

THE EFFECT OF THE FEDERAL RESERVE INTEREST RATE, UNITED STATES MONEY SUPPLY, GLOBAL GOLD PRICES, AND THE U.S. DOLLAR INDEX ON BITCOIN PRICES FOR THE PERIOD 2017–2026

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Abstract

This study aims to examine the effect of the Federal Reserve interest rate, United States money supply, global gold prices, and U.S. dollar indeks on Bitcoin prices for the period 2017–2026. This study employs an associative research design with a quantitative approach. The data used are secondary data obtained from Federal Reserve Economic Data (FRED) and investing.com. The observation period in this study covers December 2017 to March 2026. The analysis technique used is the Autoregressive Distributed Lag (ARDL) model to analyze both short-run and long-run relationships. The results show that in the short run, the Federal Reserve interest rate and global gold prices have a negative and significant effect on Bitcoin Price. But in the long run, the Federal Reserve interest rate and United States money supply have a positive and significant effect on Bitcoin price. Conversely, the global gold prices have a negative but insignificant effect, while the U.S. dollar index has a negative and significant effect on the Bitcoin price.

Keywords: Federal Reserve Interest Rate, United States Money Supply, Global Gold Prices, U.S Dollar Index, Bitcoin Prices

INTRODUCTION

Advances in digital technology have transformed the global financial system, particularly through the emergence of cryptocurrencies, with Bitcoin becoming the largest and most dominant crypto asset. Bitcoin was the first cryptocurrency, introduced by Satoshi Nakamoto in 2009 as a decentralized electronic cash system based on blockchain technology following the publication of Bitcoin: A Peer-to-Peer Electronic Cash System in 2008 (Ramadhani, 2022). Its decentralized nature enables peer-to-peer transactions without the involvement of central banks or financial institutions as intermediaries, while blockchain technology ensures transparency and security in transaction records (Afrizal et al., 2021). Over time, Bitcoin has evolved beyond its original role as a medium of exchange into a financial instrument widely used for investment and speculative purposes (Hertanto et al., 2024).

Table 1. Annual Bitcoin Price Fluctuations, 2017–2026

Period	Bitcoin Prices (USD)		Percentage change
	Start	End	
Des 2017 – Des 2018	13.850,40	3.709,40	-73,22%
Jan 2019 – Des 2019	3.437,20	7.196,40	109,37%
Jan 2020 – Des 2020	9.349,10	28.949,40	209,65%
Jan 2021 – Des 2021	33.108,10	46.219,50	39,60%
Jan 2022 – Des 2022	38.498,60	16.537,40	-57,04%
Jan 2023 – Des 2023	23.125,10	42.272,50	82,79%
Jan 2024 – Des 2024	42.580,50	93.557,20	119,72%
Jan 2025 – Des 2025	94.536,10	87.612,70	-7,32%
Jan 2026 – Mar 2026	78.726,50	68.268,30	-13,28

Bitcoin appreciated by a cumulative 392.90% from December 2017 to March 2026. As presented in Table 1, Bitcoin prices exhibited substantial fluctuations, ranging from a 73.22% correction in 2018 to an increase of more than 200% in 2020. Although these pronounced price movements reflect considerable market uncertainty and risk, Bitcoin has maintained a long-term growth trajectory. The potential for significant price appreciation and high returns has contributed to the growing adoption of Bitcoin as an investment asset worldwide, including in Indonesia. Since its introduction in 2009, the rapid expansion of Bitcoin users, supported by its position as the largest cryptocurrency by market capitalization, has attracted increasing attention from investors and policymakers (Wahyuni et al., 2024).

