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Digital Inclusive Finance from the Perspective of New Quality Productivity

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Abstract: In the context of today's digital and innovation driven era, digital inclusive finance, as an important model for financial service innovation, relies on technologies such as big data and cloud computing to provide more convenient and efficient financial services for users such as small and micro enterprises. However, its development still faces many challenges: the regulatory system lags behind the rapid innovation of financial technology, the application of technology is limited by insufficient infrastructure and security risks, there are obvious shortcomings in service coverage in rural and remote areas, and user trust is impacted by financial fraud and data privacy issues. This article proposes strategies to improve the regulatory system, break through technological bottlenecks, expand service coverage, and enhance user trust, based on the connotation of new quality productivity, in order to promote the high-quality development of digital inclusive finance in the new era, help economic transformation and upgrading, and promote social equity.

Keywords: Digital Inclusive Finance; New Quality Productivity Regulation; Innovation; Financial Service

1. Introduction

In the process of rapid socio-economic development, rapid technological changes are accelerating economic transformation. New quality productivity, this emerging key driving force for economic growth, has become the core force in reshaping industrial structure and economic operation mode [1]. Along with it, digital inclusive finance, with the help of digital technology, actively expands the breadth and depth of financial services, ushering in a promising new opportunity for development. The close combination of the two presents significant development potential in promoting stable economic development, enhancing social equity and justice, and many other aspects. But it cannot be ignored that on its development path, numerous obstacles have emerged one after another. Therefore, in-depth research and efforts to explore practical and effective solutions are of immeasurable significance for ensuring that the economy moves towards a high-quality development stage and striving to create a more inclusive and harmonious socio-economic environment.

2. Literature Review

2.1 Digital Inclusive Finance

Digital inclusive finance, with its innovation, utilizes digital technology to promote the widespread dissemination and convenient access to financial services. It effectively reduces the access threshold and financing cost of financial services, improves investment and financing efficiency and expands relevant channels through information technology means such as big data, mobile Internet, network communication and cloud computing. Digital inclusive finance enhances support for small and micro enterprises with controllable risks and affordable costs, providing convenient and secure financial services for people who are difficult to reach with traditional financial services [2].

2.2 New Quality Productivity

New quality productivity is an advanced form of productivity that is driven by innovation, breaks through traditional economic growth models and productivity development paths, exhibits high-tech content, high efficiency, and high quality, and conforms to the new

development concept. It has the characteristics of innovation, subversion, and openness [3].

2.3 Research Status

Domestic scholars have conducted multidimensional exploration around "digital inclusive finance under new quality productivity". At the level of the relationship between the two, digital inclusive finance cultivates core elements of new quality productivity through factor allocation effects, and meets its technological innovation needs through innovation support effects [4]. In terms of impact mechanism, digital inclusive finance can alleviate the mismatch of financial resources, enhance the human capital level of enterprises, and strengthen their innovation capabilities, thereby promoting the development of new quality productivity in enterprises [5]. Digital inclusive finance can not only directly enhance new quality productivity, but also indirectly promote its development by strengthening technological innovation capabilities [6]. In terms of the relationship between new quality productivity, digital inclusive finance, and urban-rural common prosperity, digital inclusive finance can promote the development of new quality productivity to promote urban-rural common prosperity [7]. Digital inclusive finance can significantly promote the integrated development of urban and rural areas, and the realization path is to enhance new quality productivity [8]. These studies have deepened our understanding of the field from different perspectives, providing rich theoretical basis for relevant policy formulation and practical development.

