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ANALYSIS ON THE FUTURE OF FINANCIAL MARKET IN CHINA

- CHALLENGES & IMPACT OF THE ISSUANCE OF DCEP

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ABSTRACT

Under the post-coronavirus context of international environment, where the economic and financial connections between countries will begin recovering and becoming tighter, the issuance of DCEP by the People's Bank of China will inevitably have a strong impact upon the current domestic and international financial market order. The aim of this piece of tesis is to have a detailed discussion on the challenges and impact of the issuance of this Central Bank-issued Digital Currency in China, through the analysis upon respective information and newly updated materials regarding DCEP, and to discover the future of the financial market in China.

Keywords: DCEP (Digital Currency Electronic Form), CBDC (Central Bank-issued Digital Currency), Banking, Financial Market

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1. Introduction

For there was once a time when no such thing as money existed....a material was selected which, being given a stable value by the state, avoided the problems of barter by providing a constant medium of exchange. That material, struck in due form by the mint, demonstrates its utility and title not by its substance as such but by its quantity, so that no longer are the things exchanged both called wares but one of them is termed the price. And today it is a matter for doubt whether one can talk of sale when no money passes. [1]

Julius Paulus Prudentissimus, circa 230 C.E.

According to this emperor's chief legal advisor in the ancient Roman, a government-issued currency should possess the following functions: (i) a unit of account for the pricing of goods and services; (ii) a method of storing value; and (iii) a medium of exchange that facilitates economic and financial transactions. It would be not difficult to recognize that the words of the Roman jurist emphasized not only on the material substance of the government-issued currency but also its strong connection with the public confidence on authorities' management of the monetary system.

With the rapid development of electronic devices and the Internet in the 21st century, the public desire of facilitating the traditional payment methods, based on the advanced techniques of the high-speed networks, has hastened the appearance of the mobile payment methods and virtual currency, which basically possesses all properties of traditional currency but has no substantial

[1] Paulus served as chief legal advisor to the Roman emperor Severus Alexander (222-235 C.E). The excerpt shown here is taken from section 18.1 of the *Digest*; the translation from the original Latin is that of Watson (2010), p.55.

existence. Virtual currency is generally considered as an unregulated and digitalized currency, usually created by private entities and accepted by users in the specific virtual communities. Those virtual currencies created with cryptographic algorithms are called cryptocurrencies like Bitcoin. At the current stage, cryptocurrency is widely accepted as the most famous representative of digital currency and mainly popular means of investment due to their sharp fluctuations of their market price.

Currently, there is still no common view upon the official definition of the digital currency. Digital currency is mainly considered as a means of payment that only exists in the electronic form. Similar to traditional currency, digital currency can be used to purchase physical goods and services. In different contexts, digital currency has different connotations and extensions. At present, in a narrow sense, digital currency mainly refers to pure digital currency which does not require a physical carrier while, in a general way, digital currency is equivalent to the electronic currency, which refers to all currencies that exist in electronic form. Depending on the issuers, digital currencies can be divided into Central Bank-issued Digital Currency (CBDC) and virtual currencies issued by private entities.

Among them, the CBDC refers to the legal currency issued by the central bank in the form of an encrypted digital string representing a specific amount. *'It is not a physical entity, nor does it use a physical entity as a carrier, but is used for network investment and transaction, storing and representing the digital information of a certain amount of value.'*[2] Similar to currently existing virtual currency, the CBDC would serve a reliable medium of exchange and facilitate, largely,

[2] Liu Xiangmin (2016). "The Legal Issues on the Central Bank-issued Digital."*Chinese Finance*, 17 : 17-19.

the outdated usage of paper notes and coins. However, differently, the CBDC, with the endorsement from the government, would possess a more stable market price and a securer storage of value.

