

Fintech's Help to Rural Revitalization of commercial Banks-a Aase Study of Agricultural Bank of China

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Abstract. The rapid development of global fintech has changed the traditional financial mode and accelerated the change of the traditional credit intermediary function of commercial banks. Fintech not only brings challenges to commercial banks but also provides new opportunities for commercial banks to develop new business models and innovative businesses and products. With the execution of the national rural revitalization strategy, all rural areas are leveraging their local natural resources to cultivate new industries; consequently, rural sectors continue to innovate and exhibit diversified development. Rural industries play a pivotal role in driving rural revitalization while simultaneously expanding financial demands within these communities. Finance is crucial for promoting regional economic development. At this critical juncture in advancing the "three rural issues," commercial banks in China should assume their responsibilities by fully utilizing their advantages and increasing support for these areas. The research focuses on analyzing the Agricultural Bank of China as a case study to explore its application of financial technology and its impact on supporting rural revitalization efforts. It summarizes both the strengths and weaknesses of commercial banks in facilitating this process while offering optimization suggestions that can serve as reference points for other banks assisting farmers.

1. Introduction

Fintech refers to the use of various scientific and technological means to provide products and services to the traditional financial industry, so as to improve work efficiency and effectively reduce operating costs. According to the definition of the Financial Stability Board (FSB), fintech is based on a series of technological innovations such as big data, cloud computing, artificial intelligence and blockchain, which are applied across the board, including payment clearing, loan financing, wealth management, retail banking, insurance and transaction settlement. In recent years, fintech has also played an increasingly important role in the development of agriculture. With the implementation of the national rural revitalization strategy, rural areas rely on local natural resources to develop emerging industries. In this regard, the inclusive financial services of commercial banks can effectively solve this problem and provide necessary financial support for infrastructure improvement

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and rural financial needs, which not only alleviates the financing pressure of local governments and village collectives but also provides effective supervision for the special use of project funds.

Agricultural Bank of China (ABC), founded in 1951, is a large state-owned commercial bank. Agricultural Bank of China is a leading financial institution in the PRC, providing multiple products and services to the people, as well as financial market and asset management businesses. As a large state-owned commercial bank whose mission is to serve agriculture, rural areas and farmers, the Agricultural Bank of China has been striving to provide high-quality financial services for rural revitalization. In view of farmers' common urgent needs for funds in the production process of planting and breeding, production and processing, commerce and trade, the Agricultural Bank of China launched the online financial product "Huinong E-Dai". With the help of the Internet, big data and other technologies, farmers can apply for mobile banking through the system, which will be automatically approved by the system, and enjoy convenient and fast loan services without leaving home. With the development of rural construction, the digital demand of rural areas in production and life is gradually increasing. Agricultural Bank of China has taken the initiative to undertake the social responsibility of assisting rural development and developed the "three assets" management platform, which not only assists county, township and village governments to effectively manage collective assets, resources and funds but also provides property rights transaction, rural governance, financial services and other functions, truly realizing comprehensive services for farmers, agriculture and rural areas.

Around the world, many countries and regions have tried to revitalize rural areas. These places are mainly concentrated in the United States, Germany, Japan, South Africa and India, which are either in the stagnant state of rural economic development or have unique understanding and strategies for rural economic discovery. In the domestic environment, our research perspective on rural revitalization is significantly different from that of foreign countries. This is not only because promoting balanced economic development, building a modern economic structure, building a new socialist countryside, fully implementing the plan to complete the building of a moderately prosperous society in all respects, and realizing the goal of common prosperity for all people are the goals of China's new era, but also because this is the core task of China's rural revitalization work in the new era, and is a strategy to improve and enhance the level of new rural construction. Moreover, fintech now has a non-negligible impact on the financial industry. Yang said that digital transformation is causing a non-negligible impact on a global scale, and banking digital transformation has significantly reduced the cost of banks and has a positive effect on bank scale. For traditional banks, their businesses must adapt to new models, goals and competitors. Banks can also reduce some of the costs associated with digital transformation by encouraging collaboration and sharing resources. The government should provide financial assistance to reduce costs in the initial stage of digital transformation [1]. Through the analysis of the development process of fintech, Hu explored the impact of fintech on commercial banks and believed that fintech brought both challenges and opportunities to commercial banks [2]. Bo believes that from the perspective of fintech, there are many weak links in the conditions and supply of fintech implementation, including relatively single products, weak availability of services, inadequate utilization of data resources, etc. [3]. Based on the potential impact model of the individual digital transformation of Chinese commercial banks on their risk-taking, Li and Zhang investigated how digital transformation reduces the level of risk-taking of Chinese commercial banks and discovered that the advancement of digital transformation in Chinese commercial banks lowers the level of risk-taking of banks by minimizing the cost related to management and enhancing the operational efficiency of banks. Digital transformation has diverse influences on the risk-taking of commercial banks with different regulations and has a more pronounced risk-reducing effect on the risk-taking of smaller banks [4].

