Research on the Impact of FinTech on Systemic Financial Risks and Countermeasures

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Abstract: With the rapid development of information technology, financial technology, as an important force driving innovation in the financial industry, has risen rapidly worldwide. FinTech has had a profound impact on the financial market by continuously innovating and transforming financial businesses, products, services, and models through the use of cutting-edge technologies such as big data, artificial intelligence, and blockchain. However, while the development of financial technology improves the efficiency, transparency, and inclusiveness of financial markets, it also increases the complexity and uncertainty of financial markets, which may trigger or exacerbate systemic financial risks. This article aims to analyze the positive and negative impacts of financial technology on systemic financial risks, and propose preventive measures to strengthen the construction of the financial technology regulatory system, promote the standardized development of financial technology, enhance the risk management capabilities of financial institutions, and promote the deep integration of financial technology and the real economy, in order to achieve the healthy, stable, and sustainable development of the financial market.

Keywords**:** FinTech, systemic financial risks, influential factors, risk analysis

1. Introduction

The Party and the state attach great importance to the development of financial technology and the prevention of systemic financial risks. The report of the 20th National Congress of the Communist Party of China stressed the need to resolutely prevent and resolve systemic financial risks, strengthen financial supervision, optimize the financial structure, and promote financial technology to better serve the development of the real economy. The White Paper on China's Financial Technology Ecology (2023) released by the China Academy of Information and Communications Technology pointed out that under the current situation, the key technologies of financial technology show new characteristics and new development trends, intelligent computing power has become the new driving force for the financial industry to achieve digital transformation, and generative artificial intelligence technology has developed rapidly, etc. In this form, the stronger the penetration of financial technology, The greater its influence on the financial industry, the more attention should be paid to strengthening the implementation of regulatory policies and always prevent the occurrence of systemic financial risks. The "Financial Technology Development Plan (2022-2025)" emphasizes the high-quality development of financial technology, proposes to be digital-driven, wisdom for the people as the core, to strengthen financial technology prudential supervision and other measures, and strive to significantly improve the overall level of China's financial technology by 2025, and achieve leapfrog improvement of core competitiveness.

Many scholars have carried out a lot of research on financial technology and systemic financial risk, and discussed the definition and impact mechanism of both. Xiang Hailing et al. show that the development of financial technology can improve the financing environment of enterprises, promote the financial stability and innovation vitality of enterprises, and help enterprises realize digital transformation faster[1]. Song Ke et al. pointed out that the development of financial technology has a certain inhibitory effect on the liquidity creation of banks [2]. Shao Xuefeng et al. found that FinTech can effectively promote the investment efficiency of enterprises [3]. Sun Li et al. pointed out that the development of financial technology promotes the transformation and upgrading of commercial banks, intensifies competition and affects banks' risk bearing [4]. Wang Wen et al. analyzed the systemic financial risks caused by real estate bubbles in the United States and Japan, and compared them with the stable real estate market in Germany, and came up with policy suggestions conducive to the healthy development of the real estate market such as levying real estate tax and setting up real estate funds [5]. Peng Junhua et al. found that the abnormal fluctuations of housing prices would cause the resource allocation of the financial system to become excessive real estate, thus accumulating risks and eventually leading to the occurrence of systemic financial risks[6]. Mao Rui et al. pointed out that the expansion of local government debt will increase the leverage ratio, leading to a rise in debt risks which in turn could trigger systemic financial risks [7].

There is no consensus on whether the development of FinTech promotes or inhibits systemic financial risks. Lin Xi et al. pointed out that FinTech will promote the innovation of financial business, thus aggravating the complexity of financial market and easily causing systemic financial risks [8]. Luo Hang et al. found that FinTech can enhance social credit and information processing, prevent the spread of systemic financial risks to a certain extent, and at the same time make the financial system vulnerable and increase the speed of currency circulation, thus intensifying the spread of risks [9]. An Qiguang et al. show that FinTech will increase the systemic financial risk of financial institutions in the early stage of development, and with the development of FinTech, FinTech will reduce the risk in turn[10]. Zheng Lanxiang et al. found that FinTech will increase the systemic risk of financial institutions by increasing the individual risk of financial institutions and increasing the connection between institutions and the financial system[11]. In general, the development of financial technology does bring some systemic financial risks, but with the continuous development and improvement of financial technology, I believe that the risks will certainly be reduced, and the benefits of financial technology will certainly outweigh the disadvantages.

To sum up, most studies on FinTech focus on the impact of FinTech on enterprises and commercial banks, and most studies on systemic financial risks are about the systemic financial risks caused by real estate and local government debt, while there are few studies on the impact of FinTech on systemic financial risks. By referring to existing studies, this paper analyzes the positive and negative impacts of FinTech on systemic financial risks, as well as related influencing factors, and discusses how to prevent and resolve the resulting systemic financial risks through the development of FinTech in the new era, so as to enrich the risk response strategies of FinTech to systemic financial risks and better promote the development of FinTech.

