A Study on the Integration Path of China-ASEAN Digital RMB Cross-border E-commerce in the Context of Big Data

Jingya Yao, Songchun Wang *

Zhuhai College, Beijing Institute of Technology, Zhuhai, Guangdong, 519088, China

* Corresponding Author Email: 79365190@qq.com

Abstract. In the trend of the global digital economy, digital currency will become one of the important payment methods in cross-border trade in the future. Countries that are in a leading position in this technology can enhance their voice in the formulation of international rules. The development and use of digital currency by the central bank is of great significance for China to gain an advantage in international financial competition in the context of the digital age. From a key strategic partner - ASEAN as the entry point, this paper expounds the current situation of China-ASEAN cross-border e-commerce. Based on online data, this paper reveals the four problems faced by digital RMB cross-border e-commerce in the China-ASEAN framework through collection, integration and comparative analysis. On that basis, this paper makes the following suggestions: promoting the standardization of digital currency supervision, improving the "Bilateral Currency Swap Agreement", and actively carrying out international dialogue and talent exchanges, so as to help ASEAN carry out cross-border cooperation of digital RMB and cultivate the advantages of China's digital economy in the competition of cross-border e-commerce.

Keywords: Digital RMB; China-ASEAN; Cross-border E-commerce; Big Data.

1. Introduction

In November 2021, on the basis of being each other's largest trading partner, China-ASEAN further developed into strategic partners. ASEAN countries hope to further unleash market vitality by deepening their cooperation with China in the digital field. The application of digital RMB will become a new opportunity for future market development.

The current situation of China-ASEAN cross-border e-commerce. Lazada and Shopee are major e-commerce platforms in such ASEAN countries as Indonesia, Vietnam, Thailand, Singapore, Malaysia and the Philippines. A large number of Chinese merchants have entered the markets of these countries, bringing China's new format of live streaming to ASEAN countries and stimulating the vitality of e-commerce there. In 2021, the volume of China-ASEAN cross-border trade reached US$878.2 billion, a year-on-year increase of 28.1%. China's exports to ASEAN were US$483.69 billion, a year-on-year increase of 26.1%; China's imports from ASEAN were US$394.51 billion, a year-on-year increase of 30.8%[1].

The impact of the emergence of digital RMB on cross-border e-commerce. The digital RMB is a legal digital currency issued by the Central Bank of China and is a "token" in the digital form of banknotes. Its physical form has changed, but its essence remains the same - M0 fiat currency. Digital RMB is a cash currency with digital features. In the following part, this paper shows a comparison of different payment methods in the form of a table. (as shown in Table 1)

Table 1. A comparison of the three main methods of payment in the market

	Payment with paper currency	Third-party electronic payment	New payment systems in the context of digital currency
Characteristics	Smooth, tough Anonymity, Low convenience Subject to physical wear, Limited by time and space Not relying on the Internet	Fast, efficient and economical, No physical wear, Not limited by time and space, No anonymity mechanism Relying on the Internet Tightly coupled	No physical wear Not limited by time and space Controlled anonymity Traceability Dual offline payment Multiple terminal options Loose coupling of accounts
Technology	Printing	Internet	NFC, distributed ledger
Credit guarantee	China's central bank	Third-party payment platforms: possibility of a bankruptcy crisis	China's central bank: unlimited legal compensation
Interest	No	Yes	No

(Source: Compiled by the author based on data from the Internet)

Looking at the international market, DCEP has a series of features, enabling it to solve the problem of multi-party cooperation in a non-complete trust environment in cross-border trade, drive the financial upgrade of the cross-border e-commerce industry chain and bring unlimited development space for the future China-ASEAN cross-border e-commerce.

2. Digital RMB brings new advantages to cross-border e-commerce

The original transaction system of cross-border payment has inherent drawbacks, including cumbersome intermediate process nodes and high costs. The use of digital RMB will make up for the original defects, break the constraints of time and space, and maximize the convenience and security of circulation, clearing (settlement), and supervision.

2.1. Reducing transaction costs and improving payment efficiency.

Programmable, traceable, and infinitely divisible properties greatly reduce the cost of converting between different currencies. Economic entities can switch between different currencies at a very low cost, and the natural integration of digital RMB's capital flow and data flow reduces the cost of information transmission. Digital technology has the characteristics of high fixed cost and low marginal cost, enabling it to provide currency services to new users at nearly zero marginal cost, and enhance the use value of currency through network effects[2].