Many scholars have studied how commercial banks help rural economic development. Li believes that with the comprehensive promotion of rural revitalization, commercial banks still have shortcomings in the face of emerging rural financial demand, agriculturally related credit still needs to be strengthened in terms of total amount sustainability and precise structure, and more targeted exhibition services and risk control systems need to be further optimized [5]. According to the existing problems, Zhang put forward policy suggestions such as increasing the innovation input of financial assistance for agricultural products, improving the risk management system of agriculture-related loans, and improving the talent introduction mechanism [6]. Fu believes that in the short-term strategy, large commercial banks should, first, take the new rural operating entities and the government as the key service objects, and strive to meet the large-scale, diversified and multi-level financial needs of the rural inclusive economy. Second, make full use of the advantages of large commercial banks with rich customer resources, large capital scale and complete management system to give priority to key regions, key industries and key customers. Third, take advantage of large commercial banks' advantages of rich agriculture-related products, strong research and development capabilities and complete licenses to seize the commanding heights of product and service innovation. From the perspective of medium and long-term development, large commercial banks should gradually improve the long-term investment and management system construction for the comprehensive services of rural digital inclusive finance, and form the core competitiveness of counties with unique advantages [7].

By analyzing the case background, development status and risk management of the Agricultural Bank of China, the research summarizes the advantages and disadvantages of commercial banks in helping rural revitalization, which can provide case reference for other banks in China to help rural economic development and develop related rural economic business.

2 Banking application of fintech

Agricultural Bank of China takes fintech innovation as the core driving force to enable the high-quality development of various businesses of the Agricultural Bank of China. Agricultural Bank of China has been committed to exploring new ideas in the field of inspiring innovation for the whole bank, sharing new methods for the application of innovative technologies, and forming a new situation of innovation-driven development of fintech.

2.1 Banks embrace fintech and continue to innovate

Insight into real-time market conditions is conducive to the transformation and innovation of the banking business. In recent years, the global economic situation has been complex and the development of science and technology is accelerating. The banking industry is facing new challenges and opportunities brought by fintech. Under the impact of the epidemic, the global "home economy" has developed rapidly, and the demand for "online and zero-contact" commodity trading and services has become more urgent. On the Chinese side, with the introduction of the "14th Five-Year Plan", the development direction of fintech has gradually changed, and major financial institutions have invested a lot of resources to actively explore new changes and new areas brought by fintech. In terms of technological development trends, the technology of the "big intelligent mobile cloud thing chain" is developing in-depth, and the degree of industrialization is constantly improving. New technologies such as virtualization, 5G+ and quantum computing have quietly changed social life and economic development. Fintech innovation work is closer to center stage in the financial industry than ever before.

2.2 Explore new areas

Agricultural Bank of China initially established an innovative technology system with big data, artificial intelligence, mobile Internet, cloud computing, Internet of Things, blockchain and other emerging information technologies as the main body, and carried out a number of research, exploration and application pilots in business application and scientific and technological support.

In business applications, breakthroughs have been made in 5G messaging, VR/AR technology, privacy computing, satellite remote sensing, edge computing and other fields. 5G news brings new bank-customer interaction entrance; AR technology was first introduced into Marketing Treasure products to improve customer experience; Privacy computing provides the technical foundation for data fusion and the release of greater value applications. Satellite remote sensing technology has solved a series of problems in farmers' credit business. Edge computing creates new technological models that optimize the quality and efficiency of operations management.

In terms of scientific and technological support, it has made efforts in five fields cloud-native, flow-batch integration, low-code development, chaos engineering and AIOps. Cloud-native technology gradually reconstructs information system application architecture and software research and development system; For the first time, flow-batch integrated computing was realized in the "Fiberhome Platform" of the Agricultural Bank of China, broadening the application scope of real-time data processing. Through a series of pilot work such as new tool research and development and new platform construction, low-code development, chaos engineering and AIOps comprehensively enable the three application research and development links of development, testing and operation and maintenance to ensure the speed of business demand response and software quality.

2.3 Platform + Scenario application will become the standard form of innovative technology application

In recent years, the Agricultural Bank of China has been committed to the construction of innovative technology platforms such as data lake, artificial intelligence platform, perceptual intelligence platform, integrated full-stack cloud platform, Internet of Things platform and blockchain platform, gradually exporting innovative technology capabilities for all business systems of the bank and creating large-scale productivity. In addition, it strengthened the foundation of fintech in distributed databases, intelligent networks, green machine room, disaster recovery and production operation and maintenance construction, information security and other aspects, and promoted and strengthened the rapid development of technology-supported business.

