



Research on Financing Paths for Small and Medium-Sized Enterprises Empowered by Digital Finance

Xinyue Luo*

School of Economics, Guangdong University of Finance and Economics, Guangzhou, 510320, China

Corresponding author. Email: 1827852750@qq.com

Abstract. With the rapid development of economy and the improvement of the financial market of China, digital finance has gradually risen, providing new channels and ways for SMEs to finance. However, the financing of SMEs still faces many problems, such as limited financing channels, high financing costs, high financing risks, and insufficient government support. These issues significantly impede the growth of SMEs and hinder the enhancement and modernization of China's economic framework. To address the financing challenges faced by SMEs, this article proposes a set of specific strategies, including bolstering the development of key technologies, establishing an online financial infrastructure, enhancing the credit system's development, and boosting governmental backing, with the goal of fostering the robust growth of SMEs, broadening their funding options in China, and elevating the nation's economic advancement.

Keywords: Digital Finance, Financing Paths, Small and Medium-Sized Enterprises

1 Introduction

As an innovative financial approach, digital finance offers small and medium enterprises (SMEs) with accessible funding avenues and adaptable borrowing techniques. The emergence of digital finance has exerted a beneficial influence on the financial landscape for SMEs. Firstly, digital finance facilitates easier access to capital, diminishes the communication expenses between businesses and financial entities, and assists SMEs in overcoming the challenges associated with obtaining capital that is both difficult to access and costly. On the other hand, digital finance can also provide more flexible financing methods to meet the diversified financing needs of SMEs. Traditional financial institutions usually require SMEs to provide many paper materials, and need to go through a cumbersome approval process. Digital finance can be used through the Internet and mobile devices, combined with the digital wind control model, so that SMEs can apply for financing and submit information anytime and anywhere, and achieve real-time second approval. This greatly simplifies the process of financing application, improves the efficiency of

financing, and provides more convenient financing channels for small and medium-sized enterprises [1]. In addition, the traditional enterprise financing process is not only cumbersome, but also limited by the number of financial institutions, types, risk preferences of business personnel, professional level of practitioners and other subjective factors, while digital finance can help many financial institutions to develop their businesses at low cost and make use of digital means. Provide more customer, flexible and fair financial service support to the small and medium-sized enterprises in the grass-roots areas of our country. Digital finance can provide more flexible financing methods through the Internet and mobile devices, such as online tax loans, electronic guarantees, electronic bills of exchange, online accounts receivable financing, supply chain finance and so on. These financing methods can be customized according to the actual needs of SMEs and provide more flexible financing schemes. Digital finance can provide more transparent financing information through the Internet and mobile devices, so that SMEs can more clearly understand the cost and risk of financing. This can help SMEs choose financing options more rationally and avoid excessive debt.

2 Digital Finance and SMES

2.1 Digital Finance

Digital finance represents the latest iteration of financial services, integrating cutting-edge digital technologies such as blockchain, big data analytics, cloud computing, and artificial intelligence with conventional financial operations. Digital technology is the means of digital finance, and financial services are the essence of digital finance. Digital finance not only emphasizes its technical means, but also emphasizes its financial attributes [2]. In reality, digital finance can refer to both digital financial technology and financial services provided by digital technology. The multidimensional cube of digital finance is shown in Figure 1. It describes the meaning of digital finance from three dimensions, with X axis representing digital financial technology, Y axis representing institutions providing digital financial solutions, and Z axis representing digital financial functions and business models. Among them, the Z-axis digital financial service mode is the most important dimension. Digital financial technology and digital financial institutions represented by X axis and Y axis are the technical basis and important executors for providing digital financial services. The three dimensions are arranged orthogonally to each other, so that each region inside the cube can be described by some combination of elements of the three dimensions. Some financial institutions are involved in only one or two of these businesses, while some digital financial institutions occupy a series of sub-cubes, involving multiple businesses and digital technologies. When financial innovation produces new business functions or technologies, it can expand the dimension by adding new elements, and the digital financial cube also expands.

