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Analysis of the Impacts and Counterstrategies of the U.S.-China Trade War Based on David Ricardo's Model

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Abstract:

Against the backdrop of deepening economic globalization, U.S.-China trade relations have emerged as a central issue in international trade. In recent years, research on the U.S.-China trade war has made significant progress, as scholars have analyzed its causes and impacts from multiple dimensions—including trade imbalances, industrial competition, and political factors—providing rich perspectives for understanding this complex economic phenomenon. However, existing research predominantly focuses on descriptive analysis and policy evaluation. A significant gap remains in systematic studies, rooted in David Ricardo's theory of comparative advantage, that examine the losses suffered by both China and the United States due to tariff measures, as well as the impact of these measures on the global trade system. This study centers on the core theme of "The Economic Impact of Tariff Measures in the U.S.-China Trade War from the Perspective of the David Ricardo Model," aiming to deeply analyze two critical questions: First, how tariff measures undermine core assumptions of the Ricardo model—such as free trade and fixed factors—thereby distorting the international division of labor based on comparative advantage. Second, what specific losses the escalating tariff barriers impose on China-U.S. trade volumes, industrial development, consumer welfare, and producer surplus, and whether they lead to a significant decline in global resource allocation efficiency. This study holds significant theoretical and practical implications. Theoretically, by revealing how tariff measures undermine classical trade theory assumptions, this study further validates the explanatory power of free trade theory in today's complex trade environment and offers new perspectives for the development of international trade theory. Practically, the findings provide theoretical grounding for China, the United States, and other countries in addressing trade frictions, warn against the risks of trade protectionism, and advocate for a return to rational cooperation among

countries to improve the global trade governance system.

Keywords: David Ricardo Model; U.S.-China Trade War; Tariffs; Deadweight Losses; Trade Protectionism

1. Introduction

Against the backdrop of deepening economic globalization, the trajectory of bilateral trade relations between China and the United States—the world's two largest economies—profoundly shapes the global economic landscape. For years, U.S.-China trade has expanded steadily through significant structural complementarity: Leveraging vast labor resources and a sophisticated manufacturing system, China has emerged as a major global exporter of industrial goods, supplying the U.S. market with labor-intensive and mid-to-low-end manufactured products; The United States, meanwhile, has leveraged its advanced technological and innovative advantages to maintain stable exports of agricultural products and high-end technology goods [1]. However, beneath the surface prosperity of trade, deep-seated contradictions—such as economic structural disparities and political strategic rivalry—have gradually accumulated, eventually escalating into a prolonged trade conflict. Grounded in David Ricardo's theory of comparative advantage, this study focuses on the pivotal role of tariff measures in the U.S.-China trade war, holding dual significance.

Theoretically, by dissecting how tariffs undermine the free trade assumptions in Ricardo's model, this study reveals the fundamental contradiction between trade protectionism and traditional international trade theory, and provides new perspectives for advancing modern trade theory. Practically, the findings provide a theoretical basis for nations navigating trade frictions, helping them recognize the dangers of protectionism and advancing the establishment of a more rational global trade governance system.

2. Causes and Background of the U.S.-China Trade War

This study adopts a comprehensive methodology that integrates a literature review, case analysis, and quantitative methods: First, it establishes a theoretical foundation by systematically reviewing literature on international trade. Second, it conducts an in-depth analysis of policy impacts, using tariff measures in the China-U.S. trade war as a representative case. Third, it quantitatively assesses the impact of tariffs on the bilateral economy through a comparative analysis of trade data [3].U.S.-China This paper first traces the multidimensional context leading to the trade war's outbreak, then analyzes tariff-induced economic effects based on the Ricardian model, and finally proposes countermeasures against trade protectionism to offer valuable insights for global economic governance.

The eruption of the U.S.-China trade war represents an inevitable outcome of intertwined economic, political, and global structural factors. From an economic structure perspective, significant disparities exist between China and the United States: China's economy is dominated by manufacturing, with strong competitive advantages in labor-intensive industries and mid-to-low-end manufacturing sectors. Leveraging high-value-for-money products, U.S. has continuously expanded its exports to the United States. Meanwhile, services account for over 80% of U.S.'s GDP [4], and high domestic labor costs have prompted the relocation of some high-end manufacturing overseas. This structural disparity directly fuels persistent bilateral trade imbalances, with annual deficits reaching hundreds of billions of dollars [5]. Certain U.S. interest groups have narrowly blamed China for these deficits, accusing its trade policies of causing American manufacturing job losses and industrial hollowing-out. Yet they overlook critical factors within the U.S. economy: lagging structural adjustments, excessively low savings rates, and the dollar's role as the international reserve currency—enabling the U.S. to export currency through trade deficits and capture seigniorage [6]. On the political-strategic front, as China's economy rapidly rises and its comprehensive national strength continues to grow, the United States views China as a potential challenger to its global hegemony. China's rapid advancement in high-end manufacturing, information technology, 5G communications,

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and other emerging industries severely threatens U.S. leadership in these sectors. Fearing China's technological innovation and industrial upgrading could surpass its own, thereby undermining U.S. global economic and technological dominance, Washington has implemented a series of trade protectionist measures. By imposing high tariffs on Chinese imports into the U.S., restricting U.S. market access for Chinese products, and attempting to suppress the development of China's high-tech industries, while simultaneously rallying allies internationally to erect trade barriers and isolate China within the global economic system, political maneuvering has driven trade friction to escalate into a full-scale trade war[8].

