

Short term value and long term consideration of central bank's digital currency issuance: A case study of DC / EP

Meng Liao

School of Central University of Finance and Economics, Beijing 100081, China

1349325550@qq.com

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Abstract: The short-term value of the central bank's digital currency is often based on the "digital characteristics" of the currency. Taking DC / EP (Digital RMB) as an example, in the short term, the central bank's digital currency issuance can crack down on AML / CFT, help the economy release new economic vitality, maintain monetary effectiveness, promote the process of internationalization, and enhance national financial power. The long-term consideration is to focus on "the competitive advantage of digital currency system". In the future, the international monetary system is likely to evolve into two forms: one is the international digital monetary system composed of different national digital currencies, and the other is the single monetary system with some super sovereign digital currencies as the main body of international trade. For the former, digital RMB should make good use of the current first mover advantage and maintain the advantage to play an important role in the future digital currency system. For the second case, we need to make some predictions: the possibility of the future development of digital currency in the direction of super sovereign currency, and the existence of national sovereign currency under the super sovereign digital currency system.

1. Introduction

In today's network era, money is changing from the initial three-dimensional form to one-dimensional form. With the continuous popularization of Internet technology, the digital economy has achieved long-term development. At the same time, with the spread of COVID-19 in the world and the impact of international financial stability, the monetary policy has also been hindered. Under the double influence, the important role of digital money has been highlighted. With the development of digital economy, central bank digital currency, which is controlled by a central bank or government, has the characteristics of token. In recent years, it is regarded as a logical step for the future development of money to become the object pursued by governments all over the world. Most domestic scholars are optimistic about the issue of digital money by the central bank, and think that the central bank's digital money has more development space than private digital money. According to the bank for International Settlements Statistics in 2019, 80% of the 66 central banks in the world have carried out the research on the central bank's sovereign digital project.[1] As early as 2014, China started the research and development of digital currency DC / EP led by the central bank, and plans to use 10 years to achieve the goal of replacing paper currency with digital currency. It can be said that China is the first country in the world to engage in the research and development of legal digital currency, and also the first country to conduct large-scale testing of legal digital currency. China has maintained its dominant position in the field of mobile payment, and has become a pioneer in the development of the central bank's digital currency field.

The definition of "short term" and "long term". When analyzing the influence of central bank's digital currency, we should distinguish the boundary between the two influences: one is the influence brought by the advantages of "digital currency" compared with "traditional currency", that is, the influence of "digital characteristics". The second is the impact of competition between national "digital currencies", that is, the impact of "competitive advantage of digital currency system". Specifically, the influence of "digital characteristic" advantage refers to that a country takes the lead in implementing digital currency and forms certain regulations and modes in the stage when the

international community takes paper currency as the main transaction medium or the paper currency transaction medium still exists. Then, the digital characteristics of digital currency itself (such as portability, programmability, traceability, etc.) are used to gain influence beyond traditional currency. This kind of influence is bound to be a short-term process. No country is willing to lag behind other countries in this field. It is bound to launch its own digital currency one after another. Once everyone has a digital currency, it is difficult for the first mover countries to gain benefits by virtue of the "digital" characteristics. "Competitive advantage of digital currency system" refers to the fact that all countries have initially formed their own digital currency at the stage when the world monetary system is gradually evolving to the world digital currency system. However, due to the technical and institutional differences in the design of digital currency, it will lead to new differentiation of digital currency, forming two types of "advantage" and "suboptimal". The "advantage" type is the best in the design of system and technology, more in line with the future development trend of digital currency, and more competitive in the future digital currency system. "Sub optimal" type is the best choice for a country, but it does not necessarily meet the needs of future development. In short, this influence depends more on the advantages of a country's digital currency technology and system design. Only when a certain number of central bank's digital currency appears, the advantages will appear. Therefore, this is a long-term and slow process.

2. The concept, operation mode and issuing purpose of digital RMB

2.1 Concept

Digital RMB, also known as DC / EP, is the integration of digital currency and electronic payment. [2]DC / EP is dominated by the central bank, issuing digital currency based on encryption algorithm while maintaining the issuance of physical cash, that is, part of M0 is composed of digital currency. From the perspective of issuers, DC / EP belongs to a kind of central bank digital currency. From the perspective of users and fields, DC / EP belongs to retail central bank digital currency. [3]Compared with ordinary digital currency, DC / EP has three main characteristics: 1. Digital RMB is digital cash, which does not need cash withdrawal or account transaction. 2. Digital currency is issued by the central bank and regulated by law. 3. National credit endorsement has unlimited legal compensation. In general, DC / EP, as a substitute for M0, is basically the same as cash except for its "digital characteristics".[4]

