

# The Relationship Between Safe -haven Property and Cryptocurrency Market: Taking Bitcoin as an example

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**Abstract:** In this paper, the main research is whether Bitcoin has the property of hedge currency. It also shows how bitcoin and cryptocurrencies have fared in financial crises over the past 20 years. This is despite the fact that the volatility of bitcoin has long been debated around the world, and most people believe that a volatile and highly volatile currency is not a safe haven. But the fact is, although the birth time of bitcoin is very short, but in every financial crisis, it has a strong ability to rise, so to some extent, Bitcoin is actually a very realistic hedging property. And among cryptocurrencies, Bitcoin has the absolute suppression of hedge properties, compared with other altcoins. Bitcoin's rise and fall have been astonishing, but it has been remarkably stable compared to altcoins.

**Keywords:** Bitcoin, Cryptocurrency market, Safe-haven property.

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## 1. Introduction

In this paper, we mainly study the hedging ability of cryptocurrencies. Due to the rise of web3.0 in recent years, many people begin to pay attention to cryptocurrency, and both public opinion and various news, such as the bankruptcy of Silicon Valley bank and so on. Many people have started to discuss when a new wave of financial crisis will come, and whether Bitcoin has the chance to become a safe haven currency for ordinary people to help them reduce their losses in the financial crisis.

## 2. Cryptocurrency Market Overview

The Bitcoin was originally established by Satoshi Nakamoto in 2009, and it publicly traded in crypto currency exchange in 2010, and has developed rapidly in the past ten years, then forming today's cryptocurrency market. Both 2017 and 2020 are defined as a bull market in the Bitcoin market. In these two bull markets, the price of Bitcoin soared rapidly from \$3,500 to \$19,000, and from \$4,500 to \$70,000. And in recent years, governments around the world have continuously increased the supervision of the cryptocurrency market. For example, El Salvador has designated Bitcoin as the national legal tender, and China has banned cryptocurrency transactions in the Chinese market. [1] Therefore, to a certain extent, the cryptocurrency market has not yet reached a truly mature state, but with the increasing exposure of the mass media and public opinion discussions, the popularity and consensus of the cryptocurrency market is keep improving.

## 3. Bitcoin

Decentralization is one of the most important and essential concepts of cryptocurrency. However, most countries are centralized economic system, which can be concerned as the entire citizen wealth economic system built around the banking system of each country. And decentralization means that every citizen (wallet) is a core, and they are all connected through a peer-to-peer network, so in this system, there is the absolute fairness and transparency. Bitcoin transactions are

recorded on a public ledger called the blockchain, which is maintained by a decentralized network of computers around the world. The blockchain ensures the integrity of each transaction by verifying that the sending address has sufficient funds to make the transaction and that the transaction is valid. Bitcoin can be bought and sold on cryptocurrency exchanges and stored in digital wallets. [2]

The second key concept is limitation, because the total number of bitcoins is limited, only 21 million. This feature induces Bitcoin a scarce currency. And Bitcoin can only be obtained through computing power mining, but its total amount cannot be increased.

Anonymity is also a very important feature. In the cryptocurrency market, every transaction of Bitcoin can be traced, but it will only display the address of each wallet, but the owner information behind each wallet can't be traced. This is completely contrary to the centralized system. Under the centralized financial system, the banking system and related personnel can trace the real owner behind each individual account. [3]

It is also a unique property of Bitcoin that it cannot be counterfeited, whether it is in your cold wallet or hot wallet. Each bitcoin has its own unique key, which is created based on the science of cryptography. Therefore, these characteristics also increase the uniqueness of Bitcoin, so Bitcoin has gradually become an eye-catching asset and has attracted the attention of people all over the world.

## 4. Definition and Theory of Safe-haven Properties

When the economic environment is uncertain or risky, investors often transfer some of their assets into safer investment options. These safe investment options are called 'safe-haven assets' because they can protect investors' assets from the impacts of market fluctuation.

