

Article

Path of FinTech to Improve Financing Efficiency of Small and Medium Enterprises

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Abstract: As an important part of China's economic system, small and medium enterprises (SMEs) have grown rapidly, contributing to the development of the social economy. However, SMEs still face the problem of fund shortage and low financing efficiency. FinTech has provided innovative solutions to solve the financing problems of SMEs. By elaborating on the financing efficiency of SMEs, how fintech improves the financing efficiency of SMEs and solves information asymmetry was explored in this study in broadening financing channels and reducing financing costs. The contents and problems of Internet innovative financing channels such as supply chain finance, peer-to-peer, crowd-funding model, and micro-loan model were compared and analyzed, and suggestions and measures were made to improve the financing path of SMEs to optimize "Blockchain + Supply chain finance". The results of this study provide a reference for the application of financial technology to solve the financing problems of SMEs.

Keywords: Financial technology, SME, Financing efficiency, Supply chain finance

1. Introduction

Currently, SMEs are an important pillar and a source of vitality for the domestic economy. According to data from the Ministry of Industry and Information Technology and the State Administration for Market Regulation of China, the number of SMEs in China exceeded 52 million in 2022, accounting for 98.4% of the total number of enterprises in the country. China's SMEs continue to grow and develop, playing a significant role in promoting national economic growth, increasing employment, and maintaining social stability. However, compared with large enterprises, SMEs face problems including funding shortages, limited financing channels, low operating income, and low financing efficiency. With emerging information technologies such as big data, cloud computing, blockchain, and artificial intelligence (AI) in the financial industry, financial technology (FinTech) has been a new technology for financial institutions to serve SMEs, opening up new financing channels and methods. FinTech has effectively improved the financing efficiency of SMEs and injected vitality into the financial industry's service to the real economy.

2. Efficiency in Financing for SMEs

2.1. Concept Definition

Efficiency generally refers to the input-output ratio, while financing efficiency of an enterprise refers to the cost input and return of the enterprise in financing financial activities, that is, the efficiency and effectiveness of financing realization. Lu (2000) defined corporate financing efficiency as the ability and effectiveness demonstrated by a certain financing method or system in the process of converting savings into investment. Gao (2005) believed that the financing efficiency of a company refers to whether it can obtain the necessary funds at the lowest possible cost. The factors that affect financing efficiency include internal factors such as enterprise size, financing costs, and capital utilization, as well as external financial environments such as financial institutions and financial systems.

Compared with large enterprises, SMEs have two problems: relatively high financing input costs and relatively low financing output economic benefits. Such problems result in low financing efficiency. Due to factors such as scale, financial situation, and information asymmetry, SMEs face financing constraints from external financing channels such as equity financing and bank credit (Li, 2018).

2.2. Reasons for Low Financing Efficiency of SMEs

2.2.1. Limited External Financing Channels

The main external financing channels for SMEs are equity financing in the financial market as a direct means and commercial bank loans as an indirect means. At present, China's financial market policies and systems favor large and medium-sized enterprises with excellent performance, and the policy thresholds in various aspects are relatively high for SMEs. In the direct financing market, a series of entry requirements have been put forward for SMEs, including corporate property structure, organizational standardization, profit indicators, and social credit. SMEs face challenges such as high-profit targets, standardized operations, and the balance of assets and liabilities, which differ from their existing capital and operational status (Li, 2012). At the same time, the process of direct financing for SMEs is cumbersome, requiring a long time, manpower, and financial resources costs. The difficulty of financing has increased. Therefore, in terms of financing mechanisms, the efficiency of financing for SMEs is low.