2.2 Operation Mode

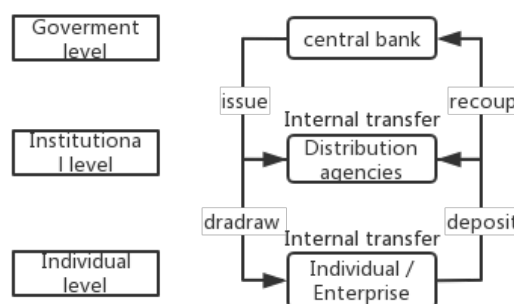


Fig.1 Double layer operation mode

In the retail field, the central bank's digital currency generally adopts two kinds of operation modes, one is that the central bank provides services to users directly, the other is the double-layer operation mechanism adopted by DC / EP, that is, the central bank first exchanges the digital currency to the distribution agencies, and then the distribution people directly face the masses. Distribution agencies mainly include commercial banks, UnionPay, Tencent, Ali and other large institutions. [5]The two layers of DC / EP framework are central bank and commercial bank, which are based on account based and wall based. At present, this two layers operation mode has been adopted by various countries, which is relatively stable and can minimize the impact of the central bank's digital currency on the original financial system and mechanism. For example, the double layer distribution model of

physical cash and token digital dollar mentioned in the digital dollar project is also designed on this basis. At the same time, DC / EP adopts the exchange system and 100% deposit reserve system in the current test to reduce the possibility of inflation caused by over issuance of digital RMB.[6]

2.3 Issuing Purposes

For ordinary people, the issuance of DC / EP means more convenient payment experience in daily life, but for the country, it has a more important purpose. On the whole, it can be summarized as two aspects: one is to strengthen the country's ability of economic regulation and supervision; the other is to impact the US dollar hegemony and build a new monetary ecology. In the traditional sense, the central bank directly controls the creation and destruction of the base money, but does not participate in the currency circulation and credit creation, which leads to the central bank unable to directly obtain first-hand information and quickly intervene in the real economy. With digital currency, thanks to the digital traceability and markability, the central bank can grasp the real-time dynamics of the transaction at the moment of transaction, and realize high-precision supervision without dead angle. [7]Most importantly, the central bank's digital currency not only has a "neutral" impact on monetary policy and macro-economy, but also can become a new monetary policy tool to enhance the effectiveness of monetary policy. At the same time, the birth of the central bank's digital currency marks the birth of a new dimension in the currency competitiveness of various countries, which is a great opportunity for China to overtake on the curve. Over the past few decades, the United States has firmly controlled the international monetary system by virtue of the hegemony of the US dollar, which has provided basic support for its hegemony in the financial field. Swift and Chip , two systems established by the United States, account for about 80% of the world's cross-border settlement business. [8]They are an unavoidable obstacle to Global trade and become a powerful tool for the United States to implement economic sanctions on a global scale. And the use of digital currency can bypass this obstacle, directly realize the trade settlement between each other, so that China can get rid of the existing dependence on this system.

3. The short term value of central bank's digital currency issuance

3.1 Help the economy release new economic vitality

The central bank's digital currency helps to release new economic vitality mainly from two aspects. One is to crack down on the problems existing in traditional currency transactions, such as anti money laundering / combating the financing of terrorism (AML / CFT), so as to maintain healthy economic development.[9] On the other hand, it provides new opportunities for economic development. Digital currency has the characteristics of markability, which can mark and track the flow of money, improve the transparency of currency transaction settlement, and help the central bank better achieve the goal of safe and efficient payment. In the initial design of DC / EP, the digital transaction using DC / EP as payment currency has a certain degree of traceability, and can analyze the total payment data in real time. In this way, the central bank can stop unsafe transactions in time, track illegal transactions, and build a safe and healthy payment environment. Specifically, the central bank's digital currency can effectively crack down on tax evasion and tax evasion. At the same time, it can also track down the embezzlers who use multiple accounts to launder money, effectively crack down on the underground economy, cut off the capital chain of terrorism, and maintain the stability of social and economic order. At the same time, the big digital platform based on digital payment can provide data support for the central bank to improve payment procedures, enhance payment efficiency, and provide key insights for the healthy development of economic activities. The birth of DC / EP will lay a foundation for the sustainable and healthy development of China's digital economy.

In addition, the central bank's digital currency will help promote the birth of new industries, modernize the current ecosystem, and promote the transformation and upgrading of industrial structure. Digital currency will create opportunities for new players and existing players, and drive a wave of innovative and efficient consumption centralization. The digital currency of the central bank

can also improve the social production efficiency, reduce the operation cost of the whole society, and make supplement on the basis of supporting the normal development of the existing business of the central bank, so as to help break the traditional business dilemma and enhance its influence and effectiveness. Based on the demand for the diversification of payment methods and means, the central bank's digital currency will promote the diversification of the payment system, so as to provide us with a more secure and efficient infrastructure for payment.[10] DC / EP will operate on the alternative payment track to enhance the flexibility of payment infrastructure, so as to attract new participants providing digital RMB related services, stimulate financial innovation and promote financial integration. DC / EP will provide the private sector with a modern currency structure for its use. The programmable and customized creation function of digital currency can enable the private commercial sector to provide a variety of private customization in services, control the ownership of data and transactions, and make finance more transparent and management more efficient.

