

Trust and Efficiency: Blockchain and Artificial Intelligence Technologies Empower Supply Chain Finance

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Abstract

This paper first analyzes four historical fraud cases in China's supply chain finance. Secondly, it explores the reasons why frauds are prone to occur in traditional supply chain finance: the multi-link circulation involving numerous participants including suppliers, manufacturers, logistics providers, retailers, banks, and factoring institutions, which leads to problems such as information asymmetry, lack of trust, and high financing costs. Thirdly, it elaborates on the necessity of applying blockchain and artificial intelligence technologies in supply chain finance. Finally, it examines how these two technologies empower supply chain finance to address issues of trust and efficiency.

Keywords

Supply Chain Finance; Blockchain; Artificial Intelligence.

1. Introduction

In recent years, the frequent outbreaks of supply chain finance frauds have caused enormous losses to society, enterprises, and individuals, pushing the trust crisis in traditional supply chains to the forefront. Traditional supply chain finance business faces numerous challenges, such as information asymmetry, lack of trust, and high financing costs, which severely hinder its development. The integration of AI and blockchain technology in intelligent finance has provided a new development path for supply chain finance. With its characteristics of decentralization, immutability, transparency, and traceability, blockchain offers an innovative solution for financial data sharing, transaction security, and trust mechanism construction. Artificial intelligence, through algorithms such as machine learning, natural language processing, and computer vision, demonstrates strong decision-making capabilities in financial data analysis, risk control, customer service, and other fields. Specifically, blockchain resolves trust deficits and data silos, while AI enhances efficiency and mitigates risks. Their combination generates synergistic effects, fostering a credible, efficient, intelligent, and inclusive new ecosystem of supply chain finance. This paper further explores how AI and blockchain technology empower supply chain finance to tackle trust issues.

2. Core Definitions of Supply Chain and Supply Chain Finance and Introduction to General Circulation Links

2.1. Definition of Supply Chain

A supply chain is a physical network system that covers the entire process from raw material procurement, intermediate product and final product manufacturing, to delivering products to consumers through sales networks. Its core elements mainly include logistics (flow of physical goods), information flow (transmission of orders, forecasts, status updates, etc.), and commercial flow (transfer of ownership). The goal is to optimize the cost and efficiency of the entire chain through effective collaboration, achieving the objective of "delivering the right product in the right quantity, quality, and condition to the right place at the right time." In

simple terms, supply chains address the issue of how "goods" can be efficiently transformed into "commodities" and circulated to consumers at low cost.

2.2. Definition of Supply Chain Finance

Supply Chain Finance (SCF) is a comprehensive financial solution that deeply embeds financial services into the transaction links of industrial and supply chains. Beyond the traditional credit evaluation model that focuses on individual corporate entities, SCF regards the entire supply chain as an integrated whole. By systematically integrating and optimizing commercial flow, logistics, capital flow, information flow, and contract flow, it provides structured financing arrangements and financial services for core enterprises in the supply chain as well as numerous upstream and downstream enterprises, including suppliers, manufacturers, distributors, and retailers [1].

Centered on core enterprises, SCF addresses the financing needs of enterprises in the chain (especially SMEs in the upstream and downstream) by integrating and managing capital flow within the supply chain. Its core lies in the management of capital flow (inflow, outflow, and financing of cash). It is based on real transactions, assets, and credit in the supply chain (such as accounts receivable, inventory, and prepayments). The goal is to activate current assets in the chain, improve the availability and turnover efficiency of funds, and ultimately reduce the overall financing costs of the supply chain. In simple terms, supply chain finance addresses the issue of how "funds" can flow and be financed efficiently and at low cost throughout the entire supply chain.

2.3. Key Differences between Supply Chains and Supply Chain Finance

The following is a comparison between supply chains and supply chain finance from the dimensions of core objects, primary objectives, focus areas, key drivers, and risk types:

Table 1. Comparison of Core Dimensions Between Supply Chains and Supply Chain Finance

Comparison Dimensions	Supply Chain	Supply Chain Finance
Core Objects	Logistics flow, Information flow	Capital flow, Credit flow
Primary Objectives	Enhance operational efficiency, reduce inventory and costs	Optimize capital allocation, address financing challenges
Focus Areas	Physical flow and collaboration of goods	Activation of assets and transmission of credit
Key Drivers	Market demand, production planning, inventory control	Financing needs, capital costs, risk control
Risk Types	Disruption risk, delay risk, inventory overstock risk	Credit risk, fraud risk
Key Participants	Suppliers, manufacturers, logistics providers, retailers, etc.	Suppliers, manufacturers, logistics providers, retailers, plus financial institutions (banks, factoring companies) and fintech platforms, etc.

