

# The Impact of Geopolitical Risk on Firms' Supply Chain Concentration - Evidence from Sino-US Trade Frictions

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**Abstract.** Geopolitical risks have substantially heightened uncertainties in the external operating environment for Chinese enterprises, with the Sino-US trade friction emerging as the most consequential factor. Notably, the "Entity List" has served as a principal instrument in U.S. sanctions against China. Utilizing panel data from Chinese A-share listed companies spanning 2009-2023, this study employs the difference-in-differences (DID) methodology to empirically examine how geopolitical risks, exemplified by the Sino-US trade friction, influence corporate supply chain concentration. Robustness checks confirm the validity of our findings. The analysis reveals three key insights: (1) Geopolitical risks, particularly those arising from the Sino-US trade friction, exert a significant positive effect on supply chain concentration, primarily through mechanisms of heightened financial risks and mitigated managerial myopia. (2) Heterogeneity analysis demonstrates that enterprise ownership, technological intensity, and industry competition levels critically moderate this relationship, with state-owned enterprises, technology-intensive firms, and competitive industries experiencing more pronounced trade shocks. (3) This research extends the scholarly discourse on geopolitical risks in supply chain management while proposing actionable policy recommendations for governmental agencies and corporate strategies to enhance trade shock resilience and optimize supply chain configurations.

**Keywords:** geopolitical risk, supply chain concentration, Sino-US trade friction, "Entity List".

## 1. Introduction

The sustained advancement of economic globalization has fostered unprecedented prosperity in international trade, accompanied by increasingly complex economic interactions among nations. Disparities in trade status between countries have consequently given rise to persistent commercial frictions. Since 2009, China has faced escalating trade disputes, consistently ranking as the primary target of global trade conflicts for 14 consecutive years, in which U.S.-China trade relations have developed in friction and twists and turns since the establishment of trade relations between the two countries. As China's economic influence expands, the United States has gradually become the country with which China has the most trade friction and the most intense. Crucially, the Sino-US trade friction transcends mere economic competition, representing a geopolitical instrument whereby Western capitalist states, led by the United States, seek to instigate political destabilization through economic coercion, territorial disputes, regional conflicts, and attempted regime subversion. These confrontations epitomize the manifestation of geopolitical risks in contemporary trade frameworks.

Geopolitical risks, particularly exemplified by U.S.-China trade friction, exert a measurable influence on corporate supply chain concentration. Allianz Trade's 2024 Global Survey Report reveals that more than half of global enterprises have initiated supply chain geographical restructuring due to geopolitical concerns, based on data from more than 3,000 exporters across eight major economies: China, France, Germany, Italy, Poland, Spain, the United Kingdom, and the United States. The findings further indicate that enterprises maintaining extensive supply chain networks with over 50% overseas production facilities demonstrate a heightened sensitivity to potential escalations in Sino-US trade friction. Supply chain concentration has remained a central focus in supply chain management literature scrutinized by scholars worldwide. Since 2017–present, it has emerged as a prominent research focus within international business studies.

However, in recent years, the evolving geopolitical landscape, particularly exemplified by escalating Sino-US trade friction, has fundamentally reshaped global economic dynamics, thereby influencing corporate supply chain concentration patterns. Statistical records indicate that between

2010 and 2020, the United States initiated 163 primary trade remedy investigations against China - the highest number among all trading partners. Furthermore, since 2018, U.S. regulators have systematically added Chinese entities to the Commerce Department's Entity List. These trade enforcement mechanisms predominantly involve anti-dumping (AD), countervailing duty (CVD), and safeguard measures, targeting 18 strategic sectors including metal products; chemical raw materials and derivatives; and iron/steel industries. Notably, prominent Chinese telecommunications firms such as ZTE and Huawei have faced recurrent sanctions, exemplifying the operational challenges posed by these geopolitical interventions.

The acute geopolitical tensions between nations amplify uncertainty in international trade and economic systems, jeopardizing supply chain stability through increased disruption risks that ultimately reshape supply chain concentration patterns. Investigating geopolitical risks' influence on supply chain concentration serves three critical purposes: First, it enables enterprises to systematically identify and mitigate operational vulnerabilities, thereby ensuring supply chain continuity. Secondly, supply chain concentration refers to the degree of concentration of an enterprise's selection of suppliers, producers, and distributors on a global scale. Studying how geopolitical risks affect supply chain concentration can help enterprises allocate resources more rationally and avoid over-reliance on suppliers in a certain region or country, thus enhancing the elasticity and resilience of the supply chain. Furthermore, in the context of globalization, competition among enterprises has become increasingly fierce. Studying the impact of geopolitical risk on supply chain concentration can help enterprises formulate more forward-looking and strategic supply chain management strategies, and enhance their overall competitiveness and market responsiveness. These imperatives underscore the necessity of examining how geopolitical risks impact firms' supply chain concentration.

## 2. Literature review

The sustained ascendancy of China and other emerging economies has precipitated structural transformations in the global economic order, fostering increasingly complex geopolitical dynamics as globalization evolves into a new geopolitical paradigm (Lu Dadao et al., 2013) [1]. This paradigm shift has attracted increasing scholarly attention to geopolitical risk analysis. Liu Wenge et al. (2020) advocate that geopolitical risks originate from sudden events faced by a country or region, such as political instability, social unrest, military confrontation, and outbreaks of terrorist activities, and also cover non-sudden political factors, such as ineffective governmental management and corruption, which may bring about unpredictable and significant negative impacts on political stability, economic development, and social harmony [2].

Supply chain concentration (SC) quantifies an enterprise's strategic reliance on limited suppliers or customers, a dependency critically influencing organizational competitiveness and sustainable growth. Within globalization and heightened market competition, SC has emerged as a pivotal metric in supply chain management (SCM), directly determining operational efficiency, risk mitigation capabilities, and market positioning. Scholarly investigation of SC carries significant theoretical and practical implications for advancing SCM frameworks (Wang Haifang et al., 2021) [3]. Chinese enterprises have improved their position in the global value chain, but they are facing the impact of trade friction, and their global supply chain, although resilient, has revealed problems such as single structure, insufficient core technology, weak risk resistance, etc., and their internationalization process has been hindered, so they need to strengthen the optimization of supply chain and risk management (Wang Luyao, 2022) [4]. Supply chain concentration (SC) fundamentally shapes corporate competitive positioning in global markets. This critical relationship necessitates systematic investigation into SC determinants to enable strategic adaptation amidst evolving market complexities and geopolitical contingencies. Empirical studies leveraging listed company data have proliferated globally. Wang Haifang et al. (2021) proposed that supply chain concentration research focuses on the theories of resource dependence and transaction cost, and the influence mechanism contains risk and return, and the frontier issues include R&D investment, capital market performance,

etc. [3]. He Wenbin's (2024) analysis reveals that economically advanced regions foster industrial clusters, attracting high-caliber supply chain partners to enhance SC through synergistic stability and reduced partner attrition [5]. As the economy diversifies and the market environment becomes more complex, enterprises are more inclined to increase supply chain concentration to ensure stability and reduce uncertainty (Tang Yingyue, 2024) [6].

