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Bitcoin and Fiat Currency Comparative Research

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Abstract:
This study explores the feasibility of Bitcoin as a legal currency and a store of value in comparison to traditional fiat currencies. Through a comprehensive literature review and discussion, the study examines Bitcoin's core characteristics such as circulation limitations, scarcity, price stability, intrinsic value, and associated security risks. The analysis highlights key challenges, including Bitcoin's limited acceptance in global commerce, high volatility, and the potential risks posed by its decentralized nature. While Bitcoin's scarcity and technological innovation position it as a unique asset, its viability as a mainstream currency remains uncertain due to its lack of regulatory support and price stability. The paper concludes that although Bitcoin holds promise as a digital asset, it faces significant obstacles in replacing fiat currencies as a stable medium of exchange or a reliable store of value. Recommendations are provided for governments and institutions on regulatory approaches and the integration of cryptocurrencies into the existing financial system.

Keywords: Bitcoin, Fiat Currency, Store of Value, Cryptocurrency, Digital Currency, Price Volatility, Decentralization, Legal Tender, Financial Stability, Monetary Policy

1. Inrtoduction

1.1 Background

Money is widely recognized as one of the major inventions in the history of human civilization, with its primary functions including serving as a measure of value, a medium of exchange, and a store of wealth, among others. It is difficult to envision how the vast and intricate economic and financial systems of modern society could operate effectively without money. Given its critical role, the design and issuance of currency is a key factor that influences both national economies and people's livelihoods. Over time, money has evolved through various forms, influenced by both natural and human factors. These forms have included physical money, metal coins, substitute currencies, credit money, electronic money, and digital money. For much of history, money existed in physical form, which can be broadly termed "tangible money." The advent of computers paved the way for the virtualization of currency. Alongside this, the na-

ture of money's value has transformed—from its original basis in physical commodities, to functional value, issuer credit, and now, trust in information technology such as software, systems, and algorithms. In Bitcoin's early years, it was often humorously referred to as "magical internet currency." Although this phrase might imply an air of mystery, Bitcoin and other cryptocurrencies are not magical at all. Instead, they rely on advanced technology and operate under a fundamentally different system than traditional currencies (Plisio, 2024).

Bitcoin's inception can be traced back to a 2008 paper authored by Satoshi Nakamoto, *Bitcoin: A Peer-to-Peer Electronic Cash System* (Nakamoto, 2008). In this paper, Nakamoto proposed an entirely decentralized digital currency system, enabling two parties to exchange value directly without the need for an intermediary, such as a bank. This novel approach eliminated the reliance on conventional financial institutions, fundamentally reshaping the concept of currency. Initially, Bitcoin garnered attention within a niche group of cryptography enthusiasts, with few people willing to exchange traditional currency for it. Over time, Bitcoin gradually gained more recognition, and its adoption by merchants grew. By 2011, as more cryptocurrency exchanges were launched, Bitcoin's value began to increase significantly. By late November 2013, its price surged to $1,200 per Bitcoin, while in China, it reached over 7,000 RMB. Unlike traditional currencies, Bitcoin is traded continuously, 24/7, with no restrictions on price fluctuations, leading to considerable volatility, often with daily swings reaching thousands of RMB. In response to this, China's central bank, alongside other government bodies, issued a notice in 2013 warning of Bitcoin's risks, declaring that it lacks the legal status of currency and cannot be circulated as such within the country. In contrast, countries like the U.S. and Germany took a more optimistic view, expressing a willingness to accept Bitcoin as a legitimate form of exchange (Yang & Zhang, 2014).

1.2 Purpose of the Research

The purpose of this study is to compare Bitcoin with fiat currencies and explore whether Bitcoin has the potential to become a reliable store of value. By analyzing the differences between Bitcoin and traditional fiat currencies in terms of liquidity, stability, and long-term value-added potential, it will reveal the positioning and role of Bitcoin in the modern financial system. This study will not only focus on the technical characteristics of Bitcoin, but will also comprehensively assess its feasibility as a store of value, taking into account its market performance and the global economic context.

