

International Practice and Enlightenment of Blockchain-enabled Financial Application Scenarios

Mei Zeng

Nanjing Normal University, Nanjing, China

Abstract

Since the birth of bitcoin, a flock of Countries have focused on the application of blockchain in the financial industry, and have been testing the financial application scenarios enabled by blockchain technology. This paper summarizes and compares the practices of most developed countries in the four scenarios of lending, securities trading, Cross-border payment and insurance. This article finds that most countries use encrypted private digital currencies as bridges for value transfer and financial transactions, meanwhile, a development model led by the United States and dominated by financial technology companies has formed, although blockchain technology is actively developed in the financial field, it is still in the exploratory stage and has not had disruptive impact on the production relations in the financial industry. This article suggests that China should speed up the implementation and application of legal digital currency pilot programs, and guide financial technology companies to actively follow regulatory rules;externally, China should further deepen international cooperation and broaden the technical boundaries of Cross-border financial services.

Keywords

Blockchain; Finance; International Practice.

1. Introduction and Literature Review

As a decentralized distributed ledger, blockchain which is an integrated application of technologies such as P2P networks, consensus algorithms, and asymmetric encryption is considered a subversive innovation in computing models following mainframes, personal computers, and the Internet. On March 10, 2017, Xiaochuan Zhou, the governor of the People's Bank of China, mentioned "digital currency and blockchain" at the fifth meeting of the 12th National People's Congress. He believed that the influence of technology such as digital currency and blockchain would difficultly to be anticipated. This is the first time that the term "blockchain" appeared in the two sessions. On October 24, 2019, General Secretary Jinping Xi, in the 18th study of the Central Committee of the Communist Party of China, emphasized that the blockchain is an important breakthrough for independent innovation of core technologies, and China should push the development of blockchain technology and industrial innovation. Jinping Xi's words show that the development of blockchain technology innovation is belong to national strategy. On April 20, 2020, the National Development and Reform Commission clarified the scope of new infrastructure construction for the first time, and blockchain was included. As a "trusted technology", blockchain and finance are naturally coupled. The characteristics of decentralization, no prior trust, code-based operation, and autonomy have changed the trust model of traditional finance (Liqing Zhang and Tong Wu, 2019), it also brings us from the Internet of Information to the Internet of Value.

Since the birth of Bitcoin in 2008, people at home and abroad have conducted continuous discussions on the application of its underlying technology of blockchain. Their researches are mainly divided into three layers of progress: Blockchain 1.0, Blockchain 2.0, and Blockchain

3.0. In the stage of Blockchain 1.0, Researches focus on digital currency, such as the attributes of private digital currency (Kaponda, 2018), risk (Cheah & Fry, 2015), supervision (Guofeng Sun and Shi Chen, 2017), and the concept of legal digital currency (Shoaib et al., 2013), specific form (Koning, 2017), economic impact (Qian Yao, 2019), etc. In the stage of Blockchain 2.0, the combination of smart contracts and digital currency has developed more financial application scenarios. Didi Xu (2019) found that blockchain technology can play an important role in promoting supply chain finance in terms of smoothing information, coordinating subjects, and controlling risks. Yueqiang Zhao et al. (2020) believe that the use of blockchain technology, especially digital currency Application can promote the formation of a new type of Cross-border payment system and make transactions equals settlement. Under the application of artificial intelligence, blockchain, cloud computing, big data and other underlying technologies, the insurance industry has formed application scenarios such as smart insurance, smart risk control, and automatic claims settlement, which has significantly improved the development quality and management efficiency of the insurance industry and service capabilities (Lei Zhou et al., 2020). Chao Zhou (2020) studied loan issues from the perspective of behavioral finance and found that blockchain technology can help improve behavioral deviations in the loan process, cut costs, and promote effective loan allocation. The application of blockchain technology in the securities market is still in the initial development stage, but in the medium and long term, it will have a significant impact on the securities market (Chenxi Zhai et al., 2018). The blockchain 3.0 stage is the era of intelligent Internet of Things. Those related scholars have jumped out of the financial field and explored decentralized applications in various industries, such as medical care (Tengfei Xue et al., 2017), logistics (Wen Liang and Junfang Si, 2019), government affairs (Lin Xu and Guang Yuan, 2020) and other non-financial scenarios, the outbreak of COVID-19 in 2020, to a certain extent, also promote the use of blockchain in epidemic management.

