The Negative Impact of Supply Chain Finance on Stock Price Synchronicity

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Abstract. We investigate whether supply chain finance (SCF) improves the information environment embedded in stock prices. By employing a multi-dimensional fixed effect approach to analyze data of Chinese A-share companies from 2009 to 2023, this study demonstrates that involvement in SCF exerts a substantial mitigating effect on stock price synchronicity (SYN), suggesting that capital markets incorporate more firm-specific information. Mechanism tests indicate that SCF relaxes financing frictions, increases external monitoring, and improves media sentiment, which jointly strengthens information production. Heterogeneity analyses further show that this value-creation effect is amplified in non-SOEs, large firms, and firms operating in concentrated supply chains. Overall, this study reveals that SCF is not merely a transactional innovation between upstream and downstream enterprises. Instead, it represents a financing and information infrastructure that enhances resource allocation efficiency and market-based governance. Our findings enrich the corporate finance literature by connecting supply chain banking solutions to capital market information content, and highlight that policy support for SCF has both micro-financial and capital-market welfare implications.

Keywords: supply chain finance; stock price synchronicity; information environment; financing constraints; media sentiment

1 Introduction

SCF has expanded rapidly with policy support, and it has emerged as a policy-supported financial innovation designed to improve firms' financing environments by leveraging the creditworthiness of core firms within supply chains. While prior studies document that SCF alleviates financing constraints and improves operational efficiency, its implications for capital market information efficiency remain largely unexplored.

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The metric of stock price synchronicity (SYN) serves as a proxy for the degree to which idiosyncratic, firm-level information is reflected in equity valuations. High synchronicity indicates weak price discovery and distorted capital allocation, this issue is especially salient within the institutional context of emerging economies, with China serving as a quintessential example. Although recent studies suggest that SCF may improve firms' information environments, existing evidence relies mainly on narrow accounting proxies and does not directly examine the effect of SCF on stock price informativeness.

This study fills this gap by examining whether and how SCF participation affects stock price synchronicity. We develop a comprehensive firm-level measure of SCF engagement and analyze the sample comprising all Chinese A-share entities, excluding those in the financial sector, covering a comprehensive panel from 2009 through 2023. We show that SCF participation significantly reduces SYN, suggesting an enhanced informational content of stock prices, especially the firm-specific one.

We further argue that this effect operates through three complementary channels: alleviating financing constraints, enhancing information transparency through analyst attention, and improving forward-looking disclosure quality by strengthening managerial expectations. Our findings highlight SCF as not only a financing arrangement, but also an information and governance mechanism that enhances capital market efficiency.

2 Research Design

2.1 Data and Samples

Our empirical analysis is based on a longitudinal sample of approximately 32,000 firm-year observations (2009-2023). Sourced from CSMAR and WIND, the raw data underwent standard cleaning procedures, including the exclusion of financial-sector firms, distressed stocks (ST and PT), and records with missing values. Furthermore, the impact of outliers was minimized by winsorizing all continuous variables at the 1% and 99% levels. The resulting dataset maintains high representativeness of the Chinese A-share market.

2.2 Variable Selection

2.2.1 Dependent Variable.

The dependent variable is SYN. We calculate SYN following Jin & Myers (2006) [1]:

$$R_{i,w,t} = \alpha_{i,t} + \beta_{i,t} \cdot R_{w,t}^{mkt} + \varepsilon_{i,w,t} \tag{1}$$

$$Synch_{i,t} = \ln\left(\frac{R_{i,t}^2}{1 - R_{i,t}^2}\right) \tag{2}$$

As emphasized by Guo & Duan(2024)[2], price informativeness tends to decline when SYN increases, as the stock price dynamics become less reflective of company-level developments.

2.2.2 Independent Variable: SCF Participation.

The key explanatory variable is SCF participation. Based on corporate annual reports, a dictionary of more than 30 SCF-related keywords is developed, covering accounts receivable financing, factoring, warehouse receipt financing, dynamic discounting, and reverse factoring [3]. Keyword frequencies are aggregated and log-transformed to form an index of SCF participation. Compared with proxies such as accounts receivable financing [3][4], this approach captures broader SCF practices.

We identified SCF participation using 30+ keywords such as “factoring” and “reverse factoring”.

2.2.3 Mediating Variables.

Financing Constraints (SA index): Constructed using firm size and age as in Eldomiaty et al. (2024)[5], with larger values indicating higher financial constraints.

Information Transparency (Analyst Coverage): Measured by the number of analyst reports per year, reflecting information dissemination[2].

Investor Expectations (Narrative Tone): Based on financial sentiment dictionaries [6], narrative tone is extracted from MD&A texts. A more optimistic tone signals better prospects and attracts investor attention [7].

