Blockchain Application in Green Finance

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Abstract: In recent years, in order to improve the construction of China's green financial system and promote the development of green financial institutions and enterprises, China has promulgated a series of laws and regulations. As a new and thriving technology after the popularity of the Internet, the blockchain has been proven to be promising in finance, food processing, and pharmaceuticals. The decentralization, transparency, and openness of the blockchain make it possible to explore possibilities in various fields. Applying the blockchain to the green finance field can solve the problems related to processing to a certain extent, and construct a platform that is more fair, effective and institutionalized for green finance, and promote the further development of green finance and industrial upgrading. To play the advantages of the green financial industry.

1. Introduction

"Quasi-technology" is one of the basic technologies. Essentially, digital information is divided into blocks and then connected through chains. The blockchain originated in the paper published by Zhong Bencong in 2008, "Bitcoin: A Peer-to-Peer E-Cash System". He first proposed the concept of blockchain, including blocks and chains. When it was widely used, its name became a blockchain, and it was not merged into the blockchain until 2016.

While foreign financial institutions continue to apply blockchain technology to settlement transactions, insurance audits, etc., major financial institutions are also exploring the way to the application of blockchain. In the insurance industry, on March 8, 2016, Sunshine Insurance used the blockchain technology as the basis, and designed the “Sunshine Bay” points, enabling users to realize blockchain point redemption. The distributed structure of the blockchain has the characteristics of decentralization, transparency, anonymity, and irreversible modification, which can enable the system to run high-cost and low-cost core technologies to realize low-cost value transfer of financial assets on a global scale.

2. Related research

The report of the 19th National Congress pointed out that it is necessary to vigorously develop green finance and promote green development. Compared with traditional finance, the most prominent feature of green finance is to emphasize the coordinated development of financial activities and environmental protection and ecological balance [1]. The current green financial policy system of green finance should strengthen fiscal policy, environmental protection tax, pollutant discharge, performance evaluation, Reforms in financial market infrastructure construction and green insurance[2] Some scholars pointed out that the development of green finance needs to continuously improve the level of environmental information disclosure and transparency of green financial markets, promote mandatory disclosure of environmental information[3] and use new Internet technologies. It is one of the important means to achieve transparency.

From the perspective of literature, since blockchain technology is currently in the growth stage, technology and theory are still not perfect, and there are not many researches on it. In terms of categories, there are mainly Internet finance, technology finance, and supply chain finance. From the perspective of direction, The initial focus of the blockchain is mainly in the payment field. The basic mode of the traditional transaction payment service is the central bank as the transaction center, based on the trust-based centralized data interaction mode, and the combination of the blockchain is a brand new decentralization. Model [4]; for cross-border payment, combined with the decentralization advantage of blockchain can effectively overcome the traditional cross-border payment business Bottlenecks such as low efficiency, high cost, low liquidity, and small payment range [5], in addition to research in the field of payment, there are also research in legal currency, small and micro enterprise credit, and precision poverty alleviation. In terms of legal currency, Wang Wei mainly discusses the feasibility of blockchain legal tender and the possible changes in the payment system, monetary policy and financial supervision under the system[6]; In terms of credit, Zhang Xiaomei believes that through the blockchain blockchain financial model, blockchain technology can be introduced into the credit market to achieve information symmetry, which fundamentally alleviates the current credit rationing problem for small and micro enterprises[7], in terms of precision poverty alleviation, Feng Guo and Wu Shuang believe that the financial significance of blockchain can create more opportunities for precision poverty alleviation and effectively solve existing problems, but in application There is still a need to strengthen technical supervision and improve the legal system[8].

3. Blockchain characteristics and application areas

1) Decentralization: Decentralization means that the obligations of each node are equal, and each data block in the system is maintained by the whole.

2) Openness: Openness means that in addition to the personal information of both parties in the blockchain, other information, such as transaction records, will be open to the users in the system, and can be viewed through the corresponding port.

3) Autonomy: Autonomy means that all nodes of the entire system are free to exchange data in a trusted environment, so that trust in "people" is turned into trust in the machine, and any artificial intervention is not feasible.

4) Information cannot be tampered with: Information cannot be modified. This means that once the information is verified and added to the blockchain, this information will be permanently stored in the system. Because no modification to a single node is ineffective unless more than half of the nodes in the system can be controlled simultaneously.