As of January 2026, Bitcoin, trading at approximately USD 92,000, ranked as the eighth-largest asset in the world by market capitalization, surpassing Meta (Facebook), which ranked tenth (CompaniesMarketCap.com, 2026). This substantial market capitalization reflects the increasing adoption of Bitcoin among both retail and institutional investors, which has contributed to its long-term value appreciation. Bitcoin adoption accelerated following the approval of spot Bitcoin exchange-traded funds (ETFs) in the United States in January 2024. The introduction of these instruments attracted substantial institutional capital inflows, reaching approximately USD 28 billion within one week of trading commencement (Pluang, 2024). Furthermore, as of February 2026, Bitcoin ownership was concentrated among major institutions, including Coinbase, BlackRock, Binance, Fidelity Custody, Strategy (MicroStrategy), Grayscale, and the U.S. government, the largest Bitcoin holder, with each entity controlling more than 1% of the circulating supply and collectively accounting for approximately 19% of total Bitcoin holdings (ArkhamIntelligence.com, 2026). This concentration of institutional ownership suggests that Bitcoin price formation is no longer driven solely by retail investor activity but is increasingly shaped by portfolio allocation decisions, risk management considerations, and global capital flows. Consequently, the growing institutionalization of the cryptocurrency market has strengthened its integration with the global financial system, making Bitcoin increasingly sensitive to macroeconomic conditions (S&P Global, 2023).

Over time, the cryptocurrency market has increasingly exhibited characteristics similar to those of traditional financial markets (Wu et al., 2025). From the perspective of the Efficient Market Hypothesis (EMH) proposed by Fama (1970), an efficient market is one in which asset prices fully reflect all available information. Market efficiency is generally classified into three forms: weak-form, semi-strong-form, and strong-form efficiency. Bitcoin is commonly considered to exhibit weak-form efficiency, whereby current prices incorporate historical information such as past prices and trading volumes (Hong, 2025). Consequently, historical information alone is insufficient to explain Bitcoin price movements, highlighting the importance of additional signals such as macroeconomic conditions, regulatory developments, institutional capital flows, and market sentiment. As Bitcoin becomes increasingly integrated into the global financial system, macroeconomic variables have gained prominence as determinants of its price dynamics. This study focuses on U.S. macroeconomic variables, given the dominant role of the U.S. dollar as the world's reserve currency in international financial markets and Bitcoin transactions. Moreover, Federal Reserve policies, particularly changes in interest rates and money supply, influence global liquidity and investment preferences, including demand for crypto assets. Global variables such as gold prices are also considered relevant, as they reflect periods of heightened economic uncertainty.

Liquidity Preference Theory explains the dynamic relationship among interest rates, money demand, and monetary policy (Ellsworth, 1936). In the context of Bitcoin, this theory suggests that changes in interest rates and money supply influence investor behavior and asset valuation. Higher interest rates increase the returns on conventional financial assets and raise the opportunity cost of holding speculative assets such as Bitcoin, encouraging investors to reallocate their portfolios toward more liquid and lower-risk instruments. Conversely, expansionary monetary policies characterized by lower interest rates and an increase in money supply reduce investors' preference for holding cash and stimulate demand for alternative assets with higher return potential, including Bitcoin. Previous studies generally find that the Federal Reserve interest rate is negatively associated with Bitcoin prices (Ramadhani, 2022; Wahyuni et al., 2024; Hardiyanti, 2024), whereas the U.S. money supply (M2) tends to exert a positive influence on

Bitcoin prices (Patacca & Focardi, 2021; Kokabian, 2025). Furthermore, Arbitrage Pricing Theory (APT) posits that asset prices are determined by multiple systematic risk factors arising from macroeconomic conditions (Ross, 1976). As Bitcoin becomes increasingly integrated into the global financial system, changes in macroeconomic variables may alter investor risk perceptions and preferences, thereby affecting Bitcoin prices. Prior empirical evidence indicates that the Federal Reserve interest rate, U.S. money supply (M2), and global gold prices significantly influence Bitcoin prices, while the effect of the U.S. Dollar Index (DXY) remains inconclusive.

