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Research on the Countermeasures of Corporate Financing Constraints under the Background of Financial Digital Transformation

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Abstract: Financial digital transformation is an important means for enterprises to achieve high-quality prosperity under the new development pattern. How to make use of the opportunity of financial digital transformation to relieve the financing constraints is worth pondering. Based on the digital transformation of corporate finance and the current situation of financing capacity in China, this paper puts forward some suggestions on how to deal with the financing constraints in line with China's national conditions. The government should actively introduce policies to promote the development of digital technology and the digital transformation of enterprises while effectively supervising enterprises, third-party data companies and the internet finance industry. The financial market should actively set up and develop small and medium-sized banks and private banks, perfect the enterprise credit system and carry out financial innovation. Enterprises should promptly deploy the digital transformation strategy, standardize the business operations, improve the management level and build diversified financing channels.

Keywords: Financial digitization, Financing constraints, Digital transformation of enterprises.

1. Introduction

In January 2022, the State Council issued the "14th Five-Year" Digital Economy Development Plan, pointing out that China's digital economy has entered a new stage of deepening application, standardizing development and sharing with all, and proposing to speed up the transformation and upgrading of enterprise digitization. With the application of cloud computing, big data, blockchain and other technologies, digital transformation has become an important opportunity for enterprises to integrate resources and achieve rapid growth. In 2020, the scale of China's digital economy was 39.2 trillion yuan, accounting for 38.6% of GDP, with a growth rate of 9.7%, which was about 6.7 percentage points higher than the nominal growth rate of GDP in the corresponding period. In order to meet the needs of the development of the digital economy, the financial sector, as the core of enterprise management, pays more attention to the digital reform. The digital transformation contributes to the innovation of products, operating process, and business model[1-3]. The use of digital technology can extract information about financing constraints from corporate annual reports and conduct textual analysis, which is very helpful for enterprises to clarify the causes of financing

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constraints [4]. Financing constraint has always been an unavoidable realistic problem for enterprises. The financing constraint restricts the investment behavior and investment efficiency of the enterprise and affects the realization of the goal of maximizing the enterprise value. Chinese enterprises mainly use indirect financing, and the financing channels are relatively single, dominated by commercial bank loans. Up to the end of December 2021, the stock of domestic and foreign currency loans of commercial banks in China accounted for 61.68% of the social financing scale. However, commercial banks tend to favor large-scale enterprises and state-owned enterprises with standardized management and high information transparency. The financing constraints faced by small, medium and micro-sized enterprises and private enterprises are even more severe [5]. The application of digital technology enables information flow, logistics, capital flow and other information of an enterprise to be effectively transferred to the capital supplier, which alleviates the problem of information asymmetry to a certain extent. Then, under the background of financial digital transformation, it is worth paying attention to the current situation of financing constraints of Chinese enterprises and what measures should be taken to deal with the financing constraints of enterprises.

In view of the above, this paper studies the coping strategies of corporate financing constraints under the background of financial digital transformation. First of all, through literature review, we can deeply understand the connotation, influencing factors and functions of financing constraints and financial digital transformation, so as to provide a theoretical basis for cracking corporate financing constraints under the background of financial digital transformation. Secondly, it investigates the status quo of financing ability and financial digital transformation of enterprises, which provides logical support for enterprises' financing constraint coping strategies. Finally, the role of government, financial institutions and enterprises should be effectively brought into play, and countermeasures should be put forward from macro, meso and micro levels. This is of positive practical significance for Chinese enterprises to make corresponding management changes to adapt to the digital transformation situation, accelerate the growth of enterprises and promote the sustained and healthy development of Chinese economy.

Compared with domestic and foreign scholars' research, the research on corporate financing constraints under the background of financial digital transformation is rare. The existing research has carried out rich discussions on corporate financing constraints and corporate digital transformation, focusing on the influencing factors of corporate financing constraints, the economic consequences of corporate financing constraints and practical suggestions for corporate digital transformation. Therefore, based on the background of financial digital transformation, comprehensive research on corporate financing constraint coping strategies needs to be supplemented urgently. This paper discusses from the following aspects. First, review and comment on the relevant literature on corporate financing constraints and financial digital transformation. Then, through statistical data and the implementation of typical enterprises, the paper discusses the current situation of corporate financing constraints in the financial digital transformation. Then, it puts forward the countermeasures to the corporate financing constraints under the background of financial digital transformation. Finally, combing the research process, summarizing the main research results on corporate financing constraints under the background of financial digital transformation.