In recent years, China has developed rapidly on both economic and social aspect, especially in the digital payment area: the rise of the Alipay and the WeChat payment has accelerated the alteration of the people expectation upon the payment methods. Although the paper payments such as cash and checks still play an important role in the current market, the continuous improvement of the cross-domain composite technology like blockchain would inevitably lead to the profound changes in the Chinese financial industry. Given the fact that the issuance and circulation of existing digital currencies like Bitcoin still remain illegal in China, to meet the general public demand for easy and fast payment anytime and anywhere under the supervision of the government, the People's Bank of China will issue their legal digital currency - Digital Currency Electronic Payment (DCEP), based on the several advanced Internet techniques like block chain and electronic encryption.

Undoubtedly, the issuance of DCEP, this brand-new concepts towards Chinese investors, will bring both challenges and profound impact towards the Chinese financial market. In this thesis, I will first summarize main characteristics of DCEP and compare DCEP with traditional currencies. Then, I will analyze challenges that DCEP might face during its issuance and potential impact of DCEP towards the Chinese financial market. Based on the description and analysis upon DCEP, I will discuss further the future of Chinese financial market under the context of the issuance of DCEP.

2. Main Characteristics of DCEP

As is defined by the People's Bank of China[3],the money supply is divided in M0, M1 and M2, according to their respective liquidity. M0 refers to the cash currency in circulation outside the banking system, that is mainly notes and coins hold by residents and enterprises, possessing the strongest liquidity. M1, narrow money, is composed of M0 and demand deposit while M2, broad money, is the sum of M1, term deposit, resident saving deposits, clients' margin from security companies and other deposits, which cannot be monetized immediately but can still be used with certain procedure.

At present, with the revolution of the banking system in the past few years, M1 and M2 in China have been digitalized successfully. By contrast, M0 still remains the same conditions as it was in the last century and there are currently 3 conspicuous problems about M0: First, the anonymity of the existing M0 makes it available for money laundering and terrorists financing; Second, the public demand for anonymous payments cannot be satisfied by the current pattern that the Internet payment system is tightly based on the bank account; Third, there are still areas with poor coverage of bank account and networking services in China, and thus, a relatively high dependence on M0 of the local public currency. The issuance of DCEP is a replacement of existing notes and coins, in an electronic form.

Like the normal notes and coins, DCEP has the unlimited legal tender for all transactions, that is, any public institution or individual must not refuse using the currency to settle public or private domestic debt. Unlike the Alipay or WeChat payment or other private payment platform, there is

[3] People's Bank of China (2014). "The Three Brothers of Money Supply: M0, M1 and M2." Available at: http://hefei.pbc.gov.cn/hefei/2927537/122429/2499986/index.html

no payment barrier set for DCEP, which under certain circumstance can the Alipay only be used in the transaction. As long as someone can use the electronic payment, the respective counterparty must accept DCEP.

DCEP follows the working pattern of dual-offline payment. As the replacement of notes, DCEP can realize the traditional paper money payment mode, which is the independent payment without the support of the Internet. As long as the mobile phone doesn't run out of the electricity, the payment can be realized between both counterparties of transaction. According to the current experiment in Shanghai, the users of DCEP don't even need to open or link any specific bank account for DCEP. Meanwhile, DCEP has the controllable anonymity, that is the usage of DCEP is still anonymous for commercial banks and other residents as the current cash is but can still be traced by its issuer – the People's Bank of China.

In essence, DCEP is the extension of Renminbi, basically maintaining all the characteristics of the original M0: safe, non-re-expendable and hard to counterfeit. As a stable and centralized currency, DCEP, unlike Bitcoin or Libra, has the same value as Renminbi does and its issuance is determined by the People's Bank of China, instead of algorithm or users' consensus.

3. Challenges of DCEP

3.1 Replaceability by Cash and Traditional Third-party Payment

Since the People's Bank of China began to issue licenses to the online payment enterprises in 2011, the third-party payment market has entered into a rapid-development track under the strong supervision. Till now, the third-party payment market has gradually formed two mainstream markets: bank acquiring business and online payment. Within both markets, the

deposit currency of commercial bank accounts is their key foundation and source, which is inevitably traceable. Bank acquiring business is mainly controlled by those mega-banks while, in the online payment market in China, the Alipay and the WeChat payment are the most famous representative.