The observation period from December 2017 to March 2026 was selected to capture recent developments and key events in the evolution of the Bitcoin market. This period encompasses several important phases in the Bitcoin market cycle, including the Federal Reserve's policy normalization, the unprecedented monetary expansion during the COVID-19 pandemic characterized by abundant liquidity in the United States, and the subsequent phase of aggressive monetary tightening. It also covers substantial fluctuations in global financial indicators, including gold prices as a safe-haven asset and the U.S. Dollar Index (DXY) as a measure of U.S. dollar strength. Against this backdrop and in light of the existing research gaps, this study aims to examine the effects of the Federal Reserve interest rate, the U.S. money supply (M2), global gold prices, and the U.S. Dollar Index on Bitcoin prices over the 2017–2026 period, thereby providing further insights into the relationship between macroeconomic conditions and Bitcoin price dynamics.

LITERATURE REVIEW

2.1 Federal Reserve Interest Rate

Interest rates represent the cost of borrowing or the price paid for the use of funds (Mishkin, 2007). The Federal Reserve Interest Rate is a monetary policy instrument employed by the U.S. Federal Reserve to influence liquidity conditions, economic activity, and investment decisions. Changes in interest rates affect the cost of capital, returns on financial assets, and investors' portfolio allocation preferences. According to Liquidity Preference Theory, higher interest rates increase the attractiveness of conventional financial instruments, whereas lower interest rates may stimulate investment in riskier assets.

2.2 United States Money Supply

The U.S. money supply reflects the level of liquidity available in the economy and serves as an important indicator of monetary conditions. Common measures of the money supply include the monetary base, M1, and M2, with M2 comprising M1, savings deposits, time deposits, and retail money market fund balances (Federal Reserve, 2026). Wahyuni et al. (2024) argue that expansionary monetary policies that increase the money supply may encourage investors to allocate funds to alternative assets such as Bitcoin as a hedge against inflation and currency depreciation. This is consistent with Liquidity Preference Theory, which suggests that abundant liquidity and low interest rates reduce the preference for holding cash and increase demand for investment assets.

2.3 Global Gold Prices

Gold is a precious metal that has historically served as a medium of exchange, a store of value, and an investment asset. Its resistance to inflation, limited supply, and broad acceptance in global markets have established gold as one of the most trusted financial assets among investors. Gold is widely recognized as a safe-haven asset, whose value tends to remain stable during periods of economic uncertainty and financial market volatility (Laduni, 2022). Wahyuni et al. (2024) suggest that Bitcoin has increasingly been viewed as an alternative hedging asset, implying that changes in gold prices may influence investors' portfolio diversification decisions between gold and Bitcoin.

2.4 U.S Dollar Index

The U.S. Dollar Index (DXY) measures the value of the U.S. dollar against a basket of six major currencies: the euro (EUR), Japanese yen (JPY), British pound (GBP), Canadian dollar (CAD), Swiss franc (CHF), and Swedish krona (SEK) (Statista, 2025). Given the dominant role of the U.S. dollar in the international monetary system, the DXY is widely used as an indicator of global economic conditions and market sentiment. An appreciation in the DXY reflects a strengthening U.S. dollar, which may exert

downward pressure on U.S. dollar-denominated assets, whereas a weaker dollar can encourage capital flows toward alternative assets, including Bitcoin.

2.5 Bitcoin Prices

Bitcoin is the first cryptocurrency and the largest crypto asset by market capitalization, actively traded across global cryptocurrency exchanges. As a decentralized asset, Bitcoin's price is entirely determined by market supply and demand mechanisms, making it highly sensitive to changes in economic conditions, policies, investor sentiment, and developments in blockchain technology adoption. Bitcoin's price can be viewed as a reflection of shifts in investor expectations regarding various systematic risk factors stemming from global macroeconomic conditions, resulting in volatile and dynamic price characteristics (Agung et al., 2023).

