

THE INTERDEPENDENCE OF BITCOIN, GOLD, THE U.S. DOLLAR, AND THE STOCK MARKET IN TIME OF CRISIS

Abstract:

This article attempts to answer the following questions: to what extent are bitcoin, gold, the U.S. dollar, and the stock market interdependent? Moreover, how do the nature and direction of the effects reflect their interdependence? My research paper examines the relationship between bitcoin and traditional investment assets in times of global crisis. The methodology used weekly return covariance to measure how the co-movement between bitcoin and other financial assets (S&P500, gold, and the USD) is affected by CBOE VIX while holding bitcoin volatility (GARCH (1,1) model) and bitcoin global attention constant. The result, at a 99% confidence interval, suggests that bitcoin behaves similarly to a speculative investment asset based on its significant positive correlation with the S&P 500. Furthermore, under extreme market uncertainty, the US dollar is a better hedge for bitcoin than gold. This research paper analyzes how bitcoin is affected by investor flight to safe behavior during extreme market uncertainty. The study aims to identify potential patterns and trends between investment assets and discuss these findings' implications for investment strategies. This paper also discusses the best time for short-term investing in bitcoin, based on its volatility and potential for excess returns compared to the stock market. In addition, the author suggests the risk of including bitcoin in a portfolio using gold and dollar-denominated assets. Overall, the analysis provides insight into the benefits and risks of investing in bitcoin and may inform future research on this topic. Potential research can replicate this paper using other currencies.

1. Introduction:

With the covid-19 epidemic, Ukraine War, and a possible recession, the world has been going through more historical events in the last four years than in the last decade. Covid dramatically changes how the world functions. It accelerates digital transformation and reminds us of the fragile connection between countries during a crisis. Moreover, the Ukraine War worsened the situation of the international supply chain that had yet to recover from Covid. Energy instability is contributing to worldwide inflation and uncertainty. This paper investigates the interaction between bitcoin and the traditional financial market during extreme market uncertainties.

The debate of what bitcoin is can be simplified into two categories: a digital currency and an investment asset. Theoretically, if Bitcoin is mainly used to pay for goods and services, it will compete with fiat currencies. If, on the other hand, it is used primarily as an investment, it will compete with investment assets such as stocks, gold, or currency. The worst case scenario is when investors no longer have interest in bitcoin, and bitcoin will go into oblivion as investors move to a new speculative asset. Covid-19 allowed us to evaluate bitcoin's relationship with gold, the S&P 500, and the US dollar in times of global crisis. This paper highlight the relationship between bitcoin and the S&P 500, gold, and USD. The findings suggest that bitcoin behaves most similarly to stocks, implying that bitcoin is a speculative asset. Numerous papers have included bitcoin volatility as an obstacle to its viability, and an asset's risk characteristic profoundly concerns investors. Bitcoin's volatility GARCH(1,1) model measures bitcoin's volatility, considering recent news impact on return. Bitcoin's popularity will be used to see how bitcoin reacts when it receives attention from the public.

My study makes three contributions to the existing financial literature on bitcoin. Firstly is the timing of this paper. After 2017, various publications considered bitcoin a tech stock, a hedging tool, or a safe haven. This paper sheds light on the behavior of bitcoin in times of extreme uncertainty and financial distress to provide a better understanding of bitcoin risks and prospects. The second contribution stems from my unique approach to assessing the relationship between

bitcoin and gold, stock, and the dollar using weekly return covariance to represent co-movement between assets. Despite not being included in the traditional financial market, bitcoin behavior shows well-defined relationships with conventional financial assets such as stocks, gold, and the US dollar. Thirdly, based on bitcoin's relationships with other investment assets, appropriate investment approaches will be suggested for both short-term and long-term strategies.

The rest of this paper will be organized as follows. Section 2 is the literature review; section 3 is a pre-estimate discussion; section 4 is data and methodology; section 5 is the discussion; section 6 is an application of the findings in investment strategies; section 7 is the conclusion.

2. Literature review

2.1, Bitcoin fundamentals

In 2008, Nakamoto Satoshi introduced Bitcoin to the world, and despite the odds, Bitcoin is still thriving in 2022. The origin of Bitcoin was to be a peer-to-peer payment network that allows individuals to securely exchange products and services without relying on a single third-party intermediary (central banks, governments) to validate transactions. Each successive bitcoin transaction contains a timestamp, which is added to a public ledger (blockchain) that stores every transaction in the network (Nakamoto, 2008). The unique characteristic of bitcoin is Nakamoto's answer to the double spending problem in banks, which occurs when institutions lend out consumer money to finance waves of credit bubbles while retaining little in reserve. Bitcoin's supply limit is set at 21 million, and the supply rate is cut in half every four years to simulate gold scarcity. There will be no more inflation after the last bitcoin is discovered (Weber, 2014). Bitcoin proponents believe bitcoin will be the solution to the centralized control of money transactions by financial organizations. Low transaction costs, peer-to-peer design, global coverage, anti-inflation feature, and transaction secrecy are among the advantages of payment systems.

