

Research on The Impact of Supply Chain Finance on The Financing of Small and Medium-Sized Enterprises: A Case of Small and Medium-Sized Manufacturing Enterprises

Wei Dai, Lingling Zeng, Yongbo Li

1587434799qq.com, *Corresponding author: 2955926860@qq.com, 466357280@qq.com

School of Economics Wuhan University of Technology Wuhan, China

Abstract—Small and medium-sized enterprises are essential boosters in China's economy and society. However, there are still obvious financing constraints on development, and the supply chain finance can well broaden the financing ideas and financing channels into enterprises to help small and medium-sized enterprises to solve the problem of financing difficulties. Picking up the manufacturing SMEs as an example, this paper uses the cash-cash flow sensitivity model to analyze the existence of financing constraints, the mitigation effect of the supply chain finance, and the regulation of the regional supply chain finance. The research conclusions provide a valuable reference for promoting the stable development of small and medium-sized enterprises, promoting the systematic operation of the supply chain and improving the supply-side level.

Keywords—supply chain finance; financing constraints; small and medium-sized manufacturing enterprises

1 INTRODUCTION

With the continuous development of small and medium-sized enterprises in China, small and medium-sized enterprises have become an essential part of China's social and economic development, which plays an essential supporting role in economic growth and promoting employment. However, on a global scale, the difficulty and high cost of financing are also bottlenecks hindering the development of small and medium-sized enterprises. The supply chain finance can well broaden the financing ideas and financing channels into enterprises, which can help small and medium-sized enterprises to address their financing problems. As a high-input capital-intensive industry and the upstream industry of the supply chain, the manufacturing industry has a good demand for capital. Its financing situation will be related to the development of the whole chain industry, so it has become the focus of this paper. This paper obtains the data onto listed manufacturing SMEs from the small and medium-sized board in China, using the cash-cash flow sensitivity model to verify that there are financing constraints on manufacturing SMEs, the supply chain finance can alleviate the financing constraints of manufacturing SMEs to a certain extent. The level of the supply chain finance plays a positive role in easing the financing constraints on manufacturing SMEs. Thus, it puts forward relevant feasible suggestions for the manufacturing small and medium-sized enterprises, financial institutions and government decision-making departments, which are

conducive to promoting the sustainable development of small and medium-sized manufacturing enterprises.

2 THEORETICAL ANALYSIS AND HYPOTHESIS

2.1 A Summary of the Research on Financing of Small and Medium-sized Enterprises

There are some financing problems of small and medium-sized enterprises, such as single financing channels, high costs and low efficiency. To solve these problems, we need to find the root cause of the disease accurately and prescribe the correct remedy of the case in time and effectively. Scholars first found the "root cause" and found that the imperfect financial system is the most external factor leading to financing constraints, which breed problems such as unbalanced credit allocation [1]. Lin Yifu and Li Yongjun pointed out that financial institutions prefer to provide financial assistance to large enterprises with less risk. It is because that the information asymmetry in the financial market will make it difficult for external fund suppliers to accurately grasp the actual situation and development prospects for enterprises [2]. After a detailed understanding of the root causes of the problem, a variety of groundbreaking "Prescriptions" were putting forward, including establishing long-term cooperative relationships of financial entities and external financing with the help of reverse factor [3],[4]. Wang Xin believed that the rise of domestic innovative financial forms also solves the financing problems of small and medium-sized enterprises to a certain extent [5]. At the same time, scholars began to explore the "curative effect" of financing efficiency. Most studies measured and evaluated the financing efficiency of small and medium-sized enterprises as a whole and in different industries, regions, and ownership. The results show that its overall financing efficiency is low, and the difference is noticeable [6],[7]. Built on the above research results, this article puts forward hypothesis 1: the financing problem exists on China's manufacturing small and medium-sized enterprises.

2.2 A Summary of the Research on Supply Chain Finance

The supply chain finance integrates finance with the traditional supply chain and regards all enterprises as a whole in the whole supply chain. The goal of production and operation activities is to provide financial services for the upstream and downstream enterprises and core enterprises to make the relationship between the main bodies of the supply chain closer and reduce the overall financial cost. The research on the concept and model of the supply chain finance originated abroad, and the foreign scholar Allen first put forward this concept [8]. Then Hofmann pointed out that the role of the supply chain finance is to maximize the benefits of the supply chain by integrating capital flow, information flow and logistics on the supply chain [9]. Then Xu Xiangtai and Yan Junhong put forward three different financing models according to the actual development of supply chain financing in China [10]. In addition, China's supply chain finance has also reintegrated the industrial chains of the three major industries. after the integration, it has formed three typical models: "e-commerce platform + supply chain finance" dominated by an e-commerce platform, "commercial bank + supply chain finance" dominated by banks, and "industrial group + supply chain finance" dominated by industry.