In addition, safe-haven refer to the characteristics of assets that maintain stability or increase in value when economic uncertainty risks increase. Usually, the safe-haven attribute refers to the negative correlation between the price of certain investment varieties and other market variables such as stock

market indexes, bulk commodity prices and currency exchange rates. When market volatility increases, the prices of these investments typically rise, while the prices of other market variables fall. Safe-haven properties offer a number of advantages for investors. One of the primary benefits of these assets is that they can provide protection against market volatility and economic uncertainty. [4] During times of market stress, safe-haven assets tend to hold or increase their value, which can help protect investors from losses and volatility in their portfolio. Safe-haven assets like gold or real estate can also provide protection against inflation, as their value tends to increase over time in line with inflation. Additionally, including safe-haven properties in a diversified investment portfolio can help reduce overall portfolio risk and volatility, as these assets have low correlation with other types of investments such as stocks or bonds. While safe-haven properties may not offer the highest returns compared to riskier investments, they can still provide positive returns over the long term, which can help investors achieve their financial goals while managing risk.

While safe-haven properties can provide a number of benefits, they also have some drawbacks that investors should consider. One of the main disadvantages of safe-haven properties is that they tend to offer lower returns compared to riskier investments such as stocks or commodities. This means that investors may need to sacrifice potential returns in exchange for the perceived security of these assets. Additionally, physical safe-haven assets like gold or real estate can be expensive to store and maintain, which can eat into potential returns. Safe-haven assets denominated in foreign currencies can also be subject to currency risk, as exchange rate fluctuations can affect their value. Furthermore, some safe-haven assets can be illiquid, meaning they can be difficult to sell quickly in times of market stress. [5] Finally, investing in safe-haven properties requires good timing, as it can be difficult to predict when market volatility will occur. If an investor buys a safe-haven asset too early, they may miss out on potential returns from other investments, while buying too late may mean not fully benefiting from the asset's safe-haven properties.

## 5. Research on Safe-haven in Traditional Financial Markets

In the traditional financial market, gold, Swiss franc, Japanese yen, and U.S. treasury bonds are all recognized by the public as assets with safe-haven properties. Gold has its unique value-preserving ability, anti-inflation ability, risk diversification ability and security to increase its hedging ability. Gold has historically been seen as a valuable store of wealth due to its finite nature. And the price of gold will not be affected by the amount of currency issued by the government or the central bank, so it also has a relatively strong ability to resist inflation. And gold is a kind of physical existence, so to a large extent, it does not have the bankruptcy attributes that other financial assets must bear. [6,7]

Gold, U.S. bonds, and the U.S. dollar can become high-quality safe-haven assets because they can hedge against the decline in risk appetite and have the characteristics of low volatility, high liquidity, and large market value. By definition, safe-haven assets refer to a class of assets whose price fluctuations are relatively stable during market changes. Compared with risky assets, the "safety aversion attribute" of safe-haven assets is mainly reflected in the ability to hedge

against the decline in risk appetite. At the same time, among safe-haven assets, assets with lower volatility, higher liquidity, and larger market value are more "high-quality". Gold, U.S. bonds, U.S. dollar and Japanese yen are all high-quality safe-haven assets. Gold is also known as the king of safe-haven assets because it can hedge the risks of economic recession and hyperinflation at the same time, is naturally scarce, and has the function of storing value.

## 6. Research of Safe-haven Property in Cryptocurrency Market

The emergence and development of cryptocurrency assets have brought new challenges and definitions to the safe-haven property. In recent years, the emergence of cryptocurrencies like Bitcoin has prompted significant interest in their potential as safe-haven assets. However, research on the safe-haven properties of cryptocurrencies in the broader financial market is still relatively limited. Some studies have suggested that cryptocurrencies like Bitcoin may exhibit safe-haven properties during periods of economic and financial instability, as their decentralized nature and lack of correlation with traditional assets can make them an attractive option for investors seeking to hedge against market volatility. However, other research has found mixed or even contradictory results, with some studies indicating that Bitcoin is not a reliable safe-haven asset and may exhibit high volatility and risk. [3]