1.3 Significance of the Research

Bitcoin, as a decentralized cryptocurrency, has gained widespread attention in recent years, and its potential is not only limited to a means of payment, but is also considered to have the potential to become a new store of value. Against the backdrop of increased global economic uncertainty and heightened fluctuations in the value of fiat currencies, it is of great practical significance to explore whether Bitcoin can replace or supplement traditional fiat currencies as a means of storing wealth. This study will provide investors, policymakers, and financial practitioners with a more comprehensive understanding and help them make more rational decisions in the choice between digital and traditional currencies. In addition, the study will provide theoretical support and empirical evidence for the positioning of Bitcoin in the future financial system.

1.4 Research framework

This study will analyze the viability of Bitcoin as a currency and a means of storing value, as well as its limitations, in terms of a comparison between Bitcoin and fiat currencies. The study will be divided into the following sections:

Introduction

This section will introduce the background of the study, clarify the purpose of the study, and emphasize the significance of the study. First, the context of the rise of Bitcoin in comparison to traditional fiat currencies will be discussed and its characteristics as a digital currency will be analyzed. Subsequently, the specific objective of the study will be clarified, i.e., to explore whether Bitcoin can become a reliable store of value and means of payment by comparatively analyzing the different characteristics of Bitcoin and legal tender.

Literature Review

The Literature Review will review in detail the existing research on fiat currencies and Bitcoin, covering the role of fiat currencies as the legal tender of sovereign states, the role of central banks, the analysis of traditional means of storing value (e.g., precious metals, real estate, etc.), as well as an analysis of the concepts behind the design of cryptocurrencies, in particular Bitcoin, and their differences from fiat currencies. Through the literature review, a comparative framework between Bitcoin and fiat currencies is constructed and theoretical support is provided for the subsequent analysis.

Discussion

The Discussion section will focus on the practical applications of Bitcoin, and will explore the limitations and

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possibilities of the following aspects:
Circulation Limitations: The current state of Bitcoin's circulation in global commerce and the challenges it faces.
Scarcity: The scarcity of Bitcoin and whether this scarcity has the potential to store value in the long term.
Stability: The impact of Bitcoin's price volatility on its use as a currency and store of value.
Intrinsic Value: The impact of Bitcoin's decentralized nature and lack of intrinsic value on its monetary function.
Security Risks: Bitcoin's security issues, such as hacking and money laundering, and the threat they pose to the financial system.

Conclusion

In the concluding section, the various aspects of the previous discussion will be comprehensively evaluated and the limitations and potential of Bitcoin as a legal tender and store of value will be presented. Conclusions about the future of Bitcoin will be drawn based on its characteristics of scarcity, stability, liquidity, and security.
Recommendations
Finally, based on the findings of this study, recommendations will be made regarding the application and development of Bitcoin. These include how to promote the role of Bitcoin in the economy through policy and technological means, and explore ways to integrate it with the traditional financial system.
Through this structured research framework, this study will systematically compare and contrast Bitcoin and fiat currencies, thereby providing insights into the role of Bitcoin in the modern financial system.

2. Literature review

2.1 Legal tender

Unlike commodity money, which derives its value from the materials used in its manufacture (e.g. gold, silver or other tangible assets), legal tender has no intrinsic value. The value of legal tender is determined by government decree because it is declared legal tender for financial transactions. Legal tender is backed by people's trust in the issuing institution rather than a physical commodity.
A key issue associated with fiat currency is inflation, which is the gradual increase in the overall price level of goods and services over time. Inflation reduces the purchasing power of money, making it a key aspect of any discussion about fiat currency. Another central concept related to fiat currency is interest rates. Set or influenced by the central bank, these interest rates determine the cost of borrowing or the return on savings, thus directly affecting the economy.
Central banks use monetary policy to manage these factors, trying to strike a balance between controlling inflation and economic growth. For example, they may raise interest rates to combat rising inflation or lower them to encourage borrowing and investment during an economic slowdown. This balancing act is essential to maintain a stable and healthy economy, ensuring that inflation does not get out of control while promoting sustainable growth (Plisio, 2024).

