

Study on the Mitigation Mechanisms of Supply Chain Finance for Financing Constraints of SMEs in China and Its Risk Management

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Abstract: Supply Chain Finance (SCF) refers to a financing model where financial institutions connect core enterprises with upstream and downstream enterprises, and flexibly utilize a variety of financial products and services. As an innovative financing model, SCF takes banking financial institutions as the carrier, centers on core enterprises within the supply chain, and provides a series of financial services for Small and Medium-sized Enterprises (SMEs) in the supply chain, thereby offering new insights for addressing the financing challenges faced by SMEs. This study deeply analyzes the core mechanisms through which SCF alleviates SMEs' financing constraints, specifically covering four dimensions: information disclosure, credit enhancement, process optimization, and capital closed-loop management. Simultaneously, it systematically identifies the main types of risks in SCF operation, including core enterprise credit risk, operational risk, information technology risk, legal and compliance risk, and market risk. By integrating the regulatory environment and typical cases, this study reveals the significant effectiveness and unique advantages of SCF in alleviating SMEs' financing difficulties, while also pointing out the complexity and challenges inherent in its risk management. Finally, from multiple perspectives-including the public sector, financial institutions, core enterprises, and SMEs-countermeasures and suggestions are proposed to improve the SCF ecosystem, strengthen risk control capabilities, and enhance service efficiency, so as to provide references for promoting high-quality economic development.

Keywords: Supply Chain Finance; Small and Medium-Sized Enterprises; Financing

Constraints; Risk Management; Information Asymmetry; Credit Risk

1. Introduction

SMEs are a vital force driving economic development in China, playing an irreplaceable role in stimulating market vitality, promoting innovation and entrepreneurship, fostering industrial chains, and improving people's livelihoods. In 2024, the number of registered SMEs in China exceeded 60 million, accounting for over 98% of the total number of enterprises in the country. SMEs contributed 75.3% of the valid invention patents developed independently, and 16.8% of SMEs invested more than 1 million yuan in research and development (R&D). Medium and small industrial enterprises above the designated size achieved a total profit of over 3.8 trillion yuan, representing 52.3% of the total profit of all industrial enterprises above the designated size. The total import and export volume of SMEs reached 24.33 trillion yuan, accounting for 55.5% of China's total foreign trade value. Additionally, medium and small industrial enterprises above the designated size employed over 128 million people and created 11.79 million new jobs for college graduates throughout the year.

However, during their actual development, SMEs face significant financing constraints, which have become a key bottleneck restricting their growth [1]. These constraints stem from factors such as inadequate internal management systems, information asymmetry with financial institutions, lack of credit records, and limited financing channels. Relevant authorities in China have emphasized the need to enhance the resilience and security of industrial and supply chains. Given that SCF provides crucial support for industrial and supply chains, it has emerged as an important tool to serve the real economy. A commodity

supply chain encompasses processes such as raw material procurement, production of intermediate and final products, and sales of products to end consumers, involving multiple stakeholders at various levels, including suppliers, manufacturers, distributors, retailers, and end consumers. Among these, core enterprises-characterized by large scale, strong bargaining power, and numerous upstream and downstream partners-often leverage their dominant position to set trade terms (e.g., delivery time, transaction price, and payment periods) that favor themselves, imposing significant pressure on SMEs. When combined with SMEs' inherent financing difficulties, this pressure leads to tight cash flows for SMEs and ultimately disrupts the balance of the entire supply chain [2,3].

SCF was developed to address this issue. On one hand, it provides financing support to SMEs, ensuring the normal operation of the supply chain and facilitating its stable circulation. On the other hand, it integrates bank credit into the procurement and sales activities of upstream and downstream enterprises, strengthens corporate commercial credit, and promotes the establishment of long-term strategic cooperation between SMEs and core enterprises-thereby enhancing the overall competitiveness of the supply chain.