2.2, Bitcoin weakness as new money

Shortcomings of bitcoin as a medium of exchange, store of value, and unit of account has led to doubt about its viability. Previous researches are pessimistic about bitcoin's feasibility due to its extreme volatility, lack of regulation, lack of liquidity, technological barriers, and lack of intrinsic value (Baur & Dimpfl, 2021; Yermack, 2013; Bonelli, 2020; Cheah & Fry, 2015; Weber, 2014). Bitcoin's weakness as a means of exchange stems from its isolation from the banking and payment systems, its incompatibility with credit markets, and the technological barrier to acquiring bitcoin (Yermack, 2013). Bitcoin's absence of payment-related services, along with significant exchange rate risk in the short term, has limited its usage as a medium of exchange (Weber, 2014; Bonelli, 2020; Baur & Dimpfl, 2021). Only through trust do individuals and organizations accord bitcoin value as a unit of currency and accept it as payment for products or services. Because of Bitcoin's extraordinary volatility, determining the true value of a specific good measured in Bitcoin is difficult or impossible (Baur & Dimpfl, 2021). Cheah and Fry (2015) established that bitcoin's fundamental value is zero in the absence of a commodity or an organization backing it. The critical distinction between fiat currencies and Bitcoin is that the government backs fiat currencies, whereas Bitcoin is not (Goodhart, 1998). Bitcoin's supply is capped at 21 million units, which raises the problem of expanding an economy using bitcoin as a currency. However, through network voting, if 51% of bitcoin holders vote to produce more, more bitcoins will come into supply. The case of El Salvador will be intriguing to see outcomes in the long term.

2.3, Bitcoin emerges as an investment asset

Assets do not have the same characteristics as currencies. Instead, assets are typically held for investment purposes or to store wealth. Examples of assets include stocks, bonds, real estate, and precious metals. Bitcoin's correlation with investment assets supports bitcoin's value (Bonelli, 2020). Several researchers regard bitcoin as a speculative asset or a risk-management tool by arguing that the law of demand and supply may justify the worth of bitcoin (Baur & Dimpfl et al., 2018; Baur, Hong et al., 2018; Baur & Dimpfl, 2021; Bonelli, 2020). The notion that bitcoin is

"digital gold" derives from its design to mirror gold's limited quantity, decreasing supply rate, and lack of government support (Li et al., 2018). If the current official money is solely based on trust and force, the loss of trust by a sufficient number of community members could result in the adoption of a new currency (Weber, 2014). Investors have a negative expectation of government-backed currencies during times of crisis, high inflation, or political uncertainty, prompting a transition of money to bitcoin as a hedge against inflation (Li et al., 2018). In this instance, Bitcoin is a safe haven for those who do not trust governments, central banks, or fiat currencies (Bonelli, 2020). According to Smales (2019), such a comparison is only possible if we have the opportunity to examine the interaction between bitcoin and gold during times of global crises. When shifting funds between Bitcoin and a financial instrument, Stensås et al. (2019) urge investors to be aware of Bitcoin's lack of liquidity. Bitcoin is considered a speculative asset because there is no guarantee of repayment at any point. Bitcoin's failure to perform as a currency or "digital gold," along with excessive volatility and excess return, makes bitcoin best resemble a speculative asset (Yermack, 2013; Kristoufek, 2013; Bouoiyour et al., 2015; Weber, 2014; Fry & Cheah, 2016; Li et al., 2018; Baur, Dimpfl, et al., 2018; Baur, Hong, et al., 2018). Nguyen (2021) found a significant positive correlation between bitcoin and the S&P 500 in times of high uncertainty.

According to Thomas (2015) and Sawar (2016), a surge in the VIX results in "flights to safety." Thomas (2015) suggests that the incentive for flight-to-safety asset reallocations stems from spikes in the VIX as opposed to changes in non-stock volatility. Bitcoin volatility is crucial when considering bitcoin as an investment or currency (Bouri et al., 2017; Katsiampa, 2017; Ardia et al., 2019). According to Byström and Krygier (2018) and Kristoufek (2013), search pressure on search engines such as Google significantly affects bitcoin's return.

3. Pre-discussion

This paper examines the interaction of bitcoin with gold, the S&P 500, and the US dollar under flights to safe theory. If bitcoin reacts simultaneously with other assets during extreme market uncertainty, their relationship will be more significant.

If bitcoin is primarily used as a speculative asset, its covariance with the S&P 500 will be the strongest compared to gold and the dollar. If so, bitcoin's market will correspond to the S&P 500 market cycle. A market cycle has four stages: accumulation, uptrend or mark-up, distribution, and downtrend or markdown. To compensate for its high volatility, risk-averse investors will expect bitcoin to have a higher return than the S&P 500. Bitcoin reached its most recent bottom at the end of 2018 and started a new market cycle in 2019. Bitcoin is in the last stage of its new cycle, and it is interesting to look back at how bitcoin performs compared to the S&P 500.