The existing literature has important reference value for follow-up research. However, a high percent of scholars is more on the feasibility of blockchain technology application scenarios, and there are few articles on the specific implementation methods of the actual application of blockchain in the financial field. Nowadays, a flock of countries are arranging the development of blockchain technology, so in the financial field, how is the progress of the application of blockchain technology in various countries? How to use blockchain technology to empower finance? How to learn from the experience of relevant countries to promote the innovative development of China's financial industry? There is little research on these issues at present, and further discussion is needed. This article takes "application status-international comparison-policy recommendations" as the analytical framework, and examines the application status of Blockchain-enabled finance from the highly centralized lending scenarios, securities scenarios, Cross-border payment scenarios and insurance scenarios, in order to further promote the implementation of blockchain technology in the financial field in China, and then to promote the development of the real economy.

2. The International Practice of Blockchain Empowering Financial Scenarios

The core of finance lies in the exchange of value across time and space (Zhiwu Chen, 2019). The financing of funds needs to be based on credit. Cross-space financial transactions have spawned a group of centralized financial intermediaries to maintain credit mechanisms. However, with the increase in the activity of financial transactions, increasingly large centralized institutions need to spend a lot of manpower, material and financial resources to maintain the operation of finance, which hinders the development of finance to a certain extent. However, the blockchain technology which is decentralized and anonymous bring new outlets for financial development.

In the practice of using blockchain technology to empower finance, some countries or regions have been more successful, already promoting the process of decentralized finance, and continuing to maintain a good development trend; there are also cases of failure in practice. The following part will introduce the application status of blockchain technology in various countries in lending scenarios, securities scenarios, insurance scenarios and Cross-border payment scenarios, and select more typical lending products for analysis.

2.1. Lending Scene

Lending is the most traditional business of a bank. Each loan requires pre-loan investigation, mid-loan review and post-loan management. There exist disadvantages such as cumbersome transaction process, long review period, and management failure. The consensus mechanism, smart contracts, and asymmetric encryption technology of blockchain can simplify loan procedures, control loan risks, and monitor loan processes, thereby better satisfying the needs of borrowers. Nowadays, most of the scenarios that use blockchain to empower loans use encrypted digital currency as a bridge currency to borrow, mainly including syndicated loans, securities lending, and encrypted currency loans.

Syndicated loan. Loans Synaps, BBVA, Fusion LenderComm use the blockchain technology to enabling syndicated loan scenario earlier, Synaps Loans Company, push the proof of concept in eight months, so that made taking 20-30 days to complete loan transaction shorten to three days; BBVA, together with BNP Paribas and Mitsubishi UFJ Financial Group, issued the world's first blockchain-based syndicated loan. In the future, the business of the blockchain platform Fusion LenderComm will be expanded to simplify secondary market transactions for syndicated loans, in order to create a more active and liquid market.

Securities lending. At the beginning of 2018, Credit Suisse and ING used HQLAx's securities lending application to complete a real-time securities lending test based on a real business environment. In that case, market participants can redistribute their collateral by exchanging the ownership of token securities on the Corda platform, eliminating the need for underlying securities to move between users, which eliminates settlement barriers and improves guaranteed liquidity.

Cryptocurrency loans. Encrypted currency loans are the most active scenario in digital loans. BlockFi, Bitbond, Bancor, Compound, Maker dominate the loan market, and because countries have not launched legal digital currencies, encrypted digital currency loans are all based on private digital currencies. the liquidity and easy-to-verify features of encrypted digital currency make the loan approved within a few minutes, which greatly reduces the heavy credit check before the loan, the mortgage evaluation during the loan, and the liquidation process after the loan.

BTCJam is the first successful Cross-border P2P lending service company. It used to provide bitcoin loans to more than 120 countries, but it ceased operations in 2017 under the regulatory pressure of the United States. It was once the world's largest blockchain lending company, BitLending Club was the same with BTCJam. By contrast, Bitbond, also established in 2013, is more successful. Bitbond is a company that provides loans to small and medium-sized enterprises based on blockchain technology and is approved by the German regulatory agency BaFIN. The company's platform operates is shown in Figure 1. The borrower creates an account on the platform, submits business account and other information for credit evaluation, and submits a loan application. The lender can provide part or all the loan after seeing the borrower's demand on the platform. For 60% of the enterprise's needs, the borrower can obtain Bitcoin or Ethereum funds, which can be exchanged for legal currency according to their own needs. For lenders, the whole process is free and can benefit from lending. For borrowers, a 0.5% activation fee and an interest rate of 7.7%-25% need to be paid, and a delay fee will be paid if the repayment is delayed due to maturity.

