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Competition and Cooperation in Nearshoring Between China and Mexico from the Perspective of Restructuring of Global Industrial Chains

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Abstract. From the perspective of the restructuring of global industrial chains, this paper analyzes the relationship between China and Mexico in nearshoring from the two dimensions of competition and cooperation, combining trade data and corporate cases from 2018 to 2025. The study shows that the competition between China and Mexico is essentially a re-game of the division of labor in the global industrial chain, while the cooperation potential stems from the complementarity of their industrial structures and the common demand for technological upgrading. Based on this, this paper suggests that the two sides should accelerate free trade agreement negotiations, jointly build a stable and efficient industrial supply chain system, and promote the realization of "win-win cooperation" between China and Mexico. This study not only provides a clear analytical framework for clarifying the nearshoring relationship between China and Mexico but also aims to offer references for developing countries to explore new win-win cooperation models amid the adjustment of global industrial chains.

Keywords: Nearshoring, Restructuring of Global Industrial Chains, Win-Win Cooperation

1. Introduction

Since 2018, under the impact of multiple pressures such as trade frictions and the COVID-19 pandemic, the global industrial chain has entered a new stage of in-depth adjustment and structural reshaping. The risks caused by over-reliance on a single cross-border supply chain have gradually become prominent, and enterprises have begun to place "safety" and "resilience" at the core when formulating supply chain strategies [1]. The COVID-19 pandemic has disrupted global logistics and production, posing a severe challenge to the "Just-in-Time (JIT)" production model. In response, enterprises have, on the one hand, increased "Just-in-Case (JIC)" safety inventory to mitigate risks and, and on the other hand, accelerated the regional layout of supply chains in the hope of shortening links and reducing external interference [2].

Against this backdrop, "Nearshoring" has become a key choice for enterprises to optimize their regional layout, thanks to its prominent advantages such as shortening supply chain distance, reducing logistics and time costs, and improving market responsiveness. According to a report by the Boston Consulting Group (BCG), over 90% of North American manufacturers have shifted some

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production links from China in the past five years, and this adjustment will continue in the next five years. Mexico is one of the most competitive destinations [3]. Relying on its geographical advantage of being adjacent to the United States, the trade facilitation brought by the United States-Mexico-Canada Agreement (USMCA), and relatively low labor costs, Mexico is breaking through its traditional role in the global value chain and gradually transforming into a manufacturing hub in North America.

2. Theoretical basis of nearshoring

"Nearshoring" is a professional term in the field of supply chains, specifically referring to enterprises outsourcing their business to neighboring countries or regions with similar time zones, the same language, and adjacent geographical locations [4]. The theory of nearshoring originates from the new development of the theory of comparative advantage and the deepening of the global value chain governance theory. The traditional theory of comparative advantage emphasizes differences in resource endowments and labor costs, while recent studies have focused more on the value implied by time costs and geographical proximity. Visigistics, a U.S. logistics and supply chain service organization, compared the logistics from China to the United States and from Mexico to the United States. The transportation time from Mexico to the United States is significantly shorter than that from China to the United States. The logistics timeliness advantage brought by geographical proximity has become the core source of competitiveness for nearshoring [5]. Against the background of emphasizing rapid supply chain response and controllable risks, this significant timeliness gap further highlights the strategic value of nearshoring. In terms of the global value chain governance theory, the "buyer-driven" chain governance model [6] provides a strong explanation for the division of labor between China and Mexico in nearshoring: the United States, as the core market, dominates value chain governance based on USMCA rules, Mexico undertakes low-value-added assembly, and China provides intermediate products with medium to high technological content. This division of labor is confirmed in the research report by Enrique Dussel Peters: in China's direct investment in Latin America from 2000 to 2022, the proportion of primary products such as metals and minerals decreased from 81.39% to 30.52%, while the proportion of technology-intensive fields such as energy (41.70%) and automobiles (12.33%) increased significantly, making China a major source of intermediate product supply [7].

3. Competition dimension: interest conflicts and games in nearshoring

3.1. Share substitution in exports to the United States

Between 2020 and 2024, China's export value to the United States decreased from the peak of 536.269 billion USD in 2022 to 438.742 billion USD in 2024; in contrast, Mexico's export value to the United States increased from 323.476 billion USD in 2020 to 505.523 billion USD in 2024, making Mexico the largest source of imports for the United States. This substitution is particularly significant in the automotive and consumer electronics sectors. Relying on the tariff advantages of USMCA, Mexico's market share in the U.S. automobile and auto parts market increased from 36.96% in 2020 to 41.1% in 2024; while China's share decreased from 10.08% in 2020 to 5.68%. Mexico undertakes North American orders from companies such as Apple and Samsung through the Maquiladora model. According to customs data, China's mobile phone exports to the United States reached 688.5 million USD in April, the lowest monthly export volume since June 2011.