Enterprises have been facing many threats and challenges such as geopolitical risk in the development process (WangXin, 2025) [7], which has a certain impact on the supply chain relationship of enterprises in China, enterprises need to incorporate geopolitical risk into the core framework of strategic decision-making, while supply chain concentration directly affects the cost structure, operational resilience, market competitiveness, and even the long-term strategic security of enterprises. Bednarski et al. (2023) demonstrate that geopolitical uncertainties amplify supply chain disruption probabilities, and reducing supplier concentration is beneficial to resist disruption risk and improve supply chain resilience [8]. Empirical evidence confirms intensified geopolitical exposures for Chinese enterprises post-2018 Sino-US trade friction (Yang Xiaoxuan, 2023) [9], since Trump took office, he has identified China's development at the cost of harming US interests and has shown that he will make containing China the primary foreign policy of the United States (БЕЗРЯКОБ А О, 2024) [10], and has formed a systematic suppression through technological blockades, supply chain reconstruction, and financial sanctions (Tega, Y., & Allison, G, 2018) [11]. Sino-US trade friction is the core geopolitical risk that China is currently facing, so this study takes the Sino-US trade friction as an example to explore the impact of geopolitical risk on firms' supply chain concentration. The U.S.-China trade confrontation transcends conventional trade deficit disputes, representing systemic rivalry between established and emerging powers in global governance structures. The 2017 National Security Strategy Report formally designated China as a "strategic competitor," catalyzing comprehensive measures to: (1) Constrain China's access to foundational technologies and disrupt global resource acquisition channels. (2) Impede China's technological leapfrogging from "manufacturing base" to "innovation powerhouse"; thereby reinforcing American hegemony in strategic domains such as semiconductors, artificial intelligence, and quantum computing. The Entity List, a pivotal instrument in technological containment strategies, has affected the internationalization of supply chain relationships of Chinese enterprises and may lead to the disruption of supply chains that Chinese enterprises used to rely on (Yang Ce, 2024) [12]. This institutionalized exclusion mechanism underscores the imperative to analyze the concentration of supply chains of enterprises under geopolitical duress, providing critical insights into the operationalization of U.S.-China techno-economic competition.

Domestically, the research on geopolitical risk started late, mostly based on the Belt and Road Initiative (BRI) context or the impact of geopolitical risks on economy and trade investment. Departing from previous studies, this study adopts a micro-level analytical framework to investigate three critical dimensions: (1) the impact of geopolitical risk on supply chain concentration, and what are the impact mechanisms. (2) Examining differential impacts across organizational attributes including ownership structures, technological intensities, and industry competition levels. (3) Developing evidence-based recommendations for SC optimization under geopolitical uncertainties. Theoretical contributions manifest in two dimensions: First, it enriches the research perspectives on geopolitical risk and enterprise supply chain concentration, and puts forward new theoretical and empirical support for the subsequent research; Second, this paper puts forward policy suggestions for enterprises to cope with trade friction and better supply chain management through in-depth analysis of the impact mechanism and heterogeneity of geo-focused analyses on the concentration of enterprise supply chain.

### 3. Theoretical analysis and research hypothesis

#### 3.1. The Impact of Geopolitical Risk on Supply Chain Concentration

Empirical studies confirm that geopolitical risks exemplified by Sino-US trade friction significantly increase corporate supply chain disruption probabilities (Yu Dianfan et al., 2024) [13]. Since 2018, U.S. regulators have systematically added many Chinese enterprises to the Commerce Department's Entity List, imposing trade restrictions on strategic sectors including nuclear power, aerospace, and semiconductors. These measures specifically target China's industries by restricting the supply of raw materials and other resources to Chinese enterprises, especially high-tech enterprises. Consequently, Chinese enterprises reliant on global supply networks face dual pressures of shrinking international market access and resource scarcity, compelling strategic shifts toward centralized procurement and domestic substitution. This operational recalibration has demonstrably elevated supply chain concentration levels across affected industries.

On the other hand, more facilitated and open trade can reduce enterprise supply chain concentration by lowering enterprise fixed costs, expanding enterprise business scope, and reducing dependence on specific supply chains upstream and downstream (Duan Wenqi et al., 2023) [14]. Conversely, information processing theory posits that geopolitical disruptions like Sino-US trade friction amplify supply chain uncertainties, and exponentially increase requisite information loads for corporate decision-making (Li Suicheng et al., 2020) [15]. To cope with the shocks and reduce the risk of uncertainty and decision-making costs, firms tend to reduce the complexity of information processing through supply chain centralization.

Building upon the resource dependence perspective, the development of enterprises needs to rely on financial resources, information resources, and technological resources (Lu Qiang et al., 2025) [16]. Geopolitical disruptions exemplified by Sino-US trade friction impose systemic constraints on firms through tightened financing accessibility, restricted technology transfers, and inflated information acquisition costs. Consequently, companies must prioritize the security and reliability of supply chain operations by minimizing reliance on unpredictable external conditions. This strategic shift compels organizations to cultivate sustainable partnerships with key suppliers and distributors across the value chain. Empirical evidence from transaction cost economics confirms that heightened supply chain concentration reduces contractual friction, enabling firms to establish more stable operational frameworks (Bushee, B. J., & Miller, G. S., 2012) [17]. The centralization of the supply chain helps enterprises to achieve information sharing and makes it easier for them to access information resources. Therefore, based on the above analysis, this study proposes hypothesis 1.

Hypothesis 1: Geopolitical risk contributes to firms' supply chain concentration - the example of Sino-US trade friction.

#### 3.2. The role of mechanisms for Corporate Financial Risk

Corporate financial risk denotes the potential for economic losses arising from discrepancies between projected and actual returns due to operational uncertainties (Han Dongmei, 2015) [18]. Financial risk has a certain objectivity, exists in all aspects of business activities, it has an impact on the safety and soundness of the production and operation process of the enterprise. Market risk, credit risk, liquidity risk, and interest rate risk are the main factors of financial risk (Wu Yehan, 2024) [19]. Through the analytical lens of Sino-US trade friction, this section systematically examines how this financial risk dimensions mediate the relationship between geopolitical risks and supply chain concentration.

