

Analysis of the Impact of Digital Currency on International Trade

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Abstract

With the development of the globalization of the world economy and the increasing trade between countries, it is urgent to establish a convenient, reliable and secure payment system for transactions. Digital currency has become the focus of attention of countries around the world in recent years, and the convenience it possesses is more in line with the needs of the times. Therefore, the research on the application of digital currency in international trade and cross-border transactions is in line with the development and changes of the times. This paper analyzes the essence and characteristics of digital currency from the basic technology of digital currency, and focuses on exploring the impact of digital currency on international trade and optimizing the existing trade methods.

Keywords

Digital Currency; Blockchain; Cross-border Payment; International Trade.

1. Introduction

In the context of the new crown epidemic, international trade and the traditional financial system have suffered a major impact, giving rise to online trade characterized by contactless and paperless, with digital currencies led by Bitcoin coming into view, the huge advantages possessed by payments, curbing criminal crimes such as money laundering, promoting currency circulation and even helping the development of the entire social economy. The research and development of digital currency is not only a key grip to optimize the digital economy ecology and promote the expansion and quality improvement of the digital economy, but also an important reliance to build the institutional power in the global governance system in the digital era. Many countries and international organizations have put the task of issuing legal digital currency on the agenda, promoting digital currency research and development and exploring the feasibility of issuance technology.

2. Overview of Digital Currency

2.1. The Meaning of Digital Currency

Digital Currency (DC) is a virtual currency based on the principle of cryptography, combining digital technology with currency, and calculated in large quantities by virtue of the Internet, blockchain and other technologies, which is essentially a string of characters encrypted to hide a variety of key information.

Digital currency has all the attributes of money, but also has the characteristics of anonymity, programmability, autonomy and controllability, which can well avoid the interference of currency value by market factors, help inhibit money laundering and tax evasion and other illegal and criminal acts, and effectively reduce the cost of currency issuance and circulation.

Based on the above characteristics, digital currencies cater to the needs of the times and are developing rapidly. Digital currency has a positive impact on the cost of storage and use, cross-border financial payments, combating money laundering crimes and promoting currency circulation compared to traditional fiat currency types, which helps social and economic development.

2.2. Technologies Underlying Digital Currencies

In 2008, Satoshi Nakamoto published the paper "Bitcoin: A Peer-to-Peer Electronic Cash System", which first proposed the concept of Bitcoin, and blockchain technology and digital currency attracted great attention. He proposed that blockchain is a new application model of distributed data storage, peer-to-peer transmission, consensus mechanism, cryptographic algorithms and other computer technologies, which is essentially a decentralized database. Blockchain data blocks generated by cryptographic methods of correlation contain information about each batch of bitcoin network transactions, and are used to verify the validity of its information as well as to generate the next block. Two blocks are linked, with the head of the previous block contained in the tail of an earlier block, the tail of the previous block contained in the head of the next block, and the transaction information between them as a chain between the two (as shown in Figure 1). Each database is interconnected and encrypted, and to crack these blocks means first cracking more than 51% of the world's blocks, which is almost a realistic possibility. It also confirms that the blockchain has the characteristics of being non-fictitious, non-falsifiable and non-tamperable.



Figure 1. Transaction information is recorded between chains

Blockchain is one of the means of digital currency circulation, digital currency is established on the basis of blockchain technology means, blockchain has a certain guarantee for the security of digital currency, at the same time digital currency is the most successful application of blockchain technology. As digital technologies such as artificial intelligence, blockchain, cloud computing and big data are gradually used and absorbed by the trade industry, international trade is reshaping the industry and breaking the inherent trade pattern, especially the digital currency of the central bank of China will break through the issuance and circulation channels of traditional currency, overcome the time and space constraints of the transaction process, and provide the conditions for establishing a new cross-border trade payment and settlement system to replace the traditional cross-border payment and clearing system.

3. The Current Problems of International Trade

3.1. Inefficient Trade Payment Settlement

The traditional international payment settlement mode suffers from long delays, expensive costs, insecurity and difficult supervision. For example, the arrival time of a cross-border remittance usually takes 3-5 working days, while the cost of cross-border remittance is as high as 6.94% of the principal amount. And it needs to be done through a third-party payment institution. Since the traditional recording method makes each third institution participant have its own ledger, each participant records in its own ledger when a transaction occurs (as shown in Figure 2).

