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An Analysis of Trade Barriers' Effect on China's NEV Sales Performance

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Abstract: In recent years, China's new energy vehicle industry has been booming, the export volume has been rising, the market scale has been expanding, and the competitiveness of various enterprises has been continuously enhanced, but it is also facing increasingly severe trade barriers in the international market. This research aims to analyze the existing state of China's new energy vehicle exports, the principal trade barriers in play, and their resultant impacts. It specifically discusses the detailed effects of such trade barriers on the sales dynamics of China's new energy automotive products. Using a combination of quantitative and qualitative analysis, this paper analyzes customs data, industry annual reports, and other data to find that trade barriers have harmed China's new energy vehicle sales, especially in major markets such as the European Union. However, China's new energy vehicle industry has maintained certain competitiveness and development potential in the global market through a series of coping strategies, such as technological innovation and market diversification.

Keywords: Trade barriers, new energy vehicles, export trade, tariff barriers.

1. Introduction

Globally, the pursuit of green development has become a common goal for countries, alongside the gradual strengthening of people's environmental protection awareness. The pollution caused by traditional fuel vehicles to the environment is becoming increasingly severe, and all countries attach great importance to the new energy industry and vigorously promote the innovation and development of the new energy industry. The government has introduced a series of incentive policies, which have greatly promoted the research and development, production, and sales of new energy vehicles. New energy vehicles have made great progress, and the continuous breakthrough of battery technology and the wide application of intelligent technology have made new energy vehicles significantly improve in terms of mileage, charging speed, safety, and comfort. According to the data of Rho Motion's official website, global sales performance of electric and hybrid vehicles in 2024 will be 17.1 million, an increase of 25% year-on-year, and the market value will increase significantly (the market size of the global new energy vehicle industry will be 505.267 billion US dollars in 2023 and 582.1 billion US dollars in 2024), and many traditional car companies have gradually accelerated the transformation of electrification. As the leading new energy vehicle market globally, China comprised 63% of the world's NEV market share in 2023. Many of China's emerging brands are also rising rapidly, such as NIO, XPeng, and Ideal. The current situation indicates that trade barriers serve as a major determinant affecting the export performance of China's new energy vehicles. Therefore,

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the study of trade barriers is of great significance to the development of China's new energy vehicles, and for enterprises, the research can enable enterprises to clearly understand the trade barriers in different target markets, to formulate more accurate market entry strategies. For the industry, this research is helpful to optimize the industrial layout, enhance industrial synergy, and promote upstream and downstream enterprises in the industrial chain to strengthen cooperation and jointly respond to trade barriers. For the country, this study will help the country to take measures to protect industrial exports, promote industrial development, and stimulate economic growth.

At present, more and more scholars have begun to study the impact of trade barriers on the export scale and market of China's new energy vehicles, and the existing research covers multiple dimensions. Hei Ye and Tian Wei's research shows that tariffs directly limit the scale of exports [1]. Taking the U.S. tariffs on China's new energy vehicles as an example, by raising tariffs, the cost of Chinese new energy vehicles entering the U.S. market has increased, resulting in limited export scale, which has directly affected the sales and market share of Chinese new energy vehicles in the U.S. market. As highlighted by Tian Wei, Xu Mingzi, and Yu Miaojie in their research [2], trade barriers exert dual effects: reducing the penetration rate of China's NEVs in target markets while simultaneously elevating product pricing and amplifying consumer purchase risks. Take the EU carbon border tax, for example, which requires imported products to account for carbon emissions and pay corresponding taxes and fees. In cases where the greenhouse gas emission accounting of China's new energy vehicles during production does not align with EU regulatory requirements, exporters are often subject to extra fees when entering the EU market. This leads to higher retail prices, thereby weakening the price competitiveness of Chinese NEVs, reducing their market presence, and increasing consumer purchasing risks caused by the unpredictability of price adjustments and policy shifts. In addition, the U.S. Inflation Reduction Act (IRA) has set conditions such as subsidies and localized production, forming non-tariff barriers that prevent Chinese new energy vehicles from entering the U.S. market. Wang et al.'s study involved the impact of trade barriers on the industrial chain [3]. From the perspective of the upstream of the industrial chain, trade barriers affect the import of raw materials and parts, and if the import is restricted, it will increase production costs and affect production progress and product quality. For example, when China imports key components for new energy vehicles, if it encounters trade barriers, it may lead to domestic manufacturers reducing production due to raw material shortages. Notably, current academic works have not fully addressed the specific impact mechanisms of trade barriers on China's NEV sales performance. This study will adopt a dual-analysis framework, combining quantitative models and qualitative interviews, to systematically analyze the direct and indirect effects of trade restrictions on the sales dynamics of China's new energy automotive products.