3.2 Maintaining currency utility and promoting internationalization

For this point, the central banks of different countries have different expectations of the value of digital money. For developing countries, they tend to pay more attention to the process of currency internationalization, while for developed countries, they pay more attention to how to maintain the currency utility and international status of their own currency. Here we discuss this value from the perspective of developing countries. With the development of digital economy, more and more digital payment demands have changed money. Money needs to adapt to new demands in order to maintain its utility. If we want to realize the internationalization of currency, we must keep pace with the times, improve our competitiveness in technology and system, and make it match the needs of economic development. The birth of DC / EP will endow RMB with new functions and utility in the digital era, enabling it to measure, support and solve the valuable things of digital symbolization with digital currency. DC / EP can well adapt to the increasing needs of new digital functions of consumers, enterprises and governments. Compared with physical currency, DC / EP can better meet the demand of the future digital market, maintain the effective use of RMB, and better enhance the international status of RMB.

After the Biden administration came to power, it tried to issue 1.9 trillion bonds to save the declining economy of the United States. [11]Faced with the high risk and low return situation in the United States, global investors want to seek diversification, which is an excellent opportunity for China. If China can give the world market confidence and provide much-needed liquidity at this time, it can provide important help for the internationalization of RMB. The application of DC / EP can help to make better use of this opportunity and realize the efficient outflow of RMB. The digital currency of the central bank has the characteristics of timely transmission, which helps the central bank to allocate funds to overseas institutions quickly and effectively. Taking digital currency as the exchange currency, the central bank can allow digital currency to be remitted directly to foreign financial institutions in need through the domestic banking system, which can effectively save the settlement expenses of institutions and improve the satisfaction of users. Overseas users can complete cross-border transactions only by exchanging with the banks that open the exchange business, which greatly reduces the difficulty of using RMB to carry out overseas transactions and improves the scope of application of RMB. [12]This advantage is conducive to the outflow of RMB and accelerate the process of RMB internationalization.

3.3 Enhance the national financial power

This is of great significance to developing countries, especially China. Sandra Heep defines financial power as "a country's ability to influence other countries through its financial relationship with other countries", and divides it into three types: relational, structural and institutional financial power.[13] At present, scholars believe that digital currency is subject to its own positioning, and it is difficult to have too much impact on the micro financial market. But in fact, from the perspective of political economy, the digital currency of the central bank is of great significance to the improvement of institutional and structural financial power.

Institutional financial power is indirectly implemented through the decision-making of international financial institutions. At present, the decision-making power of the IMF, the world bank and other financial institutions is controlled by the United States. In the financial field, the United States, relying on the hegemony of the US dollar and its long-term accumulated financial advantages, has set up obstacles everywhere to prevent developing countries from obtaining the decision-making power in International financial institutions. With the continuous development of digital economy, as a new dimension of currency competition, digital currency is very important for the future international financial development. First of all, China is in the leading position in this digital currency competition, and has profound research foundation and trial experience, which can provide better Chinese suggestions and programs for the construction of other central banks' digital currency and even the establishment of the international digital currency system. Secondly, China itself has a huge population base and perfect network communication infrastructure, which will enable China to have a huge market and users in the era of digital economy, and correspondingly there will be a huge demand market for digital money, which will greatly improve China's voice and decision-making weight in future financial institutions.

Relational financial power refers to the ability of a country to directly influence the behavior of other countries through the use of financial pressure. The emergence of DC / EP can enhance a country's relational financial power in two aspects: deposit and use. In the aspect of "deposit": first of all, the development of digital currency can meet the development needs of China's digital economy, release new economic vitality, and attract foreign investment into the domestic market, which will promote the long-term and continuous increase of foreign exchange reserves. Secondly, the development of digital currency will make international trade settlement more convenient, expand the scope of RMB settlement transactions, and enhance China's ability to resist financial sanctions. In the aspect of "use": first of all, DC / EP will make more use of RMB as a settlement tool among countries, and the wide circulation of RMB will make China's large amount of foreign exchange reserves have more opportunities to flow out. Only by making full use of foreign exchange reserves can we really influence other countries' behavior through the use of financial pressure. Secondly, digital currency can be monitored accurately in real time, and it can arrive at the account instantaneously, which enhances China's control over capital outflow. In general, DC / EP helps to enhance the use of RMB in international trade, consolidate China's creditor status, and increase China's relational financial power.