Bitcoin's possibility of acting as hedging for the asset downturn will be put to the test in Covid-19. According to the flights to safety argument, risk-averse investors will shift their portfolios away from riskier assets and toward safer assets during periods of instability. This safety-first strategy attempts cross-market hedging. Gold is traditionally a safe haven asset because of its low correlation with equities during crises. Amidst growing political uncertainty over the world during covid, foreign investors have flocked to the safety of the United States dollar, driving USD value higher than any other currency. If bitcoin best resembles gold, bitcoin can be a safe haven for investors during extreme market uncertainty. In case of bitcoin tracks the movement of the US dollar, we can suggest bitcoin's hedging ability against global political uncertainty. I will discuss how to invest in and hedge against bitcoin depending on the outcome.

4, Data and methodology

Assets weekly closing price and CBOE VIX are collected on yahoo finance; bitcoin volatility is measured using Garch(1,1) model collected on V-lab by NYU Stern; bitcoin popularity is collected by using the keyword “bitcoin” on google trends. This paper uses data from the last five years, from October 2017 to the end of September 2022.

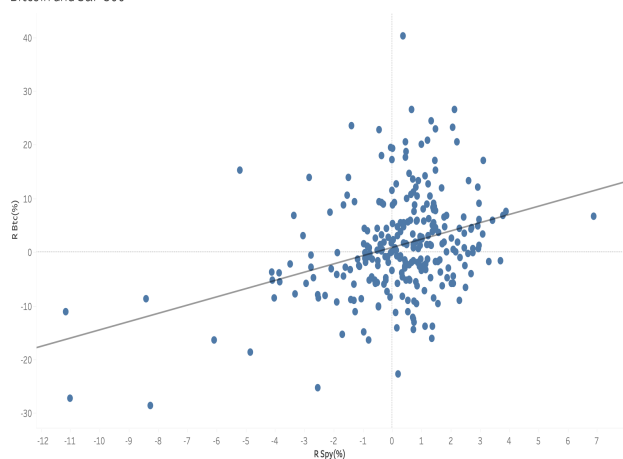
Assets' return = ((current week closing price - last week closing price) / last week closing price) * 100(%). Return (%) allows me to examine asset behavior on the same scale rather than using a dollar base.

- btc: bitcoin weekly closing price (\$)
- spy: SPY weekly closing price (\$)
- gold: gold weekly closing price (\$)
- usd: DXY weekly closing price (\$)
- r_btc: weekly return of bitcoin (%)
- r_spy: weekly return of S&P 500 (%)
- r_gld: weekly return of gold (%)
- r_usd: weekly return of the dollar (%)

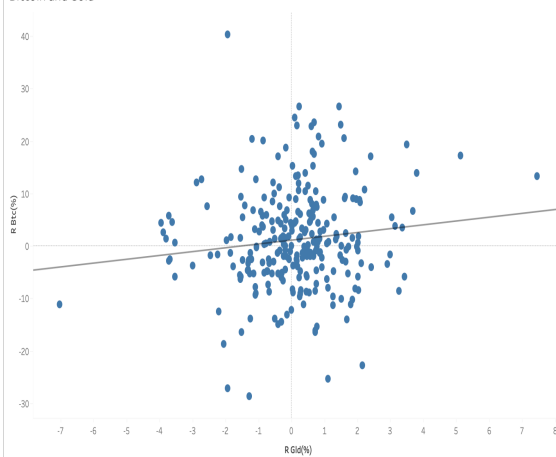
Return summary statistics

	Mean	SD	Median	Kurtosis	Skewness
r btc	1.18	9.494	0.479	4.372	.353
r spy	.22	2.086	0.527	10.43	-1.854
r gld	.119	1.572	0.193	6.178	-.102
r usd	.055	.691	0.055	7.221	.824

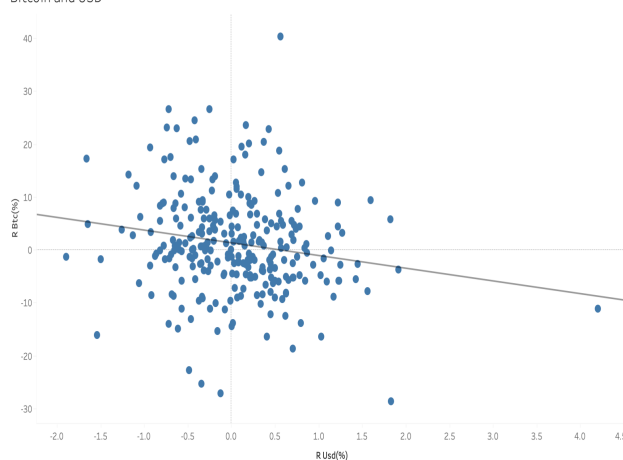
Bitcoin and S&P 500



Bitcoin and Gold



Bitcoin and USD



Pairwise correlations

Covid = 0

Variables	(1)	(2)	(3)	(4)
(1) r_{btc}	1.000			
(2) r_{spy}	0.285* (0.000)	1.000		
(3) r_{gld}	0.053 (0.413)	0.098 (0.128)	1.000	
(4) r_{usd}	-0.164* (0.011)	-0.391* (0.000)	-0.486* (0.000)	1.000

