to the perception of risk of investors and the change of market attention.

In addition, gold's performance in uncertain times can be influenced by financial market conditions. Capie et al. [8] discussed gold as a hedge against the US dollar, and it was shown that the relation between the gold price and the US dollar movement is a crucial entry point for analyzing the financial features of gold. In a related study, Aye et al. investigated the forecasting of gold prices by using a dynamic model averaging approach. This further emphasizes the need for multiple explanatory variables in the analysis. They also found that the predictive power of relevant variables can differ across time and market conditions [9]. In addition, Baur and Smales explored the hedging

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role of precious metals against geopolitical risks, extending the risk management function of gold and other precious metals to risk situations other than financial market volatility [10].

3. Methodology

3.1. Research design and data

The research design used in this paper is based on descriptive statistics, trend analysis, and comparative case studies. The period of the study is from January 2006 to December 2025. The number of observations is 240, with monthly observations. The long-term analysis is used to observe the co-movement of gold prices with major economic and financial indicators, and the case studies are concerned with the 2008 global financial crisis and the 2020 COVID-19 pandemic, comparing the changes in various variables before and after the crises.

The three analytical methods are used to describe the basic levels and ranges of fluctuation of the variables, compare the directions of change and synchronization among different indicators, and investigate the divergences in the behavior of the two crises during their initial shocks and subsequent phases, respectively. These two crises are, respectively, an internal risk in the financial system and a sudden public health shock.

3.2. Variables and measurement

In this paper, the international gold price is used as the research object, and the indicators are derived from three dimensions, including economic uncertainty, market risk sentiment, and financial market conditions. The principal variables and their purposes are:

Table 1. Variables, measurement and analytical roles

Variable	Definition of Indicator	Unit	Role in the study
Gold	International gold price	US dollars per troy ounce	Monitoring changes in the price of gold
GEPU	Global Economic Policy Uncertainty Index	Index	Measures the degree of economic uncertainty
VIX	Market Volatility Index	Index	Measures market risk sentiment
USD	Broad US Dollar Index	Index	Reflects the strength or weakness of the US dollar
Real Yield	US 10-year real interest rate	%	Reflects the opportunity cost of holding gold
S&P 500	S&P 500 Index	Index	Reflects stock market performance

4. Results

4.1. Long-term trends 2006–2025

Between 2006 and 2025, international gold prices showed a general upward trend, although they experienced several periods of temporary decline. In contrast, the GEPU and the VIX showed high volatility during important risk periods such as the global financial crisis in 2008 and the COVID-19

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pandemic in 2020. Overall, although gold prices tend to fluctuate substantially when economic uncertainty and market risk sentiment rise, the two do not always move in lockstep. At times of rapidly growing risk, gold prices did not immediately rise and even fell in the short term. Thus, economic uncertainty and market panic provide an important context for understanding changes in gold prices, but are not enough to explain its actual performance. The analysis must also include the US dollar, real interest rates, stock markets and the stage of the crisis.

4.2. The 2008 global financial crisis

Gold prices changed in phases during the global financial crisis of 2008 (Figure 1). As risks increased, gold prices rose ahead of time. From July 2007 to March 2008, the international gold price rose from about US$665 per ounce to about US$968 per ounce, an increase of about 45.6 percent. During this time, the subprime mortgage crisis worsened, and the financial system was brought into question. This may have increased demand for gold as a safe haven asset. But gold prices declined as the crisis reached a boiling point and liquidity pressures increased. Between September and November 2008, the price of gold fell by about 8.3 percent, from about US$830 per ounce to about US$761 per ounce. In the meantime, the VIX increased to around 59.89 in October 2008. The S&P 500 Index decreased significantly. The US Dollar Index rose from around 88.95 in August 2008 to around 100.77 in November.

