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Economics

BITCOIN: A BLESSING OR A CURSE?

KEY WORDS:

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ABSTRACT

Some concepts become economically relevant as new technologies emerge, as is the case with cryptocurrencies in general, or Bitcoin and Ethereum in particular. Because of the importance of these tools, a thorough bibliometric study that allows us to obtain all information about cryptocurrencies is required. This study will aid related research that has been and is currently being conducted. The bibliometric analysis includes 11 articles that highlight the most related papers, research fields, countries, organizations, authors, publications, and trends over the last few years. Finally, the number of papers published has increased over the last three years. The analysis depicts the evolution of block chain technology, which is used in this type of crypto currency. And finally, will help the reader to find the answer for the research Question.

INTRODUCTION:

''Bitcoin eliminates all money exploiters'' & ''Bitcoin will become collateral asset on banking system for cash loan'' – Gun Gun Febrianza.[1] If we believe the famous quote by Erik Voorhees – "Like the internet, Bitcoin will change the way people interact and do business around the world."[2] Satashi Nakamoto, Blockchain, and Bitcoin have all become household names in recent years, pushing the boundaries of how we think about global currency.

Bitcoin, like its roots, has become known for price volatility that frequently create news headlines and attract the attention of

1   https://www.goodreads.com/quotes/tag/bitcoin
2   https://www.awakenthegreatnesswithin.com/50-bitcoin-quotes-on-success/

financial speculators. Other digital currencies, such as Ethereum and Litecoin, have sprung up as a result. Other crypto currencies, such as Bitcoin Cash ABC, were developed when nodes elected not to update to the current protocol, resulting in the creation of a new currency out of Bitcoin's previous protocols (BABUSD).[3]

This Research paper will help the reader to understand the history of Bitcoin, how the blockchain function & whether Bitcoin would be a good investment option for future. The reader of this research paper

3   https://www.plus500.com/en- IT/ Instruments/ BTCUSD/ The-History-of-Bitcoin3

would be able to analyse & evaluate various risk involved in bitcoin investment.

Investor Sentiment:

Bitcoin (BTC) has taken investors and the rest of the world on a wild trip from its humble beginnings in 2008 to its price peak in 2021. In just over a decade, the first crypto currency has risen and fallen, rallied and fallen, and risen and fallen again on its way to tens of thousands of dollars.

Bitcoin is a peer-to-peer electronic trade that is decentralized. To put it another way, this implies that people may transmit money directly to each other without the need for a bank or a third party to act as an intermediary. Bitcoin was designed so that

people may conduct financial transactions without relying on the government or banking institutions. The Bitcoin blockchain, which uses a proof-of-work system for monitoring and verifying transactions, allows users to deal amongst themselves.

Bitcoin is the most popular crypto currency in the world today, and some proponents hope it could eventually replace traditional cash. While Bitcoin isn't flawless, investors are encouraged by the progress achieved since the crypto currency's creation. Bitcoin's surge has sparked a dedicated group of supporters who are ecstatic about crypto currency's potential for investors and companies. Thousands of new crypto currencies have sprung up as a result of Bitcoin's success.

BACKGROUND:

As scepticism of banks and their role in the financial system rose during the 2008 Great Recession, Bitcoin was born. Satoshi Nakamoto, an individual or a group of individuals, published a white paper in response to the centralized management of money and the trust necessary in managing citizens' cash.[4]

Transactions in the traditional financial system can be reversed or tampered with by third parties, resulting in high

4   https://money.usnews.com/investing/articles/the-history-of-

transaction costs. Bitcoin was pitched as a mechanism to do business without the use of a middleman. Rather of depending on third-party banks and other organizations, the Bitcoin system employs cryptographic evidence to ensure the network's integrity.

When the first block, known as the genesis block, was mined on Jan. 3, 2009, the blockchain was officially started. A week later, the first test transaction took conducted.

"The earliest Bitcoin transactions were negotiated on online forums with people trading for products and services in exchange for Bitcoin," explains Garrette

bitcoin#:~:text=Bitcoin%20was%20created%20out%20 of,required%20in%20handling%20citizens'%20cash.