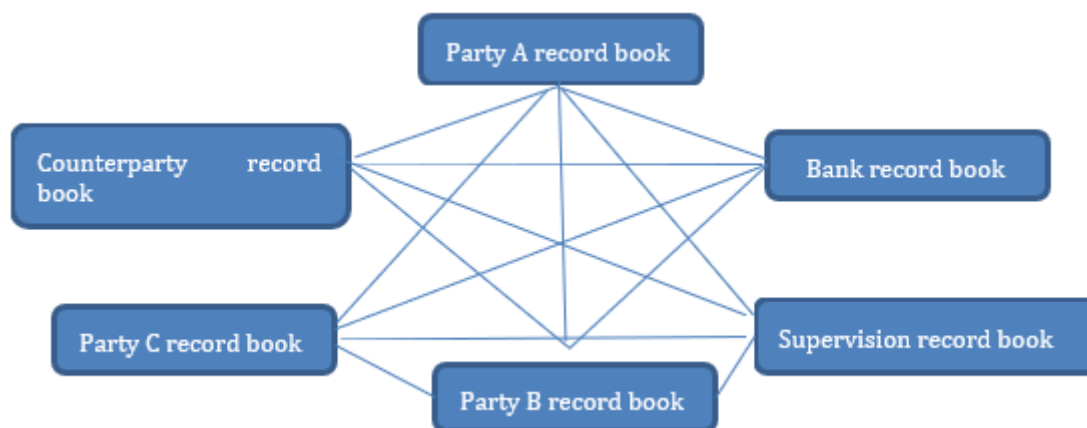


Figure 2. Traditional International Payment Ledger Recording Process

Too many participants and inconsistencies in the way traditional international payment book information is recorded increase the work burden and additional costs, while the time and space constraints of different countries also create delayed problems in international payment settlement, resulting in more payment settlement processes and much lower efficiency of funds.

3.2. Serious Tax Evasion Problem

Cross-border e-commerce makes international trade interactions between countries more frequent, bringing unlimited business opportunities for world economic exchanges and cooperation, which is conducive to expanding the tax base and expanding tax sources. However, in international trade, tax evasion and leakage occur from time to time, tax revenue is lost and it is difficult to obtain evidence, and the third-party supervision platform is not in place. For example, concealment of accounts and evidence, destruction of evidence, evasion of tax inspection under the pretext of accounting replacement and poor storage, etc. It is difficult to find exact evidence, resulting in massive loss of international trade tax revenue.

3.3. The Settlement and Clearing System is based on the US Dollar

The current international currency settlement and clearing system is based on the U.S. dollar. The current international cross-border payment system is centered on SWIFT and CHIPS, both of which are dominated by the U.S. as the most important international financial infrastructure. CHIPS is called New York Clearing House Bank Payment System, which is the world's largest dollar clearing and settlement system, and is also the private clearing system of the U.S. The U.S. is able to cut off other countries from it alone, thus excluding these countries from the dollar clearing system. It is thus clear that it is difficult for emerging countries to gain a voice in the cross-border payment and clearing system established by the US.

4. Digital Currency Changes the Future of International Trade Patterns

Digital currency is opening a new era of trade, the exchange and cooperation between countries and trade exchanges continue to expand and close, digital currency as a newborn currency will affect the change of the relevant market elements in world trade.

4.1. Impact on Trade Settlement and Payment System

Global finance, today, is still developing under the dominance of the U.S. dollar. With the rise of developing countries and emerging economies represented by China, the world's economic landscape and monetary system also need the support and development of a compatible monetary settlement and payment system. The blockchain-based international payment system can reduce the time and cost of cross-border payments and improve the efficiency of

payments due to the direct peer-to-peer transactions without relying on centralized institutions and the simultaneous completion of transaction confirmation and distributed ledger updates (as shown in Figure 3). Simplifying the complex process of traditional international payment settlement with layers of agents opening accounts and ensuring the risk of funds in transit makes the transaction more secure. Regulators can detect abnormal transactions in a timely manner, allowing transactions on the blockchain to ensure openness and transparency.

