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Research on the Value Effect of Supply Chain Finance Information Disclosure

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Abstract

Currently, the global industrial chain is undergoing restructuring and the standards for ESG information disclosure are becoming increasingly strict. Supply chain finance has become a key tool for enhancing the resilience of enterprises. However, there is a lack of conclusive empirical research to prove how supply chain finance information disclosure affects the market valuation of enterprises. This study uses A-share listed companies from 2019 to 2023 as samples and constructs a supply chain finance information disclosure index based on five indicators to examine its impact on the enterprise valuation (Tobin's Q). The empirical results show that high-quality supply chain finance information disclosure did not immediately bring a valuation premium in the capital market. Moreover, the "enterprise-led" and "bank-led" models did not show significant structural differences in the value of enterprise development. This study finds that the macro shocks caused by the pandemic and the lag in investor cognition temporarily masked the benefits brought by supply chain finance. This research provides a new perspective for understanding the pricing efficiency of supply chain transparency in the capital market and lays a theoretical foundation for the optimization of future information disclosure regulation.

Keywords

Supply Chain Finance (SCF); Information Disclosure; Tobin's Q; Corporate Valuation; Business Model.

1. Introduction

The market size of supply chain finance in China has exceeded 40 trillion RMB at present. For small and medium-sized enterprises, it plays an important role in alleviating financing difficulties. A noteworthy paradox comes into being when the direction of industry development is from the single credit model dominated by banks to the multi-dimensional industry ecosystem credit model: the disclosure of corporate information encouraged by policy support varies greatly in quality and motivation. The perceived level of the capital market for corporate information disclosure is of great significance for both investors and policy makers, and is an important reference factor for investors to actively disclose information and for policy makers to adjust the market. In this process, the "bank-led model" process dominated by financial institutions coexists with the "enterprise-led model" process dominated by core enterprises or technology platforms, resulting in huge differences in business ecology. With the development of ESG (environmental, social and corporate governance) investment, supply chain transparency has become an important index to measure the ability of an enterprise to achieve sustainable development.

The existing literature often conceptualizes Supply Chain Transparency (SCT) as a homogeneous construct, inadequately distinguishing its varied economic consequences across

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diverse financial business models.The objective of this study is to develop an integrated framework that explains the specific mechanisms through which SCFDI influences corporate market valuation, with a particular focus on isolating the moderating effect of business model heterogeneity.

This research aims to achieve the following objectives:

(1) To measure the overall impact of SCFDI on the market valuation (Tobin's Q) of listed companies and verify its value relevance.

(2) To reveal the moderating role of "Bank-led" vs. "Enterprise-led" models in shaping the value effects of disclosure.

(3) To construct a reliable SCFDI index tailored for the Chinese capital market context.

This study presents several innovations. It shifts from a general transparency analysis to a specific business model analysis, and constructs a precise measurement tool through five aspects (strategy, scale, technology, impact, and risk). Finally, the study provides empirical evidence to explain why the capital market may delay pricing for supply chain finance during macroeconomic shocks.

2. Literature Review

International research mainly considers Supply Chain Transparency (SCT) as an important type of non-financial disclosure, while earlier studies generally viewed Supply Chain Traceability (SCT) as a tool used to improve operational efficiency; however, more recent research has begun to pay attention to its financial effects, especially its role in showing a company's commitment to sustainable development and reducing information asymmetry. With the continuing changes in global regulations, transparency has gradually been used as a standard for evaluating the long-term development ability of companies. Bhanu and Krithika (2025) contend that supply chain transparency works as an important connection mechanism, and through its mediating role, the visibility of product and service supply chains can be improved, while problems within an organization's overall supply chain processes can also be identified; based on this identification, it becomes possible to evaluate whether improvements made to the supply chain can better meet customer demands [1]. Previous research also shows that higher supply chain transparency can help reduce risks, improve cooperation among stakeholders and support regulatory compliance, which may further contribute to better performance [2]; when supply chain transparency (SCT) is improved, enterprises can achieve more effective cost control and increase the flexibility and stability of their supply chains, while responding more quickly to changes in market demand [3].

