ISSN 2616-5902 Vol. 5, Issue 9: 137-142, DOI: 10.25236/AJBM.2023.050921

The Impact Mechanism of Blockchain Technology on Financing Constraints from the Perspective of High-Quality Enterprise Development

Anqi Li[1,a], Ziying Tan[1,b], Ruining Dan[2,c], Deyu Li[3,d,*]

[1]*School of Finance, Anhui University of Finance and Economics, Bengbu, China*
[2]*School of Statistics and Applied Mathematics, Anhui University of Finance and Economics, Bengbu, China*
[3]*School of Economics, Anhui University of Finance and Economics, Bengbu, China*
[a]*lianqi20021126@163.com*, [b]*1352426897@qq.com*, [c]*2496293092@qq.com*, [d]*ldy0048@163.com*
**Corresponding author*

Abstract: *Small and medium-sized enterprises (SMEs), as an important part of the national economy, often encounter some financing difficulties due to their small scale and poor ability to withstand risks, which restrict the sustainable development of China. With the advancement of technology, blockchain technology is gradually applied to various industries, which to a certain extent alleviates the financing constraints of SMEs. The article discusses the role of applying blockchain technology in enterprise financing constraint mechanism from the perspective of high-quality enterprise development, and analyzes the causes of the current financing difficulties of SMEs in China, after which the mechanism of blockchain technology's influence on financing constraint is analyzed, and finally gives countermeasures of blockchain technology to alleviate financing constraint from the perspective of high-quality enterprise development.*

Keywords: *High-quality development; Blockchain technology; Financing constraints*

1. Introduction

Small and medium-sized enterprises are an important cradle of entrepreneurship. It has an important role in achieving innovation-driven development of large enterprises, accelerating industrial transformation, easing employment pressure[1], improving national livelihood and maintaining social stability. However, the financing effect of SMEs in China is huge in relation to their outstanding contribution to social and economic development. According to Peter Drucker, the father of modern management, the competition between enterprises and businesses in the 21st century has shifted to the supply chain and supply chain. Due to its high flexibility and low risk[2], supply chain management is able to respond quickly to the needs of the market and redesign the procurement, production and sales processes, thus improving the competitiveness of enterprises.

Due to the high threshold of listed financing, SME financing is mainly concentrated in banks and other financial institutions, with only a small portion of funds coming from direct financing. However, in the actual operation process, commercial banks rarely provide long-term financing for SMEs due to small scale, simple structure, weak management capability, information asymmetry and low agency cost. Forced to develop, SMEs will choose short-term financing to meet their long-term capital needs, which further increases financing costs. In this context, banks and other financial institutions try to solve the financing problem of SMEs by expanding the scale and amount of loans, but they still cannot meet the huge demand for funds from SMEs. Faced with such financing difficulties, SMEs in China have chosen diversified financing methods. The application of blockchain technology in the financial industry provides a new way for SMEs to make a scientific and accurate assessment as well as a new way of financing.

ISSN 2616-5902 Vol. 5, Issue 9: 137-142, DOI: 10.25236/AJBM.2023.050921

2. Current Status of Financing for Small and Medium-sized Enterprises

2.1. Endogenous Financing is Insufficient

Unlike large enterprises, SMEs are financed more by internal financing. There are two types of internal financing: informal financing of a private nature (e.g., loans to friends, family, employees, etc.) and retained earnings (including surplus supply and undistributed profits). Since the former is not protected by law and the amount of financing is limited, it is not a permanent solution for corporate financing. In addition, due to the limitations of their own development, SMEs do not show a good level of profitability, resulting in the inability of internal funding to meet the urgent need of SMEs for capital development.

2.2. External Financing is Restricted

First, the threshold of direct financing is high. The financing methods include equity financing, debt financing, asset securitization, equity financing, etc. Through the statistical analysis of small and medium-sized board and GEM companies, the growth rate of China's GEM companies is significantly higher than that of small and medium-sized board. The reason for this is that the threshold for listing in China is high, and SMEs have greater difficulties in accessing the securities market. In addition, SMEs have a high demand for the bond market, which can cause excessive financial leverage of listed companies and difficulties in corporate financing. Second, credit is missing. Credit financing is currently the most important financial instrument in China, but its financial protection for SMEs is not obvious. Due to the lack of credit protection for SMEs, banks and other financial institutions tend to finance large enterprises and discriminate against them to a certain extent. In addition, the complex bank loan approval process imposes more capital and time costs on SMEs, making their financing costs much higher. In general, the loan balance growth of SMEs is relatively stable, but the overall growth rate of total medium-sized loans has fallen back and financing is greatly restricted. This paper argues that the information asymmetry that causes SMEs and banks and other financial institutions is the main factor that causes the cost of external financing to be higher than the cost of internal financing for enterprises. In this context, SMEs are faced with high external financing costs and lack of internal cash flow, thus creating a financing constraint dilemma[3].