2.2.2. High Financing Costs

In the traditional credit financing model, due to small scale, short operating cycle, and relatively weak financial strength, SMEs often lack collateral and cannot provide sufficient guarantee conditions. This leads commercial banks to be more cautious in loan reviews for SMEs due to a lack of trust, resulting in a decrease in loan amounts and a lower financing volume for SMEs. Traditional financial institutions need to invest a lot of manpower, material resources, and time costs when providing financing services for SMEs, which reduces the profitability of financial institutions (Chen, 2023). To compensate for higher credit costs and risks, banks often charge higher loan interest rates to SMEs. Higher interest rates increase the financing costs of enterprises and make it more difficult for them to obtain financing.

2.2.3. Long Cycle of Working Capital

The efficiency of fund utilization affects the financing efficiency of SMEs. The longer the circulation cycle of a company's working capital, the more working capital is needed for its development, and the lower the utilization rate of the company's funds (Wang, 2023). During the operation of SMEs, due to their market position, production chain location, and other reasons, they are prone to delayed payments and discounted payments from large enterprises with strong economic strength, resulting in inventory backlog, increased accounts receivable, longer circulation cycles of working capital, and lower efficiency in capital utilization, making it difficult to ensure the stable development of SMEs. When the internal financing of the enterprise is insufficient, the demand for external financing of the enterprise continues to increase. However, the loans that SMEs from external financial institutions are mostly to make up for the short-term liquidity gap, and the borrowing cycle is relatively short. This contradicts the desire of financial institutions to make profits through long-term loans, resulting in increased difficulty in external financing for SMEs.

3. FinTech and Financing Efficiency of SMEs

With the development of new-generation information technology, technology is increasingly applied in the financial field, giving rise to FinTech. FinTech refers to the use of new technologies such as cloud computing, big data, AI, and blockchain to improve the delivery and use of financial services, making them more efficient. The application of FinTech has changed the service channels and methods of financial institutions for SMEs to improve financing efficiency.

3.1. FinTech for Information Symmetry

In the financing process of SMEs, information asymmetry has always caused financing difficulties. Through the application of financial technologies such as big data and cloud platforms, financial institutions can easily obtain financial statements and other operational data of SMEs, evaluate their credit status reasonably, and achieve effective lending, precise risk control, and reduced information asymmetry. The unified credit reporting system established by FinTech records the credit situation of SMEs in all aspects, increases the credit transparency of SMEs in the financial market, reduces the cost of information collection and processing for financial institutions, and improves financing efficiency (Zhao, 2021).

3.2. FinTech in Financing Channels

FinTech has changed the landscape of traditional financial institutions, giving rise to a large number of new financial intermediaries that provide convenient and flexible financing services for SMEs. The application of FinTech has allowed various businesses of Internet finance to develop. Financial institutions have lowered the service threshold, creating conditions for the development of inclusive finance in China. As the main target of inclusive finance, SMEs have also benefited from the Internet

finance business. Domestic technology giants such as Alibaba, Tencent, Ping An, and JD.com have operated the financial business, providing online working capital loans for SMEs, expanding their financing channels, and solving financing difficulties for SMEs.

3.3. FinTech and Financing Costs

The application of technologies such as big data, cloud computing, and AI has enabled improved operational methods and capabilities of financial institutions. Financial institutions use paperless operations, customer service robots, natural semantic recognition, and other technologies to provide financing services, simplifying credit processes, reducing labor costs, and lowering transaction financing costs for both supply and demand sides (Wang, 2019). The application of technology has improved the business processing efficiency of financial institutions and brought more convenience to financing for SMEs.

4. Fintech for Financing Efficiency of SMEs

The combination of technology and the financial industry is useful for the optimization or transformation of traditional financial service models and the provision of innovative financing paths of the Internet, big data, cloud computing, blockchain, AI, and other technologies.

4.1. Supply Chain Finance

Supply chain finance is used in an innovative business financing model as it provides a new path for SMEs to solve their financing difficulties. From a holistic perspective, supply chain finance relies on leading enterprises in the supply chain to change the credit model of banks and other financial institutions that only target a single enterprise entity. It effectively injects funds into the supply chain and extends financial services provided to core enterprises to SMEs in the supply chain, effectively solving the financing problems of SMEs. With technologies such as big data and blockchain, supply chain finance manages each transaction link uniformly, based on the real transaction background and the credit endorsement of core enterprises, so that all parties in the supply chain can benefit. Therefore, the innovative business financing model becomes an effective model to alleviate the financing problems of SMEs (Wang, 2019).