2.1. Domestic Research on SCF and Information Disclosure

Chinese scholars have done a lot of research shaped by the country's distinctive market structure and policy landscape. A solid body of empirical work now shows that supply chain transparency-especially when companies disclose who their key customers and suppliers are-has a positive governance effect and works as an effective way to manage risk [4]. In their research, Yue Cao, Ao Zhang, and Chen found that improving supply chain transparency can lower corporate agency costs and reduce managerial risk aversion, which in turn boosts a company's capacity for taking risks-highlighting the governance benefits of SCT [4]. Other studies further demonstrate that transparency plays a vital role in addressing maturity mismatches in financing and in lowering the risk of stock price crashes [5]. More recently, researchers have started paying closer attention to the dual governance effects-both internal incentives and external oversight-that supply chain financial practices can provide.

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2.2. Research Gaps and the Need for Re-evaluation

Despite rich findings, current research faces several critical bottlenecks:

(1) Conceptual Generalization: The use of a vague "Supply Chain Transparency" concept fails to capture the specificities of financial activities within the chain.

(2) Neglect of Heterogeneity: Most studies ignore how different business models (Bank-led vs. Enterprise-led) shape the disclosure's economic consequences.

(3) Lack of Valuation Focus: There is a deficiency in systematic research linking disclosure directly to overall market valuation, particularly through a refined measurement tool.

2.3. Chapter Summary

In conclusion, while existing research has laid the groundwork for understanding the governance effects of supply chain information, it has yet to explicitly explain how supply chain finance-driven innovation (SCFDI) creates value across different operational models.

3. Theoretical Analysis and Hypotheses

3.1. Theoretical Foundation

For examining the value relevance of supply chain finance disclosure information in a more systematic way, signaling theory and resource dependence theory are combined in this study; the two theories are used together because they can explain the changes occurring in external capital markets, as well as the governance mechanisms operating within internal supply chains.

3.1.1. Information Asymmetry and Signaling Theory

In an imperfect capital market, corporate insiders and external investors usually hold different amounts of information, especially information concerning supply chain stability and detailed financial liabilities; when this information asymmetry becomes more serious, less-experienced liquidity traders may face higher transaction costs [6]. According to signaling theory, high-quality firms are willing to bear the costs associated with proprietary disclosure so that credible information about their better operational performance can be sent to the market; when detailed supply chain finance practices are disclosed by a core enterprise, its supply chain system and liquidity management ability can be presented more clearly, allowing the enterprise to be distinguished from lower-quality firms and helping reduce information friction [7].

3.1.2. Resource Dependence Theory and Ecosystem Orchestration

According to Resource Dependence Theory, the survival of an enterprise depends on its capacity to acquire and retain critical external resources. In supply chain finance, the core enterprise does not operate alone and instead works as a coordinator of the ecosystem.By furnishing or helping financing for upstream and downstream partners, the core enterprise tries to maintain a steady supply of materials and an efficient distribution network.How much control it has over these capital flows finally affects its bargaining power and resilience against macroeconomic disturbances [8].

3.2. Hypothesis Development

3.2.1. The Valuation Effect of SCFDI

Corporate valuation can be presented with the Discounted Cash Flow (DCF) model, where the firm value is the present value of expected future cash flows discounted at the cost of capital:$\mathcal{V}\mathcal{k}$

$$V = \sum_{t=1}^{\infty} \frac{E(CF_t)}{(1+k)^t}$$

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High-quality SCFDI can have a positive effect on both the numerator and denominator of this valuation equation. On one hand, transparent supply chain finance practices reduce the risk of supply chain disruptions, and therefore reducing the volatility of and ensuring sustainable growth.On the other hand, comprehensive disclosure reduces the information risk premium demanded by investors, leading to a structural decline in the cost of capital. As a result, when disclosure quality improves, firm market valuation-proxied by Tobin's Q-may receive a higher valuation [9]. Furthermore, from a working capital perspective, effective SCF programs optimize the core firm's Cash Conversion Cycle (CCC) by extending the Days Payable Outstanding (DPO) by leveraging the core enterprise's credit premium to support supplier financing, which effectively reduces the net investment in working capital, directly enhancing Free Cash Flow to the Firm (FCFF).

Optimization of CCC: Supply chain finance serves as a pivotal mechanism for mitigating the financing constraints of small and medium-sized enterprises (SMEs) and enhancing the resilience of industrial chains. At its core, it involves the transfer of credit risk. By furnishing credit enhancement, core enterprises facilitate suppliers' early access to discounted funds, while the core enterprises themselves obtain extended payment terms.

Formula Interplay: Given the relationship $CCC = DIO + DSO - DPO$, an improvement in DPO directly reduces the CCC.

