

Original Research Article

Research on the optimization path of enterprise working capital management under the mode of supply chain finance

Tingkai Cui

UOW College Hong Kong, Hong Kong, 999077, China

Abstract: Supply chain finance provides an innovative way to solve the plight of enterprise working capital management, but its potential value has not been fully released in practice. Based on the theoretical coupling of supply chain finance and working capital management, this paper systematically analyzes the three challenges faced by enterprises' working capital management under the supply chain finance mode: information barriers and poor coordination mechanism restrict financing availability, the complexity of risk transmission and control aggravates capital liquidity pressure, structural imbalance and excessive external dependence affect management stability. On this basis, the paper proposes to build a digital information sharing platform to get through the collaborative obstruction, establish a full chain dynamic risk control system to smooth capital fluctuations, optimize the financing structure and core enterprise credit transmission to enhance the system toughness and other optimization paths. By promoting the deep integration of supply chain finance and working capital management, the efficiency of capital operation and the overall competitiveness of the supply chain can be effectively improved.

Keywords: supply chain finance; working capital management; information collaboration; risk control

1. Introduction

Under the background of intensified global competition and economic uncertainty, enterprise working capital management has risen from a simple financial function to a strategic proposition related to the toughness of the supply chain. The traditional working capital management mode is limited by a single enterprise boundary and static financial perspective, which is difficult to effectively deal with the problem of capital allocation in complex transactions in the supply chain. Supply chain finance, with its institutional advantage of deep integration of capital flow and transaction flow, provides a new possibility to solve the dilemma of enterprise working capital management. However, in practice, the potential value of supply chain finance has not been fully released, and enterprises are facing multiple challenges such as information barriers, risk transmission and structural imbalance. Based on this, this paper systematically discusses the optimization path of enterprise working capital management under the supply chain finance mode, in order to provide theoretical reference and practical enlightenment for improving the efficiency of enterprise capital operation and the overall competitiveness of the supply chain.

2. Theoretical coupling of supply chain finance and working capital management

2.1. Definition and operation mode of supply chain finance

Supply chain finance is a systematic arrangement in which financial institutions or core enterprises integrate capital flow, information flow, logistics and business flow based on the supply chain transaction chain to provide customized financing services for enterprises in the chain. Its core is to jump out of the traditional framework of single enterprise credit evaluation and turn to relying on the overall transaction background of the supply chain and the logic of self-compensated trade financing^[1]. From the perspective of operation mode, it mainly includes accounts receivable financing, prepayment financing, inventory pledge financing and comprehensive platform mode based on data credit. By embedding the financing node into the links of procurement, production and sales, these models achieve the accurate matching of capital flow and logistics. The essence of supply chain finance is not a simple product innovation, but a systematic reconstruction of the capital allocation mode in the supply

chain. Its ultimate goal is to alleviate information asymmetry, reduce financing costs, and improve the capital operation efficiency of the whole supply chain.

2.2. logical mechanism of supply chain finance embedded in working capital management

Financial embedding of supply chain into working capital management, this logical mechanism can be explained from three levels. At transaction level, supply chain finance changes traditional working capital management's "passive matching" mode by moving financing nodes forward or backward, thereby enabling enterprises to actively adjust capital occupation structure according to actual transaction rhythm. At information level, supply chain finance relies on transaction data precipitation and sharing mechanism, and breaks information barriers between internal financial departments and business departments as well as between upstream and downstream enterprises, which provides data foundation for accurately predicting capital gaps and optimizing cash conversion cycles. At governance level, supply chain finance introduces core enterprise credit endorsement and capital closed-loop monitoring mechanism, thus reducing financing transaction costs and performance risks, with working capital management being transformed from passively responding to liquidity constraints to actively constructing stable and predictable capital circulation system, thereby achieving unity of efficiency and security.

3. Challenges faced by enterprise working capital management under the supply chain finance mode

3.1. Information barriers and poor coordination mechanism restrict financing availability

Under the mode of supply chain finance, the problem of information asymmetry is still prominent, which restricts the availability of enterprise working capital financing. On the one hand, there are significant differences in information levels between small and medium-sized enterprises and core enterprises in the chain. The core enterprises lack the power to fully share transaction data and credit resources. It is difficult for financial institutions to obtain true, complete and dynamic supply chain transaction information. As a result, credit evaluation is still dominated by subject credit, and the institutional advantages of supply chain finance cannot be fully played^[4]. On the other hand, there is also information separation between the enterprise's internal financial system and business system, and the capital demand of procurement, production and sales cannot be transmitted to the financing decision-making end in real time.

3.2. Risk transmission and control complexity exacerbate liquidity pressure

Supply chain finance transforms financing risks that were originally dispersed among individual enterprises into systemic risks that run through the entire supply chain, and the changes in risk transmission mechanisms significantly exacerbate the complexity of enterprise operating capital management. When any node in the supply chain experiences operational abnormalities or credit defaults, risks will rapidly spread along the upstream and downstream chains, leading to financial institutions tightening credit, core enterprises compressing payment terms or delaying payments, thereby triggering a chain reaction and causing a sudden tightening of enterprise operating funds^[5]. At the same time, supply chain finance involves multiple entities, links, and legal relationships, and the traditional static risk control model that focuses on a single enterprise is difficult to adapt to the dynamic and cross-border risk characteristics. Enterprises not only need to cope with the liquidity impact caused by their own business fluctuations, but also prevent the breakage of the capital chain caused by upstream supply interruptions or downstream delayed payments, which greatly increases the difficulty of control.