2.4 Improve the innovation support system

High-quality and efficient fintech innovation cannot be separated from the supporting management concepts, management mechanisms and management methods. In addition to technological innovation, the Agricultural Bank of China follows the latest development trends in technology management, continues to promote DevOps construction, improves system delivery efficiency, and quickly responds to business innovation.

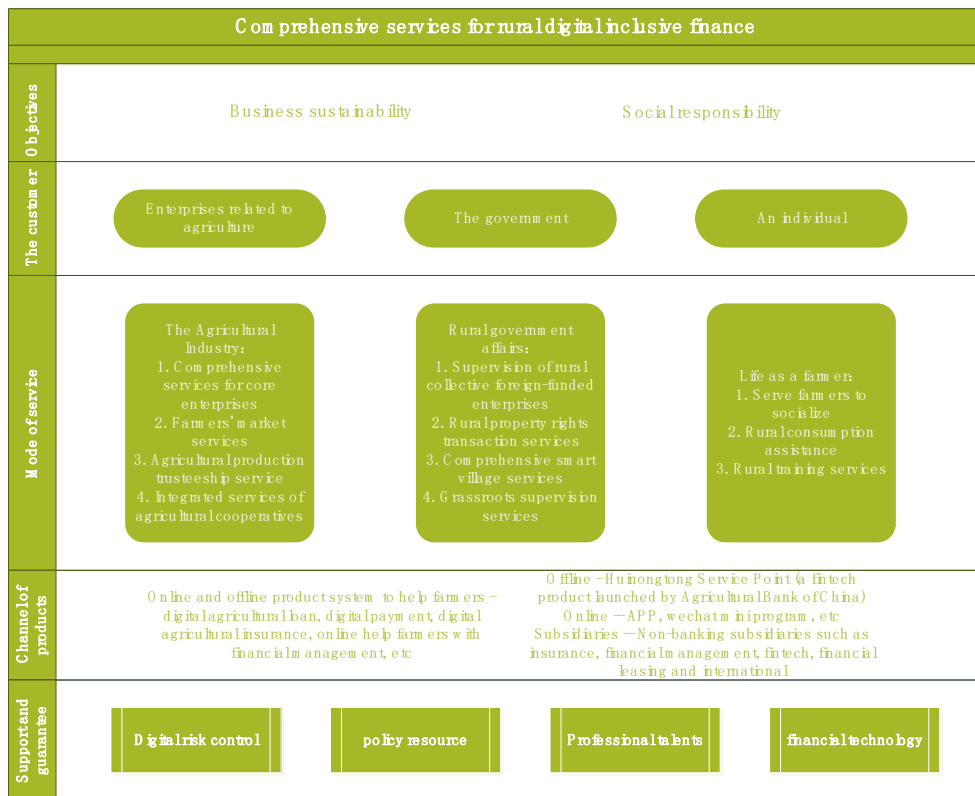


Fig. 1. Agricultural Bank of China Rural digital inclusive Finance comprehensive service framework.

Microservice planning was initiated, which reduced the trial and error cost of innovative technology exploration and realized the rapid verification of innovative technology applications. It improves the open source management system, adopts not only a "bring in", but also a "go out" strategy, and broadens the horizon of scientific and technological innovation. In addition, the Agricultural Bank of China has also established a relatively perfect fintech innovation system. By means of new technology tracking and screening, total score co-construction, platform output service capacity and other ways to build a scientific and technological innovation system loop suitable for future development, to ensure the deep integration and mutual enabling of technology and business, and jointly promote the digital transformation of the whole bank to a new stage [7].

3 Digital empowerment plays an important role in rural inclusive finance

Fintech helps advance economic development in rural areas, fundamentally changing the economic landscape by providing basic financial services to underserved populations. This leverages digital technologies to bridge existing gaps and stimulate economic growth in regions historically marginalized by the traditional financial system.

3.1 The accessibility of financial services is enhanced

Mobile banking and digital wallets: Mobile banking platforms and digital wallets enable rural residents to conduct offline financial transactions without the need to travel long distances to

physical bank outlets. Farmers can save time and reduce costs by performing activities such as deposits, withdrawals, transfers and payments directly from mobile devices such as mobile phones.

Correspondent banking networks: Digital empowerment often involves local agents equipped with digital tools who provide banking services in remote areas while acting as intermediaries between banks and customers. These agents spread financial institutions to villages and rural communities, ensuring that even the most isolated population has access to banking services.

3.2 Make transactions safer

Cost reduction: Digital transactions typically have lower fees compared to traditional banking transactions, making financial services more affordable for low-income rural residents. Automation, along with digital processes, has reduced financial institutions' operating costs, allowing them to offer competitive rates and fees.