Improvement FCFF: In the valuation model, the calculation of free cash flow to the firm (FCFF) is as follows:

$$FCFF = EBIT \times (1 - t) + Dep - CapEx - \Delta WorkingCapital$$

By extending the Days Payable Outstanding (DPO), enterprises effectively reduce the cash occupation associated with changes in working capital $(\Delta \text{Working Capital})$, thereby directly increasing the free cash flow inflow in the current period.

Based on the theoretical deduction above, the first hypothesis is proposed:

·Hypothesis 1 (H1): Ceteris paribus, there is a significant positive relationship between the level of Supply Chain Finance Information Disclosure (SCFDI) and corporate market valuation (Tobin's Q).

3.2.2. The Moderating Role of Business Models: Bank-led vs. Enterprise-led

·Bank-led Model

Logic: The core of this model is commercial banks and other financial institutions, with core enterprises mainly playing the role of "credit guarantors"

Disclosure Characteristics: The disclosed content mainly reflects the liabilities of the enterprise and its reliance on external bank loans. Such disclosures often fail to reflect the "intrinsic value" brought about by technology and independent governance. For investors, these characteristics may indicate an increase in financial leverage rather than an improvement in internal operations, thereby weakening the valuation advantage brought by the disclosure.

·Enterprise-led Model

Mechanism: The ecosystem credit system serves as the foundation and is governed by core enterprises or fintech platforms.

Disclosure Characteristics： The disclosures in this model can be used as indicators to measure coordination capabilities and digital achievements.When firms show better performance in "technological application and innovation" alongside "strategic governance," enterprises operating under this model send signals about a formidable technological moat and enhanced internal governance incentives.

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The value effect of SCFDI is not uniformly homogeneous; it is structurally moderated by the underlying business model [10], particularly whether the financing approach is "enterprise-driven" or "bank-driven." Let M represent the business model, where M=1 denotes the enterprise-driven model and M=0 denotes the bank-driven model. The marginal valuation effect of disclosure can be mathematically expressed through an interaction term as: $\frac{\partial^2 Q}{\partial SCFDI \partial M} > 0$

Following this reasoning, the second hypothesis is proposed:

·Hypothesis 2 (H2): The positive impact of SCFDI on corporate valuation is significantly stronger for firms operating under the Enterprise-led model compared to those under the Bank-led model.

4. Research Design

4.1. Sample Selection and Data Sources

4.1.1. Sample Period and Industry Classification

To enhance the accuracy of the index, this study employed a purposeful stratified sampling method based on the CSRC's industry classification guidelines. The final sample included data from 150 A-share listed companies from 2019 to 2023, distributed across three industries: 48 textile and apparel enterprises, 52 agricultural and food processing enterprises, and 50 consumer electronics companies. This distribution helps to control the noise at the industry level. These three industries were chosen because they cover typical supply chain financial ecosystems, with the upstream suppliers in the agricultural and textile industries being relatively scattered (mainly small and medium-sized enterprises), facing severe credit constraints; conversely, the consumer electronics industry has strong core enterprises, driving the development of advanced digital financing tools. In terms of universality, these industries can represent traditional manufacturing and high-tech manufacturing, providing strong reference value for the entire manufacturing economy. However, it is necessary to be cautious in extending these findings to asset-intensive industries (such as real estate) or service industries, as their supply chain structures have fundamental differences.

The reason for choosing 2019 as the starting point is that China's supply chain finance entered a new stage of accelerated digital transformation in 2019. This key transformation was driven by three concurrent macro factors. Firstly, from the regulatory perspective, the China Banking and Insurance Regulatory Commission (CBIRC) issued the landmark "Guiding Opinions on Promoting Supply Chain Finance to Support the Real Economy" (CBIRC document number 155 [2019]) in July 2019, which was the first systematic policy explicitly requiring the integration of blockchain, Internet of Things, and big data and other cutting-edge technologies into supply chain financial services. This marked the formal recognition of digital transformation (CBIRC, 2019). Secondly, in terms of technology application, in 2019, digital credit tools based on blockchain (such as "cloud certificates") promoted by core enterprises and fintech platforms achieved large-scale commercialization, shifting the market from theoretical exploration to practical application (Song & Yang, 2022). Finally, from the perspective of risk management, a series of serious supply chain fraud scandals in 2019 - especially the Kangsheng International case involving billions of RMB of false accounts receivable - exposed the key vulnerabilities of the traditional offline paper verification model. These systemic shocks compelled financial institutions to turn to digital, real-time data verification frameworks. Therefore, after 2019, the enterprise disclosures showed significant and observable differences in technology adoption and business model diversification, providing an effective observation window for this empirical study.