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Covid = 1

Variables	(1)	(2)	(3)	(4)
(1) r_{btc}	1.000			
(2) r_{spy}	0.677* (0.000)	1.000		
(3) r_{gld}	0.496* (0.005)	0.539* (0.002)	1.000	
(4) r_{usd}	-0.261 (0.164)	-0.436* (0.016)	-0.516* (0.004)	1.000

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

I compute covariance using 12 weeks up to the current week.

$$\text{Covariance} = (X - E(X)) * (Y - E(Y))$$

- Cov_bspv: covariance of bitcoin and SPY trust (representing the S&P 500)
- Cov_bgld: covariance of bitcoin and GLD ticker (represent for gold)
- Cov_busd: covariance of bitcoin and DXY currency index (represent for US dollar strength compare to a basket of fiat currencies)

Covid: time dummy variable, include time from January 2020 to July 2020. The S&P 500 recovered to pre-covid level in August 2020.

Summary statistics

Covid = 0

	N	Mean	SD	Skewness	Kurtosis
cov bspv	232	4.084	7.665	1.754	6.174
cov bgld	232	.911	4.493	-.574	3.967
cov busd	232	-.792	1.946	.424	4.898

Covid = 1

	N	Mean	SD	Skewness	Kurtosis
cov bspv	30	22.039	24.310	.418	1.316
cov bgld	30	8.739	10.049	.368	1.386
cov busd	30	-1.309	2.378	-.343	2.014

I use the log nature of bitcoin volatility to measure the change in bitcoin volatility.

- btc_garch: bitcoin volatility measured by Garch(1,1) model

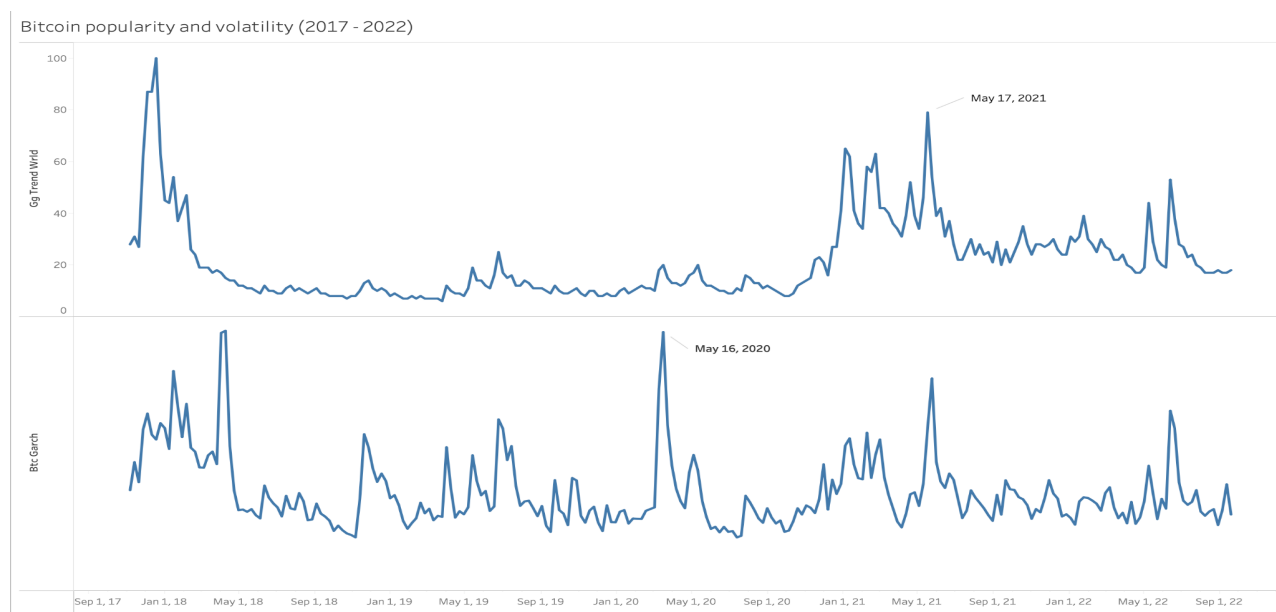
ln_bgarch: log natural of btc_garch

VIX: CBOE VIX measures market attitude toward the market in the next 30-days, representing investor's confidence in the short term.

gg_trend_wrld: keyword "bitcoin" on google trends

Matrix of correlations

Variables	(1)	(2)
(1) btc_garch	1.000	
(2) gg_trend_wrld	0.521	1.000



Bitcoin popularity and volatility have a statistically significant positive correlation. However, during the summer of 2020, there was a spike in bitcoin volatility, but the public had little attention to bitcoin. I suspect the underlying reason for bitcoin volatility primarily comes from investors reallocating their capital from risky assets.

