# **Is Bitcoin a Safe Haven or a Speculative Asset? Understanding Its Behavior under Inflation and Global Risks**

## Problem Definition

In periods of economic turbulence — marked by rising inflation, currency depreciation, and geopolitical conflicts such as the Russia–Ukraine war — individuals and investors face growing **uncertainty** about how to **preserve the real value of their wealth**. Traditionally, assets like gold and silver have acted as safe havens during crises, protecting investors from inflation and financial instability. However, the rise of Bitcoin has challenged this traditional view, raising a critical question in modern finance:  
  
Can Bitcoin serve as a reliable store of value and a safe haven against macroeconomic and geopolitical risks, or does it behave merely as a speculative asset?  
  
Despite extensive debate, there remains **limited clarity** on how Bitcoin reacts to key economic indicators such as inflation, stock market performance, the strength of the U.S. dollar, and global uncertainty. This research seeks to explore the economic drivers of Bitcoin’s value and examine whether its behavior aligns more closely with that of traditional safe-haven assets or speculative investments.

**Main Research Question**

**Does Bitcoin act as a safe haven asset or a speculative investment in the face of inflation, financial market fluctuations, and geopolitical risks?**

**Sub-Questions**

1. How does Bitcoin respond to changes in inflation and inflation expectations compared to traditional safe-haven assets?
2. What is the relationship between Bitcoin prices and stock market performance (NASDAQ)?
3. To what extent does the strength of the U.S. dollar (DXY) influence Bitcoin’s value?
4. Does Bitcoin quantity reflect genuine investment demand or speculative activity?
5. How do geopolitical events, such as the Russia–Ukraine war, affect Bitcoin’s behavior as a potential safe haven?

## Model Framework

* Dependent Variable (y):

**Bitcoin Price (BTC/USD):** measured as the log return of the daily or monthly closing price.

* Independent Variables (x):

|  |  |  |  |
| --- | --- | --- | --- |
| Variable | Symbol | Description | Expected Relation |
| Inflation | x1 | Consumer Price Index (CPI) or YoY inflation rate | (+) or (–): unclear |
| Inflation Expectations | x2 | Survey or breakeven inflation rate | (+): if Bitcoin acts as inflation hedge |
| Stock Market Index (NASDAQ) | x3 | Represents risk-on/risk-off sentiment | (+): if speculative, (–): if hedge |
| U.S. Dollar Index (DXY) | x4 | Measures dollar strength | (–): weaker dollar may push Bitcoin up |
| Quantity of bitcoin | x5 | Givens by the founder | (-): higher activity raises price |
| Geopolitical Events | x6 | Dummy or index (e.g., Russia–Ukraine conflict = 1) | (+): if Bitcoin acts as safe haven |

## **Proposed Functional Form**

**BTC\_t = β\_0 + β\_1INF\_t + β\_2INFE\_t + β\_3NAS\_t + β\_4DXY\_t + β\_5VOL\_t + β\_6GEO\_t + ε\_t**

Where:

BTC\_t = Bitcoin price (log return)

INF\_t = Inflation rate

INFE\_t = Inflation expectations

NAS\_t = NASDAQ index return

DXY\_t = U.S. Dollar Index

VOL\_t = Bitcoin trading volume

GEO\_t = Geopolitical events dummy/index

ε\_t = Error term

## Optional Extensions

Add Gold price (GOLD\_t) or VIX (VOLAT\_t) to compare Bitcoin’s safe-haven role directly with traditional measures.

| **Category** | **Theory** | **Variables** | **Purpose / Expected Relationship** |
| --- | --- | --- | --- |
| **Macroeconomic Variables** | **Safe-Haven and Hedging Theory** | - Inflation - Inflation Expectations | Test whether Bitcoin acts as a **hedge** against rising prices and macroeconomic instability; if Bitcoin appreciates with inflation, it supports the safe-haven role. |
| **Financial Market Variables** | **Modern Portfolio Theory (MPT)** **Safe-Haven and Hedging Theory** | - NASDAQ Index - U.S. Dollar Index (DXY) | Examine Bitcoin’s **correlation** with traditional markets and currency strength. Negative correlation implies Bitcoin provides **diversification** and acts as a **hedge** in portfolios. |
| **Structural & Geopolitical Variables** | **Behavioral Finance Theory** **Safe-Haven and Hedging Theory** | - Quantity of Bitcoin (Supply) - Geopolitical Events | Investigate whether Bitcoin’s **limited supply** enhances its value stability and how **geopolitical crises** influence speculative versus safe-haven demand. |