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4.1.2. Data Screening and Processing Flow

The samples were screened through the following steps: (1) Exclude enterprises from the financial and real estate sectors as their accounting standards are unique; (2) Remove companies marked as ST, *ST or PT during the sample period to reduce the noise of abnormal financial distress; (3) Delete observation records that contain missing key financial or corporate governance data.

After completing these screening steps, to reduce the potential influence of extreme values on the regression coefficients, this study performed Winsorization processing at the 1st percentile and 99th percentile for all continuous variables, thereby constructing a highly balanced panel data set.

4.1.3. Data Acquisition Sources

The data used in this study includes two primary categories: financial market data and textual disclosure data, and they were obtained from commonly used sources:

(1) Financial and Market Data: The dependent variable (firm valuation measured by Tobin's Q) and all firm-level control variables (such as firm size, debt-to-asset ratio, return on equity, revenue growth rate, etc.) were sourced from the CSMAR and Wind economic and financial databases.

(2) Data Disclosure Methodology: The textual data used for the main explanatory variable of this study-the Supply Chain Finance Disclosure Index (SCFDI)-and the moderating variable (Type), used to discern business models, are sourced from the CNINFO database (the official information disclosure website designated by the China Securities Regulatory Commission), and by systematically downloading annual reports and ESG (Environmental, Social, and Governance) reports published by sample firms between 2019 and 2023, this research uses a rigorous content analysis approach to manually extract and quantify textual information based on a predefined five-dimensional scoring framework.

4.2. Variable Definitions

4.2.1. Dependent Variable: Corporate Valuation (Tobin's Q)

Following the commonly used approach in corporate finance, this study uses Tobin's Q as a proxy variable for measuring corporate market valuation. In contrast to traditional accounting performance indicators such as ROA or ROE, Tobin's Q not only reflects historical asset accumulation but also includes the capital market's integrated expectations regarding future growth prospects, intangible assets (e.g., supply chain ecosystem control), and risk-adjusted discount rates, while the metric is calculated as follows:

4.2.2. Independent Variable: Supply Chain Finance Disclosure Index (SCFDI)

Given the absence of authoritative databases directly providing disclosure scores for supply chain finance, this study employs a rigorous content analysis methodology to construct the "Supply Chain Finance Disclosure Index (SCFDI)" by integrating manual review and text mining techniques. Drawing on the *Self-Regulatory Guidelines for Listed Companies* issued by the Shanghai and Shenzhen Stock Exchanges as well as mainstream ESG rating frameworks, the research innovatively develops a five-dimensional scoring scale.

The score for each dimension is given on a 0 to 3-point rating scale, and the criteria are listed below:

0 points: No disclosure.

1 point: Vague or qualitative mention (lacking implementation details).

2 points: Detailed qualitative description (specific business forms or mechanisms, but without quantitative data).

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3 points: Quantitative data aligned strategically (specific figures, ratios, or clear quantitative performance metrics).

(1) Strategy and Governance: Whether supply chain finance (or industrial-financial integration) is incorporated into the company's overarching strategic framework, and whether the board of directors or senior management has established a dedicated supervision and management mechanism.

(2) Business Model and Scale: Detailed disclosure of the specific financing instruments employed (such as accounts receivable factoring, inventory financing, and electronic debt instrument circulation), along with the actual financing volume or credit facilities extended to both upstream and downstream entities within the supply chain.

(3) Technology Application and Innovation: Whether to disclose the utilization of underlying digital technologies, such as blockchain, big data, Internet of Things (IoT), and artificial intelligence (AI), to establish a supply-chain credit penetration system or to prevent operational risks.

(4) Performance and Impact: Disclose the tangible contributions of this business to the real economy, such as reductions in the comprehensive financing costs for suppliers (specify the reduction in basis points), shortening of the cash conversion cycle (CCC), or improvements in the capital turnover rate of core enterprises.

(5) Risk and Management: Disclosure of a dedicated risk control model, non-performing loan (NPL) ratio/non-performing asset ratio, pre-lending due diligence criteria, and dynamic early-warning mechanism tailored specifically for supply chain finance operations.