4. The long term consideration of central bank's digital currency issuance

We not only need to think about the short-term value of the central bank's digital currency issuance to the country, but also should take a long-term view and put it into the future digital currency system. In the future, the international monetary system is likely to evolve into two forms: one is the international digital monetary system composed of national digital currencies, and the other is the single monetary system with some super sovereign digital currencies as the main body of international trade. We need to make a series of thinking about this.

4.1 Considerations under the international digital currency system

As the leader of the central bank's digital currency, how to maintain this advantage and occupy an important position in the future digital currency system is worthy of our consideration. Generally speaking, the most basic requirement for the development of money is the reliability of coin making technology and the value support behind money. [14]If China wants to maintain its first mover advantage, it first needs to promote the healthy and sustainable development of China's economy. From relying on a single export trade to two domestic and foreign markets, we can realize "double circulation", provide a good foreign market environment for the promotion of digital RMB, promote the mutual circulation of domestic and foreign currencies, and lay a good foundation for the internationalization of RMB.[15] In the future, China should continue to improve blockchain and other digital technologies to meet the future development needs of digital currency. Only in a

relatively fair competition environment can we avoid the hegemonic monopoly of a single country and promote the long-term development of the whole system.

When the international digital currency system is established, the competitiveness of a country will return to the elements of traditional currency competition. What kind of position digital RMB can occupy in the future international currency system also depends on this. At present, the status of RMB is not equal to that of China in international economy and trade, which needs a long-term balance process, and digital currency can accelerate the arrival of this balance. In the future, digital RMB may partially replace the role of the US dollar, absorb global reserve funds, provide RMB liquidity for the world and meet world demand. In short, the role of digital RMB will continue to improve with the development of China's economy.

4.2 Considerations under the super sovereign digital currency system

For a long time, there has been a debate about whether super sovereign currency will replace sovereign currency and become the future trend of monetary development.[16] No one can predict whether the super sovereign digital currency will replace the US dollar as the international mainstream currency in the future, but it is certain that the development of "digital currency" will promote this process. First of all, the development of digital economy in the future will dilute the boundaries between countries, digital transactions will make the trade between countries more convenient, transnational settlement will also be more and more, for an efficient, convenient, fast settlement of money demand will be greatly increased. Secondly, the monetary hegemony of a single country has become increasingly difficult to meet the needs of social development. Taking the US dollar as an example, US dollar hegemony not only provides important help to the world economic development, but also becomes an obstacle to sanction other countries and hinder the normal economic development. In the future, the currency hegemony of a single country may not be conducive to the healthy development of the world economy.

As for the fate of national sovereign currency under the super sovereign digital currency system, I think that even if the super sovereign currency becomes the main currency of international settlement in the future, the sovereign currency will not disappear. Because the single authorized "sovereign" currency is the cornerstone of a country's orderly market. If we control the issuance of currency, we can grasp the resources of the national market. Therefore, sovereign currency is very important for national security. Throughout the history of human civilization, the stability of a regime often depends on the state's control of currency power. In the future, even if the super sovereign digital currency becomes the mainstream currency of international trade settlement, the national sovereign currency will still play a role within the country, and the digital currency will make it possible to realize the idea that it is difficult to realize at present.

5. Conclusion

The competition of digital currency has become more and more fierce. At this time, it is worth us to calm down and carefully consider the influence of digital currency on the national level. The short-term value of the central bank's digital currency is often based on the "digital characteristics" of the currency, which means that the digital currency has the characteristics of traceability, markability, programmability, portability and timely transmission. In the short term, the issuance of digital currency by the central bank can crack down on AML / CFT, help the economy release new economic vitality, maintain monetary effectiveness, promote the process of internationalization, and enhance national financial power.

When countries launch their own digital currency one after another, the "digital characteristics" of currency can no longer be regarded as an advantage, and the short-term value brought by the central bank's digital currency with the first mover advantage will be offset accordingly. Therefore, we make a new thinking on this stage. In the future, the international monetary system is likely to evolve into two forms: one is the international digital monetary system composed of national digital currencies, and the other is the single monetary system with some super sovereign digital currencies as the main body of international trade. For the former, digital RMB should make good use of the current

advantages of first mover, so we need to improve the economic foundation and system construction. In the future, the role of digital RMB will continue to improve with the development of China's economy. For the second case, first of all, whether the super sovereign digital currency can replace the US dollar as the international mainstream currency in the future is a matter that no one can predict. However, it is certain that the development of "digital currency" will promote this process. Secondly, even if the super sovereign digital currency becomes the mainstream currency of international trade settlement in the future, the national sovereign currency will still play a role within the country.

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