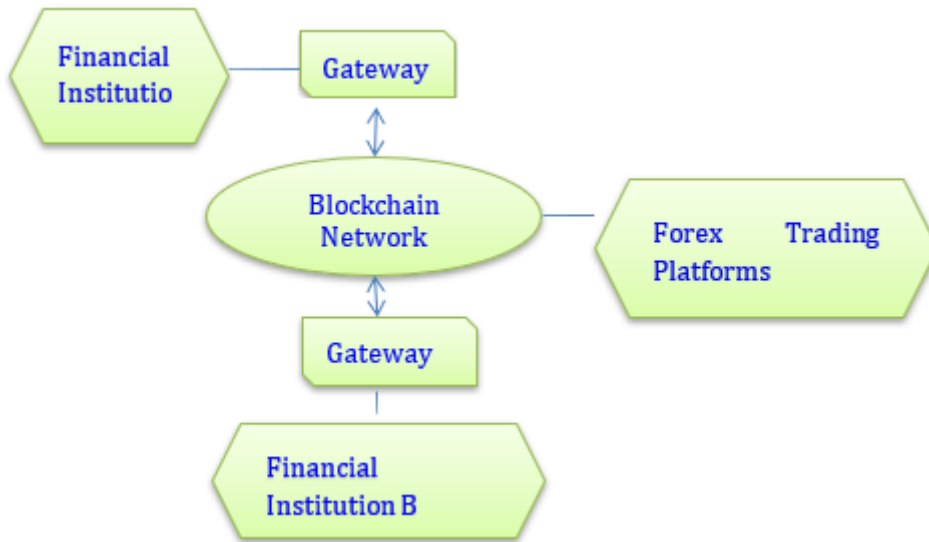


Figure 3. Blockchain international payment settlement computing model

The use of blockchain technology and digital currency technology to build a cross-border payment system can bypass the SWIFT system and the US dollar clearing system, and the peer-to-peer mode of digital currency for cross-border payment can circumvent the traditional centralized cross-border payment clearing system, which can solve the problem of low rate and high cost of the traditional centralized cross-border payment and settlement system.

As a digital currency born out of necessity, all countries are seeking a fair and favorable currency settlement to get rid of the dependence on the US dollar and maintain their legitimate and reasonable rights and interests. The U.S. controls the SWIFT international settlement system with the hegemony of the U.S. dollar, firmly tying global finance and trade to the U.S. dollar. The emergence of digital currency will reverse this dependence and impact the SWIFT international settlement system.

4.2. Impact on International Trade Patterns

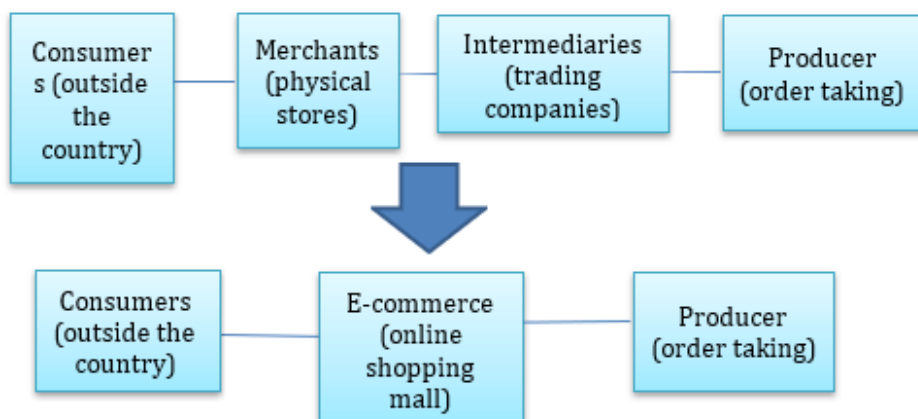


Figure 4. Shift in World Trade Patterns

The rapid development of the Internet economy, the way of life consumption has changed, the rapid development of e-commerce, the world trade model has changed greatly, more consumption will be shifted from physical stores to e-commerce stores (as shown in Figure 4). Digital currency along with e-commerce trade model change, gradually replace online banks, Alipay, WeChat payment and other means of payment, will significantly weaken the intermediate behavior of the third party, to avoid the high fees of traditional payment methods, and the impact of exchange rate market fluctuations, reduce operating costs, stabilize prices, help accurate business judgment transaction prices, and thus accelerate the transformation of the trade model, the future trade is no longer a single order export type The future trade is no longer a single order export type, but a mixed whole container type under big data analysis, not by intermediaries (import and export trading companies) according to the single order production, but according to the sales export warehousing, the traditional blind order caused by stagnant pressure will turn to data analysis of accurate warehousing sales model.