Geopolitical risk exacerbates corporate financial risk as exemplified by US-China trade friction. (1) Empirical studies demonstrate geopolitical risks accelerate market risk spillover effects (Zhao Shuran et al., 2024) [20], particularly facilitating cross-sector contagion in energy, foreign exchange, and precious metals markets, etc. (Dong Feng et al., 2025) [21]. Sanctions under the U.S. Commerce Department's Entity List disrupt material and technological flows while constraining Sino-American trade volumes, resulting in drastic changes in market supply and demand, and exacerbating the market

risk of enterprises, which in turn increases the financial risk faced by enterprises. (2) Bilateral trade restrictions increase transaction costs, elevating default probabilities on bank loans and commercial credits. This liquidity strain negatively impacts corporate cash flow sustainability, particularly for export-oriented firms (Xie Sixin, 2019) [22]. (3) Enterprises included in the "Entity List" are subject to export restrictions and are prone to short-term difficulties such as slow-moving inventories, which may lead to the inability of enterprises to obtain sufficient cash, resulting in a rise in enterprise cash flow risk. (4) From 2018 to 2023, the U.S. Federal Reserve maintained a consistent monetary tightening stance through successive interest rate hikes. In response to heightened downside risks to economic growth, China adopted a moderately accommodative monetary policy during this period. Concurrently, the escalation of Sino-US trade frictions further exacerbated interest rate volatility across both economies (Chen Huaijin, 2020) [23]. In addition, scholars have found that geopolitical risks do not have a significant impact on external debt, but they significantly contribute to the rise of domestic debt interest rates (Zhang Yue et al., 2023) [24]. The four transmission channels will make the short-term solvency of enterprises decline, and investors' risk aversion is high, which triggers corporate financial risk.

When Corporate financial risk increases, enterprises tend to avoid risk through supply chain centralization to maintain a stable business environment. This manifests through dual mechanisms: (1) Financial vulnerabilities propagate along supply networks (Chen Changbin & Sheng Xin, 2013) [25]. Facing unstable external conditions and the possibility of increased corporate financial risks, firms reduce the risks due to supply chain disruptions through supply chain integration. (2) Firms can cope with growing financial risks through increased supply chain centralization. Empirical evidence confirms that concentrated supply chains enhance working capital management efficiency, which makes the enterprise improve its capital structure, reduce the proportion of long-term debt, and then reduce the financial risk (Shen Chang'e et al., 2016) [26]. Therefore, based on the above analysis, this study proposes hypothesis 2.

Hypothesis 2: Geopolitical risks, as exemplified by U.S.-China trade friction, elevate supply chain concentration through Corporate financial risk amplification mechanisms.

### 3.3. Managerial Myopia Mechanisms

Managerial myopia manifests when corporate leaders prioritize short-term profitability over long-term organizational sustainability. Gu Qun et al. (2023) have shown that reducing R&D investment is one of the main manifestations of management myopia [27]. This section employs R&D investment intensity to quantify managerial myopia, analyzing its mediating role in geopolitical risk impacts on supply chain concentration, with Sino-US trade frictions as the empirical context.

Trade shocks arising from geopolitical risks, such as trade frictions between China and the United States, can mitigate management myopia. (1) Sanctions under the U.S. Entity List impose dual pressures: restricted market access and resource scarcity, forcing management to give more consideration to the long-term stable development of the enterprise, and thus reducing managerial myopia (Yang Ce & Zheng Jianming, 2022) [28]. Under the trade shock, the external environment of the enterprise is unstable, the management pays more attention to the enterprise's risk-resistant ability and long-term competitiveness, and to maintain a stable business situation and good earnings, the enterprise executives are more inclined to long-term strategic planning. (2) Under geopolitical risk-induced trade shocks, enterprises lacking core competitiveness struggle to maintain market share, necessitating increased R&D investment to enhance market competitiveness (Niu Zhiwei, 2023) [29]; confronted with technological embargoes, enterprises face disruptions in overseas-dependent component supply chains, compelling intensified R&D expenditures to sustain production operations through independent development of core components.

The mitigation of managerial myopia demonstrates positive correlations with supply chain concentration. (1) Reduced myopic orientation enables firms to prioritize supply chain stability over short-term profit maximization. Lower concentration levels correlate with elevated coordination costs and more long-term uncertainties (Li Xiaoying, Chen Weizheng, 2003) [30]. Environmental volatility

triggers rigorous enterprises to evaluate their suppliers, eliminate unqualified suppliers (Chen Jian & Liu Yunhui, 2021) [31], and focus their resources on more advantageous and stable head enterprises.

(2) Escalating trade uncertainties drive enterprises to vertically integrate the supply chain, grasp the core resources, and strengthen their competitiveness (Jin Yonghua, 2022) [32]. In the case of information, technology, and other resource blockades caused by the "entity list", vertical integration of the supply chain is conducive to enterprises to achieve information sharing, reduce enterprise transaction costs, reduce risks, and achieve long-term stable development (Jian Zhaoquan et al., 2013) [33]. Therefore, based on the above analyses, this study proposes hypothesis 3.

Hypothesis 3: Geopolitical risks, as operationalized through Sino-US trade frictions, elevate supply chain concentration via managerial myopia suppression mechanisms.

## 4. Research design

### 4.1. Sample Selection and Data Sources

This paper takes China's A-share listed companies from 2009-2023 as samples, to make the data more researchable, the following operations are performed on the data: (1) exclusion of financial sector entities and ST/\*ST firms; (2) removal of observations with abnormal/missing variable data; (3) winsorization of continuous variables at 1% thresholds to mitigate outlier effects.

The data sources are as follows: (1) The data required for this paper on corporate supply chain concentration and firm-level control variables come from the Cathay Pacific (CSMAR) database. (2) Entity List sanctions data, collected via the U.S. Department of Commerce's Bureau of Industry and Security (BIS) portal, undergo industry classification alignment using the China Securities Regulatory Commission's (CSRC) 2012 Industry Classification Guidelines.

Chen Wujie (2023) researches that the "Entity List" policy has a cohort effect on Chinese enterprises [34]. Following Chen's cohort effect framework, this study extends Entity List impacts to all enterprises within sanctioned industries. The empirical strategy identifies 14 targeted sectors, including Railway/Shipbuilding/Aerospace Equipment Manufacturing, Software & IT Services, Computer/Communication Electronics Manufacturing, and Non-ferrous Metal Smelting and Rolling Processing, of which new energy and high-tech industries account for a large proportion.

### 4.2. Empirical Strategy

The Sino-US trade friction, initiated in 2018, has manifested through 34 Bureau of Industry and Security (BIS) Entity List updates targeting Chinese enterprises through 2023. Based on the above theoretical analyses, this chapter examines the impact of geopolitical risk on corporate supply chain concentration, using the trade friction between China and the United States as an anthropomorphic natural experiment. Adopting Beck et al.'s (2023) difference-in-differences (DID) framework [35], this chapter constructs the following model:

$$Y_{it} = \beta_0 + \beta_1 treat_i + \beta_2 post_t + \beta_3 treat_i \times post_t + \eta control_{it} + \varepsilon_{it} \quad (1)$$

Among them,  $Y_{it}$  is the enterprise supply chain concentration;  $treat$  is a grouping variable, is divided by whether the enterprise is subject to U.S. sanctions or not, the listed companies belonging to the U.S. "Entity List" involved in the sensitive industry are defined as 1, as a treatment group, and the other enterprises are defined as 0, which is regarded as a control group;  $post$  is a time variable, takes the value of 1 after 2018, and 0 before 2018;  $\beta_3$  is the core coefficient of this paper, which represents the effect of geopolitical risk on the concentration of enterprise supply chain in the case of the China-US relationship.  $control$  denotes the control variable;  $\varepsilon_{it}$  denotes the random perturbation term.