2. Theoretical Mechanisms of SCF Alleviating SMEs' Financing Constraints

2.1 Main Manifestations of SMEs' Financing Difficulties

The vast majority of SMEs rely on bank credit for funding. Although alternative channels exist (e.g., the SME board in the securities market and SME private bonds), these channels impose high entry barriers regarding corporate profitability, revenue growth, credit status, and debt-servicing capacity [4]. As a result, bank credit remains the primary financing source for SMEs. SMEs typically lack sufficient liquid assets for collateral. Furthermore, due to non-standard financial systems and information asymmetry with financial institutions, they struggle to secure financing support from banks and other financial institutions. Interest rates for private financing are usually 5–10 percentage points higher than bank loan rates, further exacerbating SMEs' financial pressure. Improper operation of private financing by

SMEs may also lead to legal risks, and non-compliant interest rates can easily trigger social incidents.

2.2 Mitigation of Information Asymmetry and Exploitation of Information Value

Unlike traditional financing models that solely rely on an enterprise's own operating conditions to determine financing approval, SCF provides financial services based on deterministic future cash flows generated from real trade backgrounds and the overall status of the supply chain. This model reduces the cost of acquiring "soft information" (e.g., non-financial operational data) and eliminates the need for commercial banks to conduct repeated due diligence on SMEs, thereby improving financing efficiency and scale [5]. Additionally, SCF transforms the traditional "point-to-point" credit granting model into a "point-to-chain" model. Financial institutions assess the credit risk of the entire supply chain, and the accumulated credit and resources of core enterprises can significantly mitigate the information asymmetry between banks and SMEs. Financial institutions can use the information resources of core enterprises to make up for the insufficient credit of SMEs, and further obtain key operational information about SMEs by understanding the operating conditions of core enterprises. Some studies suggest that relying on the credit endorsement of core enterprises and the cargo logistics information provided by logistics and warehousing enterprises, SCF can effectively alleviate the information asymmetry between SMEs and financial institutions.

2.3 Credit Binding and Risk Transfer

In traditional financial models, SMEs face difficulties in obtaining credit due to insufficient collateral, non-transparent financial information, and lack of credit records. This forces financial institutions to bear extremely high credit risks when granting loans to SMEs, leading to the phenomenon of "concentrating lending on large enterprises" (i.e., preferential lending to core enterprises) [6]. A defining feature of SCF is its use of core enterprises as a link to enhance the credit of upstream and downstream SMEs. It integrates bank credit into the procurement and sales activities of these enterprises, uses less liquid assets in the supply chain and deterministic

future cash flows as repayment sources, and strengthens the commercial credit of SMEs through mechanisms such as reverse factoring and credit transmission. Furthermore, through models such as accounts receivable financing and inventory pledge, SCF activates the existing assets of SMEs, converting their corporate credit into transaction-based debt credit. This effectively addresses SMEs' credit inadequacy, improves the stability of their operations and financing, and tightly binds core enterprises with upstream and downstream SMEs-ultimately enhancing the coordination and competitiveness of the entire supply chain. In summary, SCF compensates for the shortcomings of traditional financing models for SMEs through two dimensions: risk sharing and asset activation.

2.4 Optimization of Business Processes and Improvement of Financing Efficiency

Supported by financial technology (FinTech), SCF enables real-time synchronization of data related to orders, logistics, warehousing, and capital flows, breaking down information silos between stakeholders [7]. Based on the credit of core enterprises, SCF provides dynamic credit to SMEs in the form of accounts receivable financing, advance payment financing, and inventory financing. For individual financing needs in the supply chain, it offers precise loan amounts, fast capital turnover, and flexible bank approval processes, as well as flexible financing products such as on-demand borrowing and repayment-effectively improving financing efficiency and shortening financing cycles. Characterized by online and automated operations, SCF uses smart contracts to automatically verify relevant information, reducing the manual review time from 5–7 working days to a few minutes and increasing the loan disbursement speed by 300%. Meanwhile, SCF leverages technologies such as blockchain and the Internet of Things (IoT) to monitor collateral in real time, avoiding the risk of fraud associated with paper-based instruments and significantly reducing the fraud risk faced by financial institutions.

