Development Economics of China
2025, VOL. 9, NO. 5, 105-110
DOI: 10.47297/wspdecWSP2515-797321.20250905

# Path selection of digital RMB

Zihui Wang

School of Pharmaceutical Economics and Management, Anhui University of Chinese Medicine, Hefei, Anhui, 230012, China

**ABSTRACT**
This study explored the Digital yuan (Digital Curency Electronic Payment, DCEP) multiple path selection, in order to analyze the marketing strategy, both at home and abroad, as well as its influence on financial technology (FinTech). Analyze the Numbers the definition and development background, especially in the global Central Bank Digital currency (Central Bank Digital Curency, CBDC) development in the background, Digital process of RMB has important strategic significance. Tell from theory foundation, the concept of digital currency and its classification, features and functions of central bank digital currency, then clear it in the role of monetary policy. The research shows that in the Chinese market, the development strategy of digital RMB should combine the optimization of payment system and the cultivation of user habits, while in the international market, it should focus on strengthening the coordination of monetary policies and scientific and technological cooperation with other countries. Digital renminbi gained popularity, which actively promote financial industry development of science and technology, encourage technological innovation, but also will bring unprecedented challenges to the traditional financial institutions. In the field of cross-border payment, this paper analyzes the current situation and problems, discusses the potential of digital RMB, as well as its advantages in improving payment efficiency and reducing transaction costs. This study deeply analyzes the internal relationship between eCNY and monetary policy, and clarifies the possible effects of eCNY on achieving monetary policy objectives and adopting relevant policy instruments. In this paper for the digital yuan development plan provides a solid theoretical basis and practical guidance, help cope with future challenges and opportunities in change of financial environment.

**KEYWORDS**
Route choice; Central bank money Cross-border; Financial technology; Pay; Monetary policy

## 1 Introduction

With the widespread adoption of smartphones and the rapid development of Internet technology, our payment methods are undergoing a profound transformation. The e-CNY, as the legal digital currency issued by the People's Bank of China, is one of the core representatives of this transformation. It is not merely the digitization of paper currency but a new form of currency that integrates new technologies and features such as "controllable anonymity" and "payment as settlement". Against the backdrop of various countries exploring central bank digital currencies (CBDCs), the launch and application of the e-CNY undoubtedly hold significant strategic importance.

However, as a new phenomenon, the future development of the e-CNY is not without obstacles. While there has been considerable research on its definition, background, and basic characteristics, there are still some issues that require in-depth consideration regarding its specific development paths:

### 1.1 The research on path selection is relatively general

Although many studies have mentioned the need to promote the e-CNY domestically and expand it internationally, they lack systematic comparative analysis and detailed strategy discussions on how to implement these two core paths, the unique challenges and opportunities each faces, and how to coordinate their advancement.

### 1.2 The impact assessment is not comprehensive enough

Most studies focus on the convenience brought by the e-CNY or its improvement of payment efficiency, but they do not delve deeply enough into the potential impact on the existing financial system (especially traditional banks), its specific role in promoting the development of fintech, and the potential influence on the implementation of national monetary policies.

### 1.3 Insufficient consideration from the user's perspective

The success of the e-CNY ultimately depends on user acceptance and usage. Existing research sometimes overlooks the concerns of ordinary users regarding security, privacy protection, and usage habits. How these factors influence the design of promotion strategies requires more detailed consideration.

Therefore, this study will focus on the core issue of "path selection for the e-CNY". The goal is to systematically analyze the specific strategies, challenges, and opportunities for the e-CNY in its domestic market promotion and international expansion, and to deeply explore the multi-faceted impacts of its development on the fintech industry, traditional financial institutions, and national monetary policies.

## 2 Overview of digital RMB

### 2.1 Definition of eCNY

Digital yuan (e - CNY) as the People's Bank of China (PBOC) launched a new type digital currency, legal represents the legal tender in the form of a digital transformation, its core is to use digital technology, improve the efficiency and transparency of existing monetary system. Digital yuan is not limited to the definition of the form of digital, carried by the more lies in its monetary policy and financial regulation function [1]. According to the White Paper on the Research and Development Progress of China's Digital RMB (2021), e-CNY is defined as a substitute for M0, which reflects the unique characteristics of digital currency in self-clearing of payment and controllable anonymity [2].