2.2. Regulatory function for cross-border capital flows

It gives full play to the application of such underlying digital technologies as big data, cloud computing, and artificial intelligence in digital RMB supervision scenarios to realize the full-process and full-time supervision of currency circulation. In particular, the layered regulatory measures for domestic residents and overseas residents, long-term investors and short-term investors will abandon the speculative nature of currency in cross-border circulation and protect the security and compliance of digital RMB in circulation, thus enhancing the trust and acceptance of digital renminbi in the international market[3].

2.3. Reducing financial risks and building a new order of cross-border payments

The application of digital renminbi will greatly improve the efficiency of cross-border payment and settlement and reduce settlement costs. Trade parties are no longer subject to economic surveillance by the SWINT system, which further enhances the security of settlement. On the other hand, the landing of the digital RMB represents the formation of a new order, which challenges the dominance of SWFT in the field of cross-border payments and promotes a new digital settlement system for international trade and the Internet economy.

3. Existing problems of digital RMB in China-ASEAN cross-border e-commerce trade

3.1. There are many blank spaces in ASEAN's supervision of digital currencies

ASEAN is a relatively loose regional organization, and countries and regions have different levels and capabilities of digital currency supervision. In order to obtain greater profits and competitive advantages, there will be a race to the bottom. In order to avoid disadvantages, they will continue to loosen the terms until they cross the bottom line[4].

China-ASEAN has not yet formed a unified and effective supervision mechanism, the division of supervision power is not clear, and there is no effective organizational structure and information sharing mechanism. This will easily lead to information overlap or lack of supervision, and make it difficult to control risks from a macro perspective, and the resulting financial risks and moral hazard will be unpredictable.

3.2. ASEAN lacks confidence in cross-border digital RMB payment with China

Global trade and financial transactions are very sticky to the US dollar. The core of promoting the use of digital RMB in global transactions is to challenge the hegemony system of the US dollar.

SWIFT is the world's largest professional cross-border payment institution dominated by the United States, and the business volume of the two major US dollar clearing institutions, Fedwire and CHIPS, has an absolute advantage in the world's dollar clearing business. The US dollar is in an unparalleled position among international currencies. This has led to a growing imbalance in international trade payments. Participants in the world's cross-border trade, including China and ASEAN, often need to go through layers of intermediary agencies, or be sanctioned by the United States.

3.3. The consumption culture of China and that of ASEAN are very different, and the usage of digital currency needs to be popularized

For ASEAN countries, there are still many difficulties in terms of language, cognition and use process in accepting and using digital RMB. The main payment methods and habits do not match the needs of digital currencies entering the market. (as shown in Figure 1)

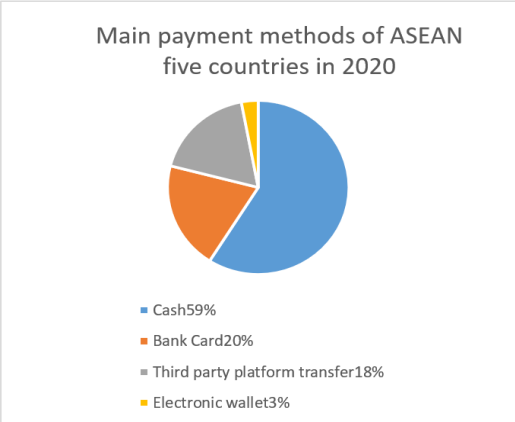

Fig 1. The main payment methods in five ASEAN countries

(Source: Luo Yongxuan, Luo Jie, Yin, Liu bangyue, Luo Yunfang. Research on the development of regional mobile payment between China and ASEAN under the “Belt and road” [J]. Financial Technology Time,2021(03): 82-87.)

In addition, ASEAN countries lack professionals familiar with the use of digital currency for cross-border e-commerce, and there is also a shortage of compound talents who understand the consumption habits of various countries, master the minor languages of various countries, and are familiar with the operation process of cross-border e-commerce.

3.4. The impact of the promotion of digital RMB on China-ASEAN third-party payment

The main third-party platforms for cross-border payment in China include Alipay International, NetEase Payment, Tenpay, etc. The cross-border electronic payment platform commonly used in ASEAN countries is paypal. In addition to the above methods, it is the transaction between the respective national banks. The addition of digital RMB will subvert the original payment habits. (as shown in Table 2)

Table 2. Comparison of digital RMB and third-party platforms for cross-border payment

	Digital RMB	Third-party platforms for cross-border payment
Efficiency	Settlement upon payment	Bookkeeping first, and then completing the transfer of funds through clearing
Charges	None	The rate of the platforms is about 3%-5%

(Source: compiled by the author according to data on the Internet)

It is now known that the main revenue of professional third-party cross-border payment companies is in the following two aspects: 1. Payment service fees. 2. Derivative businesses. Although there is no substitute relationship between the two, the overseas promotion of digital renminbi will still lead to loss of profits of third-party payment companies.