Due to high degree of functional homogeneity with the third-party payment, DCEP has to face the competition within this market. First of all, with the endorsement of the government, DCEP possesses the highest level of safety within this market and a stable issuance basis. Secondly, without reliance on the deposit currency in commercial banks, the usage of DCEP is anonymous for individual users. What's more, due to its dual-offline function, DCEP has a wider range of applications than those traditional online payment methods under the support of the Internet. The unlimited legal tender of DCEP also makes it compulsively be accepted by all the institutions in offline, cross-bank and cross-platform transactions, including other potential competitors like Alipay or WeChat payment. In one word, for individual and enterprise users, DCEP is expected to bring a higher-quality and more convenient payment experience.

However, under the current monetary system, it is impossible for the government to withdraw all the M0 in circulation and replace them with DCEP in the short-term period. Besides, the inherent consumption habit of individual users will prevent them from converting themselves to the most advanced payment technologies. Therefore, the further development of DCEP will be limited by the existing M0 and even traditional payment methods like cheques or credit cards in the short period. Also, those third-party payment platforms can benefit from the first-mover advantages, establishing strong dependence within the enormous number of users. Meanwhile, those third-party payment platforms have gradually cultivated users' consumption habits, such as small-

scaled mortgages, credit consumption, and fee payment, stimulating further the users' demand on financial management, which can further bind their current customer groups. At current stage, there is still difficulty for DCEP to realize those services and thus, DCEP has to face the challenges from both cash and third-party payment.

3.2 Difficulty on Legislation and Financial Supervision

Only through the credibility provided by the regulations issued by the People's Bank of China will it be still difficult to promote the digitalization of Renminbi in terms of effectiveness.[4] Therefore, it is necessary for China's top legislature to issue related law and regulations to provide sufficient national credibility. At the present stage, the legal supervision of digital currency in China is mainly based on anti-money laundering, protection of investor rights and maintenance of financial order. In the Law of the People's Republic of China on the People's Bank of China, the regulations on the traditional legal currency don't cover the digital currency, either. Although DCEP is under the experimental stage in several cities, the legislation process would be still extremely difficult for the lack of foregoing experience in this area.

The launch of DCEP follows the two-layer operation model. The first layer refers to the process from the People's bank of China to commercial banks while the second, from commercial banks to the public. The operational procedure of the first layer is equivalent to the one of the launch of cash and thus the supervision will remain the same. The second layer is comparatively different: there is no restriction on preset technical routes used by commercial banks. In other words, for

[4]Mu Jie (2019). "Opportunities, Challenges and Prospects of the Central Bank to Implement the Legal Digital Currency DCEP." *Research on Financial Issues*, 2020 (3): 95-105.

each commercial bank, whether will be accepted by the public and market will completely depend on the technical routes they choose. Thus, the result of promotion of DCEP is the output of market competition. However, by the supervision side, this would be more difficult to devise an efficient regulation on the whole procedure.

Regarding the possibility of counterfeit virtual currency, all the existing regulations can hardly be applied effectively. The form of counterfeit DCEP is different from traditional one. Technically speaking, it might be realized through an attack towards the Central Bank's digital currency certification and registration system or a decipherment of the related algorithm. Although the characteristics of DCEP greatly reduce the risk of counterfeiting or money laundering, the possibility still exists. Both effective beforehand risk assessment and risk management measures in process are necessary but difficult to be set.

4. Potential Impact of DCEP towards the Financial Market

As I discussed above, the issuance of DCEP is aimed at replacing the existing notes and cash. Let's discuss further what will happen once all the notes in circulation disappear and are replaced by DCEP. The potential impact of DCEP towards the financial market would mainly focus on 3 aspects: the currency creating system, the banking financing system and the Inter-bank payment and clearing system.