### 2.2 Development background of e-CNY

The launch digital RMB change rapidly in the global economic environment under the background of important measures, which involves a number of drivers, especially the rise of the digital economy and finance the development of science and technology [3]. In recent years, along with the advance of information technology, the traditional pay system is faced with the problem of high cost, inefficiency, and this is digital RMB (e - CNY) research and development provides a strong support and fall to the ground. According to the progress of digital yuan r&d white paper "(2021), digital yuan to replace cash in circulation (M0), and by setting the" controllable anonymous "and" pay the settlement "features to enhance the user experience of pay [4].

## 3 The central bank theory foundation of digital currency

### 3.1 Concept and classification of digital currency

As a new payment tool, the concept and classification of digital currency are increasingly rich. Digital Currency can generally be divided into three categories: Central Banks Digital Currency (Central Bank Digital Currency, CBDC), Commercial Banks electronic Currency (ltd. Bank Digital Currency) and Private Digital Currency (Private Digital Currency, Such as bitcoin) [5].

Central bank digital currency, specific to figure the yuan (e - CNY) as an example, emphasizes its legal tender status and sovereign attribute, namely the currency issued directly by the central bank, have the legal tender of real properties. According to the People's Bank of China in the progress of digital research and development of the white paper "(2021) of the definition, e - CNY cash in circulation (M0) to replace parts, and give people a more convenient payment method [6]. Its core features of "controllable anonymous" and "pay the settlement", mainly with instant settlement mechanism to reduce the transaction costs, improve the efficiency of payment.

### 3.2 Features and functions of central bank digital currency

Central Banks Digital Currency (Central Bank Digital Currency, CBDC) embodies the characteristics and the function of its unique position as a modern payment tool, emphasize its controllable anonymity and payment and settlement (payment upon settlement important functions such as [7]. In the digital transformation process created when the central bank digital currency, it is not only the extension of monetary policy, or improving the financial system efficiency as well as the key means of transparency.

## 4 Path selection of digital RMB

### 4.1 Promotion strategy of domestic market

When discussing the path selection of digital RMB, the promotion strategy of the domestic market is quite important. The promotion strategy is not only related to the effectiveness of the policy, but also to the public's acceptance of the eCNY and the frequency of its use. According to the results of the market research, successful promotion strategies need to include user education, convenient payment experience and deep integration with daily life.

We can use a mathematical model to express the relationship between users' acceptance of eCNY and the promotion strategy. ALet user acceptance be, promotion investment be, user education level be, convenience of payment experience be, and usage frequency in daily life be. IECFWe can assume that the relationship between these four factors can be expressed by the following equation:

A = k \cdot (I + E + C + F)

Where, kis a constant, which represents the comprehensive influence weight of each factor on user acceptance. By optimizing these factors, the promotion effect of digital RMB in the domestic market can be effectively improved, so as to promote its wide application.

## 4.2 Expansion direction of the international market

Table 1 Path selection and theoretical analysis of eCNY

| Dimensions of path selection | Domestic marketing strategy | International market development direction | Fintech impact | Monetary policy relevance |
|---|---|---|---|---|
| Market Analysis | Ease of circulating money<br>Safety and security<br>Privacy protection | Belt and Road Initiative<br>Bilateral clearing mechanism<br>Overseas market pilot | Challenging traditional financial institutions<br>Risk of user churn<br>Innovating service models | The impact of convenience versus liquidity |
| Technology application | Smart contracts and blockchain | Financial partnerships | Artificial intelligence and big data technology | Data collection and analysis advantages |
| Policy Recommendations | Improve user experience | Lower transaction costs | Enhance market competition | Precise policy implementation methods |

In the face of the growing demand for digital economy and the competition of global financial technology (FinTech), the path selection of digital RMB has gradually become the focus of financial policy-making institutions and economists [8]. This paper will deeply discuss the path selection of digital RMB from multiple dimensions, including domestic market promotion strategy, international market expansion direction and its potential impact, using complex theoretical analysis framework, To analyze the importance of Digital Currency Electronic Payment (DCEP) in modern financial ecosystem [9].