Legal digital currency relies on the credit of the central bank, while third-party payment platforms and commercial banks rely on corporate credit. Once a financial crisis occurs, people will quickly withdraw money from third-party institutions and exchange them for legal digital currency, which will lead to a more serious vicious circle and aggravate the market's run on third-party payment institutions [5].

4. Recommendations for the development of digital RMB cross-border e-commerce in the China-ASEAN framework

4.1. Improve the system for digital currency supervision and effectively avoiding financial risks

China and ASEAN have the foundation of traditional monetary cooperation. Since 2001, China has successively signed Bilateral Currency Swap Agreements with ASEAN countries. The construction of the Asian Infrastructure Investment Bank, as China's cooperation platform facing the world, has a regulatory system that can make up for the digital regulatory gap in the ASEAN region.

Both China and ASEAN should strengthen the infrastructure construction for digital currency cooperation, build a clear financial rescue mechanism and a credit evaluation system for digital RMB, increase countries' dependence on digital RMB, and establish the international reputation of digital RMB in the world.

A multilateral regulatory path should be established, and a unified and effective regulatory mechanism and regulatory organization should be built. Regulatory standards should be innovated, and diversified strategies should be implemented. For companies with good reputation, the regulatory standards can be appropriately relaxed, and for companies with poor reputation, supervision links should be added to ensure the safe and orderly circulation of digital currency in trade.

An information disclosure system should be improved, information sharing centers should be established, and a multi-terminal operating system should be connected at the same time, so as to promote information sharing, enabling both parties to control risks in a timely and effective manner, and effectively avoid duplication of operations and missing links.

4.2. The trend of the multi-polarization of the world is accelerating, and powers are emerging

Comparing the development process of digital currencies in various countries, the promotion of China's digital RMB was piloted in April 2020. At the same time, the EU is still in the process of research and development of the digital euro, and the United States only began to discuss the digital

dollar in May 2021. China's research on digital currency is already ahead of other countries. In August 2021, the third wave of the pandemic in the United States became fierce. The originally scheduled tightening policies such as interest rate hikes could not be implemented as scheduled, and the inflation of the US dollar would be difficult to control, making period a good opportunity to promote the digital RMB and help it “overtake on curves”.

The government can cooperate with countries based on the “Belt and Road” initiative to promote the digital RMB pilot to foreign countries, starting from key areas, having public-private cooperation, and landing in key economic areas of ASEAN. The key cooperative products should be taken as the entry point. The bulk e-commerce transactions between China and ASEAN countries are mainly the trade of agricultural products. Relevant personnel should go deep among farmers accurately, explain the knowledge of digital RMB, and introduce subsidy policies for using digital RMB in trade.

A unified cross-border payment channel involving ASEAN countries should be built, the equal rights mechanism of the blockchain should be utilized, and the technical means of NFC and distributed accounting should be used to realize the joint operation of participating institutions, thus realizing financial governance on that basis. This will give rise to many scenarios where ASEAN companies, governments and institutions can use their own currencies to buy DCEP and lock it up in exchange for a certain right in their trade with China, such as tariff relief, or obtain permission to operate a certain business in China[6].

At present, the central banks of the ten ASEAN countries are mainly divided into three different states in terms of digital currency. The first state is in R&D experiments or having entered the pilot stage. The second state is researching whether CBDC is feasible. The third state is having no CBDC plan or no development power. (as shown in Table 3)

Table 3. States of CBDC development in ten ASEAN countries

	State of CBDC development
Laos	Sovereign digital currency in development
Vietnam	Proposed to study national digital currency
Indonesia	Plans to issue a central bank digital currency
Thailand	Inthanon , the central bank digital currency project, will be piloted in 2022
Malaysia	In a proof-of-concept (POC) experiment for a central bank digital currency.
The Philippines	Considering implementing a central bank digital currency in the near future
Singapore	Central bank digital currency Ubin in phase 5 testing - evaluating the impact of distributed ledgers on existing regulatory frameworks and market processes
Myanmar	It has not implemented a central bank digital currency plan for the time being
Brunei	It has not implemented a central bank digital currency plan for the time being
Cambodia	Its central bank digital currency "Bakong" in pilot

(Source: compiled by the author according to data on the Internet)

According to the above table, most ASEAN countries want to develop their own CBDC. For example, Singapore has already developed relatively mature blockchain technology. Countries on both sides can take this opportunity to get on the high-tech train of digital transactions and add the terms of the central bank's digital currency contract based on the "Bilateral Currency Swap Agreements" to achieve mutual benefit and win-win results.

