

Financial Innovation in the Field of RMB Internationalization

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Abstract: Due to the limitations of the traditional financial system, under the background of the general trend of international financial development, the system construction of RMB internationalization has become an important financial innovation and construction project. Therefore, this project studies the financial innovation in the field of RMB internationalization, and puts forward suggestions and assumptions on the construction of the project system. The main research contents of the project include: Research on hardware construction of digital RMB cross-border transaction settlement system based on blockchain infrastructure; Research on the construction and advantages of distributed cross-border payment network based on digital currency; Research on the construction of distributed cross-border payment network and the reform of international monetary system; Research on establishing risk control and supervision system of digital RMB cross-border payment and settlement; Research on guiding third-party payment institutions to expand digital RMB cross-border payment scenarios.

Keywords: Internationalization of RMB, Financial innovation, Digital currency, Payment settlement.

1. Introduction

The Sino US trade dispute which began in 2018 overlapped with the global COVID-19, making the international situation perplexing. The reform of the international financial system is under the three impact of globalization structural transformation, financial digital technological revolution and structural changes of Sino US relations. China's financial security is facing new challenges: the pressure of external financial blockade has increased significantly, resulting in more and more severe risks in the financial system. In order to cope with the potential financial blockade of the United States, eliminate the hidden dangers of the financial system, stabilize the domestic financial market and jointly promote the reform and opening up of China's financial system, China must firmly seize the opportunity of the financial technology revolution, boldly innovate, empower various policy means with technological innovation, and build a cross-border digital payment system with digital RMB as the medium and pricing currency, So as to resist various economic shocks caused by external financial blockade, prevent systemic financial risks at home and abroad, and ensure China's financial security. In the long run, under the broad framework of the new digital RMB cross-border payment and settlement system, a payment and settlement platform around digital RMB will be established in the form of alliance chain. The main responsibility of digital RMB on the payment and settlement platform is pricing and functional transaction, and its ultimate goal is to break the monopoly of the US dollar payment system, It has become one of the pillar payment platforms of the new competitive and pluralistic international monetary system. Therefore, it has become an important research topic to establish a digital RMB cross-border settlement system and break the potential containment attempt of the US finance to China. Due to the limitation of network externality, the development of RMB payment system under the traditional financial framework is not enough and too late to replace the international payment

system controlled by the United States. The traditional thinking attempts to comprehensively promote the internationalization of RMB from the three fields of valuation, payment and reserve to deal with the financial blockade of the United States, which requires the free convertibility of RMB and the full opening of capital account at the same time. However, under the current urgent situation, China does not have enough time and space to realize the above steps. Therefore, the countermeasures must rely on financial innovation to find another way: firmly grasp the opportunity of financial technology revolution, empower the financial system with technological innovation, use new technologies to separate the pricing, payment and storage functions of currency, fully realize the cross-border payment function of RMB, and solve the pricing problem through the digital currency (DC / EP) issued by the people's Bank of China, Temporarily shelve the reserve function of digital RMB and only let it assume the pricing function, quickly establish a direct exchange rate inquiry mechanism between digital RMB and other currencies under the framework of central bank digital currency (DC / EP), and on this basis, build a new cross-border digital payment system with digital RMB as the medium and pricing currency. As the digital RMB has only been put forward in recent years, the relevant theory and research are not perfect, and some problems are still controversial. In addition, at present, the digital RMB is not fully market-oriented, and the relevant policies and measures have not been tested in practice. Based on the current research on digital RMB and combined with the relevant experience of US dollar cross-border payment system (swift and chips), this project will further study the relevant problems faced in the process of building a cross-border payment system with digital RMB as the medium, so as to provide theoretical support for the development and application of digital RMB in the future.

