IJAMESC, Vol. 4 No. 3, June 2026
DOI: https://doi.org/10.61990/ijamesc.v4i3.786 e-ISSN 2986-8645

THE INFLUENCE OF TRADE WARS, INFLATION, POLITICAL UNCERTAINTY, AND INTEREST RATE DECISIONS ON BITCOIN PRICES

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Abstract
This research examines to test the impact of interest rate decisions, political instability, inflation, and trade disputes on the price of Bitcoin from 2020 to 2025 is the purpose of this research. Descriptive and confirmative approaches, which are quantitative, are used in this study. The secondary time series data used in this study is sourced from various global sources, including government databases and publications. This analytical method uses multiple linear regression with classical assumption testing. This includes normality testing, multicollinearity, heteroskedasticity, and autocorrelation. Furthermore, the hypothesis is tested using the F test to identify the simultaneous effect and the t test to identify the partial effect. The model's ability to explain bound variables is then measured through the determination coefficient, known as Adjusted R^2. The analysis found that factors such as inflation, political instability, trade conflicts, and interest rate decisions all contribute to the price of Bitcoin. Each of these factors has a unique and partial effect on the rise and fall of the price of Bitcoin. This research provides an overview that global macroeconomic factors have an important role in determining the price dynamics of crypto assets, especially Bitcoin.

Keywords: Trade War, Inflation, Political Uncertainty, Interest Rates, Bitcoin

1. Introduction

The rapid development of digital financial technology has significantly transformed the global investment landscape, particularly through the emergence of cryptocurrencies as alternative digital assets (Priyatna et al., 2025). Among various cryptocurrencies, Bitcoin remains the most dominant and widely recognized asset because of its decentralized structure, limited supply, transparency, and independence from traditional financial institutions (Warmke, 2024). Unlike conventional currencies, whose value is strongly influenced by central bank policies and macroeconomic fundamentals, Bitcoin is often characterized by speculative behavior, high volatility (Liu, Wang, Gao, et al., 2026), and strong sensitivity to external economic and geopolitical shocks (Khaksar et al., 2026). During the 2020–2025 period, Bitcoin experienced highly dynamic price movements driven not only by internal market sentiment but also by global macroeconomic pressures, including trade wars, inflation, political uncertainty, and interest rate decisions (Ammar et al., 2025).

The 2020–2025 period represents one of the most volatile phases in the development of Bitcoin. Several major global events contributed to changes in investor behavior, including the Covid-19 pandemic, the escalation of United States–China trade tensions, Russia's invasion of Ukraine, aggressive monetary tightening by the Federal Reserve, and geopolitical tensions in the Middle East (Duan, 2026). As illustrated in Figure 1,

Bitcoin prices fluctuated sharply during this period, reflecting the sensitivity of digital assets to global uncertainty (Buchwalter et al., 2026). This volatility indicates that Bitcoin is no longer influenced solely by cryptocurrency market mechanisms, but also by broader global economic and political conditions (Leng, 2026). Therefore, examining Bitcoin price movements during this period is highly relevant, particularly because investors increasingly consider Bitcoin both as a speculative asset and as a potential alternative asset during periods of economic instability.

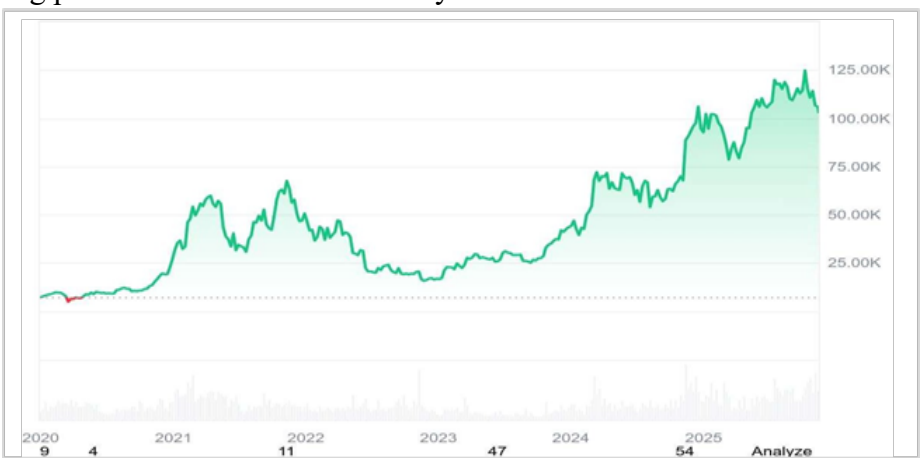

Figure 1. Bitcoin Price Movement During the 2020–2025 Period
Source: CoinMarketCap.com

Trade war is one of the external factors that may influence Bitcoin prices. Trade tensions between the United States and China have created uncertainty in international markets and affected investor confidence in traditional financial assets (Llanos, 2026). Trade policy uncertainty may encourage investors to rebalance their portfolios and seek alternative assets, including cryptocurrencies, when confidence in conventional markets declines (Roche & Noël, 2025). The relationship between trade policy uncertainty and cryptocurrency returns is not always linear, but becomes more pronounced under extreme market conditions (Burgess & Liu, 2025). This suggests that Bitcoin may react more strongly to trade war uncertainty during periods of heightened global risk, especially when investors perceive digital assets as alternative instruments outside the conventional financial system (Yi et al., 2025).

Inflation also became a major factor affecting Bitcoin price dynamics, particularly after the Covid-19 pandemic (Rodrigues et al., 2018). Rising inflation in the United States and other major economies increased uncertainty in financial markets and influenced investor preferences toward risky assets (Gozgor et al., 2019). Some investors view Bitcoin as a potential hedge against inflation due to its limited supply (Otabek & Choi, 2026), while others consider it a highly speculative asset that may decline when inflationary pressure leads to tighter monetary policy. (Rodriguez & Colombo, 2025) found that Bitcoin's inflation-hedging property is context-specific and tends to weaken as Bitcoin becomes more integrated into mainstream financial markets (Z. Wang et al., 2025). Similarly, (Ammar et al., 2025) show that inflation and interest rates have significant effects on the prices of major cryptocurrencies, including Bitcoin.