2. Literature review

2.1. Definition

Trade barriers refer to the restrictive obstacles set up by a country (or region) to foreign goods or services through legislative and administrative measures to protect local industries, maintain trade balance or achieve specific policy objectives, and their core characteristics include protective (intending to maintain local industries), discriminatory (differential treatment of foreign products) and concealment (non-tariff barriers often circumvent international rules in the name of technology and security). Concerning tariff-based trade barriers, they impact demand by inflating import costs. Governments may set elevated tariffs on imported NEVs; take developing countries as an example, they impose heavy import duties on Chinese new energy vehicles to protect their local auto industries, thereby directly increasing product prices and eroding price competitiveness. Non-tariff barriers, conversely, assume various forms and restrict market access through technical or bureaucratic means.

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In terms of technical standards, the EU has set strict standards for vehicle emissions, safety and environmental protection, and Li Weiwei pointed out that EU technical standards constitute 'compliance trade barriers' for car companies in developing countries such as Euro6 emission standards, and China's new energy vehicles must meet these high standards to enter the EU market, which increases the cost of the complexity of technical research, development, and certification processes [4]. Cheng Yunjie and Bu Yuxin pointed out that the UL certification in the United States has cumbersome procedures and long certification cycles, which hinder the rapid entry of Chinese new energy vehicles into the US market [5]. Some scholars believe that technical barriers force industrial upgrading, while others emphasize the market blockade effect.

2.2. Specific impacts

Zhang Bin and Cao Ziying's research shows that tariff barriers will directly increase the export cost of China's new energy vehicles and reduce their price competitiveness in the international market [6]. Non-tariff barriers, such as technical standards and certification requirements, have restricted China's NEW ENERGY VEHICLES from entering some overseas markets. Some countries have formulated strict battery safety standards and range requirements, which make it difficult for some Chinese new energy vehicle companies to meet. In addition, trade remedy measures such as anti-dumping and countervailing investigations have also disrupted the market expectations and production plans of Chinese NEW ENERGY VEHICLE exporters. According to data from the General Administration of Customs, in June 2024, China's total exports of pure electric vehicles to the EU amounted to about 27,000 units, a year-on-year decrease of 30%. In the first half of 2024, China's total exports of pure electric vehicles to the EU will be about 222,000 units, a year-on-year decrease of 14.6%. U.S. policies such as tariff increases have also made it significantly more difficult for Chinese electric vehicles to enter the North American market, and sales have been severely limited. On the other hand, trade barriers have raised the threshold for entering the market, making it more difficult for Chinese new energy vehicle companies to enter foreign markets, increasing the difficulty of expanding the market, and slowing down. There are also some new markets due to trade barriers, the negotiation and development cycle of enterprises entering is prolonged, and the products cannot be brought to market in time, which affects the Sustained sales growth and limitations on corporate international expansion.

Existing research predominantly focuses on the effects of trade barriers on the export volume of China’s new energy vehicles and short-term economic gains, while the impacts on long-term strategic dimensions such as brand building and technological innovation capabilities remain underexplored. In terms of research methods, most of them are mainly qualitative analysis, and the quantitative analysis model is relatively simple, and few scholars comprehensively use a variety of quantitative analysis tools to build a more complete evaluation model, to provide more practical guidance, research results, and make the results more comprehensive and accurate.

3. An overview of China’s new energy vehicle export landscape

Figure 1 pointed out that in 2021, China's new energy vehicle production was 3.677 million units, an increase of 152.5% over the previous year. In 2022, China's new energy vehicle production and sales will reach 7.058 million units and 6.887 million units, up 96.9% and 93.4% year-on-year, respectively, ranking first in the world for eight consecutive years. In 2023, China's new energy vehicle sales will be 9.495 million units, a year-on-year increase of 37.9%, and the market share of new energy vehicles will continue to expand. In 2024, China's new energy vehicle industry ushered in a new milestone. According to data from the China Association of Automobile Manufacturers, the production and sales of new energy vehicles in 2024 will be 12.888 million and 12.866 million respectively, an increase

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of 34.4% and 35.5% year-on-year, and the sales of new energy vehicles will reach 40.9% of the total sales of new vehicles, an increase of 9.3 percentage points from 2023.

