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Research on the Investment Value and Regulation of Bitcoin

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ABSTRACT
Bitcoin is considered a cryptocurrency and a digital currency, the two most notable characteristics are decentralization and anonymity. Bitcoin has a variety of properties. It could play not only the currency function but also have certain commodity property. To some extent, it can also be seen as an alternative investment option. The price of Bitcoin has stayed at a high level since 2021, but with greater volatility and more obvious amplitude than before. With the risk and potential problems of Bitcoin, the possibility of whether Bitcoin would lead to a big bubble in the financial market has increased. Although the legal status of Bitcoin is varying and having unclear or constantly changing definitions in different countries, the government is strengthening supervision and regulation over digital currency and planning to issue state-controlled currency, which would narrow the space for Bitcoin. Therefore, the possibility that Bitcoin will end up in a bubble is growing. At the same time, it is becoming increasingly clear that Bitcoin would not eventually gain legal tender status, driven by a combination of government denial and a lack of real value.

Keywords: *Bitcoin, Decentralisation, Anonymity, Regulation, Investment Bubble.*

1. INTRODUCTION

Bitcoin is a cryptocurrency and a decentralized digital currency that uses peer-to-peer technology to operate without issuance by any authority and governance. It is open-source to the public and allows every member in the system to take part. The transactions made by Bitcoin are verified by cryptography and are recorded in the blockchain, a public distributed ledger. Bitcoin is chosen not only because it contains the ideologies of anarchism, decentralization, and libertarianism but also the convenience caused of its anonymity in trading and the additional opportunities of making investments as financial assets. The increased application of Bitcoin requires more regulations. It has been criticized for using illegal transactions, causing a large amount of carbon footprint and wasting in electricity while mining, and the substantial price volatility.

With the function of serving as a currency, Bitcoin is an efficient means of transferring with a high level of mobility. There is an increasing number of paying platforms and businesses willing to use Bitcoin to make payments and accept it as an investment option. Bitcoin has become a heated investment option for several reasons. It could improve the diversification of portfolios and cost less in international transactions. As the number of active wallet addresses of Bitcoin grows continuously, it could be regarded as a sign of a vibrant and growing financial ecosystem.

With the rise of the unit price of Bitcoin, more participants enter the Bitcoin industry, and even and large-scale "mining" machine manufacturers and "mining" factories have emerged. The confluence of many factors towards Bitcoin leads to a lasting and significant impact on the global economy. The rise of Bitcoin transactions has reduced users' reliance on fiat currencies. Also, as an unregulated currency based on data entirely, Bitcoin has unlimited access to secure credit systems, which calls for further establishment and improvement of credit systems. In the face of this emerging financial system, central banks are paying attention to and strengthening supervision, which would eventually either puncture the bubble of virtual currency or solve the identity problem of virtual currency by legislation.

STEGĂROIU evaluated the advantages and disadvantages of Bitcoin in a new economy. By analyzing the "mining" process, which refers to creating new digital currencies on the market and is considered

the cornerstone of the blockchain technology, the volatility and risk are the two major segments that pose disadvantages to Bitcoin. At the same time, payment freedom, transparent information and high level of security and control consist of the substantial advantages of Bitcoin. This study found that as an experimental digital currency in a continuously developing economy, Bitcoin has both positive and negative utility, and it still has great potential to be exploited [1]. Conlon and McGee researched the safe-haven properties of Bitcoin during the downturn caused by the Covid-19 bear market. With the methodology of two-moment value at risk (VaR), the tail or downside risk level could be measured for a portfolio that has normally distributed returns. But for a financial asset with returns that do not follow a normal distribution, the four-moment modified VaR, firstly defined by Favre and Galeano (2002), was applied to analyze the downside risk of a portfolio combining equities and Bitcoin. It could be concluded that the ability of Bitcoin to provide shelter from turbulence in traditional markets could be doubtful, and the possibility of Bitcoin contributing to substantial portfolio downside risk [2]. Lyócsa et al. had researched news and sentiment of Bitcoin regulation, hacking activities towards Bitcoin exchange, and the impact of volatility of Bitcoin caused by scheduled macroeconomic news announcements. The linear HAR model and Non-crossing quantile regression HAR model were applied to measure the realized volatility and its jump component, i.e., price variation due to discontinuous price changes. This study found that the volatility and jump component of Bitcoin were mainly affected by certain specific factors, including regulation and hacking attacks on cryptocurrency markets. Unlike traditional assets, Bitcoin is barely influenced by general macroeconomic news, proving the relatively weak connection of Bitcoin to the economy via forward-looking components [3]. Sotiropoulou and Guégan researched the unique challenges and difficulties of the regulations about Bitcoin. By looking at the existing regulations on virtual currency, Bitcoin caused a definition problem, difficulties in monitoring, the transcendence of national borders, and its decentralized challenge. They concluded that some aspects of this virtual currency should be focused on when setting regulations. The innovation and the regulation should be balanced, the opportunity to enhance the efficiency of the global financial system should be caught, and the effectiveness of regulatory responses should be improved [4]. Chuen and Lee researched the development of decentralization and evaluate the innovation for Bitcoin. Through this article, examples of the development of FinTech companies in China and FinTech policy response from Singapore are used as evidence of the illustration of the effects of innovation. This article concluded that decentralization would contribute to solving the pain points of the catch-up theory of Creative Destruction in Development Economics and hugely assist in leveling the playing field for smaller, less endowed, and less accessible players through the Token Economy [5].