3. The Causes of Financing Difficulties for Small and Medium-Sized Enterprises

3.1. Internal Factors

In terms of corporate system, SMEs are mostly sole proprietorships and partnerships, which makes them suffer from many problems such as inadequate financial information disclosure, irregular financial system, poor internal control, and weak awareness of corporate culture[4]. For financial institutions like banks, these conditions make them unclear about the development of enterprises, so they will not provide loans to SMEs. SMEs without external capital support will eventually form a vicious circle until they are delisted. Therefore, SMEs should make up for their own shortcomings by taking the initiative to carry out financial information mines, improve information transparency, and establish sound financial systems and internal control systems. In terms of corporate business model, SMEs are more flexible and have higher capital turnover than large enterprises. It is difficult for banks and other financial institutions to adapt their financial products to the diversified financing needs of SMEs. At the current level of development, banks and other financial institutions are not equipped to develop financial products specifically for SMEs, making it difficult to form a good situation of long-term cooperation between lenders and moneylenders. In terms of scale, SMEs in general are small in size and simple in structure. The short life cycle, small scale and low information transparency of SMEs limit their external financing. In the loan applications made by SMEs, guarantees are usually offered to SMEs. In reality, SMEs do not have corresponding fixed assets as collateral, which makes banks reluctant to lend to them.

3.2. External Factors

In the view of banks, applying for credit from banks is the preferred way for SMEs to obtain external financing. Under the current market conditions, financial institutions like banks are reluctant to lend to SMEs for fear of taking risks. Since there is not enough interest rate incentive for banks to lend to SMEs, banks are likely to lend money to large enterprises[5].

Strict lending conditions are imposed on SMEs due to the lack of collateral and the fact that banks pawn the collateral without strictly fulfilling the contract, obtaining less money than the loan financing and causing the banks to suffer losses. Therefore, it is common for banks to strictly control their lending to SMEs. In terms of the financial system, the financial market access requirements are very strict and the guarantee system is not regulated. SMEs are constrained by their own development to provide loan guarantees, and the trust between banks and enterprises is reduced. To reduce risks, financial institutions like banks are more willing to provide funds for large companies. From the government's point of view, in order to stabilize the order of the financial market, the government has introduced policies to limit the threshold of corporate equity financing, resulting in the exclusion of most SMEs. In the case of the main market, the strict requirement of "three consecutive years of profitability" requires sponsors to subscribe more than 30 million in equity capital and a total equity of at least 50 million after the issue. These conditions prevent SMEs from raising capital in the main market.

4. The Mechanism of Blockchain Technology on Financing Constraints in Small and Medium-Sized Enterprises

4.1. Enhance information symmetry

In the long run, a deeper analysis is necessary to fundamentally solve the financing problems of SMEs[6]. This paper argues that there is a serious problem of information asymmetry between SMEs and financial organizations such as banks in China. It is difficult for financial institutions such as banks to openly grasp information about SMEs. SMEs also have disadvantages such as small size, single structure and insufficient pledges to meet banks' credit screening criteria. In the long run, to fundamentally solve the financing problems of SMEs, it is necessary to conduct a deep analysis. This paper argues that there is a serious problem of information asymmetry between SMEs and financial organizations such as banks in China. In addition, many SMEs do not have sufficient financial knowledge and find it difficult to distinguish which financial products are suitable for them. Faced with the current situation of information asymmetry, various apps based on blockchain technology are currently emerging, which are conducive to reducing the costs and expenses incurred by traditional banks in the process of customer selection. Information processing through the network can not only reduce the degree of information asymmetry, but also reduce the cost of fund matching and risk allocation, thus realizing efficient allocation of funds and reducing transaction costs. Asymmetry in the credit market is the root cause of restricting the development of SMEs. The development of blockchain technology can effectively reduce the degree of information asymmetry between banks and enterprises, thus reducing transaction costs, breaking through time and regional restrictions, and easing the financing constraints of SMEs. Based on the gradual popularization and innovation of the new round of blockchain information technology, the most prominent advantage of blockchain technology is to integrate information resources, improve data processing capability and efficiency, and effectively reduce the degree of information asymmetry.