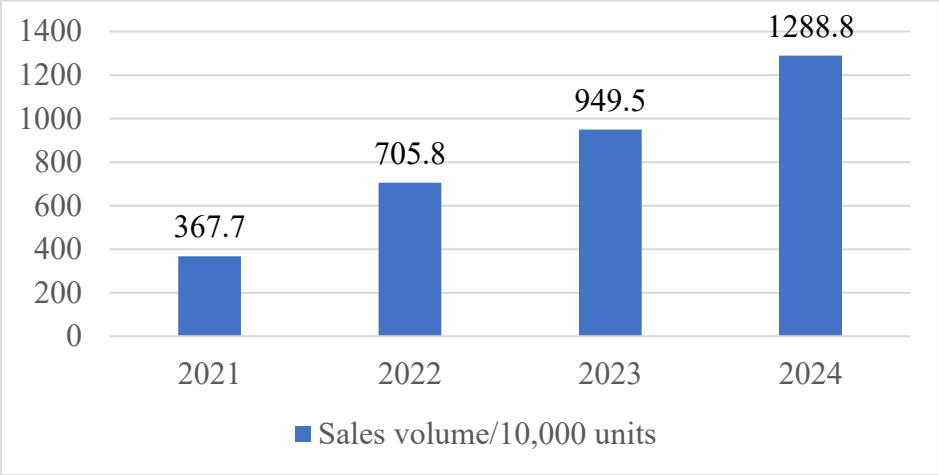

Figure 1: China's new energy vehicle sales from 2021 to 2024

4. The main types of trade barriers and their impact

4.1. Tariff barriers

Some countries and regions have raised the import cost of China's new energy vehicles by imposing tariffs and other means. For example, the European Commission has imposed differential tariffs of 35.3%, 18.8%, and 17% on SAIC, Geely, and BYD, respectively. Such additional tariff burdens have moderately weakened the price competitiveness of China's new energy vehicles in foreign markets, contributing to a drop in export volumes. According to Figure 2, in 2021, Europe became the first destination for China's new energy vehicle exports, and in that year, China sold about 220,000 new energy vehicles to the European Union. Of the 1.203 million NEW ENERGY VEHICLES exported by China in 2023, Europe accounted for 38%, or about 457,000 units. In the second half of 2024, China's NEW ENERGY VEHICLE exports to Europe fell to 632,000 units due to the EU's tariffs on Chinese BEVs. However, exports in the first half of the year were relatively good, and on the whole, the total number of passenger cars exported from China to Europe in 2024 will be 944,000 units, of which pure electric vehicles will account for 60% of all power models, or about 566,000 units.