2. Research Status at Home and Abroad

2.1. Research on Digital RMB and Cross-border Payment and Settlement

Research on digital RMB and cross-border payment and settlement. At present, the biggest expectation for the central bank's digital currency in the market lies in the application of DCEP in the field of cross-border payment, so as to promote the process of RMB internationalization (baojianyun, 2020). Digital currency has certain advantages in cross-border payment: first, the current cross-border payment has the problems of long cycle, high cost and low efficiency. For example, a current wire transfer usually takes 2-5 working days to arrive, and a handling charge of 1 / 1000 of the remittance amount plus a telecommunication charge of 150 yuan is charged on the handling charge; Cross border payment based on digital currency can not only improve the speed of cross-border transfer, but also reduce the handling fee of remittance (regardless of supervision). Secondly, at present, the central bank digital currency adopts the loose coupling account design, so users can transfer and pay without binding the bank account when using the central bank digital currency, which has a high attraction for people in poor and remote areas overseas and domestic people who lack traditional financial infrastructure (banks). Based on the above advantages, if overseas people use DCEP for cross-border remittance or transaction payment, the use of RMB in the field of trade settlement will be increased. With the rise of digital currency, its underlying distributed ledger Technology (DLT) has also attracted attention and is regarded as the core technology of the next generation payment infrastructure. CPPI (2017) pointed out that distributed ledger technology may transform financial services and markets through the following ways: ① reduce complexity; ② Improve end-to-end processing speed; ③ Reduce the need for reconciliation in the traditional mode; ④ Improve the transparency and non tamperability of transaction records; ⑤ Improve network resilience; ⑥ Reduce operational and financial risks. The IMF focuses on cross-border payments and the stability of the international monetary system, pointing out that distributed ledger technology has the potential to improve services and save costs, and may break the entry barriers caused by the economies of scale and network effects of cross-border payments (he et al, 2017). The international monetary system operates in accordance with the general financial information standards. Distributed ledger technology may bring challenges, such as interoperability issues. Therefore, relevant internationally recognized communication procedures and standards need to be established. Considering compliance and other regulatory requirements, only licensed distributed ledger networks are suitable for financial market infrastructure (shabsigh et al., 2020).

2.2. Research on Digital Currency Issuance and RMB Internationalization

The internationalization of a country's currency involves many aspects such as value storage, transaction media and bookkeeping unit. It can not be realized only by relying on the wide application of central bank digital currency in the field of cross-border payment. It should be clearly recognized that a country's currency becomes an international currency, which fundamentally depends on its comprehensive national

strength formed by its political, military, economic, financial and scientific and technological strength, and will not change because of the change of the carrier of currency. To truly realize the internationalization of RMB, we also need to promote the market-oriented reform of interest rate and exchange rate in the domestic financial market, develop the offshore RMB market, and promote the opening of capital account (Wang Li, 2020). DCEP does have advantages in cross-border payment. Even in the future, with the gradual liberalization of DCEP's restrictions on payment time and amount, it will promote the internationalization of RMB in the settlement and valuation of trade and financial transactions. But what is more important is to further promote the market-oriented reform and opening-up in China's economic and financial fields, and improve China's global economic status and comprehensive national strength. It is impractical to place the internationalization of RMB only on the advantages of DCEP in the field of cross-border payment (Xu Zhong, 2020). It is noteworthy that digital RMB will be more conducive to the internationalization of RMB. Before the launch of the RMB cross-border payment system (CIPS), the RMB cross-border settlement was highly dependent on the global Interbank Financial Telecommunication Association (Swift) system and the interbank payment system (chips) of the New York Clearing House in the United States. High dependence has certain risks, high charges, low efficiency and other defects. The internationalization of RMB must meet the conditions of a certain degree of circulation abroad, a certain proportion of transactions settled in RMB in international trade, and the financial products priced in RMB become the investment tools of major international financial institutions. The use of digital RMB is likely to greatly improve the speed of cross-border settlement, and its security will be higher than that of traditional cross-border settlement. However, to enter the international market, digital RMB still faces many challenges. First, the RMB has a certain degree of circulation abroad. Second, the transactions settled by the people in international trade should reach a certain proportion. Third, the financial products priced in RMB have become the investment tools of major international financial institutions, including the central bank (Meng Gang, 2019).