The promotion strategy of digital RMB should be analyzed from two aspects: market demand and technology adaptation. The domestic market is generally concerned about the convenience and security of currency circulation, especially when mobile payment has become the mainstream of consumption. According to relevant data, in 2022, the number of mobile payment users in China reached 850 million, and these users' demand for security, convenience and privacy protection became more and more obvious. Therefore, the promotion of eCNY should focus on improving user experience, integrating Smart Contract and Blockchain technology to build an efficient and secure payment environment. At the same time, it should cooperate with existing payment platforms (such as Alipay and wechat Pay), so that users can seamlessly switch, experience the advantages of eCNY, and improve user acceptance.

In terms of the direction of international market expansion, the internationalization of digital RMB should adopt flexible strategies [10]. With the promotion of the Belt and Road Initiative, the use scenarios of digital RMB will slowly expand to overseas markets, especially pilot projects in some economies in Southeast Asia and Africa. In this process, "Bilateral Clearing Mechanism" can be adopted to establish financial cooperation with cooperative countries, so as to reduce cross-border transaction costs and improve settlement efficiency [11]. With the help of International Trade (International Trade) cooperation with other national central Banks, the digital yuan as a Trade settlement currency, slowly in the International financial system to raise their voice and influence.

Further analyzing the impact of digital RMB on fintech, what cannot be ignored is its challenge to traditional financial institutions [12]. As the digital RMB enters the market, traditional banks (traditional banks) may suffer from user loss and unreliable market share, which is not a small risk. Based on this, financial institutions need to review its business model and value creation, innovation service mode, and the use of ai (Artificial Intelligence) and Big Data (Big Data) technology user viscosity and market competitiveness [13]. If central banks want to maintain Financial Stability, they should develop corresponding policy tools to promote effective competition and self-management among financial institutions, so as to ensure financial stability.

The implementation of digital RMB is bound to be closely related to the central Monetary Policy [14]. The convenience and liquidity it brings will have a profound impact on the transmission mechanism of monetary policy. In areas such as liquidity management, credit transmission and interest rate adjustment, eCNY may provide more precise policy implementation methods. The central bank's advantage in data collection and analysis will provide strong data support for macroeconomic control.

The path choice of digital RMB not only needs to take into account the demand of the domestic market and the expansion of the international market, but also needs to deeply understand its far-reaching impact on fintech and monetary policy [15]. In this process, it is necessary not only to conduct in-depth and extensive theoretical research, but also to make case analysis based on the actual situation, so as to ensure the healthy and stable development of digital RMB.

## 5 The impact of eCNY on fintech

### 5.1 Promotion of the fintech industry

The launch of the Digital Yuan (e-CNY) has added new vitality to the financial technology (FinTech) industry, which has had an impact on the reshaping of the payment system and led to a series of technological innovations and financial products. According to the diffusion of innovation Theory (Difusion of Inovations going), number of RMB can be regarded as an important technical innovation, its promotion in the process of each stage will be to the financial enterprise behavior and profound influence on the development strategy of science and technology.

### 5.2 Challenges to traditional financial institutions

Under the background of rapid development of Digital economy, the Digital yuan (Digital Currency Electronic Payment, DCEP) as a new legal Digital Currency, is gradually osmosis and change the traditional mode of operation of financial institutions and the competitive environment [16]. The purpose of this paper is to explore the digital RMB pose challenges to traditional financial institutions, analyzes its potential impact as well as the strategy of financial institutions to deal with [17].

## 6 Cross-border payment and the application of digital RMB

### 6.1 Status and problems of cross-border payment

At present, the basic situation of cross-border payment shows a trend of diversified development, but it also encounters many challenges. Cross-border payment is a core link in international trade and capital flow, and its operational efficiency has a direct impact on the connectivity and development level of the global economy. However, the present cross-border payment system mostly rely on traditional settlement mechanism between Banks, this makes the payment cycle is long, the cost is high, especially the traditional currency cross-border transactions, clearing delays, high fees arises out of these problems.