The distributed consensus, encryption algorithms, decentralization, and other features of blockchain technology in FinTech have increased the transparency of supply chain finance and overcome the problem of information asymmetry among trading partners. By sharing information with all node enterprises in the supply chain and utilizing encryption, tamper proof, smart contract, and other technologies, the flow of funds, information, and goods in the supply chain is real-time monitored, facilitating financial service institutions to grasp the operational status of enterprises on the chain at any time and provides an effective means for making financing decisions. There are three main business models for supply chain finance to provide financing for SMEs.

4.1.1. Account Receivable Financing

Accounts receivable financing is used by banks and other financial institutions based on the accounts receivable generated from trade contracts signed between buyers and sellers, and the seller's accounts receivable are used as the repayment source. When SMEs act as suppliers, the long time it takes to obtain accounts receivable results in a shortage of internal working capital. By transferring accounts receivable documents to financial institutions, they issue loans to suppliers, improving the short-term liquidity of SMEs and promoting their healthy development. At the same time, financial institutions use supply chain platforms to effectively supervise downstream manufacturers' timely payments and real transaction processes, control risks in accounts receivable, and improve financing returns and efficiency.

4.1.2. Inventory Financing

Due to the continuous shrinking of product cycles and frequent fluctuations in demand markets, SMEs lacking good financing channels have a dilemma. On the one hand, to ensure the stability of production and sales, enterprises have to maintain a large inventory to cope with market changes. On the other hand, they hope to turn inventory into cash flow as soon as possible to maintain their production and operation. Therefore, inventory financing mortgages inventory to financial institutions to help SMEs obtain short-term financing, turn inventory into working capital, and improve capital turnover speed. Through inventory financing, SMEs can transfer their inventory warehouse receipts to financial institutions through the evaluation of the pledged goods and issue short-term loans, thereby improving the liquidity and operational capabilities of the enterprise.

4.1.3. Prepaid Financing

Prepaid financing is understood as "financing for future inventory". Its model refers to the provision of credit guarantees by third-party logistics companies. On the premise that the supplier company promises to repurchase goods in the future, SMEs prepay accounts and pledge the purchased materials to financial institutions to apply for pledged loans to obtain the necessary working capital for production and operation to alleviate the pressure of prepaid payments. For SMEs, in the credit process of financial institutions, upstream enterprises can produce and transport goods, and the timing can be coordinated. Moreover, the related goods are converted into inventory financing, greatly alleviating the financial pressure on enterprises. This financing model is conducive to resolving the realization risk in the event of corporate default, and at the same time, the ownership of goods is clearer than inventory financing, which improves the efficiency of financing for SMEs and reduces the credit risk of financial institutions. The supply chain finance model provides convenience for financing for SMEs, but due to its greater reliance on the credit and strength of core enterprises on the chain, there are also false situations such as information silos, difficulty in measuring and controlling credit risks, and information asymmetry, which affect the smooth development of financing for SMEs (Liu, 2017).

4.2. Financing Model in Internet Finance

Due to the rapid development of Internet finance, innovative financing models have been developed to complement the lack of financing services of traditional financial institutions. Efficient and convenient loan models have solved the problem of short duration and high frequency of capital demand of SMEs.