2.3. Research on the Reform of Digital Currency Issuance and International

Settlement system. As the most important international financial infrastructure, cross-border payment network is a key component of the international monetary system. The United States has strong influence on swift and chips, which have absolute market power in the traditional cross-border payment system, which provides strong support for the United States to gain dominance in the international monetary system. Since chips is the United States' own payment and clearing system, the United States can directly decide whether to cut off the capital flow channel of dollar business of financial institutions in individual countries, so as to easily exclude these countries from the dollar system. Under the international monetary system in which the US dollar is the main settlement currency, once the channel between individual countries and chips is cut off, the relevant US dollar transaction message information provided by swift will also lose significance. However, these countries can still carry out non US dollar cross-border transactions with the support of swift, and the US control over Swift has been strengthened in recent years. After the 9 / 11 terrorist attacks, the United

States, in accordance with the launch of the "terrorist fund tracking program" (TFTP), authorized the U.S. Department of finance to track and freeze terrorist fund flows using swift, and required swift to stop providing services to individuals, enterprises and financial institutions included in the scope of sanctions. In this way, for security reasons, the United States has successfully turned swift into a weapon to collect data on capital transactions of other countries and impose financial sanctions on countries that violate its interests (Farrell and Newman, 2019). It can be seen that by controlling chips and swift, which have a monopoly in the traditional cross-border payment system, the international monetary power of the United States has been extended beyond the dollar system. At present, there are two mainstream design ideas for distributed cross-border payment networks in the world. One is based on the interoperable digital currency of national central banks or the digital stable currency of anchored sovereign currency. In the short and medium term, this idea will lead the construction of new cross-border payment networks. This creates opportunities for other sovereign currencies other than the US dollar to play the role of trading media in the world. Of course, whether a country's sovereign currency can become an international currency also depends on the country's economic strength, the international credit of its currency, the openness and depth of the financial market, the conditions of financial infrastructure, etc. According to the ITU report, there are three design options under this idea: one is the intermediary mode, that is, currency exchange and capital transfer need to be through intermediaries; The second is the direct way, that is, the two sides of the transaction transfer funds directly on the network without intermediary participation; Third, multiple currencies, that is, multiple currencies are allowed to be used in the same network, and intermediaries (possibly the central bank) are still needed (KIFF et al., 2019). Comparatively speaking, the third scheme more reflects the inclusiveness of the "network" and may have a broader impact in the future. For example, Libra coin network and IBM's bww network belong to this category. The second category is the common legal digital currency based on a basket of currencies, which may become the long-term direction of distributed cross-border payment networks. If we can build a new global cross-border payment network based on digital SDR (ESDR), it will promote major changes in the international monetary system. Zhou Xiaochuan, former governor of the people's Bank of China, once proposed to build SDR into a super sovereign currency to avoid the conflict between domestic and international functions faced by sovereign currencies as international reserve currencies. However, because SDR is difficult to be recognized by market institutions and lacks a mechanism to attract private use, it has not found a way to become a super sovereign currency for many years. Once the distributed cross-border payment network with ESDR as the token is established, ESDR will naturally assume the real monetary function and become a truly digital super sovereign currency. If the network is established under the direct leadership of the IMF, it will establish the authority and legitimacy of ESDR in the international monetary system. However, this plan will inevitably be blocked by the United States. As the shaper and the biggest beneficiary of the current international monetary system, the United States will not take the initiative to give up the dominance of the US dollar in the international monetary system. Therefore, using ESDR to build a distributed global cross-border payment network will be a long-term process,

which is more likely to occur in the period of sharp decline in US dollar credit. In the future international monetary system, there may be the coexistence of traditional currency and digital currency; In the digital currency, there may be the coexistence of stable currency and central bank digital currency; Among the stable currencies, there may be the coexistence of the stable currency anchored to legal currency and the stable currency anchored to bulk commodities; Among the stable currencies anchored to the legal currency, there may be the coexistence of the stable currency anchored to a single legal currency and the stable currency anchored to a basket of currencies. In short, the emergence of cross-border payment networks with digital currency as the carrier will reshape the global cross-border payment system, and then produce a continuous driving force for the diversified reform of the international monetary system.