2.5 Capital Closed-Loop Management and Risk Control

In the SCF model, financing funds are restricted to a controllable scope and paid to

SMEs in a targeted manner. Funds can be reviewed on a transaction-by-transaction basis according to actual business needs, and both capital flows and logistics are managed in accordance with the agreed purposes in contracts. Throughout the process, funds flow under account supervision: financing funds are directly paid to upstream suppliers to settle payments, while sales proceeds from downstream are automatically used to repay loans. This effectively prevents the misappropriation of financing funds and ensures the stability of repayment sources. Furthermore, financial institutions can adopt a dynamic risk pricing mechanism, assigning weights to indicators such as the credit status of core enterprises, historical performance data of SMEs, industry prosperity indices, and the volatility of cargo valuations. When these indicators change, measures such as adjusting margin ratios and controlling financing scales are implemented to dynamically manage credit risk, operational risk, and market risk-thereby reducing risk losses.

3. Current Development Status of SCF, Model Applications, and Effectiveness in Alleviating SMEs' Financing Constraints

3.1 Current Development Status of SCF

In recent years, authorities including the People's Bank of China (PBC), the National Financial Regulatory Administration (NFRA), and the Supreme People's Court (SPC) have continuously issued policies to support the development of SCF. Documents such as the Guiding Opinions on Promoting Supply Chain Finance to Serve the Real Economy, Guiding Opinions on Regulating the Development of Supply Chain Finance to Support the Stable Circulation and Optimization of Supply Chains and Industrial Chains, Notice on Launching Pilot Projects for Supply Chain Innovation and Application, and Notice on Regulating Supply Chain Finance Business and Guiding Supply Chain Information Service Institutions to Better Serve SMEs' Financing have been released. These policies aim to improve the market mechanism, support the stable development of supply chain enterprises, and guide all stakeholders to jointly build a standardized, digital, and intelligent industrial ecosystem.

Simultaneously, relevant policies encourage

financial institutions to provide standardized, automated, and efficient financing channels for micro, small, and medium-sized enterprises through SCF service platforms. They also promote core enterprises to achieve supply chain collaboration in their respective vertical fields, guide industrial investment funds to conduct portfolio investments in upstream and downstream enterprises of industrial chains, and support the R&D of full-scenario digital financial products.

In recent years, China's SCF industry has developed rapidly, playing a positive role in improving SMEs' access to financing. According to data from the National Bureau of Statistics of China, the balance of SCF in China increased from 19.8 trillion yuan in 2018 to 45.9 trillion yuan in 2024, with a compound annual growth rate (CAGR) of 18.3%. It is projected that the industry scale will continue to expand at a CAGR of over 10% in the next five years, and is expected to exceed 60 trillion yuan by 2027.

3.2 Mainstream SCF Models

Currently, SCF products mainly include four types: accounts receivable financing, advance payment/order financing, inventory warehouse receipt pledging, and asset securitization [8]. As the primary SCF model, accounts receivable financing allows enterprises to use their held accounts receivable as collateral to apply for short-term loans from banks and other financial institutions within the contractually agreed period and credit limit, requiring core enterprises to confirm the validity of the receivables and offering advantages such as accelerating capital turnover, reducing transaction costs, and optimizing corporate debt structures; from 2018 to 2024, the scale of this financing model increased from 11.5 trillion yuan to 24.9 trillion yuan, with its share of the total SCF asset scale rising from 57% to 63%, and the application of electronic accounts receivable certificates-accounts receivable claims issued by core enterprises to suppliers through SCF platforms based on their own credit and real trade backgrounds, featuring divisibility, transferability, and financibility-has become increasingly widespread, with over 500 supply chain information service platforms participating in this business since its launch in 2015 and an annual cumulative confirmation