3.3. Structural imbalance and excessive external dependence affect management stability

Under the current supply chain finance model, there is a significant structural imbalance in the management of enterprise operating funds, highlighted by excessive dependence on core enterprises and a single financing structure. Most supply chain finance solutions are supported by the credit of core enterprises, and the availability and cost of financing highly depend on the credit rating, payment policies, and willingness to cooperate of the core enterprises. Once the core enterprises adjust their procurement strategies or face operational pressure, the source of operating funds for small and medium-sized enterprises on the chain will be directly impacted. In addition, enterprises tend to focus on short-term bank credit and commercial credit in their financing structure,

with insufficient medium - and long-term funding sources, making it difficult to match the time mismatch between production cycles and payment cycles.

4. Optimization path of enterprise operating capital management under the supply chain finance model

4.1. Building a digital information sharing platform to overcome collaborative obstruction

Breaking through information barriers and collaboration obstacles in working capital management under supply chain financial models, the key lies in constructing digitalized information sharing platform supported by blockchain, big data and Internet of Things, which should realize real-time aggregation and trusted sharing of transaction data, logistics data and capital data across subjects and systems, thereby enabling financial institutions to conduct precise credit assessment based on real and dynamic supply chain transaction background, and shifting financing decisions from relying on subject credit to relying on transaction credit, thus effectively improving financing accessibility for small and medium enterprises. Meanwhile, the platform should establish data channels between internal financial systems of enterprises and external supply chain systems, thereby realizing automatic identification of capital needs in procurement, production and sales links and precise matching of financing services, which eliminates time lag between business rhythm and capital availability, and on this basis, through establishing multi-party collaborative governance mechanism, it clarifies data ownership and benefit distribution rules, with a benign interactive pattern being formed where core enterprises proactively share credit resources, while financial institutions provide pre-credit services and upstream-downstream enterprises cooperate with each other, thereby fundamentally breaking through collaboration obstacles between supply chain finance and working capital management.

4.2. Establish a dynamic risk control system for the entire chain to smooth out fund fluctuations

In order to cope with increasingly complex risk transmission and control problems in supply chain finance model, it is necessary to establish a dynamic risk control system running through entire supply chain, thereby realizing transformation from post-event participation response to pre-event early warning and process intervention, which should take digital platform as carrier, and construct panoramic risk view covering core enterprises, upstream and downstream suppliers, distributors and logistics service providers, while monitoring operational status, transaction fulfillment, capital flow and credit changes of each node in real time, and using big data analysis to identify risk transmission paths and vulnerable links, with a layered early warning mechanism being established on this basis, that formulates differentiated intervention strategies for different types and levels of risk signals, such as dynamically adjusting credit limits, optimizing payment terms and activating emergency financing channels, thereby controlling risks within local scope and preventing them from spreading along supply chain and triggering chain reactions.

4.3. Optimizing financing structure and core enterprise credit transmission to enhance system resilience

Enhancing the system resilience of enterprise operating capital management under the supply chain finance model requires coordinated promotion from two dimensions: optimizing financing structure and improving credit transmission mechanism. In terms of financing structure, enterprises should break through the limitations of excessive reliance on short-term bank credit and single core enterprise credit, actively expand diversified financing channels such as accounts receivable asset securitization, supply chain bills, and supply chain equity financing, and form a combination of long and short, internal and external complementary financing combinations. At the same time, financial institutions are encouraged to develop differentiated and scenario based financing products based on supply chain transaction data, to meet the differentiated funding needs of on chain enterprises at different stages such as procurement and stocking, production turnover, and sales collection, and to achieve precise matching between financing terms and business cycles. In terms of credit transmission, a multi-level and communicable core enterprise credit transmission mechanism should be established. Through methods such as electronic debt certificate splitting and circulation, credit insurance credit enhancement, etc., the credit of core enterprises can be gradually extended along the supply chain to secondary and tertiary suppliers, alleviating

the financing difficulties of remote small and medium-sized enterprises.

5. Conclusion

Supply chain finance provides innovative path for enterprise working capital management, and shifts from closed operation of single enterprise to collaborative allocation of supply chain. This research shows that supply chain finance can effectively alleviate financing constraints and liquidity pressure in working capital management through integration of information, transmission of credit and reconstruction of processes, however, in practice, there still exist practical challenges such as information barriers, complexity of risk transmission and structural imbalance. In future, enterprises should focus on building digitalized collaborative platform, full-chain dynamic risk control system and diversified financing structure to promote deep integration of supply chain finance and working capital management, thereby ultimately achieving collaborative improvement of capital operation efficiency and supply chain system resilience.

References

- [1] Zhao Yonghong. A Study on the Enhancing Effect of Supply Chain Finance on the Efficiency of Corporate Working Capital Management[J]. *Guangdong Economy*, 2025, (17): 62-64.
- [2] Ai Longfei. A Study on the Coupling Relationship between Supply Chain Finance Innovation and the Efficiency of Corporate Working Capital Management[J]. *China Economic & Trade Herald*, 2025, (06): 13-15.
- [3] Shen Ziyang, Wang Huabing. A Study on the Approaches of Supply Chain Bills to Optimize Corporate Working Capital Management[J]. *Logistics Science and Technology*, 2024, 47(16): 146-149.
- [4] Deng Kai. Application of Supply Chain Finance in Working Capital Management of GL Group[J]. *Modern Business*, 2022, (03): 132-134.
- [5] Zhang Wenxiao, Cai Liqun. Optimization of Corporate Working Capital Management Model from the Perspective of Value Chain[J]. *Times of Economy & Trade*, 2026, 23(02): 133-135.