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Cryptocurrency Market Dynamics: Analyzing Trends And Patterns In Bitcoin

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Abstract: Consumer demand for speed, comfort, and security in financial transactions is rising along with the globalization of the business. As a result, we require a payment method that is dependable and simple for bank clients. A payment system is a set of arrangements that facilitates the exchange of value between individuals and financial institutions on a national and international level in order to deliver payments. A literature review, or literature review, is the research design used here. A literature review is an explanation of the hypotheses, conclusions, and other research materials that are gleaned from reference works and used as the foundation for further study. The literature review includes summaries, reviews, and the author's observations about a variety of literature sources (books, papers, slides, online material, and so forth) that address the subject under discussion. As it stands, Bitcoin is still the most popular cryptocurrency in terms of user base, market value, and popularity. Though certain altcoins are supported due to their better or more sophisticated features than Bitcoin, virtual currencies like Ethereum and Ripple, which are more commonly utilized as other enterprise solutions, are currently growing in popularity. Based on the current trajectory, cryptocurrencies are here to stay, but as time goes on, only a select handful will stand out as leaders in the face of growing competition and more visibility. The world of cryptocurrency may prove to be quite promising in the future as long as the bitcoin options market continues to gain traction, even with all the drawbacks that accompany it.

Keyword: Cryptocurrency, Trends, Patterns, Bitcoin.

INTRODUCTION

Consumer demand for speed, comfort, and security in financial transactions is rising along with the globalization of the business. As a result, we require a payment method that is dependable and simple for bank clients. A payment system is a set of arrangements that facilitates the exchange of value between individuals and financial institutions on a national and international level in order to deliver payments. As the body in charge of the payment system, Bank Indonesia distinguishes between two categories of instruments: cash and non-

cash. Due to its numerous shortcomings, the monetary payment instrument banknotes can no longer satisfy society's demands as a method of conducting financial transactions.

These days, society has an urgent need to address the trend of non-cash payment instrument transactions. Machines like ATMs and EDCs are starting to take the job of bank tellers. Five categories of non-cash payment instruments are distinguished by Bank Indonesia: debit notes, giro bills, cards, checks, and electronic money. Electronic money is, of course, the most necessary option available at present time among the five categories of payment instruments. However, each issuing institution uses a distinct infrastructure to issue the electronic money that is currently in use, depending on the characteristics of the consumer. The public and end users find it difficult to choose which electronic money product to use due to interoperability issues across products from different issuers as a result of this circumstance.

There are currently 20 electronic money issuing companies offering a variety of products, and there is a sizable amount of electronic money in circulation. Chip-based and server-based electronic money products are the two categories into which Bank Indonesia divides its offerings. In the meantime, society as a whole is not served by the existing payment system. The technology used to create digital currency known as cryptocurrency employs cryptography to ensure its security and prevent counterfeiting. The purchasing and selling power of cryptocurrency users plays a major role in determining the price value of this technology.

The prediction of cryptocurrency prices is a hot topic among academics (Rashid & Ismail, 2023). Digital currency, often known as cryptocurrency technology, is today quite popular. It was created globally by numerous engineering teams and corporations. Google Ventures has also made an investment in a cryptocurrency-related technology. Cryptocurrency-related assets have seen a significant increase in market acceptance and have developed rapidly in recent years (Parente et al., 2024). According to coinmarketcap.com, there have been more than 500 cryptocurrencies produced. Certain cryptocurrencies have unique concepts, while others imitate those of other coins. It is not unusual for cryptocurrencies to see a value decrease of more than 20% in a single day that can be exploited for trading because the fundamental worth of these assets is entirely dependent on purchasing and selling strength and is not guaranteed by anything. profit and an advantage. Forecasting cryptocurrency prices are crucial for investors and academics in this industry because of the frequent volatility in the price of this currency (Nair et al., 2023). Bitcoin is a digital currency that Satoshi Nakamoto invented in 2009. The term also refers to the open-source software it created, which operates on a peer-to-peer network devoid of a single administrator or centralized storage. The majority of papers are focused on Bitcoin only as on cryptocurrency markets leader (Raza, 2021). The US Department of Treasury refers to bitcoin as a decentralized currency.

Bitcoin does not depend on confidence in a primary issuer, in contrast to most currencies. The most volatile cryptocurrency now that demands more general attention is bitcoin (Rahaman et al., 2023). Bitcoin records transactions using a distributed database that is dispersed among P2P network nodes. Cryptography is used to provide fundamental security features, like limiting the amount of money that may be spent on a bitcoin to the owner and never again. from a single moment. The design of Bitcoin enables anonymous wealth transfers and ownership. Bitcoins: this digital currency can be kept in a third-party wallet service or on a personal computer in wallet file format.