Furo, a partner at New York-based investment management firm Wilshire Phoenix. "Bitcoin's value was set arbitrarily at first."[5]

Literature Review:

A blockchain is a decentralized ledger that records all transactions that occur across a peer-to-peer network. It is the primary technology underlying the vast majority of crypto currencies currently in circulation. Since its inception, blockchain technology has demonstrated promising application prospects and sparked considerable interest in academia and industry. It has also become a visible target for adversaries. We conduct a systematic literature review on blockchain and crypto currency security vulnerabilities and cyber-attacks in this paper by searching and analyzing

previous research papers indexed in reputable journal databases. We then summarize the most common and critical security threats and attacks, as well as current countermeasures, based on our findings.

5   https://money.usnews.com/investing/articles/the-history-of-bitcoin#:~:text
owner of the currency. It accomplishes this

Mining is a monetary process that involves the verification of transactions and the creation of new units that are then added to the core of existing products (Eyal and Sirer 2013). Miners are in charge of aggregating the most transaction history into blocks and solving the algorithms for each currency. These miners are paid a set amount of the currency (Böhme et al. 2015; Bonneah et al. 2015). The algorithm's option is constantly changing, and the next alculation in the sequence is dependent on previous results.

Blockchain setup and maintenance:
Many cryptocurrencies use the blockchain by keeping track of each coin's movements when it is handed on to a new owner. Approving each transaction also guarantees that the network's protocols are followed.

Every independent node has access to ledgers that record who owns the coin at any given time. A 'block' represents a transaction or a packet of data, and the ledger may connect them all together in chronological order. Because it employs blockchain approaches to maintain the system transparent and honest, the term "blockchain" has become associated with Bitcoin.

format to verify that the payee is the rightful

Chronology of BTC's Journey since inception:[6]

Year	Details
2008	It was first introduced in 2008 and was designed to be a transparent and decentralized asset using peer-to-peer electronic technologies. Satoshi Nakamoto, the creator of Bitcoin, advocated in his whitepaper that the cryptocurrency be unregulated by any authority.
2009	Satoshi Nakamoto produced 50 Bitcoins utilizing blockchain techniques in January 2009, assuring that the first 50 Bitcoins would always stay in the system. As a result, these 50 Bitcoins will never be spent or utilized. Satoshi Nakamoto transfers 10 Bitcoins to Hal Finney, a computer scientist and early adopter of Bitcoin who was the first person to tweet about Bitcoin, in the world's first P2P Bitcoin transaction.
2010	After many people got into it and started trading, the path for trading Bitcoins eventually began. Bitcoin's value grew from zero to $0.0008 before the end of 2010, and it was $0.83 by the end of the year.
2011	After Bitcoin's prominence, crypto currencies like as Litecoin were created to be used for online transactions between individuals, with some major e-commerce companies enabling Bitcoin transactions for their services.

6   https://www.cnbctv18.com/cryptocurrency/hackers-with-ties-to-north-korean-weapons- program-allegedly-used-binance-to-launder-stolen-funds-13742392.htm

2012	It increased in value, reaching a peak of $250. It was also the start of the milliBitcoins (mBTC), microBitcoins (uBTC), and Satoshis measurement systems.
2013	As the value of Bitcoin increased this year, more individuals joined in, and by December 2013, it had reached a high of $1,164.
2014	Due to extreme price fluctuation, it dropped to $315 from $760 in 2014, a staggering 241% decline.
2015	Due to extreme price fluctuation, it dropped to $315 from $760 in 2014, a staggering 241% decline.
2016	In December 2016, the crypto currency market and Bitcoin saw a game- changing year, with values reaching $433 and $959. This year, the value of Bitcoin increased by 121 percent.
2017	At the start of the year, it surpassed the $1000 milestone. Jamie Dimon, the CEO of JPMorgan, labelled Bitcoin a "fraud" and subsequently returned it; the price reached an all-time high of $20,000 in March.
2018	Bitcoin plummeted to $3,200, a loss of 625 percent.
2019	Bitcoin traded between $3,190 and $10,000 by mid-June, with high anticipation of a further price increase. It dropped to $7,112.73 in December 2019.
2020	Bitcoin, which peaked around $7,200 in the first months of 2020, has risen to $18353 by November 23. Bitcoin has grown by 224 percent this year alone, and is expected to expand much more in December 2020.
2021	This year was the best year in Bitcoin's and other cryptocurrencies' history. Bitcoin reached a high of $40,000 in January. There was no turning back once Tesla spent $1.5 billion in Bitcoin in February. In February, it surpassed $50,000. Elon Musk announced in March that anybody may buy a Tesla automobile using Bitcoin. Prices jumped as a result, reaching an all-time high of $64,829.14 on April 14. Elon Musk said on May 13 that Tesla will no longer accept Bitcoin payments for its vehicles owing to environmental worries over cryptocurrency mining, which caused Bitcoin to plummet by roughly 50%. As of May 22, Bitcoin was trading at $36,057.54 per coin.