Regressions:

$$cov_bspy = \beta_0 + \beta_1 vix + \beta_2 vix * covid + \beta_3 gg_trend_wrld + u$$

$$cov_bgld = \beta_0 + \beta_1 vix + \beta_2 vix * covid + \beta_3 gg_trend_wrld + u$$

$$cov_busd = \beta_0 + \beta_1 vix + \beta_2 vix * covid + \beta_3 gg_trend_wrld + u$$

5, Results and Discussion

Table: Covariance Regressions

	cov_bspv	cov_bgld	cov_busd
vix	0.589*** (0.0970)	0.245*** (0.0529)	-0.135*** (0.0187)
c.vix#c.covid	0.334*** (0.0719)	0.119*** (0.0392)	0.0494*** (0.0138)
ln_bgarch	4.037* (2.263)	-0.101 (1.233)	1.998*** (0.435)
gg_trend_wrld	0.0241 (0.0461)	-0.0649** (0.0251)	0.00627 (0.00887)
_cons	-24.38*** (8.921)	-2.012 (4.861)	-6.725*** (1.715)
<i>N</i>	255	255	255
<i>R</i> ²	0.461	0.325	0.250
adj. <i>R</i> ²	0.453	0.314	0.238

Standard errors in parentheses

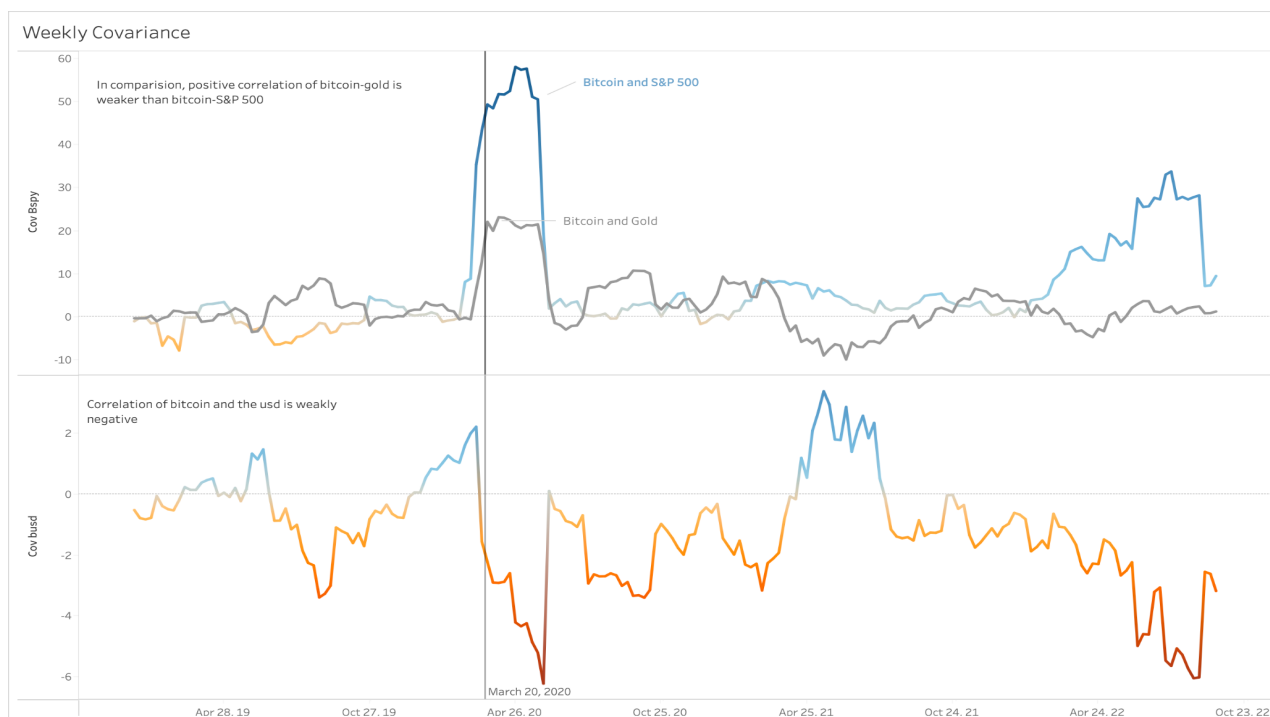
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

On average, the correlation between bitcoin and SPY (an exchange-traded fund that tracks the performance of the S&P 500 index) is the most significant. The simultaneous reactions during

extreme uncertainty suggest that bitcoin is affected by investors' flight to safe strategy. The finding that the relationship between bitcoin and SPY is the strongest during covid suggests that bitcoin is more closely tied to speculative assets like stocks than gold or the dollar. These findings support the view that bitcoin is primarily used as a speculative asset rather than as a diversifier, safe haven, or hedging tool.