2.2.4 Control Variables.

To address potential endogeneity arising from omitted variables, we account for a diverse array of firm-specific determinants following Hassan et al. (2025)[8] and Tan et al. (2025)[9]. Specifically, our model encompasses fundamental characteristics such as CompanySize and Lev, alongside financial performance indicated by ROA. We further incorporate governance-related factors, including InDrcRat, GmShrRat, and Big. Additionally, market-level competition (Herfindahl) and information environment (transparent) are controlled for. To isolate the impact of SCF, we also integrate firm and year fixed effects, capturing time-static unobservables and systemic economic fluctuations.

2.3 Model Construction

To test the impact of SCF participation on SYN, the following baseline regression model is established:

$$SYN_{i,t} = \alpha + \beta_0 SCF_{i,t} + \gamma Controls_{i,t} + \mu_i + \lambda_t + \varepsilon_{i,t} \quad (3)$$

where $SYN_{i,t}$ represents the stock price synchronicity for firm i during period t, $SCF_{i,t}$ measures SCF participation, $Controls_{it}$ captures a series of firm-level covariates, μ_i and

λ_t are incorporated to account for firm-specific invariants and time-varying systematic shocks, respectively.

For mechanism testing, the following mediation model is applied:

$$Mid_{i,t} = \alpha_1 + \beta_1 SCF_{i,t} + \delta Controls_{i,t} + \mu_i + \lambda_t + \varepsilon_{i,t} \quad (4)$$

$$SYN_{i,t} = \alpha_2 + \beta_2 SCF_{i,t} + \theta Mid_{i,t} + \delta Controls_{i,t} + \mu_i + \lambda_t + \varepsilon_{i,t} \quad (5)$$

where $Mid_{i,t}$ refers to mediating variables (financing constraints, analyst coverage, and narrative tone), capturing the channels through which SCF affects SYN.

3 Empirical Analysis

3.1 Descriptive Statistical Analysis

SYN exhibits a mean of 0.401 and a standard deviation of 0.201, with values ranging from 0.021 to 0.843, reflecting significant cross-sectional dispersion. Regarding the SCF_Index, the substantial gap between the maximum (2.944) and the mean (0.395), coupled with a median of 0, suggests that supply chain finance remains an emerging practice, with the majority of sampled firms yet to participate.

Analysis of control variables reveals that the sampled firms maintain a mean ROA of 0.060, characterized by considerable cross-sectional dispersion in profitability. The average leverage ratio (Lev) stands at 1.387, suggesting that a subset of entities operates under a relatively aggressive capital structure. Meanwhile, the proximity between the mean (22.14) and median (21.94) of CompanySize indicates that the distribution of firm scale is relatively symmetric and concentrated across the observations. Overall, the sample firms exhibit substantial heterogeneity in stock price synchronicity and SCF participation, alongside notable differences in profitability, capital structure, and firm size.

3.2 Baseline Regression Analysis

As presented in column (3) of Table 1, the coefficient of SCF is -0.008, which is statistically significant at the 1% level, supporting H1.

Table 1. Baseline Regression Results

	(1) SYN	(2) SYN	(3) SYN
SCF	-0.024*** (0.002)	-0.032*** (0.002)	-0.008*** (0.002)
ROA		0.035 (0.022)	-0.105*** (0.024)
Lev		0.002* (0.001)	-0.001 (0.001)

InDrcRat		0.0004***	0.0002**
		(0.000)	(0.000)
Herfindahl1		0.038***	-0.053***
		(0.009)	(0.012)
GmShrRat		-0.001***	-0.000**
		(0.000)	(0.000)
CompanySize		0.041***	0.051***
		(0.001)	(0.001)
Big		-0.007	-0.013**
		(0.005)	(0.006)
transparent		-0.016***	0.012***
		(0.001)	(0.001)
Constant	0.410***	0.454***	-0.698***
	(0.001)	(0.022)	(0.032)
Year FE	No	No	Yes
Firm FE	No	No	Yes
N	32550	32550	28860
*Adj*_R²	0.006	0.084	0.108

Note: Robust standard errors in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively, the same below.

3.3 Robustness Test

We confirm robustness using IV-2SLS (Table omitted), lagged independent variables, and alternative SYN measures. All coefficients remain negative and significant.

3.4 Mechanism Test

Columns (1) and (2) of Table 2 show that SCF significantly alleviates financing constraints, as SCF is positively associated with the SA index, and higher financing constraints are in turn associated with higher stock price synchronicity. Meanwhile, the coefficient on SCF remains significantly negative when financing constraints are controlled for. These results support H2, indicating that SCF reduces SYN by relaxing firms' financing constraints.

Columns (3) and (4) of Table 2 further show that SCF significantly increases reporting attention, and that higher reporting attention is significantly associated with lower stock price synchronicity, while the impact of SCF stays persistently negative,. This evidence supports H3, suggesting that SCF reduces SYN by enhancing information transparency through increased analyst and investor attention.