Political uncertainty and geopolitical risk are also important determinants of Bitcoin volatility (Ciano, 2025). Global conflicts such as the Russia Ukraine war and Middle East tensions created uncertainty across financial markets and encouraged investors to adjust their risk exposure (Hong & Zhang, 2023). In some cases, geopolitical shocks may push investors toward alternative assets, while in other cases they may reduce demand for risky

assets such as cryptocurrencies. Bitcoin returns and volatility receive information transmission from political uncertainty indicators, including geopolitical risk and party conflict indices (Chen et al., 2024). (Mahjoubi & Henchiri, 2024) also emphasize that economic policy uncertainty and geopolitical risk are relevant in explaining Bitcoin volatility, while (Damayanti & Muhith, 2025) show that geopolitical events have an important role in shaping Bitcoin price movements.

Interest rate decisions, particularly those made by the Federal Reserve, represent another key factor influencing Bitcoin price movements (Kao et al., 2024). Monetary tightening can reduce liquidity, increase the attractiveness of safer interest-bearing assets, and weaken demand for speculative assets such as Bitcoin. (Hodula, 2025) explains that U.S. monetary tightening reduces cryptocurrency demand, especially among retail users, while (Buthelezi, 2025) shows that U.S. monetary policy shocks can influence cryptocurrency prices and volatility (Sarkodie et al., 2022). The Federal Reserve's monetary policy affects major cryptocurrencies, including Bitcoin and Ethereum (Dufouleur, 2026). These findings indicate that Bitcoin has increasingly become a financial asset that responds to monetary policy signals, market expectations, and global liquidity conditions (Tosun & Uğurlu, 2025).

The urgency of this study lies in the need to address an existing research gap regarding the simultaneous influence of trade wars, inflation, political uncertainty, and interest rate decisions on Bitcoin prices during periods of global economic instability. Although numerous studies have examined the relationship between Bitcoin and macroeconomic or geopolitical factors separately, only a limited number of studies have investigated how these factors operate collectively in shaping Bitcoin price movements, particularly during the highly volatile 2020–2025 period (Mahjoubi & Henchiri, 2024). Therefore, this study is expected to provide empirical insight into how global economic pressures, political uncertainty, and monetary policy decisions contribute to the dynamics of Bitcoin prices.

2. Theoretical Background

2.1 Bitcoin Price

Bitcoin price refers to the market value of Bitcoin formed through the interaction between supply, demand, investor sentiment, liquidity, and broader macroeconomic conditions (Sapra et al., 2026). Unlike traditional financial assets, Bitcoin does not rely on corporate earnings, dividends, or central bank guarantees, making its price highly sensitive to market expectations and external shocks (Gkillas, 2026). During periods of economic uncertainty, Bitcoin may be perceived either as a speculative asset or as an alternative investment instrument, depending on investor confidence and market conditions (S. Wang, 2026). Recent studies show that cryptocurrency prices, including Bitcoin, are affected by macroeconomic variables such as inflation and interest rates (P. Han & Chen, 2025), indicating that Bitcoin is increasingly connected to the broader financial system rather than operating independently from global economic dynamics (Rodriguez & Colombo, 2025).

Bitcoin price movements are also closely related to volatility because Bitcoin is traded continuously in global markets and reacts rapidly to new information (Zeb, 2024). This makes Bitcoin highly responsive to monetary policy signals, geopolitical events, and uncertainty in international markets (Sarkodie et al., 2022). The increasing participation of retail and institutional investors further strengthens Bitcoin's sensitivity to macroeconomic and political developments (Gozgor et al., 2019). Therefore, Bitcoin price cannot be understood only from the perspective of internal cryptocurrency market

behavior, but must also be analyzed through external factors such as trade policy uncertainty, inflationary pressure, political risk, and interest rate decisions (Chen et al., 2024).

2.2 Trade Wars

Trade wars refer to economic conflicts between countries that occur through tariffs, import restrictions, export controls, and other trade policy measures (Guo, 2026). In the global financial market, trade wars can create uncertainty because they affect international trade flows, investor confidence, exchange rates, and expectations regarding economic growth(Du, 2026). When trade tensions increase, investors tend to adjust their portfolios by reducing exposure to risky traditional assets or seeking alternative instruments (Mayr-Dorn, 2026). In this context, Bitcoin may become one of the assets considered by investors during periods of heightened trade uncertainty, although its response may vary depending on market conditions and investor risk perception.

The relationship between trade wars and Bitcoin prices can be explained through the concept of trade policy uncertainty. U.S. trade policy uncertainty has a causal relationship with cryptocurrency returns (Sarkodie et al., 2022), especially when market conditions are analyzed across different quantiles rather than only through average effects (Rubbaniy, 2026). This indicates that the effect of trade uncertainty on cryptocurrencies may become stronger during extreme market conditions (Cavalcanti, 2026). Therefore, trade wars are relevant in explaining Bitcoin price movements because they create uncertainty in global markets, influence investor behavior, and may increase the demand for alternative digital assets during periods of international economic tension (Yi et al., 2025).

2.3 Inflation

Inflation refers to a general increase in the prices of goods and services that reduces the purchasing power of money (Bouri, 2025). In financial markets, inflation is an important macroeconomic indicator because it influences investor expectations, monetary policy direction, interest rates, and asset allocation decisions (Hoffmann, 2026). For Bitcoin, inflation is often discussed because Bitcoin has a limited supply, which leads some investors to view it as a potential hedge against inflation (Gkillas, 2026). However, the role of Bitcoin as an inflation hedge remains debatable because its price is also highly speculative and can decline when inflation leads to monetary tightening.