### 4.3. Variable Definitions and Measurement

(1) Explained variable: firms' supply chain concentration

This paper uses the mean value of the sum of the proportion of purchases and sales of the top 5 suppliers and customers of listed companies as an indicator of corporate supply chain concentration.

(2) Core explanatory variables: dummy indicator variables  $treat \times post$

In this paper, the impact of geopolitical risk on the supply chain concentration of enterprises is investigated by taking the trade friction between China and the US as an example, and the impact of the trade friction between China and the US is measured according to whether the enterprises belong to the industries covered by the "Entity List". Among them,  $treat$  is a grouping dummy variable, which is defined as 1 for enterprises in listed companies that are covered by the US "entity list" and belong to sensitive industries, as a treatment group; and 0 for other enterprises, as a control group.  $post$  is a time dummy variable, which takes the time of the official start of the trade war between the US and China as the node, and takes the value of 1 after the start of the trade war in 2018, and the value of 1 after the start of the trade war in 2018 as the node of the trade war.

(3) Control variable

Concerning previous scholars' studies, the control variables in this paper are as follows: firm size (Size), firm listing age (Age), asset-liability ratio (Lev), long-term debt ratio (DLCR), firm growth capability (Growth), net profit growth rate (npg), capital intensity (CAP), board size (Board), and other variables related to the characteristics of listed firms.

(4) Mechanism variables

After the above theoretical analyses, this paper adopts the corporate financial risk and managerial myopia as the influencing mechanism. Referring to the study of Zhang Weihong and Zhu Haixia (2012) [36], this paper quantitatively evaluates corporate financial risk using the Z - score model proposed by Altman. Referring to the study of Bai Jun et al. (2025) [37], the ratio of R&D investment to a firm's operating income is used to measure managerial myopia, and the smaller the ratio of R&D investment, the stronger the managerial myopia.

**Table 1.** Definition of variables and selection of indicators

Variable Type	Variable Name	variable code	Selection of indicators
Explained Variable	Firms' Supply Chain Concentration	ST5r	Mean value of the sum of the proportion of purchases and sales by the top 5 suppliers and customers of listed companies
Explanatory Variable	Industries Covered by "Entity List"	treat	1 if it belongs to an industry is covered by the "Entity List"; 0 otherwise
	Impact Year of Sino-US Trade Friction	post	0 for years before 2018; 1 for 2018 and later
	Impact of Sino-US trade friction	did	Interaction items of treat and post
Control Variables	Firm size	Size	Natural logarithm of total assets
	Firm Listing Age	Age	$\ln(\text{current year} - \text{firm establishment year} + 1)$
	Firm Growth Capability	Growth	Total asset growth rate
	Capital Intensity	CAP	Total assets / operating income
	Long-Term Debt Ratio	DLCR	Long-term liabilities / long-term capital
	Asset-Liability Ratio	Lev	Total liabilities at year-end / total assets at year-end
	Net Profit Growth Rate	npg	$(\text{Current net profit} - \text{prior net profit}) / \text{prior net profit}$
Mechanism variables	Board Size	Board	Natural logarithm of the number of board members
	Corporate Financial Risk	Z-Score	Assigning values to corporate financial indicators based on the Z-score model
	Managerial Myopia	Myopia	R&D investment / operating income

## 5. Empirical analysis of the impact of geopolitical risk on corporate supply chain concentration

### 5.1. Descriptive statistics of variables

Table 2 presents descriptive statistics for key variables. Following rigorous data processing, the final sample comprises 41,453 valid firm-year observations. From the descriptive statistics analysis, it can be seen that the mean value of *treat* is 0.548, indicating that 54.8% of enterprises belong to the industries covered by the "entity list"; the mean value of the *post* is 0.549, indicating that 54.9% of the samples are in 2018 and later; the mean value of *did* is 0.318, indicating that 31.8% of the samples are affected by the US sanctions. The variance of supply chain concentration and the significant gap between the maximum and minimum values can indicate that there is a significant difference between the supply chain concentration of different firms. The large standard deviation of the growth rate of the net profit of enterprises indicates that the net profit of enterprises fluctuated significantly during the study period; all other control variables are at relatively stable levels.

**Table 2.** Descriptive statistics of main variables

VARIABLES	(1) N	(2) mean	(3) sd	(4) min	(5) max
<i>treat</i>	41,453	0.548	0.498	0	1
<i>post</i>	41,453	0.549	0.498	0	1
<i>did</i>	41,453	0.318	0.466	0	1
<i>st5r</i>	41,453	30.92	17.33	2.500	80.88
<i>Size</i>	41,453	22.22	1.295	19.83	26.21
<i>Lev</i>	41,453	0.430	0.207	0.0558	0.912
<i>DLCR</i>	41,453	0.145	0.165	0	0.709
<i>ag</i>	41,453	0.147	0.290	-0.303	1.858
<i>npg</i>	41,453	3.375	598.5	-5,713	113,551
<i>CAP</i>	41,453	2.565	2.138	0.401	13.81
<i>Board</i>	41,453	2.118	0.201	1.099	2.890
<i>age</i>	41,453	2.177	0.785	0.693	3.526

### 5.2. Baseline Regression

Table 3 presents the impact of Sino-US trade friction, as exemplified by the "Entity List," on corporate supply chain concentration. This analysis focuses on the core explanatory variable *did* (the interaction term of *treat* and *post*). The regression results indicate that the coefficient of *did* is significantly positive at the 1% level, regardless of whether control variables are incorporated or industry and year fixed effects are applied. From an economic perspective, the findings reveal that firms affected by the U.S. Entity List exhibit a 0.768-unit increase in supply chain concentration compared to the control group. This result validates Hypothesis 1 of this study, demonstrating that geopolitical risks—specifically Sino-US trade friction—significantly enhance corporate supply chain concentration.

**Table 3.** Baseline regression results

VARIABLES	(1) st5r	(2) st5r	(3) st5r	(4) st5r
did	6.039***	5.939***	1.091***	0.768***
	(0.180)	(0.178)	(0.307)	(0.288)
Size		-2.174***		-3.811***
		(0.0783)		(0.0739)
Lev		-6.848***		-0.934*
		(0.587)		(0.555)
DLCR		8.790***		2.005***
		(0.754)		(0.702)
ag		0.687**		2.249***
		(0.285)		(0.258)
CAP		1.292***		1.241***
		(0.0404)		(0.0392)
Board		-4.424***		-2.192***
		(0.419)		(0.383)
age		-0.403***		-0.894***
		(0.117)		(0.108)
npg		-0.000105		-0.000104
		(0.000135)		(0.000120)
Constant	29.01***	85.85***	30.58***	118.6***
	(0.102)	(1.702)	(0.124)	(1.606)
fixed effect	No	NO	Yes	Yes
Observations	41,453	41,453	41,452	41,452
R-squared	0.026	0.096	0.191	0.289

Standard errors in parentheses

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

### 5.3. Robustness Tests

#### 5.3.1. Parallel Trend Test

This section uses the parallel trend test to further validate the accuracy of the findings. This test confirms that treatment and control groups exhibit statistically indistinguishable trends in supply chain concentration before policy intervention, ensuring post-treatment differences arise from the policy itself rather than preexisting divergence. Figure 1 illustrates the test results, using 2018 (the baseline year of Sino-US trade friction) as the reference point. Figure 1 shows that before the base period, the coefficients fluctuate around 0 and are not significant, indicating that before the Sino-US trade friction, the industries involved in the "Entity List" are consistent with the trend of changes in the supply chain concentration of other industries; the regression coefficients after the base period are gradually rising and are significant, indicating that the U.S. "Entity List" significantly affects the supply chain concentration of Chinese enterprises. This test satisfies the parallel trend hypothesis that the trade friction between China and the United States has a significant impact on the supply chain concentration of enterprises, and the difference originates from the trade friction itself rather than the pre-intervention trend.

