Impact of Bitcoin on Select Crypto Currencies - A Study

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Abstract

The present study has been emphasized on the growth of the Bitcoin and its impact on select crypto currencies. The study has considered the secondary data from the period 2016-2017 to 2020-2021. The study has considered the bivariate correlation and the result reveals that the selected crypto currencies are having the significant relationship with bitcoin. The ordinary least square method has been applied and it observed that the growth of the bitcoin investments is having significant impact on the selected crypto currencies. The study observed that crypto bench mark – Bitcoin having the dominance on the other crypto currencies.

Keywords: Bitcoin, Crypto currencies, Dominance, Ethereum, Litecoin

Introduction

There's no disputing that the era of information and communication technology has brought with it a multitude of golden opportunities in a number of areas. The financial and business sectors are among those that benefit from this technology and internet access. A growing number of internet users has sparked virtual world concepts, culminating in a new economic phenomena. As a consequence, new modes of commerce, transactions, and currencies have developed. Cryptocurrency is a novel financial tool that has grown in popularity in recent years. Cryptocurrency (CC) refers to any kind of electronic money that may be utilized in a range of financial transactions, whether virtual or physical. Cryptocurrencies are valuable and intangible objects that may be traded electronically or virtually across a wide range of applications and networks, such as online social networks, online social games, virtual worlds, and peer-to-peer networks.

It's uncommon to witness intense debate about a variety of topics inside the technical community. None has been more contentious in recent years than the arguments about which cryptocurrency and blockchain combo will eventually triumph over the others. Bitcoin, which has dominated the market capitalization charts from the start of the crypto revolution, has been the clear consensus choice.

Most experts, however, do not think this will continue. As the forefather of all cryptocurrencies, the Bitcoin block-chain is showing its age. It has a number of problems in the real world, the most significant of which being its inability to scale. In the fight for dominance, a number of alternative block-chain implementations have popped up to solve some of the basic problems associated with Bitcoin's blockchain, but none have succeeded in capturing a significant portion of the market thus far.

Another notable exception is Ethereum, which has long been Bitcoin's only large-scale competitor. While Ethereum is more developed than Bitcoin, it still has issues that it must address in order to achieve market dominance. That is exactly what Ethereum's developers want to do with Ethereum 2.0, their next upgrade to the underlying blockchain.[1]

Review of Literature

Saeed Alzahrani (2019): The goal of this paper is to fill a gap in the existing literature by investigating current cryptocurrency adoption levels, adoption-influencing factors, providing an in-depth study of these features, and addressing future cryptocurrency adoption challenges. The study's findings may help

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[1] https://www.computer.org/publications/tech-news/trends/end-bitcoins-blockchain-dominance

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academics, regulators, and cryptocurrency producers better understand their consumers' intentions towards cryptocurrency adoption.

Shailak Jani (2018): This research looks at users' expectations for the future of cryptocurrency. It also examines customers' confidence in dealing with cryptocurrencies at a time when such virtual money use is not fully monitored and regulated. In addition, the research intends to measure the growth of bitcoin use in order to get a comprehensive picture from a practical perspective. The study also looks at how 21 different countries have responded to cryptocurrencies in terms of regulations and legislation, in order to provide a complete picture of their impact on various laws in India that regulate them."

Jaysing Bhosale (2018): The study tries to assess three crypto currencies – Bitcoin, Ethereum, and Litecoin – in terms of their previous volatility and stability, as well as their present advancements. A combination of qualitative research conducted via interviews with industry experts, linear regression, and a Monte Carlo study may be used to evaluate if Bitcoin can leverage its existing user base and proven use case in the five-year time horizon.

Robby HOUBEN(2018): The use of cryptocurrencies for financial crime, money laundering, and tax evasion is the focus of this Policy Department A research, which looks at the problem from a legal perspective. It contains policy recommendations for future EU legislation. Blockchain technology has the potential to improve the legal economy as a whole. The fight against money laundering, terrorist financing, and tax evasion should focus on illicit applications of cryptocurrency rather than block-chain.

Christopher Henry (2017): The authors attempt to reconcile the difference in knowledge and ownership by analyzing the transactional and store-of-value reasons for holding Bitcoin. The author also found that men and those with a college or university degree are more likely to be aware of Bitcoin, as are unemployed individuals. Finally, we provide some suggestions for future digital currency surveys, especially for getting reliable estimates from the difficult-to-reach category of digital currency users.