and issuance scale exceeding 4 trillion yuan. Order financing (a type of advance payment/order financing) enables enterprises to apply for special loans from banks using orders from buyers with good credit standing, where the loans are used to purchase raw materials for order fulfillment, the loan is repaid immediately upon receipt of payment, and enterprises adopting this model are required to open dedicated remittance accounts to facilitate banks' monitoring of the flow of repayment funds. Other SCF models include inventory warehouse receipt pledging, which realizes the monetization of movable assets; factoring, which transfers credit risk through both forward and reverse models; dynamic pool financing, which optimizes the management of multiple receivables; and asset securitization, which converts supply chain assets into liquid instruments, and in essence, these models all focus on corporate current assets and provide diversified financing solutions for SMEs. In recent years, the "de-core" model has also emerged, breaking away from the traditional SCF's reliance on the credit of core enterprises [9]; by leveraging technologies such as the IoT and big data, this model shifts the credit evaluation from a single core enterprise to a comprehensive analysis of multi-dimensional information (e.g., transaction records and performance of upstream and downstream enterprises in the supply chain), establishing a risk control system based on "data credit," and examples include products like "SF Warehousing e-Loan" launched by Bank of Communications Shenzhen Branch and "U-Factoring" by Postal Savings Bank of China-SCF products based on logistics scenarios that achieve accurate online credit granting by analyzing warehousing data to provide flexible and efficient financing services for logistics enterprises. Additionally, the Guiding Opinions on Financial Support for New-Type Industrialization, jointly issued by seven ministries and commissions including the PBC and NFRA, encourages the development of the "de-core" model, explicitly requiring financial institutions to rely on "data credit" and "asset credit," utilize big data and specific scenarios to provide accounts receivable, inventory, warehouse receipt, and order financing services for SMEs in the supply chain, and explore SCF "de-core" models that do not rely on the credit of core

enterprises by leveraging the capital flow credit information of micro, small, and medium-sized enterprises.

3.3 Types and Characteristics of SCF Platforms

SCF platforms are digital infrastructures connecting financial institutions, logistics enterprises, core enterprises, and SMEs. By applying technologies such as big data, blockchain, and artificial intelligence (AI), they integrate logistics, information flows, and capital flows, providing comprehensive financial services (e.g., payment and financing) for all stakeholders in the supply chain. Currently, SCF platforms are mainly categorized into three types: core enterprise-led, financial institution-led, and third-party technology platform-led. According to data from the Beijing-Hangzhou Industrial Digital Finance Canal Research Institute, core enterprise-led SCF platforms account for the highest proportion (over 50%). Core enterprises possess real transaction data of upstream and downstream enterprises, enabling more accurate risk assessment and lower financing costs. For example, large e-commerce platforms such as Alibaba and JD.com extend their credit to multi-level suppliers to help SMEs solve financing problems. As China's largest independent industrial-financial digital platform, CEC Cloud Chain has achieved a cumulative confirmation scale of over 2 trillion yuan, cooperating with more than 6,000 core enterprises and 2,300 banks, with its business covering industries such as manufacturing and infrastructure construction. Financial institution-led SCF platforms account for approximately 26%. Financial institutions participate in SCF business by leveraging their advantages in capital costs, along with the mature credit granting and risk control systems of traditional financial institutions. Commercial banks can expand their service scope through businesses such as supply chain notes and reverse factoring-typical examples include "ICBC e-Chain" by Industrial and Commercial Bank of China and "CCB Rongtong" by China Construction Bank. China Zheshang Bank focuses on industry-specific scenario-based services, launching customized solutions such as "Electric Chain Connect" (for the power industry) and "Auto Chain Connect"

