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How Does Supply Chain Finance Inhibit Enterprises "Shifting from Real to Virtual"? Evidence from A-share Listed Companies

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Abstract

Supply chain finance(SCF), as an innovative model of integration between industry and finance, has highlighted its strategic role in serving the real economy. However, the problem of non-financial enterprises "moving away from the real economy towards the virtual economy" has constrained the high-quality development of the economy. This paper selects Chinese A-share listed companies from 2009 to 2023 as samples and, based on the theory of information asymmetry, empirically examines the impact influence of SCF on enterprise financialization. The research results show that SCF has a significant negative effect on enterprise financialization. Heterogeneity analysis shows that this inhibitory effect is more pronounced for mature and declining firms, as well as for enterprises in the eastern and central regions. Furthermore, mechanism tests confirm that SCF curbs financialization by alleviating financing constraints and mitigating managerial myopia. This study extends the literature on the economic consequences of SCF through the lens of enterprises financialization, providing theoretical support and empirical evidence for governments to formulate differentiated SCF policies and for firms to optimize capital allocation.

Keywords

Supply Chain Finance; Enterprise Financialization; Theory of Information Asymmetry.

1. Introduction

In recent years, supply chain finance, with its unique model of deep integration between industries and the financial sector, has garnered widespread attention from both the business and academic communities[1]. Specifically, supply chain finance is a comprehensive financial service based on industrial supply chains. It revolves around the flow of commerce, logistics, and information during supply chain operations, targeting participants in the supply chain to revitalize liquid assets such as accounts receivable, prepayments, and inventory, thereby providing efficient financing channels for small and medium-sized enterprises[2].

With sustained economic growth and strong policy support, financial products have become increasingly diverse. Some non-financial enterprises allocate substantial funds to financial assets rather than to physical expansion and technological innovation, leading to a deepening of corporate financialization and exacerbating the "shift from real to virtual" in the real economy[3]. This not only hollows out industries due to excessive reliance on financial returns, thereby weakening core competitiveness, but also easily inflates financial market bubbles, posing hidden risks to economic security[4]. Supply chain finance, however, can integrate the "three flows" (logistics, capital flow, and information flow) of industrial chains, leveraging the credit of core enterprises to alleviate information asymmetry between banks and enterprises, as well as among enterprises[5]. On one hand, it provides real financing support to enterprises, reducing the "reservoir" motive of passively holding financial assets for risk prevention[6]. On

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the other hand, it enhances information transparency, thereby curbing corporate speculation, guiding funds back to the real economy, and restraining corporate financialization[5].

Based on this, this paper empirically examines the impact and mechanisms of supply chain finance on the "shift from real to virtual" using a sample of A-share listed companies from 2009 to 2023. The potential marginal contributions of this study include: First, it expands the research boundaries of the economic consequences of supply chain finance from the perspective of "corporate financialization." Second, it analyzes the mitigating effect of information asymmetry, explaining the dual channels of restraining the "shift from real to virtual" through the "reservoir" and "investment substitution" motives. Third, it clarifies the boundary conditions of supply chain finance's role from the perspectives of corporate life cycles and regional heterogeneity.

2. Theoretical Analysis and Research Hypothesis

2.1. Supply Chain Finance and Corporate Financialization

Based on information asymmetry theory, this explores the impact of supply chain finance on corporate financialization. Information asymmetry refers to the disparity in market information among different participants, leading to adverse selection and moral hazard issues that severely hinder healthy market development[7]. On the financing side, financial institutions tighten credit due to inability to assess corporate realities, restricting high-risk firms' funding while diverting low-risk firms' capital to shadow banking, exacerbating financialization[8]. On the investment side, information-disadvantaged firms mimic peers' financial investments, with peer effects being more pronounced in poor information environments[9].

Supply chain finance integrates "three flows" to monitor full-chain data, providing transparency that reduces "capital hoarding" motives; its long-term nature encourages operational focus, mitigates short-term decision-making, curbs "investment substitution" motives, ultimately alleviating information asymmetry, restraining financialization, and redirecting resources to real economy[5].

H1: Supply chain finance can restrain corporate financialization.

2.2. Information Effect

Supply chain finance effectively reduces information asymmetry by enhancing transparency. [10]It relies not on static financial statements but integrates and verifies "three flows" in real-time using transactional data, ensuring accuracy[11]; technologies like big data analytics and blockchain further guarantee traceable, tamper-proof information; making core enterprises and financial institutions external monitors that mitigate principal-agent problems[12]. Principal-agent theory suggests internal information asymmetry triggers moral hazard, prompting managers to pursue self-interest by avoiding long-cycle physical investments in favor of liquid financial assets. Enhanced transparency and full-process monitoring constrain managerial discretion and raise violation costs; simultaneously, firms strengthen self-discipline to maintain partnerships/reputation, favoring long-term decisions that weaken "investment substitution" motives and redirect capital to core operations[5].