Security and trust: Rural financial institutions have improved information collection and information processing capabilities, which can more accurately measure customers' repayment and default probability, so as to better price interest rates and prevent risks. While crypto protects digital transactions, it also has the trust of rural users who may be skeptical of the traditional banking system. In addition, digital tools can help monitor fraudulent activities and ensure the safety of users' financial data and assets.

3.3 Access to credit and insurance

Digital credit platforms: Digital platforms provide more convenient services for people who need small loans, such as rural entrepreneurs and farmers, who often cannot access traditional credit due to insufficient collateral or credit history. By leveraging data from mobile device usage patterns and transaction histories, lenders can more accurately assess creditworthiness and thus expand credit availability.

Digital insurance Customized products: The advent of digital technology has enabled commercial banks to create specially designed insurance products such as crop insurance or medical insurance for the needs of the rural population. Online applications have streamlined claims processing and made it easier for users in these areas to obtain compensation [8].

3.4 Promoting employment and economic growth

Digital markets: Rural entrepreneurs or farmers can access the wider agricultural market through digital platforms, enabling them to access more opportunities outside their local area, thereby significantly increasing their potential for profitability; Moreover, integrating these businesses into a larger supply chain enhances competitiveness and sustainability.

Financial management tools: Digital financial management solutions help rural entrepreneurs oversee financial budget planning.

3.5 Data-driven decision-making

Personalized service data analysis: commercial banks can use data analysis capabilities to understand the specific demand behavior of rural customers, and can provide tailored products within the product service line; The continuous feedback mechanism through digital platforms can better adapt to the needs of people in different regions. The data collected from

digitized transactions provides decision-makers with insights into the behavioral trends prevailing in these communities, leading to effective strategies.

3.6 Integration with other businesses

The first is health and education, where digital financial platforms can be integrated with other essential services such as healthcare and education to provide a comprehensive approach to rural development. The second is beneficial to government services, which can use digital platforms to distribute subsidies, pensions and other financial assistance directly to rural residents, ensuring timely delivery of funds and transparency of how they are delivered. Finally, integration with digital identity systems facilitates access to a wide range of financial and government services.

3.7 Challenges and Considerations

While digital empowerment offers significant benefits for rural financial inclusion, several challenges must be addressed to maximize its impact:

Digital infrastructure: Reliable Internet and mobile connectivity are essential for digital financial services to operate effectively in rural areas. Not only that but ensuring that rural populations have access to smartphones and other digital devices is also critical for widespread smartphone adoption [9].

Improving rural people's knowledge: Providing training and support to help rural users navigate digital financial platforms is necessary to ensure that they can effectively use these services.

User-friendly design: Designing intuitive and user-friendly interfaces can promote easier adoption by users with limited technical skills.

Trust and Security: for building trust, overcoming skepticism about digital financial services requires consistent measures of reliability and security. Ensuring strong data protection and privacy standards is critical to maintaining user trust and compliance with regulations. The regulatory framework including governments needs to put in place regulatory frameworks that support digital financial inclusion while protecting consumers. Beyond that, regulators should balance security and regulation with the flexibility needed to foster innovation in digital financial services [10].

4. Conclusion

This research examines the significance of digital empowerment in innovating banking service models and explores how fintech can facilitate rural revitalization while promoting economic development in these areas. Additionally, it clarifies that the Agricultural Bank of China is dedicated to exploring new ideas within the realm of innovation, developing novel methodologies for technology applications, and leveraging fintech innovations to foster corporate growth. The study also delves into the Agricultural Bank of China's contemporary management philosophy regarding fintech.

Based on an analysis, it is evident that other commercial banks should enhance their financial service concepts concerning how fintech can aid rural revitalization. They can draw inspiration from Agricultural Bank's product design related to fintech and its associated management philosophy, consistently adhering to the principle of engaging employees externally while attracting customers internally. Furthermore, this research advocates for actively promoting universal financial access and service evaluation, enriching farmers' information profiles, and advancing the construction of a rural credit system to mitigate risks

stemming from information asymmetry. Concurrently, commercial banks should uphold principles aimed at cultivating exceptional employees and enhancing banking operations by training staff through personalized, continuous, and diverse methods to unlock their potential and deliver superior services. Ultimately, innovation should focus on creating unique and personalized financial services; various loan programs tailored for specific customer segments can be designed to reflect distinct characteristics while addressing diverse borrowing needs.

Despite the widespread adoption of fintech across today's financial industry, commercial banks should consider strengthening their application of science and technology—particularly in risk prevention and product innovation—as integrating fintech will significantly enhance operational efficiency.

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