2.2 Role of central banks

The central bank serves as the cornerstone of a nation's financial infrastructure, playing a critical role in managing the official currency and ensuring economic stability. Its core responsibilities include the issuance of physical currency, maintaining quality and security standards. Additionally, the central bank shapes and implements monetary policy, influencing money supply, inflation, and overall economic conditions through mechanisms like interest rate changes and open market operations. During financial crises, it acts as a lender of last resort, supplying liquidity to commercial banks to avert systemic failures. Furthermore, the central bank is responsible for supervising the banking sector, establishing regulations to uphold financial stability and protect depositors. It also manages foreign exchange reserves, working to stabilize the national currency and support international trade. One of its key functions is controlling the benchmark interest rate, which impacts borrowing costs across the economy, affecting everything from consumer loans to corporate investments. Through open market operations, it adjusts short-term interest rates and the money supply by buying or selling government bonds. Beyond these roles, the central bank monitors risks within the financial system and takes precautionary actions to forestall potential crises. It also oversees the payment systems, ensuring their safety and efficiency to facilitate smooth transactions in both personal and business contexts. Collectively, these responsibilities enable the central bank to safeguard a country's economic health, with its decisions deeply influencing inflation, interest rates, and the overall financial environment (Central Bank, 2024).

2.3 Traditional means of storing value

The most common means of storing value include fiat currencies, precious metals, real estate and property.
Fiat currencies, such as the U.S. dollar, the euro and the Japanese yen, are the most familiar means of storing value to most people because they are the most commonly used instruments of exchange in our daily lives. Fiat currencies are extremely liquid, suitable for everyday transactions and widely accepted. This liquidity stems in part from

people's trust in the financial system that underpins fiat currencies, and state-authorized monetary payments make them a necessity. The greatest advantage of fiat currency is that the state ensures its stability by making it mandatory for everyone to use it to pay taxes and settle debts. However, this advantage also carries a risk: when the economy of the country issuing the currency is mismanaged, fiat currency is vulnerable to inflation, leading to a decline in its function as a store of value. Although hyperinflation is relatively rare, when it occurs, it can lead to a complete collapse in the value of the fiat currency. This is usually driven by poor economic policy, complex geopolitical conditions, and excessive money printing.

Precious metals, such as gold and silver, have historically been used as important stores of value because of their relative scarcity, ease of trade and liquidity. The rarity of precious metals makes them relatively expensive to obtain compared to other natural minerals, requiring significant resources for mining and refining. While precious metals are not as easily traded as fiat currency in the modern world, gold and silver are more liquid than assets such as real estate. While you can't pay directly in gold, converting it to cash is usually relatively simple, greatly enhancing its liquidity as an asset. Additionally, precious metals have a wide range of applications in several industries, including electronics and jewelry, which further solidifies their value. As a result, precious metals typically do not depreciate in value over a long enough time frame to make them a good store of value.

Real estate, on the other hand, is favored as another important store of value because of its long-term appreciation potential and relative stability. Real estate markets are relatively less volatile and are usually inflation-proof, while providing investors with rental income. This allows real estate to be used not only as living space, but also as a sound investment option, especially in mature markets, where prices typically increase over time, further enhancing its attractiveness as a store of value.

In summary, the traditional means of storing value, such as fiat currencies, precious metals and real estate, are the most commonly relied upon options for economic activity because of their liquidity, scarcity, stability and value-added potential(Bitcoin,2024).

2.4 Cryptocurrency

Cryptocurrencies are decentralized digital assets that act as a medium of exchange, allowing direct transactions between individuals without the need for intermediaries such as banks or financial institutions. Built on blockchain technology, cryptocurrencies offer transparency, security and immutability, making them an innovative alternative to the traditional financial system.

Unlike fiat currencies, which are subject to inflation and can be issued at the discretion of central banks, many cryptocurrencies have a fixed supply. Bitcoin, the first and best-known cryptocurrency, has a supply cap of 21 million units, which makes it deflationary in nature and even more scarce than traditional assets such as gold. This scarcity has given Bitcoin a reputation as "digital gold" and a means of storing value, especially in times of economic uncertainty.