H2: Supply chain finance further alleviates financialization by reducing management's short-sighted speculative motives.

2.3. Financing Effect

Supply chain finance enhances information liquidity and transparency, effectively alleviating information asymmetry between banks and enterprises, thereby facilitating the financing effect. In the short term, supply chain finance can revitalize liquid assets: upstream enterprises can

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accelerate fund recovery through accounts receivable pledging or factoring; downstream enterprises can alleviate prepayment pressure via prepayment financing or warehouse receipt financing; inventory enterprises can supplement cash flow through warehouse financing models[1]. Thus, this long-term stable funding provision helps enterprises optimize cash flow management, mitigate financing constraints, and consequently curb the "capital reserve" motivation of SMEs[5]. With improved external financing channels, enterprises' demand for precautionary asset reserves weakens, freeing up funds for increased physical investment or debt repayment, thereby optimizing capital structure and ultimately promoting the trend of "shifting from virtual to real"[13].

H3: Supply chain finance further inhibits corporate financialization by alleviating financing constraints.

3. Research Design

3.1. Data Sources

The sample consists of data from China's A-share listed companies from 2009 to 2023. Data is sourced from CSMAR, Wind, and RESSET databases. After excluding financial industry data, missing/abnormal data, ST/*ST/PT-status companies, and applying 1% percentile winsorization to non-dummy continuous variables, the final valid sample comprises 29,984 observations.

3.2. Model and Variable Definitions

To examine the relationship between supply chain finance and corporate financialization in China's A-share listed companies, a regression model is established:

$$Fin_{i,t} = \alpha + \beta_1 Sfl_{i,t} + \beta_2 X_{i,t} + \theta_i + \eta_t + \varepsilon_{i,t}$$

Fin is the dependent variable, representing the degree of corporate financialization. Following Du Yong et al. (2019), financial asset holding ratio is used to measure financialization level in asset allocation, where financial assets include trading financial assets, derivative financial assets, net loans and advances, net available-for-sale financial assets, net held-to-maturity investments, and net investment properties[14].

Sfl is the independent variable, representing the level of supply chain finance. Supply chain finance is measured by the ratio of short-term borrowings, notes payable, and accounts payable to total assets[15].

$X_{i,t}$ is control variables, following the research of Gu Leilei et al. (2020), this study adopts firm age (FirmAge), ownership nature (Soe), firm size (Size), Tobin's Q (TobinQ), return on equity (ROE), revenue growth rate (Growth), whether the firm is loss-making (Loss), proportion of independent directors (Indep), board size (Board), and ownership concentration (Top3) as control variables[16].

$\theta_i$represents individual fixed effects, and $\eta_t$represents year fixed effects.

4. Empirical Results and Analysis

4.1. Descriptive Statistics

The descriptive statistics in this study are shown in Table 1: The mean value of corporate financialization (Fin) is 0.051, indicating that the overall financialization level of the sample firms is low; the standard deviation is 0.092, suggesting that most firms primarily engage in physical operations; the minimum value is close to 0, while the maximum value is 0.972,

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reflecting significant differences in financialization levels among firms, with a few extreme cases of highly financialized firms. The mean value of supply chain finance (Sfl) is 0.124, higher than that of corporate financialization (Fin), indicating a higher average proportion of supply chain finance activities; the standard deviation is 0.117, suggesting moderate dispersion among firms; the maximum value exceeds 1, indicating that some firms' supply chain finance activities surpass their own scale. The descriptive statistics reveal substantial disparities in financialization levels among listed firms in China, as well as significant differences in the extent to which firms obtain funding through supply chain finance activities.

Table 1. Descriptive Statistics

Variable	Obs	Mean	Std.Dev.	Min	Max
Fin	29,984	0.0510	0.0919	-0.0002	0.9721
Sfl	29,984	0.1241	0.1169	0.0000	1.0759
FirmAge	29,984	2.9726	0.3188	1.3863	3.6889
SOE	29,984	0.3533	0.4780	0.0000	1.0000
Size	29,984	22.2995	1.2759	19.4777	26.4523
TobinQ	29,984	1.9843	1.2884	0.7946	17.6759
ROE	29,984	0.0527	0.1514	-2.1749	0.4179
Growth	29,984	0.3133	0.9460	-0.9258	12.4550
Loss	29,984	0.0904	0.2868	0.0000	1.0000
Indep	29,984	0.3766	0.0538	0.2857	0.6000
Board	29,984	2.1171	0.1933	1.6094	2.7081
Top3	29,984	0.4884	0.1517	0.1495	0.8692