(for the automotive industry). It has served over 3,500 core enterprises and 71,000 upstream and downstream customers, with a cumulative SCF disbursement amount exceeding 700 billion yuan in 2024. Third-party technology platform-led SCF platforms account for approximately 23%. These platforms are mostly independent third-party technology companies that focus on technology output and platform construction, providing support (e.g., blockchain and big data services) for core enterprises and financial institutions. For instance, Lianyi Rong provides customized SCF solutions for automobile manufacturing enterprises and construction enterprises, with its products such as "Yitong e-Finance" (cooperated with Yiyatong) and "Standard Chartered Speed Link" (for cross-border scenarios) having been applied in the industry.

3.4 Effectiveness of SCF in Alleviating SMEs' Financing Constraints

SCF demonstrates notable effectiveness in alleviating SMEs' financing constraints through multiple dimensions: in terms of scale effect and process optimization, its centralized financing model reduces intermediate links, and by leveraging big data for large-scale, dynamic, visualized analysis of enterprises' multi-dimensional data and real-time adjustments to credit strategies, it significantly cuts financing costs and streamlines credit processes-technologies like intelligent contract review and blockchain-based evidence storage have shortened the financing cycle from 18 days to 24 hours and contract review time from 5 days to 2 hours; for example, the Shushangyun F2B2C platform has built a big data risk control model that integrates transaction, logistics and financial data, analyzes farmers' historical records, planting scale and credit ratings, boosting loan approval efficiency by 90% and lowering non-performing loan rates to below 0.5% [10]. Regarding credit enhancement, SCF uses core enterprises' credit endorsement to convert their transaction data (e.g., accounts receivable, inventory information) with SMEs into financing collateral, reducing financial institutions' reliance on traditional SME collateral-Shushangyun, for instance, provides farmers with up to 80% advance payment financing via platform transaction data, with

rates 2 percentage points lower than ordinary loans, while Tianxing Digital Technology turns enterprises' operational data into quantifiable assets, grants dynamic credit by capturing real-time order, logistics and capital flows, and has provided over 100 billion yuan in support to 5,000+ enterprises, cutting SMEs' financing costs by 2 percentage points. In providing diversified tools, unlike traditional financing (which mainly relies on bank loans and strict liquid collateral requirements), SCF offers flexible options like accounts receivable, order and inventory pledge financing to meet SMEs' short-cycle, high-frequency needs-platforms such as JD.com's "Jingbaobei" and Alibaba's "Ant Chain" issue direct loans to suppliers via e-commerce data analysis. For multi-level supplier coverage, blockchain enables multi-level transmission of core enterprises' credit, allowing supply chain enterprises at all levels to access financing; Shanghai Pudong Development Bank's "Pu Chain Credit", for example, reaches "capillary-level" SMEs long ignored by traditional finance. In automated risk control, AI-powered SCF automatically verifies contract elements and cross-checks data, blocking false applications and improving pre-loan accuracy, which reduces bank-enterprise information asymmetry, cuts transaction costs, boosts financial institutions' willingness and efficiency to lend to SMEs, and optimizes financing term matching. In dynamic risk monitoring, IoT-AI integration enables real-time monitoring of abnormal inventory and logistics-sensors in the steel industry, for example, warn of inventory changes and adjust pledge rates automatically; China Construction Bank Xiamen Branch's "e-Trust" helps core enterprises manage capital, query details, control quotas and remind subsidiaries of payment deadlines, while Bank of Communications Xiamen Branch addresses traditional inventory financing pain points by updating collateral value daily and adjusting available financing quotas dynamically to control project risks.