2. APPLICATION AND ADVANTAGE

With the trading function and the nature of the digital currency, Bitcoin could be applied in different areas and play a critical role in the future financial market, and the advantages are noteworthy.

Bitcoin is considered to be a digital currency with the characteristics of decentralized and a high level of anonymity. Bitcoin uses a cryptographic algorithm that requires all members involved in the main blockchain to prove their credentials when trading. Besides, as the transparency of Bitcoin, the creation of Bitcoin is supervised by the Internet, which makes fraud more difficult in this system. Bitcoin applies cryptography to solve the trust problem faced by currency in the decentralized issuance, which allows the issuance of Bitcoin to become independent from any government or institution and adapts to the decentralized characteristics of the Internet. It has the potential to offer an unexpected level of security. The Bitcoin network offers effective protection against the most common frauds to its users. Bitcoins can't be counterfeited, and users can back up or encrypt their wallets. These designs allow Bitcoin to be completely controlled by its user. Bitcoin has created a different payment network with a higher level of resilience and redundancy by being highly decentralized. Attacking the Bitcoin network will be more difficult without a vulnerable part like a data center.

In operation, Bitcoin is essentially a decentralized ledger on the Internet, maintained jointly by all users in the system, without the need for a central authority to verify transactions. No individual or organization can change or influence how Bitcoin operates unless the vast majority of its users agree to make a change. The advantage of decentralization is protecting private property, meaning that governments or other institutions cannot seize or confiscate Bitcoins that the users have already owned. And by setting an upper limit on the total number of Bitcoins to enhance its scarcity, currency overissuance and inflation could be prevented effectively.

The anonymity of Bitcoin is reflected in the following aspects. Firstly, the Bitcoin account is only a string of numbers, through which no information about the owner can be discovered. Secondly, the process of creating a Bitcoin account does not require any real-name authentication, and a private key could only prove the owner. Additionally, there is no correlation between the different accounts owned by the same member, which means other users can't know the actual amount of Bitcoin held by a particular member. Anonymity

gives Bitcoin flexible and controlled transparency. All Bitcoin transactions are open and transparent, and participants' identities are kept secret by default, which allows individuals and organizations to master transaction transparency. For example, a business can choose to disclose certain transactions and account balances, or a nonprofit organization can choose whether to disclosure its monthly receipts and donations.

The blockchain world is structured by the blockchain, where each 'miner' is repeating ledger records to construct new blocks. And the generation of each block proves the authenticity of the previous ledger records and enhances the stability of the entire Bitcoin system. If Bitcoin's algorithms could produce a fixed amount of bitcoins, as its creator says, the system is designed to prevent counterfeiting and prevent overissuance. As a scenario for blockchain technology, Bitcoin is creating digital assets by performing massive computations.