Dominated by the dollar's global payment system at the business level has been relatively mature, in the emerging economies, however, the popularity of digital yuan is yet to be. This situation is closely related to multiple factors such as technical barriers, legal and regulatory constraints, and market acceptance. In terms of technology, the existing payment platform (like SWIFT) speed and real-time performance of the existing problems, and the emerging technologies such as it and chain block is still in the beginning stages of fusion, this makes the users of digital yuan not intuitive understanding of the practical application of benefit.

### 6.2 Potential of eCNY in cross-border payments

The digital renminbi (e-CNY), a legal currency developed under the leadership of its predecessor, the People's Bank of China (PBOC), has shown great potential for cross-border payments, which can both improve payment efficiency and reduce payment costs, as well as smoothly connect multiple international economic activities. Specifically, the e-CNY has obvious advantages in solving the problems of high cost and high time delay of traditional cross-border payment. According to a report released by the Bank for International Settlements (BIS) in 2023, through the digital bridge between the digital RMB and other fiat currencies, the cross-border payment time can be shortened from up to two days to only 10 seconds, and the payment cost can be reduced by 50%[18]. This data undoubtedly gives strong support to the promotion of eCNY in the global payment market.

## 7 Relationship between eCNY and monetary policy

### 7.1 Objectives and instruments of monetary Policy

In the context of the application of digital RMB (e-CNY) as a monetary policy tool, the reconstruction of the basic objectives and tools of monetary policy has important academic and practical value [19]. The main objectives of monetary policy are to control inflation, promote economic growth, stabilize the financial system, adjust employment, etc. However, the way to achieve this is through a variety of policy tools, such as interest rate regulation, reserve ratio adjustment and open market operation, which have to be used. In this framework, after the introduction of the digital RMB, it plays the role of optimizing the monetary policy toolbox, and also greatly enhances the effectiveness of macro-control.

### 7.2 Impact of eCNY on monetary policy

During the implementation of digital RMB (e-CNY), it has a particularly significant impact on monetary policy, especially in the reform of money supply and credit transmission mechanism. The central bank's (PBOC) digital currency has strong flexibility and controllability, which can more effectively regulate market liquidity and optimize the allocation of money supply. Specifically, the launch of the digital yuan enables instant settlement of the currency, so that the central bank can quickly adjust the flow of funds, speed up the implementation of the policy and improve its effectiveness in response to sudden economic fluctuations. For example, during the "Double 12" in 2023, the daily transaction of e-CNY in Suzhou reached 1.2 billion yuan, although the single transaction was only 83 yuan. This phenomenon reflects the strong demand for small payments, indicating the potential of e-CNY in promoting consumption vitality [20].

## 8 Concluding remarks

The launch of the Digital RMB (e-CNY) highlights the forward-looking layout of the People's Bank of China in the field of digital currency. At the same time, it also plays a pivotal role in the process of digital transformation of the global economy. E-cny is a legal digital currency. It inherits the basic functions of traditional currency, and it has unique controllable anonymity and instant settlement characteristics, which has brought many innovations and changes to the financial system. After analyzing the operation structure of digital RMB and its application potential in cross-border payment, it can be found that it has great advantages in improving payment efficiency and reducing transaction costs, which enables it to compete effectively with the US dollar and other major currencies in the global payment system. The implementation of eCNY will not only modernize China's economic and financial system, but also enhance China's monetary sovereignty and economic influence in the international market. At the same time, there are many challenges in the promotion of digital RMB, such as user acceptance, dynamic adjustment of traditional financial institutions, compliance supervision and other aspects, which need to be solved by policy makers and financial institutions to ensure that the digital RMB provides efficient services while effectively ensuring financial security and stability. Furthermore, the digital RMB gives the central bank more means in the application of monetary policy. By optimizing the money supply and credit transmission mechanism, the digital RMB is expected to play a more efficient role in economic upswings and downturns. With the promotion of digital RMB, fintech has also been innovated and developed, which has brought new opportunities and challenges to traditional financial institutions, thus forcing them to accelerate technological transformation and improve their competitiveness. In general, the development process and future prospects of digital RMB show that China is transforming and progressing in the international financial and economic landscape, which is the inevitable result of the development of digital economy and also reflects the changes in the domestic and foreign economic environment. With reasonable policy promotion, market education and technological innovation, digital RMB may become an important part of the future payment system, laying a solid foundation for global economic connectivity and optimal allocation of resources. In the future, if the digital RMB is to be successfully promoted, it must effectively solve the problems of user privacy, security, compliance and other aspects, and be more inclusive and flexible in international exchanges and cooperation, so as to promote the global acceptance of digital currency. Therefore, it is very important to deeply explore the implementation path of the digital RMB and its role in monetary policy, feedback mechanism and risk management, which can not only provide impetus for the transformation of the domestic economic structure, but also contribute to shaping the future pattern of the international financial system.

