A Brief Discussion on the Impact of the Digital Economy on the Development of Retail Financial Innovation

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Abstract: In recent years, with the rapid development of the digital economy, the industrial landscape of China's financial industry has been changing. Through a comprehensive review and analysis of the deep integration and development of the digital economy and China's financial industry, the impact of the development of the digital economy on the innovative development of retail finance is explored. In particular, the new crown pneumonia epidemic has further driven the integration of finance and technology. In the normalised environment of the epidemic, digital technology has played a crucial role in safeguarding the business operations of the financial sector during the epidemic, and the importance of digital finance continues to grow. The epidemic has created a demand for digitisation in the financial sector, spurring the need for online and scenario-based consumer financial services. Through our research, we recommend promoting digital industry integration, tapping into the effectiveness of the digital economy and realising innovation in retail financial services; strengthening digital financial regulation, protecting the rights and interests of customer information and achieving stability in the retail financial market; and leveraging the advantages of the digital industry to seize opportunities in the financial market and upgrade the retail financial industry.

1. Introduction

In the context of the increasingly severe global new crown epidemic and China's economic transformation and upgrading, the digital economy based on the extensive and deep application of digital technology has become a new engine for social development. China's economy has shifted from the stage of high-speed growth to that of high-quality development. China's financial system is not only facing the traditional dynamics of economic restructuring and interest rate marketisation, but also the new dynamics of in-depth supply-side structural reform, rapid transformation of old and new dynamics, upgraded regulation of the financial industry and rapid development of financial technology. Since 2017, with the deep empowerment of the financial industry by digital technology, traditional retail financial business is undergoing accelerated changes from business to management, digital transformation and intelligent upgrading of the entire process. The digital economy is a new economic form that applies modern information and communication technology and uses data as a factor of production. In recent years, the world's major developed countries have elevated the digital

economy to a national development strategy, and China is no exception. The Central Party Committee, the State Council, and some provinces, cities and autonomous regions have issued relevant policies and formulated outlines for the development of the digital economy. In 2020, the scale of China's digital economy reached RMB 39.2 trillion, accounting for 38.6% of GDP, an increase of 2.4 percentage points year-on-year, effectively supporting epidemic prevention and control and Economic and social development(Data source: The White Paper on China's Digital Economy Development released by the China Academy of Information and Communications Technology in April 2021). At present, China is affected by the global epidemic and the trade war between China and the United States, etc. The downward pressure on the economy and the difficulty of transformation have increased, while the digital economy will lead a new round of technological revolution, and vigorous development of the digital economy is conducive to the transformation and upgrading of China's economic development.

2. Trends in the integration of the digital economy and the financial sector

Digital finance is a new generation of financial services resulting from the combination of the Internet and information technology tools with traditional financial services. Digital finance in China can be traced back as far as the end of 2004, represented by the Alipay platform. This is an important sign that the integration of the digital economy and the financial industry formally came into people's lives, and the beginning of digital finance being highly valued. Wu Chaoping (2019), there are five major components of digital finance business, including infrastructure, payment clearing, financing and funding, investment management and insurance. Infrastructure includes smart contracts, big data and cloud computing; payment clearing includes mobile payment and digital currency; financing and funding includes crowdfunding and online loans; investment management includes balance transfer and smart investment advice; and insurance refers to digital insurance products.[1] With the gradual digital transformation of the financial sector, the digital economy is showing the following trends in the financial sector.

(1) Digital financial regulation towards rule of law, regulation and digital intelligence. Under the trend of financial digital transformation, financial regulators will further strengthen the top-level design, improve the regulatory framework with full risk coverage, improve the corresponding laws, regulations and standard specification system, use digital technology to enhance the penetration of regulation, and continue to promote the pilot regulatory sandbox, so as to promote digital finance into a new era of compliance and stability, more orderly and innovative development.

The regulator will introduce the Interim Measures for the Protection of Personal Financial Information in a timely manner in accordance with the new laws to be promulgated by the State, such as the Personal Information Protection Law and the Data Security Law. More licensed personal credit agencies will be approved and established to regulate the collection and use of personal information and to promote the development of the personal credit-related market and business.