The scores from the above five dimensions are aggregated using equal weighting to compute the annual SCFDI total score (theoretical range: 0–15 points) for each sample company. A higher score indicates a greater level of quality and transparency in the corporate supply chain financial information disclosure.

4.2.3. Moderating Variable: Business Model Classification (Type)

To test the moderating effect posited in Hypothesis 2 (H2) concerning the business model, this study introduces a dummy variable labeled Type to characterize the dominant mode of supply chain finance. Based on the operational substance disclosed in the annual reports of the sample firms, the following categorical assignments are implemented:

·Enterprise-led Model (Assigned Value Type = 1): An enterprise is placed in the enterprise-led model if its annual report explicitly discloses that it has independently established or holds equity in an industrial fintech platform, or if it has realized multilevel permeation of core enterprise credit through spearheading the issuance of "digital debt instruments" (e.g., Cloud Letter of Credit, Banking-Correspondent Credit Instruments). Such cases distinctly demonstrate predominant ecosystem control and internalized data governance.

·Bank-led Model (Assigned Value Type = 0): A company is treated as the bank-led model if its annual report indicates that it relies exclusively on external commercial bank credit lines to provide financing for suppliers through traditional reverse factoring or accounts receivable confirmation models, where the firm functions merely as a "credit conduit" without possessing an independent digital platform.

4.2.4. Control Variables

To effectively mitigate the interference of omitted variables on the valuation model, this study, drawing on the existing literature, controls for the following firm-level characteristic variables:

·Company Size (Size):The natural logarithm of total assets at the period-end, used to account for scale effects.

·Asset Liability Ratio (Lev):The ratio of total liabilities to total assets at the period-end, reflecting the firm's financial leverage and bankruptcy risk.

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·Profitability (ROE):The return on equity, included to control for a firm's fundamental profitability during the current period.

·Growth Capability (Growth):The year-on-year growth rate of operating revenue, employed to control for the firm's expansion potential.

·Board Size (Board):The natural logarithm of the total number of board members, serving as a proxy variable for internal corporate governance strength.

·Nature of Property Rights (SOE): A dummy variable assigned a value of 1 if the actual controller is a state organ or state-owned enterprise or institution; otherwise, it is assigned 0. This variable is used to control for distinctive institutional background differences in China.In addition, the model strictly controls for year fixed effects and firm fixed effects.

5. Empirical Results and Analysis

5.1. Descriptive Statistics and Correlation Analysis

Before panel regression analysis, this study descriptive statistics and Pearson correlation analysis were carried out on the key variables to show how the data are distributed and check whether serious multicollinearity exists.

Table 1. Descriptive Statistics

Variables	Obs	Mean	Std. Dev.	Min	Max
Tobin's Q	561	1.7856	0.7463	0.8562	4.7202
SCFDI	750	0.9120	2.0279	0.0000	9.0000
Size	609	21.9132	1.2374	19.2318	26.0572
Lev	609	0.4072	0.1857	0.0484	0.9558
ROE	607	0.0401	0.2282	-1.5429	0.3268
Growth	576	0.0838	0.3350	-0.7570	1.5561
Board	579	7.9033	1.3786	5.0000	11.0000

Descriptive statistics show the main characteristics of the sample, while the dependent variable, Tobin's Q, shows a reasonable level of variation within the sample period, reflecting variations in the market valuation of listed companies during the observation window, while the core explanatory variable, the supply chain finance disclosure index, has a relatively high standard deviation, indicating considerable disparities in the quality and extent of supply chain financial information disclosure among A-share listed companies.

Table 2. Pearson Correlation Matrix

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) Tobin's Q	1.0000						
(2) SCFDI	-0.0186	1.0000					
(3) Size	-0.1335*	0.2890*	1.0000				
(4) Lev	0.0444	0.2428*	0.3218*	1.0000			
(5) ROE	0.0141	-0.0584	-0.0054	-0.3212*	1.0000		
(6) Growth	0.0867*	-0.0471	-0.0160	0.1039*	0.0104	1.0000	
(7) Board	-0.0580	-0.0879*	0.0991*	0.0786	0.0633	-0.0057	1.0000

(Note: * $p < 0.05$)

The Pearson correlation coefficient matrix shows that the absolute values of correlation coefficients among key continuous variables are generally at a low level (mostly well below the

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traditional threshold of 0.5). From this initial result, it can be seen that the absence of high multicollinearity among the independent variables, so the concern about severe multicollinearity issues and is less likely to affect later multivariate fixed-effects regression results.

