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Study on the Influence of Digital Finance Development on the Financing Environment of Small and Medium-sized Enterprises

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Abstract: In recent years, China has carried out a lot of exploration and practice in solving the problems of financing difficulties and financing nobility of small, medium and micro enterprises, and has achieved fruitful results, but the financing of small, medium and micro enterprises is still facing a lot of difficult problems, such as lack of funds, narrow financing channels, high financing costs, high financing risks, low credit rating, lack of collateral and unstable financial policies, etc., and the development of digital finance has brought certain opportunities, this paper puts forward coping strategies by systematically analyzing the main problems faced by SME financing in the context of digital finance, combined with the impact on the financing environment of SMEs.

Keywords: Digital Finance; SMEs; Financing Environment.

1. Introduction

Small and medium-sized enterprises (SMEs) are the driving force of China's economic development, contributing more than 50% of tax revenue, more than 60% of GDP, more than 70% of technological innovation, more than 80% of urban employment, and possessing more than 90% of the number of market entities [1], which is an indispensable force to promote the high-quality development of the economy. In recent years, China has carried out a lot of exploration and practice in solving the problems of difficult and expensive financing for SMEs, and has achieved fruitful results, but SME financing still faces many difficulties. As shown in the figure, from the point of view of inclusive MSME loans, MSME loans and the asset size of financial institutions, there is a large gap between the size of MSME loans and the asset size of financial institutions, indicating that most of the financing services provided by financial institutions flow to large and medium-sized enterprises. To solve the financing problems of small, medium and micro enterprises can not be separated from the support of scientific and technological means, this paper penalizes the law from the perspective of the development of digital finance to break the financing problems of small, medium and micro enterprises.

2. Overview of the Development of Digital Finance

2.1. Definition of Digital Finance

With the rapid development of technology and the trend of globalization, digital finance has become an important branch of today's financial industry. Digital finance, also known as e-finance, is a general term for the provision of various financial services to consumers and businesses through digital channels such as the Internet and mobile devices. These services include, but are not limited to, payments, transfers, investments, loans, insurance, and more. Digital finance makes full use of advanced technologies such as big data, artificial intelligence, blockchain, etc., and realizes the online, intelligent and inclusive financial services. [2]

2.2. Characteristics of Digital Finance

The characteristics of digital finance are mainly reflected in the following aspects: online, intelligent, inclusive and personalized. Online refers to the fact that financial services are no longer subject to the restrictions of time and location, and users can enjoy financial services at any time and any place; intelligence refers to the fact that the efficiency of financial services is improved through artificial intelligence, big data and other technologies; universality refers to the fact that digital finance has lowered the threshold of financial services, so that more people can enjoy convenient financial services; personalization refers to the fact that digital finance can provide personalized financial products and services according to the user's needs and behavioral habits. personalization means that digital finance can provide personalized financial products and services according to users' needs and behavioral habits. Digital finance has been widely used in many fields such as payment, investment, loan and insurance. In the field of payment, such as Alipay, WeChat Pay, etc.; in the field of investment, such as Balance Treasure, Wealth Management, etc.; in the field of lending, such as Microparticle Loan, Borrowing, etc.; and in the field of insurance, such as Ping An Insurance and Pacific Insurance. These platforms use digital technology to simplify the financial service process, improve service efficiency, and provide users with convenient financial services.

