

Study on the Impact of Digital Currency on the Traditional Financial System

Xiangdong Xu

College of Accounting, Haojing College of Shaanxi University of Science & Technology, Xi'an 710000, Shaanxi, China
DOI: 10.32629/memf.v5i6.3346

Abstract: The rapid development of digital currency is driving profound changes in the global financial system. This paper analyzes the impact of digital currency on the traditional financial system across several areas, including payment and settlement, monetary policy, financial intermediation, and the international financial landscape. Firstly, digital currency enhances the efficiency of payment and settlement through decentralized technology, challenging the dominant role of traditional banks within the payment systems. Secondly, the introduction of central bank digital currencies (CBDCs) has far-reaching implications for monetary policy tools and may strengthen central banks' control over the economy. Meanwhile, the rise of decentralized finance (DeFi) weakens the intermediation role of traditional financial institutions, transforming patterns of capital flow. At an international level, the widespread adoption of digital currency may reshape the global financial order, reduce the influence of reserve currencies such as the U.S. dollar, and promote the liberalization of capital flows.

Keywords: Digital currency; Traditional financial system; Monetary policy; Financial regulation

1. Introduction

In recent years, the emergence of digital currency has profoundly reshaped the global financial system. Cryptocurrencies, represented by Bitcoin and Ethereum, have grown rapidly, and central banks worldwide are actively exploring CBDCs, underscoring their significance in the financial system. Digital currencies exhibit advantages of high efficiency and low cost in cross-border payment and settlement, gradually eroding the monopolistic position of traditional banks in this domain. Simultaneously, the rise of DeFi has significantly altered capital flow within financial markets, diminishing the intermediation role of traditional financial institutions and potentially leading to far-reaching structural adjustments in the global financial landscape.

2. Definition and Classification of Digital Currency

2.1 The Concept of Digital Currency

Digital currency exists in electronic form, retaining the payment and exchange functions of traditional currency but differing significantly in terms of technology and operational mechanisms. Its core characteristics include digitalization, decentralization, and cryptographic security. The earliest form of digital currency was cryptocurrency, represented by Bitcoin, which relies on blockchain technology. This technology employs a distributed ledger to record all transactions, ensuring that the transaction process is transparent and immutable[1]. The decentralized nature of digital currency means that it does not rely on central authorities like banks or governments for issuance or regulation, instead enabling peer-to-peer transactions directly between users[2].

2.2 Comparison between Cryptocurrencies and Central Bank Digital Currencies

Cryptocurrencies and CBDCs are both forms of digital money, yet they differ markedly in issuance mechanisms, technical architecture, and regulatory frameworks. Cryptocurrencies, such as Bitcoin and Ethereum, are decentralized and based on blockchain technology, facilitating transactions through a distributed network, thus possessing anti-censorship qualities and transparency. In contrast, CBDCs are issued and managed by central banks, ensuring the effective implementation of national monetary policy[3]. The advantages of CBDCs lie in their potential to improve payment system efficiency, enhance financial inclusion, and ensure transaction security and traceability[4].

2.3 Applications of Digital Currency

Digital currency has broad and continually expanding applications, primarily in payments, financial markets, and cross-border transactions. Firstly, digital currency demonstrates significant advantages in the payment domain, especially in cross-

border transactions, where its decentralized architecture reduces transaction costs and speeds up transfers. In regions where traditional payment systems are inefficient, digital currency offers a reliable alternative. Additionally, digital currency's role in financial markets is increasingly prominent, as DeFi enables direct connections between borrowers and lenders through smart contracts, reducing the need for financial intermediaries and increasing capital flow efficiency. Digital currency also provides a new platform for asset digitalization and trading; blockchain-based digital assets enable more efficient transactions and management across various asset forms, including securities and real estate[5].

3. Impact of Digital Currency on the Traditional Financial System

3.1 Transformation of the Payment and Settlement System

The application of digital currency, particularly cryptocurrencies and central bank digital currencies (CBDCs), has triggered profound changes in the payment and settlement system. Traditional payment and settlement systems rely on banks and intermediary institutions, which are complex and costly, especially in cross-border payments where time efficiency is a significant concern. The decentralized nature of digital currency enables transactions to occur without intermediaries, greatly enhancing payment efficiency. For example, blockchain-based cryptocurrencies like Bitcoin and Ethereum allow for peer-to-peer networks that enable instant settlement, reducing lengthy clearing processes and intermediary fees. CBDCs also hold the potential to enhance payment convenience and security while ensuring the effective implementation of national monetary policy.

3.2 Adjustment of Monetary Policy Tools

The introduction of CBDCs provides new opportunities for adjustments in monetary policy tools. Traditional monetary policy relies on mechanisms such as interest rate adjustments, open market operations, and reserve requirements to regulate money supply and credit conditions. However, CBDCs allow central banks to regulate currency circulation through more direct and precise methods. By designing programmable features into CBDCs, central banks can finely control monetary flow, such as monitoring funds in real time and setting automated policies under specific conditions or in targeted economic regions. Additionally, the widespread adoption of CBDCs may reduce the dependence on commercial banks as intermediaries, allowing central banks to distribute currency directly to the public.