Data Review:
Bitcoin Prices from 2010 through 2022 (Yearly)
This table displays Bitcoin Historical Prices on January 1st of each year.[7]

Year	Bitcoin Price ($)	Change ($)	Year-over- year (%)
2022	47,743	18,351.22	62.44

Year	Bitcoin Price ($)	Change ($)	Year-over- year (%)
2021	29,391.78	22,203.31	308.87
2020	7,188.46	3,318.99	85.77
2019	3,869.47	-9,542.97	-71.15
2018	13,412.44	12,414.75	1,244.35
2017	997.69	563.23	129.64
2016	434.46	120.54	38.40

Year	Bitcoin Price ($)	Change ($)	Year-over- year (%)
2015	313.92	-456.51	-59.25
2014	770.44	757.13	5,690.96
2013	13.30	8.04	152.56
2012	5.27	4.97	1,655.90
2011	0.30	0.21	249.65
2010	0.09	0	0

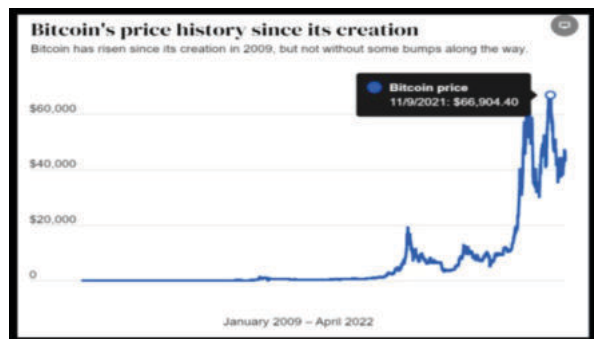7   https://www.in2013dollars.com/bitcoin-priceat more over

$850 in February, maintaining the previous year's upward trend, and completed the year at $378.64. Bitcoin's price fell for a few months in 2015, but it rose at the end of the year, reaching $362.73 on 1 Bitcoin could be purchased for $0.30 in December 1st. Prices gradually grew in 2016 and 2017, culminating in a massive spike towards the end of 2017. Prices plummeted precipitously in 2018, but have now early 2011! The currency reached more over $15 before settling at $3 by the end of the year. Bitcoin's price has risen to $12.56 by the end of 2012. By November 2013, Bitcoin had risen to $198.51, but then had a massive spike, finishing the month at $946.92. 2014 marked the first time that Bitcoin finished the year at a lower price than it began. It peaked rebounded, albeit they remain well below their 2017 highs. Bitcoin prices skyrocketed between 2020 and 2021. Coindesk reports the Bitcoin price in US dollars. The prices on this page are purely nominal (i.e., they are not indexed to inflation)[8]

8 https://www.in2013dollars.com/bitcoin-price

* Based on 2009 price from New Liberty Standard Exchange Source: Calculations based on data from Investing.com

Challenges:
Virtual currencies have been linked to numerous unregulated activities, including

Bitcoin's price history since its creation
Bitcoin has risen since its creation in 2009, but not without some bumps along the way.

Bitcoin price
11/9/2021: $66,904.40

January 2009 – April 2022

Bitcoin returns by year[10]*

Year	Return
2009	N/A
2010	30,203%*
2011	1,467%
	187%
2013	5,870%
2014	-61%
2015	35%
2016	124%
2017	1,338%
2018	-73%
2019	94%
2020	302%
2021	60%

9 https://www.bankrate.com/investing/bitcoin-price-history/

criminal acts, due to their ease of use (Selgin 2013) and lack of regulation, particularly regarding taxation (Follador 2017), and may contribute to further price distortion (Barratt et al. 2013; Hardy and Norgaard 2016; Foley et al. 2019; Griffin and Shams 2020). Another issue with these currencies is their high volatility, losses, and lack of wider acceptance among the general public, which may indicate ineffectiveness (Nadarajah and

10 https://www.bankrate.com/investing/bitcoin-price-history/

Chu 2017; Klein et al. 2018). Although volatility can be interpreted as both a risk and an opportunity (Brière et al.