2.3. Trends in the Development of Digital Finance

Globalization and the development of the Internet have accelerated the digitalization process of the financial industry, the changes and diversity of customer needs have driven financial service innovation, the progress of science and technology has provided infinite possibilities for the financial industry, and the support and guidance of government policies have created favorable conditions for the development of digital finance, with the progress of science and technology and the changes in customer needs, the development trend of digital finance can be foreseen as more obvious. Firstly,

digitalization will further penetrate into all areas of financial services to achieve full-process digital services; secondly, the use of artificial intelligence, big data and other technologies will further improve the quality and efficiency of financial services; furthermore, digital finance will pay more attention to the customer experience and personalization of services; and lastly, digital finance will pay more attention to cross-border cooperation and innovation to adapt to the ever-changing market environment. In short, digital finance, as an important branch of the financial industry, is changing the way we live and work at an amazing speed. In the future, with the advancement of technology and the development of the market, we have reason to believe that digital finance will bring more surprises and innovations. [3]

3. Main Difficulties Faced by SMEs in Financing

3.1. Shortage of Capital and Narrow Financing Channels

Although the development of digital finance has provided SMEs with more financing opportunities, many SMEs still face a shortage of capital. This may be due to a variety of factors such as unstable sales revenue and rising operating costs. Existing studies show that among the shortcomings of existing credit products perceived by enterprises, the small amount of loan accounts for 36.23% [4]. Due to the lack of capital, SMEs are often unable to expand their production scale or carry out the necessary technological innovations and equipment upgrading, which seriously restricts the development of enterprises. In addition, for many SMEs, financing channels are relatively narrow. Traditionally, they mainly rely on bank loans and loans from friends and relatives for financing. However, the more stringent risk control of bank loans to SMEs, coupled with banks' higher requirements for collateral and guarantees, have made it difficult for many SMEs to obtain loans from banks. In addition, the number of loans from friends and relatives is also limited, which cannot meet the large amount of capital needs of enterprises. [5]

3.2. High Financing Costs and Risks

Due to the lower credit rating of SMEs and the stricter risk control of banks on SME loans, SMEs often need to pay higher interest rates and fees to obtain loans. In addition, due to narrow financing channels, SMEs may also need to pay higher costs such as intermediary fees. All these factors make the cost of financing relatively high for SMEs, adding to their financial burden. At the same time, the operating conditions of SMEs are often not stable enough, so they also face greater risks in the financing process. If SMEs' operating conditions are poor, they may not be able to repay their loans on time, which will lead to damage to the credibility of the enterprise, and may also trigger a chain reaction that affects the financing and operation of other enterprises.

3.3. Low Credit Rating and Lack of Collateral

As the operating history of SMEs is relatively short and not stable enough, their credit ratings are often low. This makes them pay higher interest and fees in the financing process, and also increases the risk of banks and other financial institutions lending to them. Traditionally, banks and other financial institutions often require enterprises to provide a certain amount of collateral as security when providing loans to SMEs. However, the relatively small size of SMEs' assets, coupled with the difficulty in quantifying some of their assets such as intellectual property rights, makes them lack sufficient collateral to obtain loans. This makes it further difficult for SMEs to raise funds.

3.4. Unstable Financial Policies

The stability of financial policies is crucial to the financing of SMEs. However, financial policies are often not stable enough due to changes in the domestic and international economic situation as well as policy adjustments, which brings great uncertainty to SMEs' financing. If there is a significant change in policy, it may cause a drastic change in the financing environment for SMEs, which may adversely affect the operation and development of enterprises. As shown in Figure 3, there are still enterprises that believe that digital financial products do not play a very large role in solving the problems that exist in their enterprises. Therefore, the government, financial institutions and the enterprises themselves need to make joint efforts to optimize the financing environment of SMEs through various means, such as improving policies and innovating financial products and services, in order to promote their healthy development and growth.