## About the Author

Zihui Wang, whitnee.wang@outlook.com.

## References

[1] YAN J. Exploration of digital RMB internationalization path from the perspective of currency evolution [J]. Times Finance,2023,(7):21-22+26.

[2] Wang Jiajia & Shen Kunrong. Practical challenges and optimization paths of promoting the development of digital RMB [J]. Economic Review, 2021,(11):121-128.

[3] Chen Y Y. (2021). The Development path and economic logic of digital RMB [J]. Regional Finance Research,2022,(11):86-91.

[4] Qiu Y. Barriers and legal path of digital RMB realizing cross-border payment [J]. Finance and Economics,2021,(11):81-88.

[5] Radic Aleksandar,Quan Wei,Koo Bonhak,Chua Bee Lia,Kim Jinkyung Jenny,Han Heesup.Central bank digital currency as a payment method for

tourists: application of the theory of planned behavior to digital Yuan/Won/Dollar choice[J]. Journal of Travel Tourism Marketing, 2022, 33 (2) 6.

[6] Lei Sirui. Path selection of high-quality development of digital RMB Enabling economy [J]. Qinghai Finance,2023,(09):56-59.

[7] Miao He, Jitai Liang, Jiaxin Zhou, Yunhan Tang. Reflections on the privacy protection of e-CNY[J]. Academic Journal of Business Management, 2023,5(5).

[8] Hu Q., Qi, J. & Ji, X. Digital RMB enables high-quality development of digital economy: Mechanism, mechanism and path [J]. Jiangxi Social Sciences, 2020,42(10):64-73.

[9] Xu Jianguo. Developments and Implications of Central Bank Digital Currency: The Case of China e - CNY. Asian Economic Policy Review, 2012,17(2).

[10] Wang Ran, Xue Longfei, Zhou Yajing. [10] [WangR, XueL F, ZhouY J. China Business Theory,2023,(04):17-20.

[11] Hu Xinru.The Necessity and Overall Significance of the Development of Digital RMB in China[A].2022.

[12] Digital RMB Meets [J]. Journal of Hangzhou Finance Research Institute,(08):4 (2021).

[13] Jiayi Yuan, Ziqing Gao, Yijun Xiang. Green Energy Consumption Path Selection and Optimization Algorithms in the Era of Low Carbon and Environmental Protection Digital Trade.Sustainability,2023,15(15).

[14] Nie G C. Tasting New Digital RMB [N]. China Consumer News,2021-06-29(3).

[15] Yuan Xinfeng. Path selection and regional practice of RMB Internationalization [J]. China Finance,2022,(16):38-40.

[16] Martin Samek,Martin Vlasta.Digital Yuan – Currency or Policy Tool? AUC IURIDICA,2021,67(3).

[17] Wang Q N. Journal of Hangzhou Finance Research Institute,(08):8-11 (2021).

[18] Li J. (2021). Journal of Jiangsu Economic and Trade Vocational and Technical College,(06):6-9 (2021).

[19] Liu, Y. & Tang, Y. [19] [LIU Y H, TANG Y Y. Practical dilemma and optimal path of promoting the development of digital RMB from the perspective of law [J]. Journal of Chongqing Three Gorges University, 2020,38(05):36-46.

[20] WANG Yunxi. Today's Wealth (China Intellectual Property),2023,(12):70-73.