In the cryptocurrency market, Bitcoin or Ethereum is relatively defined as a safe-haven currency. The reason is that it has shown a relatively stable and a relatively small volatility ratio compare with other altcoins. However, compared with the crypto currency market and the traditional financial market, the fluctuation in the field of crypto currency is extremely huge. Therefore, when people talk about the property of risk aversion, most of them will not think of the digital currency market. [8]

However, compared with the traditional market, Bitcoin and other altcoins still have certain unique safe-haven properties. Because of its decentralized concept, in some degree, when the traditional economic market encounters risk shocks and brings volatility, the cryptocurrency becomes a relatively safe-haven financial asset. In addition, when the demand for Bitcoin begins to increase, the price will generate support, which will promote the continuous increasing in the circulation of Bitcoin, and become a safe-haven choice for many traders.

## 7. Case Study

The next step is to compare the price trend of Bitcoin when the global financial crisis occurred in the past ten years. The cases are the European debt crisis in 2010, the Chinese stock market crisis in 2015-2016, and the economic impact brought about by the global Corona virus epidemic in 2020. As figure 1 shows, we can more clearly and intuitively see the reaction status of Bitcoin under various financial turmoil.

The debt crisis that occurred in 2010 was mainly due to Greece's eagerness to use huge amounts of financing to try to pay a large amount of maturing public debt in order to avoid the risk of debt default. In view of this, the euro zone countries and the International Monetary Fund agreed to provide Greece with a total loan of 110 billion euros on May 2nd, 2010. During this period, the price of a Bitcoin also rose from 9 cents to about 20 US dollars.

In 2015, China's stock market encountered unprecedented hits. It was growing dramatically in the first half of the year, and the market began to avalanche in the second half of the year. The entire A-share Shanghai Composite Index fell by 35% from mid-June to the end of June, and the Growth Enterprise Market even fell by 43%, the total market value has

evaporated by 3.5 billion US dollars. Since there were a lot of foreign capital in the Chinese stock market at that time, the international market economy also fluctuated. Then let's take a look at the reaction of the bitcoin price during this time. From 2015 to 2016, the price of Bitcoin has continued growing from \$100 to \$360, with a total increase of 360%.