Baur and Lucey (2010) define a diversifier as an asset positively correlated with another asset or portfolio on average. Baur and McDermott (2010) define a strong hedge as an asset negatively correlated with another asset or portfolio on average, and a strong safe haven is defined as an asset negatively correlated with another asset or portfolio in certain periods only.

Investing in gold and the US dollar can help manage the risk of a portfolio that holds bitcoin. Gold can diversify the portfolio because it doesn't have a strong relationship with bitcoin. The dollar can also act as a hedge against potential losses in the value of bitcoin. However, during the Covid-19 pandemic, the relationship between bitcoin and gold and the dollar became stronger, which reduced the effectiveness of gold and the dollar as risk management tools for a portfolio holding bitcoin. During times of extreme market uncertainty, these assets may not be as effective at protecting against risk in a bitcoin portfolio



The findings suggest that the volatility of bitcoin strengthens its correlation with stocks while weakening its correlation with the dollar, supporting the view that bitcoin is a speculative asset. The increased correlation between bitcoin and stocks suggests that bitcoin is more closely tied to the performance of stocks than to the performance of other assets like the dollar or gold. When bitcoin is more volatile, the dollar's ability to hedge gets weaker.

When the correlation between bitcoin and gold is lower, gold provides better diversification benefits for a portfolio holding bitcoin. As a result, the increased attention and interest in bitcoin may make gold a more effective diversifier for a portfolio holding bitcoin.

6. Extensions

6.1, Bitcoin as a speculative asset, diversified by gold and hedged by the dollar

Bitcoin is a relatively new asset, with a market capitalization at its peak of around \$1 trillion compared to the \$40.36 trillion of the S&P 500. The S & P 500 is a safer investment than bitcoin and represents the economy's overall health. The movement of the S&P 500 is more likely to impact the return on bitcoin than the other way around. This paper will use simple OLS regression analysis to investigate the extent to which the S&P 500 influences the return on bitcoin. I will also examine whether bitcoin, as a speculative asset, can predict the return on the S&P 500, gold, and the US dollar based on the relationship suggested in section 5.

- Uptrend: time dummy variables, including time from August 2020 (after the market recovered from the covid negative shock) until December 2021 (when the stock market reaches its peak).
- Downtrend: time dummy variable, including time from January 2022 until September 2022
- lag_r_btc: bitcoin 1 week lag return (%)
- lag_r_spy: SPY 1 week lag return (%)
- lag_r_gld: gold 1 week lag return (%)

- lag_r_usd: USD 1 week lag return (%)

Regressions:

$$r_spy_t = \beta_0 + \beta_1 \text{lag_r_spy} + \beta_2 r_btc * \text{uptrend} + \beta_3 * r_btc * \text{downtrend} + \beta_4 * \text{VIX} + u$$

$$r_gld_t = \beta_0 + \beta_1 \text{lag_r_gld} + \beta_2 r_btc * \text{uptrend} + \beta_3 * r_btc * \text{downtrend} + \beta_4 * \text{VIX} + u$$

$$r_usd_t = \beta_0 + \beta_1 \text{lag_r_usd} + \beta_2 r_btc * \text{uptrend} + \beta_3 * r_btc * \text{downtrend} + \beta_4 * \text{VIX} + u$$

$$r_btc_t = \beta_0 + \beta_1 \text{lag_r_btc} + \beta_2 r_btc * \text{uptrend} + \beta_3 * r_btc * \text{downtrend} + \beta_4 * \text{VIX} + u$$

Table 2: Assets' Return Regressions

	r_spy	r_gld	r_usd	r_btc
lag_r_spy	0.167*** (0.0556)			
c.r_btc#c.uptrend	0.0441** (0.0222)	-0.00411 (0.0197)	-0.00941 (0.00821)	
c.r_btc#c.downtrend	0.267*** (0.0375)	0.0297 (0.0332)	-0.0520*** (0.0139)	
vix	-0.0557*** (0.0136)	-0.00371 (0.0114)	0.0100** (0.00476)	-0.0455 (0.0633)
lag_r_gld		0.0716 (0.0611)		
lag_r_usd			0.159*** (0.0587)	
lag_r_btc				0.302*** (0.0565)
c.r_spy#c.uptrend				1.196* (0.673)
c.r_spy#c.downtrend				2.278*** (0.516)

_cons	1.349***	0.196	-0.163	1.723
	(0.298)	(0.247)	(0.103)	(1.392)
<i>N</i>	272	272	272	272
<i>R</i> ²	0.283	0.009	0.109	0.180
adj. <i>R</i> ²	0.273	-0.006	0.095	0.168

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

The analysis findings are consistent with the relationship between bitcoin, the S&P 500, gold, and the US dollar that was identified in section 5. In both uptrends and downtrends, the return on bitcoin and the S&P 500 are significantly positively correlated. While both bitcoin and the S&P 500 have statistically significant predictive power on each other, the S&P 500 has a more substantial overall effect on bitcoin. Additionally, the influence of the S&P 500 on bitcoin is more substantial during downtrends, indicating that bitcoin is more vulnerable to market uncertainty when the S&P 500 is performing poorly.