2.3 A Summary of the Research on the Influence of Supply Chain Finance on the Financing of SMEs

About the impact on the supply chain finance on the financing of SMEs, most scholars believe that it has unique advantages in the funding of small and medium-sized enterprises, and the financing constraints can be alleviated through the role of the supply chain finance. Specifically, the influence is mainly reflected on improving the credit level of small and medium-sized enterprises, reducing the problem of information asymmetry, managing and controlling credit risk, effectively enhancing the efficiency of the whole supply chain, and helping to relax financing constraints. Fellenz and Brady believed that the supply chain finance can improve the information transparency and credit level of small and medium-sized enterprises and meet the credit needs of small and medium-sized enterprises [11]. Chen and Peng believed that the supply chain finance can improve the stability of cooperation among enterprises to a certain extent [12]. After simulation, Su and Lu found that the supply chain finance can effectively manage and control the credit risk of each subject's behavior, which significantly improves the efficiency of the whole supply chain [13]. To sum up, hypothesis 2 is putting forward: the supply chain finance can relax financing constraints on small and medium-sized manufacturing enterprises.

2.4 The Regulating Function of the Financial Level of the Supply Chain

Although the development level of the supply chain finance in China is increasing year by year, there are great regional differences in the process of development. According to historical data, in 2018, the eastern region of China accounted for 65% of the supply chain financial market, with the highest degree of development, while the central region and the western region accounted for 23% and 12% respectively, with a relatively low degree of development. Based on this, we can observe the regulatory role of the financial level of the regional supply chain. For regions with more developed the supply chain finance, they have higher acceptance and wider scope of application to the supply chain financial model, and financial institutions have more unobstructed access to information and a larger amount of effective information. It is helpful to solve the financing difficulties of the four industries of small and medium-sized enterprises. And the lower the development level of the supply chain finance is, the higher the development level of financial technology is, which greatly improves the information transparency between banks and enterprises. On the basis of this, hypothesis 3 is putting forward: the financial level of the supply chain plays a positive role in alleviating the financing constraints on manufacturing small and medium-sized enterprises.

3 EMPIRICAL STUDY

3.1 Model Building

This paper will use the cash-cash flow sensitivity model. When the cash flow coefficient is positively correlated with the change of cash holdings, the validity of hypothesis 1 can be verified. In order to more comprehensively and systematically reflect the impact on cash flow, capital expenditure, enterprise size, short-term borrowing and other factors on the changes of cash holdings, this paper establishes a benchmark model (1) to test hypothesis 1.

$$\begin{aligned} \Delta_Cash_{i,t} = & a_0 + a_1\Delta_Cash_{i,t} + a_2Grh_{i,t} + a_3Size_{i,t} + a_4Exp_{i,t} + a_5\Delta_Std_{i,t} \\ & + a_6\Delta_Nwc_{i,t} + \mu_{i,t} + \varepsilon_{i,t} \end{aligned} \quad (1)$$

Among them, the names and meanings of variables designed in the model are listed in Table 1. In addition, a_1 is the cash flow sensitivity coefficient, if it is positive, it can indicate the validity of hypothesis 1, and its size changes in the same direction as the degree of financing constraints.

On the basis of model (1), model (2) further introduces the influencing factors of the supply chain finance to verify hypothesis 2. With regard to the quantitative indicators of the supply chain finance, there are mainly the following two kinds: one is the amount of national commercial bills, discounts or short-term loans, and the other is the sum of short-term loans and notes payable on the current period. Although the former is more often adopted in previous studies, the second is mainly adopted by scholars in recent years, because considering that other variables in the model are enterprise micro financial indicators, if we choose macro indicators to represent the supply chain finance, it will make the statistical caliber inconsistent. At the same time, the relationship between the financial level of the supply chain and the financing constraints on the company is reflected by the multiplicative term of the quantitative index and operating cash flow, and the extended model (2) is obtained.

$$\begin{aligned} \Delta_Cash_{i,t} = & a_0 + a_1CF_{i,t} + a_2SCF_{i,t} + a_3\Delta_CF_{i,t} * SCF_{i,t} + a_4Grh_{i,t} + a_5Size_{i,t} \\ & + a_6Exp_{i,t} + a_7\Delta_Std_{i,t} + a_8\Delta_Nwc_{i,t} + \mu_{i,t} + \varepsilon_{i,t} \end{aligned} \quad (2)$$

Where a_3 is the cross-multiplier coefficient, if it is negative, it means that hypothesis 2 is true. The meaning of other variables is the same as model (1).