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Table 1. U.S. merchandise imports from China and Mexico, 2020-2024 (100 million USD)

Year	China	Mexico
2024	4387.42	5055.23
2023	4272.47	4729.07
2022	5362.69	4520.15
2021	5042.46	3825.69.
2020	4325.48	3234.76

Source: U.S. Census Bureau https://www.census.gov/foreign-trade/balance/; General Administration of Customs of the People's Republic of China http://www.customs.gov.cn/

3.2. Escalating game in tariff policies

Mexico's total foreign trade volume in 2024 was 1.24241 trillion USD, of which exports were 617.1 billion USD, with 505.523 billion USD exported to the United States, accounting for 82% of its total exports [8]. Since 2024, Mexico has continuously adjusted its tariff policies for countries that have not signed free trade agreements with it. On April 23, 2024, it imposed temporary import tariffs of 5% to 50% on 544 types of commodities; from January 2025, it will cancel the duty-free policy for imported commodities below 50 USD; from August 2025, the import tariff on parcels worth less than 2,500 USD will be increased from 19% to 33.5%; on September 10, 2025, it plans to raise import tariffs on commodities under 1,371 tariff codes, with some categories reaching 50%.

These measures echo the "North America-First Value Chain" strategy proposed by Mexican President Claudia Sheinbaum [9], aiming to promote the localization of Mexico's manufacturing industry. The Mexican government has adopted trade barrier measures such as raising tariffs to promote localized production in key industries, reduce dependence on imported commodities, and achieve the goals of manufacturing localization and supply chain autonomy, which indicates that the game between China and Mexico in the trade field will further intensify.

3.3. Competition for dominance in supply chain restructuring

With the help of agreements such as USMCA, the United States has urged Mexico to implement mandatory localization requirements in key industries, integrating Mexico into its self-led supply chain closed loop and reducing the penetration of external economies into the North American industrial chain. In addition to explicitly stipulating that 75% of auto parts must be produced in the United States, Mexico, and Canada to enjoy zero tariffs in the automotive sector, the agreement also sets a minimum standard for "labor value content"—40% for passenger cars and 45% for light and heavy trucks—and the hourly wage of workers producing these vehicles must not be less than 16 USD. While improving production standards, this rule has prompted local Mexican automakers and foreign-funded automakers to retain high-value-added production links in North America, restricting them from introducing industrial chain resources from regions such as Asia through low-cost labor. This further promotes the regionalization and localization of the automotive industrial chain and consolidates the dominant position of the United States in the North American supply chain [10].

In the National Development Plan 2025-2030 officially released by the Mexican government in April 2025, it is proposed to enhance the competitiveness of the local industry through policy guidance, increase the domestic content of export products, and reduce dependence on imported materials. This goal is particularly prominent in key industries such as automobiles, electronics, and

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pharmaceuticals. For example, it is required that the localization rate of auto parts will reach more than 50% by 2030 [11]. However, Mexico's local supply chain capacity is insufficient, and its lithium mining technology and battery production equipment still rely on China. This contradiction between "demand and autonomy" makes Mexico's supply chain policies volatile. Mexico pursues technological independence in strategic fields such as lithium mines and semiconductors and requires Chinese-funded enterprises to transfer core technologies. In 2024, the Mexican government revoked the lithium mining concession of the Mexican subsidiary of Ganfeng Lithium on the grounds that it failed to fulfill its minimum investment obligations on time [12]. Against the background of ongoing policy uncertainty, BYD has suspended its new energy vehicle project in Mexico and shifted to production in Brazil to strengthen its strategic layout in South America. According to Monitor of Chinese OFDI in Latin America and the Caribbean 2025, the proportion of China's M&A investments in Latin America was 57.94% in 2022, dropped to 40.65% in 2023, and fell sharply to 12.22% in 2024, reflecting the constraints of the awareness of local industrial sovereignty on Chinese enterprises' investments [13].