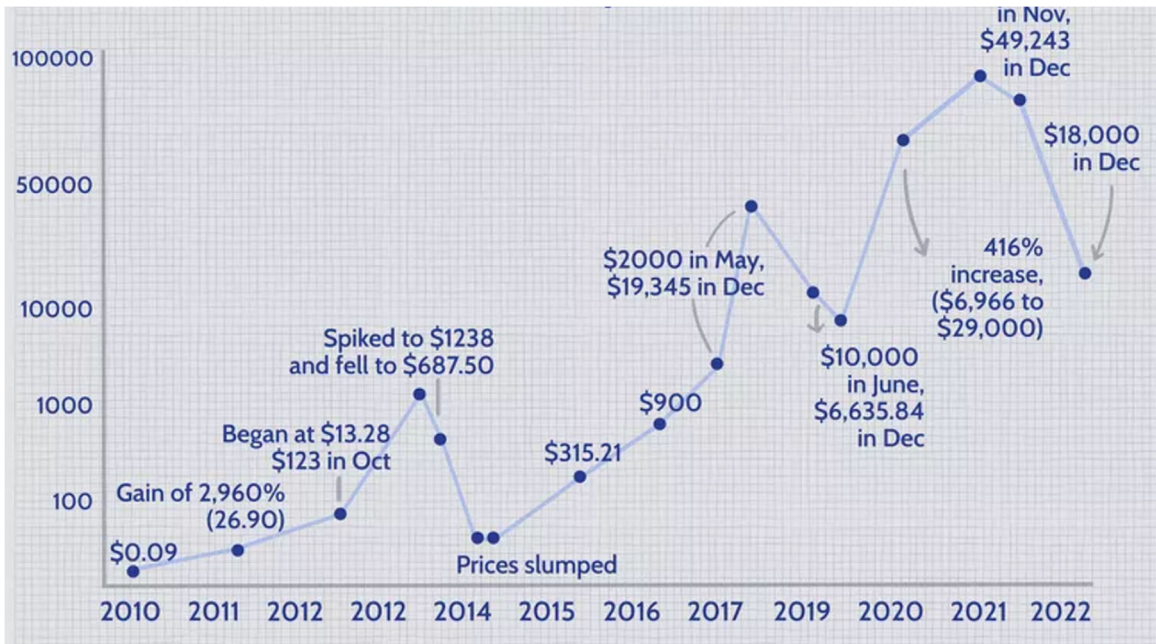


Figure 1. Price history of Bitcoin

Under the impact of the global corona virus epidemic in 2020, the price of Bitcoin rose from \$4,500 in March 2020 to \$64,000 in May 2021. Under this global turmoil, many

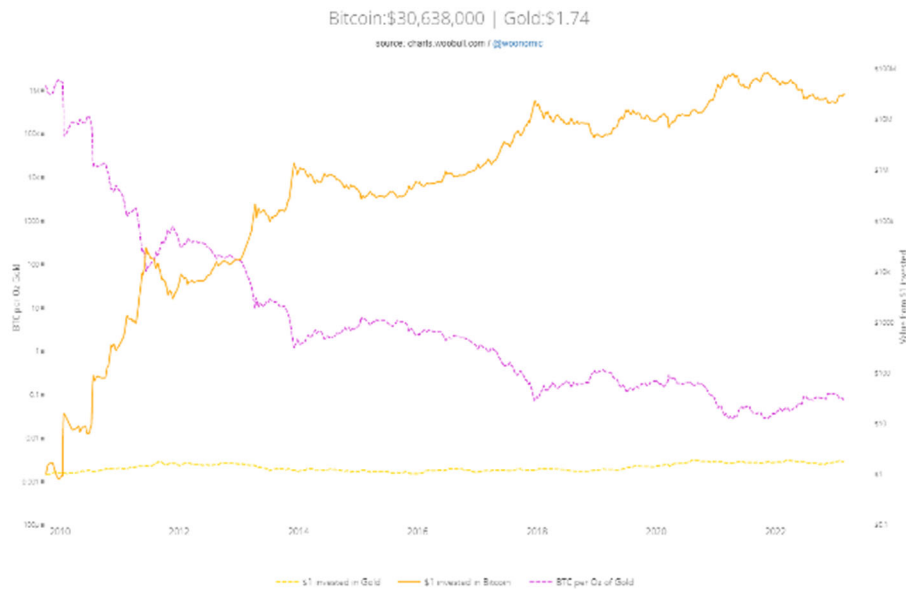
investors choose to put funds into the cryptocurrency market to reduce the impact of risks, which led to the sharp rise of Bitcoin this time.



Figure 2. The price of Bitcoin

During the major global financial disasters in the past decade, the price of Bitcoin has shown a good upward trend as figure 2. Therefore, when the economic situation is unstable, there are still many investors who are willing to transfer their assets to the digital cryptocurrency market for

safe haven, which leads to a continuous rise in the price of Bitcoin. But this only shows that risk aversion has a great impact on the price of Bitcoin, and it does not mean that Bitcoin is indeed a qualified safe-haven asset.



**Figure 3.** bitcoin vs gold over 13.4 years

The figure 3 above shows the income brought by every US dollar invested, compared with the income brought by gold. The solid yellow line is the income of Bitcoin, and the dotted yellow line below is the income brought by gold. We can clearly see that although Bitcoin fluctuates violently, it is indeed a high-yielding asset from a long-term investment perspective.

## 8. Analysis of Bitcoin's Safe-haven Attributes

Although the price of Bitcoin fluctuates dramatically, its price is on the rise after all. From September 2017 to February 27, 2023, the price also rose from \$2,700 to \$23,500.

Since the superior performance of Bitcoin in the three financial events mentioned above, in fact, from some degree, Bitcoin will be affected by traders' risk aversion when the economic situation is unstable, and A safe-haven asset accepted by the majority of traders.