In addition to Bitcoin, there are thousands of other cryptocurrencies (often referred to as torrents) that play a variety of roles in the digital economy. Some cryptocurrencies focus on privacy (e.g., Monroe Coin), others aim to speed up payments (e.g., Litecoin), and many support decentralized applications (e.g., Ether). Each cryptocurrency operates within its own ecosystem, providing users with a range of options based on their specific needs.

As the cryptocurrency landscape evolves, new use cases and technologies such as decentralized finance (DeFi) and non-homogenized tokens (NFT) continue to emerge, further expanding the role of digital assets in global finance. However, the decentralized nature of cryptocurrencies also poses regulatory challenges as governments and institutions struggle to establish clear frameworks for their integration into the broader financial system (Plisio, 2024).

2.5 Bitcoin Design Concept

Satoshi Nakamoto's Bitcoin scheme proposes a particular design concept for a global monetary system, which depicts a peer-to-peer electronic cash system that is free from the traditional payment model of third-party intermediaries. The mechanism design for Bitcoin can be summarized as follows (Nakamoto, 2008): (1) Bitcoin issuance and credit basis. The issuance of bitcoins is mainly realized through the process of "mining", which is the process of collecting transaction data and creating new blocks. The maximum number of Bitcoins that can be issued through the process of "mining" is 21 million according to certain rules, and there is an upper limit on the number of Bitcoins that can be issued. Bitcoin uses cryptographic algorithms and blockchain technology to solve the trust problem of currency issuance. (2) Account Management. Bitcoin's account address consists of a string of numbers, and a user with a key can inquire about the balance of the Bitcoin account. (3) Transaction confirmation. Transactions generated during the "mining" process need to be verified one by one, and only those transactions that are successfully verified will become valid transactions into the block. Bitcoin transactions become valid only after they have been validated by the entire network and entered into the main block (Yang, X., & Zhang, M, 2014).

Bitcoin has the following characteristics that distinguish

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it from traditional sovereign currencies: first, decentralization. This is the most central feature of private digital currencies such as Bitcoin. Bitcoin adopts a decentralized approach to currency issuance and management, not through central banks and governments for credit endorsement, aiming to get rid of the dependence on any centralized institutions and governments. Second, it is highly anonymous. Bitcoin accounts prove ownership by means of a private key, without the need for real-name authentication as in the case of traditional bank accounts; Bitcoin accounts consist of a numerical address, which does not record the personal information of the Bitcoin user, and there is no correlation between the different accounts, making it impossible to know the total number of coins held by the Bitcoin user. Third, traceability. The entire process of a Bitcoin transaction is recorded in the main blockchain and can be traced without authentication, and Bitcoin account lookups are also open. Fourth, irreversibility. In order to avoid the interests of the recipient being violated, bitcoin transactions are not allowed to undo operations, each transaction only exists in two states of success and failure, the transaction has the characteristics of irreversibility. Fifth, Bitcoin is a global currency. Bitcoin has no national boundaries and does not require exchange, which helps to reduce the transaction costs of international trade and capital flows (Yang, X., & Zhang, M, 2014).

2.6 Bitcoin vs. Fiat Currency

Here are some aspects of Bitcoin vs. fiat currency (Blockchain Technology Guide, 2024)

Convenience

- Bitcoin is extremely convenient (especially in terms of payments), and the digital currency network is borderless, allowing for quick and easy money transfers (online payments, purchases, cross-border transfers, remittances, etc.) across the globe, as opposed to traditional fiat currencies, which are regulated and centralized. In fact, cross-border transfers in Bitcoin are faster and easier than cross-border remittances from traditional banks.

Privacy

- Bitcoin protects the privacy of both parties to a transaction by using cryptographic algorithms based on blockchain technology to ensure that transactions are not tampered with, enhancing the privacy and security of transactions. Fiat currencies, on the contrary, have relatively low privacy protection during transactions.

Anonymity

- Bitcoin utilizes Pseudonymity to protect privacy, but the level of privacy is not guaranteed to be completely private due to artificial visibility.