Both supply chains and supply chain finance typically involve four core elements: information flow, commercial flow, logistics flow, and capital flow, which together form the complete operational system of the supply chain. While both encompass these four flows, their emphases differ, as summarized below:

Table 2. Comparison of the Four Flows in Supply Chains and Supply Chain Finance

Elements	Role in Supply Chains	Role in Supply Chain Finance
Information Flow	Coordinates operational data such as production, inventory, and transportation	Provides transaction documents (e.g., invoices, contracts) and credit records as the basis for financial risk control
Commercial Flow	Contracts and transaction processes for the transfer of commodity ownership	Converts transaction rights and obligations (e.g., accounts receivable, orders) into financing collateral
Logistics Flow	Focuses on the efficiency of physical goods flow	Serves as a risk control measure (e.g., warehouse receipt pledge, in-transit cargo monitoring)
Capital Flow	Naturally occurring payment and settlement activities	Proactively manages cash flow through financial instruments (e.g., factoring, discounting)

A supply chain is a physical network where the four flows serve product delivery; supply chain finance is financial empowerment where the four flows serve capital efficiency and risk control. Both require the collaboration of the four flows, but capital flow and information flow dominate in financial scenarios.

2.4. Introduction to General Circulation Links Covered by Supply Chain Finance

The core of supply chain finance lies in centering on a core enterprise and providing financing services for various links such as procurement, production, sales, warehousing, and transportation of its upstream and downstream partners. It mainly covers the following circulation links:

2.4.1. Order Stage

Order financing applies when upstream suppliers have received orders from core enterprises but need funds to organize production or purchase raw materials. The core issue is the lack of initial capital for suppliers after securing orders.

2.4.2. Inventory Stage

Inventory financing and warehouse receipt pledge are used when suppliers or core enterprises hold raw materials, semi-finished products, or finished products, which occupy a large amount of working capital. The core issue is difficulty in capital turnover due to inventory overstock.

2.4.3. Accounts Receivable Stage

Accounts receivable financing, factoring, and reverse factoring are applicable when suppliers have delivered goods or provided services to core enterprises, forming accounts receivable, but need to wait for a payment term (e.g., 60 days, 90 days) to receive payment. The core issue is that prolonged accounts receivable occupation affects the cash flow efficiency of suppliers.

2.4.4. Distribution Stage

Advance payment financing is designed for downstream distributors who need to make advance payments to core enterprises to take delivery of goods. The core issue is insufficient capital for distributors, which prevents them from expanding procurement scale.

2.4.5. Logistics Stage

Logistics financing and in-transit inventory financing involve goods in transit, where ownership and risks are being transferred. In-transit goods also tie up capital, and the core issue is the difficulty in controlling risks associated with in-transit cargo.

3. Analysis of Four Historical Fraud Cases in China's Supply Chain Finance

Due to the numerous general circulation links covered by supply chain finance, information asymmetry between financing parties, and the increasingly complex financial environment, the

security of supply chain finance is facing unprecedented challenges. In recent years, financial frauds have emerged from time to time in China's supply chain finance sector. The following analysis of several cases aims to reveal the core issues behind these frauds.