4.2. Baseline Regression Results

Table 2. Baseline Regression Results

VARIABLES	Fin	Fin	Fin
Sfl	-0.1555***	-0.0248***	-0.0192***
	(0.0042)	(0.0049)	(0.0050)
FirmAge			0.0199***
			(0.0066)
SOE			-0.0028
			(0.0028)
Size			-0.0090***
			(0.0011)
TobinQ			0.0010
			(0.0006)
ROE			0.0023
			(0.0023)
Growth			-0.0016***
			(0.0005)
Loss			-0.0011
			(0.0013)
Indep			-0.0066
			(0.0122)
Board			-0.0008
			(0.0041)
Top3			-0.0329***
			(0.0066)
Constant	0.0702***	0.0540***	0.2139***
	(0.0009)	(0.0007)	(0.0328)
Observations	29,984	29,984	29,984
R-squared	0.039	0.695	0.697

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This study employs a fixed-effects model to conduct empirical regression on the dependent variable, with the regression results presented in Table 2. Column (1) does not include fixed effects or control variables: The coefficient for supply chain finance level (Sfl) is -0.1555, significant at the 1% level, indicating that without controlling for other confounding factors, supply chain finance exerts an inhibitory effect on corporate financialization. Column (2) incorporates individual and time fixed effects: The coefficient for supply chain finance level (Sfl) is -0.0248, significant at the 1% level. Column (3) includes all control variables: The coefficient for supply chain finance level (Sfl) is -0.192, significant at the 1% level, demonstrating that even after accounting for other influencing factors, the inhibitory effect of supply chain finance on corporate financialization remains statistically and economically significant. In summary, supply chain finance can curb corporate financialization, validating Hypothesis 1.

4.3. Robustness Test

To ensure the reliability and stability of the conclusions, this paper adopts the following three methods for robustness testing: First, by replacing the measurement method of the explanatory variable supply chain finance, the ratio of the sum of short-term loans and notes payable to the total assets at year-end is used to replace the original measurement method, and the variable name is changed to the supply chain finance-related variable (Sfp) for testing[17]. Second, to exclude the interference of macroeconomic shocks and industry cyclicality on the regression results, this paper introduces the interaction term "province × year," changes the fixed effects structure, and re-conducts the tests[18]. Third, given the significant differences in policy benefits and economic development levels between prefecture-level cities in China and the four municipalities directly under the central government (Beijing, Tianjin, Shanghai, and Chongqing), this paper excludes samples from these municipalities and re-conducts the tests[19]. The regression results are shown in Table 3. The coefficient of the supply chain finance-related variable (Sfp) is -0.0418, and the coefficients of supply chain finance (Sfl) are -0.1176 and -0.0158, respectively, all significantly negative at the 1% level, indicating consistent conclusions.

Table 3. Robustness Test

	Replacement of Explanatory Variables	Reference of interaction term	Exclusion of four municipalities
VARIABLES	Fin	Fin	Fin
Sfp	-0.0418***		
	(0.0045)		
Sfl		-0.1176***	-0.0158***
		(0.0047)	(0.0052)
Constant	0.1945***	0.1383***	0.2303***
	(0.0327)	(0.0150)	(0.0339)
Observations	29,984	29,984	24,633
R-squared	0.698	0.192	0.681

4.4. Heterogeneity Analysis

4.4.1. Life Cycle Heterogeneity

To examine whether the impact of supply chain finance (Sfl) on corporate financialization (Fin) varies by corporate life cycle, this paper divides the sample into three groups-growth stage, maturity stage, and decline stage-for regression[20]. The results (Table 4) show: The Sfl coefficient for growth-stage firms is -0.0165. Due to insufficient capital accumulation and limited expansion of core business in growth-stage firms, funds are concentrated in R&D activities and market expansion, among other real operations; thus, the association is not

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significant. The Sfl coefficient for maturity-stage firms is -0.0291, significant at the 1% level. Maturity-stage firms operate stably with sufficient capital, and supply chain finance can further optimize capital allocation, significantly curbing financialization. The Sfl coefficient for decline-stage firms is -0.0223, significant at the 1% level. Decline-stage firms face operational contraction, and supply chain finance can revitalize assets or provide transformation support, reducing speculative financial investments.

4.4.2. Regional Heterogeneity

To explore whether the impact of supply chain finance level (Sfl) on corporate financialization degree (Fin) varies by regional development, this paper divides the sample into eastern, central, and western groups. The results (Table 4) show that the Sfl coefficient for eastern enterprises is -0.0226, significant at the 1% level, indicating the strongest inhibitory effect. This is closely related to the region's abundant financial resources, high degree of marketization, and mature supply chain finance system. The Sfl coefficient for central enterprises is -0.0185, significant at the 5% level, with a weaker inhibitory effect compared to the eastern region. The Sfl coefficient for western enterprises is -0.0088, failing the significance test, due to the region's weak financial resources and lagging supply chain finance development.