4. Challenges and Key Risk Points Faced by SCF

4.1 Over-Expansion of Core Enterprise Credit and Moral Hazard

SCF exhibits a high degree of reliance on core enterprises, which often use their own credit to

conduct financing or provide guarantees for upstream and downstream enterprises. If a core enterprise experiences operational deterioration, cash flow disruption, or reduced willingness to fulfill obligations, it will have a cascading impact on the entire supply chain and may even trigger systemic risks. Furthermore, some core enterprises may exploit their information advantages to manipulate transaction data for fund misappropriation, collude with financial institutions to harm the interests of SMEs, or conspire with SMEs to forge orders and defraud financing from commercial banks. For example, between 2008 and 2014, the person in charge of a certain import and export company in Yunnan concealed the fact that goods had been sold by obtaining excessive cargo rights and forging reconciliation letters, defrauding multiple banks of over 1.2 billion yuan.

4.2 Operational Risks and Process Loopholes

Although SCF has significantly reduced manual review links and complex processes, manual review is still required for non-standard contracts and contracts with ambiguous terms. Additionally, higher requirements are imposed on the verification of document authenticity and asset valuation. Some enterprises may conceal the true status of documents, leading to losses for financial institutions (e.g., due to repeated pledging) [11]. Meanwhile, the widespread application of digital technology in SCF has improved financing transparency and efficiency but also introduced technical risks-such as system vulnerabilities, data tampering, or hacker attacks-which may result in information leakage and subsequent loss of control over capital flows.

4.3 Risks of Inadequate Supervision

Some supply chain information platforms have problems such as non-public and non-transparent information disclosure, and inadequate data security measures. These platforms can easily become channels for illegal activities such as illegal fund-raising, money laundering, and interest transfer. For example, Zhengwei Group obtained a comprehensive credit line of 1.6 billion yuan by signing a contract with a bank through Guizhou International Commodity Supply Chain Management Co., Ltd. (which it controlled), ultimately defrauding a total of

1.584 billion yuan (including principal of loans, bill advances, and interest).

5. Countermeasures and Suggestions for Strengthening SCF Risk Management

5.1 Government Level: Optimizing the Development Environment and Strengthening Supervision

Improve the policy and regulatory framework: Issue more detailed SCF operation guidelines and risk management measures to address legal challenges such as the validity of electronic certificates and accounts receivable confirmation [12]. Explore the establishment of local risk compensation funds or re-guarantee mechanisms, clarify the rights, responsibilities, and market positioning of all stakeholders, and reduce the legal risks and operating costs of participants. Strengthen infrastructure construction: Further expand the functions of platforms such as "Lumao Tong" (Shandong Foreign Trade Link), promote cross-departmental and cross-platform data interconnection, improve the application of the unified registration and disclosure system for chattel and right pledges, and support the promotion and implementation of trusted technologies such as blockchain. Enhance supervision coordination and risk monitoring: Rely on the PBC's credit reference platform to promote data sharing between financing service platforms and departments such as industry and commerce, taxation, and customs. Break down information barriers between industries, enterprises, and platforms to avoid redundant construction and ineffective supervision, and achieve efficient collaboration among all stakeholders. Establish an SCF risk monitoring and early warning mechanism, incorporate all financial activities into supervision in accordance with the law, improve the quality and efficiency of financial services for the real economy, and protect the legitimate rights and interests of SMEs. Support the standardized development of SCF service providers: Currently, there is a large number of SMEs but a small number of SCF service providers. SMEs have diversified financing needs, while SCF business suffers from homogenization, leading to a mismatch between financing supply and demand. To address this, more specialized SCF service providers should be encouraged to develop,

guide them to focus on niche markets and specific supply chains, provide targeted financing products and solutions, and expand the supply scale of SCF services.