Transaction Fees

- The main advantage of Bitcoin over traditional currencies is the reduced transaction fees, where transactions can be completed through the standard of miner's fees without the need for a bank. Bitcoin transactions have lower transaction fees because digital encryption is utilized to reduce transaction costs, but the transaction process also requires confirmation fees to support the entire network. Overall, the fees are much lower than traditional banks.

Qualifications

-Typically, traditional fiat currencies have far more historical credentials than Bitcoin. Fiat currencies have mandatory legal tender status from the government, as well as being driven by historical and cultural contexts that continue to drive economic infrastructure and national development.

Issuance

- The issuance of Bitcoins is subject to strict arithmetic requirements; Bitcoin's rules are defined through distributed consensus, and the number is fixed with a cap on the total amount. Fiat currencies, on the other hand, are issued under the control of a central bank and have no upper limit on their quantity.

Governance

- Bitcoins have no centralized governing body; they are governed by a proof-of-work mechanism; and they rely on a large enough consensus on the face of the Bitcoin transaction to maintain them.

3. Research methodology

This study adopts the method of literature reading. Through the literature review, we will sort out the existing academic studies on Bitcoin and fiat currencies, paying special attention to the differences between the two in terms of liquidity, scarcity, stability, security, and so on. We will refer to authoritative resources such as academic journals, industry reports and policy documents to ensure a solid theoretical foundation for the study.

In the discussion and analysis section, the realistic feasibility and limitations of Bitcoin as a currency and a means of storing value will be explored based on theoretical and practical examples in the literature (e.g., El Salvador's experience of using Bitcoin as legal tender). The study will focus on how Bitcoin compares to traditional fiat currencies in terms of monetary functions, price volatility, and security, thereby providing insights into the future development of Bitcoin.

4. Disscussion

4.1 Circulation limitations

Despite Bitcoin's technological innovation and long-term

value-added potential, there are still many challenges to its widespread circulation in global commerce. Fourteen years ago, the first smartphone (iPhone) was introduced. Just 14 years later, smartphones have become ubiquitous around the world (Statista, 2023). Smartphones allow people to do old things (browse the internet, take pictures, communicate) in new and better ways. Bitcoin is doing the same thing, but for money and finance. Like many emerging disruptive things, Bitcoin is volatile, but if you look at the long term, its value has been rising - and dramatically. It has been the best performing liquid asset of the last decade (Bilello, 2021). However, there are also arguments that Bitcoin is not currently circulating on a large scale in commerce, with only a few merchants accepting it, and holders are more likely to convert it to other well-accepted sovereign currencies even when purchasing goods. The high cost of acquiring new coins, the high risk of storage, and poor liquidity are some of the reasons that prevent bitcoin from circulating widely as a medium of exchange (Yermack, 2013).

4.2 Scarcity

Bitcoin has been considered to have potential as a store of value due to its scarcity, however, some scholars have pointed out that Bitcoin's open-source code makes it easy for anyone to copy it and release similar cryptocurrencies. As a result, many believe that Bitcoin's scarcity is not naturally occurring, but rather artificially created. Some commentators have even argued that Bitcoin is merely a transitional technology that paves the way for more advanced cryptocurrencies in the future, emerging technologies that can fix Bitcoin's inherent flaws. Thus, in the long run, Bitcoin's ability to serve as a store of value may be challenged and could eventually be replaced by other cryptocurrencies, such as Litecoin, which has been gaining traction (Bitcoin, 2024). Technically, there is no uniqueness in the way virtual currencies are created, traded, or stored, and Bitcoin is no exception. Any P2P-compliant, limited-supply, and centrally-control-free digital currency could potentially replace Bitcoin, which makes Bitcoin's lack of natural or legal exclusivity and uniqueness make it difficult to serve as a universal medium of value exchange in the long term (Sheng & Zhang, 2014).

However, another group of scholars argue that Bitcoin's scarcity, while artificial, does not diminish its potential as a store of value. Indeed, many current stores of value, such as fiat currencies, are similarly artificially scarce. While governments are free to issue more money at will, they typically do not do so because maintaining the relative scarcity of money helps maintain economic stability. Bitcoin has the advantage that its scarcity is immutable, and the algorithm ensures that its total supply is only 21 million, some of which are permanently lost (Zimwara, 2020). As such, Bitcoin's aggregate cap provides it with a certain level of scarcity, which makes it somewhat similar to gold and is seen by many as one of the main reasons why it is superior to other virtual currencies.

