Research on the Evaluation System of Supply Chain Finance Cooperative Projects between Private Core Enterprises and Commercial Banks Based on Experimental Analysis

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Abstract: How to objectively evaluate and reasonably guide private core enterprises and commercial banks to cooperate in supply chain finance projects is one of the most critical problems urgently needed to solved in the current supply chain finance research. This paper adopts the Analytic Hierarchy Process method to construct the evaluation system of such projects. The evaluation model includes 20 indicators in five aspects, namely project importance, small and micro business services, supply chain construction, capacity building of private core enterprises， capacity building of commercial banks. Construct the judgment matrix and the consistency test method. Fifteen professionals were invited to participate in the questionnaire survey, collected 1,665 data, and determined the total weights of each index after analysis. The 900 actual business data were collected and analyzed on three different types of supply chain financing cooperation cases, and the results were the same as the real situation. It further verifies the applicability and scientific nature of the evaluation system. It has good guiding significance and reference significance for the supply chain financing project cooperation between private core enterprises and commercial banks.

Keywords: Private Core Enterprises; Commercial Banks; Supply Chain Finance; Cooperation Evaluation

1 INTRODUCTION

Supply chain finance is the comprehensive management behavior and process in which financial technology used to integrate logistics, capital flow, information flow and other information based on the overall supply chains and industry chains. In the context of actual transactions, the integrated financial supply system and risk assessment system of core enterprises and upstream and downstream enterprises dominating the supply chain constructed while systematic financial solutions provided. Supply chain finance is of great significance to alleviate the financing problems of small and micro enterprises, support the structural reform of the monetary supply side, and promote the regular upgrading of supply chains and industrial chains in China [1].

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Recent years have witnessed increased support in this field. In September 2020, eight ministries and commissions, including the People's Bank of China, issued the Opinions on Regulating the Development of Supply Chain Finance, Supporting the Stable Cycle and Upgrading of Supply Chains and Industry Chains, further clarifying the connotation, development chain, and related support policies of supply chain finance [2]. The main entities participating in supply chain finance include core enterprises, upstream and downstream small and micro enterprises (including individual industrial and commercial households, the same below), and financial institutions, private core enterprises and commercial banks exist as the two most representative and dynamic entities. The supply chain finance cooperation between these two parties constitutes an essential part of supply chain finance and has received active support from local governments. For example, in 2019, Zhejiang Province established the core enterprise database of the supply chain and the "partner bank" system based on 26 Zhejiang core enterprises and 96 provincial-level pilot enterprises listed in the national pilot program. And 60% of the core enterprise database belongs to private enterprises [1].

In supply chain financial cooperation, private core enterprises and commercial banks are more likely to judge and make decisions on project cooperation from their respective perspectives. Therefore, problems such as indifference to fulfilling social responsibilities and overlooking supply chain construction and capacity building of both partners commonly seen. How to objectively evaluate and reasonably guide private core enterprises and commercial banks to cooperate in supply chain finance projects is one of the most critical problems urgently needed to solved in the current supply chain finance research. Previous scholars mainly studied the single risk evaluation system in bank-enterprise cooperation [3-4]. These studies fail to comprehensively and objectively evaluate the operational effects of bank-enterprise supply chain finance cooperative projects. Therefore, in response to the above issues, this paper constructs a new comprehensive and objective evaluation system for cooperative projects to guide private core enterprises and commercial banks to take a long-term perspective, taking both social responsibilities and economic benefits into account, thus achieving win-win cooperation.

2 The Construction of Evaluation Systems of Supply Chain Finance Cooperative Projects between Private Core Enterprises and Commercial Banks

2.1 The Determination of Evaluation Systems Indicators of Supply Chain Cooperative Projects

To make private core enterprises and commercial banks notice the above problems and improve them, 20 evaluation indicators from five aspects, namely project importance, small and micro business services, supply chain construction, capacity building of private core enterprises and capacity building of commercial banks, are selected and refined after a comprehensive comparative analysis.

