

# Research on How to Use Digital Currency Technology to Accelerate the Process of RMB Internationalization

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## Abstract

The internationalization process of RMB is facing unprecedented challenges. Based on an overview of the definition, characteristics and current application status of digital currency technology, the article analyzes the background, current situation, path and influencing factors of RMB internationalization, and analyzes the opportunities and challenges that digital currency technology brings to RMB internationalization. Specific impacts on cross-border payments, international settlements, investment and financing, and competitiveness were discussed. On this basis, some suggestions were put forward for China's digital currency in promoting the internationalization of the RMB, deepening integration, and strengthening supervision.

## Keywords:

*Digital currency technology; RMB internationalization; international competitiveness*

## 1. Introduction

In recent years, countries around the world have attached great importance to and researched the development of digital currencies. Digital currency is a new form of currency based on cryptography, distributed ledgers, blockchain and other technologies, and characterized by decentralization, anonymity, and programmability. It is considered an important development direction of the future financial market. Against this background, China's monetary policy has undergone fundamental changes. However, people still lack sufficient understanding and evaluation of the role of digital currency technology in the process of RMB internationalization.

Based on this, this study attempts to explore its impact on the internationalization of the RMB from the perspective of digital currency technology, hoping to bring some enlightenment to China's digital currency technology and the internationalization of the RMB.

## 2 Overview of digital currency technology

### 2.1 Definition, characteristics and classification of digital currency technology

Digital currency technology is a new currency form based on cryptography, distributed ledgers, blockchain and other technologies that can realize paperless payments,

cross-border remittances, smart contracts and other functions. Compared with traditional currency, digital currency is a new type of currency based on Internet transaction methods and algorithmic rules. Today, Bitcoin, Ethereum, Litecoin, etc. are the most representative digital currencies. Digital currency is an emerging financial technology. Its application in financial technology is becoming more and more widespread and it is receiving more and more attention. Digital currency technology has the following characteristics:

**Decentralization:** Digital currency is a technology that does not rely on countries or financial organizations. Its issuance and circulation are carried out in a decentralized manner.

**Anonymity:** Digital currency transactions can achieve anonymity, thus ensuring user privacy and transaction security.

**Programmable control:** Electronic currency technology can realize smart contracts, allowing transactions, payments and other behaviors to be carried out according to preset conditions.

**Quick Verification:** Verification of electronic money takes much less time and may only take a few minutes. In contrast, traditional bank transfers can take days.

**High security:** Digital currency technology uses technologies such as cryptography and blockchain to protect the security of transactions and prevent problems such as fraud, tampering, and double payments.

**Borderless:** Through digital currency technology, capital flows and payments can be made across countries, avoiding various restrictions and fees between traditional banks.

**High transparency:** The transaction data of electronic currency is stored in a decentralized manner and can be viewed and verified by all transaction participants, which increases the transparency and fairness of electronic currency.

According to implementation methods and functional characteristics, digital currency technology can be divided into the following types: blockchain-based digital currency, centralized digital currency, encrypted digital currency, stable currency, community digital currency and tokens, etc. Digital currencies such as Bitcoin, Ethereum, and Litecoin are decentralized currencies with blockchain as the core. Central-level digital currencies are generally issued by

states and financial institutions, such as the “digital renminbi” launched by the Central Bank of China. Digital currency is a new type of cryptocurrency represented by Zcash and Monero. The so-called “stable currency” refers to a digital currency related to a certain asset price. Community digital currency refers to individuals or groups with common interests, such as Dogecoin, Antcoin, etc. Tokens refer to digital assets based on the blockchain, generally related to specific applications or projects, such as Etherkeleks’ ERC-20 tokens.

## 2.2 Current application status of digital currency technology

Digital currency technology has been a hot topic in international research in recent years. Digital currency technology has been widely used in finance, payment and various fields of social life. Among them, digital currency technology with blockchain as the core has been widely used in many fields such as finance, medical care, justice, logistics, etc. Cryptocurrency is a digital currency represented by Bitcoin, Ethereum, Litecoin, etc. It has been increasingly used in investment, transactions, payments, etc., and has gradually become a mainstream circulation method.

In China, the “digital RMB” issued by the People’s Bank of China and has been piloted in many cities is characterized by being safe, fast, traceable, and reducing the use of cash. In addition, due to the development of digital currency technology, electronic payment methods such as mobile payment, Alipay, and WeChat have become necessary payment methods in people’s daily lives. In addition, digital currency technology can also track the entire process of goods in the fields of food, medicine, etc., thus enhancing consumers’ trust in goods.