Despite the ups and downs of the Bitcoin business, its nature as an asset and the technology behind Bitcoin are attracting more companies and individual investors. As early as August 2013, the German Ministry of Finance recognized Bitcoin as a private legal asset and supported the owners to use Bitcoin to pay taxes, etc. Dell, PayPal, and Microsoft have already recognized Bitcoin as a payment method in 2014. Especially PayPal integrated Bitcoin with the mobile payment platform Braintree, which allows merchants to accept Bitcoin payment through that platform. In addition, Steam, online travel giant Expedia, Marks Jewelers, Domino's Pizza, Starbucks, and many other businesses have announced their acceptance of Bitcoin payment. In March 2021, Tesla officially became the first major automaker in the world to use a virtual cryptocurrency as it opened the Bitcoin payment channel. And the document sent to the US Securities and Exchange Commission by Tesla stated that the company had already bought $1.5 billion worth of Bitcoin for the targets of more flexibility, further diversify and maximization of return. As more financial payment platforms gradually accept Bitcoin, a growing number of companies and financial institutions are deploying it for asset management purposes. Some demand is starting to build as companies and institutions with little investment in Bitcoin a few months ago are entering the space.

3. INVESTMENT VALUE: BUBBLE?

Over the decade-long period, Bitcoin's price trend and development could be said to be surprising and unexpected. Bitcoin has had many times of ups and downs in its price throughout history. In December 2017, the price of Bitcoin hit a milestone height that time, but the price plunged about more than 50% just a month later. The second price spike of Bitcoin occurred in July 2019, but this price was lower than the previous one. Since 2020, the price of Bitcoin has increased significantly and dramatically. After touching the bottom in March 2020, the current price of Bitcoin has surged more than tenfold, and it even broke $60,000 in March 2021. Due to the impact of the environment and especially the COVID-19, the price of Bitcoin has fluctuated in ways that are difficult to predict or even explain. Although its price in 2021 has remained high, the volatility and amplitude are more obvious and drastic than before.

While tracing the origin of Bitcoin, it could be found that there is a natural connection with countering inflation. The global outbreak of COVID-19 has increased the demand for a safe haven. In 2020, the global economy suffered the biggest decline since World War II due to the epidemic's impact, and international financial risks piled up to a record high. Under the epidemic's impact, banks, insurance companies, and wealth management institutions began to embrace the cryptocurrency market, including Bitcoin, to hedge the inflation risk. It could be said that the current macroeconomic condition sets up a perfect environment for this asset as it combines the strength of technology and the nature of value. Negative interest rates, extreme monetary policies, ballooning public debt, and dissatisfaction with the government have provided a powerful incentive to invest in Bitcoin. With expectations of higher inflation and rising debt, investors tend to invest in assets that can rise in value. Moreover, the fear of crisis leading to interference from central banks or political actors towards the market may switch investment preferences to the decentralized crypto market.

However, the possibility of whether Bitcoin would lead to a big bobble in the financial market has increased recently. The risk and potential problems of Bitcoin cannot be ignored. Over the past year, the positive correlation between Bitcoin and gold, the U.S. dollar, and the S&P 500 Index has increased. Coupling with high volatility, Bitcoin is more of a risk asset than a safe haven. And the speculative risks in the Bitcoin market should be guarded because the Bitcoin market is still not large and easy to manipulate to some extend. On the other hand, a worldwide sound regulatory mechanism for the Bitcoin market has not been established. It is predictable that in 2021, the Bitcoin market will still be labeled as huge volatility, extreme yields, and anti-fiat money and central banking. In addition, unlike fiat currencies, the supply of Bitcoin is limited: Bitcoin has a maximum supply in its design, of which about 89 percent was reached by April 2021. It is believed that Bitcoin will run out in 2040, even though the 'mining' equipment of Bitcoin would be more powerful. That is because the difficulty of mining increases exponentially every four years, and the power

consumption also goes up [6]. As a result, another hurdle for Bitcoin is how to 'mine' without continuously polluting the environment while the price of Bitcoin has risen and trading volumes have increased. Moreover, another important reason is that Bitcoin does not have the status of fiat currency at present. It cannot be linked with the development and value creation of any real economy and real industry. In terms of the current situation, the commodity property of Bitcoin is more obvious. Bitcoin is a commodity whose value is derived from its uniqueness rather than any intrinsic value. And an asset without prestige value but attracts investors based on perception rather than performance would become a super-bubble waiting to burst [7].

4. REGULATION ON BITCOIN

The legal status of Bitcoin varies from country to country, while many countries and regions still have unclear or changing definitions of the legal status of Bitcoin. Although the use of Bitcoin itself is not considered illegal in most countries, its status as a currency or commodity varies depending on the regulatory implications. While some countries explicitly allow the use and trading of Bitcoin, others ban or restrict it. Similarly, different government agencies, departments, and courts have classified bitcoin differently.