2.1.1 Evaluation Indicators for Project Importance

a) Regional social contribution: include promoting the development of regional economy and industrial economy, increasing tax revenue and boosting employment.

b) Compatibility to industrial policy: whether supply chain projects conform to national industrial policy and belong to the strategic industry supported by the nation, such as high-end equipment manufacturing, intelligent manufacturing, modern agriculture and animal husbandry， and modern service industry.

c) Types of supply chains: whether it belongs to the national projects concerning strong chain and supplementary chain, the modern supply chain innovation projects, or the conventional supply chain projects, and how important it is.

d) Legitimacy and compliance: whether any violation of laws and regulations exist in the cooperation and operation between projects or whether the business has within the scope permitted by financial supervision.

2.1.2 Evaluation Indicators for Small and Micro Business Services

a) Number of financing customers: the number of customers from upstream and downstream small and micro enterprises who receive financing services to operate the.

b) Financing cost: whether there is a decline in the actual financing cost of upstream and downstream small and micro enterprises that have received financing.

c) Service content and quality: whether the financial and non-financial service content, efficiency， quality provided to upstream and downstream small and micro enterprises are abundant and accurate with good senses of experience.

d) Enterprise growth: whether the upstream and downstream small and micro enterprises have seen joint development and improved viability and profitability.

2.1.3 Evaluation Indicators for Supply Chain Construction

a) Comprehensive competitiveness: whether the overall comprehensive competitiveness of the supply chain and its position in the industry has been promoted.

b) Closeness of Cooperation: whether the transaction amount and number among core enterprises, upstream and downstream small and micro enterprises, commercial banks and other subjects have been enhanced, and the levels of mutual trust and information sharing have been improved.

2.1.4 Evaluation Indicators for Capacity Building of Private Core Enterprises (Commercial Banks)

Five indicators, position in industry, profitability, service capability, innovation capability， risk control capability, are included in evaluating private core enterprises and commercial banks.

a) Position in the industry: the impact on the social image and brand awareness of private core enterprises and commercial banks. Whether or not the government and regulatory authorities'

recognition of its fulfillment of social responsibilities has been consolidated and the influence in specific supply chain customer groups has increased.

b) Profitability: the degree of impact on the overall production scale, sales scale, operating income, net profit of the private core enterprise and its group members. the effect on the revenues like commercial bank interests and service fees; whether the added value, with operating costs, capital costs and risk costs deducted, is positive, and how is its contribution within the industry.

c) Service capability: the comprehensive service capabilities of private core enterprises for group members and upstream and downstream small and micro-enterprises include the organization and management of business activities concerning procurement, production, and sales, as well as support for financing activities. Whether or not commercial banks can provide a targeted, comprehensive financial service program. Whether or not the service content, efficiency, and methods have been significantly improved.

d) Innovation capability: Whether or not the marketing, risk control, technology and other departments of private core enterprises and commercial banks can effectively coordinate, use scientific and technological means to integrate logistics, capital flow, information flow to achieve system docking. How advanced and representative are the jointly-developed new operating systems, new products, and new models suitable for supply chain and supply chain finance cooperative projects.

e) Risk control capability: Whether an effective risk control mechanism has been established to carry out the whole chain risk control for cooperative projects, whether a risk control model that meets the characteristics of supply chain operations has been established, whether the asset quality is controllable, and whether systemic risks can be avoided.

2.2 The Determination of Evaluation Indicators Weight of Supply Chain Finance Cooperation Projects

2.2.1 The Model Building of Indicator Weight of Supply Chain Finance Cooperation Projects

The analytic hierarchy process is adopted to determine the indicator weight of each layer. According to the analytic hierarchy process, the requirements on mutual influence and affiliation can be divided into three layers. As shown in Table 1, the target layer (T) refers to the overall evaluation of supply chain finance cooperative projects; the criterion layer (C) includes project importance (C1), small and micro business services (C2), supply chain construction (C3), capacity building of private core enterprises (C4), capacity building of commercial banks (C5); in contrast, the factor layer (F) is subordinate to the upper layer, reflecting the specific indicators of the criterion layer for the evaluation of chain financial cooperation projects.