Because of the facts that Bitcoin and gold have many similar properties, similar to being limited and not affected by the amount of currency issued by the government, Bitcoin is also considered "digital gold" by many bitcoin-lovers.

## 9. Causal Analysis of Risk Aversion and Bitcoin Price Fluctuation

When the risk aversion sentiment rises in the traditional financial market, investors become more cautious about investing in traditional assets such as stocks and bonds. This can lead to a flight of capital towards alternative investments like cryptocurrencies, which are viewed as a safe-haven asset due to their decentralized nature and lack of correlation with traditional financial markets. As a result, traders in the traditional financial market may transfer more assets to the digital cryptocurrency market to reduce the negative impact caused by the turbulent market.

Furthermore, in times of market uncertainty, traders in the cryptocurrency market are more willing to convert altcoins into Bitcoin, which is considered to be the most established and reliable cryptocurrency. This increased demand for Bitcoin can drive up its price and cause it to become directly proportional to the risk aversion sentiment in the broader

financial market. As a result, when the risk aversion sentiment is high, the price of Bitcoin tends to rise, and traders may continue to invest in Bitcoin as a safe-haven asset. [9]

Conversely, when the market is stable and prosperous, the risk aversion sentiment is relatively light. In such situations, traders may choose to transfer assets out of the cryptocurrency market, which may cause fluctuations in Bitcoin prices. This is because Bitcoin prices are heavily influenced by supply and demand dynamics, and any sudden shift in investor sentiment can lead to significant changes in market conditions.

Overall, the relationship between risk aversion and Bitcoin price fluctuation is complex and multifaceted, and depends on a range of factors including investor sentiment, market conditions, and technological developments. As such, it's important for investors to carefully monitor these factors and consider a range of investment strategies when investing in cryptocurrencies.

## 10. Discussion

The debate on whether Bitcoin is a safe-haven currency has been ongoing, and while it is clear that Bitcoin is affected and favored by traders' risk aversion, it still remains to be seen whether it can truly be considered a qualified safe-haven asset. There are several points of doubt that need to be addressed before we can consider Bitcoin a reliable safe-haven asset.

Firstly, it is important to note that Bitcoin has only been traded for a relatively short period of time compared to other established assets like gold and U.S. bonds. Therefore, it needs to be subjected to market conditions for a longer period of time before we can fully judge whether it is qualified as a safe-haven asset.

Secondly, there is currently no consensus on whether Bitcoin can be considered a safe-haven asset, similar to gold. While some traders view Bitcoin as a safe-haven asset, others do not. This lack of consensus makes it difficult to determine whether Bitcoin can be relied upon as a safe-haven asset in times of market turbulence.

Thirdly, there is a need for improvement in market and regulatory policies. Such improvements can help promote the stability of the cryptocurrency market and give confidence to a wider range of traders. For example, clearer regulations can

help prevent fraudulent activities and enhance investor protection, which in turn can increase trust in the cryptocurrency market.

Finally, there is a need for greater liquidity and a larger total market value of Bitcoin. Currently, the total market value of Bitcoin is only 0.6 trillion US dollars, which is relatively small compared to the market value of other established safe-haven assets such as gold and U.S. bonds. A larger market value and greater liquidity can help make Bitcoin a more attractive and reliable investment option for traders seeking safe-haven assets.

## 11. Conclusion

Although Bitcoin has performed well during these economic turbulences, this ratio must represent the good hedging properties of Bitcoin. Compared with the test of dozens or even hundreds of years of gold, Bitcoin still needs to withstand the baptism for a longer period of time. And when the digital cryptocurrency market continues to develop and improve, Bitcoin should still show a different state, for example, it may be more stable, or it may have a greater increase (when the limited amount of currency is constantly being dug out when). But now, with the rapid development of Bitcoin in the past ten years, it has been slowly affected by the risk aversion sentiment of traders, and it has shown good performance during the turbulent period. Therefore, when the consensus is getting higher and higher in the future, Bitcoin has the opportunity to become one of the safe-haven assets in the new era.

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