Recent empirical evidence shows that Bitcoin's relationship with inflation is not always stable. (Rodriguez & Colombo, 2025) found that Bitcoin returns may increase following positive inflation shocks, supporting the view that Bitcoin can act as an inflation hedge under certain conditions (Sapra et al., 2026). However, this function depends on the market context and may weaken when Bitcoin becomes more integrated with mainstream financial markets (P. Han & Chen, 2025). Inflation, measured through the Consumer Price Index, is one of the macroeconomic variables that affects major cryptocurrency prices, including Bitcoin (Ammar et al., 2025). Therefore, inflation is an important variable in this study because it may influence Bitcoin prices both directly through investor expectations and indirectly through monetary policy responses.

2.4 Political Uncertainty

Political uncertainty refers to instability caused by political events, policy changes, government transitions, international conflicts, sanctions, or diplomatic tensions

(Hussain, 2025). In financial markets, political uncertainty can influence investor behavior because it increases risk perception and encourages investors to reassess their asset positions (Perrin, 2026). Bitcoin may respond to political uncertainty in different ways (Cheng, 2026). In some situations, investors may perceive Bitcoin as an alternative asset outside the control of governments and traditional financial institutions (Dufouleur, 2026). In other situations, political uncertainty may trigger risk aversion and reduce demand for volatile assets such as cryptocurrencies.

Recent studies show that political uncertainty and geopolitical risk have meaningful connections with Bitcoin volatility and returns. (Chen et al., 2024) found that Bitcoin returns and volatilities receive information from political uncertainty indicators, including geopolitical risk and party conflict indices, especially during periods of financial stress (Chen, 2024). (Mahjoubi & Henchiri, 2024) found that economic policy uncertainty, geopolitical risk, and climate policy uncertainty influence Bitcoin volatility. In the Indonesian journal context, (Damayanti & Muhith, 2025) explain that geopolitical factors such as armed conflict, foreign policy changes, international sanctions, regional tensions, terrorism threats, and diplomatic crises affect Bitcoin price movements during 2022–2024. These findings support the relevance of political uncertainty as an explanatory variable in analyzing Bitcoin price dynamics.

2.5 Interest Rate Decisions

Interest rate decisions refer to monetary policy actions taken by central banks, particularly decisions to raise, lower, or maintain benchmark interest rates (Cui, 2026). In this study, interest rate decisions are mainly associated with the Federal Reserve because U.S. monetary policy has a significant influence on global liquidity and investor risk appetite (D. Kang & Leng, 2025). Higher interest rates generally increase the attractiveness of safer interest-bearing assets, reduce liquidity, and weaken demand for speculative assets (Beyer, 2026). Conversely, lower interest rates may increase liquidity and encourage investors to seek higher returns through riskier assets, including cryptocurrencies (Fulford & Shupe, 2026).

The relationship between interest rate decisions and Bitcoin prices is supported by recent studies on monetary policy and cryptocurrency markets. (Hodula, 2025) found that U.S. monetary tightening reduces cryptocurrency demand, especially when measured through cryptocurrency app usage and downloads across G20 countries. (Tosun & Uğurlu, 2025) also demonstrate that the Federal Reserve's monetary policy affects major cryptocurrencies, including Bitcoin and Ethereum, using monthly data from January 2019 to April 2025. Interest rates, measured through the Federal Funds Rate, affect the prices of major cryptocurrencies (Bouri, 2025). Therefore, interest rate decisions are highly relevant in this study because they reflect monetary policy direction, liquidity conditions, and investor appetite toward risky digital assets such as Bitcoin (Ammar et al., 2025).

3. Methods

3.1 Research Design

This study employs a quantitative approach using descriptive and verificative analysis with the objective of examining the effects of trade wars, inflation, political uncertainty, and interest rate decisions on Bitcoin prices during the 2020–2025 period (Darwin et al., 2021). Descriptive analysis was used to describe the trends, patterns, and characteristics of each time-series variable, while verificative analysis was applied to test the relationship between the independent variables and the dependent variable through statistical

procedures (Putra & Suryadi, 2025). The quantitative approach is considered appropriate because the data are numerical and analyzed through statistical procedures to objectively examine the relationships among variables. The research design is longitudinal in nature, utilizing time-series data to capture dynamic relationships over the observation period, allowing for the analysis of how macroeconomic and geopolitical factors influence Bitcoin prices over time.

3.2 Population and Sample

The population of this study consists of all time-series data related to Bitcoin prices, trade policy uncertainty, inflation, political uncertainty, and Federal Reserve interest rate decisions during the 2020–2025 period. Bitcoin was selected as the research object due to its position as the largest and most influential cryptocurrency in the global market, making it a representative indicator for analyzing the impact of macroeconomic and geopolitical factors on digital assets. The period of 2020–2025 was chosen because it encompasses significant global events, including the COVID-19 pandemic, geopolitical tensions, inflationary pressures, and monetary policy shifts that have potentially influenced Bitcoin price movements. The sample in this study consists of 72 monthly observations, representing monthly data from January 2020 to December 2025 for each research variable. The sample was determined using a purposive sampling technique, where data were selected based on the availability and completeness of information for all variables during the observation period. The sample size of 72 observations is considered adequate for time-series analysis and meets the minimum requirements for multiple linear regression analysis, which typically requires a minimum of 30 observations for reliable statistical inference (Ghozali, 2020). The use of monthly data provides sufficient frequency to capture short-term fluctuations while maintaining data stability for analysis.

3.3 Data Collection Techniques

This study utilizes secondary data obtained from official and publicly available sources. The data collection procedure involved several sequential steps:

1) Bitcoin Price Data: Bitcoin price data were obtained from reputable cryptocurrency market data providers, including historical price records from major exchanges, representing the monthly closing price of Bitcoin in US dollars.
2) Trade Wars Data: Trade wars were measured using the Trade Policy Uncertainty Index or global trade tension indicators, obtained from international economic databases and policy uncertainty indices developed by academic institutions.
3) Inflation Data: Inflation was measured using the Consumer Price Index (CPI) year-on-year, obtained from official statistical agencies and international financial institutions.
4) Political Uncertainty Data: Political uncertainty was measured using political uncertainty or geopolitical risk indicators, obtained from global risk indices and geopolitical databases.
5) Interest Rate Decisions Data: Interest rate decisions were measured using the Federal Funds Rate, obtained from the Federal Reserve's official publications and monetary policy records.