Seetharaman (2017): The purpose of this study is to learn about the various factors affecting Bitcoin (BTC), which is gaining momentum in many sectors of global finance, and how disruptive it may be, such as replacing major fiat currencies in the financial system, which will mainly effect the US dollar. The findings of this study will help us comprehend the future of global finance from a number of angles, including regulation, cryptocurrencies, and fiat currencies. The reason for this conclusion is that Bitcoin is now confronted with a major regulatory hurdle that will prevent it from growing in the way that it would have developed if policymakers had supported it.

Jonathan Chiu (2017): The author has explained on the economics of cryptocurrencies like bitcoin and others. Adoption of alternative consensus techniques, such as proof-of-stake, may improve efficiency even further. In a cryptocurrency system, mining is a public benefit, while double spending to defraud the coin depends on individual incentives to reverse a particular transaction. As a result, a cryptocurrency works best when the number of transactions outnumbers the value of each transaction.

Yutaka Kurihara (2017): This research examines whether or not weekly price anomalies exist by analyzing Bitcoin's market efficiency. According to the empirical results, the Bitcoin market is inefficient. The empirical results, on the other hand, suggest that Bitcoin transactions are getting more efficient and will continue to do so. According to the results, future Bitcoin returns would be uncertain. According to the results, the Bitcoin market is not inefficient. However, as shown by real discoveries, Bitcoin will become more efficient. On a daily basis, one might expect Bitcoin returns to be unpredictable in the future. The empirical results, on the other hand, are untrustworthy.

Objectives of the Study
1. To study the relationship of Bitcoin with the select crypto currencies
2. To know the Impact of Bitcoin on the movement of select crypto currencies

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Hypothesis of the Study

H0: There is no significant relationship of Bitcoin with the select crypto currencies
H0: There is no significant impact of Bitcoin on the select crypto currencies

Scope of the Study

The present study has been focused on the role of Bitcoin effect on the movement of select crypto currencies. The study will consider the historical time series data from the period of 5 years i.e., 2016-17 to 2020-21. The study will consider the following crypto currencies.

- Etherium
- Litecoin

Research Methodology

The study adopted the quantitative research approach to examine the impact of Bitcoin on select crypto currencies. The study considered the secondary data and by using the purposive sampling method Ethereum and Litecoin has been selected based on the trading volumes.

Statistical tools: The present study has considered the secondary data and applied the following statistical tools. They are

- Bivariate correlation
- Ordinary Least square method

Tabulation of Data Analysis

Objective 1: To study the relationship of Bitcoin with the select crypto currencies.

The study has framed the following hypothesis to know the relationship of Bitcoin with the Etherium and Lite coin.

H0: There is no significant relationship of Bitcoin with the select crypto currencies
H1: There is a significant relationship of Bitcoin with the select crypto currencies

The below table explains regarding the relationship between the bit coin, etherium and litecoin through the bivariate analysis through SPSS software.

Table 1: Correlation Among Bitcoin, Etherium and Litecoin

		Bitcoin	Etherium	Litecoin
Bitcoin	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	45		
Etherium	Pearson Correlation	.639**	1	
	Sig. (2-tailed)	.000		
	N	45	45	
Litecoin	Pearson Correlation	.795**	.882**	1
	Sig. (2-tailed)	.000	.000	
	N	45	45	45
** Correlation is significant at the 0.01 level (2-tailed).				

The above table depicts the relationship of Bitcoin with the select crypto currencies. The study applied the statistical method of bivariate correlation on the historical time series data. The study result stated that Bitcoin is having the strong relationship with the Etherium (0.638) and Litecoin (0.795). The p value is observed to be having significant i.e., less than 0.5. Therefore, it has been observed that the movement of

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the Etherium and litecoin are moving along with the Bitcoin. Hence, there is a rejection of null hypothesis and acceptance of alternative hypothesis. There is a relationship crypto currencies with the Bitcoin.

Objective 2: To know the Impact of Bitcoin on the movement of select crypto currencies
The study has framed the following hypothesis to know the Impact of Bitcoin on the Etherium and Lite coin.