In summary, the inhibitory effect of supply chain finance on corporate financialization exhibits significant heterogeneity: at the lifecycle level, it is strongest for mature enterprises; at the regional level, it is most pronounced for eastern enterprises.

Table 4. Heterogeneity Analysis

	Growth	Maturity	Decline	East	Central	West
VARIABLES	Fin	Fin	Fin	Fin	Fin	Fin
Sfl	-0.0165	-0.0291***	-0.0223**	-0.0226***	-0.0185**	-0.0088
	(0.0104)	(0.0112)	(0.0101)	(0.0068)	(0.0084)	(0.0091)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.0210	0.0031	0.3244***	0.2675***	0.1903***	0.1760***
	(0.0510)	(0.0824)	(0.0943)	(0.0438)	(0.0693)	(0.0675)
Observations	9,845	10,060	10,079	20,956	4,979	4,049
R-squared	0.782	0.774	0.758	0.702	0.621	0.741

4.5. Mechanism Analysis

4.5.1. Mediating Effect of Financing Constraints

This paper uses the SA index to represent corporate financing constraints. It aims to examine whether corporate financing constraints (SA index) play a mediating role in the process of supply chain finance level (Sfl) affecting corporate financialization (Fin). The results in Table 5 indicates that the coefficient for supply chain finance level (Sfl) is -0.0831, significant at the 1% level, suggesting that supply chain finance has a significant negative impact on financing constraints, i.e., it can alleviate corporate financing constraints. Based on the three financing models of supply chain finance, it not only effectively reduces the overall operational costs and information search costs of the supply chain but also alleviates the financing difficulties faced by enterprises. In a mutually beneficial collaborative environment, mature core enterprises can play a leading role, helping other enterprises in the chain accelerate capital turnover and optimize resource allocation efficiency, ultimately achieving synergistic development and collective improvement, which helps curb corporate financialization. This validates Hypothesis 3.

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4.5.2. Mediating Effect of Managerial Myopia

The mediating effect of managerial myopia aims to explore whether managerial myopia (Myp) plays a mediating role in the process of supply chain finance (Sfl) affecting corporate financialization (Fin). The results in Table 5 shows that the coefficient for supply chain finance level (Sfl) is -0.5539, significant at the 5% level, meaning supply chain finance can curb managerial myopia behavior. On one hand, supply chain finance alleviates information asymmetry by relying on authentic trade information. It also optimizes capital allocation to meet corporate funding needs, enhances long-term development confidence, and ultimately reduces short-sighted decisions made by management due to short-term financial pressures. On the other hand, the supply chain collaboration mechanism helps management focus on long-term development and the common interests of the supply chain, thereby reducing the likelihood of short-sighted behavior and ultimately curbing corporate financialization. This validates Hypothesis 2.

Table 5. Mechanism Analysis

VARIABLES	Fin	SA	Myp
Sfl	-0.0192***	-0.0831***	-0.5539**
	(0.0050)	(0.0058)	(0.2428)
Control Variables	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes
Time Fixed Effects	Yes	Yes	Yes
Constant	0.2139***	-4.0164***	-1.7712
	(0.0328)	(0.0439)	(1.4571)
Observations	29,984	29,984	29,984
R-squared	0.697	0.969	0.546

5. Conclusion

This paper empirically analyzes the relationship between supply chain finance and corporate financialization among China's A-share listed companies from 2009 to 2023, using their data as a sample. The results show that supply chain finance can curb corporate financialization. The inhibitory effect varies significantly across corporate life cycles and regions: it is particularly pronounced during the maturity and decline stages, as well as in central and eastern regions. Additionally, supply chain finance provides funding support and development pathways for real investments by alleviating corporate financing constraints and curbing short-sighted behavior. It reduces reliance on financial speculation in the short term while boosting corporate confidence and momentum for long-term development, ultimately inhibiting corporate financialization.

Based on the above conclusions, this paper proposes the following policy recommendations: First, government departments should actively introduce policies to encourage the innovative development of supply chain finance, guide the construction of supply chain information platforms and financial service platforms, and establish an efficient and transparent supply chain finance system. At the same time, differentiated support policies should be formulated to promote coordinated regional development. Second, financial institutions should continue to innovate supply chain finance products and services, developing differentiated offerings to enhance the precision and efficiency of financial services. Third, small and medium-sized enterprises should focus on their core business and products, continuously improving their operational capabilities. They should also prioritize integrity and transparency as the

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foundation of their credit systems and strengthen collaboration and information sharing with other partners in the supply chain.

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