A STUDY ON CRYPTOCURRENCY IN INDIA WITH SPECIAL RESPECT TO BITCOIN

Prof. Pramila Pareek, Research Scholar
JSPM's Rajarshi Shahu College of Engineering
pramilapareek@rediffmail.com

Dr. Amey Choudhari
JSPM's Rajarshi Shahu College of Engineering
ameychoudhari@gmail.com

ABSTRACT
Bitcoin and other cryptocurrencies have become a popular topic in the financial sector. Cryptography is used for security in the creation of cryptocurrencies, which are digital, virtual, or online money.
With both positive and bad effects, cryptocurrency has brought about unparalleled changes in the financial market. Despite being easy to make use of, cryptocurrency's concept can be a little perplexing. It is thought to be difficult because of how drastically it departs from the conventional currencies that we have used for generations. During the global financial crisis of 2008, Bitcoin was developed in order to function independently of central banks, governments, and financial institutions. Since then, a number of regulators have struggled with Bitcoin's structure and have worked to find ways to control it. As a effect, some countries outlawed or outright prohibited it, while others chose to stay ignorant and develop means of taxing and regulating it. This conceptual paper aims to explore the many facets of cryptocurrencies, including their history, varieties, uses, benefits and drawbacks, difficulties, and opportunities. The study's goal is to evaluate Bitcoin's legal status in India.
Keywords: cryptocurrencies, types, Bitcoin, benefits, operations

Introduction

The exchange instruments used to support trade transactions have undergone considerable development and alteration in response to market demands. The tools used to enable the exchange of products are referred to as "money." Money, often known as currency, is a shop of value, a unit of account, and a way of conducting business. In the sense that we all agree to accept it while conducting transactions, money is a medium of exchange. Employees and business owners agree to accept money in trade for the goods and services they provide. In bookkeeping and accounting, value is easily identified and expressed using money as the unit of measure. Money functions as a shop of value since it enables us to preserve the earnings from our jobs or businesses in a convenient item. World currencies have changed significantly throughout the years, starting with barter, progressing through commodity money, metals and coins, gold and silver, contemporary monetary systems, and checks, and eventually the appearance of cryptocurrencies like Bitcoin and Ethereum. It was unthinkable a few years ago how severely the introduction of cryptocurrencies would alter the global payment system. A type of digital or virtual cash protected by encryption is known as a cryptocurrency. As a result, nobody could track the digital currency, including the bank that issued it or any other institution or government. Due to its security characteristics, a cryptocurrency is challenging to counterfeit. One of the aspects that sets a cryptocurrency apart from others is the lack of an issuing authority organization. There is no central control over it.

Literature Review

A sort of digital exchange known as cryptocurrency ensures the use of a strong encryption mechanism, which in turn limits the number of stocks (Luu2016). This is a relatively new phenomenon that has grown significantly in a volatile and shifting economic climate, while not being recognized as a formal form of debt cancellation (Ciaian, 2016). Cryptocurrencies are an unconventional kind of money since, despite being intended for this purpose, their decentralized nature prevents them from being utilized as a substitute for legal tender (Nakamoto 2008). Non- governmental organizations control the creation and upkeep of currencies, despite the fact that they are thought to be a viable option in the future (Kim 2015).

Virtual currencies first emerged as a form of digital trade that ensured their confidentiality, integrity, and balance because of a greater level of protection put in place by users. These people perform algorithms to help with security duties in exchange for cash (Alstyne 2014; Urquhart 2018) Or, to put it another way, the users who support and safeguard the underlying infrastructure by giving computer power are the ones who develop the security features of this payment system (Böhme2015).

According to Evans (2014), A shift in this assumption might lead the value of bitcoin and other digital currencies to vary even further. Their expectations for the future worth are reflected in the value of these assets at any

moment. According to the study, even if Bitcoin appears to be highly volatile in the short term, it will settle over time. The participants increase their knowledge of supply and demand as well as the value generated from using bitcoin, making them more efficient.

