

The Impact of Digital Finance on the Efficiency of Urban Green Economy

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Abstract: *Digital finance is a new financing model for small and medium-sized enterprises and individuals. In recent years, with the rapid development of big data, cloud service technology, and artificial intelligence (AI) technology, it has to some extent promoted the efficient development of urban green economy. From the perspective of applying digital finance to urban enterprises and individual consumers, this study explores the important role of digital finance in enterprise investment and financing services, industrial structure upgrading, technological innovation, and the promotion of personal credit, consumption patterns, job employment, and environmental participation activities. Based on this, the impact of digital finance on the operation and efficiency improvement of urban green economy is obtained, and the problems of inadequate digital transformation and low coordination level in different industries of the city's economy are solved.*

Keywords: Digital finance; Urban green economy; Development efficiency; Influence.

1. INTRODUCTION

Digital finance, as one of the important driving engines for the development of modern green economy, can assist in the green and high-quality development of urban industrial economy and resident consumption economy through the transformation and upgrading of digital service platforms, expansion and improvement of financial service projects. Scholar Wang Renzeng; Zhan Shuke focuses on the direction of high-quality development of enterprise economy, studying the combined impact of digital inclusive finance and green finance on industrial and technological transformation and development; Li Ping; Wang Ruqi and others explore the positive impact of digital finance on residents' consumption behavior and the development of green consumption economy from the perspective of urban residents' green consumption. This study combines urban industrial economy and green consumption economy, and applies digital inclusive finance to carry out network innovation in enterprise financing and development models, resident credit and consumption behavior, enhance the role of digital financial support mechanisms and transmission channels in promoting green economic development, and ensure the improvement of urban green economic efficiency and quality.

2. THE POSITIVE IMPACT OF DIGITAL FINANCE ON IMPROVING THE EFFICIENCY OF URBAN GREEN ECONOMY

2.1 Reduce the Financing Costs of Urban Enterprises and Promote the Rational Allocation of Social Finance

Digital inclusive finance is another important financing model besides government financial funds and commercial bank credit funds, providing more concise and efficient credit verification and lending services for financing activities targeting small and medium-sized enterprises, individuals, or consumer entities. Compared with credit services of commercial banks, digital inclusive finance does not have too high limits on enterprise scale and growth, enterprise credit qualification, proportion of independent directors, fixed asset ratio and other assessment indicators. It is faster and safer in online crowdfunding, P2P online lending, and Internet wealth management business management, and can meet the demand of urban SMEs operators and individual users for credit financing services.

A digital inclusive financial service platform built on artificial intelligence technologies such as C/S (Client/Server) or B/S (Browser/Server Service costs).

2.2 Promote the Upgrading of Urban Enterprise Industrial Structure, Technological and Service Innovation

The industrial agglomeration in different regions such as the eastern and central western regions is strong, while

the efficiency of financial financing and capital supply and demand resource docking in economically underdeveloped areas is not high, resulting in significant regional industrial structure heterogeneity and financing constraints. According to scholar Wang Renzeng; Zhan Shuke [1] conducted a survey on panel data from 32 provinces and found that digital finance has a stronger impact on underdeveloped areas, industrial manufacturing, and other secondary industries. By providing moderate digital financial support to meet the needs of enterprise industrial upgrading, it will drive the transformation of low tech and low efficiency industrial structures towards higher levels, and have a more significant impact on the added value of the secondary industry compared to the tertiary industry. Especially in recent years, the rise of digital inclusive financial capital led by Internet enterprises can not only provide support for the industrial structure transformation, technology and service innovation of regional SMEs, but also help enterprises to change their internal financial audit and management accounting decision-making methods by introducing the networked fund payment and management model into enterprises, promote the cost reduction and efficiency increase of enterprise financing, post loan management and financial fund management by using the digital payment service system, and realize the transparency and traceability of industrial fund financing, fund use flow, and financial service costs.

2.3 Promote the Application and Development of Green Credit and Green Consumption Economy for Urban Residents

The Internet financial application program developed by relying on Java and C++ assembly language has paperless, wide coverage, low energy consumption and other characteristics, which itself belongs to the category of green economy. The digital financial service platform can be based on big data and cloud computing technology, blockchain and other artificial intelligence technologies, and follow the collection process of "Scribe log collection Kafka file import Storm cluster deployment user sample construction model parameter update" to collect and integrate information on residents' personal credit and consumer payment services to construct user "self portraits". Based on the "self portraits", innovative green credit products, convenient payment models and consumer recommendation services can be developed, and digital finance can be applied to e-commerce scenarios such as B2C (Business to Consumer), C2C (Consumer to Consumer), O2O (Online to Offline), etc., providing financial services for residents' customers with green credit and small non confidential payments, fully unleashing the potential of market-oriented personal consumption and green consumption economy. Promote carbon reduction and consumption reduction in urban green economy [2].