4.1 Reshape the Currency Creating System

Once DCEP is applied successfully and the public is willing to change their current habits on holding and using cash, savings and demand deposits would keep leaking out of commercial banking system. Supposing that the primary deposits remain stable, it means that cash leakage

ratio (or currency ratio) of commercial banks would decrease, the cash savings in the banking system and would also increase and the derivative deposits created by commercial banks would increase. To the whole society, the loanable funds would increase and so would the aggregate investment level. Given that DCEP is issued by the People's Bank of China, the ability of the monetary policy on mediating the aggregate economic situation would be strengthened.

DCEP would have an impact on the monetary base, by influencing cash hold by the public, and monetary base multiplier, by influencing the cash leakage ratio. Consequently, the total money supply would have to be mediated according to the issuance amount of DCEP. Furthermore, the current definition for M0 might not be appropriate any longer due to the fact that M0 would always be zero under the perfect promotion of DCEP. Thus, the models and formulas based on M0 would cease to be effective.

4.2 Reshape the Banking Financing System

Firstly, given the fact that the Central Bank would not need to issue notes and coins any longer, the cost of issuance would disappear and so would those problems deprived from the original pattern of currency issuance like the optimization of issuance process, issuance amount and time constraints required for circulation, etc. Those intermediary costs like transportation, security and counting costs etc. would be saved in transferring routes of both layers, from the Central Bank to commercial banks and from commercial banks to each branch. Meanwhile, the personnel costs for banks would be also decreased by the mediation and reduction of respective posts and staff number.

Secondly, those traditional illegal activities like counterfeit notes, money laundering, terrorist financing, smuggling, kidnapping, bribery, drugs and weapons transactions, whose transactions or operations are mainly based on cash and notes, would thus probably decrease or even disappear, because the application of DCEP would make all the transactions traceable and the cost of breaking the law would be extremely high. At current stage, the supervision costs for the Central Bank on KYC (Know Your Customers) and AML (Anti-Money Laundering) are very high. In the case of zero cash, with the help of big data capture and analysis, the Central Bank would have much lower costs on supervision. However, like we discussed above, since there still might be new measures on counterfeiting currency with more advanced techniques, additional costs and issues would appear.

Thirdly, new electronic payment system would appear. With the usage of DCEP, all the transactions and transference between enterprises, enterprises and individuals, enterprises and banks would be point-to-point finished accurately and remittance between both sides would become real-time. Besides, the whole process would become paperless: all the checks, bank drafts, bank's acceptance bills, commercial acceptance bills would no longer exist. Business for bank notes discounting, inter-bank discounting and rediscounting would also disappear. In that case, commercial banks would probably become a channel for deposits and withdrawal of funds other than pool of saving funds and thus commercial banks would lose the stable source of funds to release mortgage.

In the future, the financing system and the financial services functions of commercial banks in China would be altered to a large extent. Indirect financing activities, in which commercial banks serve as the intermediary, would be greatly reduced and subsequently, direct financing activities

through stock and bonds, which are currently dominated by security companies, would become mainstream for financing activities. Thus, disintermediation in the commercial banks would occur more rapidly and their current leading position in the Chinese financial market would be challenged by other players who have the ability to provide sufficient capital.

4.3 Reshape the Inter-bank Payment and Clearing System

DCEP would completely reshape banks' payment and clearing system. Firstly, all the debit cards and credit cards would no longer exist because DCEP can completely replace them under all the circumstances, from daily fee payment to mortgage payment. In this case, credit card companies like MASTER and VISA would be influenced greatly as well. The third online payment platform like the Alipay and WeChat payment might be weakened by their strong connection with individuals' bank accounts and would to some extent be assimilated with the new Bank Payment and Clearing System.

Secondly, the remittance business in the intermediary business would disappear quickly in the new payment and clearing system. With the disappearance of bank bills, the original accounting system of commercial banks would also undergo sharp changes, and even the balance sheets of commercial banks would change, meaning that cash and other equivalents within the assets category would disappear; the mediation between cash and provisions would be gradually unnecessary; inter-bank borrowing and central bank borrowing in the debt category would sharply decrease.