To understand what makes Bitcoin valuable or what causes its prices to fluctuate frequently, substantial academic research has been conducted. The most prevalent theory that determines the price of bitcoin in literature is the demand-supply theory. According to Blundell-Wignall, "inelastic demand and constrained supply" are to blame for the skyrocketing costs of Bitcoin (2014). The price determination methodology is used based on Bitcoin's role as a "medium of exchange." They contend that the advantages of using Bitcoin are what determine the supply and demand curves. However, if the government decides to eliminate these benefits, the coins are compromised by fraud, or a better alternative joins the market, the value might decrease to zero. The volume of transactions also demonstrates to be a key demand-driving component, indicating that the price increases are caused by users increased transactional needs. On the other hand, the supply-side factors show to have no impact on the pricing of this unrestrained modern money. According to Polasik (2015), the source of this phenomenon is that since a mathematical formula governs the bitcoin network, every projected future change has already been included into the existing values. Kristoufek (2015) does an analogous study using the wavelength coherent analysis approach and the creation of a demand variable as a trade exchange ratio. The study suggests that price drives the Trade exchange ratio in the near term but not over a longer duration. Therefore, increasing the number of non-exchange transactions will increase Bitcoin's value over the long term, while increasing exchange-based transactions in the short term due to price fluctuations. It is however difficult to distinguish the supply-side component since the future money supply is already taken into account in the current pricing according to a well-known process. There is very little correlation between the price of Bitcoin and the anticipated future supply (Polasik 2015).

Viglione (2015) uses the Economic Freedom Index to examine how governance and other relevant characteristics affect the price of Bitcoin, which is determined by users' willingness to pay more. This study shows how important it is for real interest rates, tax burdens, and investment flexibility to vary between nations when setting Bitcoin pricing. Inflation rates and the ease of transnational money exchange have no impact on the price of Bitcoin. Since Bitcoin is a digital currency, it needs to be examined from more than simply the standpoint of a regular currency. Ciaian and Rajcaniova examine both the conventional causes of currency values and elements unique to digital currency (2016).

The security of an electronic currency or the blockchain can theoretically be compromised, but depending on the algorithm and the formation process, doing so would be expensive. (Xu 2016; Khan and Salah 2018; Zhang . 2019).

As Bitcoin gains acceptability and appeal in the IoT (internet of things) age, it is attracting more attention. It is run on an unregulated system, making it incredibly vulnerable to manipulation. Gandal . (2018), as well as Griffin and Shams, have brought attention to this problem (2020).
Objective of the study

- To understand cryptocurrencies and its operations
- To study Bitcoin and its challenges.

Data Analysis
The role of a cryptocurrency as a medium of trade is its main objective. Online users can presently access more than 1600 cryptocurrencies, and this number is growing. whenever a brand-new cryptocurrency is created. By market capitalization, Bitcoin currently leads Ripple, Ethereum, and Litecoin as the largest blockchain network.

1. Bitcoin (BTC)

Bit coin is one of the most well-known cryptocurrencies and is generally acknowledged as the first. It is open-source software that was developed in 2009. Users are able to conduct open peer-to-peer transactions using the blockchain technology that underpins Bitcoin. These transactions, which are safe because of blockchain technology, are visible to all users. The transaction is visible to all users, but can only be decrypted by the owner of that particular Bitcoin using a "private key" that is supplied to each owner. Bitcoin has no centralized authority, unlike a bank. Global anonymous trading is made possible by the complete control that Bitcoin users have over the amount of money they transfer and receive.

2. Litecoin (LTC)

In order to compete with Bitcoin, Litecoin was released in October 2011. Litecoin is an open source software project and peer-to-peer cryptocurrency that is publicly accessible under the MIT/X11 license. Its generation and

transfer are totally decentralized and rely on open source encryption technologies.
Bitcoin and Litecoin are distinct from one another in some ways. Here are some examples of how various digital currencies differ from one another:

- In comparison to Bitcoin, the Litecoin network aspires to process a block every 2.5 minutes. The fact that this is the case suggests that Litecoin may confirm transactions more quickly. 84 million Litecoins and 21 million Bitcoins, in total, are in use today.

Experts assert that Litecoin is more expensive to produce and more challenging to produce because of its use of the unique Script algorithm and FPGA and ASIC (Application Specific Integrated Circuit) technology built for mining.

