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Legal Frameworks and Issues in Digital Currency: Insights from Financial Technology

Chengkun Liu*

School of Computer and Artificial Intelligence, Beijing Technology and Business University, Beijing 102445, China

***Corresponding author:** Chengkun Liu, 18953586589@163.com

Abstract: With the rapid advancement of network technology, new payment methods represented by Q coins and game currencies have entered a phase of significant growth. However, these payment methods have a limited scope of application and lack the legal status of fiat currency. The rise of digital currency has profoundly impacted the authority of traditional currency systems. Distinguished by robust payment capabilities, digital currency differs significantly from traditional currency. Yet, due to its relatively brief history, a globally unified definition has yet to be established. Consequently, there is an urgent need to enhance the regulation of digital currency through legislative measures to ensure its orderly and sustainable development.

Keywords: Financial technology; Digital currency; Legal issues; Digital science and technology

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1. Introduction

In 2008, the article "*Bitcoin: A Peer-to-Peer Electronic Cash System*" introduced the concept of a digital currency system underpinned by blockchain technology [1]. The following year, Bitcoin, the first private digital currency, was created. Subsequently, other private digital currencies, including Ethereum, Litecoin, and Ripple, have emerged and experienced rapid global adoption [2]. However, these digital currencies operate outside national regulatory frameworks, being issued and controlled entirely by developers. This lack of oversight has led to challenges such as volatile pricing, speculative trading, and inadequate credit guarantees, all of which have posed substantial threats to global monetary and financial systems.

In response, numerous countries and financial institutions have initiated research and development of "legal digital currencies." In 2020, China piloted its digital yuan (a legal digital currency) in cities such as Shenzhen, Suzhou, and Beijing, followed by the launch of related applications [3]. Since its inception, the digital yuan has seen significant growth in popularity, extending to a broader range of applications. The simultaneous expansion of offline use cases and online consumption scenarios has resulted in a promotion model that integrates both channels.

While the development prospects of the digital yuan in China are widely regarded as promising, the transition from pilot programs to large-scale implementation faces notable challenges. These include ensuring system stability, establishing comprehensive safety and risk management mechanisms, and clarifying the regulatory framework necessary for broader adoption.

2. Overview of digital currency

In the rapidly evolving information age, there is no unified understanding of the concept of digital currency in China [4]. Compared to existing virtual currencies and their forms, digital currency exhibits significant independence in value. It does not rely on physical objects but is built on blockchain technology, establishing a cryptographic digital identity. This digital identity functions as a native asset in the internet space and is typically acquired through the exploration and discovery of internet-based information [5].

Digital currency differs from traditional paper currency, which serves as a legal transaction medium endowed by national laws and regulations but lacks intrinsic value. However, it shares certain characteristics with precious metals like gold and silver, such as its potential use as a trade tool and its implicit value. The mining process for digital currency is complex, relying on specialized algorithms on the internet and requiring assistance from professional organizations and personnel, making it a challenging endeavor.

The core of digital currency lies in its adoption of a specialized cryptographic system [6]. On the internet, digital currencies generated through data mining techniques are assigned specific passwords, creating a complete digital currency system. Bitcoin, as a representative example, derives its high value largely from its scarcity, akin to gold on Earth.

In recent years, China has significantly increased its investment in the digital currency sector. It is important to note that the digital currency issued by the People's Bank of China differs significantly from Bitcoin. The central bank's digital currency is uniformly issued and encrypted by the central bank, supported by national credit, and represents an emerging form of currency.

3. Legal issues of digital currency

3.1. Legislative challenges of digital currency compensation

Within China's currency system, research on digital currency has reached considerable depth [7]. However, as a novel form of network currency, digital currency lacks a comprehensive legislative system to fully protect its legal status and usage. As the central bank advances the issuance of digital currency, there is an urgent need for relevant departments to engage in detailed discussions, formulate regulatory provisions, ensure its market legality, safeguard users' legitimate rights and interests, prevent potential transaction disputes, and establish a solid legal foundation for the healthy development of digital currency.

3.2. Legal adjustment needs for the transfer of digital currency rights

Changes in property rights are integral to ownership and are a central aspect of the property transaction process. As an emerging virtual product with prominent internet characteristics, digital currency introduces increased complexity regarding property ownership. To ensure the safety and reliability of data circulation, it is essential to establish corresponding laws and regulations tailored to the unique characteristics of digital currency [8].

By implementing unique identity identification and ownership binding for digital currency, alongside a robust password verification mechanism, transaction information can be accurately matched among various parties, ensuring safety and fairness in transactions.