2.4. Research on Blockchain Technology and Construction of Cross-Border Payment System

Domestic research on blockchain cross-border payment is earlier. Among them, Deng Qing (2020) analyzed cross-border clearing from the perspective of the application mechanism of blockchain technology, and believed that the timestamp technology in the underlying design of blockchain is the key to its traceability and tamperability. Fu Yingjun (2020) conducted classified research on relevant institutions using blockchain technology. He divided the development of current blockchain application subjects into two categories: the first category is traditional financial institutions, which aims to apply the decentralized characteristics of blockchain to their original payment and clearing infrastructure, hoping to optimize the existing payment and clearing methods; The second category is blockchain technology companies, which aim to explore digital currencies that can replace the existing monetary system, so as to establish a powerful information data processing system to subvert the traditional payment mode. Zhang Tao (2020) focused on comparing the traditional cross-border Payment institutions visa and swift to explore their similarities and differences in using blockchain technology to innovate the cross-border payment and settlement mode. Among them, he pointed out that blockchain technology can differentiate into two paths in the current cross-border payment and settlement. Wang Chaoyang (2020) focused on private blockchain cross-border payment enterprises. Taking foreign cross-border blockchain ripple with benchmarking significance as an example, he expounded the similarities and differences between China's current four traditional payment and settlement modes and cross-border settlement modes under blockchain technology, and summarized and proposed that "high efficiency" and "reducing capital occupation" are the two core advantages of blockchain cross-border clearing, At the same time, comparing the development of China's exploration of cross-border payment with foreign countries, it is considered that the main factors restricting China's exploration of blockchain are fuzzy supervision and relatively backward technology. Recently, China's large commercial banks and financial technology giants have competed to layout blockchain cross-border payment, successively carried out services and continuously expanded their business territory. At present, domestic projects applying blockchain technology to cross-border payment have been implemented. The most benchmarking significance is the cross-border payment

launched by ant financial in 2018 in Hong Kong, China and the Philippines.

3. Summary

Through the research, we find that the central bank's digital currency operation mechanism varies from country to country. Central banks of various countries are at the stage of exploring whether to use blockchain technology, main application scenarios, wallet use rules, transfer and storage limits, and the choice of accounting mode (account based or voucher based accounting). In addition, from the perspective of the central bank's digital currency scheme published all over the world, monetary sovereignty is the primary issue considered by countries in the design of digital currency, which makes countries very cautious about international cooperation in digital currency. On the issue of currency sovereignty, countries have not reached a relatively unified understanding on the cross-border transactions of digital currency payment by central banks and the construction of relevant clearing systems; In addition, the issue of digital currency is essentially different from the printing of banknotes. In the era of paper money, even if a country's money printing machine is imported from abroad, it can be relatively independent and controllable. However, the digital currency era is different. At present, only a few countries in the world have sufficient financial and technological strength to independently support the operation of their sovereign digital currency system. If most countries want to issue sovereign digital currency, they need to import the financial technology support system of other countries. Behind this is not only the dependence on hardware, but also the implantation of complex monetary algorithm system, which has a huge risk of losing monetary sovereignty. As China's legal tender in the future, the internationalization of digital RMB will fully respect the relevant systems of other countries, establish a win-win and win-win cross-border circulation mechanism with other countries, and jointly improve the relevant use rules with other countries on the basis of equality and mutual benefit. Due to the accuracy of the use of digital RMB, the trading mode that damages the interests of any party can be timely and effectively stopped in theory. Therefore, with the continuous enhancement of China's national strength and the continuous consolidation of international credit, the international circulation of digital RMB will be more popular in other countries, and may even become one of the most important international circulation currencies in the near future. In conclusion, during the construction of the new digital RMB cross-border payment and settlement system, all participants must always focus on their ultimate goal: give full play to the leading advantages of digital RMB (DC / EP) and focus on serving specific industries and key enterprises subject to U.S. financial sanctions, Build a Chinese version of the "spare tire" plan

under the financial blockade - a new multi-level market-oriented cross-border payment and settlement platform with digital RMB as the medium and pricing currency to maintain China's financial security.

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