3. Problems in the Development of Digital Inclusive Finance from the Perspective of New Quality Productivity

3.1 Lagged Regulatory System

Under the current development pattern driven by new quality productivity, the lagging regulatory system has become a significant bottleneck for the development of digital inclusive finance. With the rapid development of financial technology, emerging financial products and service models emerge one after another, such as decentralized finance (DeFi) supported by blockchain technology. However, regulatory policies often require time to adjust and adapt to these innovations, leading to regulatory gaps in the early stages of emerging financial businesses and providing opportunities for illegal activities. Meanwhile, the regulatory coordination mechanism is not yet perfect. Digital inclusive finance involves cross disciplinary business across multiple fields and requires collaborative efforts from multiple departments. For example, when comprehensive fintech companies engage in various businesses such as payments, lending, and wealth management, there is a lack of effective coordination mechanisms among regulatory departments, which can lead to regulatory overlap or gaps. In addition, insufficient international regulatory coordination and significant differences in regulatory standards among different countries have increased the risk of cross-border financial risk transmission.

3.2 Technical Application Bottlenecks

The imperfect technological infrastructure has formed limitations on the application of new quality productivity. Especially in remote areas, issues such as insufficient network coverage and slow internet speeds have seriously affected the development of digital inclusive finance services. For example, mobile payments require stable and fast network support, but in some mountainous areas, insufficient base station construction and unstable signals limit residents' access to convenient financial services. Technical security risks cannot be ignored either. The widespread application of big data and AI has led to frequent data breaches and algorithm vulnerabilities. When financial institutions collect customer data, if the protective measures are not in place, they are vulnerable to hacker attacks, leading to the leakage of private information, damaging customer interests, and triggering a crisis of trust. The opacity of AI algorithms may lead to decision-making errors, affecting the fairness and effectiveness of financial services. There are also issues with technical compatibility, as different financial institutions adopt inconsistent technical system standards, leading to increased costs and reduced efficiency in data sharing and business integration.

3.3 Narrow Coverage Area

The narrow coverage of services is currently a prominent issue. Financial services are concentrated in urban areas, while there is a severe shortage of supply in rural and remote areas. The coverage rate of bank branches in impoverished mountainous areas is extremely low, making it difficult for rural residents to access basic financial services such as savings and loans. Small and micro enterprises and low-income groups are excluded from mainstream financial services. Small and micro enterprises find it difficult to obtain loan support from traditional financial institutions due to their small scale, irregular finances, and insufficient collateral. Low-income groups have unstable incomes, incomplete credit records, and financial institutions are unwilling to provide services to avoid risks, exacerbating wealth inequality and social inequality. Digital inclusive finance mainly focuses on payments and small loans, with limited coverage of other financial services such as insurance and wealth management, especially with low participation in agricultural insurance.

3.4 Insufficient User Trust

Insufficient user trust has become an important bottleneck hindering the development of digital inclusive finance. Due to the lack of financial knowledge, many ordinary people, especially rural residents and the elderly, lack trust in financial services. They know very little about the operating mechanism of financial products and often hold a skeptical attitude towards new digital financial products. Especially with the frequent occurrence of financial fraud, the public's trust in financial services has been greatly reduced, and even legitimate products launched by legitimate financial institutions will be negatively affected. At the same time, data privacy and security issues further exacerbate distrust. Due to the aforementioned technological bottlenecks, users are concerned about data security, which also leads to distrust of financial institutions and the entire industry.

4. Solution Strategies from the Perspective of New Quality Productivity

4.1 Improve the Regulatory System and Enhance Its Adaptability to New Quality Productivity

4.1.1 Establish an innovation evaluation team, regularly update regulatory policies, and conduct regulatory sandbox experiments.

The regulatory authorities establish an innovative product evaluation team composed of financial experts, technical experts, and legal experts to conduct real-time observation and research on new financial products and service models emerging in the market. When discovering innovative and potentially impactful businesses, immediately initiate an evaluation to analyze their business models, risk characteristics, and impact on financial markets and consumers. According to the research results of the evaluation team, regulatory authorities have established a periodic policy update system [9]. Develop detailed regulatory guidelines, entry barriers, operational standards, risk control requirements, and consumer protection measures tailored to the characteristics of emerging financial businesses. Afterwards, regulatory sandbox experiments will be conducted in some active areas of financial innovation, allowing financial institutions to pilot innovative new financial products and services within a certain scope. The regulatory authorities provide limited exemption policies for experimental projects and closely monitor the operation of the projects during the trial period. Based on the experimental results, timely summarize the experience and lessons learned, further improve regulatory policies, and provide a basis for comprehensive promotion.