While Bitcoin's scarcity is seen as an advantage, there is an inherent contradiction between its fixed supply and the ever-expanding demand for the circulation of goods in modern economies. If Bitcoin were to become the main currency of a given country, the inability to flexibly adjust its supply could lead to deflation, which in turn could inhibit economic development. While the money supply should be synchronized with economic demand, the total amount of Bitcoin is determined by an algorithm and cannot adapt to dynamic market demand. This is one of the main reasons for the collapse of the gold standard in history. In a modern economic system, money is the central tool for the state to regulate the economy, and the central bank regulates the supply through monetary policy to support economic growth. Bitcoin, on the other hand, has no central regulatory mechanism; no individual or organization has the power to change its supply, and no institution can intervene to record its transaction data. Therefore, the state cannot realize macroeconomic regulation through Bitcoin, and traditional monetary policy tools cannot work in the Bitcoin system, and the credit expansion mechanism will be difficult to operate (Sheng & Zhang, 2014).

To summarize, the exogenous supply of bitcoin is disconnected from the economic system and lacks the support of a modern credit system, making it difficult to serve as an effective economic regulation tool (Zhang, 2024). Therefore, I believe that although Bitcoin can be a more reliable means of storing value due to its scarcity, it is not suitable to become a country's legal tender, or it may undermine the country's economic regulation mechanism.

4.3 Stability

Bitcoin's price volatility makes it a highly risky asset for storing value, even though its liquidity and utility continue to grow significantly each year. Bitcoin is considered a relatively liquid asset, and this liquidity has been increasing by substantial margins annually. In fact, Bitcoin has become easier to trade than gold, although it still lacks the ease of use that fiat currencies provide. With more businesses accepting Bitcoin as a payment method, its utility has expanded considerably. Bitcoin is currently being used for international money transfers, and some governments, such as El Salvador, have recently adopted it as legal tender (Helms, 2021).

However, El Salvador's experience with Bitcoin highlights the challenges of such adoption. On September 7, 2021, El Salvador became the first nation to embrace

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Bitcoin as legal tender under the guidance of President Nayib Bukele. Yet, this decision has been met with significant public resistance, with surveys revealing that a large portion of the population—more than half—was opposed to the move. Many citizens took to the streets in protest against Bitcoin's official status. The Salvadoran government's total Bitcoin holdings amounted to over 2,300 bitcoins, with an estimated cost of more than $100 million. Based on recent price estimates, the country has seen the value of its Bitcoin investment drop by roughly 50%, resulting in a loss exceeding $50 million (Beijing Daily, 2022).

In the short term, Bitcoin's extreme volatility makes it a risky store of value compared to traditional options. Bitcoin's price swings of 50% or more are not uncommon, while other stores of value, such as gold or fiat currency, tend to experience much more moderate fluctuations. Such significant volatility is likely to discourage more conservative investors who are averse to taking on large risks (Bitcoin, 2024). Though Bitcoin's growing utility is undeniable, its high price instability presents a serious barrier to it becoming a reliable store of value for the broader market. Whether Bitcoin can evolve into a more stable asset in the long term is a key question for its future viability.

4.4 Intrinsic Value

Bitcoin's decentralized and intrinsic-value-less attributes make it theoretically and practically limited in its use as a true currency. Fiat currencies are managed and regulated by centralized institutions (e.g., national banks) that control their supply and circulation. By contrast, Bitcoin and other cryptocurrencies are decentralized. For example, Bitcoin is generated through a process called "mining," which ensures that its distribution is not dependent on a centralized entity.

One of the main advantages of Bitcoin is its immutability. Once a transaction is completed, it is irreversible, ensuring that the same coin cannot be reused. This tamper-proof feature enhances trust as transactions cannot be canceled or refunded, unlike many fiat currency-based payment systems (Plisio, 2024).