TABLE 1 THE HIERARCHICAL STRUCTURE MODEL FOR THE EVALUATION SYSTEMS OF SUPPLY CHAIN COOPERATIVE PROJECTS BETWEEN PRIVATE CORE ENTERPRISES AND COMMERCIAL BANKS

Destination Layer (T)	Criterion Layer (C)	Factor Layer(F)	
The Overall	Project Importance	F1	Regional Social Contribution

Evaluation on Supply Chain Finance Cooperative Projects	(C1)	F2	Compatibility to Industrial Policy
		F3	Types of Supply Chains
		F4	Legitimacy and Compliance
	Small and Micro Business Services (C2)	F5	Number of Financing Customers
		F6	Financing Cost
		F7	Service Content and Quality
		F8	Enterprise Growth
	Supply Chain Construction (C3)	F9	Comprehensive Competitiveness
		F10	Closeness of Cooperation
	Capacity Building of Private Core Enterprises (C4)	F11	Position in Industry
		F12	Profitability
		F13	Service Capability
		F14	Innovation Capability
		F15	Risk Control Capability
	Capacity Building of Commercial Banks (C5)	F16	Position in Industry
		F17	Profitability
		F18	Service Capability
		F19	Innovation Capability
		F20	Risk Control Capability

2.2.2 The Construction of Judgment Matrix and the Test Method of Consistency

The consistency matrix method is adopted to determine the weights of factors at various layers, with which all factors are not compared together but in pairs. The relative scale is used to reduce the difficulty of comparing different factors and improve the accuracy. The experienced professionals of supply chain finance professionals, including commercial banks (5 people), private core enterprises (5 people), and university teachers (5 people), are invited to participate in the questionnaire survey. The indicators in the judgment matrix are compared in pairs with an importance scale from 1 to 9, among which (1 point) stands for equally important, (3 points) for slightly important, (5 points) for important, (7 points) for very important, (9 points) for absolutely important, and 2, 4, 6, 8 points for the value between the two levels. The importance comparison result of the element i and the element j is denoted by 1/Aij. The judgment matrix A is thus constructed based on the average questionnaire statistics combined with expert opinions. Through the average geometric method, the weight value W_i is calculated. And the random consistency ratio CR=CI/RI is further adopted to test the consistency of the judgment matrix, where CI stands for the consistency indicator and RI is the average random consistency indicator. When CR is less than or equal to 0.1, it indicates the satisfactory consistency in judgment matrix A; otherwise, revision is required when it fails to meet consistency requirement [5].

2.2.3 The Evaluation Indicator Weight and Its Consistency Test Results

After analyzing and sorting out the questionnaires with the cooperative project scoring sheets distributed to the above-mentioned 15 experienced professionals related to supply chain finance, the importance of judgment matrix indicators of different layers and their consistency results

are determined as shown in Table 2. The types of supply chains (F3), financing customers (F5), comprehensive competitiveness (F9), service capability of private core enterprises (F13), and risk control capability of commercial banks (F20) are relatively the fields sharing the most weight among project importance (C1), small and micro business services (C2), supply chain construction (C3), capacity building in private core enterprises (C4) and capacity building in commercial banks (C5) at the criterion layer. To ensure the rationality of the judgment matrix, a consistency test is carried out, the CR value of whose test results are all less than 0.1. As the supply chain construction (C3) is a second-order judgment matrix, it equips complete consistency.