2.6 Conceptual framework

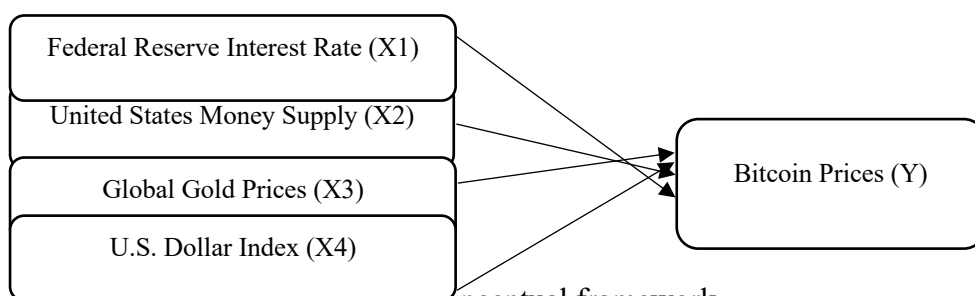


Figure 1. Conceptual framework

2.7 Hypotheses

H1: The Federal Reserve interest rate has a negative and significant effect on Bitcoin prices

H2: The United States money supply has a positive and significant effect on Bitcoin prices

H3: Global gold prices have a positive and significant effect on Bitcoin prices

H4: The U.S. Dollar Index has a negative and significant effect on Bitcoin prices

METHOD

This study adopts a quantitative approach using secondary monthly time-series data. The population comprises all available observations for the variables examined from August 2010 to March 2026, corresponding to the availability of Bitcoin price data. The sample was selected using purposive sampling and consists of monthly observations on Bitcoin prices, the Federal Reserve interest rate, the U.S. money supply (M2), global gold prices, and the U.S. Dollar Index (DXY) from December 2017 to March 2026, yielding a total of 100 observations. To mitigate heteroscedasticity and facilitate the interpretation of variable relationships, Bitcoin prices, the U.S. money supply (M2), global gold prices, and the U.S. Dollar Index (DXY) were transformed into natural logarithms. The data were collected from credible secondary sources, with information on the Federal Reserve interest rate and the U.S. money supply (M2) obtained from the Federal Reserve Economic Data (FRED), while Bitcoin prices, global gold prices, and the U.S. Dollar Index (DXY) were retrieved from Investing.com. The analysis employs the Autoregressive Distributed Lag (ARDL) approach to examine both the short-run and long-run relationships between macroeconomic variables and Bitcoin prices.

Operational Definitions of Variables

The Federal Reserve interest rate is measured using monthly data from the Federal Reserve Economic Data (FRED) database, represented by the FEDFUNDS series. The data correspond to the monthly average of the effective federal reserve interest rate, calculated from daily observations reported by the Federal Reserve throughout each month. The U.S. money supply is measured using monthly data from the Federal Reserve Economic Data (FRED) database, represented by the M2SL series. The data are published by the Board of Governors of the Federal Reserve System and reflect the aggregate amount of currency in circulation, savings deposits, time deposits, and other liquid financial assets held within the U.S. financial system.

Global gold prices are measured using monthly data retrieved from Investing.com. The data are compiled from major global futures exchanges and represent the settlement prices of the most actively traded gold futures contracts during each month. The U.S. Dollar Index (DXY) is measured using monthly data retrieved from Investing.com. The index represents the geometric weighted average of the U.S. dollar exchange rate against a basket of six major currencies in the international foreign exchange market. Bitcoin prices are measured using monthly data retrieved from Investing.com. The data are aggregated from major global cryptocurrency exchanges and reflect trading activity weighted by exchange volume during each month.