Different from the traditional lending business, under the use of Bitcoin blockchain technology, the Bitbond platform is unique in the following three points: First, its own geographical advantages. Bitcoin does not rely on the government and Cross-border transactions are simple, so the platform attracts borrows from all around the world. at present, the platform has provided more than 1,300 loans to more than 80 countries from borrowers all over the world, and it is estimated that the total loan amount will reach 1 billion euros in 2022. The second is it can simplify loan procedures and reduce transaction costs. The platform completes the review of the borrower within 15 minutes and sets the credit rating of A-F, which can provide loans to SMEs in as little as 30 minutes. The introduction of smart contracts makes all payments automatically collected in accordance with the agreed timetable, which control loans risk. The third is to ensure the privacy of customers. The application of asymmetric encryption technology in lending can ensure the authenticity of transactions while protecting the privacy of users.

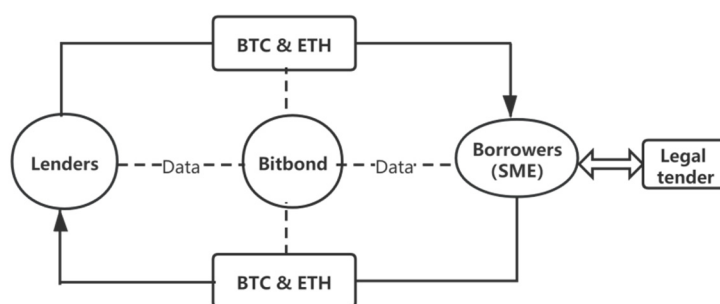


Figure 1. Bitbond platform operation mode

2.2. Securities Scene

The application of blockchain in the securities market can be divided into two major types^①: One is to use blockchain technology to realize information on the chain and ^①Quoted from <https://www.tianfucaijing.com/blockchain/168224.html>. the issuer's participants on the chain, thereby reducing information asymmetry; the second is to use blockchain technology to empower basic facilities of the securities market, and thus the services and securities registration and securities clearing links, The following part is mainly showing the typical applications of the revolutionary second type.

Securities issuance. Santander, Societe Generale, and Daimler AG all via the Ethereum blockchain to issue corporate bonds. Among them, Santander has a good record of the entire process, through investor wallets and issuer wallets. If bonds are issued on the blockchain in the dual-token process, the investor wallet converts the received currency into tokens, and the issuer wallet converts the tokenized currency received by the investor. Each link is digital, automated, and on-chain. This will reduce the cost of issuance and improve operational efficiency. In the future, Santander will be involved in the issuance of bonds in the secondary market.

Securities trading. As early as 2015, the United States has begun to promote the use of blockchain equity market, and Nasdaq launched the equity trading system-Linq system, becoming the first product to digitally manage asset transactions through a blockchain platform. In response to technical issues such as low transaction frequency, data loss, complicated processes, insufficient liquidity, and illegal operations such as black-box operations in the private equity market, the Linq system provides a "blockchain + equity" solution.

Securities settlement. Germany has been exploring the application of blockchain technology in the securities field since 2015. Recently, the blockchain technology-based securities settlement function prototype launched by the German central bank Deutsche Bundesbank and Deutsche

Börse is still in Concept research stage. In contrast, the practice in the United States is quite effective. Paxos is subject to the US Securities and Exchange Commission (SEC), the regulation block chain infrastructure platform. securities settlement service of Paxos is the first real-time application of blockchain technology in the U.S. stock market. From the basic settlement of backlog stocks via the blockchain to the settlement of stock transactions on the same day, a new market infrastructure has been built. in the future, Paxos is committed to becoming the second U.S. clearing agency after DTCC, to use digital methods to facilitate the payment and transfer of securities on the exchange. In addition, the Deutsche Börse, the Tokyo Stock Exchange, the Canadian Stock Exchange and the Australian Stock Exchange are also actively preparing blockchain trading systems. The Deutsche Börse has completed a pilot program for securities settlement based on blockchain and launched the prototype of the securities settlement function of blockchain technology.