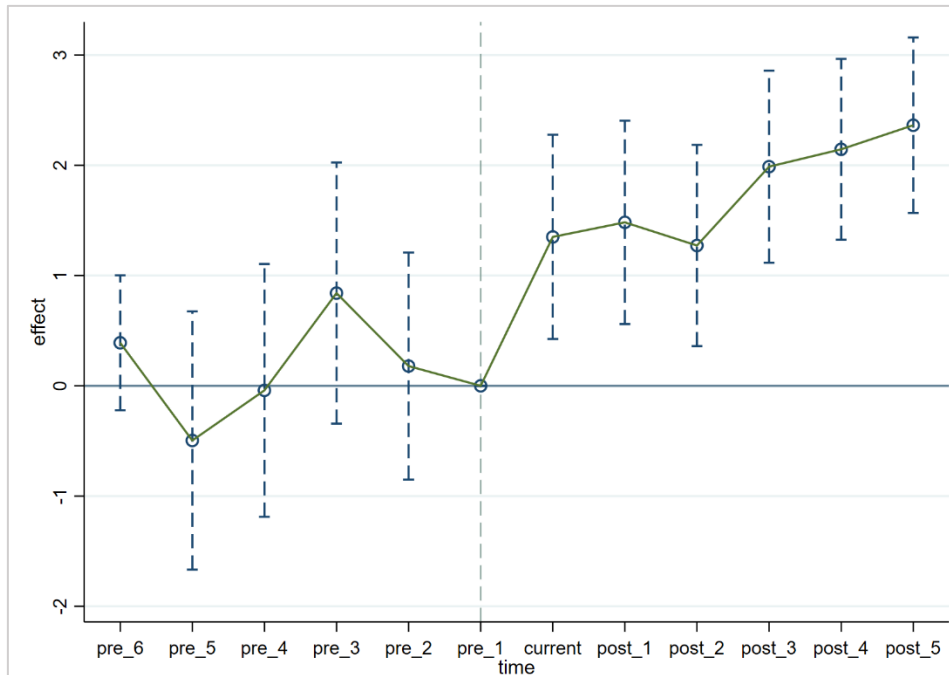


Figure 1. Parallel trend test

### 5.3.2. Placebo Test

To validate the reliability of the regression results and mitigate potential biases from unobserved confounders or random chance, a placebo test was implemented. This involved 1,000 randomized simulations where treatment and control group labels were artificially reassigned to simulate scenarios devoid of true policy effects. As can be seen from Figure 2(1), the false estimated coefficients are normally distributed, fluctuating around the value of 0, significantly lower than the true estimated coefficients of the core explanatory variables, indicating that the significance of the estimated coefficients in this study does not originate from the random factors or confounding factors, and excludes the possibility that the results are a fortuitous coincidence; Figure 2(2) demonstrates the distribution of the kernel density of the T-values for the placebo test, and the curves show that the T-value of the false estimates is concentrated around 0, showing an approximately normal distribution with no significant deviation from 0. This suggests that no significant spurious treatment effect was generated in the placebo test for randomized treatment group labels, thus ruling out the possibility that the original regression results were caused by random factors or confounding factors; Figure 2(3) demonstrates the p-values and density distributions of the placebo test, which show that most of the p-values for the randomized treatment group are greater than 0.1, suggesting that the spurious estimated coefficients are not significant, and once again verifying that the results of the baseline regression are Robustness.

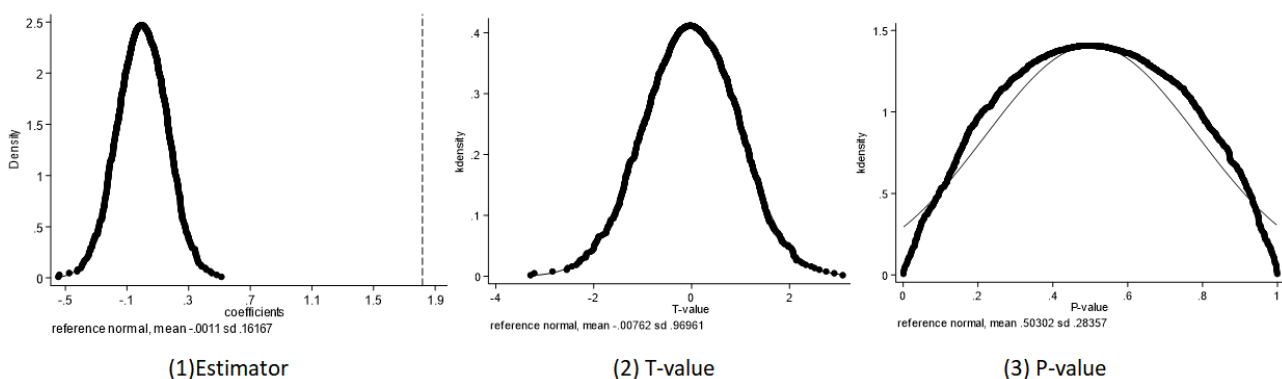


Figure 2. Placebo test results

## 5.4. Mechanism Analysis

Building on the theoretical framework established in Chapter 3, this study examines the mediating roles of corporate financial risk and managerial myopia in the relationship between geopolitical risks and supply chain concentration. To mitigate endogeneity concerns and measurement errors, the analysis adopts Jiang's (2022) structural equation approach for mechanism validation [38], focusing on geopolitical risks' direct impacts on these mediating channels.