RESULTS AND DISCUSSION

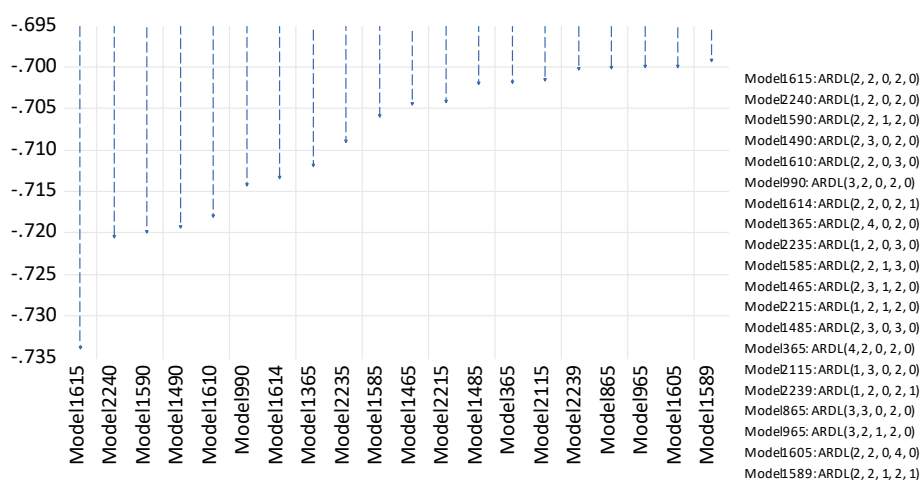
Results

Table 2 Stationarity Test

Variable	Level Prob.	First Difference Prob.
Bitcoin Prices (LN_Y)	0.8272	0.0000
Federal Reserve Interest Rate (X1)	0.6867	0.0007
United States Money Supply (LN_X2)	0.4016	0.0108
Global Gold Prices (LN_X3)	0.9994	0.0000
U.S Dollar Index (LN_X4)	0.2769	0.0000

The results of the stationarity test indicate that all variables are not stationary at level $I(0)$, but are stationary at the first-difference level or integrated of order one $I(1)$.

Table 3 The Optimal Lag Determination
Akaike Information Criteria (top 20 models)



The results of the optimal lag determination show that the best ARDL model is ARDL(2,2,0,2,0), indicating that Bitcoin prices, the Federal Reserve interest rate, and global gold prices use a two-period lag, while the other variables do not use any lags.

Table 4 Cointegration Test

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
Asymptotic: n=1000				
F-statistic	4.892180	10%	2.2	3.09
k	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37
Finite Sample: n=80				
Actual Sample Size	98	10%	2.303	3.22
		5%	2.688	3.698
		1%	3.602	4.787

The results of the cointegration test show an F-statistic value of 4.892180, which is higher than the upper bound of 3.49 at a 5% significance level; therefore, it can be concluded that there is a long run relationship between the study variables.

Table 5 The Coefficient of Determination (R²) Test

R-squared	0.975932	Mean dependent var	10.14104
Adjusted R-squared	0.973165	S.D. dependent var	0.999555
S.E. of regression	0.163739	Akaike info criterion	-0.675650
Sum squared resid	2.332524	Schwarz criterion	-0.385500
Log likelihood	44.10683	Hannan-Quinn criter.	-0.558290
F-statistic	352.7749	Durbin-Watson stat	2.031186
Prob(F-statistic)	0.000000		

*Note: p-values and any subsequent tests do not account for model selection.

The coefficient of determination (R²) of 0.975932 indicates that 97.59% of the variation in Bitcoin prices can be explained by the variables in the model, while the remaining 2.41% is influenced by other factors outside the scope of this study.

Table 6 Short-run t-Test

ECM Regression				
Case 2: Restricted Constant and No Trend				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LN_Y(-1))	0.142872	0.085857	1.664056	0.0997
D(X1)	0.008816	0.106763	0.082580	0.9344
D(X1(-1))	-0.290543	0.109802	-2.646063	0.0097
D(LN_X3)	-0.090468	0.376020	-0.240593	0.8104
D(LN_X3(-1))	-1.305588	0.388851	-3.357554	0.0012
CointEq(-1)*	-0.198417	0.035614	-5.571359	0.0000

Based on the table above:

1. The Bitcoin price variable from the previous period (D(LN_Y(-1))) has a coefficient of 0.142872 with a p-value of 0.0997 (> 0.05), indicating a positive but insignificant effect on Bitcoin prices in the short run.
2. The current-period Federal Reserve interest rate variable (D(X1)) has a coefficient of 0.008816 with a p-value of 0.9344 (> 0.05), indicating a positive but insignificant effect on Bitcoin prices in the short run.