All extracted data were systematically organized into a time-series dataset suitable for statistical analysis using the selected analytical software. The secondary data sources

employed in this research are considered reliable as they represent official publications from authorized institutions and established data providers.

3.4 Operational Definitions of Research Variables

Table 1. Operational Definition and Measurement of Variables

Variable	Definition	Measurement	Scale	Source
Bitcoin Price (Y)	Market value of Bitcoin expressed in US dollars, reflecting the collective assessment of investors regarding the cryptocurrency's value at a given point in time	Closing price at month-end	Nominal	Cryptocurrency market data providers
Trade Wars (X_1)	Level of global trade tension and policy uncertainty arising from trade disputes between major economies	Index value	Ratio	International economic databases
Inflation (X_2)	Sustained increase in the general price level of goods and services in an economy over a period of time (Rachmawati, 2018)	Annual percentage change	Percentage	Official statistical agencies
Political Uncertainty (X_3)	Level of unpredictability and instability in the political environment, including geopolitical tensions, elections, policy changes, and international conflicts	Index value	Ratio	Global risk indices
Interest Rate	Monetary policy actions taken by the Federal	Interest rate percentage	Percentage	Federal Reserve publications

Variable	Definition	Measurement	Scale	Source
Decisions (X_4)	Reserve regarding the benchmark interest rate, reflecting the central bank's stance on economic conditions and inflation			

Source: Developed for this research (2026)

4. Results and Discussion

4.1 Descriptive Summary of Research Variables

Table 1. Descriptive Summary of Research Variables

Year	Trade War Index	Inflation (%)	Political Uncertainty Index	Interest Rate (%)
2020	164.17	1.23	188.75	0.46
2021	174.17	4.70	165.00	0.25
2022	212.50	8.02	197.00	2.02
2023	186.25	4.13	158.00	5.19
2024	182.92	2.93	174.00	5.17
2025	141.25	3.01	152.00	4.38

Source: Secondary data processed (2026)

Based on Table 1, the research variables showed different movements during the 2020–2025 period. The trade war index reached its highest level in 2022 at 212.50, indicating that global trade tensions were relatively stronger during that year. Inflation also reached its peak in 2022 at 8.02%, reflecting the high inflationary pressure after the Covid-19 pandemic. Political uncertainty was also highest in 2022, with an index value of 197.00, which was closely related to global geopolitical tensions during that period. Meanwhile, interest rates increased sharply after 2022 and reached the highest level in 2023 at 5.19%, reflecting the tightening of monetary policy by the Federal Reserve. These patterns indicate that the 2020–2025 period was marked by strong macroeconomic and geopolitical pressures that may have influenced Bitcoin price movements.

4.2 Classical Assumption Tests

Prior to hypothesis testing, classical assumption tests were conducted to ensure that the regression model provides unbiased and efficient estimates. The classical assumption tests employed in this study include normality test, multicollinearity test, heteroscedasticity test, and autocorrelation test. Table 2 presents the summary of all classical assumption test results.

Table 2. Classical Assumption Test Results

Assumption Test	Test Method	Test Result	Criterion	Conclusion
Normality Test	One-Sample Kolmogorov–Smirnov	Asymp. Sig. = 0.814	Sig. > 0.05	Passed (Residuals normally distributed)

Assumption Test	Test Method	Test Result	Criterion	Conclusion
Multicollinearity Test	Variance Inflation Factor (VIF)	Trade War: VIF = 2.405, Tolerance = 0.416	VIF < 10; Tolerance > 0.10	Passed (No multicollinearity)
		Inflation: VIF = 1.456, Tolerance = 0.687	VIF < 10; Tolerance > 0.10	Passed (No multicollinearity)
		Political Uncertainty: VIF = 2.092, Tolerance = 0.478	VIF < 10; Tolerance > 0.10	Passed (No multicollinearity)
		Interest Rate Decision: VIF = 1.252, Tolerance = 0.799	VIF < 10; Tolerance > 0.10	Passed (No multicollinearity)
Heteroscedasticity Test	Scatterplot	Residuals randomly distributed around zero line	No clear pattern	Passed (No heteroscedasticity)
Autocorrelation Test	Durbin-Watson	DW = 2.066	dU < DW < 4−dU (1.7358 < 2.066 < 2.2642)	Passed (No autocorrelation)

Source: Processed data (2026)

Based on Table 2, the normality test using the One-Sample Kolmogorov–Smirnov test yielded an Asymp. Sig. value of 0.814, which is greater than 0.05, indicating that the residual data were normally distributed. This result was also supported by the Normal P–P Plot where the data points were distributed close to the diagonal line. The multicollinearity test results indicate that all independent variables met the required criteria, namely tolerance values above 0.10 and VIF values below 10. This means that trade war, inflation, political uncertainty, and interest rate decisions did not have a high correlation with one another, and the regression model was considered free from multicollinearity problems. The heteroscedasticity test using the scatterplot showed that the residual points were generally distributed randomly around the zero line on the Y-axis, with no clear pattern indicating heteroscedasticity. Therefore, the regression model fulfilled the assumption of constant residual variance. The autocorrelation test using the Durbin-Watson test produced a value of 2.066, which met the requirement of $dU < DW < 4 - dU$ ($1.7358 < 2.066 < 2.2642$), indicating that the regression model did not contain positive or negative autocorrelation. Overall, the classical assumption tests confirm that the regression model satisfies all required assumptions, ensuring that the estimation results are reliable and unbiased for hypothesis testing.