### 5.4.1. Corporate Financial Risk Pathway

Geopolitical risk, as exemplified by the trade friction between China and the United States, exacerbates the financial risk of enterprises by limiting their trade, technological, and information resources, which in turn increases the concentration of their supply chains. Theoretical analyses suggest that geopolitical risk can increase corporate supply chain concentration by increasing the level of corporate financial risk. To verify this theoretical conjecture, this paper refers to the research of Altman (1968) [39], which adopts the Z-score to measure the degree of corporate financial risk, and the lower values indicate higher bankruptcy risk. Table 4 (2) shows the test results of corporate financial risk as a mechanism. Among them, the regression coefficient of the core explanatory variable did on corporate financial risk is significantly negative at the level of 0.1, indicating that geopolitical risk, as exemplified by the Sino-US trade friction, can indeed significantly reduce the Z-value of a firm, i.e., increase the degree of corporate financial risk. The test results are consistent with the theoretical analyses in Chapter 3 and the literature studies of previous scholars, proving that corporate financial risk plays a mediating role in the impact of geopolitical risk on corporate supply chain concentration. It verifies hypothesis 2 of this paper: geopolitical risk can pass through corporate supply chain concentration by exacerbating corporate financial risk - taking the example of US-China trade friction.

**Table 4.** Mechanism of action test - corporate financial risk

VARIABLES	(1) st5r	(2) z
did	0.768***	-0.163*
	(0.288)	(0.0846)
Constant	118.6***	23.95***
	(1.606)	(0.472)
control variable	be	be
fixed effect	be	be
Observations	41,452	41,452
R-squared	0.289	0.423

Standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

### 5.4.2. Managerial Myopia Pathway

Theoretical analysis posits that geopolitical risks suppress managerial myopia, thereby increasing firms' supply chain concentration. To operationalize this mechanism, managerial myopia is measured by R&D intensity (R&D expenditure relative to operating revenue), where higher ratios reflect reduced short-term orientation. To verify this theory, this section focuses on the impact of core explanatory variables on management myopia, and Table 5 shows the test results. The regression coefficient in Table 5 (2) is 1.223 and is significant at the 1% level, indicating that geopolitical risk has a dampening effect on corporate management myopia, which is consistent with the theoretical analysis in Chapter 3, and proves that Sino-US trade friction can increase corporate supply chain concentration by dampening corporate management myopia. It verifies hypothesis 3 of this paper: geopolitical risk can increase corporate supply chain concentration by suppressing managerial myopia - taking Sino-US trade friction as an example.

**Table 5.** Mechanism of action test - managerial myopia

	(1)	(2)
VARIABLES	st5r	Myopia
did	0.768***	1.223***
	(0.288)	(0.0913)
Constant	118.6***	7.579***
	(1.606)	(0.506)
control variable	be	be
fixed effect	be	be
Observations	41,452	34,622
R-squared	0.289	0.440

Standard errors in parentheses  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## 5.5. Heterogeneity analysis

### 5.5.1. Enterprise Ownership

Based on the difference in firm ownership, this study classifies firms into state-owned and non-state-owned firms and conducts heterogeneity analyses to test whether the effect of Sino-US trade friction on firms' supply chain concentration varies according to the difference in firm ownership. Table 6 demonstrates the impact of state-owned equity firms and non-state-owned equity firms on the extent of the effect of trade friction between China and the United States. The regression results in Table 6 (1) show that the regression coefficients of state-owned enterprises do not pass the significance test, indicating that Sino-US trade friction does not significantly affect the supply chain concentration of state-owned enterprises; the regression results in column (2) show that the effect of Sino-US trade friction on the supply chain concentration of non-state-owned enterprises is significantly positive at the 1 percent level.

**Table 6.** Heterogeneity - Enterprise Ownership

	(1) Yes	(2) No
VARIABLES	st5r	st5r
did	-0.366	1.530***
	(0.500)	(0.362)
Constant	114.6***	124.4***
	(2.762)	(2.207)
control variable	be	be
fixed effect	be	be
Observations	14,323	26,294
R-squared	0.342	0.271

Standard errors in parentheses  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

In summary, the supply chain concentration levels of state-owned enterprises and non-state-owned enterprises are significantly different in the face of Sino-US trade friction, and the reasons for this phenomenon may be as follows: (1) State-owned enterprises are in a more stable operating condition. Scholars have shown that compared with non-state-owned enterprises, state-owned enterprises have larger enterprise scale, smaller financing constraints, more stable operating conditions, and stronger stability in response to external environmental shocks (Liu Rong et al., 2025) [40]. (2) State-owned enterprises are subject to a greater degree of policy support. State-owned enterprises have the advantages of resource scale, policy support, and strategic position, while non-state-owned enterprises have relatively limited resources, weaker policy support, and constrained global deployment capacity. According to existing studies, the policy favoring state-owned enterprises helps

them establish stable supply chain relationships, and their ability to cope with risks and alleviate pressure is stronger than that of non-state-owned enterprises (Zhang Min et al., 2012) [41].

### 5.5.2. Technology Intensity of Enterprises

The impact of U.S.-China trade friction on supply chain concentration may vary with firms' technological intensity. This study categorizes firms into technology-intensive enterprises and non-technology-intensive enterprises. Table 7 demonstrates the different impacts of supply chain concentration levels of technology-intensive firms and non-technology-intensive firms by U.S.-China trade frictions. Among them, Column (1) shows that the US-China trade friction significantly contributes to the supply chain concentration of technology-intensive firms at the 5% level. Column (2) regression coefficients of core explanatory variables show that non-technology-intensive firms are not significantly affected by the U.S.-China trade friction.

In summary, technology-intensive enterprises and non-technology-intensive supply chain concentration level in the face of the U.S.-China trade friction to produce significant differences in this phenomenon may be due to the following aspects: (1) technology-intensive enterprises (e.g. semiconductors, biomedicine, etc.) R & D and production of cutting-edge overseas technology and key components dependence on a high degree of, and insufficient domestic supporting, weak substitutability, the Sino-US trade friction of technology blockade Forced the previous dependence on the U.S. enterprises high-tech related production and manufacturing behaviour is limited(Yang Yiwen, 2024) [42], it is forced to centralized procurement or rely on a small number of overseas suppliers, resulting in a passive increase in the concentration of the supply chain; and non-technology-intensive enterprises such as the traditional manufacturing industry, mostly with general-purpose parts and components, the domestic alternative sources of rich, low cost of adjustment, by the impact of a more dispersed. (2) As high-tech enterprises are the core of national scientific and technological innovation, their development is directly related to international scientific and technological sovereignty, supply chain security, and international competitiveness, so compared with non-technology-intensive enterprises, the U.S. sanctioned more technology-intensive enterprises, technology-intensive enterprises by the Sino-US trade friction impact are more significant.