They can also be sent via the internet to anyone who has a Bitcoin address. Because of its peer-to-peer architecture and decentralized management, bitcoin makes it hard for governments or other authorities to control the price of the cryptocurrency or create inflation by printing more of the digital currency.

METHOD

A literature review, or literature review, is the research design used here. A literature review is an explanation of the hypotheses, conclusions, and other research materials that are gleaned from reference works and used as the foundation for further study. The literature review includes summaries, reviews, and the author's observations about a variety of literature sources (books, papers, slides, online material, and so forth) that address the subject under discussion. A quality literature review ought to be sufficient, current, and pertinent. Among the methods for doing a literature review are the theoretical foundation, theoretical review, and literature review. the processes of looking for publications online and in databases of research journals. The Google Scholar database search is employed.

The phrase "Cryptocurrency Market Dynamics: Analyzing Trends And Patterns In Bitcoin" is also included in the data collection. This literature review was synthesized using the narrative method, which grouped similar extracted data according to the results measured to answer the research journals' objectives that fit the inclusion criteria. Next, the researcher's name, the year the journal was published, the country of research, the title of the research, the method, and a summary of the findings or results were collected and made into a summary of the journal. The research journal summaries were arranged in a table using the previously described format, with the entries arranged alphabetically by year of publication.

RESULTS AND DISCUSSION

Bitcoin

Satoshi Nakamoto is the name of the person who created Bitcoin. It is unknown if this Satoshi is a single individual or a group. It is also unknown if it is male or female. At current exchange rates, Satoshi is already extremely wealthy, having mined up to a million Bitcoins in his early days. Satoshi has amassed a significant wealth, but he has never spent any of it. Regarding who might have invented this coin, there is some conjecture. Numerous names have been mentioned by researchers and media, but each has refuted the claims. Maybe this enigmatic inventor will reveal who he really is when the hue becomes green in the future (Islam et al., 2019).

The premise behind Bitcoin's development was that a good currency should not be governed by a central bank or government. The current financial crisis serves as another evidence of the government's historical disregard for preserving economic stability. It's widely held that the government is constantly run by crooked individuals and serves their own selfish agendas, which is why financial decisions are consistently made in favor of large corporations. Many people find this concept appealing, particularly IT nerds. The American and European financial crises served as evidence that the global economy was becoming more unstable at the same time that they began putting their money in bitcoin. They aim to replicate the learning capabilities of the human brain, using mathematical approximations to generate predictions based on unseen data points from the past (Özbay Karakuş, 2023). It is anticipated that Bitcoin would spread like wildfire and turn into a commodity, driving up its value.

This is demonstrated by the fact that, in January 2013, one bitcoin (the unit of money used to store bitcoin) was exchanged for about 13 USD, and in May 2013, 1 BTC surged in value to 120 USD. This indicates that, in just five months, the value of bitcoin has increased about ten times, I leaped. As of December 2013, 1 BTC was worth 860 USD, a rise of 66 times in just a single year. if it was two years prior. The fact that we may open a Bitcoin wallet without disclosing our identify is the single thing that contributes to Bitcoin's popularity as a medium for anonymous transactions. The currency will stay public in this scenario, but the wallet will stay private.

This means that transactions involving the earning of coins (e.g., mining or purchasing them in an untraceable manner), spending of coins (e.g., paying for something that is not delivered or personally associated in any way), and disabling wallet connectivity with a physical location (e.g., using a wallet only via Tor) must all be anonymous. But correct handling of this anonymity is required. The transaction can be tracked through to the very conclusion if either fails. Cash is still the safest option, even though Bitcoin allows for anonymous transactions. For large data researchers, blockchain is a goldmine, and regulations governing it are probably not far off.

Bitcoin as Currency

Bitcoin, which is the most famous cryptocurrency currently, has basic properties like gold. Oscar Darmawan, CEO of Bitcoin Indonesia, explained that "On the one hand, the level of demand from people around the world continues to increase because regulations regarding Bitcoin in developed countries are becoming clearer so that it has potential in the future." Availability is limited but full of uses so the price can continue to rise. Bitcoin itself is seen as a safe asset like gold in developed countries such as Japan and Europe. They often save part of their wealth in the form of Bitcoin apart from gold.

With the increasingly rapid development of technology, especially supported by internet networks that can be accessed globally, as well as the many cases of the collapse of paper currency in various countries in the world such as Greece, Venezuela, Zimbabwe and Argentina, this has triggered a global crisis. awareness that now is not the right time to use the economic system. with fiat money. Because vulnerability to crisis can occur at any time. For people who are interested in investing their wealth in digital money, it is protected by a blockchain algorithm where each user can monitor or see the total supply of Bitcoin in circulation and transact on the digital network transparently.