3.1. The "Chengxing Group" Fraud Case

Known as "China's top supply chain finance fraud case" by the media, the "Chengxing Group" fraud occurred between February 2015 and June 2019. Companies under Chengxing Group forged huge amounts of accounts receivable owed to large internet companies (mainly JD.com and Suning.com), using these as collateral to defraud financial institutions of funds. Specifically, Chengxing Group forged official seals of JD.com and Suning.com, as well as a full set of documents including procurement contracts and accounts receivable payment confirmation letters with these companies. Most of the transactions with JD.com and Suning.com reflected in these documents were fictional. Relying on the forged "accounts receivable" from JD.com and Suning.com as repayment guarantees and underlying assets, Chengxing Group secured financing from multiple financial institutions. The total involved amount exceeded 30 billion yuan, resulting in actual losses of more than 8.8 billion yuan. On November 1, 2022, the Shanghai No.2 Intermediate People's Court sentenced Luo Jing, the principal culprit, to life imprisonment for crimes including contract fraud[2,3]. Core Issues Exposed: Excessive reliance on the credit of core enterprises, neglect of the authenticity of underlying assets, failure of financial institutions to effectively monitor the actual use of large-scale financing funds, and potential huge loopholes in the risk control, due diligence, and verification links of supply chain finance.

3.2. The "Haifa Pharmaceutical" Supply Chain Finance Fraud Case

The core of the "Haifa Pharmaceutical" fraud, which broke out in 2019, was a large-scale systematic fraud implemented by forging accounts receivable from public hospitals, constructing complex financial channels, and exploiting loopholes in the risk control of financial institutions. Firstly, Haifa Pharmaceutical forged underlying assets, selecting Peking Union Medical College Hospital (a high-credit-rated public hospital) as the credit guarantee for its forged accounts receivable. Secondly, it forged official seals, financial seals, and personal seals of hospital presidents, fabricated pharmaceutical supply contracts, invented non-existent supply chain service contracts for pharmaceuticals and medical devices with these hospitals, and forged accounts receivable confirmation letters. It used factoring companies as "channels" to defraud trust companies and banks. Subsequently, these factoring companies, as originators, took the "accounts receivable" as the underlying assets of trust products, collaborated with multiple trust companies and some banks to establish trust plans for accounts receivable transfer or factoring financing, and raised funds from individual and institutional investors. In 2019, Haifa Pharmaceutical was unable to redeem maturing products as scheduled, leading to capital chain breakage, and its actual controller Xie Wenhai went missing-marking the complete exposure of this 2-billion-yuan fraud[4,5]. Core Issues Exposed: Relaxation of inspections on the authenticity of underlying assets, severe formalism in verification processes, uncontrolled risks in "channel" businesses, and trust companies' excessive reliance on partners such as factoring companies for the verification of underlying assets, coupled with their own lack of ability and willingness to directly inspect the underlying assets.

3.3. The False Financing Trade Case of Jiangsu Sainty Co., Ltd.

The false financing case of Jiangsu Sainty is a typical long-standing example of "empty-cycle" and "document-only" trade involving a state-owned enterprise (SOE). According to the Administrative Penalty Decision (CSRC [2024] No. 41) issued by the China Securities Regulatory Commission (CSRC): After investigation, the private network communication business led by Sui Moli in which Jiangsu Sainty participated was essentially a false self-

circulating business forming a closed loop of contracts, funds, and bill flows, with no commercial substance. Accordingly, the corresponding operating income, operating costs, and profits should not have been recognized. By participating in such false self-circulating domestic trade of communication equipment, Jiangsu Sainty overstated its operating income by a total of RMB 103.33 billion, operating costs by RMB 93.99 billion, and total profits by RMB 9.34 billion in its annual reports from 2009 to 2021. A typical feature of false financing-oriented trade is "document circulation, invoice issuance, and no physical goods movement." "Document circulation" refers to signing a series of formally compliant procurement and sales contracts; "invoice issuance" involves issuing value-added tax (VAT) invoices to form complete fund and bill flows; "no physical goods movement" means the goods either do not exist at all or their control rights have never been substantially transferred. The essence of the entire fund flow is as follows: Jiangsu Sainty, leveraging its own credit, obtained loans from banks or used its own funds to provide capital to the ultimate actual fund users (downstream customers) through upstream suppliers in the name of "payment for goods." After an agreed cycle, the downstream customers returned the principal plus a fixed "price difference" (essentially interest) to Jiangsu Sainty in the name of "payment for goods," completing a cycle. This is a highly typical case of SOE "empty-cycle" and "document-only" trade spanning 12 years[6].

Core Issues Exposed: Comprehensive failure of the company's internal control links including risk control, legal affairs, and finance; the credit of the SOE was exploited as a tool to obtain bank funds or occupy state-owned capital; financial institutions such as banks failed to conduct penetrative audits on the true trade background and the transfer of goods ownership when providing financing.