4.3. Strengthening bilateral exchanges and actively having international conversations

Strengthening the construction of a talent growth mechanism, increasing investment in education for digital cross-border trade, offering special cross-border training programs, strengthening links between universities, and exchanging graduate students for mutual exchanges. Cross-border e-commerce companies need to provide training of ASEAN-oriented digital currency trading to cultivate talents suitable for the companies themselves.

Broadening the perspective and shifting the strategic goal to another group of economy subjects - tourists, international students, cross-border business people. With the continuous deepening of

China-ASEAN cooperation, even under the impact of the pandemic, the flow of people between the two sides is still growing exponentially. These people can become an important influential factor in expanding the use of digital RMB in bilateral countries, penetrate from individuals to the market, gradually change the solidified thinking consciousness, and drive the transformation of the transaction form in the entire market. Scenarios of digital RMB payment can be built for international online platforms, digital wallets can be built on well-known video websites and social networking sites, and digital currency consumption habits can be cultivated.

4.4. Third-party enterprises: a co-existence of opportunities and challenges

The early-stage promotion of digital RMB to ASEAN must rely on the traffic and scenario support of third-party platforms, and third-party platforms can also seize the opportunity of digital RMB to achieve mutual benefit and win-win results.

The digital RMB needs to be built in the digital wallets of various third-party platforms in the initial stage, which will bring fresh traffic to the platforms. Various platforms can expand more customer resources from this. In addition, third-party platforms can enhance customer experience and develop new business space with the help of featured wallet services.

The feature of digital RMB of charging no service fee will attract a large number of small enterprises and individual businesses to cross-border e-commerce, and these enterprises often face the problem of scarcity of personnel and lack of experienced and compound talents. Third-party payment platforms can seize this opportunity, provide new service perspectives, and expand new business fields for enterprises and third-party platforms, thus further diversifying the China-ASEAN B2C trade model.

The promotion and use of digital RMB needs to go through different stages, enterprises need to continuously adjust their strategies according to their level of development, and its full coverage will take at least a few more years. Third-party payment platforms should make early preparations based on existing experience and traffic, and change the existing models, so as to find a broader space of benefit.

5. Conclusion

The application of digital renminbi in China-ASEAN cross-border e-commerce still faces many difficulties: Regulatory laws and systems are still in the exploratory stage. In the existing payment system, the hegemony of the U.S. dollar has led to a lack of confidence in ASEAN countries to carry out cross-border digital RMB payment with China, and there are huge differences in the cultures of both sides. The importance of legal digital currencies in cross-border transactions has gradually become prominent. As a country in a leading position in the development of legal currency, China needs to open up a diversified development path in the blank space of cross-border application of legal currencies. On the basis of respecting the policies and legal provisions of various countries, respecting the currency sovereignty, exchange rate systems and regulations on currency exchange and remittance of various countries, China should actively engage in conversations with ASEAN countries to discuss such issues as policy supervision and implementation of digital RMB, so that digital renminbi can become a powerful "lever" to open the door to a new international order of trade. It is hoped that the questions and recommendations raised in this paper can inspire more people and serve as a reference, thus providing an important theoretical basis for the development of digital RMB cross-border e-commerce in the China-ASEAN framework.

Acknowledgments

Special innovation projects of key platforms and scientific research projects of colleges and universities in Guangdong Province; Subject number: 2021wtscx141.

References

[1] Lu Wenwen, Lin Jihong. Research on cross-border e-commerce cooperation between China and ASEAN [J]. Asia-pacific Economic Review,2021(05):12-21.

[2] Liu Danyang, Chen Wenjing. Reflections on the construction of China's cross-border payment system in the global digital age [J]. Voice of Hongqiao Forum,2021(09):004.

[3] Liu Xiaoxin. The main features and impact of digital RMB [J]. People's Forum,2020(26):86-91.

[4] Liu Jiali. Construction of legal mechanisms for China-ASEAN legal digital currency cooperation [J]. Journal of Yunnan University, 2019(09):137-145.

[5] Xiao Chengzhi, Qi Wenting. Research on the impact of RMB internationalization and cross-border e-commerce on cross-border RMB clearing and domestic third-party payment [J]. Regional finance, 2016(11):54-58.

[6] Qi Yudong, Liu Huanhuan, Xiao Xu. Digital currency and the reform of international monetary system and the new opportunities of RMB internationalization [J]. Journal of Wuhan University,2021(05):105-118.