Thirdly, in China, most commercial banks have realized their growth on profits through widening their intermediary business other than interest rate spread in the past decades. With the

promotion of DCEP, the intermediary business would be affected greatly and their traditional space for making profits would be strongly squeezed, which would even raise the liquidity risk of small banks.

Fourthly, with the new Inter-bank Payment and Clearing System based on DCEP, the Inter-Bank Lending Market (SHIBOR) and the Inter-bank Bonds Trading Market would be influenced greatly: all the offline transactions would gradually be cancelled; the clearing pattern would convert from T+0 or T+1 to real-time. With the internationalization of Renminbi, which enables Renminbi to become the international reserve and clearing currency, the convenience of DCEP would play an important role in the international clearing system and even challenge the existing SWIFT system.

5. Future of Financial Market in China

5.1 Coexistence among Cash, Third-party Payment and DCEP

Nowadays, those Chinese smartphone users living in big cities usually have strong reliance on using the third-party payment apps in their daily life and using cash is even regarded as weird. In comparison, for those residents, who still don't possess smartphones or live in the countryside, using cash is still mainstream. As a result, cash and third-party payment have been coexisting since the rising of Alipay and WeChat payment and, due to the convenience of using the third-party payment, there is even a trend that the third-party payment would further replace the cash with the popularization of smartphones.

After the official promotion of DCEP, even with the strong support from the government, DCEP can hardly be generally accepted by the public and replace cash and third-party payment

immediately. Cash, third-party payment and DCEP will coexist for decades. As we discussed in the previous part – challenges of DCEP, DCEP suffers from a high degree of homogeneity from the Alipay and WeChat payment, both of which have solid user group at current stage. Despite the advantages and convenience of using DCEP, habits of the public on using cash and the online payment can hardly be altered in the short-term. According to the development of Alipay, which has spent over ten years achieving its high occupancy on market share, we can foresee that DCEP should undergo the similar process.

On the other hand, at the early stage of the issuance of DCEP, it will be unreasonable to replace all the cash in circulation with DCEP. Therefore, the coexistence among cash, third-party payment and DCEP is inevitable. In long-term, with the further promotion of DCEP, cash will probably be replaced, and third-party payment will be included into the new electronic payment system, which is dominated by DCEP.

5.2 Narrower Survival Space of other Digital Currency

In 2013, the People's Bank of China, together with other four financial supervision institutions, issued the notice that the circulation of digital currencies without endorsement from sovereignty like Bitcoin is forbidden and stated explicitly that Bitcoin is regarded as a virtual commodity with high risks rather than currency.[5] Due to sharp fluctuations of their market prices, Bitcoin is mainly served as a part of the investment portfolio of financial institutions and individual investors in China. However, under the strong supervision of Chinese Government, the survival space of those digital currencies is extremely narrow.

[5] People's Bank of China (2013). "Notice on the precaution about Bitcoin." Available at: http://www.pbc.gov.cn/goutongjiaoliu/113456/113469/999049/index.html

Without the restriction from the People's Bank of China on digital currencies, more and more financial assets would be priced in digital currencies like Bitcoin or Libra due to their more frequent involvement of digital currencies in the financial transactions and the existence of digital currencies would further become the challenge towards the traditional Chinese monetary system and even the national sovereignty on currency issuance. At the first Bund Financial Summit, Qifen Huang, the deputy director of China Center for International Economic Exchanges, stated that the best way to practice the sovereignty on the currency issuance for a certain century is to issue the digital currency by its government and central bank.[6] In other words, one of purposes to issue DCEP is to protect the sovereignty on currency issuance of the Chinese government. Therefore, after the official issuance of DCEP, the survival space of other digital currency will become narrower.