2013), it is an inherent feature of the currency (Bariviera 2017) and is virtually impossible to predict (Balcilar et al. 2017). Recent research has discovered that brief ripples limit the ability to benefit from these tools; however, assets in these crypto currencies are not limited, leaving only speculations about financial advantages (Li et al. 2018). The continuous variations and breakdown in the exchange of distributed volume cause large price volatility (Navas-Navarro 2015; Polaski et al. 2015), indicating the market's inefficiency (Urquhart 2016; Zhang et al. 2018; Neslihanoglu 2021).

It is an exchange mechanism whose true value begins at zero (Van Alstyne 2014; Cheah and Fry 2015). Although their long-term viability is currently being debated, research has shown that the life span of crypto currencies increases as they stabilize (Bariviera et al. 2017).[11]

Advantages & disadvantages:
In recent years, cryptocurrency, the most contentious and intriguing asset, has drawn a large number of investors and speculators. Crypto currency's clearly considerable market capitalization also drives contemporary

11 https://jfin-swufe.springeropen.com/articles/10.1186/s40854-021-00306-5

financial tools such as futures and options. These will be determined by the dynamism, volatility, and even price surges of cryptos. We present a thorough examination of the risk dynamics of the Bitcoin Market from the standpoint of realized volatility. The Bitcoin market is particularly dangerous in terms of volatility, intertwined leaps, and lengthy successive jumps, all of which mirror important happenings throughout the world. According to empirical research by Junjie Hu, Wolfgang Karl Härdle, Weiyu Kuo,

considerably reduce future realised variance.[12] Realized Variance and Smoothing Variance The definition of realized variance RV_{t+1} on a logarithmic asset price process $p(t)$ over one period $(t; t+1]$ is

$$RV_{t,t+1} \overset{def}{=} \sum_{j=1}^{1/\Delta} r_{t+j\Delta}^2,$$

where Δ associates with the sampling period, we sample the daily price process every 5-minutes evenly, which means 288 price

Scholars from Cornell university, delayed realised variance increases future realised variance, but leaps, especially positive ones,

12 https://arxiv.org/abs/1912.05228

points per trading day2, hence $\Delta = 1/288$.

The logarithmic return $r_{t+j\Delta}$ denotes the j-th observed price change value in day t.[13]

13 https://arxiv.org/pdf/1912.05228.pdf

Summary Statistics of BTC Annualized Realized Variance Against Global Exchange Indices						
	AEX†	DJI†	FTSE†	HSI†	SPX†	SSEC†	BTC-D
count	4842	4704	4769	4645	4709	4508	1385
mean	0.16	0.12	0.14	0.15	0.13	0.23	0.86
std	0.38	0.30	0.32	0.41	0.32	0.46	1.88
min	0.10%	0.08%	0.16%	0.35%	0.04%	0.23%	0.76%
25%	0.02	0.02	0.02	0.03	0.02	0.03	0.16
50%	0.05	0.04	0.05	0.06	0.05	0.09	0.37
75%	0.14	0.11	0.13	0.14	0.12	0.23	0.85
max	7.04	5.55	7.74	16.46	7.18	7.71	36.93

†: Selected global indices from developed markets and emerging markets. Trading hours in different global exchanges could be different which introduce bias of RV. We correct such bias by accounting the overnight price change (Bollerslev et al. (2018)) to allow those RV estimators to be comparable. Datasource from Realized Library, Oxford-Man Institute of Quantitative Finance.

According to the research, after accounting for the bias produced by the consecutive leaps, the empirical evidence demonstrates that, in addition to Bitcoin's projected extreme high risk, a huge number of 26 jumps intertwine in the price process. The researchers dissect positive and negative leaps using realised semi-variance, which demonstrates that the market rise and fall occurred in terms of average size and frequency. Further investigation reveals that the price increases are linked to many of the significant economic events, implying that Bitcoin price increases reflect not only

14 https://arxiv.org/pdf/1912.05228.pdf

emotive concerns, such as opinion leaders' casual Twitter posts, but also real-world situations. It does not, however, give additional forecasting accuracy or value to model leaps for investors focusing on extremely short horizon realised variation, such as 1-day ahead realised variance.