3. The Federal Reserve interest rate variable for the previous period ($D(X1(-1)))$ has a coefficient of -0.290543 with a p-value of $0.0097 (< 0.05)$, indicating a negative and statistically significant effect on Bitcoin prices in the short run.
4. The current-period global gold price variable ($D(LN_X3)$) has a coefficient of -0.090468 with a p-value of $0.8104 (> 0.05)$, indicating a negative but insignificant effect on Bitcoin prices in the short run.
5. The global gold price variable for the previous period ($D(LN_X3(-1)))$ has a coefficient of -1.305588 with a p-value of $0.0012 (< 0.05)$, indicating a negative and significant effect on Bitcoin prices in the short run.
6. The Error Correction Term (ECT) variable has a coefficient of -0.198417 with a p-value of $0.0000 (< 0.05)$, indicating the presence of an adjustment mechanism toward long-run equilibrium, with approximately 19.84% of short-run imbalances being corrected in each period.

Table 7. Long-run t-Test

Levels Equation Case 2: Restricted Constant and No Trend				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1	0.257578	0.082526	3.121158	0.0024
LN_X2	6.104411	1.122302	5.439189	0.0000
LN_X3	-0.008696	0.592165	-0.014685	0.9883
LN_X4	-8.931944	2.951186	-3.026561	0.0033
C	-9.365202	11.26172	-0.831596	0.4079
EC = LN_Y - (0.2576*X1 + 6.1044*LN_X2 - 0.0087*LN_X3 - 8.9319*LN_X4 - 9.3652)				

Based on the table above:

1. The Federal Reserve interest rate variable (X1) has a coefficient of 0.257578 with a p-value of $0.0024 (< 0.05)$, indicating that it has a positive and significant effect on Bitcoin prices in the long run.
2. The U.S. money supply variable (LN_X2) has a coefficient of 6.104411 with a p-value of $0.0000 (< 0.05)$, indicating a positive and significant effect on Bitcoin prices in the long run.
3. The global gold price variable (LN_X3) has a coefficient of -0.008696 with a p-value of $0.9883 (> 0.05)$, indicating a negative but insignificant effect on Bitcoin prices in the long run.
4. The U.S. dollar index variable (LN_X4) has a coefficient of -8.931944 with a p-value of $0.0033 (< 0.05)$, indicating a negative and significant effect on Bitcoin prices in the long run.

Discussion

The Effect of the Federal Reserve Interest Rate on Bitcoin Prices

Based on the ARDL estimation results, the Federal Funds Rate exerts a negative and significant effect on Bitcoin prices in the short run (lag -1), with a coefficient of -0.290543 and a p-value of 0.0097 , but a positive and significant effect in the long run, with a coefficient of 0.257578 and a p-value of 0.0024 . Therefore, hypothesis H1, which posits that the Federal Funds Rate has a negative and significant effect on Bitcoin prices, is supported in the short run but not in the long run. In the short run, a one-percentage-point increase in the Federal Funds Rate is estimated to decrease Bitcoin prices by 29.05%, suggesting that Bitcoin is highly responsive to changes in U.S. monetary policy. This finding is consistent with Liquidity Preference Theory, which suggests that higher interest rates increase the opportunity cost of holding risky assets, prompting investors to reallocate their funds toward safer financial instruments. However, the positive long-run relationship indicates that Bitcoin prices are also influenced by other factors, including the growing adoption of cryptocurrencies and increased institutional participation. Moreover, these findings support Arbitrage Pricing Theory (APT), which posits that macroeconomic factors play an important role in asset pricing.

The short-run findings of this study are consistent with those of Ramadhani (2022), Wahyuni et al. (2024), and Hardiyanti (2024), who reported a significant negative effect of the Federal Funds Rate on Bitcoin prices. However, the long-run results reveal a contrasting relationship, indicating a significant positive effect. This discrepancy may be attributed to differences in the observation periods, as the present study encompasses episodes of low interest rates, aggressive monetary tightening, and heightened institutional adoption following the introduction of Bitcoin ETFs.