To verify hypothesis 3, this paper takes the manufacturing small and medium-sized enterprises in the eastern region (Zhejiang, Guangdong and Jiangsu provinces) as a group of high development level, and the manufacturing small and medium-sized enterprises in other central and western regions as a group with low development level. Based on the extended model (2), grouping regression was carried out and comparative analysis was made. The regulation of the degree of supply chain financial development can be reflected by the absolute value of the multiplicative coefficient a_3 . The absolute value of a_3 has a positive relationship of this regulation. If hypothesis 3 is true, the absolute value of a_3 in the high development group will be higher than that in the low development group.

In addition, it needs to be explained that SCF is a measure of the financial level of the supply chain finance. This paper uses the ratio of the sum of short-term loans and bills at the end of the current period to the total assets in the current period to express this index. SCF financial CF is the multiplicative term of SCF and Δ_CF , and the coefficient can reflect the influence of the supply chain finance on the sensitivity of corporate cash flow. Grh indicates the growth of enterprises, and most scholars at home and abroad use Tobin's Q theory to reflect this index. According to the actual situation of our country, domestic scholars put forward two other indicators, namely, the growth rate of total assets (Grh-TA) and the growth rate of sales (Grh-Sales). The above three indicators have been adopted in practical research [14]. In this paper, Grh-Sales is used as the indicator of empirical analysis, and Grh-TA is used as the robustness test.

Table 1 variable name and definition

<i>Project</i>	<i>Variable</i>	<i>Variable meaning</i>
Endogenous variable	Δ_Cash	Change in the ratio of ending balance of cash and cash equivalents to total assets
Independent variable	Δ_CF	Ratio of changes in net cash flow from operating activities to total assets in the current period
	SCF	Development level indicators of the supply chain finance
	SCF*CF	Cross-multiplier of the supply chain finance measurement index and operating cash flow
Control variable	Grh-Sales	Sales growth rate
	Grh-TA	Total assets growth rate
	Size	Total scale of enterprise assets
	Exp	Net capital expenditure
	Δ_Std	Ratio of changes in enterprise's short-term debt to total assets in the current period
	Δ_Nwc	Ratio of changes in non-cash working capital to total assets in the current period

3.2 Data Explanation and Statistical Analysis

1)*Data source and processing*: This paper selects the small and medium-sized enterprises listed on the SME Board of the Shenzhen Stock Exchange as a sample, the time range is from 2013 to 2020. At the same time, the sample data were screened: (1) delete enterprise sample data on ST and *ST; (2) delete the samples of missing data; (3) Select the sample data matching the manufacturing enterprise type. Eventually 219 SMEs met the requirements with a total of 1533 annual observations. In addition, according to the division standard of group regression, the enterprise samples are divided into 83 enterprise samples with low development degree in supply chain financial region and 136 enterprise samples with high development degree in supply chain financial region.

2)*Descriptive statistical analysis*: It can be seen from Table 2 that there is a large difference in the changes of cash holdings, quantitative indicators of the supply chain finance, enterprise size and sales growth rate, indicating that there are some differences in the choice of cash holdings and the degree of development of the supply chain finance in the sample enterprises. Among them, the maximum and minimum values of enterprise size are 17 and 10.25 respectively, and the standard deviation is 0.929. There are great differences in scale of the sample enterprises. Due to the fierce competition in the manufacturing industry, the enterprise scale is affected by its own capacity and supply chain status. According to the statistical analysis results of the explanatory variable SCF, the quantitative indicators of the supply chain finance vary greatly, indicating that there are obvious differences in the financial level of the supply chain finance among different enterprises, indicating that the index is more representative.

3) *Correlation statistical analysis*: From Table 3, we can see that there is a significant correlation between Δ_Cash and Δ_CF at the confidence level of 1%, and the correlation coefficient is positive, indicating that the increase in operating cash flow will prompt enterprises to retain cash in case of future trouble. We can judge the rationality of hypothesis 1 and the validity of the model. At the same time, we can also see that most of the correlation coefficients between variables are within plus or minus 0.3, and most of them are significant at 1% confidence level, so we can also judge that there is no multicollinearity between variables.