The analysis has shown that there is no significant causal relationship between the return of bitcoin and gold, which means that including gold in a portfolio could be a good way to diversify bitcoin investments. On the other hand, this study has found that during downtrends, there is a significant negative correlation between bitcoin and the US dollar, implying that the dollar might be a good choice as a hedge against bitcoin during bear markets. Based on these findings, we can recommend investment strategies that take advantage of bitcoin's volatility and help to manage risk.

6.2, Short-term and long-term investing

There is a distinction between trading and investing. To invest in something, you assess its value, compare its price, and then buy if the price is less than its value or sell if it is greater. The trading process is less complex than other forms of economic speculation because it only requires you to assign a value to an asset, predict whether or not that value will rise or fall during the next period, and then place your bet. While it is possible to be successful at either, the skill sets and tool

kits used for investing and trading are distinct, and what makes a good investor may differ from what makes a good trader.

6.2.1, Short-term traders

Bitcoin's high price volatility and potential for excess returns are well-known characteristics of the cryptocurrency. However, given the significant volatility that investors are exposed to when investing in bitcoin, it is reasonable to ask whether the returns are "worth it." One way to assess the risk/reward tradeoff of investing in bitcoin is to use the Sharpe ratio, which measures the return on an investment relative to the amount of volatility. Sharpe ratio allows us to compare bitcoin's risk/reward ratios to those of more conventional investment assets.

The risk-free rate, used as a benchmark in the Sharpe ratio calculation, can be represented by the average 30-day US Treasury bill yield over each holding period. The chart below shows each date's Sharpe ratio for owning bitcoin over the past year.



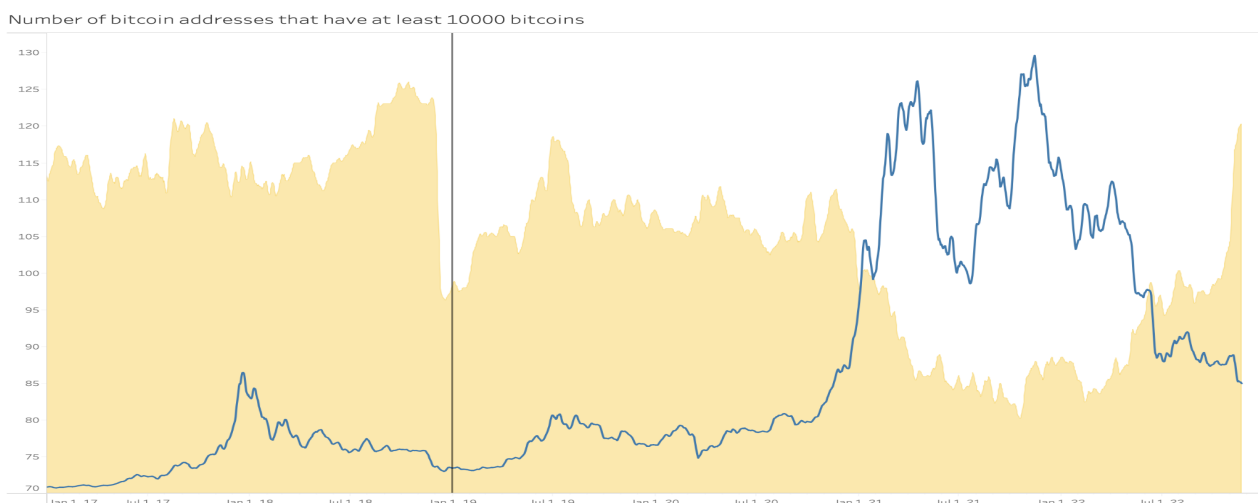
During the bull market from 2019 until the end of 2021, bitcoin outperformed the stock market index, gold, and Treasury bonds. The stock market reached a new all-time high in 2021

before entering a bear market. Since the start of 2022, bitcoin has become the least attractive investment.