The Effect of the United States Money Supply on Bitcoin Prices

The U.S. money supply (M2) exerts only a long-run effect, as the optimal lag selection indicates that this variable does not include lagged terms. The estimation results reveal that M2 has a coefficient of 6.104411 with a p-value of 0.0000, indicating a positive and significant impact on Bitcoin prices in the long run. Therefore, hypothesis H2, which posits that the U.S. money supply has a positive and significant effect on Bitcoin prices, is supported.

The findings suggest that a 1% increase in the U.S. money supply (M2) is associated with a 6.1% increase in Bitcoin prices in the long run, *ceteris paribus*. This result implies that greater market liquidity encourages investors to allocate capital toward assets with higher return potential, including Bitcoin. These findings are consistent with Liquidity Preference Theory and Arbitrage Pricing Theory (APT), as well as with the studies of Patacca and Focardi (2021) and Kokabian (2025), which also reported a positive and significant relationship between the U.S. money supply and Bitcoin prices.

The Effect of Global Gold Prices on Bitcoin Prices

Global gold prices exert a negative and significant effect on Bitcoin prices in the short run (lag -1), with a coefficient of -1.305588 and a p-value of 0.0012. In the long run, however, global gold prices have a coefficient of -0.008696 with a p-value of 0.9883, indicating a negative but insignificant effect on Bitcoin prices. Therefore, hypothesis H3, which posits that global gold prices have a positive and significant effect on Bitcoin prices, is not supported in either the short or long run.

The findings indicate that a 1% increase in global gold prices is associated with a 1.3% decline in Bitcoin prices in the short run, whereas in the long run, it is estimated to increase Bitcoin prices by 0.0087%, although this effect is statistically insignificant. The short-run results support the view that gold serves as a safe-haven asset, leading investors to reallocate funds from riskier assets, such as Bitcoin, toward gold during periods of heightened uncertainty. Moreover, these findings are consistent with Arbitrage Pricing Theory (APT), which posits that macroeconomic factors influence asset prices, and with the study by Pourpourides (2025), which reported a negative and significant relationship between gold prices and Bitcoin prices.

The Effect of the U.S. Dollar Index on Bitcoin Prices

The U.S. Dollar Index (DXY) exerts only a long-run effect, as the optimal lag selection indicates that this variable does not include lagged terms. The estimation results reveal that the DXY has a coefficient of -8.931944 with a p-value of 0.0033, indicating a negative and significant impact on Bitcoin prices in the long run. Therefore, hypothesis H4, which posits that the U.S. Dollar Index has a negative and significant effect on Bitcoin prices, is supported.

The findings suggest that a 1% increase in the DXY is associated with an 8.93% decline in Bitcoin prices in the long run, *ceteris paribus*. This result indicates that a stronger U.S. dollar encourages investors to reallocate capital toward dollar-denominated assets, which are generally perceived as more stable and less risky than Bitcoin. These findings are consistent with Arbitrage Pricing Theory (APT) and with the study by Pourpourides (2025), which also reported a negative and significant relationship between the DXY and Bitcoin prices.

CONCLUSION

Based on the findings of this study, the following conclusions can be drawn, The Federal Reserve Interest Rate has a negative and significant effect on Bitcoin prices in the short run (lag –1) and a positive and significant effect in the long run over the 2017–2026 period, The U.S. money supply (M2) has a positive and significant long-run effect on Bitcoin prices over the 2017–2026 period. Global gold prices have a negative and significant effect on Bitcoin prices in the short run (lag –1), while exhibiting a negative but insignificant effect in the long run over the 2017–2026 period. The U.S. Dollar Index (DXY) has a negative and significant long-run effect on Bitcoin prices over the 2017–2026 period. Future studies may extend the observation period or increase the sample size to better capture the long-run dynamics among the variables examined. Future research may also incorporate additional macroeconomic variables, such as inflation, exchange rates, stock market indices, unemployment rates, and market sentiment, to provide a more comprehensive understanding of the determinants of Bitcoin prices.

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