Profound shifts in the global economic landscape also provided the macro backdrop for the U.S.-China trade war. The rapid rise of emerging economies, exemplified by China, has continuously challenged traditional international economic order, with China's importance in global industrial and supply chains growing daily. Against a backdrop of sluggish global economic growth and intensifying trade competition, the United States sought to reshape global trade rules through the trade war to maintain its economic dominance. The U.S. has sought to use coercive measures to compel emerging economies such as China to make concessions in rule-making, thereby consolidating its economic hegemony[10]. This competitive pressure and struggle for interests, triggered by shifts in the global economic landscape, has further intensified U.S.-China trade conflicts, ultimately precipitating the full-scale outbreak of the trade war.

3. The Impact of the U.S.-China Trade War

Based on David Ricardo's theory of comparative advantage, international trade should be conducted based on each country's comparative advantages to achieve efficient resource allocation and maximize overall welfare [2], which in turn exerts profound impacts on both economies.

In terms of trade volume, the United States imposed high tariffs on Chinese imports, directly raising the prices of Chinese products in the U.S. market and undermining their price competitiveness. Exports of traditional competitive products such as textiles plummeted significantly[5]. Simultaneously, China's retaliatory tariffs severely impacted U.S. exports to China, including agricultural products and automobiles[4]. This tit-for-tat tariff escalation has led to a significant contraction in bilateral trade volume. As a result, neither side can fully leverage its comparative advantages, which in turn leads to inefficient resource allocation.

At the industrial level, relevant sectors in both countries have been impacted. China's export-oriented manufacturing enterprises face reduced orders and squeezed profits. U.S. tariffs on Chinese manufactured goods have increased production costs for these companies, forcing some to scale back capacity or even relocate production lines[11]. In electronics manufacturing, China plays a critical role in the global supply chain, exporting vast quantities of electronic products to the U.S. The trade war has shrunk U.S. market demand, prompting signs of supply chain relocation by multinational corporations like Apple, which has impacted the development of Chinese contract manufacturers. In U.S. agricultural development, China's tariffs on U.S. agricultural products have significantly reduced sales of U.S. soybeans, pork, and other agricultural products in the Chinese market, leading to substantial declines in income for many U.S. farmers[11].

U.S. restrictions on high-tech exports to China not only eroded profits for domestic companies but also hindered global industrial chain coordination. The U.S. automotive sector relies on imported Chinese components; tariffs increased corporate costs, thereby undermining profitability and product competitiveness[12]. From a welfare perspective, consumers and producers in both countries suffered losses. For consumers, tariffs have driven up prices and reduced real purchasing power. American consumers have been forced to pay higher prices for Chinese-made clothing, electronics, and other goods[12], while Chinese consumers face significantly increased costs for U.S. agricultural products and high-end consumer goods. At the producer level, Chinese exporters have seen reduced producer surplus due to shrinking market share and rising costs; U.S. companies in related industries also face pressure on profits from export barriers and intensified market competition[12]. The trade war presents both challenges and opportunities for China's industrial restructuring. When external demand stalls, the overcapacity issues in export-dependent low-to-mid-tier manufacturing become glaringly apparent, intensifying pressure for industrial transformation. To overcome U.S. technological barriers, China has significantly increased R&D investment

in high-tech fields such as semiconductors and artificial intelligence. The Chinese government has introduced a range of policies to support the development of the semiconductor industry, and under this policy guidance, many enterprises have actively expanded into chip R&D and manufacturing. This has led to a certain degree of improvement in the self-sufficiency rate of domestic chips in recent years[13]. To mitigate the negative impacts of tariffs, Chinese enterprises have accelerated their global expansion by establishing factories in Southeast Asia and Mexico, thereby developing a "China + 1" strategy to enhance supply chain resilience. This has also facilitated regional market expansion, such as Chinese textile companies investing in Vietnam and auto parts manufacturers setting up operations in Mexico. During the trade war, the U.S. domestic industry experienced numerous negative effects. The uncertainty caused by the trade war has made companies cautious about long-term investments, which has hindered the upgrading and expansion of the manufacturing sector. U.S. consumers bore the cost of the trade war as tariffs were ultimately passed on to them. Prices for Chinese-made clothing, electronics, and other goods rose, increasing living costs and reducing real purchasing power. Data from the U.S. Bureau of Labor Statistics indicates that during specific phases of the trade war, the price index for relevant consumer goods increased significantly. The U.S. government's implementation of a series of trade protectionist measures targeting China essentially sought to reconstruct an international trade landscape "decoupled from China," aiming to keep China permanently confined to the lower end of the global value chain. In reality, the trade war failed to reverse the U.S. trade deficit or facilitate its "decoupling" from China. Manufacturing failed to return to the U.S. as hoped. American companies lost crucial overseas markets while facing heightened inflationary pressures and increasingly complex and costly supply chain systems.