3.4. The False Trade Case of a Subsidiary of Central Enterprise Sinoforest Group

China National Forest Products Group Co., Ltd. (Sinoforest Group) is one of the 97 central enterprises directly managed by the State-owned Assets Supervision and Administration Commission of the State Council (SASAC) and the only central enterprise in China's forestry and grassland industry. From the end of 2023 to the beginning of 2024, two subsidiaries of Sinoforest Materials Co., Ltd. and their affiliated companies experienced large-scale commercial bill defaults and debt breaches. According to public data from the Shanghai Commercial Paper Exchange, the overdue amount exceeded several billion yuan. As a company mainly engaged in the trade of bulk commodities such as timber and agricultural products, Sinoforest Materials' questioned business model was centered on "document circulation, invoice issuance, and no physical goods movement." Its purpose was to expand the scale reflected in financial statements, overstate operating income and profits, and meet performance assessment indicators. For actual financing parties, leveraging the "central enterprise" credit and rating of Sinoforest Group, it was easier to obtain loans from banks or issue commercial acceptance bills for financing. Since the second half of 2023, Sinoforest Materials and its affiliated companies have experienced commercial bill overdue issues. According to the public overdue list released by the Shanghai Commercial Paper Exchange, a large number of commercial bills under its name failed to be redeemed, involving a huge amount, which directly exposed its liquidity crisis to the market. Eventually, all accounts of Sinoforest Group's subsidiaries were taken over by China Three Gorges Corporation[7,8].

Core Issues Exposed: This false trade case revealed that the "central enterprise" label is regarded in the market as an implicit guarantee with national credit. Such incidents have severely undermined market trust in the risk control and credit of central enterprises.

4. Why Does Supply Chain Finance Need Blockchain and Artificial Intelligence Technologies?

The above case analyses indicate that the numerous intermediate links in supply chain finance easily lead to trust and efficiency issues. Supply chain finance involves multiple participants, typically including core enterprises, upstream and downstream small and medium-sized enterprises (SMEs), financial institutions (banks, factoring companies, etc.), logistics companies, warehousing companies, and technology platforms. Each link may pose efficiency problems and trust risks, easily resulting in the following issues:

4.1. Information Silos and Asymmetry

Each participant operates its own information and data systems, such as core enterprises' ERP systems, logistics companies' Warehouse Management Systems (WMS), and financial institutions' credit systems, which are not interconnected. This makes it difficult for financial institutions to obtain comprehensive, real-time, and true transaction data for risk assessment. Due to information asymmetry, financial institutions can only rely on the "hard endorsement" of core enterprises' credit or require strong collateral, failing to accurately provide financing to valuable but small-scale SMEs.

4.2. Difficulty in Verifying Transaction Authenticity

The large number of intermediate links makes it possible to forge transactions and conduct duplicate financing. For example, a supplier may use the same accounts receivable to obtain financing from different financial institutions. This exposes financial institutions to enormous fraud risks. Once the underlying transaction is false, the corresponding accounts receivable or inventory financing becomes unsustainable (like "a tree without roots").

4.3. Risks Related to Goods Ownership and Control

In inventory financing or advance payment financing, goods may circulate in warehouses of different entities or be in transit. Financial institutions face difficulties in real-time and effective monitoring and control of these movable assets. Problems such as duplicate pledges and empty receipt pledges occur frequently, leading to huge losses for financial institutions.

4.4. Breakdown of Credit Transmission Chains

The ideal model of supply chain finance is that the credit of core enterprises can be transmitted upstream along the transaction chain to multi-level suppliers. However, in the traditional model, such credit can only be transmitted to first-tier suppliers, making it difficult to benefit second-tier, third-tier, and other more remote SMEs that are more in need of funds. "Long-tail" SMEs at the end of the supply chain still face difficulties in accessing financing and high financing costs, which affects the stability of the entire supply chain.

4.5. Operational Complexity and Moral Hazards

Manual review of contracts, invoices, waybills, and other documents is cumbersome, which not only leads to low efficiency but also increases the risks of human operational errors or fraud through internal and external collusion. This results in high operational and risk control costs, which are ultimately passed on to SMEs as financing costs.