Table 2 descriptive statistical analysis

<i>Variable</i>	<i>Sample size</i>	<i>Average</i>	<i>Standard Deviation</i>	<i>Minimum</i>	<i>Maximum</i>
Δ_Cash	1533	-0.002	0.063	-0.289	0.326
Δ_CF	1533	-0.059	0.093	-0.532	0.207
SCF	1533	0.188	0.12	-0.234	0.647
SCF*CF	1533	-0.010	0.0203	-0.166	0.076
Size	1533	13.130	0.929	10.250	17.000
Grh-Sales	1533	0.652	0.334	0.132	3.109
Exp	1533	0.056	0.048	0.001	0.603
Δ_Std	1533	0.002	0.076	-0.340	0.432
Δ_Nwc	1533	-0.007	0.115	-0.527	0.566

Note: three decimal places are retained in the statistical results

Table 3 correlation statistical analysis

Variable	Δ_Cash	Δ_CF	SCF	Grh-Sales	Size	Exp	Δ_Std	Δ_Nwc
Δ_Cash	1							
Δ_CF	0.457 ***	1						
SCF	-0.041	0.102 ***	1					
Grh-Sales	0.041	0.174 ***	0.202 ***	1				
Size	0.023	0.081 ***	0.068 ***	-0.052 **	1			
Exp	-0.159 ***	0.075 ***	-0.037	-0.009	0.129 ***	1		
Δ_Std	-0.218 ***	-0.111 ***	0.162 ***	-0.024	0.009	-0.004	1	
Δ_Nwc	-0.682 ***	-0.428 ***	-0.018	-0.044 *	0.004	0.054 **	-0.120 ***	1

Note: **, ** and * indicate significant at the levels of 1%, 5% and 10%, respectively, the same below.

3.3 Test Results and Regression Analysis

1) *Hausman Test*: The purpose of the Hausman test is to decide whether to use a fixed effect model or random effect model for regression analysis. From Table 4, the parameter estimation of the fixed effect model for Δ_CF is 0.4811, while the random effect model is 0.3086, and the difference in the distribution variance between the two is 0.1725. In addition, the value of the statistic is 220.62 and the P_value is 0, which significantly rejects the original hypothesis.

Therefore, the sample data into the benchmark model to use the fixed effect model for regression analysis.

Table 4 Hausman test results of benchmark model

Project	FE	RE	Var (Diff)
Δ_CF	0.4811	0.3086	0.1725
Chi-sq (6) =220.62			
P_value=0.0000			

From Table 5, the parameter estimates of the fixed effect model for the explanatory variables Δ_CF , SCF and SCF*CF are 0.6342, -0.0973 and -0.8222, respectively, while those of the random effects model are 0.3909, -0.0669 and -0.4243, respectively. The distribution variance differences in the two parameter estimators of Δ_CF and SCF are 0.2433 and -0.0305, respectively. In addition, the value of test statistics is 243.91. P_value is 0, the results significantly reject the original hypothesis, so the extended model also uses the fixed effect model for regression analysis.

Table 5 Hausman test results of Extended model

Project	FE	RE	Var (Diff)
Δ_CF	0.6342	0.3909	0.2433
SCF	-0.0973	-0.0669	-0.0305
SCF*CF	-0.8222	-0.4243	-0.3979
Chi-sq (6) =243.91			
P_value=0.0000			

2) *Model regression analysis*: After Hausman test, this paper finally selects the fixed effect model for regression analysis. Regression analysis of the benchmark model is mainly used to verify hypothesis 1, while the extended model is mainly to verify hypothesis 2 and hypothesis 3. The results are shown in Table 6.

Table 6 regression results of benchmark model and extended model

Project	Endogenous Variable: Δ_Cash			
	Benchmark model	Extended model	Extended model	
			High degree of development	Low degree of development
Δ_CF	0.178 ***	0.330 ***	0.325 ***	0.348 ***
SCF		-0.050 ***	-0.041 **	-0.072 ***
SCF*CF		-0.812 ***	-0.836 ***	-0.809 ***
Grh-Sales	-0.024 ***	-0.025 ***	-0.027 **	-0.022 *

Size	0.007 ***	0.006 **	0.004	0.010 *
Exp	-0.261 ***	-0.268 ***	-0.292 ***	-0.182 ***
Δ_Std	-0.221 ***	-0.222 ***	-0.231 ***	-0.210 ***
Δ_Nw c	-0.331 ***	-0.329 ***	-0.335 ***	-0.314 ***
Constant	-0.048	-0.028	-0.002	-0.080
F	131.3 ***	110.2 ***	73.09 ***	41.80 ***