2. Literature review

2.1. Factors affecting financing constraints

The financing situation of enterprises is complex, and many factors lead to the corporate financing constraints. The influencing factors of corporate financing constraints mainly include the following aspects.（1）The level of financial development. A good financial ecological environment, financial innovation and the development of digital inclusive finance can effectively ease corporate financing

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constraints [6-8]. (2) The national monetary policy. The uncertainty of monetary policy will have an effect on corporate cash holding strategy [9]. (3) Information sharing degree. Li Xianghua and Sharla Cheung found that the higher the information sharing degree of the company in the self-media platform, the more effective it will be to ease the financing constraint problem of the enterprise [10]. (4) Political connection and financial connection. Political connection helps enterprises to obtain commercial credit, and alleviates enterprise financing constraints from two aspects of financing scale and financing term. Financial connection helps enterprises to obtain short-term loans [11-12]. (5) The nature of enterprise ownership. Zhang Xueying and Liu Yinwei analyzed the difference of financing cost between local state-owned enterprises and private enterprises, indicating that the financing capacity is affected by the nature of ownership [13]. (6) Enterprise scale. Financing constraints of small and medium-sized enterprises are more significant than those of large enterprises [14]. (7) Commercial credit level. Lan Yanze and Wei Yidan pointed out that commercial credit as a financing channel can ease the financing constraints of enterprises [15]. (8) Effectiveness of internal control. Effective internal control can reduce corporate financing costs and ease corporate financing constraints [16]. (9) Degree of information disclosure. Disclosure of high-quality corporate social responsibility information is an effective way to solve financing difficulties [17].

2.2. Economic consequences of financing constraints

First of all, financing constraints greatly limit the investment behavior and investment efficiency of enterprises. In this regard, scholars at home and abroad have conducted a large number of studies, such as Kaplan and Zingales, Cleary, Zhao Libin and others [19-20]. Cui Lingyu and Zhu Zhiyong used the data of A-share listed companies from 2012 to 2020 to examine the impact of financing constraints on enterprise investment efficiency, and found that optimizing financing capacity can improve enterprise investment efficiency [21]. Secondly, financing constraints have an impact on corporate value. Haider pointed out that the weaker the financing constraint, the better the operating performance [22]. Guo Lili found that the further allocation of financial assets of enterprises with high financing constraints may lead to a more severe development situation of enterprises, which is not conducive to the growth of business performance of enterprises. On the contrary, in the case of low financing constraints, the value of enterprises can be increased through financialization [23]. In addition, financing constraints also limit innovation and export trade. Yan Ruosen and Jiang Xiao found through empirical research that financing constraints have a significant negative impact on enterprises' R&D investment [24]. Zhong Fengying and Leng Bingjie studied the correlation between financing constraints and enterprise innovation performance with research and development investment as an intermediate variable. The results showed that financing constraints do significantly inhibit enterprise innovation performance [25]. Li Qiaochu explored the impact of financing constraints on the export vitality of enterprises from the perspectives of export decision-making and export scale. The research found that financing constraints do restrict export behavior [26].

2.3. Financial digital transformation and its application in China

Fu Jianhua, vice president of UFIDA Network Technology Co., Ltd., distinguishes financial digitalization from financial informatization, and believes that the concept of financial digitalization arises from the application of enterprise digitalization to financial management [27]. Enterprise digitization refers to the re-creation of the company's vision, strategy, organizational structure, processes, capabilities and culture through digital technology to adapt to the evolving digital business environment [28]. The external driving forces of the digital transformation of enterprises mainly include the development and penetration of digital technology, the intensification of the competitive environment and the change of users' demands [29]. The application of digital technology helps to

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ease corporate financing constraints. Buehlmaier and Whited believe that extracting information about financing constraints from corporate annual reports and then constructing indicators of listed companies' financing constraints based on text analysis can clarify the causes of corporate financing constraints and help companies find ways to ease the financing constraints [4]. Zhang Qinglong and Zhang Yanbiao pointed out that the research on financial digital transformation pays more attention to the application of management accounting tools, the implementation of financial sharing services and the application of specific digital technologies under the transformation objectives, in order to enhance the efficiency and cost reduction of accounting, promote the transformation of financial organizations and the adjustment of accounting human resources allocation structure [30].