2. Definition and development status of FinTech

Charnes et al. 's 1972 article first mentioned the term "FinTech", and many studies have been carried out on this basis since then[12]. Agarwal pointed out that FinTech has greatly changed the way financial services are provided by affecting credit supply and payment and settlement services[13]. Currently, for the definition of FinTech, one can refer to the standards issued by the Financial Stability Board (FSB). The FSB defines FinTech as technology-based innovations in financial services that create new business models, applications, processes, or products that have a significant impact on financial markets, financial institutions, and the delivery of financial services. In addition, the FinTech Development Plan issued by the People's Bank of China also provides a definition of FinTech, emphasizing that it is a technology-driven financial innovation, aiming to use modern scientific and technological achievements to transform or innovate financial products, business models, business processes, etc., and promote the quality and efficiency of financial development [14]. Up to now, FinTech has gone through three stages of development represented by IT technology, Internet technology, and emerging technologies represented by big data and artificial intelligence, realizing profound development and transformation of the financial industry. FinTech is mainly used in online payment, crowdfunding and other fields, and transaction costs have been greatly reduced through the application of FinTech. FinTech has the following remarkable characteristics: first, technological innovation. With technological innovation as the core driving force, FinTech continuously promotes the innovation of financial products and services. Second, universality. FinTech reduces the threshold and cost of financial services, improves the efficiency of financial services, and enables more individuals and institutions to enjoy convenient financial services[15]. Third, high efficiency. FinTech enhances the efficiency and transparency of financial transactions through automated and intelligent means. Fourth, complexity. The development of FinTech has increased the diversity of participants and transactions in the financial market, but also brought more risks and challenges.

In recent years, the global FinTech has achieved rapid development and has made steady progress towards the stage of high-quality development. Artificial intelligence, blockchain, cloud computing and other technologies are increasingly widely used in the financial sector, promoting the intelligence, automation and decentralization of financial business. At the same time, FinTech companies have sprung up, injecting new vitality into the financial market. In 2023, China's FinTech market size, investment and financing scale and total investment reached 372.78 billion yuan, 21.5 billion yuan and 122.822 billion yuan respectively, with year-on-year growth of 9.7%, 32.72% and 5.38%. The ratio of FinTech investment to revenue rose to 3.52%, the highest value in the past year. It can be seen that the development of FinTech in China continues to grow.

3. Supervision and prevention measures of FinTech on systemic financial risks

The development of FinTech is the general trend of The Times. Although the development of FinTech promotes financial innovation and provides many convenience conditions, it is also accompanied by a series of risks and challenges that cannot be ignored. Many scholars are not completely unified in their views on the impact of FinTech on systemic financial risks, but they are consistent in their views on adhering to the development of FinTech. All in all, when the benefits of the development of FinTech outweigh the risks, the risks caused by it can be solved to a certain extent.

3.1 Strengthening the FinTech regulatory system

Gu Zheng et al. believe that improving the regulatory system of FinTech can effectively prevent the occurrence of systemic financial risks [16]. In view of the development characteristics of FinTech and its impact on systemic financial risk, a more perfect regulatory system should be established. First, improve the regulatory system. Through the establishment and improvement of the FinTech regulatory framework, the regulatory subjects, regulatory objects and regulatory measures should be clarified. Meanwhile, the access management of FinTech enterprises should be strengthened, and their business scope and behavioral rules should be standardized to ensure the healthy development of FinTech under the premise of controllable risks. Second, improve the level of intelligent supervision. Big data, artificial intelligence and other technical means will be used to improve the intelligent level of FinTech regulation and realize real-time, dynamic and precise regulation, so as to strengthen daily supervision and risk monitoring of FinTech enterprises and timely discover and dispose of potential risks.

3.2 Promoting standardized development of FinTech

The standardized development of FinTech requires joint efforts in both technological innovation and regulation. On the one hand, technology assessment and risk warning for FinTech enterprises should be strengthened, market access management should be strengthened, and market access conditions for FinTech enterprises should be strictly enforced to ensure that only enterprises with corresponding qualifications and capabilities can enter the FinTech field; On the other hand, financial institutions should be encouraged to strengthen technological innovation and R&D investment, and improve the level of intelligence and automation of financial services. At the same time, it is necessary to establish and improve laws and regulations, accelerate the formulation and revision of laws and regulations related to FinTech, and provide strong legal guarantee for the development of FinTech.

3.3 Improving the risk management capabilities of financial institutions

With the innovative development of FinTech, the financial market environment is complex and changeable, and financial institutions are facing increasing risks. Therefore, improving the risk management ability of financial institutions can effectively reduce individual risks and enhance the stability of the financial system. On the one hand, it is necessary to make full use of big data and artificial intelligence technology to improve the ability of financial institutions to identify and evaluate potential risks, so as to timely discover and respond to risk events. On the other hand, efforts should be made to promote financial institutions to optimize the risk management process and realize the automation, intelligence and refinement of risk management.

3.4 Promoting the deep integration of FinTech with the real economy

FinTech plays an important role in the development of the real economy, and the deep integration of the two should be promoted to make FinTech better serve the real economy. First, FinTech enterprises should be encouraged to provide more convenient and efficient financial services for the real economy and promote the development of the real economy. Secondly, we should guide FinTech enterprises to make innovative applications in areas such as inclusive finance and green finance to improve the coverage and penetration of financial services. Finally, we should increase the training and introduction of FinTech talents to provide a strong talent guarantee for the development of FinTech.

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