**Table 7.** Heterogeneity - Technology Intensity of Enterprises

VARIABLES	(1) Yes st5r	(2) No st5r
did	1.220** (0.583)	0.341 (0.425)
Constant	105.0*** (2.456)	126.7*** (2.147)
control variable	be	be
fixed effect	be	be
Observations	19,169	22,283
R-squared	0.243	0.320

Standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

### 5.5.3. Industry Competition Levels

This study examines the heterogeneous effects of U.S.-China trade friction on supply chain concentration based on industry competitiveness. Following Yang et al.'s methodology, industries are classified as competitive (Herfindahl-Hirschman Index, HHI < industry median) or non-competitive (HHI ≥ median). Table 8 demonstrates the extent of the impact of Sino-US trade friction on firms' supply chain concentration in two cases, where firms belong to competitive industries and non-competitive industries. Among them, column (1) shows that the effect of Sino-US trade friction on firms' supply chain concentration is significantly positive at the 5 percent level when firms belong to

competitive industries, while column (2) presents the effect is insignificant when firms do not belong to competitive industries;

The supply chain concentration of firms belonging to competitive industries is more susceptible to Sino-US trade frictions, which may be due to the following reasons: (1) Lieven's research shows that competitive industries are more affected by trade shocks than non-competitive industries (Li Fan, 2024) [43]. So, firms belonging to competitive industries are more vulnerable to external shocks when facing trade frictions between China and the United States. Their previous reliance on overseas supply chains such as the U.S. is interrupted and they are forced to reduce their reliance on overseas supply chains to cope with this shock, enterprises are forced to implement centralized purchasing strategies or rely on a few overseas suppliers, which makes the supply chain concentration passively increase. (2) The higher the degree of competition, the lower the barriers to entry in the industry (Liu Qian et al., 2024) [44]. The lack of technological innovation within the enterprise makes it more dependent on overseas core technology resources than enterprises with high industry barriers.

**Table 8.** Heterogeneity - Industry Competition Levels

	(1)	(2)
VARIABLES	st5r	st5r
did	0.699** (0.326)	0.913 (0.664)
Constant	115.6*** (1.898)	129.4*** (3.183)
control variable	be	be
fixed effect	be	be
Observations	31,343	10,109
R-squared	0.261	0.319

Standard errors in parentheses

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

## 6. Conclusion

This study empirically examines the impact of geopolitical risks on corporate supply chain concentration using panel data from China's A-share listed companies (2009–2023) and a difference-in-differences (DID) methodology, with the U.S.-China trade friction as a quasi-natural experiment. This study draws the following main conclusions:(1) Geopolitical risk in the form of trade friction between China and the U.S. has a significant positive effect on corporate supply chain concentration. Robustness checks confirm these findings across alternative model specifications. The geopolitical risk, exemplified by the trade friction between China and the United States, imposes technological blockade and export restrictions on enterprises, which makes the external environment of enterprises increase in uncertainty, and forces enterprises to pursue long-term stable supply chain relationships and centralized purchasing more by exacerbating the corporate financial risk, suppressing managerial myopia, and then enhances the supply chain concentration of enterprises. (2) In the heterogeneity analysis, it is found that the ownership of enterprises, the degree of enterprise technology intensity, and the degree of competition in the industry they belong to all play a key role in the impact of geopolitical risk on the enterprise supply chain concentration: state-owned enterprises, technology-intensive enterprises, and competitive industries are subject to more significant trade shocks. Based on the findings, this paper makes the following recommendations:

**Government-Level Strategies:** In the face of the trade impact brought about by geopolitical risks, especially the technological blockade and import and export restrictions caused by the trade friction between China and the United States, the government should give positive policy guidance. Through financial subsidies, tax incentives, financing support, etc. to reduce the long-term investment costs of enterprises, ease the pressure of business operations, and encourage enterprises to carry out

independent research and development. At the same time, the government should help enterprises to establish industrial cluster supply chain mode, promote enterprises to establish stable supply chain relationships, realize resources and information sharing among enterprises, and reduce operating costs; the government should also give appropriate policy inclination to the sanctioned enterprises, establish strategic cooperation between the government and enterprises, improve supply chain stability and resilience, and strengthen the enterprise risk-resistant ability.

**Corporate-Level Actions:** trade sanctions brought about by the trade friction between China and the United States have interrupted the overseas supply chain that enterprises used to rely on, and enterprises have been forced to choose centralized purchasing or domestic substitution, and the concentration of the enterprise supply chain has increased. On the one hand, compared with short-term profits, the management should pay more attention to the long-term interests of enterprises and operational stability, and reduce the short-term profit-seeking behaviors such as ignoring technology accumulation and rushing for success; enterprises should increase investment in R&D, master the technology in their own hands, and reduce the dependence on overseas parts and components, to avoid the operational crisis caused by the interruption of the core technology and raw material supply chain. On the other hand, enterprises should strengthen the management of the supply chain in the process of operation and pay more attention to the resilience and stability of the supply chain. Enterprises should evaluate their suppliers, carefully select co-operative enterprises, eliminate unqualified upstream and downstream of the supply chain in time, reduce the number of suppliers, and establish stable supply chain relationships with head enterprises. Enterprises should be committed to building a coordinated and integrated supply chain relationship, realizing information exchange and technology sharing within the supply chain, saving the production and operation costs of enterprises, reducing the risk of default and other uncertainties, and striving to achieve the dynamic optimization of the supply chain.

## References

- [1] Lu Dadao & Du Debin. (2013). Some thoughts on the strengthening of geopolitical and geo-economic studies. *Journal of Geographical Sciences*, 68 (06), 723 - 727.
- [2] Xiao Fangxin & Zhang Xiaotong. (2020). The Geopolitical Risks and Solutions for China's Railway Construction in Africa. *Journal of International Relations*, (03), 39 - 67+155 - 156.
- [3] Wang Haifang, Wang Mingtao, Wang Xinyi, Ma Peipei & Zhang Xiaoyu. (2021). A Review of Supply Chain Concentration Research-Analysis Based on Bibliometrics and Knowledge Mapping. *Friends of Accounting*, (19), 115 - 122.
- [4] Wang Luyao. (2022). The Impact of Enterprise Internationalization on Enterpriserisk: The Moderating Effect of Trade Triction and Supply Chain Concentration (Master's Thesis, Henan University). Master.
- [5] He Wenbin & Gong Mingxuan. (2024). How the High-Quality Development of Provincial Economy Affects the Concentration of Enterprise Supply Chain: An Empirical Analysis of Listed Companies Data. *Journal of Pagdanganan University*, 39 (02), 87 - 93.
- [6] Tang Yingyue & Zhou Mengyao. (2024). Research on the impact of institutional investors' shareholding on supply chain concentration in cross-border e-commerce enterprises. *Finance and Accounting for International*, (11), 17 - 22.
- [7] WangXin & Wang Meizhi. (2025). Constituent Elements, Practical Basis, and Enhancing Strategies for Core Competitiveness of State-owned Enterprises in the New Era. *Reform*, (02), 49 - 61.
- [8] Bednarski, L., Roscoe, S., Blome, C., & Schleper, M. C. (2023). Geopolitical disruptions in global supply chains: a state-of-the-art literature review. *Production Planning & Control*, 36 (4), 536 – 562.
- [9] Yang Xiaoxuan. (2023). Geopolitical risks, cross-border capital flows, and foreign exchange market volatility. *Northern Finance Journal*, (02), 14 - 18.
- [10] БЕЗРУКОВ А О. Трамп сосредоточит внимание США на КНР[EB/OL]. (2024 - 11 - 07).
- [11] Tega, Y., & Allison, G. (2018). [Review of *Destined for War: Can America and China Escape Thucydides's Trap?*]. *International Relations of the Asia-Pacific*, 18 (2), 282 – 285.