2.4. Literature commentaries

Through literature review, it can be seen that the relevant research on corporate financing constraints is relatively rich, and there are relatively consistent research conclusions on the influencing factors and economic consequences of financing constraints. The research on financial digital transformation mainly focuses on the practical field, but the relevant research focusing on the analysis of corporate financing constraints from the perspective of corporate financial digital transformation needs to be supplemented. Therefore, based on the existing research, this paper attempts to analyze the current situation and countermeasures of corporate financing constraints under the background of financial digital transformation. This research can provide a new way to solve the problem of corporate financing constraints under the new economic situation, which has certain practical significance. On the other hand, it can provide a theoretical basis for promoting the digital transformation of Chinese enterprises.

3. Corporate financing constraints under the background of financial digitalization

3.1. Status of financing capacity

From the perspective of financing channels, the financing channels of enterprises in China are relatively single. Chinese enterprises mainly depend on internal self-accumulation, and seldom apply external financing. Bank credit is their main external financing channel. Up to the end of December 2021, the stock of social financing was 314.13 trillion yuan, of which the direct financing represented by corporate bonds and domestic non-financial enterprise stocks was 39.41 trillion yuan, accounting for only 12.55% of the social financing. From the perspective of financing entities, private enterprises have more significant financing constraints than state-owned enterprises, and small and medium-sized enterprises are more likely to be subject to credit restrictions than large enterprises. Xie Weimin et al. analyzed the listed private enterprises in China by constructing a basic model of financing constraints, and pointed out that the private enterprises in China have financing constraints [31]. The results of the national banker's survey carried out by the People's Bank of China in 2021 show that the loan demand index of China's large enterprises is 57.1%, that of medium-sized enterprises is 60.5%, and that of small and micro enterprises is 70.5%. It can be seen that small, medium and micro-sized enterprises are in more urgent need of financing. However, commercial banks are more willing to choose large-sized enterprises for reasons such as risk aversion. As of the end of September 2021, the balance of loans from financial institutions, enterprises and institutions amounted to RMB121.26 trillion, of which loans to small and micro-sized enterprises accounted for only 40.36%, which is seriously inconsistent with the number of small and micro-sized enterprises and their demand for loans. From the perspective of credit providers, China's financial institution system cannot fully match the financing needs of enterprises. Compared with large-scale financial institutions, small and medium-sized financial institutions are more likely to maintain long-term cooperative relationship with small and medium-sized enterprises [32]. However, the development of small and medium-sized financial institutions in China is relatively lagging behind, and the ability to provide credit to small and medium-sized enterprises is insufficient. Up to the fourth quarter of 2021, inclusive small and micro enterprise loans from small and medium-sized banks accounted for only 63.4% of the total inclusive small and micro enterprise loans from banking financial institutions.

3.2. Enterprise financial digitalization status

First of all, the financial digital transformation of Chinese enterprises is in an overall growth period. According to the results of the 2020 "Business Evaluation Environment for Ten Thousand Private Enterprises" survey released by the All-China Federation of Industry and Commerce, only 34.54% of the enterprises have carried out the digital transformation strategy [33]. The diagnostic data of China's digital transformation service platform show that by the end of 2020, less than 1% of the enterprises have realized the data-driven transformation of the whole enterprise and all elements, and more than 85% of the enterprises only apply digital technology in certain single functions or business scope [34]. Secondly, large-scale enterprises are the main force in the financial digital transformation. According to the report on Digital Transformation of Chinese enterprises issued by Tsinghua University, 53.8% of the enterprises' transformation aims at achieving the unified management and control of the group, and the large state-owned enterprises are more active in the digital transformation. State Grid, PetroChina, Sinopec and other large state-owned groups have made systematic and in-depth digital changes in product innovation, production, operation, user services, staff empowerment, data development and other aspects. In addition, RPA is the most widely used technology in financial digitalization in China. RPA can realize the automation of financial process, improve the enterprise's financial data processing ability, help to release the financial human resources at the grass-roots level, and further improve the enterprise's risk prevention and control ability. UiPath, Automation Anywhere, Aliyun RPA, i-search, Kingdee and UFIDA are the major suppliers of RPA technology in China.