3. Ripple(XRP):The US-based startup Ripple Labs Incorporation invented Ripple, a network for real-time gross settlement, currency exchange, and remittances. Ripple, a cryptocurrency and digital payment network, was unveiled in 2012 and acts as a platform for business dealings. In order to make money transactions swift, safe, and economical, a global settlement network was established. The exchange of any money, including USD, Bitcoin, gold, and EUR, is made possible via Ripple's connections to banks. This distinguishes it from other types of money. By focusing on large-scale money transfers rather than one- on-one transactions, Ripple sets itself apart from other digital currencies.

4. Ethereum (ETH)
In late 2013, researcher and programmer Vitalik Buterin proposed the cryptocurrency Ethereum for the first time. In July 2015, it was initially made accessible. It is a platform that uses blockchain technology and is open source. Since the Ethereum blockchain focuses on running the computer code of any decentralized apps and on maintaining ownership of digital currency transactions, application developers can use it to pay for transaction fees and services on the Ethereum network.

5 .Bitcoin Cash
In order to improve some characteristics of Bitcoin, a brand-new cryptocurrency named Bitcoin Cash was created. In Bitcoin Cash, block sizes were increased, allowing for the quicker processing of more transactions.

6. Ethereum Classic
A variation of the Ethereum network is the blockchain known as Ethereum Classic. It uses a comparable decentralized infrastructure to manage smart contracts. Computer programmes called "smart contracts" operate exactly as intended with no chance of fraud, censorship, or outside meddling. It offers a value token called "conventional ether" that users may use to pay for products and services, much like Ethereum does.

Bitcoin
Bitcoin, the well-known cryptocurrency wallet, was created in 2008 by a person or group of persons going by the name Satoshi Nakamoto. Cryptocurrencies like bitcoin are a type of electronic money. On the peer-to-peer Bitcoin network, it is a type of decentralized electronic currency that may be transmitted directly between users without the need for a mediator. A public database called a blockchain, which manages user data anonymously, is used for transactions. Bitcoin has developed into the most well-known and widely accepted digital currency since its introduction ten years ago.

The term "cryptocurrency" is frequently used to refer to Bitcoin, even though Nakatamo himself describes it as "a mechanism for electronic transactions without relying on trust." For the transaction to be validated in other electronic payments, a trustworthy third party, such as a bank or other electronic device, is required. The Bitcoin system employs a massive number of competitive "miners" to authenticate transactions rather than depending on a single reliable middleman, like a bank or credit card network. To create and control currency, Bitcoin makes use of cryptographic principles. In comparison to Bitcoin transactions, traditional online payment options have greater transaction costs. Since they were designed to stand alone for their worth, bitcoins are wholly digital money. The bank does not need the moving or storing of money. There are no actual bitcoins stored in a public cloud wallet; only balances. A significant amount of computing power is needed to verify each and every Bitcoin transaction. A secret database that you may keep up on your computer, on your phone or tablet, or anywhere in the cloud is referred to as a "wallet." From one individual wallet to another, bitcoins are transferred.

Characteristics of Bitcoin
It takes more than just transmitting money from one person to another to use the Bitcoin system. It differs from other cryptocurrencies in a number of ways.

Control of fraud: In order to protect consumers against the vast majority of common scams, like chargebacks and

unauthorized charges, it gives the highest level of defense. The security of the wallets allows users to fully control their finances by encrypting them. This means that there is no chance of fraud of any type.

Bitcoin is accessible from any location in the globe, making it possible for any bank, company, or person to send and receive payments quickly and securely at any time. The ways of payment are unrestricted.

Cost-effective: Bitcoin allows for direct transactions without the need for an intermediary. The transaction time and cost are considerably less when compared to other payment systems.

Transparency: Users can see and follow all Bitcoin transactions. Every transactional detail is preserved on the block chain. a site that customers can access at any time.

Bitcoin's operation

Without the aid of a third party, such as a bank or financial institution, for the purpose of validation, individuals can use Bitcoins to pay other individuals or businesses. Instead, the system authenticates and clears transactions using the blockchain. Blockchain technology serves as the foundation for the majority of cryptocurrencies. To put it simply, it is a system for exchanging and storing the data or information created during bitcoin transactions. All Bitcoin transactions that have occurred inside the Bitcoin system are recorded and made publicly available on the blockchain, a public ledger. A block is a running list of recently completed transactions. The blockchain, which goes back to the initial Bitcoin transaction, is made up of blocks of stored data that stack on top of one another. The security of the validation process, which enables the community to monitor and self-regulate transaction activity, is a prerequisite for the openness that the blockchain offers. Additionally, it makes it simple to authenticate the sender and receiver and prevents bitcoin double spending.