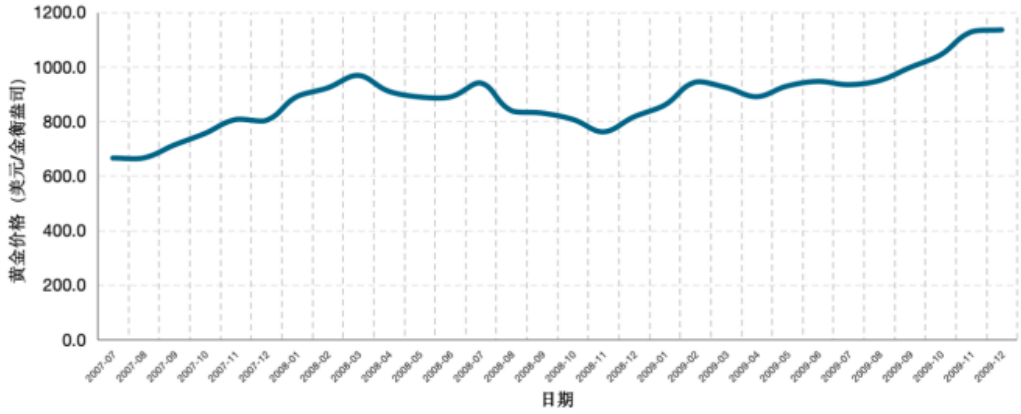


Figure 1. Phased changes in gold prices from 2007 to 2009

4.3. The COVID-19 crisis, 2020

The COVID-19 pandemic of 2020 was a different kind of shock than the financial crisis of 2008. It started out as a public health emergency, but quickly spread to impact economic activity and financial markets across the globe (Figure 2). Gold didn't jump immediately at the start of the pandemic. Between February and March 2020, the price dropped slightly from about US$1,597 to US$1,592 an ounce. Meanwhile, the VIX rose from approximately 40.11 to 53.54 by the end of the month; the S&P 500 declined sharply, and the US Dollar Index climbed from around 116.71 to 121.02. Gold could have had short-term liquidity problems, as in 2008. Gold prices then increased from around US$1,561 per ounce in January to US$1,969 in August, an increase of about 26.1 percent. In this period, the US 10-year real interest rate declined from around −0.12 percent in March to −1.01 percent in August, owing to accommodative policies and the rebound of market liquidity. Lower real interest rates reduce the opportunity cost of holding gold and may make it more attractive than interest bearing assets.

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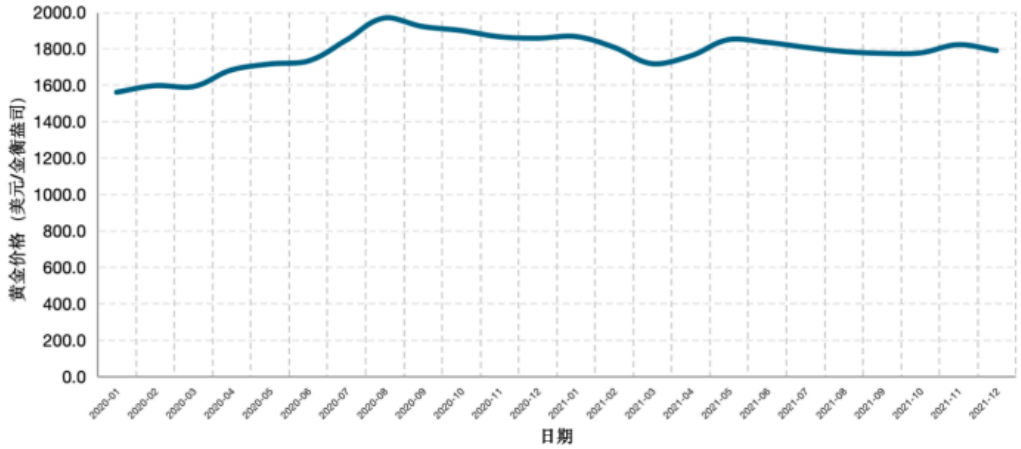