4. Impact of Digital Finance Development on the SME Financing Environment

4.1. Main Impact

First of all, digital finance can more accurately assess the credit status of SMEs through technical means such as big data and cloud computing, and reduce the requirements of financial institutions for collateral and guarantees, thus lowering the financing threshold of SMEs. This helps solve the problem of SMEs' shortage of funds and provides them with more financing opportunities. Secondly, digital finance can simplify the financing process and improve financing efficiency. Through the Internet platform, SMEs can submit financing applications more conveniently, and financial institutions can review the applications more quickly and give the corresponding loan amount. This makes the financing channels of SMEs more diversified and reduces their financing costs. Furthermore, the development of digital finance also helps to improve the credit rating of SMEs. Through big data analysis, financial institutions can gain a comprehensive understanding of SMEs' business conditions, consumer evaluations and other information, so as to more accurately assess their credit ratings. This helps to reduce the financing risks of SMEs and increase the availability of their financing. In addition, digital finance helps improve the business environment for SMEs. Through digital means, SMEs can conduct transactions, payments and other business activities more conveniently and improve their operational efficiency. At the same time, digital finance also promotes the digital transformation of SMEs and empowers their high-quality development. [6]

However, the development of digital finance has also brought some challenges. For example, the universality of digital finance needs to be improved, and SMEs in some backward areas may not be able to enjoy the convenience brought by digital finance. In addition, the regulatory policies of digital finance need to be further improved to protect the legitimate rights and interests of consumers and prevent financial risks. Overall, the development of digital finance has

provided more opportunities and convenience for SME financing, but it also faces some challenges. In the future, the government, financial institutions and SMEs need to work together to further improve the environment for the development of digital finance, so as to better serve the financing needs of SMEs.

4.2. Response Strategies

(1) IoT empowers digital finance

First, the construction of the management platform. The key to IoT management lies in platform construction, i.e., financial institutions have to build a science and technology financial IoT management platform to access all relevant physical status information of all served SMEs to the platform, and the platform should at the same time be embedded with technologies such as big data, blockchain, artificial intelligence, etc., so that all SMEs' information transmitted to the platform can be intelligently processed in order to reflect the physical status of SMEs in real time, and to facilitate the adoption of timely management measures. Second, comprehensive physical management. In order to actively prevent the risks of SMEs, it is necessary to comprehensively track and manage the physical form of all SMEs with which there is a business relationship. Financial institutions can apply Internet of Things technology to input the remote monitoring situation of SMEs into the platform in real time, and the platform sets up an early warning system, so that once the early warning line is touched, the system will remind the management to take measures in real time, so as to strengthen the safety management of credit funds from the form of things. Third, expanding credit resource channels. Financial institutions can incorporate the non-fixed assets of SMEs into the guaranteed collateralized assets, because the technical support of the Internet of Things can ensure that the non-fixed assets can play a role in the vision of financial institutions, and at the same time can be used as an important guarantee for mitigating and transferring risks, thus effectively expanding the total credit scale of SMEs.

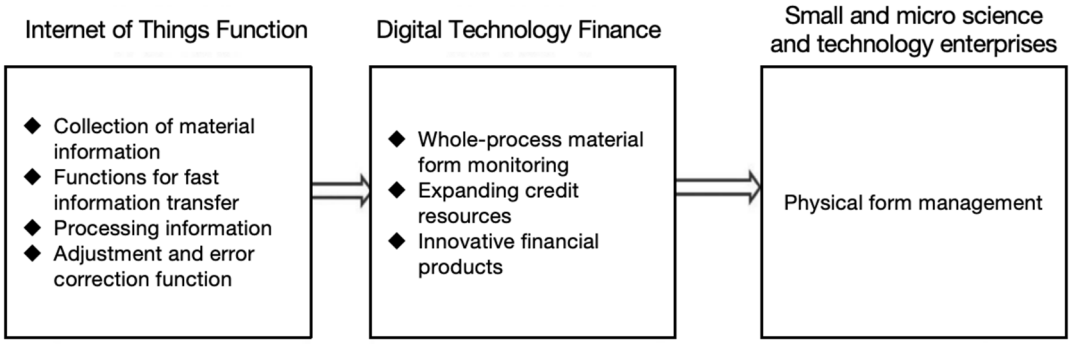


Figure 1. IoT Enabling Digital Finance Processes [7]

