Analysis Of Various Cryptocurrency Price Changes And Their Correlation With Global Events (2019–2021)

Dr. S. SUGUNA, Professor, Department of Commerce with Professional Accounting, Dr. N.G.P. Arts and Science College (Autonomous), Coimbatore

Ms. JANANI SREE C, Student, Department of Commerce with Professional Accounting, Dr. N.G.P. Arts and Science College (Autonomous), Coimbatore

Abstract

This study investigates the impact of global events on cryptocurrency price fluctuations with a specific focus on Bitcoin, Ethereum, and Litecoin during the pre-pandemic (2019), pandemic (2020), and post-pandemic (2021) periods. Using statistical methods such as correlation and regression analysis on secondary data, the research highlights how global disruptions—like lockdowns, government stimulus, and vaccine rollouts— correlate with volatile cryptocurrency price movements. Key findings suggest that market capitalization significantly influences price, while trading volume has a mixed impact. The study provides vital insights for investors, researchers, and policymakers seeking to understand and navigate the crypto market during global crises.

Keywords

Cryptocurrency, Price Volatility, Global Events, Bitcoin, Ethereum, Regression Analysis, Market Capitalization, COVID-19 Impact

1. Introduction

The emergence of cryptocurrencies, beginning with Bitcoin in 2009, has transformed the global financial landscape. Powered by blockchain technology, cryptocurrencies offer a decentralized alternative to traditional fiat currencies. With rising global adoption, particularly during uncertain times, understanding the price behavior of digital assets has become crucial. This study explores the relationship between cryptocurrency prices and global events, especially during the COVID-19 pandemic, aiming to provide data-backed insights for future market assessments.

2. Objectives

➢ To analyze the price fluctuations of major cryptocurrencies over time.
➢ To examine the relationship between market capitalization and cryptocurrency prices.
➢ To investigate the correlation between global events and cryptocurrency price movements.

3. Methodology

Design: Descriptive Research
Sample Size: 80 cryptocurrencies
Data Source: Secondary data from platforms like CoinMarketCap and Binance
Tools Used: Pivot tables, Correlation analysis, Regression analysis
Time Period Analyzed: 2019 (pre-pandemic), 2020 (pandemic), 2021 (post-pandemic)

4. Findings

➢ Market Capitalization: Found to have a strong positive correlation with price, especially in post-pandemic data.

➢ Trading Volume: Influential but inconsistent in predicting price; significance varies across years.

➢ Price Volatility: Spikes during global disruptions like the COVID-19 outbreak and lockdowns.

➢ Short-Term vs Long-Term Movements: Short-term hourly changes have minimal predictive value for long-term price shifts.

➢ Regression Insights: Market cap emerged as the most statistically significant predictor of cryptocurrency price changes.

5. Discussion

The study aligns with findings by Bampinas & Panagiotidis (2023) and Shaturaev (2023), who noted how cryptocurrencies behaved during crises like COVID-19 and the RussiaUkraine conflict. Like Marcin Watorek et al. (2023), this study observed that Bitcoin and Ethereum prices increasingly mirrored trends in traditional markets. Moreover, Panagiotis Vekios (2023) emphasized the forecasting potential using correlation and regression, which supports the analytical approach of this study.

6. Recommendations

➢ Focus on Market Cap: Prefer assets with strong capitalization for stability.

➢ Global Event Monitoring: Track global policy and health developments closely.

➢ Educate Investors: Raise awareness about crypto volatility and risk.

➢ Adopt Predictive Models: Utilize time-series and regression tools for price prediction.

➢ Regulatory Insights: Stay updated with legal changes affecting crypto use globally.

7. Conclusion

Cryptocurrency markets are highly responsive to global macroeconomic shifts. Market capitalization is a critical driver of price, while trading volume plays a lesser but relevant role. The impact of COVID-19-related events demonstrated that investor behavior is deeply tied to global news. These insights are valuable for forming investment strategies, designing regulatory frameworks, and understanding crypto market resilience.

References

1. Bampinas, G. & Panagiotidis, T. (2023). Cryptocurrency and Equity Market Interactions During Global Crises.

2. Panagiotis Vekios (2023). Forecasting Cryptocurrency Price Trends: A Statistical and ML Approach.

3. Shaturaev, J. (2023). Impact of Crypto Markets on Traditional Financial Systems (2017–2021).

4. Marcin Watorek, Jarosław Kwapien & Stanisław Drozdz (2023). Cross-Market Dependencies Between Cryptocurrency and Traditional Assets.

5. Almeida, J., Gaio, C., & Gonçalves, T.C. (2024). Crypto Asset Reactions to Geopolitical and Economic Policy Risks in BRIC Nations.