TABLE 2 THE JUDGMENT MATRIX OF INDICATOR IMPORTANCE AND ITS CONSISTENCY TEST RESULTS

Hierarchical Model		Judgment Matrix					Weight	Consistency Test	Comprehensive Weight	Sort
T-C		C1	C2	C3	C4	C5				
	C1	1	1/3	1/3	1/4	1/5	0.0627	CI=0.0156 RI=1.12 CR=0 .01 39<0.1		
	C2	3	1	1	1	1	0.2207			
	C3	3	1	1	1/2	1/2	0.1673			
	C4	4	1	2	1	1	0.2685			
	C5	5	1	2	1	1	0.2808			
Project Importance (C1)		F1	F2	F3	F4					
	F1	1	1/2	1/3	1		0.1477	CI=0.0069 RI=0.89 CR=0.007 7 <0.1	0.0093	20
	F2	2	1	1	2		0.3270		0.0205	17
	F3	3	1	1	2		0.3618		0.0227	15
	F4	1	1/2	1/2	1		0.1635		0.0103	19
Small and Micro Business Services (C2)		F5	F6	F7	F8					
	F5	1	1	3	3		0.3741	CI=0.0368 RI=0.89 CR=0.041 3<0.1	0.0826	4
	F6	1	1	4	2		0.3632		0.0802	5
	F7	1/3	1/3	1	1		0.1247		0.0275	14
	F8	1/3	1/2	1	1		0.1380		0.0305	13
Supply Chain Operation (C3)		F9	F10							
	F9	1	2				0.6667	CI=0	0.1115	1
	F10	1/2	1				0.3333		0.0558	8
Capacity Building of Private Core Enterprises (C4)		F11	F12	F12	F13	F14				
	F11	1	1/2	1/5	1/3	1/3	0.0724	CI=0.0156 RI=1.12 CR=0.013 9<0.1	0.0195	18
	F12	2	1	1/2	1	1/2	0.1551		0.0416	12
	F13	5	2	1	2	1	0.3243		0.0871	3
	F14	3	1	1/2	1	1	0.1932		0.0519	10
	F15	3	2	1	1	1	0.2549		0.0685	7
Capacity Building of Commercial Banks (C5)		F16	F17	F18	F19	F20				
	F16	1	1/2	1/3	1/3	1/4	0.0766	CI=0.0146 RI=1.12 CR=0.013 0<0.1	0.0215	16
	F17	2	1	1/2	1	1/2	0.1568		0.0440	11
	F18	3	2	1	1	1	0.2577		0.0724	6
	F19	3	1	1	1	1/2	0.1953		0.0548	9
	F20	4	2	1	2	1	0.3136		0.0881	2

According to both the weight of the factor layer relative to the criterion layer and the weight of the criterion layer relative to the target layer, the weight of the factor layer relative to the target layer can be calculated, that is, the comprehensive weight. It is shown in Table 2 that F9, F20, F13, F5, and F6 are the top 5, significantly contributing to the overall evaluation on cooperative projects with the respective comprehensive weight of 0.1115, 0.0881, 0.0871, 0.0826, and 0.0802.

2.2.4 The Indicator Scoring Standards

Through an in-depth understanding of supply chain financial cooperative projects between private core enterprises and commercial banks, referring to related documents, consulting experts in related fields, a scoring standard for cooperative projects is formulated with the evaluation on each indicator ranging from 1 to 3 points. Three grades, namely excellent grade for a comprehensive score of 2(included) points or more, the medium grade for 1(included) to 2 points, and the poor grade for points between 0 and 1, are divided by the comprehensive score of each project, to which the suggestions concerning cooperation expansion, cooperation optimization, and cooperation termination were relatively given. The key to the continuous and effective development of supply chain finance cooperative projects lies in whether the overall risk is controllable while the bottom line is legitimacy and compliance. If any one of the three indicators of legitimacy and compliance, risk control capacity building in private core enterprises, and risk control capacity building in commercial banks scores 0 points, the cooperative project shall be directly terminated or suspended and adjusted greatly.