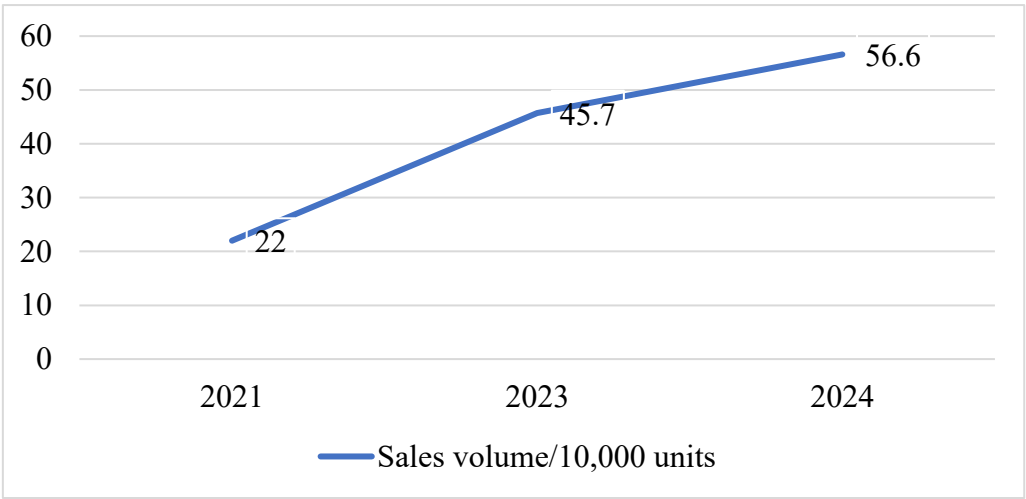

Figure 2: China's NEW ENERGY VEHICLE sales to the EU, 2021-2024

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2024: In the second half of 2024, China's NEW ENERGY VEHICLE exports to Europe fell by 6% to 632,000 units due to the EU's tariffs on Chinese BEVs. However, exports in the first half of the year were relatively good, and on the whole, the total number of passenger cars exported from China to Europe in 2024 will be 944,000 units, of which pure electric vehicles will account for 60% of all power models, or about 566,000 units.

4.2. Technical barriers

Chen's study indicates that certain countries and regions have established stringent technical norms and regulations, which pose greater challenges to the market entry of Chinese new energy vehicles [7]. For example, the European Union's "New Battery Law" requires carbon footprint accounting for the whole life cycle of electric vehicle power batteries, such as production, on-board use, cascade utilization after retirement, and scrap recycling, and requires that from 2027, power batteries exported to Europe must hold a "digital passport" that meets the requirements of the "New Battery Law".

5. Analysis of the impact of trade barriers on China's new energy vehicle sales

As the EU is one of China's important export markets for new energy vehicles, its trade measures, such as tariffs and technical barriers, have had a significant impact on the sales of Chinese new energy vehicles in the region. According to the data, China's BEV exports to the EU in the first half of 2024 fell year-on-year, and the number of Chinese EV registrations in 16 EU member states in July fell by 45% month-on-month. This shows that trade barriers have inhibited the sales growth of Chinese new energy vehicles in the EU market to a certain extent. Comparatively speaking, according to Hao's research, the direct vehicle exports of new energy vehicles to China in other markets, such as the United States, are relatively small, and the impact of trade barriers on their sales is relatively weak [8]. Some countries, such as the United Kingdom, are more open to China's new energy vehicles, which provides a broader space for Chinese car companies to develop in these markets.

6. Conclusion

Trade restrictions have exerted a substantial influence on the sales of China’s new energy vehicles (NEVs), particularly in the EU market. After the EU launched a countervailing investigation in 2023 and planned to impose tariffs of up to 35%, the growth rate of China's new energy vehicle exports to Europe plummeted from 123% in the first half of the year to less than 30% in the fourth quarter, and the European market share fell by 2.3 percentage points compared with expectations. This protectionist policy not only raises the cost of entry but also triggers a crisis of confidence in "Made in China" among some consumers. In the face of challenges, China's industry has broken through the dilemma through three major strategies. In terms of local production, BYD built Europe's first vehicle plant in Hungary, and CATL's German battery plant achieved local supply, effectively avoiding tariff barriers. In the field of technological innovation, the R&D investment intensity of leading enterprises exceeded 6%, CATL's super-rechargeable battery achieved "a range of 400 kilometers in 10 minutes", and Xpeng's intelligent driving system surpassed Tesla in European evaluation. In 2023, exports to Southeast Asia will increase by 258%, the market share of the Middle East will exceed 15%, and the market share of Russia will reach 49%, forming a risk hedging mechanism. The global new energy vehicle market is expanding at an accelerated pace, with the International Energy Agency predicting that sales will reach 40 million units by 2030. China needs to enhance its competitiveness in multiple dimensions: first, break through key technologies such as automotive-grade chips and build an independent industrial chain; the second is to establish a full life cycle carbon management system to deal with the EU "battery passport" system; The third is to promote the internationalization of China's charging standards and intelligent network specifications. At the government level, multilateral

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negotiations need to be strengthened to maintain a fair trade environment. It is worth noting that trade barriers objectively promote industrial upgrading. In 2023, China's power battery patents will account for 68% of the world's total, and the commercialization process of L4 autonomous driving will lead Europe and the United States. With breakthroughs in disruptive technologies such as solid-state batteries, China is expected to occupy a more central position in the global industrial landscape. With continuous innovation and international collaboration as driving forces, China’s NEV sector will take on a more pivotal role in the global energy revolution.

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