Based on Binary Marginal Mechanism—The Impact of EU Anti-subsidy Investigation on China's Electric Vehicle Exports and Suggestions for Countermeasures

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Abstract. Anti-dumping and anti-subsidy investigations are the most important means to maintain fair competition and market order in international trade. In recent years, the global competition in the electric vehicle industry has been fierce, and China has taken a leading position in the supply chain of the electric vehicle industry. Since 2023, China has surpassed Japan to become the world's largest exporter of automobiles, especially electric vehicle exports, which have become an important driving force for China's automotive exports. The EU is highly concerned about the explosive growth of China's electric vehicle exports, believing that China's overcapacity in electric vehicles comes from government subsidies, and believes that the large number of Chinese electric vehicles entering the EU market will pose a threat to the development of its related industries. The paper first analyzes the development of Chinese electric vehicles in the European Union, and then evaluates the impact of the EU's "anti subsidy" measures based on the binary marginal mechanism. It analyzes the dual impact on China's electric vehicle export intensity margin and expansion margin, and finally proposes relevant countermeasures and suggestions.

Keywords: Electric Vehicle, Anti-subsidy, Binary Marginal Mechanism.

1 Introduction

On October 4, 2023, the European Commission issued a notice officially deciding to launch a "anti subsidy" investigation into imported products of new battery electric vehicles originating in China. The "anti subsidy" investigation was initiated by the European Commission in accordance with its authority, and the investigated product is a new type of battery electric vehicle, which is mainly designed for the transportation of 9 people or less (including drivers), and is only driven by one or more electric motors (EU CN code 87038010), excluding motorcycles. The subsidy and damage investigation period in this case is from October 1, 2022 to September 30, 2023, and the damage reference period is from January 1, 2020 to September 30, 2023.

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According to regulations, any Chinese enterprise that has exported electric vehicles to the European Union during this period (including those related to it, participating in the production and sales of electric vehicles, providing financial support, upstream suppliers, etc.) belongs to the involved enterprise and needs to participate in litigation. Chinese automobile companies are actively conducting investigations into the EU anti subsidy measures for electric vehicles. On October 11th, Great Wall Motors took the lead in submitting anti subsidy materials to the European Union. In addition to Chinese brand car companies, foreign car companies such as Tesla, BMW, and Volkswagen have also been included in the survey list. Manufacturers must disclose their contact with China in the EU questionnaire, including information about their business partners in China and the number of cars produced by car manufacturers in the Far East and shipped to the EU. On October 25th, the European Commission announced a "anti subsidy" investigation into BYD, SAIC, and Geely. If the EU discovers "subsidy evidence" in the investigation, the "sampled enterprises" that cooperate with the investigation and are selected will be subject to different separate tax rates. Those unselected "non sampled cooperative enterprises" will calculate the corresponding "weighted average countervailing tax" . Imported electric vehicle companies, including Chinese brand cars such as Great Wall and Volkswagen, Tesla, BMW, etc. produced in China. Generally, it is levied continuously for five years, and every five years, it can continue to be levied for another five years through the sunset review procedure[2]; And those companies that do not submit sampling questionnaires and do not cooperate will be subject to the highest unified punitive countervailing duty.

1.1 Export Structure of Chinese Electric Vehicles and Comparison of Prices between China and Europe.

Europe is the most important export market for electric vehicles in China. According to data from China Association of Automobile Manufacturers (CAAM) and China Customs, in 2022, China exported 679000 new electric vehicles, a year-on-year increase of 1.2 times. Among them, 434000 vehicles were exported to Europe (EU27+UK, the same below), accounting for 63.9% of the total. From January to November 2023, China exported 1.0602 million electric vehicles, a year-on-year increase of 83.5%; Among them, 582000 vehicles were exported to Europe, a year-on-year increase of 46.3%, with Europe accounting for 54.9%.

The export share of electric passenger vehicles exceeds 95%. The export models of passenger cars include sedans, SUVs, MPVs, etc. According to China customs data, in 2022, 945000 electric passenger vehicles were exported, accounting for 96.9% of the total export volume of electric vehicles. 30000 commercial vehicles were exported, accounting for 3.1%, with the main export models being electric buses and electric light trucks. From January to September 2023, the export volume of electric passenger vehicles and commercial vehicles was 800000 and 25000 respectively, accounting for 97.0% and 3.0%, respectively.

The proportion of foreign brand car exports is gradually decreasing. According to data from the China Association of Automobile Manufacturers, in 2022, a total of 334800 Tesla Model Y, Model 3, and Renault's Dacia Spring models were exported,

accounting for nearly 50% (49.3%) of China's total electric vehicle exports. Since 2023, the export growth rate of Chinese brand electric vehicles has been significant. According to Marklines data, from January to October this year, among the top 10 electric vehicle export models in China, Tesla Model Y exported 180000 vehicles, ranking first; Model 3 ranks second with 129000 exported vehicles; The MG 4 model exported 113000 vehicles, ranking third, and the gap in export volume with Tesla is gradually narrowing; BYD Atto 3, BYD Dolphin, and Polestar 2 are ranked 3-5, with exports of 78000, 56000, and 55000 vehicles respectively; Dacia Spring has fallen out of the top 5, ranking sixth with an export volume of 52000 vehicles.