4. Cooperation dimension: exploring complementarity and synergistic opportunities between China and Mexico

According to the Ministry of Industry and Information Technology of China, China's manufacturing industry has ranked first in the world in terms of total scale for 15 consecutive years, contributing more than 30% to the growth of the global manufacturing industry. From raw material extraction to end-product manufacturing, China has a complete industrial chain in basic fields such as iron and steel, chemicals, and electronics. Taking the photovoltaic (PV) industry as an example, according to data from the International Energy Agency (IEA), the global trade volume of PV modules in 2024 was approximately 280 GW, with China exporting 238.8 GW, accounting for 85% of the total [14]. Mexico's high dependence on cooperation with China in promoting the localization of its PV industry is jointly determined by its industrial status, technological shortcomings, market demand, and the global supply chain pattern. Mexico's PV market presents a structural contradiction of "high-end technology depending on imports totally while local enterprises handling assembly only". Local enterprises can only complete simple packaging and assembly, while core links such as silicon wafer production and cell manufacturing are completely dependent on Chinese technology. Chinese PV products are moderately priced and of high quality. Among the more than 30 brands sold by Refaxo, a Mexican PV distributor, most are produced by Chinese enterprises [15].

China's PV industry has formed a complete ecosystem covering polysilicon, silicon wafers, cells, modules, and inverters, accounting for most of the global market share. If Mexico wants to realize localized production, it needs to import key equipment and raw materials from China. Moreover, Chinese enterprises provide full-chain services from cell production, system integration to engineering, procurement, and construction (EPC). They optimize power output through intelligent dispatching to meet the local demand for grid stability. This full industrial chain advantage makes it difficult for Mexico to bypass China and build an independent localized supply chain.

In the field of energy storage, Mexico's mandatory energy storage supporting policy (new PV projects must be equipped with energy storage systems accounting for 30% of the installed capacity) further highlights its technological shortcomings. At present, the localization rate of Mexico's energy storage industrial chain is seriously insufficient. Core components such as battery cells and battery management systems (BMS) are almost entirely imported, and Chinese enterprises account for 80% of Mexico's energy storage battery import market [16].

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The core logic of the localization of Mexico's PV industry is as follows: its own technological shortcomings need to be addressed with the help of China, the integration of the industrial supply chain requires China's participation, and market expansion needs China's support. Constraints from agreements such as USMCA—for example, products exported to the United States need to meet a certain proportion of North American origin requirements—have objectively promoted cooperation between China and Mexico. China-Mexico cooperation has formed a closed loop of "technology export-localized production-market radiation". With the implementation of policies such as Mexico's Energy Storage Development Plan 2024-2038, cooperation between the two sides in fields such as PV-storage integration and smart grids will continue to deepen, jointly shaping a new pattern of global energy governance.

The practice of Chinese enterprises in nearshoring in Mexico has always sought a balance between "efficiency, cost, and compliance". They can not only use supply chain advantages to enjoy benefits such as tariff reductions but also face challenges such as low localization rates, slow improvement in production efficiency, and uncertainties brought by local policy adjustments. China and Mexico need to further establish a systematic policy coordination mechanism to truly transform mutually beneficial and win-win cooperation into micro-level benefits for enterprises.

5. Policy recommendations: path construction from competitive game to synergistic win-win

At the institutional level, the governments of China and Mexico should actively promote free trade agreement negotiations and rule alignment, prioritize expanding market opening in fields such as new energy and agricultural products, and at the same time reduce tariffs and trade barriers on advantageous products of both sides (such as PV modules and avocados) to activate the trade potential of both sides. Meanwhile, they should establish a mutual recognition and trust mechanism to promote cooperation in important fields such as intellectual property protection and digital trade. In addition, a regular communication and collaboration platform should be established to assist in resolving trade and tariff disputes between the two sides, promote bilateral economic and trade development, and achieve the goal of "win-win cooperation".

At the industrial level, China needs to balance its competitive relationship with Mexico in the nearshoring field and explore cooperation opportunities from the two dimensions of "strengthening endogenous competitiveness" and "proactively laying out cooperation". It should enhance its risk awareness, overcome key technologies in the industrial chain, and strive to build an independent, controllable, safe, and efficient industrial and supply chain [17]. It is necessary to upgrade China's "scale advantage" in manufacturing to the "dual advantages of efficiency + technology", replace labor costs with technology, and improve the anti-transfer capability of the industrial chain. Moreover, it is important to build an industrial cluster featuring "China R&D + Mexico Manufacturing". At the same time, taking advantage of China's super-large-scale domestic market to attract global industrial and supply chains, further expand the Belt and Road Initiative cooperation partner network, promote the industrial and supply chain international cooperation system to achieve mutually beneficial and win-win results, and push the cooperation in merchandise trade and digital trade toward higher-quality development [18].