On the whole, the current use of electronic money is quite common. In the future, there will be more places where electronic currency technology can be used to improve production and living standards. However, in order to better cope with possible risks and challenges in the future, its security and standardization need to be further strengthened. Therefore, it must be effectively managed to ensure its application in the digital economy.

## 3 Analysis of the path of RMB internationalization

### 3.1 Background and current situation of RMB internationalization

In the context of China’s rapid economic growth, the internationalization of the RMB has become a major national strategy for China. The internationalization of the RMB is the result of a combination of factors. First, the

expanding foreign trade regulations The model has led to China’s increasing demand for foreign exchange transactions and settlements. The use of RMB in real trade can reduce exchange rate risks, improve exchange rate efficiency, and be closer to the market. Secondly, with the deepening of reform and opening up, China’s economy has also developed rapidly. At the same time, with the gradual opening and improvement of China’s financial market, more and more foreign investors have higher and higher requirements for China’s capital market, which has played a great role in promoting the internationalization of the RMB. Finally, RMB internationalization is a national strategy of China, which is conducive to enhancing China’s voice, influence and competitiveness in the world.

At present, in China’s trade settlement, RMB has gradually become the world’s The main currency used by countries and regions around the world to settle trade with China. So far, more than 120 countries and regions have agreed to settle in RMB. In terms of investment and financial management, many banks and financial institutions around the world have launched offshore RMB businesses, which has led to an increasing number of Chinese investors. In terms of capital flows, the RMB, as a major currency, plays an important role in promoting international capital flows. From the perspective of foreign exchange reserves, the RMB has gradually become the main foreign exchange reserve currency of central banks of various countries, thereby increasing its status and influence in the global financial system.

However, there are also many problems and challenges in China’s development process. China’s current level of RMB internationalization is not high and there is still a certain gap compared with mainstream international currencies; the convertibility of RMB still needs to be further improved; the international credit rating of RMB needs to be improved, etc. In addition, changes in the international political and economic environment, as well as the outbreak of the new coronavirus pneumonia epidemic, will have an impact on the internationalization of the RMB.

### 3.2 Analysis of the path of RMB internationalization

The approach to RMB internationalization is a gradual one, which can be roughly divided into three stages:

The first stage: Promote the internationalization of RMB in Asia. China should strengthen currency cooperation with neighboring countries and promote the internationalization of RMB within Asia, including signing currency swap agreements and establishing an offshore RMB market. China has conducted currency exchanges with Singapore, South Korea, Malaysia and other countries, and has carried out offshore transactions of RMB in Hong Kong, Singapore and other places.

The second stage: Promote the internationalization of the RMB. China should further expand the international

uses of the RMB and, on this basis, gradually promote the internationalization of the RMB. Against this background, it is a very important topic to further improve communication and cooperation between the RMB and major currencies in the world, promote the application of cross-border trade and investment settlement, and actively introduce foreign capital into the Chinese market. For example, China has signed agreements on RMB settlement with some European countries, such as the United Kingdom, Germany and France, and has established offshore RMB markets in London, Frankfurt and Luxembourg.

The third stage: enhance the status and influence of the RMB in the world. China should further improve its status in the world financial system and enhance its influence on the world economy. Among them, the RMB has joined the International Monetary Fund 's SDR package to improve its international credit rating. At the same time, China also needs to strictly control the RMB exchange rate to ensure the stability and reliability of the RMB exchange rate.

### 3.3 Factors influencing RMB internationalization

(1) China ' s economic strength and degree of openness to the outside world. China's economic strength and degree of openness to the outside world are important factors in promoting the internationalization of the RMB. As the world's second largest economy, China's economic aggregate and foreign trade scale are both very large. At the same time, China's degree of opening up to the outside world is also increasing, and it has become the world's largest trader in goods and the second largest country in service trade. These factors make the RMB more internationally competitive and promote the process of RMB internationalization.

(2) International monetary policy environment and international financial market environment. Changes in international monetary policy and changes in international financial markets also have a certain impact on the internationalization of the RMB. The adjustment of the U.S. central bank's monetary policy and the outbreak of the international financial crisis will all affect the process of RMB internationalization. At the same time, the impact of international financial market fluctuations and uncertainties on the internationalization of the RMB cannot be ignored.

(3) The convenience of RMB transactions and the construction of cross-border payment systems. The facilitation of RMB transactions and the construction of a cross-border payment system also play an important role in the internationalization of RMB. If we want the RMB to go global , we must have a convenient transaction and payment system. In addition, by establishing a cross-border payment system and realizing the interoperability of RMB, it can also promote the internationalization of RMB.