3. THE NEGATIVE IMPACT OF DIGITAL FINANCE ON IMPROVING THE EFFICIENCY OF URBAN GREEN ECONOMY

3.1 Insufficient Implementation of Digital Financial Regulations Serving the Development of Urban Green Economy

In 2016, the Ministry of Finance and seven other ministries jointly issued the "Guiding Opinions on Building a Green Financial System", proposing to "build a green financial system that is in line with the domestic economic development situation". Subsequently, in March 2020, the National Development and Reform Commission and the Ministry of Justice issued the "Opinions on Accelerating the Establishment of a Green Production and Consumption Regulatory and Policy System", pointing out that "promoting green production and consumption is an important part of China's ecological civilization construction and high-quality development" [3].

However, in terms of the implementation of laws and regulations, relying solely on the top-level system design of China's characteristic green finance cannot effectively ensure that digital financial funds led by private capital are applied to low-carbon production industries, green energy industries, and clean production directions, resulting in a low degree of integration and development of digital financial services with urban green energy industries and low-energy enterprises. On the other hand, the construction of a multi sector collaborative supervision mechanism for digital finance is not perfect. First, the legal and regulatory mechanisms serving the supervision of digital financial enterprises are not comprehensive. The State Financial Supervision Administration and local regulatory bureaus replace the CBRC in implementing the Internet financial supervision responsibilities, and there is a lack of detailed management systems for credit loans, funds, bonds and other different digital finance; Secondly, the regulatory enforcement of digital finance towards the green economy is not strict, resulting in low penalties for illegal activities of participating digital finance enterprises and low business execution efficiency, making it difficult to effectively curb the occurrence of illegal financial transactions and violations.

3.2 The Impact of Digital Finance on the Expansion of Urban Small and Medium-sized Enterprise

Industries and Credit Risks

Internet digital finance, as a supplementary means of government financial policies and commercial bank finance, can play the role of market subject when the government's subjective economic regulation fails, and achieve the goal of reasonable adaptation of social liquidity resources and provision of virtual financial services in cloud service centers. However, SMEs in central and western regions and underdeveloped regions have high industrial and operational risks. If digital finance is further applied to enrich the credit financing model of enterprises, it may lead to the improvement of industrial operation risks, credit and technological research and development risks of enterprises.

The economic foundation of small and medium-sized enterprises in cities in the central and western regions is weak, the level of total factor productivity allocation is low, and there is a certain network gap in the popularization and application of digital finance in various industries. If low-cost digital finance is used recklessly to provide credit services to enterprises with backward industrial structure and poor operating efficiency, it cannot timely alleviate and solve the problems of capital resource shortage and weak technological innovation encountered by enterprises. In most cases, it will even lead to enterprises squandering funds, misallocation and waste of resources, and some enterprises face bankruptcy risks in industrial operation and credit, which will have a negative impact on the efficient development of urban green economy.

3.3 The Uncertainty of Investment Direction in Digital Finance Hinders the Development of Green Economy Projects

Some enterprises in the city operate new energy projects and green economy service projects. However, the digital financial service activities relying on the Internet platform, to some extent, are also based on the development scale, operating profit, technical level and other factors of enterprises to provide matching credit financing services, which makes it difficult for some small-scale green energy projects to obtain digital financial investment. In recent years, digital financial services have been concentrated in the central areas of cities and the secondary industry. Local governments usually provide financial and tax policies, as well as commercial credit financing support for enterprises within industrial parks. Enterprises outside the industrial park rarely receive sufficient financial credit support, which suppresses the financial credit financing and green technology innovation activities of small and micro enterprises in the region, and cannot promote the comprehensive and coordinated development of digital transformation and green economy of urban enterprises [4].