4. Countermeasures for corporate financing constraints under the background of financial digitalization

From the macro perspective, firstly, the government should speed up the development of digital technology, assist enterprises in their digital transformation, precisely implement policies for enterprises in different regions and industries, guide enterprises to enhance their transformation awareness, and strengthen the construction of data governance and regulatory system. Then, by improving the laws and regulations to crack down on the financial fraud, commercial fraud and other illegal acts of enterprises, improve the quality of enterprise information disclosure. Secondly, governments at all levels should attach importance to the development of internet finance, make full use of the internet, big data, artificial intelligence and other technologies to speed up the construction of a national comprehensive service platform for smart finance, and optimize the allocation of capital resources. Thirdly, the government should do a good job in supporting the third-party data companies, and support and regulate the third-party data companies from two aspects of policy and capital. Finally, establish a sound internet finance industry access standard and regulatory mechanism, create a good institutional environment for the development of internet finance, and promote low-risk direct transactions between the supply and demand of funds.

The countermeasures of the middle dimension are as follows: firstly, the establishment and development of small and medium-sized banks and private banks should be accelerated to form a coordinated financial institution system of large, medium and small commercial banks; Second, establish a financing guarantee system for small and medium-sized enterprises and private enterprises to enhance corporate credit and guard against bank risks. At the same time, set up a re-guarantee

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agency to transfer the risks of guarantee companies. Third, actively carry out financial innovation and design diversified personalized financial products that meet the needs of enterprises, so as to reduce the external financing costs of enterprises. Fourthly, we should improve the corporate credit reporting system and use the Internet, big data, cloud computing and other technologies to achieve scientific assessment of financing-constrained enterprises. At the same time, we should promote the opening of the corporate credit reporting system and provide more open and transparent corporate information resources for banks and investors, effectively solve the problem of information asymmetry in the corporate financing process and reduce the cost of information collection and transaction in the financing market.

From the micro perspective, firstly, enterprises should deploy the digital transformation strategy in a timely manner, make full use of digital technology to integrate resources, optimize business model, improve the management level, and enhance borrowing capacity by enhancing enterprise value. Secondly, in the process of digital transformation, enterprises should constantly improve their internal management systems, conduct business in good faith, improve the accuracy of financial accounting, pay taxes in full and on time, earnestly fulfill their corporate social responsibilities, establish a good corporate image, and enhance the confidence of banks and external investors. Third, make full use of the advantages of big data credit reporting model, improve the transparency of business information of enterprises, strengthen the connection between enterprises and banks, enhance the communication between enterprises and external investors, and ease the financing constraints of enterprises by reducing information asymmetry. Fourth, enterprises should broaden financing channels, make full use of the financing channels of internet finance, give full play to the advantages of supply chain finance, and ease financing constraints by means of P2P, crowdfunding, asset securitization, etc.

5. Conclusion

Based on the background of the country vigorously promoting the development of digital economy, this paper studies the corporate financing constraints in the financial digital transformation. Firstly, the paper reviews the literature on the research of financing constraints and financial digital transformation, and then further analyzes the current situation of financing capacity and financial digital transformation of Chinese enterprises. For a long time, China's corporate financing channels are relatively single, mainly commercial bank loans. Due to the unreasonable structure of commercial banks and the limitations of enterprises themselves, the financing constraints of private enterprises and small and medium-sized enterprises are more significant. The advancement of digital technology makes it more convenient to collect information in the financing market, but at the same time there are problems such as data security. At present, the digital transformation of corporate finance in our country is still in its growing period. Based on the above analysis, this paper puts forward the following countermeasures and suggestions on corporate financing constraints under the background of financial digital transformation. (1) The government should issue policies to promote the development of digital technology, corporate digital transformation and the construction of a national comprehensive service platform for smart finance. At the same time, laws and regulations should be improved to effectively regulate corporate information disclosure, third-party data companies and the internet finance industry. (2) Financial institutions should actively set up and develop small and medium-sized banks and private banks, perfect and open the credit system of enterprises, and carry out financial innovation. In addition, the society should establish a financing guarantee system for small and medium-sized enterprises and private enterprises and set up a re-guarantee agency. (3) Enterprises should promptly deploy the digital transformation strategy, take advantage of the financial digital transformation opportunity, standardize the operation, improve the management level, strengthen the contact between enterprises and banks and external investors, and construct diversified financing channels. Based on the actual situation of China's enterprises' financial digital transformation and financing ability, this paper puts forward some countermeasures and suggestions on financing constraints from the macro, meso and micro levels, which are in line with China's national conditions. However, digital technology also promotes changes in financial institutions and other economic organizations. In the future, we can examine the impact model of digital economic development on enterprises' financing constraints, and then put forward some strategic suggestions to promote the healthy development of the financing market.

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