The public key and the private key are provided to the user when they create a Bitcoin wallet to keep their bitcoin. Similar to his or her login and password, public keys and private keys are two sets of very large numbers and letters. If someone wants to send them money, they need to have access to their public key. No one needs to know their name or email because it is just a collection of numbers and statistics, address or other details that can be used to identify a person. As a consequence, Bitcoin users maintain their anonymity. However, the private key is not disclosed. A person's private key serves as their unique identifier on the blockchain. To access Bitcoin, a private key is required. Every Bitcoin in the wallet or account might be stolen if someone witnesses.

Bitcoin's legality in India

Bitcoin's and other related crypto-related instruments' legal status is still up in the air or fluctuating in several of these countries. The majority of countries do not specifically prohibit the use of Bitcoin, but different regulatory consequences apply depending on whether it is regarded as money or a commodity. In certain states, its use and commerce are explicitly allowed, whilst in others, it is not allowed or is subject to limitations. Similar to how different categories have been given to Bitcoins by several government departments, agencies, and courts. The conversion of fiat cash (conventional currency) to bitcoin, however, is said to be subject to VAT/GST. Regarding Bitcoin's position as a currency, the European Union has not established any formal regulations. Bitcoin use is permitted in the following countries: Ireland, France, the United States, Russia, Japan, Singapore, Switzerland, Germany, Norway, Costa Rica, South Africa, Kyrgyzstan, Jamaica, Netherlands, Luxemburg, Belgium, Spain, Herzegovina, Portugal, Marcedonia, Malta, Lithnania, Italy, Greece, Bulgaria Sweden, Bosnia, Denmark, Finland, Iceland, Lebanon, Ukraine, Mexico, Namibia, Rica, Uzbekistan, Costa, Venezuela, Turkey, the Czech Republic, Turkey, Hong Kong, Lebanon, Israel, Chile, Philippines, Brazil, Argentina and Venezuela.

A number of countries, including, China, Nepal, Taiwan, Pakistan ,Cambodia, , Bangladesh, Iran, Saudi Arabia, Indonesia Colombia, , Bolivia, Ecuador, Morocco, Algeria and Egypt, have outright banned Bitcoin and transactions based on it.

Bitcoin is legal in India, Canada, Jordan, Vietnam, and Thailand while being outlawed in banking. Although the State Bank of Vietnam has stated that the issuance, supply, and use of Bitcoin and other comparable virtual currencies is forbidden as a method of payment and is subject to fines of between 150 million and 200 million Vietnamese Dong (VND), the government has not passed any legislation that forbids the exchange of Bitcoin for other virtual goods or assets. Bitcoins became available in India in 2012. Arun Jaitley, the finance minister, pledged to restrict the use of Bitcoin and other virtual currencies in India for illicit purposes in his budget presentation on February 1, 2018. He emphasized that India will support blockchain technology in payment systems rather than accepting them as legal cash. The Indian government advises users of these forms of currencies to exercise caution because there is no legal protection for them. And if the public encounters fraud, the government cannot assist the public in any way. In the early months of 2018, the Reserve Bank of India

(RBI) placed a ban on the purchase and selling of crypto currencies for organizations under RBI control.
A petition contesting the legitimacy of cryptocurrencies and asking for a directive or order preventing their transaction was submitted to the Supreme Court of India in 2019. The regulatory framework for cryptocurrencies is being developed by the Indian government. The Supreme Court handed thegovernment four weeks to develop cryptocurrency regulation on February 25. The court will then consider the petitions challenging the RBI's ban on crypto currency banking.