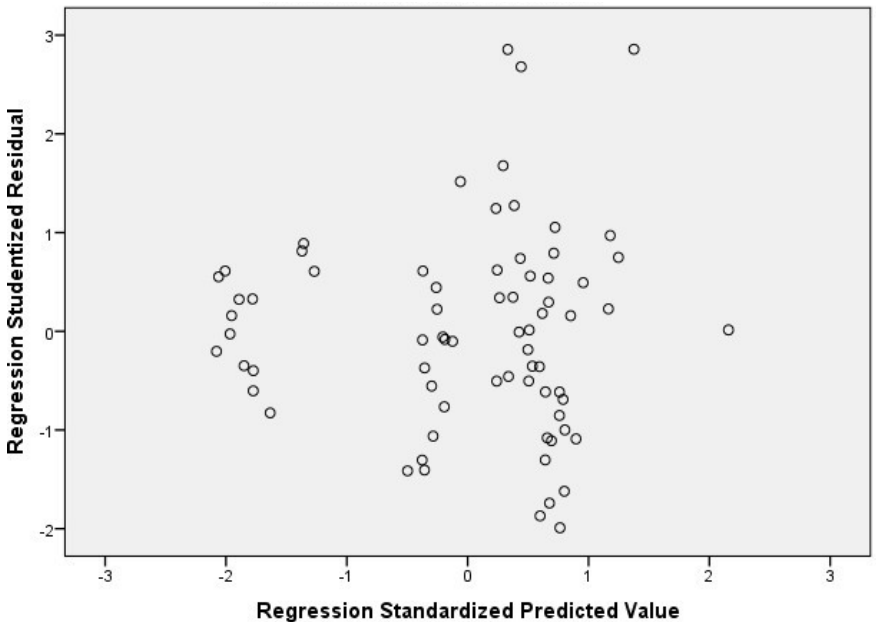

Figure 2. Scatterplot Graph

4.3 Multiple Linear Regression Analysis

Table 3. Multiple Linear Regression Results

Model	Variable	B	Std. Error	Beta	t	Sig.
1	Constant	1.713.743.581,842	262.227.986,086	-	6,535	0,000
1	Trade War	-612.881,601	1.468.114,548	-0,060	-0,417	0,678
1	Inflation	21.234.634,466	14.452.254,059	0,164	1,469	0,146
1	Political Uncertainty	-6.760.897,375	1.898.310,466	-0,476	-3,562	0,001
1	Interest Rate Decision	40.440.664,029	14.519.113,381	0,288	2,785	0,007

Source: Processed data (2026)

Based on the multiple linear regression analysis, the regression equation obtained was:

$$Bitcoin\ Price = 1{,}713{,}743{,}581.842 - 612{,}881.601(Trade\ War) + 21{,}234{,}634.466(Inflation) - 6{,}760{,}897.375(Political\ Uncertainty) + 40{,}440{,}664.029(Interest\ Rate\ Decision) + e$$

The constant value of 1,713,743,581.842 indicates that when all independent variables are assumed to be constant, the Bitcoin price has a positive baseline value. The regression coefficient of trade war was -612,881.601, indicating that an increase in the trade war index tends to reduce Bitcoin prices, although the effect was not statistically significant. The inflation coefficient was 21,234,634.466, showing that inflation had a positive but insignificant effect on Bitcoin prices. Meanwhile, political uncertainty had a negative and significant coefficient of -6,760,897.375, meaning that higher political uncertainty significantly reduced Bitcoin prices. Interest rate decisions had a positive coefficient of 40440664.029, indicating that increases in interest rates were associated with higher Bitcoin prices during the study period.

4.4 Coefficient of Determination

Table 4. Coefficient of Determination Results

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0,655	0,429	0,394	234.774.596,47375

Predictors: Interest Rate Decision, Trade War, Inflation, Political Uncertainty
Dependent Variable: Bitcoin Price
Source: Processed data (2026)

Based on Table 7, the R Square value was 0.429, indicating that 42.9% of the variation in Bitcoin prices could be explained by trade wars, inflation, political uncertainty, and interest rate decisions. Meanwhile, the remaining 57.1% was influenced by other variables outside the research model, such as market sentiment, investor behavior, cryptocurrency regulation, Bitcoin supply-demand dynamics, institutional adoption, and global liquidity conditions. These findings indicate that the model had moderate explanatory power in explaining Bitcoin price movements during the 2020–2025 period.

4.5 F-Test Results

Table 5. F-Test Results

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	2.769.269.997.433.787.400,000	4	692.317.499.358.446.850,000	12,560	0,000
Residual	3.692.980.447.010.657.300,000	67	55.119.111.149.412.792,000	-	-
Total	6.462.250.444.444.444.700,000	71	-	-	-

Predictors: Interest Rate Decision, Trade War, Inflation, Political Uncertainty
Dependent Variable: Bitcoin Price
Source: Processed data (2026)

Based on the simultaneous test results, the F-count value was 12.560 with a significance value of 0.000. Since the significance value was lower than 0.05, the fifth hypothesis was accepted. This means that trade wars, inflation, political uncertainty, and interest rate decisions simultaneously had a significant effect on Bitcoin prices during the 2020–2025 period. This finding suggests that Bitcoin price movements are not shaped by a single macroeconomic or political factor alone, but rather by the combined influence of global trade tensions, inflationary pressure, political uncertainty, and monetary policy decisions.

4.6 Hypothesis Testing Summary

Table 9. Summary of Hypothesis Testing Results

Hypothesis	Relationship	t/F Value	Sig.	Decision
H1	Trade War → Bitcoin Price	-0.417	0.678	Rejected
H2	Inflation → Bitcoin Price	1.469	0.146	Rejected
H3	Political Uncertainty → Bitcoin Price	-3.562	0.001	Accepted
H4	Interest Rate Decision → Bitcoin Price	2.785	0.007	Accepted
H5	Trade War, Inflation, Political Uncertainty, and Interest Rate Decision → Bitcoin Price	12.560	0.000	Accepted

Source: Processed data (2026)

Based on Table 9, trade wars had a negative but insignificant effect on Bitcoin prices, as shown by a t-value of -0.417 and a significance value of 0.678. Inflation had a positive but insignificant effect, with a t-value of 1.469 and a significance value of 0.146. Political

uncertainty had a negative and significant effect on Bitcoin prices, with a t-value of -3.562 and a significance value of 0.001. Interest rate decisions had a positive and significant effect, with a t-value of 2.785 and a significance value of 0.007. Simultaneously, all independent variables had a significant effect on Bitcoin prices, as indicated by the F-count value of 12.560 and a significance value of 0.000. These results show that political uncertainty and interest rate decisions were the most influential partial factors, while the overall model confirmed the importance of macroeconomic and geopolitical variables in explaining Bitcoin price dynamics during the 2020–2025 period.