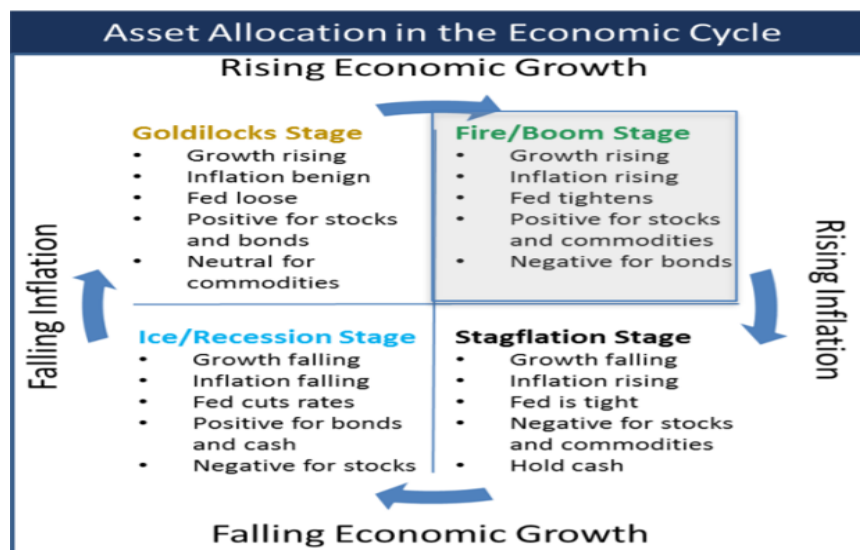
During a stock market uptrend, being bullish on bitcoin can offer investors higher returns than the S&P 500. However, during a stock market downtrend, bitcoin is likely to be the worst asset to hold. Traders can take advantage of bitcoin's higher sensitivity to the performance of the S&P 500 during downtrends by short-selling. Since the S&P 500 is negatively correlated with the VIX, investors can actively short-sell bitcoin when there is growing market uncertainty in a bear market. This strategy can provide an opportunity to profit from the vulnerability of bitcoin during the market downtrend.

6.2.2, Behavior of long-term investors in the stock market and bitcoin market

Morey and Gottesman (2022) found that investors with high perceived and actual knowledge about their investments are more likely to plan to buy after a market crash using data from FINRA's 2018 Investor Survey. I saw a similar strategy used by investors with bitcoin addresses that had at least 10000 bitcoins during the 2022 bear market. As of December 2022, even at the lowest price, 10000 bitcoins are worth around 160 million dollars. Since bitcoin is a risky asset, it's likely that these investors only have a small percentage of their portfolio, maybe even less than 5%, invested in bitcoin. This suggests that the portfolio managers have high investment management skills and a good understanding of the economy.



After bitcoin hit its low point in late 2018, bitcoin accumulation increased. During the recent bitcoin rally, we noticed that the number of institutional addresses dropped, which suggests that these investors are selling while the price is going up, not at the highest point. Recently, during bitcoin's bear market in 2022, we saw the number of addresses holding large amounts of bitcoin start to grow again. The behavior of this group is similar to how traditional, rational investors act. The bitcoin market is no longer made up solely of speculative traders, and it is starting to draw in more experienced investors.



The goldilocks stage is when the economy is recovering from a recession. During this phase, the Federal Reserve usually lowers interest rates to help the economy recover. Some investors may consider buying bitcoin during this stage because they expect the market to grow soon.

The fire/boom stage is when the economy grows quickly, and free capital is looking for investment opportunities. Investors willing to take risks may be attracted to bitcoin because it can be risky but also has the potential for high rewards. Speculating on bitcoin can lead to big price swings and extra returns. During this stage, investors who owned bitcoin might gradually sell some of their holdings to make a profit.

The stagflation stage is when the market is at its highest point and starts to go down. Investors should sell any remaining bitcoin because the potential losses from holding the asset are the greatest out of all investment assets.

The ice/recession stage is when the economy is slowing down. Investors may consider buying bitcoin during this phase but should be aware that it can be riskier to hold bitcoin for longer.

7, Conclusion

Bitcoin was initially intended to be a peer-to-peer electronic payment system, but it has since gained popularity as a speculative asset. The significant correlation between the price of bitcoin and the performance of stocks supports this argument. Furthermore, the high risk of investing in bitcoin may be compensated by its excess returns compared to the S&P 500. However, this also makes it the riskiest during times of economic downturn or market uncertainty. The findings suggest that bitcoin should be considered primarily as a speculative asset rather than as a portfolio diversifier, safe haven, or hedging tool.

A portfolio that includes bitcoin can use gold as a diversifier to reduce the portfolio's overall risk by investing in a different asset class with a low correlation with bitcoin. This strategy can help to balance out the portfolio and make it more resilient to market fluctuations or other risks that may affect the value of bitcoin.

Using the dollar as a hedge against bitcoin means investing in assets or instruments denominated in dollars that can be used to offset potential losses in the value of bitcoin. For example, you could invest in dollar-denominated bonds or other fixed-income securities that are less volatile than bitcoin and may provide a steady stream of income or returns. Bonds can reduce the portfolio's overall risk by providing stability and diversification.

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