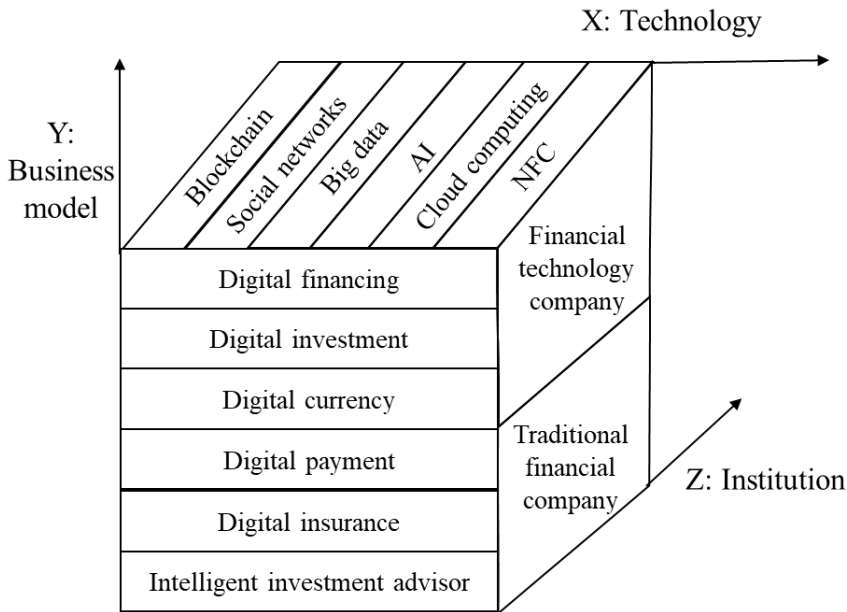


Fig. 1. Multidimensional Cube of Digital Finance (figure credit: original)

2.2 Small and Medium-Sized Enterprises

A universally accepted criterion for defining SMEs does not exist globally. Commonly, we refer to metrics like employee headcount, capital scale, and operational revenue. SMEs are abundant, extensively spread out, and dispersed across various sectors of the national economy, increasingly becoming integral to it. Throughout China's economic expansion, the growth of SMEs has not only significantly contributed to the economy but also spurred technological advancements and intensified market competition. To foster the growth and innovation of SMEs, China has enacted numerous favorable policies, such as tax rate reductions, alleviating the tax load on SMEs, and offering them favorable loan interest rates. SMEs have the ability to adapt their products and management systems in response to market demand shifts, thereby enhancing their competitiveness in the market. [3]

Jin Zhuang long, Minister of Industry and Information Technology, said that in 2022, an average of 23,800 new enterprises were set up every day in our country in March 2023. The number of small and medium-sized enterprises has exceeded 52 million, and the operating income of small and medium-sized industrial enterprises above the scale has exceeded 80 trillion yuan. In addition, the country has nurtured more than 70000 specialized, special and new small and medium-sized enterprises, including 8997 specialized, special and new “Little Giant” enterprises. Small and medium-sized enterprises, most of which are private enterprises, play an important role in improving people's livelihood and promoting national economic development.

Figure 2 shows the important value of small and medium-sized enterprises. The small and medium-sized enterprises in China contribute about 50% of tax revenue, more than 60% of GDP, more than 70% of technological innovation, more than 80% of urban employment, and more than 90% of the number of enterprises, which is enough to highlight the importance of doing a good job in small and medium-sized enterprises.