4.6.1 The Effect of Trade Wars on Bitcoin Prices

The findings revealed that trade wars had a negative but insignificant effect on Bitcoin prices during the 2020–2025 period. This was evidenced by a t-value of -0.417, which was lower than the t-table value of 1.667, and a significance value of 0.678, which was greater than 0.05. The regression coefficient of trade wars was -612,881.601, indicating that an increase in the trade war index tended to reduce Bitcoin prices, although the effect was not statistically significant. This result suggests that trade war pressure did not directly determine Bitcoin price movements during the research period.

From a theoretical perspective, trade wars create uncertainty in global markets through tariff escalation, export-import restrictions, protectionist policies, and global supply chain disruption (Guo, 2026). These conditions can influence investor expectations and encourage portfolio reallocation. However, the insignificant result in this study indicates that the Bitcoin market did not respond to trade war pressure in a direct and consistent manner (Cavalcanti, 2026). This may occur because trade war issues are often transmitted indirectly through other macroeconomic channels, such as global liquidity, exchange rate movements, investor risk appetite, and uncertainty in financial markets. Trade policy uncertainty has dynamic effects on Bitcoin prices, suggesting that the relationship between trade-related uncertainty and Bitcoin is not always immediate, but may depend on other market conditions such as mining costs and broader financial pressure (Liu, Wang, & Gao, 2026).

This finding is also consistent with the view that cryptocurrency markets are increasingly shaped by both macro-level and market-specific dynamics. (Bouteska et al., 2025) explain that the efficiency and behavior of cryptocurrency markets are influenced by macro-level dynamics and micro-level characteristics (Hong & Zhang, 2023). This means that Bitcoin prices are not determined only by one external shock, such as trade conflict, but also by internal crypto-market factors, including liquidity, investor participation, market maturity, and information efficiency. Even though trade wars may create a negative direction in Bitcoin price movements, their isolated effect may be statistically weak when other macroeconomic and political variables are included in the model.

In practical terms, the result indicates that Bitcoin investors may not treat trade war news as the main signal in making investment decisions. During the 2020–2025 period, trade tensions occurred alongside other major events, such as inflationary pressure, monetary tightening, geopolitical conflict, and shifts in institutional interest toward digital assets. As a result, the partial effect of trade wars became weaker because investors were likely responding to a broader set of global risk indicators. (S. Han, 2024) also shows that cryptocurrency returns may have a nonlinear relationship with market uncertainty, meaning that the influence of uncertainty does not always appear in a simple or linear manner.

The implication of this finding is that investors and analysts should not rely solely on trade war indicators when predicting Bitcoin price movements. Trade war data remain useful as part of macroeconomic risk assessment, but they need to be combined with uncertainty indices, liquidity indicators, investor sentiment, and cryptocurrency-specific factors. Future studies may use more specific measures, such as tariff announcement intensity, Trade Policy Uncertainty Index, global supply chain pressure, or trade-related news sentiment, to capture the influence of trade wars on Bitcoin prices more accurately.

4.6.2 The Effect of Inflation on Bitcoin Prices

The results showed that inflation had a positive but insignificant effect on Bitcoin prices. This was indicated by a t-value of 1.469, which was lower than the t-table value of 1.667, and a significance value of 0.146, which was greater than 0.05. The regression coefficient of inflation was 21,234,634.466, suggesting that an increase in inflation tended to raise Bitcoin prices, although the effect was not statistically significant. This means that inflation may have a positive relationship with Bitcoin prices, but the relationship was not strong enough to be considered statistically significant.

Theoretically, inflation can influence Bitcoin prices because Bitcoin is often perceived as an asset with limited supply (Llanos, 2026). When inflation increases, the purchasing power of fiat currency declines, and some investors may consider Bitcoin as an alternative asset (Dufouleur, 2026). The insignificant result in this study indicates that Bitcoin did not consistently function as a strong inflation hedge during the 2020–2025 period. (Smales, 2024) argues that cryptocurrencies do not always provide a reliable alternative to traditional inflation hedging assets, because their high volatility may weaken their role as a stable store of value (S. Wang, 2026). This supports the finding that inflation may have a positive direction toward Bitcoin prices but does not necessarily produce a statistically significant effect.

The insignificant effect of inflation can also be explained by the interaction between inflation and monetary policy (Rodriguez & Colombo, 2025). High inflation is usually followed by central bank tightening, which may reduce liquidity and increase the attractiveness of safer interest-bearing assets (Dekimpe & Heerde, 2023). This condition may offset the positive effect of inflation on Bitcoin demand. (Lin et al., 2025) show that macroeconomic factors can influence cryptocurrency returns differently across market conditions, meaning that the effect of inflation may vary depending on whether the market is in a normal, bullish, or stressed condition.

In practical terms, this finding suggests that investors did not automatically move into Bitcoin when inflation increased. During inflationary periods, some investors may choose safer instruments, while others may still perceive Bitcoin as speculative due to its price volatility. Macroeconomic factors are relevant in explaining Bitcoin-related behavior, but their effects may depend on broader economic conditions and investor characteristics (Rabhi & Soujaa, 2024)(Smales, 2024)(Dekimpe & Heerde, 2023). This supports the interpretation that inflation alone is insufficient to explain Bitcoin price movements during the 2020–2025 period.