Figure 2. Gold prices during the pandemic, 2020–2021

4.4. Cross-crisis comparison

Table 2. Comparison of gold price behaviour during the two crises

Comparison Criteria	The 2008 Global Financial Crisis	The 2020 COVID-19 Pandemic
Source of risk	Risks within the financial system	Public health emergencies
Changes in the VIX	Sharp rise	Sharp rise
Stock markets	Sharp decline	Sharp decline
At the onset of the crisis, gold	Experienced a brief dip	Remained broadly stable with a slight decline
The US dollar's performance	Showed a marked strengthening	Showed a marked strengthening
Subsequent real interest rates	Gradual decline	Rapidly falling to negative levels
Subsequent performance of gold	Marked rise	Marked rise

The two crises were similar in phased features: during the initial period of the concentrated shock, the VIX increased, the stock market declined, and the US dollar gained value at the same time, while gold did not increase immediately and sustainably; during the later stages, however, gold gained much strength. At the same time, the sources of risk and the changes in real interest rates differed between the two crises, suggesting that fluctuations in the price of gold cannot be explained by changes in risk sentiment alone.

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5. Discussion

5.1. The relationship between gold prices and risk sentiment

The two case studies and the long-term trends suggest that the relationship between risk sentiment and gold prices is not a simple linear one. Economic policy uncertainty and market panic may lead to higher demand for safe-haven assets, but the demand does not necessarily translate immediately into higher gold prices, because gold is also affected by investors' actual allocation behavior and market liquidity. The lag between rising risk indicators and rising gold prices therefore need not mean that gold has lost its safe-haven function but may rather be indicative of changing investor demand across stages of a crisis.

This means that gold's safe-haven characteristics are phase-dependent. Investors may choose cash or sell assets to meet short term funding needs when sudden shocks cause a large jump in liquidity demand, thus putting a temporary pressure on gold [11]. With liquidity returning even as concerns about economic risk persist, the diversification and value storage functions of gold are more apt to come to the fore. Moreover, the risk dimensions represented by economic policy uncertainty and market volatility are not entirely the same, and their relation to gold could be different depending on the type of crisis and the stage of the crisis. You can't just look at risk sentiment indicators and say gold is a safe haven. It has to be judged based on its own market.

5.2. The role of financial market conditions

The US dollar, real interest rates and the stock market provide further perspective on these phases. The strong dollar makes gold more expensive for non-US investors and may also reflect a demand for dollar liquidity that adds pressure to gold early in a crisis. Lower real interest rates reduce the opportunity cost of holding gold versus interest bearing assets, and may increase its appeal. The two factors do not have to move in the same direction, so gold prices are best viewed in the light of the broader financial environment. In the same way, falling equity prices may lead to diversification, but tight liquidity may also lead to investors selling gold for cash. So, stress in the stock market does not necessarily mean rising gold prices. The two crises had different risk origins, but in both, early stages seem to have seen safe-haven demand co-exist with short-term liquidity pressure, while later monetary conditions and real interest rates may have enhanced the appeal of gold. The descriptive comparisons presented here identify phased associations, but cannot separate independent effects of individual factors or establish causality. In addition, monthly data can mask short-term variation during a crisis. High-frequency studies found that the safe-haven properties of gold were not uniform during the phases of the pandemic [12].

6. Conclusion

This paper investigates the co-movements of gold prices with economic uncertainty, market risk sentiment and some major financial variables, based on monthly data from 2006 to 2025, by contrasting the 2008 global financial crisis and the 2020 COVID-19 pandemic. Gold can soar during uncertain times but its price does not always follow risk indicators. In both crises, gold was not on the rise immediately; it gained strength later. Gold may have suffered early on from a stronger dollar and liquidity pressure, with falling real interest rates, accommodative policy and changing financial conditions seeing later gains. So gold's safe haven role was phased and conditional in these two crises, and cannot be explained by rising risk sentiment only. Due to the monthly trend comparisons

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and two case studies, the study cannot establish causal relationships. Future research with higher frequency data and systematic econometric methods can test the relationships further.

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