Types of Bitcoin

Hardforks, which attempt to expand the size of Bitcoin's blockchain blocks in order to support more transactions, are largely unsuccessful in splitting the original Bitcoin, now known as Bitcoin Core. Segregated Witness and Lightning Network, which have the ability to scale Bitcoin transactions outside of the blockchain (avoid hardforks), are deemed sufficient by Bitcoin Core to address this issue. For instance, if you discuss hardforks on the Bitcoin forum on Reddit, don't be shocked if they remove your post right away. You might even face forum bans. The objectives of Bitcoin Classic and Bitcoin Unlimited are somewhat similar: they both want to see a hardfork and an increase in block size. Blockchain has emerged as an innovative technology with potential to transform business management, through operational efficiency improvements (Rico-Peña et al., 2023).

What sets Unlimited apart from Classic is that it is a non-profit group that will decide things like "how much increase in block size do they want?" by voting twelve miners. Here, angel investor and original investor in Start-up2 Bitcoin Roger Ver appears to be a strong advocate for Bitcoin Unlimited. After one of the biggest mining pools (in the top 5), ViaBTC, switched from Bitcoin Core to Bitcoin Unlimited Client, it changed its hashrate, making Bitcoin Unlimited even more intriguing. As a result, the hashrate of Bitcoin Unlimited via MiningPool and Bitcoin.com increased to 0.8% globally. Furthermore, Bitcoin Unlimited needs to command at least more than 51% of worldwide demand in order to surpass Bitcoin Core.

The Bitcoin Unlimited community believes that Segmented Witness is not a good concept. The rationale is that block size efficiency can only be increased by 1.7 MB with the aid of Segregated Witness. In the meantime, Bitcoin will eventually experience more issues as a result of the rise to 1.7 MB. After just a year, it's predicted that 1.7 MB will be

insufficient to handle the growing number of Bitcoin users. A novel approach for predicting bitcoin trends using the One-Dimensional Convolutional Neural Network (1D CNN) (Khan et al., 2023). In addition, there will be a lot of technical issues with incorporating Segregated Witness, requiring a complete reset of the bitcoin transaction structure in wallets, mining pools, software, ATMs, and exchangers.

In addition, this integration comes at a significant external cost—all for the purpose of adding 0.7 MB to the block size. Moreover, the Lightning Network is viewed as a weak scalability option by the Bitcoin Unlimited Community. The cause is the centralized structure of the Lightning Network, which requires users to lock their bitcoins in a "hub" prior to processing transactions. Even if consumers use Bitcoin to avoid the centralized banking system, all these methods subtly render the Lightning Network identical to banks¹³. By adding a coinbase script to each block, Bitcoin Unlimited gives its miners the autonomy to choose the largest maximum block size they wish to generate. This will increase the flexibility and ease of adjustment of the Bitcoin size block. Naturally, the greatest danger associated with a hardfork is the emergence of two distinct blockchain scenarios, similar to Ethereum and Ethereum Classic. The Bitcoin Unlimited group, however, asserted that there is little chance of two distinct blockchain types arising, even if the majority of users support this increase in block size.

Bitcoin Price

In the Cryptocurrency Ranking for 2017, Bitcoin (BTC) remained solidly at the top, followed by Ethereum (ETH), Bitcoin Cash (BCH), Ripple (XRP), and Dash (DASH). Bitcoin (BTC) was selling at \$8,099.21 on November 24, 2017, according to data from Coinmarketcap. This is a great price for a currency that is only eight years old. The price of gold, which is just around between \$1,200 and \$1,400, or between IDR 16 million and IDR 19 million per ounce, has actually been surpassed by this value.

How then can the price of Bitcoin keep rising? According to All Time movement research, there was a Major tendency UP, or general upward tendency, in Bitcoin prices from the time of the cryptocurrency's founding in 2009 until 2017. The CNN for multivariate prediction has been applied to diverse areas, such as bitcoin trend prediction, open caisson sinking prediction, industrial control system anomaly detection, explainable CNN for multivariate time-series prediction, multivariate mobile data traffic prediction, and useful life prediction for the turbofan engine (Aliyu et al., 2023). This trend was interspersed with minor corrections to keep the price rising. It is hardly unexpected that a growing number of traders, speculators, investors, and even institutional business professionals are now becoming involved in the Bitcoin market as a trading and investment tool. Bitcoin has the ability to break records and keeps breaking them. Beginning at the end of September at \$4,979, it rose to \$6,449 in October, and it still rose past the \$8,200 mark for a single Bitcoin. According to some forecasts, Bitcoin's rise won't end at \$10,000 since a large number of institutional investors will enter the market with enormous sums of money the next year. Because it is decentralized, Bitcoin is not impacted by economic factors that often influence the value of a nation's currency, such as inflation. Bitcoin prices hit a historical peak on December 18th, 2017, which was followed by a crash due in which investors suffered a loss of 80% the following year (Park & Yang, 2023).