With the implementation of the "Implementation Measures of the People's Bank of China on the Protection of the Rights and Interests of Financial Consumers", financial institutions will assume the main responsibility for the management of consumer information security, and the People's Bank of China will insist on "zero tolerance" for infringements of consumer financial information security and will crack down on violations of the law that infringe on the legitimate rights and interests of financial consumers. The internal control mechanism of financial institutions' information will be further improved. With the further implementation of open government data sharing and the completion of a unified open platform for national government data, the financial sector will see the dividends of open government data.

(2) Reinventing the business model to serve the real economy. Under the dual-loop development

pattern of domestic and international, the innovation of digital finance model will migrate from consumer finance to industrial finance, and the fields of microfinance, supply chain finance and "three rural" finance will become the main front for the innovation of digital finance business model. The network microfinance companies under Ant Group, Baidu, Jingdong, Meituan, Xiaomi and Zhongan may need to significantly increase their registered capital, and more than half of the network microfinance companies will face transformation, transfer, introduction of strategic shareholders or even withdrawal, with service to the real economy becoming an important direction for the development of network microfinance. Otherwise, the network microfinance business license may not be renewed by the CBRC. Off-site online lending will be strictly regulated, the joint lending business model will be reshaped, and regulatory provisions such as not helping partner institutions to circumvent off-site operations will be introduced. Innovative financial institutions with a fintech gene will continue to receive regulatory support, while consumer finance will receive policy support to enhance its sustainability, revitalise its credit stock, expand its financing channels and thus expand its business.

(3) Digital technology to accelerate the digital transformation of finance. Li, Haifeng, Xie Chao (2019), Digital finance is a technology-driven financial innovation that will further influence the deepening reform of the financial sector.[2] Fintech will support banks to actively explore the senseless docking of online appointments and offline services, smarter lending decisions in banking, more personal and small business loans will be issued through automated processes supported by artificial intelligence, and banks will optimize non-performing rates more through intelligent post-loan management solutions. Fintech will accelerate its penetration from credit to insurance, securities and capital management, and gradually penetrate from online to offline scenarios, enhancing the breadth and depth of Fintech applications and driving the digital transformation of more traditional business scenarios and traditional financial institutions.

At the same time, fintech service providers will have more market space and "fintech services" platforms will emerge to provide more convenient support for financial institutions to establish cooperation with fintech companies, and the fintech industry chain will become richer and run more smoothly.

3. Pathways for digital fintech to support retail financial innovation

Li Xin (2018), Within China, many companies in the banking, insurance, fund and securities industries have started to leverage big data, artificial intelligence and other technologies to promote the intelligence of their retail business, and have achieved good results.[3]

(1) Strengthening the capacity for service innovation. In terms of investment and finance, FinTech can be used to open up internal and external correlation systems to form a closed loop for online and offline transactions; in terms of credit financing, FinTech can be used to achieve intelligent management of the whole process of pricing, measurement and risk control before, during and after the event, and to achieve the best combination of cost and interest rate in key areas such as personal consumption loans; in terms of payment grates, QR codes, near-field payments, biometrics and other emerging technologies are widely used. In terms of payment grids, emerging technologies such as QR codes, near-field payments and biometrics are widely used and can be combined with specific application scenarios to match security strategies and build a convenient and secure product system that covers both online and offline. In addition, by connecting different scenario portals at the front end and feeding customer data and information to the big data platform at the back end, customised financial products or service solutions such as asset reports, intelligent investment and advisory, credit and financing, personalised menus and information can be targeted.

(2) Improving channel operational capabilities.With the support of big data, artificial intelligence

and other technologies, the construction of retail financial channels is rapidly evolving in the direction of intelligence, mobility, lightness and customisation. Traditional branches will change from manual operation to a model of customer operation plus manual assistance, improving customer experience through process optimisation; online and mobile platforms will bring customers a new feeling of "efficiency, convenience and wisdom" through the introduction of technologies such as biometrics and intelligent investment advice; in addition, online and offline channels will also be fully connected to ensure In addition, the online and offline channels will be fully connected to ensure that customers can switch seamlessly between channels to find the most suitable services and enjoy the most consistent experience in the most convenient way.