2.3. Cross-border Payment Scenarios

For a long time, virtual currency platforms, financial institutions, regulatory agencies, and traditional Cross-border payment institutions have been exploring the application of blockchain in Cross-border payment scenarios. The mode is mainly to make Cross-border payments through intermediate tokens, and tends to issuing its own platform's stable currency as an intermediate token. Refer to Table 1 for details of the usage in various countries.

Table 1. Application status of blockchain in Cross-border payment scenarios

Subject type	Institution	Time	Research status & Practices
Regulatory authorities	European Central Bank	2016.09	Jointly launched the Stella project with the Bank of Japan
	Bank of England	2017.07	Jointly develop the legal digital currency system RScoin with the University of London, UK
	Singapore Monetary Authority	2020.07	Carry out the fifth phase of the Ubin project
Traditional cross-border payment	VISA	2015.11	Payments using the Bitcoin blockchain network
	SWIFT	2017.01	Explore the deployment of open source HyperLedger technology to carry out cross-border settlements in a private chain
Virtual currency platform	Ripple	2012.01	Developed Ripple Consensus Ledger and launched Ripple Coin
	uphold	2015.01	Explore cross-border payment in digital currency
	Veem	2015.01	Send and receive payments in local currency for small and medium businesses via blockchain
	Circle	2017.06	Announced to provide users with zero-cost cross-border transaction services
	Facebook	2020.04	Release Libra White Paper 2.0
Financial Institutions	UBS Group	2015.11	Jointly develop a blockchain technology settlement system with 13 financial institutions including Barclays Bank, Nasdaq, and ING
	IBM	2017.10	IBM announced the launch of a cross-border payment blockchain network, which provides real-time clearing and settlement for cross-border payments
	R3 Blockchain Alliance	2017.11	Establish a cross-border payment platform based on the Corda technical framework
	JPMorgan	2019.02	Announced the launch of the settlement project JPM cion based on Quorum platform
	SCB	2020.01	Thailand Siam Commercial Bank (SCB) and Ripple collaborate to create low-cost cross-border payment applications

Innovation of virtual currency platform. Circle is the first digital payment platform involved in Cross-border payments. At first, Circle used Bitcoin as a bridge to exchange legal currencies to realize multi-currency global real-time settlement. However, the price of Bitcoin fluctuates greatly, which is not conducive to Cross-border payment transactions. In 2018, Circle launched USD Coin (USDC), a stable currency pegged to the U.S. dollar. It has always ensured the liquidity of one U.S. dollars to one USDC, and Supervised by U.S. supervision. Therefore, the circulation of USDC has exceeded 27.5 billion in only three years. The U.S. dollar, which will enable Circle to gradually realize the transformation from a digital payment platform to a virtual currency bank that reserves USDC. Ripple is a benchmark enterprise in the application

of blockchain Cross-border payment, and has developed two Cross-border payment models based on Ripple (XRP) and not based on Ripple. The Cross-border payment model that is not based on XRP connects and verifies inter-bank transactions through the Ripple network, and realizes the function of transaction as settlement, which optimizes the Cross-border payment process, improves the liquidity of funds, and reconstructs the credit system. Since encrypted digital currency is also in a regulatory blind zone, more than 200 companies connected to the Ripple network adopt the second mode as the mainstay. Facebook's currency conversion concept is like Ripple, the bridge currency is Libra, but there is no limit to the number.

Innovation of traditional Cross-border payment institutions. Driven by the new situation, new demands and new technologies, SWIFT and Visa, the traditional Cross-border payment financial institutions giants, have also carried out corresponding explorations. In November 2015, European Innovation Lab of Visa demonstrated a remittance application using the Bitcoin blockchain network to complete Cross-border remittances in the form of Bitcoin as an "intermediate token"; and then launched a new platform, VisaB2B, based on blockchain technology Connect in order to build a global business-to-business Cross-border transaction infrastructure for financial institutions. SWIFT announced the launch of a proof of concept in January 2017, exploring the deployment of open source Hyperledger technology. Unlike Visa that uses blockchain to build a new underlying service platform, SWIFT adopts a private chain to carry out Cross-border development Settlement which is based on maintaining the existing business boundaries.