Without considering the degree of development of the supply chain finance, from the regression results of the benchmark model, we can see that the sensitivity coefficient of Δ_CF is positive (0.178) and significant at 1% confidence level, indicating that enterprises do have cash-cash flow sensitivity, which proves that hypothesis 1 is established, that is, financing constraints exist. According to the regression results of the extended model, the sensitivity coefficient of Δ_CF are both positive (0.330) and significant at 1% level, which verifies the validity of hypothesis 1 again. At the same time, it can be obtained that the SCF financing CF is negative (0.812) and significant at 1% confidence level, indicating that the level of the supply chain finance suppresses the sensitivity of cash flow, that is, the supply chain finance can alleviate the financing constraints of manufacturing SMEs to a certain extent, thus proving that hypothesis 2 is true.

If we consider the factors of the degree of development of the supply chain finance, according to the results of grouping regression, we can see that the Δ_CF coefficient is 0.325 and 0.348 respectively, and the absolute value of the coefficient with a low degree of development are larger, which shows that enterprises in areas with a low degree of development of the supply chain finance are subject to more serious financing constraints. In addition, the SCF coefficient is negative and the absolute value of the group of high degree of development are larger, indicating that the supply chain finance has a greater effect on the financing constraints on enterprises in areas with high degree of development, which proves that hypothesis 3 is true. The influence of regional development degree factors is not particularly great, because the supply chain finance in China is still in the early stage, although various regions have issued related policies, but there is still much room for the development of the supply chain finance. Finally, the F values of the four models are all significant at 1% level, indicating that the regression effect is good and the conclusion is reliable.

3.4 Robustness Test

In this paper, the robustness test is done by replacing the control variables, that is, the original sales growth rate (Grh-Sales) is replaced by the total asset growth rate (Grh-TA). This is to ensure the integrity and accuracy of the analysis. The specific regression results are listed in Table 7.

Table 7 robustness test of regression results (Grh-TA)

Project	Endogenous Variable: Δ_Cash			
	Benchmark model	Extended model	Extended model	
			A high degree of development	A low degree of development
Δ_CF	0.186 ***	0.331 ***	0.328 ***	0.344 ***
SCF		-0.047 ***	-0.040 *	-0.065 **
SCF*CF		-0.783 ***	-0.801 ***	-0.791 ***
Grh-TA	0.020 **	0.018 **	0.018	0.019 *
Size	0.008 ***	0.008 ***	0.007 ***	0.009 *
Exp	-0.277 ***	-0.283 ***	-0.305 ***	-0.195 ***
Δ_Std	-0.216 ***	-0.218 ***	-0.223 ***	-0.211 ***
Δ_Nwc	-0.318 ***	-0.317 ***	-0.324 ***	-0.301 ***
Constant	-0.089 ***	-0.071 **	-0.067 *	-0.085
F	134.5 ***	108.9 ***	74.78 ***	39.92 ***

From the regression results, it can be concluded that without considering the degree of supply chain financial development, the Δ_CF coefficients of the benchmark model and the extended model are 0.186 and 0.331, both of which are positive and significant at 1% level, while the SCF coefficient is also negative. After considering the factor of regional development degree, the absolute value of Δ_CF coefficient was 0.328 and 0.344 respectively, and the absolute value was higher in the group of high development degree and negative SCF coefficient. To sum up, regression results based on Grh-TA are basically the same as those based on Grh-Sales, which proves that the hypotheses and related conclusions proposed to this paper are reliable and persuasive.

4 CONCLUSION

4.1 Research Conclusion

The first is that small and medium-sized manufacturing enterprises in China have financing constraints. As a capital-intensive industry with high investment, manufacturing industry is mainly engaged in the processing and production for raw materials of industrial products, which belong to the upper reaches of the supply chain and have a large demand for funds. However, due to the influence of self-factors and externality, they have narrow financing

channels, high financing costs and low efficiency of capital use, so there are greater financing constraints.

The second is that the supply chain finance can alleviate financing constraints. The financing model of the supply chain finance carries out credit guarantee through core enterprises and mortgages in inventory and accounts payable in real transactions, which can solve the problems of low credit level and insufficient collateral of small and medium-sized enterprises. At the same time, the reputation mechanism of the supply chain helps to avoid moral hazard and improve the information transparency between banks and enterprises, which can effectively relax the financing constraints.