In India, bitcoin is entirely legal as of April 2022, there are no clear laws or regulations to regulate Bitcoin, but the Indian government has enacted a crypto tax at a flat rate of 30% on gains from the transfer of cryptocurrencies. The legality of Bitcoin and other cryptos hasn't yet been debated, despite the tax implications. This does not preclude you from engaging in legitimate cryptocurrency trading, though. The union budget outcomes are

1. A 30% tax rate will apply to income from the transfer of virtual digital assets like cryptocurrency and NFTs.
2. When declaring revenue from the transfer of digital assets, there will be no deductions permitted besides the cost of purchase.
3. Digital asset losses cannot be offset by any other revenue.
4. Giving away digital assets will subject the recipient to tax.It is not possible to offset losses from one virtual digital currency against gains from another.

Benefits of Bitcoin

1. The advantages and disadvantages of Bitcoin are listed below by Ivaschenko (2016). Anonymity comes first. The applicants must provide their ID while requesting an account with a bank. Using Bitcoin, anyone can send money to anyone else in the globe. To open a Bitcoin wallet, no KYC (Know Your Customer) procedure is necessary. It is fully anonymous and totally transparent. Without using the names, addresses, or any other sensitive information of its customers, any business may generate a limitless number of Bitcoin addresses.

2. In a peer-to-peer bitcoin network, nothing is managed by a single central server. In this case, there is an information (or monetary) exchange taking on between two to three software clients. The Bitcoin network includes all application wallets that users have installed. All committed transactions and the total quantity of Bitcoins in each wallet are stored in the client's database. Many dispersed servers handle hundreds of transactions. The movement of money cannot be controlled by governments, banks, or taxes.

3. As there are only 21 million Bitcoins in existence, there is no inflation. There is no opportunity for inflation to arise in the system since neither political forces nor companies are able to alter this setup.

4. Using the same algorithms as online banking, open source cryptocurrency mining employs BTC. The sharing of user data is the sole distinction between Internet banking and conventional banking. All transaction-related data (how, when) is communicated through the BTC network, but neither the sender nor the recipient of the coins are known (the owner's wallet is therefore inaccessible).Unlimited transaction options - The owner of a wallet has unlimited transaction options, enabling them to transfer money to anybody, anywhere, for any amount. You may transfer money to anybody, anywhere in the world, who has a Bitcoin wallet since a Bitcoin transaction cannot be stopped or controlled.

5. No restrictions. Making payments via this manner is final. It is impossible to duplicate, forge, or use the coins more than once. The integrity of the entire system is safeguarded by these skills. More and more online vendors, suppliers, and businesses are now accepting Bitcoin each month.

6. Low operating costs for Bitcoin: Real money and online purchasing power can coexist with the help of the BTC cryptocurrency. Banks or other companies are not entitled to receive commissions or other fees. The primary, free element of this procedure is math. This method provides a lower commission fee as compared to other systems. It amounts to 0.1% of the whole transaction value. Transaction fees are sent to the wallets of bitcoin miners.

7. Decentralization Each computer mining : This network, which includes Bitcoins, is managed by all of its users rather than by a single entity. This suggests that the central authority lacks the power to enforce regulations on Bitcoin users. Additionally, the payment mechanism will continue to work reliably even if some of the network is down.

8. Easy to use. Businesses can gain from utilizing BTC since it might be challenging to open a corporate

account in Ukrainian banks and there is a potential that it will be rejected without warning. The business may create a BTC wallet in around 5 minutes, after which it can be utilized right away without any charges or wait times.

9. Openness: The BTC maintains a history of every prior transaction. A blockchain is a collection of related blocks that are arranged sequentially. All of the data is included in the block chain. Anyone can learn how much Bitcoin is held if the company has made the BTC address public. If the location is kept a secret, no one will ever know that this company even has a physical address. Businesses frequently use a different BTC address for each transaction to retain the highest level of privacy.

10. Transaction speed: After a payment has been accepted by the BTC network, the capacity to transmit money instantaneously to anybody, anywhere.Sending an international payment through our bank often takes three days or more. If we transmit it using Bitcoin, it will only take a little more than 10 minutes. This is still much quicker than the banks' 3+ day turnaround times, even though it can occasionally take longer (up to an hour or more).

Drawbacks of Bitcoin

1. No Bitcoin transaction may be undone. The financial institutions that accept checks, credit card charges, bank drafts, wire transfers, and other conventional payment methods profit by being insured and reversible. Every time bitcoins are transferred between users and wallets, the outcome is already known. Your Bitcoin wallet is not additionally covered by insurance. If you misplace your wallet's password or even the hard drive information, the contents of your wallet are permanently lost.