Besides, the JPM Quorum blockchain network promoted by financial institutions is also a typical application. In October 2016, JPMorgan Chase launched Quorum, an enterprise private chain platform, and became the first mainstream financial institution to launch a blockchain platform. In February 2019, JPMorgan Chase announced that it would launch JPM Coin, which is for institutional users of JPMorgan Chase and has an unlimited amount and is not circulated in the secondary market. The role of JPM Coin is like the media role of XRP in online payments. One JPM Coin is equal to one U.S. dollar, which replaces legal tender to achieve real-time transaction settlement.

2.4. Insurance Scenario

The insurance industry which has high requirements for creditworthiness is an important part of the financial market. Traditional insurance business processes include R&D, underwriting, and claims settlement of insurance products. There are problems such as serious homogeneity competition of insurance products, high channel costs, and low overall efficiency (Dawei Zhao and Qian Du, 2020). Nowadays, the embedding of blockchain technology is subverting the insurance industry. Customizing professional insurance services for customers, carrying out automated underwriting, changing the profit model, reducing customer friction, and encouraging claims are the manifestations of the empowerment of insurance by blockchain technology, which will enhance mutual trust in insurance and achieve insurance inclusiveness. Among all insurance products, there are many insurance scenarios empowered by blockchain technology in various countries, as shown in Table 2. B3i, blockchain Alliance of Insurance, whose reinsurance application Hyperledger is the underlying technology, using a three-tier distributed ledger data structure and consensus algorithm to achieve data privacy and sharing integration. This is a relatively successful case. In addition, blockchain applications such as mutual insurance, property and accident insurance, and agricultural insurance are also being explored.

Table 2. Application status of blockchain in insurance scenarios

Type of insurance	Name	Year of establishment	Practices & introduction
Reinsurance	B3i	2016	Building a blockchain reinsurance platform based on Hyperledger technology
Mutual insurance	Dynamis	2012	Mutual subsidy unemployment insurance platform based on Ethereum to provide services for small and medium-sized enterprises
	Teambrella	2015	Peer-to-peer community insurance based on Bitcoin network
	Nexus Mutual	2017	The first blockchain originated mutual insurance product
	Cover Protocol	2020	A mutual insurance project built on the Ethereum network, using a dual-token operation mechanism
Property and accident insurance	Lemonade	2015	Non-profit financial technology insurance company using artificial intelligence and blockchain technology
	Etherisc	2016	Distributed insurance DApps construction platform, flight delay insurance, social insurance and crop insurance are its three main application directions
	Fizzy	2017	AXA, a French insurance company, launches a flight delay product based on the Ethereum blockchain
Agricultural insurance	Arbol	2018	Blockchain-based decentralized weather data provides weather parameter insurance
others	Safeshare	2015	Provide sharing economy insurance
	Unslashed	2020	Provide crypto asset protection insurance

Mutual insurance. Dynamis is a mutual subsidy unemployment insurance platform based on Ethereum to provide services for small and medium-sized enterprises. Once the company lays off an employee, the platform will verify the employee’s unemployment status through the social networking site LinkedIn and smart contracts, and perform automated compensation payments. Until the employee finds new job, the original insurance policy can be transferred to the new enterprise. Teambrella, Nexus Mutual, and Cover Protocol are also mutual insurance platforms. The users of Teambrella platform can spontaneously join friends and acquaintances to form small communities, and community members deposit funds into their personal Ethereum wallets, if members are in danger, the community members will vote to determine the amount of claims, And the average value of the claim amount is shared by the members of the group. So, it is required that there exists a certain degree of trust between community members, and the more the number, the better. Unfortunately, Teambrella has suspended business. Nexus Mutual is the first company to operate the traditional insurance "mutual protection" model in DeFi. The platform is built on the Ethereum public chain, adopts a fund pool model, and introduces a "decentralized risk assessment" mechanism to allow a group of Smart contract security audit experts participate in the assessment of specific risks by staking tokens. Members with correct risk assessment and claim assessment will be rewarded with tokens, otherwise a certain amount of tokens will be deducted as punishment to achieve the purpose of self-management. In the future, Nexus Mutual will provide encrypted wallet protective sleeves, earthquake protective sleeves and more standard products. Unlike Nexus Mutual, Cover Protocol adopts a peer-to-peer model. However, due to the current disadvantages of high user participation thresholds, high token volatility, and inability to choose the insurance period, the user' traffic is not as good as the Nexus Mutual platform.