However, in terms of essential properties, Bitcoin cannot be a true currency. Starting from the commodity money theory, the challenge that Bitcoin has no intrinsic value has been argued by some scholars in terms of the production costs of mining and the marginal benefits of purchasing holdings to argue for a certain value that it has (Dwyer, 2014). However, while Bitcoin may reduce transaction costs and increase efficiency in terms of the underlying technology, it remains elusive that Bitcoin performs a monetary function by acting as a general equivalent. From a debt-credit perspective, some proponents see it as a hope for realizing Hayek's vision of "denationalizing money" and solving problems such as sovereign currency over issuance. However, the core design concept of Bitcoin is decentralization, which is a private digital currency not backed by state credit, and can at most be exchanged with sovereign currencies, which is a departure from the debt nature of money and the attributes of state credit. Therefore, from both mainstream and non-mainstream monetary theories, Bitcoin is hardly a real currency, but rather a "utopia" of monetary liberalism (Sheng, S., & Zhai, C. 2014).

4.5 Security risks

The decentralized nature of Bitcoin and its completely digital form give it some potential as a store of value. Because Bitcoin exists without physical location restrictions and can be easily "carried", it is very difficult to confiscate or steal. Users can store bitcoins independently of third-party institutions (such as banks or governments), thereby avoiding the risks associated with third parties. For example, a person storing fiat currency in a bank would be concerned about the possibility of the bank going bankrupt or having their account frozen, whereas Bitcoin has no such pitfalls. In addition, traditional methods of storing value, such as gold, require complex security measures, and moving these assets often comes with high costs and risks. In contrast, Bitcoin can be easily stored and transferred by simply memorizing a private key, regardless of whether the value of Bitcoin is $100 or $100 million. Also, the Shared multisig Bitcoin wallet (2024) minimizes the security risk of a single point of failure.

However, Bitcoin itself has security issues that cannot be ignored. On the one hand, the user's private key, which is the only credential for accessing the Bitcoin account, cannot be recovered once it is stolen by hackers, which makes it difficult to adequately safeguard the security of personal assets. On the other hand, the anonymity and untraceability of Bitcoin have fueled illegal activities such as money laundering and drug trading, as well as posed a huge challenge to tax regulation in various countries (Zhang, 2024). According to the China Cybersecurity Report released in 2017, the price of Bitcoin soared from $970 to over $20,000 in 2017, an increase of nearly 2,000%. Such a substantial increase attracted a large number of hacker attacks, including ransomware such as WannaCry, Petya, and Bad Rabbit, which used Bitcoin for ransom, and even infected users' computers with mining viruses to illegally obtain Bitcoin (China Cybersecurity Report, 2017).

In addition, the drastic fluctuations in the price of Bitcoin have led to it becoming a major concern in the minds of investors. Although the underlying technology of the

cryptocurrency exhibits relatively robust characteristics, the occurrence of technical failures, fraud, and cyberattacks can still result in the loss of wealth. Since Bitcoin does not have a legal issuer, it is difficult to trace or make legal recourse in the event of a problem. More notably, Bitcoin's mining activities consume a tremendous amount of energy, and the computing power relied upon to validate exchanges has a modest environmental impact. If Bitcoin is widely adopted as a fiat currency, there could be a non-negligible negative impact on the ecosystem (Adrian & Weeks-Brown, 2021).

While the technology underlying Bitcoin has the potential to reduce the cost of financial services and increase financial inclusion, if it is adopted as a national currency, it could seriously threaten the stability of the financial system, undermine financial integrity, and pose significant risks to consumer protection and the environment. While some countries may view crypto-assets as a "quick" economic solution, in reality, the risks associated with this approach far outweigh the benefits (Adrian & Weeks-Brown, 2021).

Therefore, governments should respond to Bitcoin by ensuring that their economic policies maintain stability, efficiency, equity, and environmental sustainability. While some of Bitcoin's technological advantages are worthy of reference, it is not realistic to use it as a national legal tender but may instead create more financial and economic problems. Countries should promote technological innovation while establishing appropriate regulatory frameworks to balance the potential risks of crypto-assets with the opportunities they present.