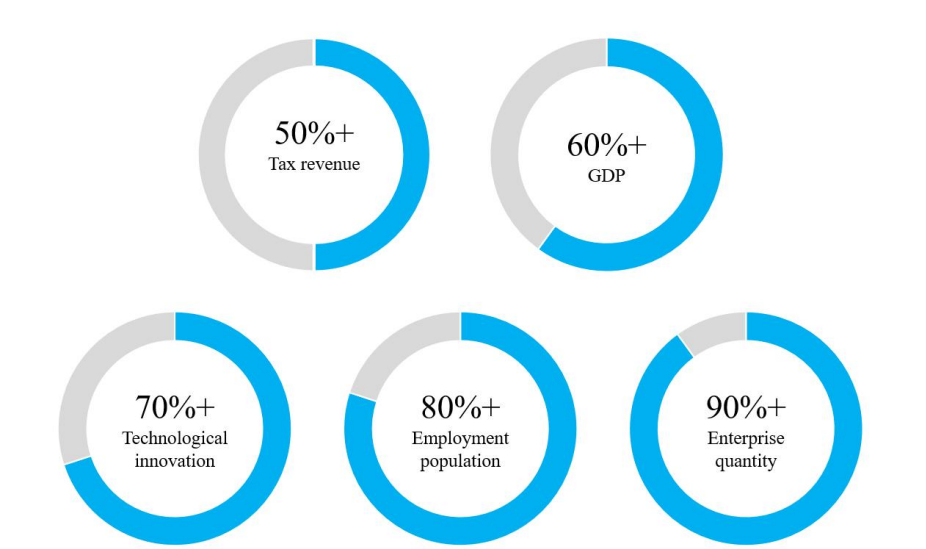


Fig. 2. Contributions of Small and Medium-Sized Enterprises in China (figure credit: original; data original: <https://baijiahao.baidu.com/s?id=1759154726900237490&wfr=spider&for=pc>)

3 Problems in Sme Financing

3.1 Limited Financing Channels

From the perspective of financing methods, the financing of enterprises is mainly divided into two ways: internal financing and external financing. Endogenous financing means that enterprises rely on their own retained earnings to solve the funding gap, while exogenous financing includes direct financing and indirect financing. In the financing structure of our country, the bank loan has been the main way of enterprise financing. According to the scale of social financing disclosed by the People's Bank of China in 2023, the stock of social financing in China is 378.09 trillion yuan, of which RMB loans account for about 62%. Conversely, the financing secured via the bond market constitutes roughly one third of the total social financing scale, whereas the financing acquired through the securities market represents merely about 3% of the social financing scale. When juxtaposed with the conditions in developed nations like Europe and the United States, it becomes evident that China's financing structure has ample potential for transformation. In these advanced

economies, the share of direct financing can attain approximately 80%, whereas China's capacity for direct financing services is comparatively weaker, necessitating further enhancement of the capital and bond market infrastructure. Consequently, to facilitate the sustainable economic growth of China, it is imperative to bolster support for direct financing, elevate the share of direct financing, and achieve a transformation and upgrade of the financing structure [4].

3.2 Excessive Financing Costs

Although small and medium-sized enterprises have obtained external financing opportunities through unremitting efforts, they still face the problem of high financing costs [5]. The financing cost of many small and medium-sized enterprises has exceeded their affordability, and once problems arise in the production and operation links, the enterprises may be overwhelmed and fall into the brink of bankruptcy. According to the data disclosed by the China Financial Research Center of Tsinghua University, the average financing cost of Chinese enterprises is 7.6%, which only includes interest rate cost. Considering the non-interest costs such as guarantee fee, assessment fee, handling fee and margin in the process of loan, the comprehensive financing cost of most SMEs is generally more than 10%, and the problem of expensive financing is still prominent. In practice, some commercial banks require enterprises to repay the original loans first when renewing loans for enterprises, which forces SMEs to turn to informal financial channels such as private lending to seek "bridge funds". However, the interest rate of this kind of "bridge fund" is usually between 20% and 30%, which undoubtedly brings huge risks to SMEs and economic development, and is not conducive to the healthy growth of SMEs.