4.3. Impact on the Logistics and Warehousing Industry

The creation and widespread use of digital currency has promoted a change in trade patterns and will certainly affect the logistics and warehousing industry of commodity trade. Traditionally, the production of export orders, logistics is a single product by a single batch of the flow, warehousing is each business (importers) alone warehouse, basically a single commodity oligarchy. After the change of trade model, logistics and warehousing are no longer "widow", logistics is a variety of regional-centric commodities "mixed transport", warehousing will be a comprehensive regional-centric warehousing. Various commodities will be mixed according to their own regional sales, logistics and warehousing industry will usher in new development opportunities.

4.4. Impact on Tax Monitoring

The use of digital currency for transactions is a significant improvement to the current taxation problem. The information of transactions based on blockchain technology is recorded in detail, and blockchain is immutable and falsifiable, so it is impossible to tamper with falsified transaction records, which can prevent unscrupulous companies from using hidden books and falsified records to steal taxes. At present, the EU has promulgated a set of VAT standards and protocols based on blockchain technology to unify all VAT accounting transactions. The tax authorities can read the VAT transaction information of the whole Europe in real time through this system, which can effectively assist tax monitoring and greatly reduce the occurrence of tax evasion.

5. The Application and Prospects of Digital RMB in International Trade

Compared with other countries in the world, China is at the forefront of the development and promotion of digital currency, and has completed the top-level design, standard development, function development and joint testing of digital currency, and has conducted pilot projects in Shenzhen, Suzhou, Xiong'an, Chengdu and the Beijing Winter Olympics. The pilot projects will be implemented in countries along the "Belt and Road" and Africa, which are less dependent on the U.S. dollar, to establish a regional chain system of digital currency settlement grid, enhance the stickiness and dependence of countries along the route on China's trade and Chinese currency, thus expanding the influence and increasing the world's confidence in China's new settlement system, and then gradually It will then be gradually introduced to countries with a larger share of import and export trade, and promote the implementation of digital trade settlement systems in most trading countries. The internationalization of digital RMB will bring its advantages of higher settlement efficiency and lower settlement cost, and will also impact the existing SWIFT system. The launch of CIPS, the RMB cross-border payment system, will

enhance the status of RMB in international trade, which will have a positive effect on China's world trade and give it a head start in future world trade.

Considering the compatibility and coordination issues among central banks' digital currencies, especially the interface of payment systems when cross-border payments involve transactions in different currencies, many central banks, including the People's Bank of China, are actively carrying out research projects on multilateral central bank "digital currency bridges", actively seeking and participating in the cooperation of central banks to promote digital currency-based global financial regulatory standards. They are actively seeking and participating in the cooperation of central banks to promote the development of global financial regulatory standards based on the digital currency system, enhance the pricing power and voice of the digital RMB in the future digital currency system, and achieve the overall strengthening of the global governance system in the context of future digital finance.

6. Concluding Remarks

As the international circulation of RMB increases, the introduction of digital RMB for cross-border payment transactions in trade settlement will have a substitution effect on the existing dominant international payment and settlement currencies, break through the existing barriers to cross-border payment and settlement, and promote the innovative development of trade settlement. It will build a platform for the process and widespread application of "peer-to-peer" digital currency settlement, allowing the Chinese digital currency to truly "go global" and effectively capture the world trade market share. If we can seize the opportunity of digital currency and develop and apply legal digital currency as early as possible, we will have the right to set rules and standards in the wave of global currency digitization, and help RMB internationalization to overtake and increase the application in international trade.

All in all, the digital transformation of the world economy is a major trend, and the new industrial revolution will profoundly reshape human society. For China, the future development of digital RMB can vigorously play the core competitive advantages such as state endorsement and central bank issuance, explore easy-to-use, sustainable and widely connected payment channels, promote larger-scale landing, and empower the high-quality development of the real economy, while carrying out cross-border payment and international cooperation pilots, actively seeking partners from outside, and taking multiple measures to accelerate the pace of RMB internationalization.

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