The third is that the level of the supply chain finance plays a positive role in alleviating the financing constraints of small and medium-sized enterprises. The specific performance is that the higher the degree of development of the supply chain finance is. The better the effect of the supply chain finance is. On the one hand, it is because the regions with more developed supply chain finance generally have a higher degree of acceptance and a wider range of application of the supply chain finance; on the other hand, it is because the region with higher level of the supply chain finance, its financial institutions have more and more smooth access to information and more effective information, which is more helpful for small and medium-sized enterprises to obtain financing.

4.2 Feasible Suggestion

(1) Small and medium-sized manufacturing enterprises should join hands with upstream and downstream enterprises to participate in supply chain finance, actively seek win-win cooperation with all parties in the supply chain, and maximize the benefits of the supply chain; (2) Banks and other financial institutions should need to recognize the development potential and importance of supply chain finance, develop and promote corresponding financial services to provide differentiated and personalized financial products and services for enterprises. Bank can also expand the market of small and medium-sized enterprises and promote the coordinated development between banks and small and medium-sized enterprises; (3) Government decision-making departments should improve the supply chain financial guarantee system and introduce relevant preferential incentive policies to promote the participation of small and medium-sized enterprises. In addition, a good information service platform can improve the operational efficiency of the supply chain finance, and government decision-making departments should make rational use of their own influence and technical advantages to build relevant platforms to help improve the information transparency of enterprises and facilitate the development of the supply chain finance business.

REFERENCES

- [1] Wang H.S, and Feng J, "Replacing Credit crowding with Credit sharing——some thoughts on solving the problem of Credit imbalance among Enterprises," Study and Practice, (01), pp. 45-55, 2018.
- [2] Lin Y.F, and Li Y.J, "Promoting the Growth of Medium and Small-sized Enterprises through the Development of Medium and Small-sized Financial Institutions," Economic Research Journal, (01), pp. 10-18+53, 2001.

- [3] M. Samartín Sáenz, M.J. Casasola, C.Cardone Riportella, "Do banking relationships improve credit conditions for Spanish SMEs?," DEE - Working Papers. Business Economics. WB, (2005), pp. 1-36, 2005.
- [4] S.D. Lekkakos, A. Serrano, "Supply chain finance for small and medium sized enterprises: the case of reverse factoring," International Journal of Physical Distribution &Logistics Management. vol. 46(04), pp. 367-392, 2016.
- [5] Wang X, "A Study on Internet Finance Helping Relieve SMEs Financing Constraints," Journal of Financial Research, (09), pp. 128-139, 2015.
- [6] Shen C, "A Research on Financing Efficiency of SMEs in NEEQ Market: Private Placement Based on Three Stage DEA Model," Journal of Audit & Economics, vol. 32(03), pp. 78-86, 2017.
- [7] Wang X.Z, Ding H.P, and Hu Y, "The evaluation of financing efficiency for China's small and medium-sized enterprises based on DEA model," Systems Engineering-Theory & Practice, vol. 37(04), pp. 865-874, 2017.
- [8] N. B. Allen, and F. U. Gregory, "A more complete conceptual framework for SME finance," Overcoming Growth Constraints, vol. 10(03), pp. 14-40, 2004.
- [9] Hofmann, "Financing Constraints and Corporate Investment," Brookings Papers on Economic Activity, vol. 74(01), pp. 141-195, 2005.
- [10] Yan J.H, and Xu X.Q, "Analysis on the financing Mode of small and medium-sized Enterprises based on supply chain Finance," Shanghai Finance, (02), pp. 14-16, 2007.
- [11] M.R. Fellenz, and M. Brady, "Requirements for an Evolving Model of Supply Chain Finance: A Technology and Service Providers Perspective," Communications of the IBIMA, vol. 10(29), pp. 227-235, 2009.
- [12] Chen L, Peng F. "Study on Small and Medium-sized Enterprise Supply Chain Financing," in Conf. International Conference on E-Business and E-Government, Shanghai, 2011, pp. 1-4.
- [13] Y.Su, and L.Nan, "Simulation of Games Model for Supply Chain Finance Credit Risk Based on Multi-Agent," Open Journal of Social Sciences, vol. 03(01), pp. 31-36, 2015.
- [14] Yao W.X, Xia J, and Sun T.T, "A Study on Financing Constraint and its Mitigation in Hi-Tec SMEs In the View of Supply Chain Financing," Science & Technology Progress and Policy, vol. 34(04), pp. 105-110, 2017.