4.2.1. Peer to Peer (P2P) Network Lending Model

The P2P online lending model is a type of unsecured lending that does not involve banks or financial institutions as intermediaries and is conducted directly between borrowers and lenders through the Internet. In P2P financing, the borrower issues loan information through a third-party network platform that matches the Internet platform and borrows from the borrower through competitive bidding. This model has the advantages of low transaction costs, transparent information, and simple processes, meeting the requirements of SMEs for small loan amounts and high liquidity. On the Internet, SMEs can freely choose to compare loan interest rates and take the initiative to reduce costs. P2P lending platforms also solve the problem of information asymmetry between the supply and demand sides of funds by screening the creditworthiness of borrowers. Lenders invest in multiple borrowers in a dispersed manner, maximizing the dispersion of risks. P2P online lending, as a supplement to traditional lending models, provides new financing channels for SMEs and, in its unique way, serves the economy, alleviating the problem of financing difficulties for SMEs and promoting their rapid development to a certain extent. Due to the incomplete personal credit reporting system in China, P2P platforms face the problem of high credit reporting costs. The relevant legislation is not yet formulated, and the regulatory gaps in the regulatory authorities have led to illegal lending and storage activities on some platforms. Excessive collateral leverage and cybersecurity risks also constrain SMEs from effectively utilizing this channel for financing.

4.2.2. Crowdfunding

In crowdfunding, enterprises with capital release information about fund-raising projects through the Internet, raise funds from the public and obtain financial support from the society. Crowdfunding is used to support various activities such as disaster, reconstruction, private, fundraising, entrepreneurial fundraising, and creative inventions. Online crowdfunding uses the Internet to allow SMEs, artists, or individuals to show their creativity to the public and gain everyone's attention and support. In the early stages of the development of SMEs, adopting this innovative financing method can attract more attention from partners, customers, and investment funds, while also diversifying financing risks. SMEs can use equity crowdfunding models to allow investors to participate in sharing future profits of the enterprise, conveniently and quickly raising small amounts of funds to meet the needs of small projects and improve the efficiency of fund utilization. At present, there are still shortcomings in China's crowdfunding model, the legal environment is not yet sound, there is no clear definition and regulation of the content of numerous fundraising projects, and there are issues with products' non-standardization. The credit issues, information asymmetry, and potential involvement of illegal fundraising on third-party platforms are obstacles for SMEs to use this channel for normal financing.

4.2.3. Small Loan Model

This model is a type of online loan business conducted by small loan companies of quasi-bank credit institutions that have been approved and licensed by local government financial offices, using online platforms. Microfinance refers to continuous credit services with small amounts of money provided to low-income groups and micro enterprises, generally ranging from 10000 to 200000 yuan. In China, it mainly serves agriculture, rural areas, and SMEs. Small loan institutions do not focus on collateral, but operate on credit and guaranteed loans, providing new channels for financing for SMEs and becoming an effective supplement to

traditional commercial bank financing methods. The small loan model targets specific customer groups and utilizes big data analysis technology to present characteristics of small, decentralized, fast, and emergency, improving the financing efficiency of SMEs and promoting the development of inclusive finance. Due to the lack of supervision over small loan companies in the current market, financing risks are relatively high, and SMEs need to conduct in-depth investigations when choosing platforms. In addition, small loan institutions profit by issuing high-interest loans to borrowers, which indirectly increases the financing costs of SMEs. Therefore, SMEs need to consider their capital turnover situation comprehensively.

5. Suggestions and Measures for Financing Path of SMEs

5.1. Optimizing Blockchain+Supply Chain Finance

The supply chain finance financing model is a new channel for SMEs to finance under the background of FinTech, which enhances the control of financing risks and improves financing efficiency. To address the data collection and trust issues in current supply chain finance, optimizing the combination of blockchain technology and supply chain finance is essential to help SMEs improve their financing paths.