5.2. Baseline Regression Analysis (Testing H1)

For the test of Hypothesis 1 on the value effect of supply chain finance information disclosure, a two-way fixed effects model is used for empirical analysis, while the model controls for time-invariant firm-specific characteristics (firm fixed effects) as well as macroeconomic shocks specific to particular years (year fixed effects).

Table 3. Baseline Regression Results

Variables	Coefficient	Robust Std. Err.	t-value	P>|t|
SCFDI	-0.0056	0.0124	-0.45	0.652
Size	-0.5295**	0.2201	-2.41	0.017
Lev	0.6391	0.4056	1.58	0.117
ROE	0.1349	0.1152	1.17	0.244
Growth	-0.1095*	0.0642	-1.70	0.091
Board	-0.0099	0.0332	-0.30	0.765
Constant	13.1523***	4.7420	2.77	0.006
Year Fixed Effects	YES			
Firm Fixed Effects	YES			
Observations (N)	558			
Number of Firms	140			
R-squared (Within)	0.0948			
F-statistic	5.12***			0.0000

(Note: *** p<0.01, ** p<0.05, * p<0.1. Standard errors are clustered at the firm level.)

As shown in Table 3, the model exhibits satisfactory explanatory power (F-statistic = 5.12, significant at the 1% level). Regarding the control variables, firm size (Size) shows a significantly negative coefficient (-0.5295, $p < 0.05$), which aligns with typical findings in Chinese capital market: larger firms tend to have lower growth premia, thus resulting in relatively lower Tobin's Q values. Revenue growth rate (Growth) also shows a negative association with valuation at the 10% significance level, which may reflect the market's pessimistic pricing of aggressive expansion strategies amid macroeconomic downturn.

For the main explanatory variable, the coefficient of SCFDI (SCFDI) is -0.0056, and its corresponding p-value is 0.652 ($p > 0.1$); this indicates that the variable does not pass the traditional statistical significance test. In terms of the regression result, this result means that improvements in the quality of supply chain finance disclosures are not followed by a statistically significant valuation premium (Tobin's Q) in the capital market; therefore, Research Hypothesis 1 (H1) is not supported.

5.3. Moderating Effect of Business Models (Testing H2)

For examining whether the "Enterprise-led" model exerts a more pronounced value-enhancing effect than the "Bank-led" model (Hypothesis 2), an interaction term between the disclosure index and the business model dummy (SCFDI × Enterprise-led) was added to the regression equation.

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Table 4. Moderating Effect Regression Results

Variables	Coefficient	Robust Std. Err.	t-value	P>|t|
SCFDI	-0.0069	0.0191	-0.36	0.717
Enterprise-led	-0.2780**	0.1113	-2.50	0.014
SCFDI × Enterprise-led	0.0428	0.0337	1.27	0.207
Size	-0.5196**	0.2213	-2.35	0.020
Lev	0.6420	0.4051	1.58	0.115
ROE	0.1300	0.1102	1.18	0.240
Growth	-0.1063	0.0654	-1.63	0.106
Board	-0.0084	0.0327	-0.26	0.797
Constant	12.9237***	4.7673	2.71	0.008
Year Fixed Effects	YES			
Firm Fixed Effects	YES			
Observations (N)	558			
Number of Firms	140			
R-squared (Within)	0.0982			
F-statistic	5.44***			0.0000

(Note: *** p<0.01, ** p<0.05, * p<0.1. Standard errors are clustered at the firm level.)

The regression output in Table 4 shows several findings; firstly, the standalone dummy variable Enterprise-led is significantly negative (-0.2780, $p < 0.05$); this result indicates that, holding disclosure quality constant, firms with proprietary supply chain platforms faced a baseline valuation discount during the sample period, attributable to the market's skepticism toward heavy-asset investmentsor potential off-balance-sheet risks.

Secondly, the coefficient of the interaction term (SCFDI × Enterprise-led) is positive (0.0428). While the positive sign aligns with the theoretical expectation that ecosystem governance under the enterprise-led model should yield better marginal returns, the p-value associated with this interaction term is 0.207 ($p > 0.1$). Because it lacks statistical significance, it cannot be concluded that the enterprise-led model structurally outperforms the bank-led model in translating transparency into market value. Thus, Hypothesis 2 (H2) is also rejected.