At the corporate level, Chinese enterprises should abandon the mindset of using Mexico as a temporary channel to avoid tariffs, take localized development as the fundamental direction, and proactively integrate into Mexico's local manufacturing ecosystem to eventually become a key force in the North American supply chain system [19]. Chinese enterprises need to adopt a more in-depth localized layout to mitigate multiple risks and improve their competitiveness. Adhering to "compliant operation" is the primary prerequisite: they must strictly abide by local laws and

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regulations in Mexico, respect local employees, understand cultural differences, be familiar with legal requirements in areas such as land expropriation and environmental protection, and take various measures to consolidate the foundation of cooperation between the two sides to avoid "acclimatization issues" [20]. Chinese enterprises should shift from simply setting up factories to "technology licensing + talent training + community integration". They should actively employ local management teams in Mexico, carry out skill training in collaboration with local universities, and proactively integrate into local culture to reduce cultural and management conflicts and effectively lower the risk of labor disputes.

At the talent level, cultivating qualified talents for Chinese industries going global to Latin America is an urgent task. A "three-dimensional system featuring government guidance, university-enterprise collaboration, integration of industry and education, and cultural immersion" should be built to cultivate qualified talents in accordance with the needs of the Latin American market and the globalization of Chinese industries. Universities should establish an interdisciplinary talent training system of "Spanish/Portuguese + professional background", revise training programs based on national strategic orientations and social needs, and change the single training model of pure language learning. Students should be funded to study in energy, engineering, law, and other majors at Latin American universities, and graduates should be required to provide targeted services for overseas projects of Chinese-funded enterprises. Universities and Latin American research institutions should be promoted to jointly establish joint laboratories, and interdisciplinary talents should be cultivated through technological R&D projects. Higher vocational colleges should conduct in-depth cooperation with enterprises and implement the "Education Follows Enterprises" model. For example, reference can be made to the practice of Xi'an Railway Vocational and Technical College in participating in the Talent Training Program for Urban Rail Transit Operation and Management in Bogotá, Colombia. With the goal of serving enterprises' overseas projects, Xi'an Railway Vocational and Technical Institute innovatively proposed the "Vocational Training Going Global with Enterprises" model and worked with enterprises to customize a university-enterprise collaborative talent training system. The "order-based classes" created under this model have significant application value and social significance: they not only help enterprises reduce overseas operation costs by billions of USD but also promote China-Colombia exchanges through rich cultural activities, providing a reference model for vocational education to explore ways to serve enterprises' "going global" strategy and establish international education brands [21].

6. Conclusion

The restructuring of global industrial chains and the wave of nearshoring have profoundly shaped the new roles and interaction models of China and Mexico in the global value chain. This paper reveals that the nearshoring relationship between China and Mexico has a significant "duality of competition and cooperation": competition is mainly reflected in the re-game of the status in the division of labor of the global value chain, while cooperation is based on the complementarity of their industrial structures and the common demand for technological upgrading. The core analysis shows that relying on geographical proximity, USMCA institutional dividends, and labor cost advantages, Mexico has formed a certain market substitution effect on China in terms of exporting end products to the United States. However, the expansion of Mexico's manufacturing scale has simultaneously increased its dependence on Chinese intermediate products and technologies, forming a division of labor pattern of "Mexican assembly + Chinese components". On the whole, the complementarity between China and Mexico's economies outweighs their competitiveness, and many successful cooperation cases have emerged in fields such as new energy. In the future, China-

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Mexico cooperation will face multiple challenges, such as the policy trends of the United States, Mexico's localization paradox (needing Chinese technology but pursuing independence), and the demand for in-depth localization of Chinese enterprises. The evolution of the nearshoring relationship between China and Mexico will become a key sample to test whether developing countries can participate in global value chain governance and reshape industrial competition rules. Ultimately, China and Mexico need to transcend the zero-sum game mindset, and through institutional coordination, technological cooperation, and supply chain integration, jointly build a more resilient, innovative, and inclusive regional industrial ecosystem, providing an important reference for developing countries to explore new cooperation paradigms amid the restructuring of global industrial chains.

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