3.3 Weakening of Financial Intermediary Roles

The rise of decentralized finance (DeFi) has significantly impacted the intermediary role of traditional financial institutions, particularly banks. DeFi enables lending, trading, and investing activities through blockchain technology and smart contracts, bypassing the need for intermediaries and diminishing the central role of banks in capital allocation. Traditionally, banks serve as credit intermediaries, maintaining capital flow through deposit-taking and loan issuance. In the DeFi system, however, users can conduct peer-to-peer lending and financial transactions directly via decentralized networks, eliminating reliance on banks or other intermediary institutions.

3.4 Challenges in Financial Regulation and Stability

The rise of digital currency introduces new challenges to financial regulation and stability. Given that cryptocurrencies and DeFi systems often operate on decentralized networks, traditional regulatory tools face limitations in applicability. First, the anonymity and global nature of digital currency complicate cross-border regulation, making it more susceptible to misuse for money laundering, tax evasion, and illicit financial activities. Although the promotion of CBDCs enhances regulatory control, it also necessitates the establishment of new legal and technical standards to ensure transparency and security in capital flows. Particularly concerning financial stability, the high volatility of digital currencies exacerbates market unpredictability; a major security incident involving a mainstream cryptocurrency or DeFi platform could trigger chain reactions affecting the stability of the entire financial market.

4. Impact of Digital Currency on the International Financial Landscape

4.1 Decentralization Trend in Cross-Border Payments

The emergence of digital currency is profoundly transforming traditional cross-border payment systems. Conventional cross-border payments rely on a multi-layered system of intermediaries, including banks, clearing institutions, and central banks, resulting in high costs and low efficiency, especially noticeable in developing countries and regions. In contrast, digital currencies, particularly cryptocurrencies and CBDCs, achieve decentralized cross-border payments through blockchain technology, eliminating the need for traditional banking systems and greatly simplifying payment processes. Cryptocurrencies

like Bitcoin and Ripple enable peer-to-peer transactions without third-party clearing institutions, completing transactions within minutes and significantly reducing fees and settlement time compared to traditional cross-border payments.

4.2 Shifts in Global Financial Sovereignty

With the promotion of digital currency, especially CBDCs, there is a fundamental shift in global financial sovereignty. Traditionally, the U.S. dollar, as the primary global reserve currency, has dominated international financial markets and the settlement of global trade. However, the rise of digital currencies, particularly the implementation of cross-border CBDCs, may impact the international standing of the dollar. For instance, China's digital renminbi initiative and other countries' explorations of CBDCs signal a move toward direct control over cross-border transactions through digital currency, potentially reducing dependence on traditional reserve currencies.

4.3 Challenges in Capital Flow and International Regulatory Coordination

The widespread adoption of digital currency has far-reaching implications for the liberalization of cross-border capital flows, presenting new opportunities and challenges. Due to the decentralized nature of digital currencies, capital can flow globally with speed and minimal barriers, bypassing the traditional capital control mechanisms within banking systems. This liberalization of capital flow not only enhances global investment convenience but also weakens individual countries' control over capital inflows and outflows. Furthermore, the anonymity and high liquidity of digital currency present considerable regulatory challenges in managing cross-border capital flow, especially in combating money laundering, tax evasion, and illicit fund transfers. Regulatory bodies worldwide face significant coordination difficulties, as differing legal frameworks and financial regulations among countries often place the cross-border use of digital currency beyond the jurisdiction of any single nation.

5. Conclusion

The rapid development of digital currency is profoundly impacting the global financial system, particularly in the areas of payment and settlement, monetary policy, financial intermediation, and international capital flows. Decentralized technology has enhanced payment efficiency and reduced costs, transforming traditional cross-border payment models. CBDCs offer more precise and real-time tools for monetary policy. DeFi has weakened the role of traditional financial intermediaries, facilitating the liberalization of capital flows. However, digital currency also introduces new challenges to global financial regulation, with cross-border capital flow regulation requiring strengthened coordination. Going forward, countries must seek a balance between innovation and regulation to ensure the stable development of the global financial system.

References

- [1] Piao Shuqing. Research on the Impact of Digital Finance Development on the Transmission Mechanism of China's Monetary Policy [D]. Jilin: Jilin University, 2023.
- [2] Yu Bo. The Impact and Challenges of Digital Currency on the Traditional Financial System [J]. Journal of Hubei Open Vocational College, 2024, 37(16): 160-161,167.
- [3] Pang Ye, Xian Xiang. The Application of Digital Currency in International Trade and Its Challenges to the Traditional Financial System [J]. Price Monthly, 2024(7): 87-94.
- [4] Xiao Kai. Research on the Impact of Digital Currency on the Financial System and Traditional Currency [J]. Business Economy, 2024(5): 179-181.
- [5] Li Zhiwen, Zhuang Lei, Zhao Chengguo. Research on the Effect and Impact Mechanism of Digital Currency on the Traditional Currency Financial System [J]. Economist, 2020(2): 120-122,126.

Author Bio

Xiangdong Xu was born in Dali, Shaanxi, P.R. China, in 1986. He received the master's degree from Chang'an University, P.R. China. Now, he works in College of Accounting, Haojing College of Shaanxi University of Science & Technology. His research interest include Higher education management and financial management.