Blockchain is a decentralized distributed ledger database. The decentralization and immutability of blockchain effectively solve the problem of information leakage and provide a reliable transaction environment for banks and enterprises. Distributed ledgers record all information during the product production process, which is open, transparent, and visible. Enterprises and banks can trace the entire process information of the product. Blockchain technology eliminates information asymmetry, solves the problem of information silos between various departments in the supply chain financing market, and improves overall operational efficiency. Through the establishment of the blockchain consortium chain, SMEs are authorized to join the consortium chain. Financial institutions can understand the real status of each enterprise's loan situation, credit repayment, and others. Within the consortium chain, the efficiency and completeness of information acquisition can be improved[11]. The smart contract of blockchain enables the automated operation of "loan repayment", the labor cost minimization of supply chain finance, and the avoidance of human operation risks and moral hazards. The integration and innovation of blockchain technology and supply chain finance broaden the credit coverage of financial institutions and effectively solve the financing difficulties of SMEs in the industrial chain.

SMEs must improve their management level, understand innovative concepts, and optimize their organizational structure to meet the requirements of blockchain technology and supply chain construction in their business operations. Therefore, it is necessary to improve the information system, establish corresponding databases, enhance data quality, and provide guarantees for the smooth progress of supply chain financing.

5.2. Social Credit Rating and Internet Credit Lending System

The premise for the development of innovative Internet financial financing mode is that the whole society has a relatively perfect credit rating system. By establishing personal credit rating indicators, enterprise business credit situation indicators, and other content, credit rating is conducted to provide a reference for financial institutions' credit decision-making. P2P, crowdfunding, and online lending platforms require credit maintenance from borrowers and lenders for transactions. The construction and improvement of the social credit rating system reduce the occurrence of default and ensure the normal development of financing[12]. In response to the relatively scattered and incomplete data in China's credit reporting system, local governments need to integrate data from functional departments such as banks, public security, taxation, and industry and commerce, as well as relevant e-commerce platforms. By utilizing big data technology, the credit information of SMEs can be reasonably evaluated, and a scientific online credit lending system can be constructed. In terms of risk control in online lending, for situations such as non-standard financial information of SMEs, borrower risks are evaluated by combining other operational data, such as public expenses such as water and electricity bills, or requiring other enterprises to provide joint guarantees to achieve the goal of risk diversification.

5.3. Regulation for Risks In Finance and Technology

The application of FinTech has brought innovation and change to traditional financial institutions, providing channels and paths for financing for SMEs. However, SMEs are prone to new technological risks, such as online credit risks, due to their unfamiliarity with new technological means. FinTech lending has main risks including the incomplete application of information technology, improper operating methods, and other reasons, resulting in operational risks, moral risks, and technological risks, which increase the financing difficulties for SMEs. In response to the risk issues of FinTech, China has strengthened the legislative construction of FinTech regulation and the application of regulatory technology. By further improving the regulation of FinTech,

establishing regulatory standards, defining the nature and content of financial activities, and formulating relevant legal forms to regulate FinTech lending behavior, the interests of SMEs are safeguarded in financing.

5.4. Self-Improvement of Digitalization and Informatization in SMEs

In using FinTech to help broaden the financing path and improve financing efficiency for SMEs, requirements for the digitization and informatization of their business management must be satisfied. Therefore, SMEs need to provide corresponding information in terms of funding and product information to meet the needs of the entire industry chain and online financial platforms. It is mandatory to continuously improve the information management of SMEs, enhance their voice in the industry chain and lending market, improve their credit image, and thus achieve an improvement in financing efficiency. Faced with the continuous introduction of diversified financial market products, SMEs need to actively understand the application of FinTech, master the regulations and systems of different financing channels, conduct comprehensive evaluations of financing institutions, gradually improve the phenomenon of information asymmetry, reduce financing risks, increase product trading rates, and develop well in the fierce market competition.

6. Conclusions

The results of this study show that financial institutions have provided diverse financing paths for SMEs through the application of innovative technologies to improve financing efficiency and effectively alleviate financing difficulties. At present, the application of FinTech is still in the stage of development and improvement, and various financing methods still have shortcomings. By continuously improving the combination of technology and financial business scenarios, perfecting relevant laws and regulations, and enhancing financial skills to better serve SMEs, the high-quality development of inclusive finance can be achieved.

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