China and the United States can be regarded as two examples of radically different regulatory attitudes toward Bitcoin. In 2013, to prevent financial risks, five government departments and commissions, including the People's Bank of China (PBOC), issued the Notice on Preventing Bitcoin Risks. It announces that the Bitcoin under the government regulation of the People's Republic of China will not be recognized as an effective transaction settlement tool, as it has no legal compensation and mandatory monetary attribute. The People's Bank of China (PBOC) has taken the first step toward regulating Bitcoin, forbidding financial institutions from processing and facilitating Bitcoin transactions and banning financial companies from holding or trading cryptocurrencies. On April 1, 2014, the People's Bank of China ordered commercial banks and payment companies to shut down the Bitcoin trading accounts within two weeks. Cryptocurrency exchanges and trading platforms were effectively banned by regulations in September 2017, with 173 platforms shut down as of July 2018. The most up to date explanation about Bitcoin was put forward at the "Digital Payment and Digital Currency" sub-forum of the Boao Forum for Asia Annual Conference 2021 by the deputy governor of the People's Bank of China. The cryptocurrency asset is an alternative investment option or will be used as an investment vehicle, but not a currency in itself. In general, China has been cautious about regulating Bitcoin, and the tendency of the following regulations is getting tighten.

Different government departments in the United States set different policies for Bitcoin. In 2013, the U.S. Treasury Department classified Bitcoin as a convertible, decentralized virtual currency. Instead, virtual currencies such as Bitcoin are "property" rather than "currency," according to the Internal Revenue Service's Guideline in 2014. And Bitcoin was committed as a commodity in September 2015 by the Commodity Futures Trading Commission (CFTC). According to the Internal Revenue Service, Bitcoin was taxed as property. On the other hand, according to the CFTC's 2017 decision on the Bitcoin ETF application, Bitcoin is neither a "property" nor a "currency" but a "future." These conflicting policies have created judicial confusion. In the US, a bureaucratic turf war has emerged between FinCEN, the CFTC, the SEC, and the IRS to conceptualize and regulate Bitcoin. In examining the existing legal frameworks implemented by each entity, the BSA, the CEA, the Securities Act of 1933 and the SEA, and the 2014 Guidance had not really explained the unique properties of Bitcoin and effectively addressed the concern about anti-money laundering [8].

The possibility of whether Bitcoin would become a major currency is relatively low. The regulatory environment for Bitcoin and other cryptocurrencies is in the early stages of development. The application and interpretation of relevant laws and regulations are therefore having a high level of uncertainty. New laws and regulations applicable to blockchain and cryptocurrencies that might be enacted in the future could lead to a possible adverse impact on Bitcoin and make it more difficult to make a predict the price and liquidity of Bitcoin. On the other hand, there have been attempts by Asian countries to push forward the development of state-controlled digital currencies, which could dent demand for Bitcoin and other cryptocurrencies. Since 2020, many countries have accelerated the plan to promote the digital currency issued by central banks. For example, China started relevant preparation work in 2014, completed top-level design, standard-setting, functional research and development, joint research and testing by 2019, and successfully launched a non-public pilot scheme in the first half of 2020. It can be said that the research and development of legal digital currency have been moving forward actively and steadily. Overall, it remains relatively unlikely that Bitcoin will ever achieve the status of a fiat currency as it is facing both competition from digital currencies planned by national central banks and an increasingly restrictive regulatory environment. Therefore, Bitcoin may not eventually be universally recognized or used as a unit of value or currency.

5. CONCLUSION

In conclusion, as the heated digital currency and cryptocurrency market, Bitcoin is still facing controversy and potential risks. The possibility that Bitcoin will eventually become a bubble is increasingly highlighted. Although the legal status of Bitcoin is different in different countries, the common trend in the regulation of Bitcoin is gradually cautious and strict. With its nature of a currency that exists and based entirely on the Internet, Bitcoin cannot build up a link to the development and value creation of any real economy and industrial entity. In addition, national plans for the digital currency are gradually being refined. Governments are strengthening control and supervision of this sector, which will point to the Bitcoin bubble bursting. Meanwhile, Bitcoin would eventually fail to gain fiat currency status is becoming clear under the joint influences of the non-recognition from governments and the lack of its actual value.

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