Property and accident insurance. Lemonade is a nonprofit financial technology insurance company that currently provides tenant insurance, landlord insurance, life insurance and pet insurance products in the United States and Europe. Different from traditional insurance companies, Lemonade uses artificial intelligence and blockchain technology to determine the appropriate rate, and uses smart contracts to automatically settle claims, reducing the workload of cumbersome authentication in the insurance business process, and obtaining claims within three minutes; in addition, the company operates in different ways, Lemonade

willing to pay reparations, they charge a flat fee, after paying claims and expenses, the remaining premiums to charity (excluding life insurance), therefore it will reduce conflicts with clients, and pay claims quickly without worry. At present, Lemonade's customer base has exceeded 1 million. The world's largest insurance group, AXA, also launched Fizzy, a flight delay insurance product based on the Ethereum area. This is a parametric insurance. When a flight is delayed for 2 hours, it triggers a smart contract for fast payment. Later, due to low commercial applicability AXA closed the Fizzy website in November 2019.

Other types of insurance. Agriculture is the industry most affected by weather. Arbol, American insurance technology platform, provides farmers with insurance against weather risks by providing users with parameter contract insurance based on weather data through technologies such as big data, smart contracts, and machine learning. For claims settlement, the Arbol platform will automatically and quickly pay users within a week. At present, in addition to the agricultural sector, the Arbol platform also provides weather insurance in the energy and maritime sectors. The insurance start-up Safe share is committed to the development of insurance services for the sharing economy, such as providing insurance for shared office spaces; Etherisc, the German distributed insurance platform, specializes in the development of multiple types of insurance for insurance companies. The insurance products currently are officially displayed include crypto wallet insurance, there are 6 types of mortgage protection insurance and community insurance for crypto-supported loans; there are also insurance platforms based on cryptocurrency, such as the Unslashed platform in the United Kingdom and the Opyrn platform in the United States. However, the development is relatively slow due to the three high restrictions: customer purchase threshold, regulatory threshold and risk control threshold.

The integration of blockchain technology and the insurance industry has a certain effect in improving the efficiency of insurance transactions, reducing costs, and enhancing mutual trust in insurance. However, the use of encrypted digital currencies with unstable prices as a bridge makes the insured increase the risk of currency fluctuations, this may run counter to the original intention of insurance.

3. Conclusion

Blockchain has the characteristics of transparency, security, and high efficiency, and has great empowering potential and transforming power in the financial field. The article summarizes the blockchain empowerment applications of various countries in the four major scenarios of lending, securities trading, Cross-border payment and insurance, and analyzes the typical exploration progress of various countries, and draws the following conclusions: First, it is found that because the legal digital currency of various countries has not yet been launched, blockchain technology empowers financial scenarios to use encrypted private digital currencies as bridges for value transfer and financial transactions, which promotes the cautious and slow development of financial scenarios, and also brings certain risks due to the fluctuation of private digital currencies; second. countries actively embrace blockchain technology, which formed a development model led by the United States and dominated by financial technology companies, also, financial technology companies that actively embrace regulatory agencies are more vigorous; third, blockchain technology is still in the exploratory stage, industry standards have not yet been established, and blockchain technology is short in computing power, transaction performance, scalability, and so on which also limit the in-depth development of financial scenarios.

China encourages the compliant development of blockchain finance, and gradually forms a three-dimensional integration trend between financial institutions, financial technology companies and technical service providers. However, there are not many successful cases of

Blockchain-enabled financial scenarios in China, and the technology is not yet mature, the industry pattern has yet to be formed. In order to promote the healthy integration of China's blockchain industry and financial industry, this article suggests that China should learn from the aforementioned international experience, and the following measures should be taken:

First, speed up the pilot implementation and application of legal digital currency, and build a digital currency bridge with stable value for the development and application of financial scenarios. Since 2017 our country ban Bitcoin transactions, along with Bitcoin rose fell, three associations jointly issued on guard against the risk of virtual currency speculation trading announcement between legal currency and virtual currency and virtual currency exchange will be carried out Related transactions are classified as criminal activities in 2021. However, simply suspending certain businesses can indeed eliminate short-term concerns, but cannot achieve long-term effects, For this, China should create an environment for the development and application of blockchain in financial scenarios to build a digital currency bridge with stable value.