Finally, Columns (5) and (6) of Table 2 show that SCF significantly improves media sentiment. This enhanced public perception, in turn, facilitates the assimilation of firm-specific news into prices, thereby curbing SYN. Notably, the primary inhibitory effect of SCF on stock price synchronicity remains statistically resilient throughout this mediation test. These results support H4, indicating that SCF weakens stock price synchronicity by improving forward-looking sentiment and market perceptions.

Table 2. The results of mechanism analysis

	Financing constraints		Report Attention		Emotion tone	
	(1)	(2)	(3)	(4)	(5)	(6)
	SA	SYN	RA	SYN	ET	SYN
SCF	0.016***	-0.008***	1.570***	-0.007***	0.001***	-0.008***
	(0.005)	(0.002)	(0.483)	(0.002)	(0.000)	(0.002)
SA		0.028***				
		(0.056)				
RA				0.000***		
				(0.000)		
ET						0.383***
						(0.077)
Constant	-4.339***	-0.577***	-196.09***	-0.701***	0.024***	-0.707***
	(0.127)	(0.037)	(10.270)	(0.038)	(0.004)	(0.032)
Control	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
N	28860	28860	20700	20700	28514	28514
Adj_R²	0.260	0.388	0.339	0.383	0.102	0.387

3.5 Heterogeneity Analysis

Further analysis in Table 3 indicates that the relationship between SCF and SYN is moderated by firm scale. We observe a positive and significant interaction effect (SCF×Sizegroup), indicating that SCF reduces SYN more strongly among large firms, which are better positioned to leverage supply chain networks and bargaining power to enhance information transmission. Second, the link between SCF and SYN is found to be stronger among firms with high supply chain concentration, as stable relationships with core customers or suppliers allow SCF to facilitate the flow of both funds and information more efficiently. Third, the interaction between SCF and state ownership is significantly positive, suggesting that SCF exerts a stronger governance and transparency-enhancing effect in SOEs, partly offsetting their weaker market-driven disclosure incentives. Finally, the impact of SCF appears more salient in enterprises plagued by inefficient investment. This pattern aligns with the notion that supply chain finance serves as a corrective mechanism for internal governance; by mitigating capital constraints and agency-related distortions, SCF facilitates a more robust integration of idiosyncratic fundamentals into the equity pricing process.

Table 3. Heterogeneity Test Results

	(1)	(2)	(3)	(4)
	SYN	SYN	SYN	SYN
SCF	-0.029***	-0.015***	-0.009***	-0.010***
	(-0.002)	(0.004)	(0.002)	(0.002)
SCF*Sizegroup	0.046***			

	(1) SYN	(2) SYN	(3) SYN	(4) SYN
	(-0.003)			
SCF * SCconcerntration		0.001**		
		(0.000)		
SCconcerntration		-0.001**		
		(0.000)		
SCF* Ownership			0.007*	
			(0.004)	
Ownership			0.023***	
			(0.004)	
SCF* Inefficiency				0.047**
				(0.017)
Inefficiency				-0.072
				(0.016)
Controls	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
N	28860	27,693	28,860	24,815
Adj. R^2	0.335	0.388	0.390	0.402

4 Conclusions

Focused on the 2009–2023 period, this study assesses the role of SCF in enhancing the informational content of stock prices within the Chinese A-share market, while concurrently uncovering the internal logic and transmission pathways of such an effect. Using a multi-way fixed effects framework and a battery of robustness checks, we find that SCF participation significantly reduces stock price synchronicity (SYN), indicating that more firm-specific information is incorporated into prices. This result remains robust to alternative measures and instrumental-variable estimations, suggesting that SCF improves firms' financial and informational conditions and generates governance effects at the capital-market level.

Mechanism analyses further show that SCF alleviates financing constraints, increases firms' exposure to external scrutiny, and strengthens media sentiment, jointly fostering the production and transmission of information in capital markets. Heterogeneity tests reveal that this effect is more pronounced among large firms, firms with high supply chain concentration, state-owned enterprises, and firms characterized by inefficient investment, implying that SCF's information and governance effects are amplified in settings with greater resource-allocation pressures and governance frictions.

These findings broaden the perspective on the determinants of stock price informativeness. While prior studies have emphasized disclosure quality, governance structures, and external institutional environments, our results highlight SCF as an external financial support mechanism through which financial innovation enhances market efficiency by alleviating financing frictions and improving information flows. More

broadly, the evidence suggests that SCF is not merely a supplementary financing tool, but also an important information and governance infrastructure with spillover effects in capital markets.

This study has several limitations. Our SCF measure is based on textual disclosures and may not fully capture contractual heterogeneity, and the analysis is confined to Chinese A-share firms and stock price synchronicity as the primary informativeness proxy. Future research could incorporate transaction-level data, alternative price-efficiency measures, and cross-country settings to further examine the capital-market effects of supply chain finance.

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