5.4. Discussion of Empirical Findings: The "Cognitive Lag" and Macroeconomic Shocks

The rejection of both hypotheses raises a question in the empirical results: why does a fundamentally beneficial strategic tool fail to be priced by the market? This result may not come from the intrinsic ineffectiveness of supply chain finance, and may instead be related to the severe pricing friction and systemic noise prevalent during the 2019-2023 observation period, while the lack of significant valuation premiums can be discussed from three aspects:

First, the "Masking Effect" of Systemic Macroeconomic Shocks, while the sample period almost entirely overlaps with the global pandemic and the later complex economic recovery cycle. During these years, the manufacturing and consumer sectors experienced unprecedented physical supply chain disruptions, logistics paralysis, and demand contraction. Although high-quality SCFDI signals a core firm's active intervention to stabilize its supplier network, these micro-level operational enhancements were largely engulfed by macro-level systemic risks, while the market's pervasive risk aversion fundamentally masked the potential value-added effects of supply chain resilience.

Secondly, information asymmetry and the "cognitive lag" of the market. In the A-share capital market, retail investors and momentum-driven institutions dominate. These institutions

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traditionally rely on financial indicators (such as earnings per share, return on equity). However, supply chain finance is a highly complex mechanism that integrates multiple factors such as business, logistics, capital, and information flow. Although our multi-dimensional index effectively extracts this complexity through content analysis, external investors still face significant information barriers. They find it difficult to accurately convert the multi-level credit penetration rate and accounts receivable factoring and other elements into discounted cash flow (DCF) models. This severe information barrier and analytical friction hinders the timeliness of the disclosure signals.

Third, the mismatch issue of "high upfront costs and low returns later". Under the enterprise-led model, building a stable and digitally integrated supply chain finance platform requires a huge amount of upfront capital expenditure, including investments in blockchain technology, ERP system integration, and risk management algorithms. These sunk costs will severely compress current profitability and cash flow. In contrast, strategic benefits - such as reducing the default rate of the entire supply chain, enhancing supplier stickiness, and lowering long-term procurement costs - take several years to be realized. This temporal mismatch between explicit short-term costs and implicit long-term returns leads to a delay in the market's response to value.

6. Conclusion and Recommendations

6.1. Conclusion

In the context of deep restructuring of the supply chain, supply chain finance (SCF) has become a key mechanism for enhancing the resilience of the real economy ecosystem. This study utilized a stratified sample of A-share listed companies from 2019 to 2023 and conducted rigorous analysis to innovatively construct a five-dimensional supply chain finance disclosure index (SCFDI). The aim of this study was to empirically examine the added value effect brought by supply chain transparency and the moderating role played by different business models (enterprise-led vs. bank-led).

The empirical results indicated that high-quality disclosure of supply chain finance did not immediately trigger a statistically significant valuation premium (Tobin's Q value) in the capital market. Moreover, the "enterprise-led" model did not show a significant structural difference compared to the "bank-led" model in the data. The study believes that the strategic benefits of supply chain finance are temporarily masked by severe pricing frictions rather than the lack of fundamental value. Specifically, the macroeconomic shocks during the pandemic, the deep "cognitive barriers" of retail and institutional investors towards the complex ecosystem governance, and the time mismatch between the large-scale digital investment and the long-term cost reduction benefits all contributed to the failure to observe a valuation premium in the short term.

6.2. Policy and Management Suggestions

Based on the empirical results and the theoretical discussion, the following practical recommendations are provided:

(1) For regulatory authorities: Establish a unified disclosure framework to reduce cognitive lag.

Regulatory authorities should pay attention to the inefficiency of the capital market in pricing complex supply chain operations, and should incorporate supply chain finance indicators into the mandatory ESG disclosure framework. Specifically, regulatory authorities should issue detailed guidelines to encourage enterprises to disclose standardized data, such as the actual reduction in financing costs for small and medium-sized enterprises, the optimization of cash turnover cycle (CCC), and specific default rates. Standardized data helps reduce information

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asymmetry and enables institutional investors to incorporate the supply chain resilience risk capacity into their valuation models.

(2) For Listed Companies: Shift from "Passive Compliance" to "Strategic Signaling."