Second, actively join or form a blockchain technology research alliance to further deepen international cooperation. Cross-border payment involves multiple transaction entities such as domestic and foreign regulatory agencies, financial institutions, and enterprises, which needs to cooperate with the outside world, strengthen exchanges with foreign financial institutions, regulatory agencies, and blockchain organizations, and carry out multi-form demonstration project cooperation to improve International discourse power and rule-making power to realize the value output of blockchain technology innovation and financial product innovation.

Third, financial technology companies should take the initiative to comply with current regulatory regulations and rules and compete in a fair and orderly manner. On the one hand, financial technology companies are often important partners of traditional financial institutions' technology research and development, and the technological innovations they bring will be diverted to traditional financial institutions, which greatly increases the difficulty of risk management; on the other hand, the current specific application scenarios are inadequate, and there are few blockchain application standards or specifications, the industry technical standards have not yet been formulated too. Therefore, financial technology companies should learn from international experience and carry out technological innovation and product research and development based on actively embracing supervision.

References

- [1] Chen Zhiwu. "The Logic of Finance" [M]. Beijing: International Culture Publishing Company, 2019: 2~3.
- [2] LIANG Wen, SI Jun-fang. Research on Innovative Coupling Development of "Blockchain + Logistics": Based on Shared Economy[J]. Journal of Shanghai University of International Business and Economics, 2019, 26(01): 60~69.
- [3] Sun Guofeng, Chen Shi. U.S. virtual currency supervision and reference[J]. China Finance, 2017, (19): 82~84.
- [4] Zhao Dawei, Du Qian. Research on the insurance industry under the background of artificial intelligence [J]. Financial Theory & Practice, 2020(12): 91~100.
- [5] Xu Didi. Application Research of Blockchain Technology in Supply Chain Finance[J]. Southwest Finance, 2019(02): 74~82.
- [6] Xue Tengfei, Fu Qunchao, Wang Cong, Wang Xinyan. Research on medical data sharing model based on blockchain [J]. Acta Automatica Sinica, 2017, 43 (09): 1555~1562.
- [7] Xu Lin, Yuan Guang. Blockchain: an effective solution to digital predicaments in governmental governance in the era of big data[J]. Journal of Shanghai University (Social Science Edition), 2020, 37(02): 67~78.

- [8] Yao Qian. Analysis of the economic effects of legal digital currency: theory and empirical research [J]. Studies of International Finance, 2019(01): 16-27.
- [9] Zhang Liqing, Wu Tong. The Application of Blockchain in Finance: Theoretical Basis, Practical Difficulties and Solutions[J]. Reform, 2019(12): 65~75.
- [10] Zhao Yueqiang, Wei Lizhu, Chen Xiao, Lei Jian. Blockchain technology and Cross-border payment system: development status, trends and policy enlightenment [J]. New Finance, 2020(10): 44~48.
- [11] Zhou Lei, Qiu Xun, Liu Jing. Application of InsurTech in promoting high-quality development of the insurance industry in the new era[J]. Southwest Finance, 2020 (02): 57~67.
- [12] Zhou Chao. Blockchain+Bank: Constructing a new model of loan decision-making--research from the perspective of behavioral finance[J]. New Finance, 2020(01): 43-48.
- [13] Zhai Chenxi, Xu Wei, Xu Kun, Yuan Kang, Guo Lijing, He Lei, Liang Chen. Research on the Application and Supervision of Blockchain in China's Securities Market [J]. Financial Regulation Research, 2018 (07): 33~54.
- [14] Cheah ET, J Fry. "Speculative Bubbles in Bitcoin Markets? An Empirical Investigation into the Fundamental Value of Bitcoin" Economics Letters[J]. 2015, 130: 32 ~36.
- [15] Kaponda K. Bitcoin the 'Digital Gold' and its Regulatory Challenges[R]. SSRN Working Paper, No. 31 23531, 2018.
- [16] KONING J P. Evolution in cash and payments: comparing old and new ways of designing central bank payments systems, cross -border payments networks, and remittances[R]. R3 Reports. 2017.
- [17] SHOAI B M, ILYAS M, KHIYAL MSH. Official digital currency[C]. Eighth International Conference on Digital Information Management (ICDIM) .IEEE, 2013: 346~352.