4.1.2 Build a financial regulatory information sharing platform, cross departmental linkage, and optimize regulatory coordination and communication mechanisms

The government takes the lead and collaborates with various financial regulatory departments to build a unified and comprehensive financial regulatory information sharing platform. Standardize data interfaces and specifications to ensure that data from various departments can be accurately and timely aggregated and circulated on the platform. The platform integrates regulatory data from various relevant departments to achieve real-time sharing and interaction of information. A joint regulatory working group is composed of professional personnel appointed by relevant regulatory departments, and regular meetings are held to effectively divide labor and cooperate with fintech

companies involved in various businesses such as payment, lending, and wealth management. Within the same inspection cycle, comprehensive inspections of different business sectors are completed to form a unified regulatory report. Establish a daily work liaison mechanism, with designated personnel from each department responsible for information transmission and communication coordination. By setting up an emergency problem handling hotline, ensure that cross departmental coordination mechanisms can be quickly activated in the event of sudden financial risk events to jointly respond to crises.

4.1.3 Integrate with international financial regulation, establish cross-border financial risk supervision and joint disposal mechanisms

Conduct in-depth research on international financial regulatory trends and rule making dynamics, and strengthen communication and cooperation with relevant international financial organizations. Actively participate in the process of formulating international financial regulatory rules, fully express China's position and views on digital inclusive finance regulation, and promote the formation of international regulatory standards that are conducive to the development of China's financial market. Real time monitoring and early warning of cross-border financial risks using big data analysis and AI risk warning models. Once a cross-border financial risk event is discovered, immediately activate the joint disposal mechanism, jointly take measures to stabilize the financial market, and prevent the spread and expansion of risks. At the same time, we have signed regulatory cooperation memorandums with financial regulatory agencies in major countries and regions, and strengthened collaborative supervision of cross-border financial institutions and businesses through regular dialogue and exchanges, sharing experiences.

4.2 Breaking through Technological Bottlenecks and Strengthening the Empowerment of New Quality Productivity

4.2.1 Strengthen funding and policy support, promote innovation and application of communication network technology, and establish effective evaluation mechanisms

To solve the problem of insufficient network infrastructure in remote areas, the government should establish a special fund, formulate targeted communication network construction plans, and regularly invest funds in base station construction and network upgrades to ensure network coverage, speed, signal stability, etc. At the same time, providing tax and other related preferential policies to reduce the construction costs of telecommunications operators and encourage them to increase their investment efforts. At the same time, scientific research institutions and technology enterprises are encouraged to carry out technological research and development for communication needs in remote areas, and explore the use of new communication technologies such as satellite communication and low altitude drone communication to solve network coverage problems. Promote the pilot application of 5G networks in remote areas, gradually improving network speed and quality. The relevant government departments shall establish regular and effective evaluation mechanisms to promptly identify and solve various problems in the construction process, and give corresponding rewards and punishments based on the evaluation results.

4.2.2 Increase talent cultivation and AI algorithm governance, improve data security management system, and strengthen technical security guarantees

Financial institutions need to strengthen the training of technical security personnel, regularly arrange technical security personnel to participate in industry training and academic exchanges, and timely grasp the latest security technologies and threat dynamics [9]. Build a highly professional technical security team through internal training and external referrals. Financial institutions shall establish an algorithm filing system, conduct detailed filing of the AI algorithms used, establish an algorithm evaluation mechanism, and regularly evaluate the accuracy, fairness, and stability of the algorithms. At the same time, third-party evaluation agencies are introduced to independently evaluate algorithms, adjust and optimize algorithms with problems in a timely manner, and ensure the fairness and effectiveness of algorithm decisions. Financial institutions establish a full lifecycle data security management system, specifically: during the data collection phase, clarify the scope and purpose of data collection, follow the principles of legality, legitimacy, and

necessity, and obtain clear authorization from users; In the data storage stage, encryption technology is used to encrypt and store data, and a data backup and recovery mechanism is established to ensure the integrity and availability of the data; During the data usage phase, strictly restrict data access permissions, review and record data usage behavior; During the data sharing phase, establish strict approval processes and security protocols to ensure the security of shared data. In short, by introducing advanced encryption technology, intrusion detection systems, antivirus software and other security protection software and hardware, a multi-level data security protection system can be constructed.