- [12] Yang Ce & Zheng Jianming. (2024). The Impact of the US Entity List Sanctions on the Total Factor Productivity of Chinese Firms. *Scientific Decision Making*, (03), 21 - 44.
- [13] Yu Dianfan, Li Xin & Zhang Yu. (2024). Corporate ESG Performance and Supply Chain Risks. *Contemporary Finance & Economics*, (12), 153 - 164.
- [14] Duan Wenqi, Jing Guangzheng & Qi Jianhong. (2023). Trade Facilitation and Enterprise Supply Chain Security—A Perspective of Diversification and Localization. *Journal of International Trade*, (04), 90 - 106.
- [15] Li Suicheng, Cui Hejiao & Shi Xia. (2020). Aligning Supply Risk Mitigation Strategies. *Soft Science*, 34 (05), 50 - 56.
- [16] Lu Qiang, Wang Xinyi, Yang Yudong & Song Hua. Supply Chain Concentration and Enterprise Digital Transformation: Perspective of Resource Dependence Theory Considering Contingency. *Science of Science and Management of S.& T.*, 1 - 32.
- [17] Bushee, B. J., & Miller, G. S. (2012). Investor Relations, Firm Visibility, and Investor Following. *The Accounting Review*, 87(3), 867 – 897.
- [18] Han Dongmei. (2015). On corporate financial risk control and prevention. *Communication of Finance and Accounting*, (14), 104 - 106.
- [19] Wu Yehan. (2024). Analysis of the Composition and Prevention and Control Strategy of Enterprise Financial Risk. *China Market*, (30), 179 - 182.
- [20] Zhao Shuran, Zhang Jie, Zhao Kun & Ren Peimin. (2024). Geopolitical Risks and China's Commodity Market Spillovers from the Quartile Perspective. *Journal of Central University of Finance & Economics*, (12), 32 - 44.
- [21] Dong Feng, Li Zhicheng, Wang Shouyang & Huang Zihuang. Geopolitical risks and risk spillover between energy, foreign exchange, and gold markets. *Systems Engineering-Theory & Practice*, 1 - 20.
- [22] Xie Sixin & Yin Bingjie. (2019). Risk Prejudgement and Strategic Breakthrough of Cross-Border E-Commerce Logistics Alliance Under Sino-US Trade Friction. *China Business and Market*, 33 (02), 73 - 82.
- [23] Chen Huaijin & Zhou Xiao. (2020). On the Response and Policy Appeal of Chinese Export-Oriented Enterprises Facing Sino-US Trade Friction—Analysis Based on 2019 Cost Reduction Survey. *Intertrade*, (01), 22 - 30.
- [24] Zhang Yue, Zhao Liuyan & Zhao Yan. (2023). The Choice between Fiat and Commodity Standards: A Financial Market Perspective on China's 1935 Currency Reform. *China Economic Quarterly*, 23 (01), 266 - 282.
- [25] Chen Changbin & Sheng Xin. (2013). Research on the construction of evaluation system of credit risk in supply chain finance. *Journal of Fujian Normal University (Philosophy and Social Sciences Edition)*, (02), 79 - 86.
- [26] Shen Chang'e, Wei Ronghuan & Tian Zhou. (2016). Supply chain integration, working capital management efficiency and capital structure. *Academic Forum*, 39 (12), 63 - 68.
- [27] Gu Qun, Wang Wenwen & Li Min. (2020). Economic Policy Uncertainty, Institutional Investors and R&D Investment—Based on the Perspective of R&D Heterogeneity. *Soft Science*, 34 (02), 21 - 26.
- [28] Yang Ce & Zheng Jianming. (2022). The Impact of Being Included in the Entity List on the Innovation of Listed Companies in China. *International Business*, (02), 137 - 156.
- [29] Niu Zhiwei. (2023). Trade friction and corporate innovation: overview and outlook. *Jiangsu Commercial Forum*, (12), 53 - 56.
- [30] Li Xiaoying, Chen Weizheng. (2003). A Study on Mechanism of the Formation of Supply Chain Risks. *China Business and Market*, (09), 12 - 15.
- [31] Chen Jian & Liu Yunhui. (2021). Operations Management Innovation Enabled by Digitalization and Intellectualization: From Supply Chain to Supply Chain Ecosystem. *Journal of Management World*, 37 (11), 227 - 240+14.
- [32] Jin Yonghua. (2022). Research on the Improvement of China's New Energy Vehicle Industry Chain in the New Development Opportunity Period. *Economic Review Journal*, (01), 83 - 90.

- [33] Jian Zhaoquan, Li Lei, & Liu Yi. (2013). Review and Prospect of Research on Service Supply Chain Integration and Its Impact on Service Innovation. *Foreign Economics & Management*, 35 (01), 37 - 46.
- [34] Chen Wujie. (2024). Research on the Impact of US Entity List on Supplier Allocation of Chinese Enterprises in the Context of Global Supply Chain Restructuring (Master Dissertation, Jiangxi University of Finance and Economics). Master.
- [35] BECK, T., LEVINE, R., & LEVKOV, A. (2010). Big Bad Banks? The Winners and Losers from Bank Deregulation in the United States. *The Journal of Finance*, 65 (5), 1637 – 1667.
- [36] Zhang Weihong & Zhu Haixia. (2012). Compatibility Inspects of Z-score Model to Financial Risk of Quoted Companies. *Science and Technology Management Research*, 32 (14), 228 - 231.
- [37] Bai Jun & Cheng Haoyang. (2025). Directors and Officers Liability Insurance and Corporate Leverage Manipulation. *Friends of Accounting*, (10), 79 - 86.
- [38] Jiang Ting. (2022). Mediating Effects and Moderating Effects in Causal Inference. *China Industrial Economics*, (05), 100 - 120.
- [39] Altman, E. I. (1968). Financial ratios, discriminant analysis, and the prediction of corporate bankruptcy. *Journal of Finance* (Wiley-Blackwell), 23 (4).
- [40] Liu Rong, Peng Zhijing & Tao Yan. (2025). Business environment optimization and corporate organizational resilience. *Finance and Accounting Monthly*, 46 (10), 106 - 113.
- [41] Zhang Min, Ma Lijun & Zhang Sheng. (2012). Supplier-client relationship and auditor selection. *Accounting Research*, (12), 81 - 86+95.
- [42] Yang Yiwen. (2024). Impact and Response Analysis of China-US Trade Friction on High-tech Enterprises--Taking Huawei as an Example. *Modern Business*, (08), 135 - 138.
- [43] Li Fan. (2024). Research on the impact of the dual function of industrial and trade policies on the technological complexity of manufacturing exports (Master Dissertation, Central South Forestry University of Forestry and Technology). Master.
- [44] Liu Qian, Qiu Shan-Yun & BAI Jun. (2024). Research on the Impact of Common Institutional Ownership on the Dynamic Adjustment of Enterprise Capital Structure. *Chinese Journal of Management*, 21 (12), 1870 - 1880.