(3) Promoting process organisation transformation. Institutional mechanisms are important safeguards for the development of retail banking. On the one hand, agile organisation can be further promoted through digital transformation of business processes. The speed, depth and breadth of innovation can be accelerated by leveraging the technology and concepts of emerging technologies to improve products in a project-oriented and fast-iterating manner, and in this way to promote the formation of a decision-making mechanism that encourages innovation. On the other hand, financial technology tools such as big data, blockchain and artificial intelligence can be used to improve information technology systems and strengthen data support to support the optimisation and integration of the middle and back office, improve the efficiency of its services to the front office, and strengthen cross-disciplinary and cross-business collaboration.

(4) Strengthening risk prevention and control capabilities. Risk management is the cornerstone of financial enterprise management. By introducing digital technology to improve the whole process of prevention and control from before to during and after the event, we can effectively meet the requirements of the rapid development of retail business. The use of big data can identify risks more accurately and cost-effectively from the vast amount of information available, and the development of modelling and data analysis technologies enables algorithms to be continuously improved. The combination of the above three can drive the development of intelligent risk control by stripping out raw customer data, establishing formatted rules and developing corresponding risk control models, both in terms of mature risk control strategies and flexible configuration of business rules to provide scenario-based risk control models that fit product needs.

4. Problems in the development of digital economy innovation in the retail finance sector

(1) Data intelligence is uneven. Ho, D.A. (2021), data intelligence is a specific form of implementation or method of operation in the development of the digital economy, mainly referring to the use of big data analysis and artificial intelligence to meet the objectives of product innovation, customer analysis and business management. [4] The level of a financial institution's ability to collect, store, integrate, classify, process and process big data indicates the level of its data intelligence. There are two major stages in the use of the digital economy in retail finance: the first stage is the collection, storage, integration and classification of big data; the second stage is the processing and handling of big data. At this stage in China, the level of data intelligence of financial institutions can all be classified into different stages based on their ability to use big data analysis and artificial intelligence. Wang Jiong (2019), the vast majority of financial institutions at this stage can only collect, store, integrate and classify big data, but cannot process and handle big data, especially traditional financial institutions; [5] Frost, J. (2019) Very few internet financial service providers are able to both collect, store, integrate and classify big data, and process and manipulate it. [6] The above situation determines that the digital economy in China's financial sector is still in its infancy, rather than the digital economy in China's financial sector, which some scholars claim has developed significantly.

(2) Significant differences in network synergy. He Da'an (2020), the digital economy is a market

model that consists of both data intelligence and network synergy. Neither can we simply equate the digital economy with data intelligence, nor can we focus only on network synergy and cut off data intelligence. It helps to understand the digital economy if we see data intelligence and network synergy as a relationship between fish and water. [7]

At this stage in China, the vast majority of traditional retail financial institutions are at a low level of network collaboration, while only a few Internet platforms and commercial banks with rapid transformation are at a high level of network collaboration, a situation that corresponds to the current development of data intelligence. The network collaboration of retail finance needs to transform the interactions between financial institutions and consumers in consumption, investment, wealth management, insurance and securities into digital information, which can be intelligently processed to form a data decision-making model to achieve precise targeting of target customers, support product innovation to meet market demand, and anticipate and avoid potential risks in the marketing and customer acquisition side of retail financial institutions. And avoidance of potential risks. This process relies on big data, processing technology and intelligent analysis. At present, traditional financial institutions have an absolutely large amount of customer behaviour data, while internet platform companies and financial institutions that are transforming faster have core data processing technology and intelligent analysis capabilities. Because of this, it is difficult to effectively interoperate data across industries and institutions, and fragmented information cannot be integrated to become the information basis for intelligent decision-making, which in turn leads to the overall low level of digital economy network synergy in China's retail financial industry at this stage.