3.3. Legislative regulation issues of counterfeiting digital currency

Counterfeiting has long posed challenges to currency circulation, and digital currency, as a "virtual currency" based on information technology, is particularly vulnerable to malicious attacks by hackers and computer experts. These vulnerabilities exacerbate counterfeiting issues compared to traditional paper currency.

Addressing this requires strict legal measures to punish counterfeiting activities and maintain a well-ordered market. Legislative efforts must align with the rapid development of digital currency, continuously improving the relevant legal system to ensure its legitimacy and security. Such advancements will provide a robust foundation for the broader application of digital currency [8].

4. The path of legal supervision for digital RMB

4.1. Realization of personal rights protection under the application of digital RMB

4.1.1. Establishing the subject and specific content of personal rights and interests protection responsibilities

With the rapid progress of financial technology, legal issues related to digital currency are becoming increasingly prominent, with user privacy protection emerging as a critical issue that urgently needs resolution. The foremost task is to clarify the entities responsible for protecting personal rights and interests. In traditional electronic payment systems, transaction data is primarily stored by third-party payment institutions [9]. However, the advent of digital RMB has transferred these data storage responsibilities to commercial banks. Compared with third-party payment companies, commercial banks possess notable advantages in technological capability and risk control. Furthermore, given their involvement in "private finances," commercial banks face heightened sensitivity and security requirements, making the strengthening of personal data management within these institutions a crucial priority.

4.1.2. Defining the effective conditions for the transfer of digital currency rights

From a legal perspective, the principles governing the ownership of digital RMB align with those of traditional currency. Within electronic payment systems, the asset reduction experienced by the currency holder is mirrored by a corresponding increase in the receiver's account balance. In civil and commercial transactions, upon the completion of a digital currency payment, either party involved in the transaction retains the right to request an equivalent amount of currency from the other.

4.2. Building an economic regulation system for the impact of digital RMB

The introduction of digital RMB has brought unprecedented opportunities and challenges to China's financial system within the rapidly evolving financial technology landscape. Effectively addressing these challenges requires the incorporation of digital RMB into the framework of economic law, particularly by confirming its legal status as a legitimate digital currency issued by the central bank, equated to cash RMB. To achieve this, the following strategies must be implemented:

4.2.1. Improving the issuance and circulation norms of digital currency

Although the central bank's issuance and usage of digital currency share similarities with traditional currency processes, the digital RMB's reliance on digital information networks introduces unique characteristics. Consequently, the central bank must supervise comprehensively the entire process, from issuance to circulation and eventual recycling or destruction of digital RMB. This ensures standardized, secure operations, maintaining stability within the financial market.

4.2.2. Broadening participation channels for financial institutions

Currently, digital RMB operations are predominantly managed by the central bank and commercial banks. However, as technological advancements continue, participation from additional third-party and private enterprises is anticipated. To prepare for this, it is necessary to establish stringent screening criteria, access conditions, and exit mechanisms for financial institutions. This approach ensures that only entities with adequate strength and credibility participate in the issuance and servicing of digital RMB, thereby supporting the financial system's stability and growth.

4.2.3. Clarifying the legal responsibilities of digital RMB service providers

Legislation should explicitly define the responsibilities and obligations of service providers, encompassing currency exchange, digital wallet management, identity authentication, information security, risk prevention, and reporting of illegal activities. Service providers should leverage the digital RMB's technological capabilities to swiftly identify and address potential or actual risks, ensuring the continuity, stability, and efficiency of financial operations [10].

4.2.4. Establishing comprehensive macro-control and market supervision mechanisms

A robust supervisory framework must balance public demand, safety, and usability while mitigating risks such as difficulties in currency withdrawal or inflation. Enhancing business efficiency, service quality, and risk resistance is essential for the development of China's banking sector. Furthermore, considering the spontaneity and potential disorder of online transactions, national institutions should expedite legislative processes, uphold strict legal standards, and rigorously address unfair competition. This approach lays a solid foundation for the sustainable development of the digital economy.

5. Conclusion

In summary, digital currency is increasingly pivotal in contemporary economic activities. Constructing a comprehensive legal and regulatory framework for digital currencies is essential for fostering the healthy development of digital currencies in China and ensuring the continued innovation of financial technology. Relevant authorities must integrate China's specific circumstances and undertake thorough and efficient supervision through both technical and legislative measures. By establishing robust legal systems and supervisory mechanisms, it becomes possible to better meet the needs of the populace while supporting the economic and social development goals of the nation.

Disclosure statement

The author declares no conflict of interest.

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