Core enterprises need to recognize that merely establishing a digital supply chain platform may not be sufficient when the market fails to understand their value. Enterprises should make more full use of financial reports, investor relations (IR) platforms, and specialized ESG roadshows to convey information to the market. If enterprises can more clearly explain how their upfront technological investments (CAPEX) in blockchain and supply chain integration can be transformed into long-term risk-resistance tools and sustainable cash flows, it will help reduce market cognitive lag and accelerate the capitalization of their system value.

(3) For Investors: Broaden Valuation Horizons to Capture Long-term Dividends.

Investors may need to move away from a mainly short-term focus on short-term financial indicators and recognize the structural value of ecosystem resilience. Identifying companies with high-quality supply chain governance during macroeconomic downturns can provide a critical margin of safety and yield significant long-term returns once the economic cycle recovers.

6.3. Limitations and Future Research

While this study examines the pricing of supply chain transparency, it still has several limitations, which may be considered in future research:

Firstly, the observation window (2019-2023) overlaps with a period of unusual macroeconomic fluctuation, while the systemic risks inherent in this period may have weakened the valuation effects. Future research may extend the timeline to the post-pandemic recovery phase to verify whether the valuation premium of supply chain finance emerges over a longer horizon.

Secondly, because manual content analysis, the sample size was limited to about 150 representative firms in specific sectors. Future research could employ advanced Natural Language Processing (NLP) and machine learning techniques to systematically score the SCFDI for all A-share listed companies, so that a wider range of market changes can be covered; finally, future studies could replace Tobin's Q with alternative dependent variables, such as corporate credit spreads or stock price crash risk, to evaluate more fully the risk-mitigation effects of supply chain finance.

References

[1] Bhanu, S. A., & Krithika, M. (2025). A framework for evaluating supply chain performance: The mediating role of transparency in digital transformation. In *2025 Tenth International Conference on Science Technology Engineering and Mathematics (ICONSTEM)* (pp. 1–8). IEEE. https://doi.org/10.1109/ICONSTEM65670.2025.11374338

[2] Cao, Y., Zhang, A., & Chen, W. R. (2025). Supply chain transparency and corporate risk assessment. *Financial Management Theory and Practice*, 46(1), 76–84. https://doi.org/10.16339/j.cnki.hdxbcjb.2025.01.010

[3] Doorey, D. J. (2011). The transparent supply chain: From resistance to implementation at Nike and Levi Strauss. *Journal of Business Ethics*, 103, 587–603. https://doi.org/10.1007/s10551-011-0882-1

[4] Duan, Y., Hofer, C., & Aloysius, J. (2020). Transparency in the supply chain: Do firms benefit by disclosing supplier monitoring activities? *Academy of Management Annual Meeting Proceedings*, 2020(1), Article 20405. https://doi.org/10.5465/AMBPP.2020.20405abstract

[5] Hu, X., Song, H., & Mi, Y. (2025). Unveiling the path to sustainable carbon reduction: A comparative analysis of bank-led vs. firm-led carbon finance strategies. *Humanities and Social Sciences Communications*, 12, Article 1655. https://doi.org/10.1057/s41599-025-05906-5

ISSN: 2692-7608 DOI: 10.6981/FEM.202609_7(9).0009

[6] Black, J. R., Irtisam, R., & Jain, P. K. (2025). Textual uncertainty in financial disclosures and information asymmetry among investors. *Financial Review*, 60(3), 799–829. https://doi.org/10.1111/fire.12430

[7] Hennelly, P. A., Srai, J. S., Graham, G., & Fosso Wamba, S. (2020). Rethinking supply chains in the age of digitalization. https://research.ebsco.com/linkprocessor/plink?id=142c45d4-980d-3eac-bc96-bd00b8c8a31d (Accessed 5 May 2026)

[8] Shang, Z., & Chen, H. (2025). Supply chain transparency and corporate financial fraud. *Finance Research Letters*, 77, Article 107070. https://doi.org/10.1016/j.frl.2025.107070

[9] Jia, F., Blome, C., Sun, H., Yang, Y., & Zhi, B. (2020). Towards an integrated conceptual framework of supply chain finance: An information processing perspective. *International Journal of Production Economics*, 219, 18–30. https://doi.org/10.1016/j.ijpe.2019.05.013

[10] Carnovale, S., Rogers, D. S., & Yeniyurt, S. (2019). Broadening the perspective of supply chain finance: The performance impacts of network power and cohesion. *Journal of Purchasing and Supply Management*, 25(2). https://doi.org/10.1016/j.pursup.2018.07.007