The implication of this result is that Bitcoin should not be viewed as a guaranteed hedge against inflation. Investors need to analyze inflation together with interest rate expectations, real interest rates, monetary policy direction, global liquidity, and investor sentiment. For policymakers and financial analysts, this finding indicates that inflation should be treated as one component of a wider macroeconomic framework rather than as a single determinant of Bitcoin prices. Future research may distinguish between headline

inflation, core inflation, inflation expectations, and real interest rates to obtain a more precise understanding of Bitcoin's response to inflationary pressure.

4.6.3 The Effect of Political Uncertainty on Bitcoin Prices

The findings demonstrated that political uncertainty had a negative and significant effect on Bitcoin prices during the 2020–2025 period. This was evidenced by a t-value of -3.562, which exceeded the t-table value of 1.667 in absolute terms, and a significance value of 0.001, which was lower than 0.05. The regression coefficient of political uncertainty was -6,760,897.375, indicating that an increase in political uncertainty significantly reduced Bitcoin prices. Therefore, the third hypothesis was accepted.

From a theoretical perspective, political uncertainty increases risk perception in financial markets because investors become more cautious when facing unstable government policies, geopolitical conflicts, diplomatic tensions, sanctions, and international crises (Hussain, 2025). Although Bitcoin is sometimes considered an alternative asset outside the traditional financial system, the negative coefficient in this study indicates that political uncertainty may trigger risk aversion and reduce demand for volatile digital assets. (Fang et al., 2024) found that geopolitical risk and cryptocurrency market volatility have a nonlinear relationship, showing that cryptocurrency markets may react more strongly when geopolitical risk reaches a certain level (Chen et al., 2024).

This result also indicates that Bitcoin's safe-haven role is not always stable. In some conditions, Bitcoin may attract investors during uncertainty, but in other situations, investors may reduce their exposure to cryptocurrencies because of their high volatility. (Chibane & Janson, 2025) examine whether Bitcoin is the best safe haven against geopolitical risk and show that the safe-haven function of Bitcoin needs to be interpreted carefully (Cheng, 2026). Cryptocurrencies may serve as safe havens against geopolitical risk only under certain market quantiles, indicating that their protective role is conditional rather than absolute (Mo et al., 2025). These findings support the result of this study, where political uncertainty had a significant negative effect on Bitcoin prices.

In practical terms, global political instability, such as war, sanctions, diplomatic conflict, and changes in government policy, may reduce investor confidence in risky digital assets. During uncertain political conditions, investors may prefer safer and more liquid assets rather than highly volatile cryptocurrencies. (Nguyen, 2025) also shows that geopolitical risks may affect crypto exchange rate premiums and capital movement, indicating that political instability can influence cryptocurrency demand across countries. This supports the interpretation that political uncertainty is an important external factor in Bitcoin price dynamics.

The implication of this finding is that political uncertainty should be considered a major risk factor in Bitcoin investment analysis. Investors need to monitor geopolitical events, international sanctions, political transitions, and diplomatic tensions when making decisions in the cryptocurrency market. For analysts, political uncertainty indicators can serve as early warning signals for potential pressure on Bitcoin prices. Academically, this result strengthens the view that Bitcoin is increasingly connected to global political risk, rather than being fully separated from the conventional financial and geopolitical environment.

4.6.4 The Effect of Interest Rate Decisions on Bitcoin Prices

The results showed that interest rate decisions had a positive and significant effect on Bitcoin prices. This was indicated by a t-value of 2.785, which was greater than the t-

table value of 1.667, and a significance value of 0.007, which was lower than 0.05. The regression coefficient of interest rate decisions was 40,440,664.029, indicating that an increase in interest rates was associated with an increase in Bitcoin prices during the research period. Therefore, the fourth hypothesis was accepted.

Theoretically, interest rate decisions reflect the direction of monetary policy and liquidity conditions in financial markets. In general, higher interest rates tend to reduce demand for risky assets because investors may prefer safer assets that offer fixed returns (D. Kang & Leng, 2025). However, the positive effect found in this study indicates that Bitcoin price movements during 2020–2025 were not determined only by the mechanical effect of interest rate increases. Investors may have anticipated interest rate hikes, adjusted their portfolios before policy announcements, or responded positively when monetary policy became clearer (Cui, 2026). Cryptocurrencies have become increasingly connected with monetary policy uncertainty, suggesting that digital assets are no longer fully independent from monetary policy signals (Çağlı & Dimpfl, 2025).

This positive relationship may also reflect the role of expectations in financial markets. When interest rate decisions become more predictable, uncertainty may decrease, allowing investors to re-enter riskier assets such as Bitcoin. (K.-Y. Kang & Lee, 2024) discuss the relationship among money, Bitcoin, and monetary policy, indicating that Bitcoin should be analyzed within a monetary framework rather than treated only as a speculative digital product (Dufouleur, 2026). This supports the finding that interest rate decisions are relevant in explaining Bitcoin price movements.

In practical terms, Bitcoin investors closely observe Federal Reserve policy announcements, inflation expectations, liquidity conditions, and central bank communication. Even when interest rates are high, Bitcoin prices may continue to rise if investors expect that monetary tightening has reached its peak or that future policy easing will occur. (Mumtaz et al., 2025) also emphasize the relationship among cryptocurrencies, money demand, and monetary policy, showing that cryptocurrency markets are connected to monetary conditions and investor demand for alternative monetary assets.

The implication of this finding is that interest rate decisions should be treated as an important variable in Bitcoin price analysis. Investors should not only observe whether interest rates increase or decrease, but also consider market expectations before and after policy announcements. For future investment analysis, interest rate decisions should be combined with real interest rates, liquidity indicators, inflation expectations, and central bank communication. This finding also reinforces the argument that Bitcoin has become increasingly integrated with global monetary policy dynamics.

4.6.5 The Simultaneous Effect of Trade Wars, Inflation, Political Uncertainty, and Interest Rate Decisions on Bitcoin Prices

The findings showed that trade wars, inflation, political uncertainty, and interest rate decisions simultaneously had a significant effect on Bitcoin prices during the 2020–2025 period. This was evidenced by an F-count value of 12.560 and a significance value of 0.000, which was lower than 0.05. Therefore, the fifth hypothesis was accepted. In addition, the R Square value of 0.429 indicates that 42.9% of the variation in Bitcoin prices could be explained by the four independent variables, while the remaining 57.1% was influenced by other factors outside the research model.