4.2.3 Develop technical standards, conduct standard pilot projects, gradually update standards, and achieve unified technical standards

Industry associations organize financial institutions, technology companies, research institutions, etc. to jointly establish a technical standard setting committee. Based on the characteristics and development needs of emerging financial businesses, fully solicit opinions from relevant parties, formulate unified technical standards to ensure the scientificity, practicality, and operability of the standards. Carry out technical standard pilot projects in some financial institutions and scientific enterprises, collect feedback and suggestions in a timely manner, further improve and optimize technical standards, and promote their application throughout the industry. Financial technology is constantly evolving. The Technical Standards Development Committee regularly conducts research and evaluation on the development trends of financial technology, revises and improves technical standards in a timely manner based on new technologies and businesses, and communicates them to financial institutions and related enterprises to ensure that the industry can share the latest unified standards in a timely manner and improve the standardization level of the industry.

4.3 Expand Service Coverage and Enhance the Popularity of New Quality Productivity

4.3.1 Establish a special incentive mechanism, expand diversified financial service channels, and strengthen the integration of financial services with local industries

The government has introduced policies to encourage financial institutions to establish branches in rural and remote areas, and to increase the coverage of branches in remote areas. Financial institutions plan their network layout in rural and remote areas based on their own development strategies and market positioning [10]. Establish financial service stations equipped with self-service terminal devices, assign dedicated personnel for guidance, and facilitate residents to handle financial transactions offline. At the same time, vigorously promote online channels for financial services. Develop a user-friendly and fully functional mobile financial service application tailored to the characteristics of rural and remote residents, providing one-stop financial services such as account inquiry, transfer and remittance, payment, loan application, etc. Financial institutions deeply understand the development needs of characteristic industries in rural and remote areas, provide financing support for farmers and agricultural enterprises, develop financial products related to rural tourism for remote areas with abundant tourism resources, promote local economic development, and improve the quality and coverage of financial services.

4.3.2 Build an AI credit evaluation system, develop diversified credit products, and form a mechanism for sharing risks among all parties

Financial institutions integrate data resources from multiple channels such as industry and commerce, taxation, social security, and e-commerce platforms, increase investment in big data technology research and application, and establish comprehensive and accurate databases of enterprise and personal credit information [11]. Using big data analysis technology, establish a scientific AI credit evaluation model to conduct multidimensional evaluations of the credit status of enterprises and individuals, and improve the possibility of obtaining loans. At the same time, financial institutions develop diversified credit products based on different needs. By utilizing digital technology to simplify the application process, reduce cumbersome procedures and proof materials, improve loan approval efficiency, and provide customers with a convenient financial service experience. The government has introduced interest subsidy policies,

providing a certain percentage of interest subsidies to eligible loans to reduce financing costs. To reduce financial risks, the government has invested in establishing a risk compensation fund and jointly established a risk sharing mechanism with financial institutions, enterprises, and individuals. When there are non-performing loans, the risk compensation fund will share the corresponding losses according to a certain proportion.

4.3.3 Innovate insurance products and services, develop suitable wealth management products, and enrich the types of digital inclusive financial products and services

Insurance institutions innovate and diversify insurance products based on the risk characteristics of rural markets and specific groups. For example, comprehensive agricultural insurance products covering risks such as natural disasters, pests and diseases, and small-scale personal insurance products for low-income rural groups. Utilizing digital technology to optimize insurance service processes, achieving online insurance application and claims processing, and improving the convenience and efficiency of insurance services. Financial institutions innovate wealth management products, design suitable wealth management products based on users' wealth management needs and risk tolerance, and achieve low threshold, stable returns, and controllable risks.