(2) Artificial Intelligence Enabling Digital Technology Finance

On the one hand, the application of artificial intelligence in risk identification and management should be strengthened. The application of artificial intelligence technology should be combined with a variety of technologies, such as big data and blockchain, to take advantage of the advantages of artificial intelligence's large amount of information collection and strong and fast risk identification ability, and to play its role in risk management. It should be actively used for the identification of high-quality small and micro-science and innovation enterprise customers, make full use of its language ability for communication, and fully implement intelligent services for the daily management of risks. The ability of AI to recognize various risks, especially uncertainty risks, should be enhanced. On the other hand, the application of AI in the whole process of digital science and technology financial process should be strengthened. It is necessary to actively promote the standardization and batching of small and micro science and technology products, realize intelligent marketing and automated processing, and improve the operational efficiency of small and micro science and technology enterprises, especially the application of artificial intelligence in supply chain finance, which can further reduce costs and improve the market competitiveness of small and micro science and technology enterprises. In addition, a large number of digital robots are deployed. Digital robots have low input costs and strong ability to replace labor, and the calculation work of high replication and large dosage in digital science and technology finance can be handed over to the AI system to be completed, and the coordinated use of man and machine can be implemented, so as to not only save costs, but also provide accurate and detailed services to long-tailed customers in small and micro science and technology enterprises.

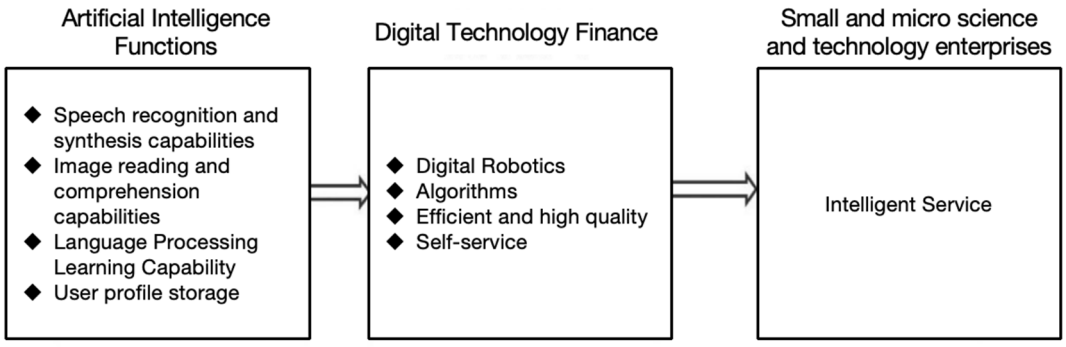


Figure 2. Artificial Intelligence Enabled Digital Finance Processes [8]

(3) Strengthening financial infrastructure

First, accelerate the construction of financial infrastructure such as data-sharing platforms. By strengthening the coordination mechanism between financial regulators and other economic data production departments, establishing a standardized public data sharing platform, improving the data opening and sharing mechanism, and promoting the opening and sharing of data on national and local credit information sharing platforms, commercial banks, and core supply chain enterprises, the level of financial technology will be enhanced. Second, accelerate the pace of digital transformation of small, medium and micro enterprises. Promote SMEs to go to the cloud, use numbers, and empower wisdom, promote the digital transformation of the whole process from production and processing, operation and management to sales and services, and open up the digital channels between the production process and channels such as finance, logistics, and trading markets, and promote the formation of an application ecology for digital financial inclusion. Third, improve the credit system. Incentivize and guide market-related entities to increase capital investment in cloud computing, big data and other Internet information technology and technology research and development, improve the ability to integrate big data information, and promote the interoperability and fusion of Internet financial information, government departmental information, and information in the category of credit collection system, in order to accelerate the construction of a more comprehensive and open and shared credit information platform. Fourth, improve the regulatory system. Strengthen the monitoring and prevention of digital inclusive financial risks, improve relevant laws and regulations, clarify the main body of supervisory responsibility, establish a complete risk reminder and disclosure mechanism, and enhance the ability to identify and control the risks of the new digital financial industry.

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