5.3 Future of Alipay and WeChat Payment

In November 2020, the People's Bank of China issued *Regulations on Administration for Small-scaled Internet Loans* on the Internet to put strong supervision on small-scaled Internet loans. Small-scaled Internet loans are the main business of the Ant Group, a branch of the Alipay. At current stage, besides the commissions and service charges based on its payment function, a major part of Alipay's profits come from two aspects --investment of liquid fund and interest rate margin of small-scaled Internet loans, which is similar to commercial banks. Due to the issuance of the regulation, valuation of Ant Group has been overpriced and its IPO in China mainland has been ceased by the Shanghai Stock Exchange.

[6] Qifan Huang (2019). "Speech on the First Bund Financial Summit." Available at: http://www.acfic.org.cn/fgdt1/zjgd/201910/t20191029_144281.html

As two giant companies in the third-party payment market, Alipay and WeChat payment will become two main obstacles during the promotion process of DCEP. In the short-term period, both companies will suffer from stricter supervision and constraints on their value-added services and small-scaled loan business. The stricter regulations from the Chinese government will alter the current profit-making patterns of both Alipay and WeChat payment and thus force them to explore new profit-making methods. Due to the high reliance of the public upon the convenience of the third-party payment, their basic function of mobile payment will be retained in the short-term period.

In the long-term period, Chinese government will probably further cut the profit-making space of the traditional third-party payment companies to sustain the development of DCEP and their basic function of mobile payment will be challenged by the new clearing system dominated by DCEP. With the further alteration of the residents' habits on using DCEP, Alipay and WeChat payment will be included into the new clearing system dominated by DCEP and even become the terminal application of DCEP.

5.4 Further Integration between Financial Industries and Internet

The process of integration between financial industries and Internet has started since the last decade and at current stage, those Internet-related technologies like big data, data cloud or artificial intelligence have been widely used in the services promotion and market analysis by commercial banks, securities companies or other financial institutions. With the further development of those technologies, which can be applied in the financial sector, the process of integration will be further accelerated.

The issuance of DCEP will be catalyzer of the whole sector. As we discussed above, with the comprehensive usage of DCEP, the intermediary role of commercial banks might be eliminated. In that case, more direct financing activities will appear through the platform of the Internet, where DCEP will facilitate the whole process. More fintech companies, whose main business is based on direct financing, will appear. On the other hand, the commercial banks will have to explore new profit-making points based on the Internet technologies and. For other financial institutions, the channels of their retailing services will be gradually converted from the physical branches to the Internet. A further integration between financial and the Internet sector will be promoted.

6. Conclusion

DCEP is regarded as the extension of Renminbi, with basic characteristics of existing currency notes: safe, non-re-expendable, hard to counterfeit and unlimited legal tender. Besides, DCEP has the function of dual-offline payment and controllable anonymity. In comparison to existing digital currencies like Bitcoin or Libra, DCEP is centralized and more stable.

Despite those basic features, the promotion of DCEP may have to face several challenging factors. Considering that residents' habits on using cash can hardly be altered in the short-term period, existing cash and notes can be obstacle for the promotion of DCEP. Due to high degree of functional homogeneity with the third-party payment, DCEP has to face the competition with existing giants Alipay and WeChat payment. By the governmental side, there are also difficulties on legislation and financial supervision for the lack of related precedents.

Talking of the potential impact of the issuance of DCEP, we consider that it would mainly focus on the banking sector and our discussion is based on the assumption that all the existing M0 had been replaced by DCEP. In one word, we assume that the issuance of DCEP would reshape the currency creating system, the banking financing system and the inter-bank payment & clearing system. Meanwhile, this will be an opportunity for other players within the financial market.

Finally, based on the latest related news and our former analysis, we firstly predict that cash, third-party payment and DCEP will coexist in the short-term period. Those digital currencies without the endorsement from sovereignty will have a narrower survival space in China while traditional third-party payment giants will probably be included into the new clearing system dominated by DCEP. A further integration between financial industry and Internet will be

inevitable. Nevertheless, it still remains to be seen what the future will be like after the issuance of DCEP.

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