4. INNOVATIVE STRATEGIES TO PROMOTE THE EFFICIENCY IMPROVEMENT OF URBAN GREEN ECONOMY FROM THE PERSPECTIVE OF DIGITAL FINANCE

4.1 Constructing and Implementing Digital Financial Laws and Regulations for the Development of Urban Green Economy

On the basis of the existing digital finance guidance system, green production and consumption service system, we will improve the detailed system of digital finance regulatory entities, funding sources, funding flow, and violation penalties, including accurately defining the concepts of digital finance and green finance, transforming some digital finance services into green finance products, and directing investments into energy-saving industries, clean energy industries, green transportation industries, green building industries, environmental protection industries, and other fields. Especially through the introduction of government laws and regulations and policy support, as well as the establishment of national level green development funds, commercial banks and private digital financial institutions are encouraged to join the ranks of green investment, which can guide the benign interaction and development of digital finance and green economy, and make digital financial product investment more beneficial to green small and medium-sized enterprises [5].

In addition, a digital finance supervision and management system was formulated and implemented, with the participation of local regulatory bureaus, enterprise managers, financial accountants and other subjects, to review and supervise the implementation processes of digital finance such as "guarantee, loan, prudent evaluation, simplified approval, and interest discount", and to strengthen the comprehensive and transparent information disclosure of digital finance credit, credit evaluation, and repayment, so as to avoid the potential risk problems of illegal operation of Internet financial enterprises and inadequate review of financial credit evaluation of urban

enterprises, and ensure the implementation efficiency of digital finance services in the development of green economy.

4.2 Implement Dynamic Differentiated Digital Financial Service Strategies for Different Enterprises

Compared to commercial bank loans, funds, or bond loans, digital finance has the non competitive and inclusive characteristics of financial capital. It can provide support funds for enterprise industrial upgrading and technological innovation through the reconfiguration of social liquidity capital, promoting the sustainable and healthy development of green credit loans and digital consumption services for urban residents.

In order to avoid the industrial operation risk and credit evaluation risk of urban SMEs' network credit, the Internet platform providing digital financial services can reasonably formulate the credit review indicators and standards of digital financial financing services and review the project implementation process according to the economic development of the city where the enterprise is located and the actual situation of enterprise industrial operation. One is to review the risk level of credit amount, loan purpose, and repayment ability of urban enterprises, reject their credit financing requests for urban enterprises with a large amount of borrowing and multiple instances of dishonesty, and hold relevant credit guarantors accountable; The second is to provide reasonable loan financing services for enterprises that have passed credit review and evaluation, with reasonable loan amounts and repayment periods. While solving the problem of insufficient funds for industrial investment and technological research and development, it effectively avoids the problems of financial capital waste and resource mismatch.

4.3 Optimize Digital Financial Services to Promote Personal Green Credit and Consumer Economy Development

Digital finance not only provides services for financing of small and medium-sized enterprises, but also is widely used in urban residents' credit and green consumption activities. Currently, the Internet financial service system, which is dominated by WeChat payment, Alipay, and Jingdong Finance, has been applied to most urban residents' personal credit and consumption payment service scenarios [6]. By developing more green consumption scenarios, financial credit and payment products, we aim to drive carbon reduction and emission reduction in urban personal consumption, digital financial service management, and increase participation in network intelligent services and utilization of green and clean energy. For example, taking the development and application of digital financial software such as Alipay and Jingdong Finance as an example, Alipay has developed functional modules such as Ant Forest, Baba Farm, Clean Your Plate Campaign, green takeout, package recycling, etc., which provide personal consumers with preferential services such as collecting water drops and payment deduction, encourage them to take public transportation, practice online payment, and practice the action of recycling old clothes and things, and improve the efficiency and level of urban green economy implementation. At the same time, in terms of providing green credit loan services in digital finance, comprehensive and systematic credit review, loan disbursement, and repayment services can be provided to individual residents in cities through scoring audits such as Sesame Credit and Huabei Credit. This will further update the city's green economy service model, improve financial transaction levels, and achieve stable growth and development of the city's macro market economy and green economy.

5. EPILOGUE

In summary, the digital financial service model based on online information platforms, through online financial user registration and real name authentication, submission of financial application materials, credit review and evaluation, loan disbursement and post loan management system construction, can minimize the credit loan threshold for enterprise industrial operations and save time and material costs for financial service provision. Therefore, introducing a digital financial service model based on big data and cloud computing technology, constructing a review and management mechanism for urban enterprise industrial structure risk assessment, industrial operation information assessment, and sharing, and opening various green financing channels such as credit loans, funds, bonds, etc. for enterprises or individuals can promote the transformation and upgrading of regional enterprise industrial structure, comprehensive improvement and innovation of industrial technology and service models, and enhance the promotion effect of digital finance on urban green economic efficiency.

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