3.3 High Financing Risk

Small and medium-sized enterprises in China have serious problems in information transparency. In the special period, in order to maintain the normal operation of the company, business operators do not hesitate to shut down, but the inherent cost of the company is constantly consuming the little capital left by the company, so that it cannot guarantee a certain profit, and banks will try to avoid providing loans to such enterprises. Some small and medium-sized enterprises cannot improve their operational efficiency, open new markets, and effectively prevent market risks because of vague property rights [6]. For their own reasons, banks are reluctant to lend to small and medium-sized enterprises with high bankruptcy and default rates. At the same time, due to the inherent defects of the financial data of SMEs in China, such as incomplete information, data distortion, short time series of data, it is difficult for banks to evaluate the credit risk of SMEs. Because SMEs generally have the problem that the content of financial information is not transparent enough, it is difficult for banks to obtain information about SMEs, so they cannot prove their credit solvency. Due to the pressure from all sides, banks are reluctant to grant loans to SMEs in low quotas, which makes the capital needs of SMEs unable to be met.

3.4 Insufficient Government Support

The government's backing is comparatively limited, which in turn directly leads to the funding challenges faced by SMEs in China. The growth of SMEs is a crucial catalyst for advancing the marketization of China's economy, and the funding issues of SMEs are a key concern for the government [7]. In recent years, China has introduced a range of financial support measures to bolster the development of financial institutions, such as enhancing the central bank's re-lending and rediscount policies for commercial banks, with the aim of fostering the growth of SMEs in China. However, currently, there is an absence of a comprehensive financial support system tailored to various industrial characteristics. To date, China has not established a dedicated financial regulatory body for the advancement of SMEs, nor has it offered effective services and guidance for them. Moreover, there persist certain issues in China, including incomplete policies and disjointed policy reforms, which directly result in insufficient policy support for the development of SMEs in China, impeding their robust growth. In practice, this support framework is often found to be rather insufficient. Additionally, due to the minimal costs associated with SMEs defaulting on loans in China, it is more challenging for the state to facilitate their lending.

4 Countermeasures for sme Financing Under the Background of Digital Finance

4.1 Strengthen R&D Core Technologies

In the market competition, technological progress and product research and development will enable enterprises to form competitive advantages, and then have a certain impact on the market competitiveness of enterprises. In addition, enterprises should continue to innovate in order to adapt to the changing times and continuously improve their brand strength. Small and medium-sized enterprises should do their own brand building, constantly improve their own strength and industry level, and constantly enhance their financing capacity. At the same time, strengthening the development strategy oriented by R&D core technology, adjusting, and optimizing the industrial structure can bring more development opportunities for the company. In front of the big problem of financing, small and medium-sized enterprises should start from the long-term development, find the future direction of development, formulate corresponding business strategies, through product innovation, develop products and services that are compatible with market demand to continuously improve the quality of products, lay a good foundation for enterprises to cultivate and build their own brands, and enhance the capital strength of the company [8]. Its solvency has been continuously improved. Small and medium-sized enterprises should find their own development direction in the changing market and seize the market with their own unique technology and products. Small and medium-sized enterprises should moderately increase scientific research funds, form technological advantages in their own industries, improve product quality and service level to differentiate their

enterprises from other enterprises. Scientific analysis of market demand to promote the sustainable development of core technologies to meet market demand.

4.2 Build Internet Financial System

The use of modern scientific and technological means can shorten the time of financing evaluation and improve the efficiency of financial services for SMEs. Using big data technology, the main financial and operational data of the evaluated company can be extracted from a large amount of data, which can effectively reduce the cost of loans and reduce the cost of credit service audit. A substantial reduction in costs can make financial institutions more willing to accept and support the credit transactions of SMEs subjectively. Network financial technology can collect and collate big data, dig it deeply, and use big data credit system, banks can better evaluate the reputation of traders, thereby reducing risks. Taking the Internet as a big data platform, we can promote financial institutions and enterprises in the industry to conduct multi-dimensional credit evaluation to ensure that banks can lend quickly and accurately to provide appropriate financial services for companies to better solve the financing problems of small and medium-sized enterprises [9]. The tiered financing market for SMEs is capable of offering a multitude of financing options and also fostering innovation within the financial sector. Novel financing innovations can not only more effectively satisfy the capital requirements of SMEs but also stimulate the innovation and evolution of financial markets. Ultimately, this can lead to the advancement of the real economy. SMEs constitute a significant segment of the real economy, and their growth is intrinsically linked to the stability and progress of the national economy. By developing a tiered financing market for SMEs, we can offer a broader range of financing avenues, lower the barriers to financing, and enhance the efficiency of capital acquisition.