The combination of artificial intelligence and blockchain can effectively address the above issues: blockchain resolves trust deficits and information silos, while artificial intelligence improves efficiency and mitigates risks. The technical characteristics of blockchain and artificial intelligence and their roles in supply chain finance are illustrated through the following literature review.

5. Literature Review on Blockchain and Artificial Intelligence Empowering Supply Chain Finance

Artificial intelligence (AI) and blockchain technology are profoundly reshaping the landscape of supply chain finance, providing a new paradigm for addressing the pain points of traditional supply chain finance. R Saxena et al. (2023) point out that the combination of blockchain technology and AI can serve as an extremely powerful tool to solve multi-dimensional problems in various fields[9].

Wang et al. (2021) and Tapscott (2016) note that blockchain offers a new trust mechanism relying on cryptography and distributed decentralized networks. Blockchain eliminates the need for trusting third parties (Zyskind et al., 2015), and sound relationships based on mutual trust play a crucial role in supply chains[10,11,12].

Furthermore, Soosay and Hyland (2015) indicate that blockchain networks can also promote information sharing among supply chain partners. Trustless networks undoubtedly strengthen relationships between different supply chain collaborators[13].

The integration of blockchain and supply chain finance not only improves the transparency and integrity of financing transactions but also establishes a more robust credit rating system for the architecture of Supply Chain Finance (SCF) (Shu et al., 2024)[14].

Wu, Liu, and Liang (2024) argue that the emergence of Industry 5.0 has ushered in a new era of industrial transformation characterized by the integration of physical and digital systems. In this dynamic environment, the role of AI in supply chain management has become critical. Industry 5.0 (IND5) represents a major revolution in the industrial sector, seamlessly integrating physical and digital systems (Psarommatis et al.). This paradigm shift has accelerated the development of intelligent supply chain management, fundamentally transforming operational strategies and enhancing enterprises' responsiveness to customers. Leveraging its capabilities in data mining, predictive analytics, pattern recognition, and automation, AI makes supply chain finance intelligent and efficient[15].

Wang (2023) states that the combination of AI and blockchain technology (BT) enables functions such as information sharing, risk sharing, and data interaction[16,17].

6. How Do Blockchain and Artificial Intelligence Empower Supply Chain Finance?

Traditional supply chain finance excessively relies on the credit of core enterprises. The core of empowerment by new technologies-AI and blockchain-lies in converting logistics, information flow, and commercial flow in the supply chain into trusted capital flow and assets through digitization, credibility enhancement, and automation. This reduces reliance on the credit of a single entity, achieving refined risk control and optimized operational efficiency.

6.1. Blockchain Technology: Building a Trusted Supply Chain Finance Network

With its technical characteristics such as decentralization, immutability, traceability, and smart contracts, blockchain lays the foundation of trust for supply chain finance. It empowers supply chain finance through the following links:

6.1.1. Digital Claims Vouchers (Multi-Level Circulation)

Core enterprises convert accounts payable into divisible, transferable digital vouchers on the blockchain (e.g., "blockchain accounts receivable vouchers"). Similar to cash, these vouchers can be split, circulated, and used for financing among upstream suppliers at multiple levels along the supply chain.

Multi-level circulation is an innovative model based on supply chain finance. Core enterprises issue electronic claims vouchers through supply chain information service systems, which can be circulated, split, and transferred among multi-level suppliers in the supply chain. This achieves multi-level penetration of credit and expands financing opportunities.

For example, Ant Blockchain's "Dual Chain Link" platform converts core enterprises' accounts payable into divisible and transferable digital vouchers, enabling upstream SMEs to quickly obtain financing from financial institutions. By 2024, the platform has served over 100,000 SMEs, reducing the average financing cost by 20% and shortening the financing disbursement time from the traditional 7 days to 2 hours. Fintech companies, banks, and core enterprise suppliers participating in this ecosystem have all achieved growth through expanded business volume.

The core value of multi-level circulation lies in converting accounts receivable into transferable and financeable electronic vouchers backed by core enterprises' credit. This addresses SMEs' financing difficulties and high costs while improving capital liquidity and utilization efficiency. It perfectly solves the problem of multi-level penetration of core enterprises' credit: first-tier suppliers can split the vouchers to pay second-tier suppliers, who can directly apply for financing from financial institutions using the vouchers. All records are on-chain with clear rights and obligations, and cannot be tampered with.