2. Unable to be Confiscated, Frozen, or Audited: Banks and law enforcement are unable to seize, freeze, or audit bitcoin wallets. Bitcoin wallets cannot be restricted in terms of deposits or withdrawals. Wealth management decisions are made only by the owner of the Bitcoin wallet.

3. It's not easy to use Bitcoin: Private key, public key, accessing and using a wallet, etc., are not very straightforward ideas for folks who are unconfident with computers. Every time we want to send someone money, we have to enter a long string of characters into the computer (their public key). Bitcoin needs to be as easy to use as internet browsing in order to be available to everyone worldwide.

4. Delay in confirmation due to technical issues: It is occasionally feasible to spend bitcoins twice during the confirmation period. Bitcoin transactions are peer-to-peer, thus it takes a while for the P2P network of computers to confirm them. A dishonest user who clicks rapidly during these brief pauses might send a second payment of the same Bitcoins to a different recipient. The payment and the items are lost if the second receiver delivers the goods to the dishonest buyer before receiving confirmation of the dishonest transaction, even though the system finally recognises the double-spending and invalidates the dishonest second transaction.

Bitcoin (Btc) Opportunities In India

Businesspeople there believe this creates a natural opportunity for the country to adopt Bitcoin and other cryptocurrencies. The number of Bitcoin owners in India is now estimated to be around 30,000, and this number is expected to increase.

- Customers using the payment method are not required to submit their secret passwords.

- For emigrants, it provides a tool for sending remittances without incurring fees. • For marketers, it is a technique to reduce transaction costs.

Btc Difficulties In India

Government Regulation: The attitude of the Indian government is the main barrier preventing Bitcoin from taking off in India. Currently, it's unclear how cryptocurrencies will develop in India. The RBI announced in 2019 that cryptocurrencies would not be recognized as legal cash. largely as a result of its complete decentralization

Security Risk: Malicious people and hackers will be able to make as much virtual money as they desire if they are successful in getting past the system's defenses and learning how to create it. As a result, it will be simple to produce fake virtual currency or steal virtual money by simply changing account balances.

Crypto currencies like Bitcoin, which allow users to buy both virtual and real products and services using virtual currency on some platforms, may have a negative impact on the Indian monetary system by reducing the need

for physical cash. Users will transition from paying for their purchases with real money to utilizing virtual money. The price of real money will increase as a result of some platforms users' ability to exchange their virtual currency for it. This change in supply and demand will have a negative influence on the real monetary systems.
Utilizing for Alleged Operations: A number of incidences have led to claims that Bitcoin has been used for nefarious and criminal operations throughout the world, including tax evasion, black marketing, and money laundering.

No Ombudsman: As there is no venue where a user may conceivably go for assistance or to air a complaint, consumers are subject to transactional and informational risks.

Deep economic integration of local currency: According to Paul Brody, global innovation leader at EY, Bitcoin and other cryptocurrencies have no real-world use in the country because of how pervasively used local currency is.
Human error in online transactions: Unregulated internet exchanges that exchange money for bitcoins may be run by dishonest or inexperienced individuals. The fundamental contrast is that while user insurance is not offered by Bitcoin exchanges, bank clients are partially insured for losses through traditional banking.

Conclusion & Finding

Bitcoin provides a cutting-edge, advantageous, and appealing payment mechanism that can increase revenue for both enterprises and operators. It makes it easier for consumers to complete financial activities including purchasing, selling, transferring, and exchanging by providing alternatives to traditional payment methods. More advantages of cryptocurrencies can be found in the e-business and e-payment sectors. The trust in cryptocurrency is currently low, nevertheless. There are several issues, concerns, and problems with many cryptocurrency systems. Until cryptocurrencies are properly controlled and maintained, users must use them with great caution. The absence of laws is thus the primary problem with cryptocurrency systems. To increase India's credibility and win the trust of the populace, more laws should be upheld and enforced.