(4) RMB free convertibility and international credit rating. The convertibility of the RMB and the level of

international credit have also had a certain impact on the internationalization of the RMB. The improvement of the level of liberalization of the RMB exchange rate is conducive to the international circulation of the RMB and the improvement of the international competitiveness of the RMB. At the same time, improving China's international credit rating will help increase China's popularity and usage around the world.

## 4. The impact of digital currency technology on the path of RMB internationalization

### 4.1 Opportunities and challenges of digital currency technology for RMB internationalization

(1) Opportunities: Promote cross-border payment and settlement of RMB. Digital currency technology can enhance the international recognition of RMB and provide more convenient, safe and efficient solutions for RMB cross-border payment and settlement. Promote the process of RMB internationalization. Through digital currency technology, the international competitiveness of the RMB can be improved and its status and influence in the world economic system can be strengthened. Expand the applicable fields and scope of RMB. Digital currency technology can provide strong technical support for the development of countries along the "Belt and Road" and emerging market countries, and help expand the application areas of the RMB.

(2) Challenges: First, technical risks. China's digital currency technology is still in its infancy and faces some technical immaturity and network security issues. Once a technical error occurs or is attacked by hackers, it may affect the internationalization process of the RMB. Due to its characteristics such as anonymity and decentralization, it is difficult for regulatory authorities to effectively supervise it, making it extremely easy to be exploited and thus affecting social stability. Currently, different types of digital currencies such as Ethereum and Bitcoin have appeared around the world . Internationally, if it cannot compete with foreign digital currencies, it will have a great impact on the internationalization of the RMB. The second is policy constraints. Policies and regulations on digital currency vary from country to country and region, and some countries and regions have even banned the trading of digital currency, which may restrict the promotion and application of RMB digital currency in the international market to a certain extent.

### 4.2 The impact of digital currency technology on RMB cross-border payments

Improve the efficiency and convenience of cross-border payments. Digital currency technology has functions such as instant settlement, cross-border payments and

contactless transactions. Compared with traditional cross-border payment methods, it is more efficient and convenient.

Promote the internationalization of the RMB. The emergence of digital currency will bring new opportunities to the internationalization of the RMB. Digital currencies characterized by decentralization, high security, and traceability will help improve the international reputation and market recognition of the RMB and promote its application in cross-border payments.

Strengthen the supervision and management of cross-border payments. Through the use of digital currency technology, effective supervision of cross-border payments can be achieved. The use of digital currency technology can realize the traceability and supervision of cross-border capital flows, effectively prevent cross-border money laundering and other illegal activities, and ensure the safety and legality of cross-border payments.

#### **4.3 The impact of digital currency technology on RMB international settlement**

Improve efficiency. Digital currency is an important technology for realizing cross-border payment and settlement. Compared with traditional inter-bank settlement methods, digital currency technology has faster processing speed, lower cost, and is not restricted by time and geography, and can effectively improve the efficiency of RMB international settlement.

reduce risk. Due to the use of blockchain and other technologies, digital currency technology has the characteristics of decentralization, non-tampering, and high security.

This can avoid credit risks that may arise in the traditional financial settlement process.

Risk, anti-money laundering risks and other issues have improved the safety and reliability of RMB international settlement to a certain extent.

Expand application areas. The article proposes a RMB international settlement solution based on digital currency technology. For example, China will use digital currency technology to provide convenient and efficient cross-border payment and settlement services to countries along the "Belt and Road" and will further promote the internationalization of the RMB.

#### **4.4 The impact of digital currency technology on RMB investment and financing**

Broaden financing channels and approaches. Digital currency technology can open up new avenues for RMB financing. Due to the development of digital currency technology, decentralized financing and investment have become possible, which will make the use of RMB funds wider, more flexible, lower costs, and higher capital efficiency.

Promote the internationalization of the RMB. Digital currency technology can promote RMB investment around the world and promote its development around the world. Using digital currency technology, cross-border capital flows can be carried out conveniently and safely, thereby making the circulation and use of RMB more free.

Strengthen the transparency and security of investment and financing. Digital currency technology can make investment and finance more transparent and safer. Digital currency is an electronic currency with traceability, openness, and anti-counterfeiting functions.

#### **4.5 The impact of digital currency technology on the international competitiveness of RMB**

Provide a more convenient and efficient payment method for the internationalization of RMB. Digital currency technology can greatly improve the international payment of RMB, making it more efficient and convenient. Using digital currency technology, RMB can quickly realize cross-border payment and settlement, reducing transaction costs, improving transaction efficiency, and making it more secure and reliable. In this way, the use and recognition of RMB around the world can be improved, and its status as a payment currency internationally can be enhanced.