When compared to fiat currencies like the US Dollar (USD), which consistently loses value owing to inflation each year, this will have an effect on the amount of currency that is printed. Additionally, there are rumors about regarding taxation, interest rate regulations, and other matters that could impact the value of the nation's currency. Unlike Bitcoin, the only factors affecting its price fluctuations are those of pure supply and demand from participants in the Bitcoin market. Perfect consensus refers to a situation in which market participants

themselves "set" the pricing accord. According to Coinmarketcap, there will inevitably be a rise in the number of transactions as interest in Bitcoin grows.

Over \$3.3 billion worth of transactions have been made on this cryptocurrency in just the past day, and as of right now, its total market capitalization, or Bitcoin Market Cap, is \$135 billion. The fact that there isn't enough supply to meet the rising demand means that the price of Bitcoin is obviously rising. Furthermore, there are more than 16.6 million Bitcoins in circulation compared to the maximum 21 million pieces of the cryptocurrency. Thus, there are only 3.4 million Bitcoins in circulation. The law of supply and demand states that this quantity will never be able to satisfy global demand, so it is inevitable that Bitcoin will become more and more expensive in the future (Demand Exceeds Supply = Price UP).

The whole point of bitcoin is to always undergo deflation, or a decline in stock. Based on our analysis, the supply of bitcoin will always decline every four years, a phenomenon known as the "Halving Process". This implies that the blockchain system will create half as many Bitcoins as it currently does. At the moment, there might only be 12.5 BTC that appears once every minute; but, following the halving, there will only be 6.25 BTC that emerges once every minute. This is unquestionably the best design to reduce excess supply, which could result in a drop in an item's price.

CONCLUSION

As it stands, Bitcoin is still the most popular cryptocurrency in terms of user base, market value, and popularity. Though certain altcoins are supported due to their better or more sophisticated features than Bitcoin, virtual currencies like Ethereum and Ripple, which are more commonly utilized as other enterprise solutions, are currently growing in popularity. Based on the current trajectory, cryptocurrencies are here to stay, but as time goes on, only a select handful will stand out as leaders in the face of growing competition and more visibility. The world of cryptocurrency may prove to be quite promising in the future as long as the bitcoin options market continues to gain traction, even with all the drawbacks that accompany it.

Even a few big businesses, including Microsoft and Google, are beginning to accept digital currency characteristics as an acceptable method of payment. Thus, when saving their digital currency, many individuals think about market dealing with multifunctional features. Although there are currently few possibilities, particularly in Indonesia, Bitcoin.co.id is the ideal spot to begin and conclude your search. One of the safest locations to store and conduct any digital activity, including trading and other activities that will greatly benefit its users, is here. They even offer a very helpful forum for lay people who are just looking for answers regarding this world, in addition to being extremely helpful for all other groups.

Thus, you should think of Bitcoin.co.id as one of the most reliable marketplaces for purchasing and selling Bitcoin, not just in Indonesia but globally as well. Thus, you can register here and join the bitcoin.co.id family if you're truly interested in trying to learn what's best in this place. Despite the risks involved, Bitcoin has the potential to revolutionize e-commerce and increase the scope of economic activity. But it's crucial to understand the dangers and ramifications of utilizing this new technology, particularly as it relates to Indonesia. It remains to be seen if a global agreement will be reached over the financial risks and legal concerns related to the use of bitcoin.

Bitcoin users must of course be able to read market prices, because there are times when Bitcoin prices rise and fall in just a matter of hours. One thing we need to remember is that holding Bitcoin is different from holding Rupiah. Holding Bitcoin means you are holding an item that must be sold. Meanwhile, holding Rupiah means you are looking for the best position to buy merchandise. Therefore, if Bitcoin owners want to make a profit, they must know the ups and downs of Bitcoin prices on the market. As stated by the CEO of

Bitcoin.co.id, Oscar Darmawan, Bitcoin trading is a high-risk activity. Bitcoin prices are volatile, where prices can change significantly over time. Please use extra judgment in making decisions to buy or sell Bitcoin. Bitcoin.co.id does not force its users to buy or sell Bitcoin, as an investment, or as an act of seeking profit. All Bitcoin trading decisions are independent decisions by the user.

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