5.2 Financial Institution Level: Enhancing Risk Control Capabilities and Promoting Product Innovation

Build a differentiated risk control system: Establish a risk assessment model specifically for SCF, integrate multi-dimensional information (e.g., core enterprise credit, transaction data, logistics information, and corporate behavior data), and strengthen penetrating and full-chain credit management of core enterprises [13]. Ensure the authenticity of trade backgrounds through cross-verification of tax invoices, logistics documents, and capital flow information. Deepen FinTech empowerment: Leverage technologies such as big data, AI, IoT, and blockchain to enhance capabilities in risk identification, monitoring, early warning, and disposal. For small and medium-sized financial institutions, joint R&D or commissioned R&D by FinTech companies can be adopted to explore the application of technologies such as intelligent verification and dynamic collateral monitoring, keeping pace with technological development trends. Optimize products and services: Adopt a differentiated competition strategy, design customized SCF products based on the needs of local characteristic industrial clusters, and achieve differentiated competition by providing customized and comprehensive financial services-avoiding redundant construction of SCF business.

5.3 Core Enterprise Level: Strengthening Responsibility Awareness and Capacity Building

Improve the operational stability of core enterprises: The stable operation of core enterprises is the foundation of a stable SCF ecosystem. For core enterprises with large-scale SCF business and a large number of served SMEs, fiscal incentives such as tax preferences and fiscal interest subsidies can be used to encourage their further participation in SCF development. Actively participate in SCF practice: Cooperate with financial institutions in the confirmation of accounts receivable and orders. Financial institutions can implement differentiated credit policies for core

enterprises that actively participate in confirmation and provide guarantees, offering preferential interest rates. Core enterprises should share necessary information (excluding core commercial secrets) with financial institutions in compliance with regulations and explore the establishment of independent SCF platforms or participation in existing ones.

5.4 SME Level: Standardizing Operation and Management and Strengthening Credit Building

Standardize financial management and daily operations: Improve information transparency, establish sound credit records and performance records, and build an effective modern corporate governance system. Increase investment in technological innovation to enhance the competitiveness of products and services. Enhance understanding and application of SCF: Strengthen communication and exchanges with upstream and downstream enterprises in the industrial chain, financial institutions, and third-party institutions, expand information access channels, and make full use of SCF-related preferential policies and services to improve financing capabilities.

5.5 Third-Party Institution Level: Providing Professional Services and Strengthening Collaborative Cooperation

FinTech companies should provide safe, reliable, and compliant technical solutions to ensure data security and corporate privacy [14,15]. Qualified research institutions and FinTech enterprises can conduct joint R&D to optimize SCF service processes and risk control methods, build intelligent supply chain platforms, and achieve intelligent cross-verification of information through blockchain technology to ensure information authenticity and credibility-promoting the development and growth of professional SCF platforms with informatization and digitalization. Furthermore, FinTech can be applied to the construction of risk control systems to break down information silos, improve the SCF credit evaluation system, and form a collaborative mechanism with smooth information flow, unobstructed capital flow, and coherent policies-enhancing the overall efficiency of the SCF industry.

6. Conclusion

As an innovative model to alleviate the financing constraints of SMEs in China, the core value of SCF lies in addressing the financing dilemmas of SMEs-caused by information asymmetry, insufficient credit, and cumbersome processes in traditional financial models-through four key mechanisms: information disclosure, credit enhancement, process optimization, and capital closed-loop management. Meanwhile, relying on diversified products such as accounts receivable financing and platform formats like the "de-core" model, SCF provides customized financing solutions for SMEs at different levels and in different scenarios, achieving remarkable results in improving financing accessibility, reducing financing costs, and stabilizing supply chains. However, SCF still faces challenges including over-reliance on the credit of core enterprises, operational loopholes, digital risks, and inadequate supervision. To advance optimization in the future, collaboration among multiple stakeholders is required: the government needs to improve policies and infrastructure, and break down data barriers; financial institutions should deepen the application of financial technology and build differentiated risk control systems; core enterprises must avoid credit abuse; SMEs need to standardize their operations to enhance credit; and third-party platforms should provide safe and compliant technical support. The joint efforts of all parties will improve the SCF ecosystem, enabling it to more effectively alleviate the financing constraints of SMEs and provide support for enhancing the resilience of industrial and supply chains as well as promoting high-quality economic development.

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