4.4 Enhance User Trust and Build a Cornerstone of Trust for New Quality Productivity

4.4.1 Innovative popularization methods, hierarchical and classified popularization of financial knowledge, and establishment of a mechanism for evaluating the effectiveness of popularization education

In order to popularize financial knowledge, financial institutions, together with governments and enterprises, have innovated diversified financial knowledge popularization and publicity methods by using the Internet and new media platforms. For example, using digital technology to produce interesting and understandable short videos of financial knowledge, animation and other content, which are widely disseminated through social media platforms such as WeChat official account, Tiktok, and B station; Organize interactive activities such as online financial knowledge competitions, live lectures, and Q&A sessions to attract users to actively participate and improve their learning outcomes. Develop different popularization plans for different groups to enhance their awareness and acceptance of various financial products and services. For example, for rural residents, write an easy to understand and illustrated financial knowledge manual that covers basic financial concepts, common financial products, etc; For the elderly population, it is suitable to use face-to-face methods to popularize commonly used financial instruments and anti fraud knowledge; Integrating financial knowledge into general education for the youth population, cultivating students' financial awareness and abilities. Regularly evaluate the financial knowledge level, risk prevention awareness, and financial behavior of different groups through questionnaire surveys, on-site interviews, and other methods, adjust and optimize popularization plans and methods in a timely manner, establish a scientific and effective evaluation mechanism, and improve the pertinence and effectiveness of financial knowledge popularization work.

4.4.2 Build an AI financial fraud monitoring and early warning system, strengthen cross departmental cooperation in law enforcement, and crack down on financial fraud behavior severely

Regulatory authorities, in collaboration with financial institutions, utilize technologies such as big data analysis and machine learning to monitor and analyze financial transaction data in real-time, and establish an AI financial fraud monitoring and early warning system [11]. By using an adaptive fraud behavior model, abnormal transaction behavior and potential fraud risks can be automatically identified, and warning signals can be issued in a timely manner. When problems are discovered, a cross departmental joint law enforcement team is formed by regulatory authorities, public security, judicial, financial institutions, etc., to strengthen information sharing and cooperation, and form a working force in case investigation, evidence collection, asset recovery, and other aspects. For acts that constitute financial fraud crimes, severe punishment shall be imposed in accordance with the law, and the severity of punishment

shall be increased. At the same time, a list of illegal and dishonest financial fraud will be formed, and individuals and enterprises who commit financial fraud will be included in the blacklist, restricting their qualifications and credit activities in the financial field, and forming effective legal deterrence and protection.

4.4.3 Strengthen the research and application of user data privacy protection technology to ensure the privacy and security of user data

Financial institutions are increasing their investment in research and development of data privacy protection technologies, adopting advanced encryption algorithms, anonymization processing technologies, and other measures to protect user privacy and data security. At the same time, establish a comprehensive emergency response mechanism for data breaches and develop detailed emergency plans for data breaches. In the event of a data breach, emergency plans should be immediately activated, emergency measures should be taken to prevent further data leakage, and affected users should be notified in a timely manner, informing them of the data breach situation and potential risks, and assisting users in taking corresponding preventive measures. In addition, according to regulations, report data leakage incidents to regulatory authorities and relevant agencies, actively cooperate with investigations and handling work, in order to ensure the privacy and security of user data.

In the wave of booming development of new quality productivity, digital inclusive finance faces both opportunities and challenges. Only by continuously improving the regulatory system, resolving technological challenges, expanding service boundaries, and reshaping user trust can we fully unleash the potential of digital inclusive finance, thereby promoting the advancement of new quality productivity to new heights [12], assisting in the optimization and upgrading of economic structure, promoting social equity and inclusive development, seizing opportunities in global economic competition, and achieving a positive interaction and win-win situation between finance and the real economy.

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