H0: There is no significant impact of Bitcoin on Ethereum
H1: There is a significant impact of Bitcoin on Ethereum

Table 2: Impact of Ethereum on Bitcoin

Dependent Variable:			Dethereum	
Method:			Least Squares	
Sample (adjusted):			2 45	
Included observations (after adjustments):			44	
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-3.118688	18.23620	-0.171016	0.8650
D	0.038847	0.011162	3.480243	0.0012
R-squared	0.223833	Mean dependent var		4.710455
Adjusted R-squared	0.205353	S.D. dependent var		134.6616
S.E. of regression	120.0413	Akaike info criterion		12.45794
Sum squared resid	605216.7	Schwarz criterion		12.53904
Log likelihood	-272.0746	Hannan-Quinn criter.		12.48801
F-statistic	12.11209	Durbin-Watson stat		2.090165
Prob (F-statistic)	0.001182			

Source: Secondary Data

The above table represents the impact of bitcoin on ethereum. Ordinary least square method is applied to know the effect of bitcoin on ethereum. The probability value is 0.0012, which is observed to be less than the recommended level i.e., (<0.05) which means the probability value is significant. The co-efficient value of ethereum depicts that bitcoin has a positive impact on ethereum which states that one unit rise in bitcoin will have a rise of 0.038847 units rise in ethereum. Hence, there is a rejection of null hypothesis and acceptance of alternative hypothesis. Therefore, it indicates that bitcoin has a significant positive impact on ethereum.

H0: There is no significant impact of Bitcoin on Litecoin
H1: There is a significant impact of Bitcoin on Litecoin

Table 3: Impact of Litecoin on Bitcoin

Dependent Variable			Dlitecoin	
Method:			Least Squares	
Sample (adjusted):			2 45	
Included observations (after adjustments):			44	

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Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.268807	2.949659	-0.769176	0.0461
D	0.015856	0.001805	8.782599	0.0000
R-squared	0.647456	Mean dependent var		0.926886
Adjusted R-squared	0.639062	S.D. dependent var		32.31856
S.E. of regression	19.41638	Akaike info criterion		8.814501
Sum squared resid	15833.83	Schwarz criterion		8.895600
Log likelihood	-191.9190	Hannan-Quinn criter.		8.844576
F-statistic	77.13405	Durbin-Watson stat		2.222927
Prob(F-statistic)	0.000000			

Source: Secondary Data

The above table represents the impact of bitcoin on litecoin. Ordinary least square method is applied to know the effect of bitcoin on litecoin. The probability value is 0.0000 which is observed to be less than the recommended level i.e., (0.05) which means the probability value is significant. The co-effecient value of litecoin depicts that bitcoin has a positive impact on litecoin which states that one unit rise is bitcoin will have a rise of 0.015856 units rise in litecoin. Hence, there is a rejection of null hypothesis and acceptance of alternative hypothesis. Therefore, it indicates that bitcoin has a significant positive impact on litecoin.

Findings of the Study
1. The study finds the relation between bitcoin and selected crypto currencies i.e ethereum and litecoin it is observed to be positive during analysis period.
2. The Bitcoin has positive correlation with ethereum and litecoin during the analysis period.
3. The study result stated that Bitcoin is having the strong relationship with the Etherium (0.638) and Litecoin (0.795) under bivariate correlation.
4. Ordinary least square method is applied to know the effect of bitcoin on ethereum. The probability value is 0.0012 which is observed to be less than the recommended level i.e., (<0.05) which means the probability value is significant. The co-efficient value of ethereum depicts that bitcoin has a positive impact on ethereum which states that one unit rise in bitcoin will have a rise of 0.038847 units rise in ethereum.
5. Ordinary least square method is applied to know the effect of bitcoin on litecoin. The probability value is 0.0000 which is observed to be less than the recommended level i.e., (0.05) which means the probability value is significant. The co-effecient value of litecoin depicts that bitcoin has a positive impact on litecoin which states that one unit rise is bitcoin will have a rise of 0.015856 units rise in litecoin.

Conclusion
The study is focused on bitcoin and its impact on selected global currencies i.e. ethereum and litecoin in particular. The study has considered the secondary data and examined the relationship with the selected crypto currencies and observed that bitcoin is having the significant relation with ethereum and litecoin. The ordinary least square method has been applied and the result indicated that, it is having impact on the growth of other crypto currencies. There is a need to do further study in this area by considering the other asset class investments impact on the crypto market, so that the investors will take optimum decision.

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