6.1.2. Asset Traceability and Anti-Counterfeiting

Wang et al. (2021) argue that traceability is one of the important practical functions of blockchain in supply chains. It can be widely applied to various commercial purposes such as quality control, reverse logistics, anti-counterfeiting, service monitoring, and compliance.

Blockchain records the full-lifecycle data of financial assets (e.g., equity, bonds, bills) through distributed ledgers, enabling full-process traceability from issuance and transaction to liquidation. Specifically, hash values of key information throughout the entire process of commodities—from production, warehousing, and logistics to sales (e.g., quality inspection reports, warehouse receipts, waybills)—are recorded on the blockchain. Commodity circulation registration: each transfer of commodities (e.g., production, transportation, sales) is recorded on the blockchain, forming an immutable circulation chain. Electronic products can be traced back to component suppliers. Financial institutions can clearly track the origin and circulation of underlying assets, effectively preventing fraudulent behaviors such as duplicate pledges and empty receipt pledges, and enhancing confidence in lending. For instance, Ant Chain's "Dual Chain Link" platform uses national cryptographic algorithms to allow suppliers to prove the authenticity of accounts receivable to financial institutions while protecting commercial secrets.

6.1.3. Application of Smart Contract Automation in Supply Chain Finance

The application of smart contract automation in supply chain finance is mainly reflected in three core advantages: targeted payment, automated execution, and "integration of three flows" (commercial, logistics, and capital flows) management. It can effectively improve capital management efficiency and reduce risks.

These contracts can automatically execute pre-set terms without manual intervention, greatly improving transaction efficiency and accuracy. Smart contracts can program financing conditions into automatically triggered rules—for example, automatically releasing financing funds when accounts receivable are confirmed on the blockchain and reach the agreed amount. For example, Walmart collaborated with IBM to develop smart contracts based on the Hyperledger Fabric blockchain platform, recording data such as food origin, inspection reports, and logistics information. When food quality issues arise, smart contracts can automatically trace the responsible link and trigger compensation processes (e.g., automatic refunds to consumers). (If logistics enterprises are unwilling to share data, supply chain smart contracts will face the problem of "information silos.")

6.2. Artificial Intelligence: Empowering Intelligent Decision-Making in Supply Chain Finance

The underlying process of AI is fundamental: automation addresses "efficiency" issues. The middle layer is core: it solves intelligent risk control, i.e., "trust" issues. The top layer is strategic: it enables smart decision-making and ecosystem construction, i.e., "value" issues. The applications are as follows:

6.2.1. Dynamic Risk Identification and Trust Assessment

AI's main applications in supply chain finance are risk control and trust assessment. AI models can integrate on-chain transaction data and off-chain enterprise operation data (e.g., tax, judicial, public opinion) to conduct comprehensive profiling and dynamic credit evaluation of SMEs in the supply chain. This changes the traditional credit granting model that relies on collateral and static financial statements, realizing "credit granting based on transaction credit." Enterprises with good credit can obtain lower interest rates and higher credit limits.

6.2.2. Operational Process Automation and Efficiency Improvement

This part mainly addresses the question of "how to lend faster and with less effort," significantly reducing operational costs. Specifically, it includes three aspects: intelligent document processing, smart contracts and automated approval, and intelligent customer service and Robotic Process Automation (RPA).

6.2.3. Intelligent Demand Forecasting and Capital Optimization

Accurate financing demand forecasting: based on historical transaction data, seasonal factors, and market trends, AI models can predict the peak and trough of future capital demand for enterprises at all nodes in the supply chain. This helps financial institutions pre-arrange funds and enables enterprises to better plan their cash flow.

6.3. Synergistic Empowerment of Supply Chain Finance by Blockchain and AI

The empowerment of supply chain finance by AI and blockchain is not a simple technical superposition but a profound restructuring of production relations. It upgrades the old fragmented model relying on core enterprise guarantees to a networked, transparent new model based on data credit.

7. Conclusion

Blockchain is a "trust machine." It solves the fundamental problem of trust transmission in supply chain finance through technical means, converting core enterprises' credit into transferable digital assets and building a foundation for multi-party collaboration.