The U.S.-China trade war violated the free trade principles advocated by David Ricardo's model, inflicting damage across multiple dimensions of both economies. Neither industrial development, employment, nor consumer welfare escaped unscathed.

4. China's Response Plan

In response to the impacts and challenges posed by the U.S.-China trade war, China can formulate countermeasures centered on three core directions. First, focus on optimizing industrial structure and strengthening technological innovation. The trade war has exposed China's weaknesses in high-end manufacturing and core technologies. China should increase R&D investment and policy support for strategic emerging industries such as semiconductors, artificial intelligence, and new energy. By establishing special industrial funds and offering tax incentives, resources can be channeled toward tackling key technological challenges, accelerating the process of domestic substitution. Simultaneously, digital technologies should be leveraged to modernize traditional industries through intelligent and green upgrades, enhancing product value-added and production efficiency to strengthen competitiveness within the global value chain. For instance, in the semiconductor sector, domestic enterprises are actively collaborating with research institutions to overcome challenges in chip design and manufacturing, thereby reducing their reliance on foreign technologies.

Second, actively expand diversified markets and boost domestic demand. Given that the trade war has highlighted the risks of reliance on a single market, China must vigorously advance the Belt and Road Initiative, deepen cooperation with participating countries in trade, investment, and infrastructure development, and reduce trade barriers through establishing free trade zones and signing bilateral agreements to tap into emerging markets. Simultaneously, it is essential to fully tap the potential of the domestic market, improving the social security system to boost consumer confidence, and fostering new consumption models like online and green consumption to drive consumption upgrades are essential. Increased investment in infrastructure and livelihood projects will help build a new development paradigm centered on domestic circulation while promoting mutual reinforcement between domestic and international circulation, thereby enhancing endogenous economic growth momentum[14].

Finally, China must resolutely uphold the multilateral trading system. China should actively participate in reshaping global trade rules, unite with other nations under the World Trade Organization framework to resist trade protectionism, and defend the principles of free trade and the multilateral trading order. Proactively participate in regional trade agreement negotiations, such as the Regional Comprehensive Economic Partnership (RCEP),

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to enhance China's voice and influence in international economic and trade affairs. Furthermore, actively propose trade rules and standards that align with China's development needs and global economic trends, contributing Chinese wisdom to global trade governance.

5. Conclusion

The U.S.-China trade war is the result of the combined effects of economic structural disparities, political strategic maneuvering, and shifts in the global landscape. Its impact on both nations and the global economy is profound and complex, deviating from the core logic of David Ricardo's theory of comparative advantage.

Theoretically, the tariffs imposed by both sides undermine assumptions central to the Ricardo model—such as "free trade" and "efficient allocation of factors"—distorting the international division of labor based on labor productivity. This has led to a significant contraction in U.S.-China trade volume, with China's exports of machinery, electronics, and textiles to the US, and US exports of agricultural products and automobiles to China, both suffering severe impacts. Resource misallocation has become more pronounced, and the coordination of global industrial chains has weakened.

At the industrial and welfare levels, China's export-oriented manufacturing faces pressures like capacity reduction and production line relocation due to rising tariff costs, while U.S. agriculture suffers sharply reduced sales and plummeting farmer incomes from China's countermeasures. Consumers in both countries endure welfare losses from rising commodity prices, and producer surplus diminishes as markets shrink. For China, the trade war has accelerated domestic substitution in high-tech industries such as semiconductors , but it has also intensified pressure to transform low-to-mid-end manufacturing. For the U.S., the goal of manufacturing reshoring remains unachieved, while inflationary pressures and rising supply chain costs have emerged as new challenges.

From a global governance perspective, the U.S. attempt to curb China's industrial upgrading and reconstruct a "de-Chinaized" global value chain through trade wars represents unilateral action. This approach has not only failed to reverse the trade deficit but also intensified the strategic competition over trade rule-making between emerging economies and traditional hegemonic powers, undermining the stability of the multilateral trading system.

This research indicates that trade protectionism results in a "lose-lose" outcome. Only by returning to the free trade principles of the Ricardian model, reducing trade barriers through dialogue and consultation, and deepening international division of labor and cooperation can global economic welfare be enhanced. China must build development resilience through technological innovation, market diversification, and the expansion of domestic demand, while actively participating in reshaping global trade rules and promoting multilateral cooperation. Future research could further focus on emerging trade areas to provide theoretical support for addressing complex trade challenges.

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