3 Case Analysis of Supply Chain Cooperation Projects between Private Core Enterprises and Commercial Banks

3.1 The Overview of Cases

3.1.1 Introduction to Cooperative Project X

Project X is a secure supply chain finance cooperative project between private core enterprise A and commercial bank B. Enterprise A stands as the world's leading video-centric smart IoT solution provider and an operational service provider, establishing itself among one of the Top 500 manufacturing companies and Top 500 private enterprises in China. It also boasts tens of thousands of upstream suppliers and downstream distributors. While bank B is a commercial bank in a leading city. It remains average in financial technology capability and product innovation capability, and it has just been involved in the supply chain finance. Superior in scientific research capability, enterprise A is equipped with an advanced supply chain management platform, and strict screening and assessment of the upstream and downstream, under which suppliers are guaranteed to receive payment while distributors must prepay part of the payment before delivery. It can be said that enterprise A shares an absolutely dominant position in the supply chain. Bank B embedded financial services into enterprise A's supply chain management platform, and relied on enterprise A's credit and ability to control capital flows to create blockchain receivables jointly. Blockchain technology was also used to achieve the sharing, decentralization, and transparency of transaction data records and ensure the traceability and non-tampering of data [6]. As bank B provided online financing services for safe listed small and micro enterprises recommended after the risk control review of enterprise A, it

was welcomed by upstream and downstream enterprises, experiencing an increasing growth in the overall competitiveness of the supply chain.

Through project cooperation, enterprise A has shortened the accounts receivable period, reduced the accounts payable, boasted more abundant cash flow with its annual operating income increased by 16% compared with the last year. Enterprise A, without loan demand, has settlement deposits of about 1 billion yuan in bank B. Bank B has served more than 1,200 upstream and downstream small and micro enterprises each year and issued nearly 2 billion small and microloans with an annual interest rate of 6.8% and a non-performing rate of 1.5%. On the first anniversary of the cooperation, the two parties signed a comprehensive strategic cooperation agreement, further improving the social images of both parties.

3.1.2 Introduction to Cooperative Project Y

Project Y is a dairy supply chain finance cooperative project between private core enterprise C and commercial bank D, and a supply chain belongs to the modern agriculture and animal husbandry supply chain. The private core enterprise C is a private dairy enterprise sharing a high reputation in China, mainly producing liquid milk, yogurt, milk powder, and dairy products. The upstream suppliers are mainly all kinds of dairy farms, and the downstream include provincial and municipal multi-level distributors. Bank D belongs to a national joint-stock commercial bank with strong financial technology and product innovation capabilities. It has accumulated and explored certain aspects of supply chain finance services. The ERP system of enterprise C was connected to the supply chain finance service module in the bank D system to realize real-time sharing of transaction information. Through bank D's comprehensive application of new technologies such as big data and cloud computing, a comprehensive service platform of dairy supply chain finance was tailored for enterprise C and its upstream and downstream.

Throughout the one-year cooperation between the two parties, bank D has provided a loan of 1 billion yuan to enterprise C, served more than 300 upstream and downstream small and micro enterprises and dairy farmers, and issued a small and microloan of nearly 200 million yuan, with an annual interest rate of 5.2% and a non-performing rate of 1.8%. Although the number of small and micro customers served has remained relatively small due to risk control capabilities, enterprise C has supported the upgrading of upstream dairy farms and farmers through technical services and other methods. With the partnership with upstream and downstream consolidated and improved, operating income has increased by 6% over the previous year. Bank D has obtained a batch of stable customers and settlement deposits, boasting great potential for comprehensive development.

3.1.3 Introduction to Cooperative Project Z

Project Z is a second-hand car supply chain finance cooperative project between private core E and commercial bank F. Enterprise E is a well-known private unicorn company in China, mainly operating a large-scale C2B second-hand car e-commerce platform. Its upstream is the C-end car owners who sell second-hand cars and B-end second-hand car dealers while the downstream the C-end second-hand car buyers. Bank F is a medium-scale urban commercial bank average in financial technology and risk control capabilities. As it has just stepped into the supply chain finance business, its online retail loan business is expected to be expanded through project

cooperation. The second-hand trading platform has robust control over the transactions of upstream and downstream customers with the funds under enclosed management. After investigation, bank F highly recognized enterprise E's business model and risk control capability in big data. Then bank F, through system docking, embedded the loan business into enterprise E's second-hand car trading platform, providing online business loans for second-hand car dealers and online car purchasing installment services for buyers. Enterprise E provided guarantees and paid a certain percentage of deposits. And customer screening and lending were mainly controlled by enterprise E.