Promote the participation of RMB in international trade. Digital currency technology provides convenience for the RMB to go global. The use of digital currency technology can make settlement and payment methods in cross-border transactions more flexible, which not only reduces the costs and risks of cross-border transactions, but also improves the speed and efficiency of settlement. In this way, the degree of use of RMB in foreign trade can be increased and its competitiveness in foreign trade can be enhanced.

Enhance the international competitiveness of the RMB. The development of digital currency will help enhance the competitiveness of the RMB in the world. By using digital currency technology, the RMB can be exchanged and circulated with other digital currencies, thereby increasing the RMB's influence in the international financial market and enhancing its status as a reserve currency. In this way, the international status of the RMB can be further enhanced and its international competitiveness enhanced.

### **5. The Enlightenment of Digital Currency Technology on the Path of RMB Internationalization**

#### **5.1 Give full play to the role of digital currency technology in the internationalization of RMB**

Digital currency technology has functions such as instant clearing, cross-border payments and contactless

transactions, which has improved the usage and efficiency of RMB in cross-border payments and settlements. Digital currency is a new type of e-commerce that is conducive to promoting the internationalization of the RMB. Digital currency is a technology that integrates decentralization, high security, and traceability, and can improve the international status and credibility of the RMB. The use of digital currency technology can ensure the safety and legality of the RMB, allowing it to gain more recognition and use in the fields of international investment, financing and trade, thus improving the status of the RMB in the international currency market. Digital currency is an emerging form of currency that can promote the exchange and circulation between RMB and other digital currencies, thereby improving the status of RMB in the world financial market. Using electronic currency technology, people can conduct real-time exchanges between digital currencies, thereby increasing the exchange rate between RMB and other electronic currencies and promoting the internationalization of RMB.

### **5.2 Promote the deep integration of digital currency technology and RMB internationalization**

It is necessary to strengthen the research, development, application and other aspects of digital currency technology to promote its further integration with the internationalization of the RMB. It is necessary to accelerate the innovation and application of digital currency technology, conduct research and development of digital currency products and services that are compatible with the needs of RMB internationalization, and improve the security and stability of digital currency technology. In addition, corresponding laws and regulations should be formulated to standardize and legalize the development of technology. The promotion and penetration of digital currencies must be accelerated. Digital currency should be promoted into cross-border payment and settlement of RMB to make it more convenient and efficient. In addition, a digital currency trading center should be established to facilitate the exchange, storage, and management of digital currencies, and to facilitate the circulation and exchange of digital currencies such as RMB. Therefore, in the process of promoting the internationalization of the RMB, we must increase support for digital currencies. In order to promote its application and popularization in the process of RMB internationalization, corresponding policies and measures should be formulated. At the same time, financial institutions should be guided to actively promote the use of digital currency and enhance its impact on the internationalization of the RMB.

### **5.3 Strengthen the technical supervision of digital currencies to ensure the security of RMB internationalization**

Through technical supervision of digital currency, the security and stability of the RMB internationalization process are ensured. In order to adapt to the development of electronic currency technology, a sound regulatory system must be established. A regulatory agency for digital currency technology should be established, and corresponding regulatory rules and regulations should be formulated to clarify regulatory responsibilities and standards, standardize digital currency business operation processes, and enhance the transparency and credibility of the digital currency market. In addition, supervision of digital currency companies should be strengthened to protect the legitimate rights and interests of their users. Therefore, it is necessary to increase the protection of the security of electronic currency. The main contents include: building a digital currency technology security prevention system, strengthening digital currency transaction security management, and conducting network security risk investigation and repair. At the same time, information protection for digital currency users must be strengthened to prevent personal privacy from being infringed. It is necessary to regulate the technical operation behavior of digital currencies to maintain its market order. The operational management of digital currency technology should be strengthened, digital currency trading activities should be regulated, and illegal and criminal activities such as money laundering and illegal transactions should be strictly prevented. At the same time, we should also strengthen the monitoring and investigation of digital currencies, and promptly investigate and deal with violations of laws and disciplines.

## **6. Conclusion**

The emergence of digital currency will directly affect the development direction of RMB internationalization. Digital currency technology can improve the efficiency and convenience of RMB international payments, promote the application of RMB in international trade, enhance the status of RMB in the international financial market, and then promote the internationalization of RMB. On this basis, new requirements have been put forward for its supervision, safety and other aspects, and corresponding supervisory measures have been formulated to ensure its safety and stability.

In the future, digital currencies will continue to develop and improve, and will have a more profound impact on the internationalization of the RMB. We must continue to explore the intrinsic connection between digital currency technology and RMB internationalization, strengthen the

research and application of digital currency technology, promote the in-depth integration of digital currency technology and RMB internationalization, and lay a solid foundation for the RMB to move towards a broader international stage. Foundation.

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