(3) Limitations of digital transformation in retail finance. As the role of digital fintech grows, some practitioners develop blind trust in technology. Zetzsche, D. (2017), while the rise of digital finance has had a positive impact on economic and financial development, the issues of risk contagion, spillover, and transformation raised by the rise of digital finance have attracted widespread attention from policy makers and scholars. [8] Although the digitisation of the financial sector plays a larger role in the transformation of banking, insurance and securities companies, the digital economy cannot be exaggerated and there are limits to how much digital technology can support the transformation of retail finance. On the one hand, technological innovation is faster than institutional innovation. Digital fintech provides us with very efficient means, but it is not just technology that determines the development of the retail business of financial institutions, but the reform of institutional mechanisms. As of now, the problems in terms of talent, hardware and software are easier to solve than institutional reform. In addition, the huge investment in digital fintech innovation makes it difficult to enhance the operational efficiency of financial institutions through shallow applications, and there is duplication of development between different institutions, with uneconomic high input and low output. Therefore, without a thorough reform and transformation of institutional mechanisms, it will be difficult for digital technology itself to be truly effective. On the other hand, digital finance has its own limitations. First, data security, credit system and other supporting facilities are not perfect, and the corresponding laws and regulations are not sound. Secondly, digital technology itself needs further iteration, and even if it has been applied, it is basically at a preliminary stage, with limited efficiency gains for financial enterprises. Third, digital technology may bring risks. Qiao Rui (2020), the integration of digital technology and retail business has led to an increasing number of cross-market and cross-industry crossover products, which also makes the risks in the development of digital finance intertwine with those in retail business, making financial risks more complex; financial consumers' awareness fails to keep up with the speed of technological innovation, making consumers confused in their choices and more vulnerable to infringement of their rights. [9]

5. Conclusions

(1) Promoting digital industry integration, tapping the effectiveness of the digital economy and realising innovation in retail financial services. Digital transformation is an objective requirement of the development of the digital economy for the financial industry. Adhering to digital development not only requires the integration of advanced technologies such as big data, cloud computing, IoT, blockchain, 5G and AI into the functions of innovative retail financial services, but also emphasises industry integration. Financial institutions should do a good job of top-level design, define a fintech development strategy that is in line with the institution's own positioning and characteristics, design phased development goals, and achieve an overall breakthrough from top-level design to implementation on the ground. In the process of technology development and application, it is important not to "patch" but to "knit", and to systematically propose development ideas for digital transformation, especially to cooperate in a complementary manner within the financial sector and across industries. To make up for the disadvantages of traditional financial institutions in terms of data resources endowment and insufficient development and application capabilities, the advantages of Internet platforms and technology finance companies in data processing intelligence and networking should be brought into play. Truly establish a digital industry alliance in the financial sector to bring into play the effectiveness of the digital economy and achieve innovation in retail financial services.

(2) Strengthening digital financial regulation to protect the rights and interests of customers' information and achieve stability in the retail financial market. The booming digital economy has promoted the concentration of social resources into the digital industry and the industry has developed rapidly. The development process has resulted in a pile-up of data resources that have failed to achieve effective encrypted storage and compliant application as the pace of technological development has been faster than the pace of legal and institutional updates. The healthy development of the digital economy industry is threatened by the widespread use of mobile communication data, social and governmental data and consumer behaviour data, which are widely used in the financial industry, thus making it impossible to properly deal with issues such as customer information, customer rights and customer security. Consumers are unable to access the services they need most when using financial services. Government regulators need to establish a unified regulatory platform or system to bring the digital industry in the financial sector under regulation, not as a "one-size-fits-all", but as a "one-net". As an industry regulator, it should not suspend or hinder the rapid development of the digital financial industry and sever the link between the regulation of the financial industry and IT security, but rather increase the ways and means of regulating the high-tech sector in the context of financial regulation. On the basis of strengthening the construction of a digital financial regulatory system, we will protect the rights and interests of customer information and achieve stability in the digital development of the retail financial market.

(3) To leverage the advantages of the digital industry, grasp the opportunities in the financial market and upgrade the retail financial industry. The digital industry focuses on data innovation, breaking down the phenomenon of data silos, improving data governance and building digital management capabilities. Build a data asset management system from a fundamental, long-term and holistic perspective. Financial institutions should accelerate the pace of development through digital transformation to achieve a bend in digital development. The construction of a digital system will facilitate a "customer-centric" service and product system. Further optimise business processes and systems to create a truly integrated "service-scenario-open" bank of the future. The bank will transform its channels, marketing, risk control, products and operations, integrate technology into the front, middle and back office, take advantage of the digital industry, grasp the opportunities in the financial market and upgrade the retail financial industry.

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