Bitcoin a critical approach:
While traditional currencies are managed and regulated by banks, the circulation of digital currencies is decentralised, which is a fundamental reason driving hopes for bitcoin's expansion into new markets and transaction kinds. Despite the fact that traditional currencies currently reside largely on digital ledgers of banks, such as bitcoins, the bitcoin ledger has no independent owner or regulator. Bitcoin is instead maintained and updated by bitcoin users via the bitcoin protocol. The bitcoin network offers significant benefits over government- regulated currencies since it is not controlled by a single agency. These benefits include:

The bitcoin protocol restricts the number of bitcoins in circulation to 21 million. Central banks, on the other hand, have the ability to print more money, which, if not accompanied by GDP growth, can lead to an increase in inflation and other economic difficulties. As of May 27, 2016, there were 15.6 million bitcoins in circulation, worth $7.4 billion. 15

15 https://knoema.com/infographics/nmyfsf/bitcoin- price-from-2009-to-2021

Because traditional currency restrictions do not exist, a bitcoin address, similar to a standard private bank account, can be created in seconds, is free, and cannot be deactivated by a third party.

Many banks and financial institutions have announced fresh investments in virtual currency technology, with the assumption that bitcoin transaction management and digital records will minimize administrative expenses and enable faster transaction processing than current systems. The ease of bitcoin has also piqued the interest of the Swiss city of Zag, which aims to launch a 6- month trial scheme in July in which local residents may pay for municipal services with bitcoin.

Another significant advantage is that the data is transparent. All completed transactions on the blockchain are available to everyone, but personal information is shielded. The public address is accessible, but personal information is not associated with it; anybody may review transactions in the Bitcoin block chain at any moment.

Because Bitcoin is cryptographically secure, it cannot be controlled by anybody, organization, or government.

Another advantage is the cheap costs. Currently, no or very modest commissions are imposed on Bitocoin payments. Users may insert fees to expedite transaction processing. The bigger the fee, the higher the priority in the network and the faster it will process.

By transforming bitcoins into fictional currencies, digital currency exchanges assist traders in processing transactions. These providers typically charge less than payment cards and PayPal.

Research finding (Evaluation):
Because Bitcoin transactions cannot be reversed, do not include personal information, and are secure, traders are safeguarded from possible losses due to fraud, and there are considerably less dangers for traders.

Traders can use Bitcoin to conduct business in areas where crime and fraud are prevalent. Because of the public register, also known as blockchain, it is extremely difficult to deceive someone in Bitocin.

However, Bitcoin's anonymous character, a result of its decentralization, makes it an ideal instrument for criminal behavior. Here are several examples:

Illegal drug trafficking Bitcoin-based transactions on the online drug bazaar Silk Road, which was created in February 2011 and shut down by the US Federal Government in October 2013, are one of the most well-known examples of the usage of bitcoins in the illegal drug trade.

Terrorism. Cyber terrorists may also utilise bitcoins as their preferred currency to obtain ransom payments. According to a Cyber Threat Alliance assessment, ransom payments made to hackers via the bitcoin network via the Crypto Wall malware are projected to exceed $325 million.

Companies accept bitcoins for the benefits they provide, although the list is quite small when compared to actual currency.

Companies such as TigerDirect, Dell, NewEgg, and Overstock accept Bitcoin as payment, which is fantastic. Employees should be educated about Bitcoin in order to assist their consumers. This will undoubtedly take some time and effort.

Risk and volatility are two significant disadvantages for Bitcoin.

This is risky since there are only a finite number of coins and the demand for them grows with each passing day.

However, volatility is projected to decline with time. Because numerous businesses, media outlets, and retail malls have begun to take Bitcoin, its price will ultimately settle.

Currently, the Bitcoin price fluctuates from day to day, according to the events surrounding digital money. Bitcoin is still in its infancy, with only a few functionalities available.

New features, tools, and services are being developed to make digital money safer and more accessible. Bitcoin has a long way to go before reaching its full potential.

This is because Bitcoin is still in its early stages and must deal with the same issues as any other coin.

CONCLUSION:
To summarize, Bitcoin has become a globally popular virtual money due to its decentralized structure. It is not governed by a central bank, and it is quicker, cheaper, and more secure. However, given the recent spate of Bitcoin thefts at a major Bitcoin exchange, a Bitcoin bank, and an underground website, security precautions appear to have taken a back seat. As a result, improved transaction techniques utilising digital money are required to ensure its bright future among small and large firms. Otherwise, it may be eclipsed by another digital money. In any case, the digital money movement ishere to stay.

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