Judging from the initial cooperation performance, customer qualifications and repayment have performed well with an annual interest rate of about 8%. Both the bank and the enterprise have maintained optimism about the prospects of cooperation, with a total of more than 2 billion yuan in loans and nearly 10,000 loan customers. However, due to the significant investment in marketing and promotion by the platform company, sales profit and subsequent financing failed to keep up, leading to a capital flow crisis and long-term occupation and arrears of car owners and second-hand car dealers. With the crisis of user confidence growing worse, the platform collapsed in the end, causing great losses to the cooperative bank, second-hand car dealers, car owners, and buyers.

3.2 The Scores of Cases

Considering the brief introduction of these three cases, 15 experts scored each project based on the scoring standard of each indicator, the scores of which were averaged with two decimals kept. The comprehensive scores of each project are shown in Table 3.

TABLE 3 THE COMPREHENSIVE SCORES OF SUPPLY CHAIN COOPERATIVE PROJECT

Item	Specific Indicator	Comprehensive Weight	X	Y	Z
Evaluation on Project Importance	Regional Social Contribution (F1)	0.0093	2.27	1.67	0.53
	Compatibility to Industrial Policy (F2)	0.0205	2.60	1.93	1.13
	Types of Supply Chains (F3)	0.0227	2.73	1.13	0.40
	Legitimacy and Compliance (F4)	0.0103	2.47	2.13	1.27
Evaluation on Small and Micro Business Services	Number of Financing Customers (F5)	0.0826	3.00	1.00	3.00
	Financing Cost (F6)	0.0802	0.93	1.87	0.33
	Service Content and Quality (F7)	0.0275	2.13	1.67	1.67
	Enterprise Growth (F8)	0.0305	1.60	1.80	0.53
Evaluation on Supply Chain Construction	Comprehensive Competitiveness (F9)	0.1115	2.53	1.60	1.53
	Closeness of Cooperation (F10)	0.0558	2.33	1.73	0.87
	Position in Industry (F11)	0.0195	2.13	1.27	0.13
	Profitability (F12)	0.0416	2.27	1.87	0.87

Evaluation on Capacity Building of Private Core Enterprises	Service Capability (F13)	0.0871	2.60	1.93	0.47
	Innovation Capability (F14)	0.0519	2.33	0.87	2.07
	Risk Control Capability (F15)	0.0685	2.47	1.13	0
Evaluation on Capacity Building of Commercial Banks	Position in Industry (F16)	0.0215	1.93	1.67	0
	Profitability (F17)	0.0440	2.13	1.07	0.27
	Service Capability (F18)	0.0724	1.87	1.67	1.27
	Innovation Capability (F19)	0.0548	1.33	1.80	1.13
	Risk Control Capability (F20)	0.0881	1.53	1.87	0
Scores			2.13	1.57	0.96

3.3 The Evaluations on Cases

3.3.1 Evaluation of Project X

The comprehensive evaluation score of Project X is 2.13, rating it a high-quality cooperation project. It can be seen from the scoring situation that Project X is highly evaluated in terms of project importance, supply chain construction, and capacity building in a private core enterprise, with 11 indicators scored above 2. The scores are relatively low in indicators ranging from the financing cost of small and micro enterprises (F6), service capability of commercial banks (F18), innovation capability of commercial banks (F19) to risk control capability of commercial banks (F20), while high in the profitability of a private core enterprises (F12) and commercial banks (F17). By comparison, it can be found that the comprehensive capability of private enterprise A is much higher than that of bank B and bank B's stronger profitability, which is largely benefited from its excellent partners and higher interest charged from small and micro-enterprises. It is recommended that both parties should further expand cooperation and the common customer group. Bank B must strengthen the construction of its capabilities concerning service, innovation, and risk control and appropriately reduce loan interest rates, considering both the social responsibilities and economic benefits. Enterprise A can replicate this cooperation model to increase the number of cooperative banks; bank B can also continue to explore similar high-quality supply chains to serve more high-quality core enterprises and upstream and downstream small and micro customers.