4.2. Increase the Scale of Financing

Banks will choose different lending methods based on their unique business philosophy, scale, organizational structure and other advantages. Due to the heterogeneity of SME information, different lending approaches and different proportions of heterogeneous information result in differences in information assessment, which leads to differences in risk assessment when SMEs and banks face different risks. Banks will form different expected returns when granting credit and form the feasible credit range of banks[7]. The advantages of blockchain technology in terms of information collection, information processing and its own development influence the ability of lending technology to identify heterogeneous information of SMEs. First, blockchain technology can effectively improve the multidimensionality and authenticity of information and enable information sharing among stakeholders. Second, data mining technology can accurately locate and match the information required by users and reduce the cost of collecting information from lenders by improving the accuracy of data search. The third is Metcalfe's law. The blockchain technology platform gathers a large number of enterprises and customers, enabling exponential dissemination of data and providing comprehensive and dynamic data information between capital supply and demand. By improving the degree of information matching, blockchain technology can provide financial institutions such as commercial banks with comprehensive customer information, thereby expanding the scope of viable credit from commercial banks to SMEs. The more accurate the blockchain technology's assessment of SME information, the easier it is for SMEs rated as excellent projects to obtain financing success. In addition, the improved information matching can help improve the expected return, optimize the welfare of both borrowers and lenders, and improve the financing environment.

4.3. Lower Financing Costs

In traditional credit transactions, SMEs are in a very passive position. Due to our inadequate financial system, irregular accounting registration and imperfect information disclosure, our traditional commercial banks often need to provide guarantees to them, thus making their financing costs and credit difficulties more prominent. Blockchain technology, based on blockchain technology, is conducive to technological innovation, financial function development, financial credit quantification, and user experience enhancement, making finance more convenient and thus improving the financing efficiency of SMEs. In addition, blockchain technology, with its advantages of efficient information collection and information matching, can improve the access to credit information of SMEs and achieve the effect of information management. Implementing comprehensive information management for SMEs can make up for the deficiency of relying on financial statements and collateral in the traditional credit process, and provide SMEs with diversified and convenient financing channels. Blockchain technology gradually strengthens its own development through multi-dimensional and wide-field information resource integration, improves information transmission and information identification mechanisms, and enables efficient matching of borrowers and lenders, so that SMEs can realize low-cost financing and high-quality services. Therefore, blockchain technology can optimize the credit process and customer evaluation model through technological innovation, thus reducing the financing cost of SMEs. Meanwhile, blockchain technology can turn the fragmented information scattered among SMEs into a comprehensive enterprise analysis report and can provide useful guidance and advice for SMEs' operation and financial management to promote their long-term development.

4.4. Reduce Financing Risk

China's SMEs have a large base across various industries, with significant inter-enterprise heterogeneity. In addition, SMEs are small in scale and simple in structure, and their internal structure, information disclosure system and information management are generally imperfect, leading to information asymmetry in the credit process. Due to the lack of effective understanding of SMEs' operation and solvency, blind lending will cause credit risks. Blockchain technology, authorized by SMEs, with its powerful data statistics and analysis functions, obtains information required by commercial banks for credit business through specific algorithms, which makes up for the imperfection of SMEs' financial information and provides reasonable guarantee for reducing financing risks. There are three ways for blockchain technology to solve the financing risks of SMEs: first, based on their behavioral characteristics, measure their current financial status; and combine with current economic activities, reasonably estimate the future production, sales and cash flow of SMEs, so as to further estimate their solvency and willingness to repay debts. Ensure the safety of credit funds and prevent credit risks. Secondly, data mining technology can effectively reduce the cost of enterprise behavior analysis and scientifically and effectively monitor the flow of funds, business behavior and other related information in the credit process, thus avoiding moral hazard and default risk to a certain extent. Again, through efficient information aggregation, analysis and identification, we can analyze the operating cash flow, investment cash flow and financing cash flow of SMEs, reasonably estimate the financing amount, maturity and interest rate of enterprises, avoid the business risks brought by human intervention and strengthen risk control.

5. Countermeasures for Alleviating Financing Constraints in Small and Medium-Sized Enterprises through Blockchain Technology

5.1. Improving the Quality of Information Disclosure for SMEs

The key reasons why SMEs have difficulty in obtaining financial support in the financial market are low trust in banks due to serious information asymmetry and increased financing costs due to lack of collateral. SMEs should focus on establishing a good social image so that they can be recognized by banks and other financial institutions. First, SMEs must improve their internal information disclosure system, actively disclose information and expand the transparency of information disclosure in order to win the trust of investors in the financial market and obtain financial support, thus promoting efficient business operations. Second, SMEs must improve internal governance[8], enhance credit awareness, standardize financial management, and actively provide investors with high-quality information; Third, SMEs must break through property rights regulations, strategize according to the stage of the enterprise's life cycle, optimize capital structure, enhance the flexibility of production and operation, and focus on the development of technological innovation to attract investors' attention.