Theoretically, this result confirms that Bitcoin price movements are not shaped by a single macroeconomic or political factor, but by the interaction of several external

pressures (Z. Wang et al., 2025). Trade wars represent global trade uncertainty, inflation reflects macroeconomic pressure, political uncertainty captures geopolitical and policy-related risk, while interest rate decisions represent monetary policy direction and liquidity conditions(Hong & Zhang, 2023). Together, these variables form a broader risk environment that influences investor behavior in the cryptocurrency market. (Civelli & Jackson, 2025) show that cryptocurrencies, stocks, and economic policy uncertainty interact within a broader financial system, indicating that cryptocurrency markets are connected with macroeconomic and uncertainty shocks (K.-Y. Kang & Lee, 2024).

In practical terms, the simultaneous result indicates that Bitcoin investors do not respond to only one economic signal. Instead, investment decisions are shaped by a combination of global trade conditions, inflationary pressure, political instability, and monetary policy expectations. Global financial stress can be transmitted to cryptocurrency markets, supporting the idea that Bitcoin prices are influenced by broader financial conditions rather than by isolated factors (Chen et al., 2024). This helps explain why the simultaneous effect was significant even though trade wars and inflation were not significant when tested partially (Colombage et al., 2025).

The implication of this result is that Bitcoin price analysis requires a multidimensional approach. Investors, researchers, and policymakers should consider macroeconomic, geopolitical, and monetary variables together rather than separately. Although the model explained 42.9% of Bitcoin price variation, the remaining 57.1% suggests that other important factors should also be considered, such as market sentiment, cryptocurrency regulation, Bitcoin halving, institutional adoption, exchange-traded fund developments, technological innovation, and global risk appetite.

5. Conclusion

This study examines the influence of trade wars, inflation, political uncertainty, and interest rate decisions on Bitcoin prices during the 2020–2025 period. Using multiple linear regression analysis on 72 monthly observations, the results show that trade wars, inflation, political uncertainty, and interest rate decisions collectively have a significant effect on Bitcoin prices. However, when examined partially, trade wars were found to have a negative but insignificant effect, inflation had a positive but insignificant effect, and interest rate decisions also showed a positive but insignificant effect on Bitcoin prices. In contrast, political uncertainty emerged as the only variable with a negative and significant effect, indicating that rising political instability and geopolitical tension play a more decisive role in suppressing Bitcoin prices than the other variables examined individually. These findings imply that Bitcoin price movements are shaped not only by isolated macroeconomic indicators, but more importantly by the combined interaction of macroeconomic and geopolitical conditions.

The theoretical implications of this study contribute to the growing body of literature on cryptocurrency price determinants by demonstrating that Bitcoin, despite its decentralized nature, remains susceptible to traditional macroeconomic and geopolitical risk factors. The significant effect of political uncertainty on Bitcoin prices supports the notion that Bitcoin is not entirely immune to global political events and serves as a risk-on asset that reacts negatively to heightened uncertainty. This finding extends the application of traditional asset pricing theories to the cryptocurrency market, suggesting that Bitcoin behaves similarly to conventional financial assets in response to geopolitical risks. The non-significant results for trade wars, inflation, and interest rate decisions individually, despite their collective significance, indicate that these factors may

influence Bitcoin prices through complex interactions rather than through direct linear relationships. This finding suggests that the relationship between macroeconomic variables and Bitcoin prices may be more nuanced than previously assumed, warranting further investigation.

From a practical perspective, investors, market analysts, and policymakers are encouraged to pay closer attention to political uncertainty as a key risk factor, while also considering trade conditions, inflationary pressure, and monetary policy simultaneously in order to better understand and anticipate fluctuations in Bitcoin prices. Investors should incorporate geopolitical risk assessments into their cryptocurrency investment strategies, as political uncertainty has been shown to have a significant negative impact on Bitcoin prices. Market analysts should develop more sophisticated models that account for the combined effects of multiple macroeconomic and geopolitical factors rather than focusing on isolated indicators. Policymakers should recognize that Bitcoin, as an increasingly integrated asset in global financial markets, may serve as an indicator of market sentiment toward geopolitical risks and monetary policy decisions.

This study has several limitations. First, the analysis is limited to the 2020–2025 period, which may not capture longer-term relationships or structural changes in the cryptocurrency market. Second, the study focuses solely on four independent variables trade wars, inflation, political uncertainty, and interest rate decisions without considering other potential determinants of Bitcoin prices such as market sentiment, regulatory developments, technological advancements, institutional adoption, or mining difficulty. Third, the use of monthly data may not capture high-frequency price movements and market reactions to news events that occur within shorter time frames. Fourth, the study relies on secondary data from publicly available sources, which may have limitations in terms of accuracy, completeness, and consistency across different data providers. Fifth, the measurement of political uncertainty using aggregated indices may not fully capture the nuances of political events and their differential impacts on cryptocurrency markets.

Future research should broaden the scope by extending the observation period to capture longer-term trends and structural changes in the cryptocurrency market. It would also be valuable to integrate additional variables such as regulatory announcements, institutional adoption rates, market sentiment indicators, technological developments, and global risk appetite measures to capture more complex dynamics in the relationship between macroeconomic factors and Bitcoin prices. Employing higher frequency data, such as daily or intraday data, could strengthen causal inference and provide deeper insights into the temporal dynamics of market reactions to macroeconomic and geopolitical events. Comparative studies across different cryptocurrencies or digital assets would provide insights into whether the findings are specific to Bitcoin or generalizable to the broader cryptocurrency market. Finally, exploring the moderating role of market conditions, such as bull versus bear markets, or regulatory environments across different jurisdictions may enrich the theoretical and practical contributions of future studies in this rapidly evolving field.

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