4.3 Improve Credit System Construction

Credit is the key to the success of small and medium-sized enterprises, and the premise of their financing. The greatest advantage of a company with good reputation is that it can accumulate credit wealth, so that the company can enjoy more preferential policies. Therefore, we should use modern information technology to construct and improve the credit system of small and medium-sized enterprises in China, create a credit database for enterprises, comprehensively record the overall operation and financial situation of the company, and regularly audit it. Under the digital economy model, we should set up a credit reporting framework for enterprises matching digital financial services, make full use of big data technology, establish the relationship between upstream and downstream enterprises and related small and medium-sized enterprises in the existing credit reporting system, reorganize, analyse, and input information, and build a comprehensive, unified, and perfect credit reporting system. It is convenient for financial institutions and regulatory authorities to have a three-dimensional and comprehensive understanding of the business situation of enterprises and overcome the difficulties of information asymmetry in the

financing process. Small and medium-sized enterprises should compete fairly, operate honestly, put an end to false and fraudulent business activities, and establish a good corporate image. Small and medium-sized enterprises must further improve the financial system, strengthen the management of accounting information, and ensure the authenticity of their financial situation. Small and medium-sized enterprises should establish a culture of honesty and credit, vigorously advocate the concept of honesty and credit, and enhance the sense of honesty and credit of small and medium-sized enterprises. In the credit guarantee system, the intervention of the government and other organizations can promote the standardization of the credit system, thus providing financial support for small and medium-sized enterprises [10].

4.4 Increase Government Support Intensity

While developing digital finance, it also needs the support of the government, which should guide and regulate it scientifically. At the same time, we should strengthen the supervision of network finance to ensure the healthy development of network finance to provide better financing services for small and medium-sized enterprises. In order to promote the development of small and medium-sized enterprises in China, the government should give support in policy and finance. The central and local governments have provided strong support to small and medium-sized enterprises to help them solve their difficulties, and have taken effective measures such as tax reduction, rent reduction, financing cost reduction, research and development expenditure subsidies, and encouragement for the development of science and technology enterprises. Financing for emerging companies and jointly improving output can ensure the optimal use of resources. The government should strengthen the supervision of policy implementation to ensure that the policy takes root. Specific measures include: increasing policy publicity to improve SMEs' understanding of the policy; strengthening policy transparency to enable SMEs to fully understand the policy information and reduce financing costs in the process of applying for financing; Establish and improve the policy implementation mechanism to ensure the smooth transmission of information and timely implementation in the process of policy implementation.

5 Conclusions

The problems faced by SMEs in the process of financing mainly include financing difficulties, high financing costs, policy, technological innovation, and risk management. These problems not only restrict the development of small and medium-sized enterprises, but also affect the stability and sustainable development of the whole economy. To address these issues, it is imperative to implement a range of remedial actions. These include bolstering the research and development of core technologies, establishing a multi-tiered financing marketplace for SMEs, enhancing the development of the credit information infrastructure, and boosting governmental support. In essence, the evolution of digital finance offers a greater array of financing

prospects for SMEs, yet concurrently introduces numerous challenges. The government, financial entities, and businesses must collaborate to reinforce their cooperative efforts, foster the robust growth of digital finance, deliver superior financing services to SMEs, and encourage economic stability and sustainable progression.

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