5.2. Strengthen the Awareness of SMEs

Compared with the development scale and development history of large enterprises, the development of SMEs in China is relatively "isolated", therefore, SMEs should learn to rely on external forces to achieve their long-term development in the process of development. First, large enterprises have more advantages than SMEs. By establishing solid ties with large enterprises and establishing long-term and stable cooperative relationships[9], we can gradually improve the development level of SMEs in China and direct them to large enterprises. Second, SMEs should establish long-term cooperation mechanisms with banks and other financial institutions, maintain good business relationships, and gradually improve their credit ratings to lay the foundation for improving financing efficiency. By strengthening the cooperative relationship between SMEs and large enterprises, banks and other financial institutions, SMEs can get rid of their dependence on private financing as much as possible and adopt more convenient and efficient financing methods.

5.3. Increase Government Support for Innovation of SMEs

The current technological innovation of SMEs in China suffers from insufficient innovation funds, technical difficulties, uncertain market risks, backward equipment level, shortage of scientific and technological talents, and poor policy environment. Technological progress and technological innovation have become an important factor affecting the development of SMEs in China[10]. Therefore, it is far from enough to rely on blockchain technology alone to solve the financing limitations of SMEs. It must be regulated and supported by the state. Therefore, the government must be fully aware of the various difficulties encountered by SMEs in China in the process of technological innovation and take corresponding countermeasures to promote and motivate SMEs to actively participate in technological innovation activities.

First, the government should regulate the relevant legal system to prevent violations of law and discipline, use the authority of the law to restrain malpractices in the financial market[11], and provide a good market investment and financing atmosphere for SMEs and blockchain technology companies. Second, the government should strengthen information disclosure for SMEs (especially state-owned, low-tech and growth stage), reduce information discrepancies between transaction parties, and encourage, support and guide SMEs to focus on technological innovation and progress.

Acknowledgements

This work is supported by the National Innovation and Entrepreneurship Program for Undergraduates, "Research on the Impact Mechanism of Blockchain Technology on Financing Constraints from the Perspective of High Quality Development of Enterprises"(Grant No.: 202210378154).

References

[1] Gao Xiaoyue. Mechanism, Effect and Countermeasures of Financial Technology to Relieve Financing Constraints of SMEs [D]. Henan Polytechnic University, 2020.
[2] Qu Xiaowei. An Empirical Study on the Impact of Supply Chain Integration on Enterprise Value [D]. Zhejiang University of Finance and Economics, 2015.
[3] Fan Houyu. An Empirical Study on the Impact of Internal Control on Financing Constraints [D]. Jinan University, 2016.
[4] Liang Shuiyuan, Yu Cuilian. Why is It Difficult for Small and Medium-sized Enterprises to Obtain Financing [J]. Statistics and Decision, 2003(11):108-109.
[5] Chen Xinjuan. Research on Internet Finance to Resolve Financing Difficulties of Small and

ISSN 2616-5902 Vol. 5, Issue 9: 137-142, DOI: 10.25236/AJBM.2023.050921

Medium-sized Enterprises [J]. Cooperative Economy and Technology, 2019 (18): 46-49.

[6] Mao Wenxia. Research on Financing Problems of Small and Medium-sized High-tech Enterprises Based on Factor Endowments [J]. Accounting Newsletter, 2014 (35): 11-13.

[7] Chen Wenqi. Research on the Impact of Financial Technology on Small and Micro Enterprises' Financing [D]. Hunan University, 2018.

[8] Chen Lishan, Fu Yuanhai. Dynamic Characteristics of Technological Innovation Affecting the High-quality Development of Enterprises under Financing Constraints [J]. China Soft Science, 2019(12):108-128.

[9] He Yuqian, Li Xing. Research on the Impact of Blockchain Technology on Business Development and the Path [J]. Journal of Hubei Open Vocational College, 2022, 35(04):111-112.

[10] Zhou Zhou, Wang Yiming. Research on the Iimpact of Distributed Bookkeeping Technology on Accounting Efficiency of Small and Medium-sized Enterprises from the Perspective of Blockchain [J]. Small and medium-sized enterprise management and technology, 2021(01):108-109.

[11] Yawen Zhang. A Study on the Impact of the Establishment of Free Trade Zone on Total Factor Productivity of Enterprises Based on the Mediating Role of Financing Constraints [J]. Modern Business, 2021(23):61-68.