5) Anonymity: Anonymity means that data interaction does not need to be trusted, so the behavior in the blockchain does not have to be known.

If blockchain technology is applied to the field of green finance, it can be imagined that it can improve its credit field, expand the scope of green financial products, lower the threshold of green finance, derive green smart contracts and solve liquidation in green finance. problem.

The current credit model of commercial banks' financial institutions still relies mainly on the shared credit data of the central bank's credit information center. This situation will change with the development of blockchain technology. For example, the "Cuiyang" blockchain "Development and Application White Paper" released on December 31, 2016 aims to create a blockchain application demonstration zone, providing a wide range of blockchain application scenarios, including government affairs, people's livelihood, business, etc. The development of the field blockchain has laid a good technical support, especially in the field of green poverty alleviation.

4. Blockchain lowers the threshold of green finance

In recent years, domestic green finance has developed rapidly, and many new products have been introduced. But most green financial services are targeted at large companies. In general, for green SMEs, because they are generally small in scale, most of them have problems such as difficulty in financing and high cost. At the same time, the current financial providers of green finance are mainly

the government, so it is difficult to inject private capital into the high threshold. Compared with traditional computer rooms, distributed financial storage infrastructure using blockchain technology requires only 1% of construction costs and 5% of operating costs. Currently, all modern cloud computing models are unable to compete with them. This is in line with the original intention of green finance to reduce resource consumption and cost investment.

In the PPP mode of green finance, the implementation time of green finance generally involves a longer period. This requires a mechanism to ensure the long-term effectiveness of the project contract."Quasi" can solve this problem of credit continuity. “Reach” also provides intelligent contracting capabilities that allow you to set the appropriate cycle and other return details during project setup fees and automatically execute when the project setup fee expires, giving participants confidence that their investment is not Will be affected by other factors.

The advantage of the blockchain application for the payment of green finance is that it can realize direct transactions at both ends without going through intermediate institutions such as banks. In this way, we can imagine that the payment of green financial transactions will be very fast and efficient, and a more favorable payment process can be realized by reducing unnecessary programs in traditional programs. External payments will be more profitable, and it is undoubtedly the establishment of a global payment system. Then green finance will not be single-line, one-sided. It can form a cross-border regional financial product that many financial institutions can cooperate with. For example, the ripple payment system in the cross-border payment field (providing a foreign exchange transfer plan based on the "transfer" agreement between commercial banks and other financial institutions in the Canadian Union) is a good example.

Table.1. Comparison of application areas of blockchain

application	Original drawback	Utilizing the characteristics of blockchain	effect
Credit field	Disclosure information is one-sided, untrue, and cannot be quantified.	Information is transparent and cannot be tampered with Distributed shared data	Overcome the shortcomings of incomplete information, untimely data updates, and high costs.
Green financial products	Product innovation is scarce and the market is imperfect	Shared transparency	Reduce information asymmetry, reduce risk, and extend products to financial areas such as insurance.
The threshold of green finance	Traditional computer room costs are high Information asymmetry	Shared transparency Decentralized sharing mechanism	Reduced management difficulty and management costs Improve system security and privacy Autonomy of financial equipment
Smart contract	Trust problem is difficult to solve The process is cumbersome and complicated	Shared ledger	Optimize business processes and operations
Payment settlement	Process takes a long time High cost of use	End-to-end Distributed Systems	Optimize business processes and operations Reduce capital acquisition costs

5. Conclusion

With the development of blockchain technology, personal credit status, transaction records and transaction information will be encrypted or uploaded to the computer without being encrypted, and stored in the network of the blockchain, which cannot be tampered with. In this way, it is conceivable that future issues concerning the user's credit field, green finance's own products, thresholds, contracts and payment settlement will be improved. Since then, the application of blockchain has not only reduced the risk of market failure, but also made green insurance management easier. The blockchain can conduct automatic compliance review of environmental and social contracts. Customers who fail to meet the requirements or meet the basic requirements will be automatically upgraded according to the review process and face more stringent supervision. Effectively solve the difficulties and pain points in the large amount of loans in the transaction proof, tracking, real-time viewing and other aspects.

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