5. Conclusion

To sum up, the emergence of Bitcoin in the financial sector is undoubtedly a major innovation, which not only triggered thinking about the traditional monetary system, but also opened up the exploration of decentralized finance. As the first successful cryptocurrency, Bitcoin occupies a special place in the hearts of investors, and many see it as an important part of the future digital economy. However, Bitcoin still faces a number of challenges to achieve wide circulation and widespread acceptance.

First, the circulation of Bitcoin is limited, and only a few merchants are currently willing to accept Bitcoin directly as a means of payment. Most users prefer to convert Bitcoin to fiat currency when purchasing goods, reflecting its lack of practical application. In addition, the price of bitcoin is extremely volatile, increasing the risk of users holding and using it, which makes many people less confident in its use as a daily payment tool.

Second, while bitcoin's scarcity is seen as one of its major advantages, this scarcity does not occur naturally. Anyone can create a digital currency similar to Bitcoin, which puts Bitcoin's uniqueness into question. Against this backdrop, new cryptocurrencies continue to emerge with the potential to offer more efficient solutions, creating uncertainty about Bitcoin's future.

More importantly, Bitcoin's adoption has triggered ongoing tensions between innovation and regulation. As governments and financial institutions grapple with the implications of digital currencies, the regulatory environment will play a critical role in shaping Bitcoin's future. Increased regulation may enhance the legitimacy of bitcoin, but it may also inhibit its growth.

In summary, despite Bitcoin's remarkable progress and widespread interest among investors and the public, uncertainty remains about its long-term viability as a stable and reliable store of value. As the cryptocurrency market continues to evolve, it is important to continuously observe the dynamics of Bitcoin and other digital currencies to better understand their role in the global financial ecosystem.

6. Recommendations

Enhanced regulatory transparency: Governments and regulators should develop clear and consistent cryptocurrency regulations. By providing a stable regulatory framework, trust can be enhanced, encouraging wider adoption of Bitcoin and other digital currencies and ensuring that users feel secure in their transactions.

Promote Merchant Acceptance: Increasing the number of merchants accepting Bitcoin is key to enhancing its utility as a means of payment. This can be done by working with payment processors, streamlining the bitcoin transaction process, and providing incentives for merchants to encourage them to integrate bitcoin payment options.

Improve user education: Educational efforts need to be stepped up to inform potential users of the benefits and risks of Bitcoin. Seminars, online courses, and informational resources can help to dispel concerns about cryptocurrencies and enable people to make informed decisions.

Developing more stable financial products: financial institutions and tech companies could explore creating stablecoins or other financial products linked to Bitcoin to reduce its volatility. This could appeal to users who are hesitant to invest due to price fluctuations.

Encourage technological innovation: continued investment in blockchain technology and related innovations is critical to improving Bitcoin's scalability, transaction speed, and overall efficiency. Supporting research and development in this area can help address existing limitations and enhance Bitcoin's competitiveness.

Promote Community Engagement: Building a strong Bitcoin community can create a supportive ecosystem that

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encourages its use and growth. Interacting with users, developers, and stakeholders through forums, meetups, and online platforms can foster collaboration and innovation.

Explore integration with the traditional financial system: establishing partnerships with traditional financial institutions can help integrate Bitcoin with the existing financial system and increase its acceptance and utility. The value of everyday use of Bitcoin can be enhanced by providing convenient transfer and payment options.

7 Review

After completing this paper, I believe I have provided a comprehensive and in-depth analysis of Bitcoin compared to fiat currencies. Through a literature review, I have tried to present the unique characteristics of Bitcoin, including its scarcity, decentralization, and ease of transaction, while also analyzing its limitations in terms of global liquidity, price stability, and intrinsic value. This analysis not only helps clarify Bitcoin's position in the modern financial system, but also provides theoretical support for its potential application scenarios.

Overall, I am satisfied with the completeness and depth of this article, while also being aware of the complexity of the subject of Bitcoin. I hope that this research will provide readers with a more comprehensive understanding of the relationship between Bitcoin and fiat currencies and provide a reference for future research on cryptocurrencies.

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