References

Böhme, R., Christin, N., Edelman, B., & Moore, T. (2015). Bitcoin: Economics, Technology, and Governance. The Journal of Economic Perspectives,29(2), 213-238. Retrieved from http://www.jstor.org/stable/24292130

Angel, J., & McCabe, D. (2015). The Ethics of Payments: Paper, Plastic, or Bitcoin? Journal of Business Ethics,132(3), 603-611. Retrieved from http://www.jstor.org/stable/24703614

Blundell-Wignall A (2014) The Bitcoin question: currency versus trust-less transfer technology (No. 37). OECD Publishing, Paris

Böhme, R., Christin, N., Edelman, B., & Moore, T. (2015). Bitcoin: Economics, Technology, and Governance. The Journal of Economic Perspectives,29(2), 213-238. Retrieved from http://www.jstor.org/stable/24292130

Ciaian P, Rajcaniova M. The digital agenda of virtual currencies: Can Bitcoin become a global currency? ISEB. 2016;14(4):883–919. doi: 10.1007/s10257-016-0304-0

Ciaian P, Rajcaniova M, Kancs DA. The economics of Bitcoin price formation. Appl

Econ. 2016;48(19):1799–1815. doi: 10.1080/00036846.2015.1109038.

Dwyer GP. The economics of Bitcoin and similar private digital currencies. J Financ Stab. 2015;17:81–91. doi: 10.1016/j.jfs.2014.11.006.

Dyhrberg AH. Bitcoin, gold and the dollar–A GARCH volatility analysis. Financ Res Lett. 2016;16:85–92. doi: 10.1016/j.frl.2015.10.008.

Gandal N, Hamrick JT, Moore T, Oberman T. Price manipulation in the Bitcoin ecosystem. J Monet Econ. 2018;95:86–96. doi: 10.1016/j.jmoneco.2017.12.004

Garcia D, Tessone CJ, Mavrodiev P, Perony N. The digital traces of bubbles: feedback cycles between socio-economic signals in the Bitcoin economy. J R Soc Interface. 2014;11(99):20140623.doi: 10.1098/rsif.2014.0623

Griffin JM, Shams A. Is Bitcoin really untethered? J Financ. 2020;75(4):1913–1964. doi: 10.1111/jofi.12903.

El Alaoui M, Bouri E, Roubaud D. Bitcoin price–volume: a multifractal cross-correlation approach. Financ Res Lett. 2019 doi: 10.1016/j.frl.2018.12.011.

Evans DS. Economic aspects of Bitcoin and other decentralized public-ledger currency platforms. SSRN J. 2014 doi: 10.2139/ssrn.2424516.

Griffin JM, Shams A. Is Bitcoin really untethered? J Financ. 2020;75(4):1913–1964. doi: 10.1111/jofi.12903

Kaminski J (2014) Nowcasting the Bitcoin market with twitter signals. Cambridge. Retrieved from http://arxiv.org/abs/1406.7577

Murali, J. (2013). A New Coinage: Can Bitcoin, the global online digital currency, be the precursor of a new

monetary system? Economic and Political Weekly,48(38), 77-78. Retrieved from 45c http://www.jstor.org/stable/23528549

Ivaschenko, A.I. (2016). Using Cryptocurrency in the Activities of Ukrainian Small and Medium Enterprises in order to Improve their Investment Attractiveness. Problems of economy, (3), p.267-273.

Luther, W. (2016). Bitcoin and the Future of Digital Payments. The Independent Review, 20(3), 397-404. Retrieved from http://www.jstor.org/stable/24562161

Matkovskyy R, Jalan A. From financial markets to Bitcoin markets: A fresh look at the contagion effect. Financ Res Lett. 2019;31:93–97. doi: 10.1016/j.frl.2019.04.007

Polasik M, Piotrowska AI, Wisniewski TP, Kotkowski R, Lightfoot G. Price fluctuations and the use of Bitcoin: an empirical inquiry. Int J Electron Commer. 2015;20(1):9–49.

doi: 10.1080/10864415.2016.1061413.

Viglione R. Does governance have a role in pricing? Cross-country evidence from Bitcoin markets. SSRN Electr J. 2015 doi: 10.2139/ssrn.2666243.

Nadarajah S, Chu J. On the inefficiency of Bitcoin. Econ Lett. 2017; 150:6–9. doi: 10.1016/j.econlet.2016.10.033