Artificial intelligence is an "efficiency engine" and a "risk control tool." Based on trusted data, it realizes process automation, precise risk management, and intelligent decision-making, greatly enhancing the inclusiveness and operational efficiency of supply chain finance.

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References

- [1] Research Center for Financial Security, PBC School of Finance, Tsinghua University. White paper on supply chain finance of Chinese enterprises 2025, 2025 September.

- [2] Zhang, X. Y. Carving two fake seals to swindle 30 billion? The Chengxing fraud case has new developments. Jiemian News, 2023.November 28. https://news.cnr.cn/native/gd/20231128/t20231128_526501395.shtml
- [3] Shen, Z., & Sun, Q. M. Who will take the blame for the 30 billion "Chengxing case"? Yangcheng Evening News, A09.2.2023. December14. https://ep.ycwb.com/epaper/ycwb/html/2023-12/14/content_9_619500.htm
- [4] Li, D. Harvest Wealth stumbles into Haifa Pharmaceutical's 2 billion financial fraud. Sina Finance.2024. September 1.<https://finance.sina.com.cn/stock/marketresearch/2024-09-01/doc-incmskca4770099.shtml>
- [5] Zhang, X. Y. The unfinished saga of Haifa Pharmaceutical's 2 billion financial fraud. Jiemian News. 2023.March 8. <https://www.jiemian.com/article/9020017.html>
- [6] China Securities Regulatory Commission, China Securities Regulatory Commission (CSRC,2024), Administrative penalty decision (Jiangsu Sainty and responsible persons). <https://www.csrc.gov.cn/csrc/c101928/c7491450/content.shtml>
- [7] Zhou, T. L. The road to trusteeship of a central state-owned enterprise. Caixin Weekly, (40), 2024.October 11. <https://weekly.caixin.com/2024-10-11/102244063.html>
- [8] Zhou, T. L. How the central SOE China Forest Group was dragged down by the black hole of its out-of-control subsidiaries. Caixin Weekly, 2024. October 12. <https://database.caixin.com/2024-10-12/102244349.html>
- [9] Saxena, R., Gayathri, E., & Kumari, L. S. Semantic analysis of blockchain intelligence with proposed agenda for future issues. International Journal of System Assurance Engineering and Management, vol.14, 2023.issue 1, No 3, p. 34-54.
- [10] Wang, M., & Wu, Y. Blockchain and supply chain management: A new paradigm for supply chain integration and collaboration. Operations and Supply Chain Management: An International Journal, 14(1), 2021, p.111-122.
- [11] Tapscott, D., & Tapscott, A. Blockchain revolution: How the technology behind bitcoin is changing money, business, and the world. Penguin Publishing Group, ISBN13: 9780399564062, 2016.
- [12] Zyskind, G., Nathan, O., & Pentland, A. Decentralizing privacy: Using blockchain to protect personal data. In 2015 IEEE Security and Privacy Workshops, 2015.p.180-184. IEEE.
- [13] Soosay, C., & Hyland, P. A decade of supply chain collaboration and directions for future research. Supply Chain Management, 20(6), 2015. p 613–630.
- [14] Shu, C., Chen, Y., Tan, C., Luo, Y., & Dou, H. Enhancing trust transfer in supply chain finance: a blockchain-based transitive trust model. Journal of Cloud Computing, 13(4), 2024, p: 1–11.
- [15] Haoyang Wu, Jing Liu. Biming Liang, AI-Driven Supply Chain Transformation in Industry 5.0: Enhancing Resilience and Sustainability, Journal of the Knowledge Economy, Volume 16 No6, 2024. p.3826–3868.
- [16] Dong Wang, Supply Chain Resources and Economic Security Based on Artificial Intelligence and Blockchain Multi-Channel Technology, International Journal of Information Technologies and Systems Approach, Volume 16.2023. Issue 3, p1-15.
- [17] Michael Wang, Yong Wu, Bruce Chen, Melissa Evans, Blockchain and Supply Chain Management: A New Paradigm for Supply Chain Integration and Collaboration, OPERATIONS AND SUPPLY CHAIN MANAGEMENT, Vol.14, 2021, No.1, p.111-122.