3.3.2 Evaluation of Project Y

The comprehensive evaluation score of Project Y is 1.57, positioning it as a cooperative project with excellent development potential. It can be seen from the scoring situation that Project Y has low scores on the number of small and micro-enterprise financing customers (F5), innovation capability of private core enterprises (F14), risk control capability of a private core enterprises (F15), and profitability of the commercial banks (F17). The weak innovation capability and risk control capability of enterprise C, especially the inadequate control over dairy farmers, combined with the stricter risk control from banks, cut down the number of upstream and downstream financing customers served. As bank D has invested more in system construction and other aspects with a certain percentage of non-performing loan losses undertaken, it proves to be weak in profitability. It is recommended that both parties further

optimize cooperation, innovate risk control methods, and expand the business scale. One way is to try the Internet of Things technology boldly, install smart ear tags, foot rings ,and other equipment for dairy cows, use wireless communication technology to monitor and track dairy cows [7], and pilot the chattel mortgage loans of dairy cows. The second is to introduce insurance or guarantee agencies to provide online insurance or guarantee services to dairy farmers and increase the number of dairy farmers' financing customers. While the third is, given the controllability of the overall risk, banks should actively expand the number of financing customers and the scale of financing and increase profitability to improve economic and social benefits further.

3.3.3 Evaluation of Project Z

The comprehensive evaluation score of Project Z is 0.96, marking it as a failed cooperative project. It can be seen from the scoring situation that five items, namely position of private core enterprises in the industry (F11), position of commercial banks in the industry (F16), risk control capability of private core enterprises (F15), risk control capability of commercial banks (F20), the profitability of commercial banks (F17), are scored 0 or close to 0; in contrast regional social contribution (F1), financing costs of small and micro enterprises (F6), growth of small and micro enterprises (F8), and closeness of supply chain cooperation (F10) scored less than 1; only the number of financing customers of small and micro enterprises (F5) and the innovation capability of private core enterprise (F14) scored relatively high. The fundamental reason for the major risks of the project lies in that bank F is eager to expand its business but ignores risk management, especially after the construction of risk control capability became seriously lagging, it relied on its partner too much that it loosened the risk management for core enterprises. It is suggested that banks attach great importance to the risks of private core enterprises, conduct dynamic tracking management in the cooperation, and effectively strengthen their risk control capacity building. If the project can be tracked and evaluated regularly to discover hidden risks in time and terminate cooperation early, the losses of banks, second-hand car dealers, car owners, and buyers may be reduced.

4 CONCLUSION

The evaluation system constructed in this paper provides a more objective and comprehensive evaluation method for the evaluation of supply chain finance cooperative projects between private core enterprises and commercial banks, and a new reference for the development of supply chain finance and policy formulation. First, the evaluation system has a reasonable structure with the interests of all subjects taken into consideration. The evaluation system, including project importance, small and micro-enterprise services, supply chain construction, capacity building of private core enterprise, and capacity building of the commercial bank, not only considers the interest of private core enterprises, commercial banks, upstream and downstream small and micro enterprises, and national society, but the relationship among social responsibility, economic benefits, and risk control. Second, the evaluation indicators highlight the emphasis and clarify the bottom line of risk control. The comprehensive competitiveness of supply chain construction ranks first in comprehensive weight, which implements the national strategic intention to promote the stable upgrade of the supply chains and industrial chains. The comprehensive weight of the two indicators, i.e., the number of financing customers of small

and micro enterprises and the financing cost, amounts to 16.28%, which shows that alleviating the financing problems of small and micro enterprises remains a social responsibility that must be undertaken in the development of supply chain finance. The key to the continuous and effective development of cooperative projects is whether the overall risk is controllable, and the bottom line is legally compliant. Third, the application of the evaluation results is consistent with the case analysis test. The results obtained from the analysis and testing on 3 cases prove to be basically consistent with the actual performance, demonstrating the applicability and scientific nature of the evaluation system. The conclusions of this paper provide a clear idea for private core enterprises and commercial banks to carry out supply chain finance cooperation. Based on the above research, it is recommended that the two parties comprehensively consider and optimize the social responsibilities and supply chain construction, service capability building, and other aspects in the process of supply chain finance project cooperation to achieve win-win cooperation and sustainable development.

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