The price advantage of Chinese electric vehicles in the European market is relatively prominent. Due to the production cost advantage, supply chain enrichment advantage in the electric vehicle industry chain, and production efficiency advantage of electric vehicle enterprises in the Chinese market, the selling price of electric vehicles in the Chinese market has steadily decreased, and is lower than similar products in the European market. According to research by Jato Dynamics, the average cost of electric vehicles in China in the first half of 2022 was less than 32000 euros, while the average cost of European brands was as high as 56000 euros. In terms of price, since 2015, the average selling price of electric vehicles in the European market has increased from $51000 to $59000, the selling price of electric vehicles in the US market has increased from $53000 to $64000, and the selling price of electric vehicles in the Chinese market has decreased from $70000 to $33000. This has also led to the phenomenon that Chinese electric vehicles are priced higher in the European market than in the domestic market. Chinese made electric vehicles are expected to further impact the European mass consumer market of 20000 to 40000 euros. The price of Chinese electric vehicle is showed in Table 1.

Table 1. Chinese Electric Vehicle Prices in the European Market

No.	Vehicle Brand and Type	Price in European Market
1	MG 4	Starting from€45～51 thousand
2	BYD Atto 3	Starting from€38～40 thousand
3	Peugeot e-208	Starting from€36.8 thousand
4	VolkswagenID. 4	Starting from€40.3～53.3 thousand
5	VolkswagenID. 3	Starting from€39 thousand
6	SkodaEnyaq	Starting from €33.8 thousand
7	Fiat 500 e	Starting from €37.5 thousand
8	Hyundai Kona	Starting from€ 41～52.4thousand

Source: Enterprise official website information, Autohome, etc.

1.2 Several reasons why the EU has only initiated a "anti subsidy" investigation

The EU has launched an "anti subsidy" policy against China, and its reserves have matured. In January 2023, the EU's Foreign Subsidies Regulation (FSR) on Distorted Internal Markets came into effect. The European Commission believes that foreign subsidies give non EU operators an unfair competitive advantage in participating in EU market activities compared to EU operators whose state aid is strictly restricted, thereby distorting the EU market. To achieve the goal of creating a fair competitive environment, the European Commission has imposed mandatory pre declaration obligations on third country enterprises that meet the declaration threshold, participate in EU mergers and acquisitions, and public procurement; On the other hand, the European Commission can proactively initiate post review of foreign subsidies based on its authority, not limited to mergers and acquisitions and public procurement.

The period for initiating a "anti subsidy" investigation against China is relatively short[3]**.** The initial determination and investigation period of "anti subsidy" are significantly shorter than those of "anti-dumping" investigations, which is conducive to the rapid implementation of trade remedy protection measures by the European Union[1]. The procedural timeliness of anti subsidy investigations is an important procedural reason for the EU's decision to only initiate "anti subsidy" investigations[2].

The difficulty of initiating "anti subsidy" measures against China is relatively low. The EU's anti-dumping investigation against China applies a "non market economy" approach, which uses the factor cost method (FOP) to determine normal value. It requires professional production and technical support in the electric vehicle industry to determine FOP and product classification codes (PCN), and the technical difficulty of application and filing is significantly higher than that of anti-dumping investigations.

The European Commission aims to reduce resistance and pressure from within Europe. The European Commission has conducted comprehensive policy collection and subsidy evidence analysis on the subsidy policies with high transparency in the Chinese automotive industry in recent years. At the same time, the European Commission does not require the EU electric vehicle industry to file an anti-dumping investigation application from a technical perspective, nor does it require the automotive industry to cooperate with the investigation. At the same time, the European Commission can directly initiate anti subsidy investigations according to its authority, without causing direct pressure on EU enterprises[3].

1.3 Identification of subsidy scope and subsidy situation in other countries

1) Scope determination of subsidies.

The two basic conditions for the EU to recognize "subsidies" are: first, funding projects provided by the government of the country of origin or export, various financing (such as preferential loans, export credit, credit limits, acceptance bills, bonds, etc.), tax incentives (high-tech enterprise income tax reduction, research and development expenses additional deduction, import equipment tariffs and value-added tax exemption, and value-added tax refund for purchasing domestic equipment, etc.) The government's

provision of goods or services at low prices (such as land, energy, raw materials, etc.), export credit guarantees, and insurance are all considered as "subsidies". It should be noted that since 2019, loans or subsidies received by Chinese overseas investment enterprises from within China, namely "cross-border subsidies", have also been included in the "anti subsidy" investigation[4]. The second is the existence of any form of income or support referred to in Article 16 of the General Agreement on Tariffs and Trade (GATT) of 1994, that is, through targeted procurement, targeted subsidies to support the development of the automotive industry. However, it is important to note a very important principle that not all "subsidies" will be considered as objects of "anti subsidy". Only targeted subsidies will be taken as "anti subsidy" measures, and targeted subsidies refer to corresponding subsidies specifically targeted at a certain enterprise or industry, or a certain enterprise group or industry group, Therefore, subsidies aimed at consumers do not fall within the scope of this "subsidy".

2)Subsidies exist in the development of the automotive industry in multiple countries.

In the early stages of development in many industrial sectors such as automobile manufacturing, it is customary for governments of various countries to formulate incentive subsidy policies. However, China's subsidy policy for electric vehicles was completely phased out by the end of 2022. Even though some of the production models surveyed by the European Union were produced before the subsidy was completely phased out, there is still a large amount of "subsidy" behavior in the development process of the automotive industry in European and American countries. During the 2008-2009 financial crisis, the US government established the Automotive Industry Assistance Program (AIFP) under the Non Performing Assets Assistance Program (TARP), investing over $80 billion. Although AIFP is a special measure taken during a special period and not a general subsidy policy, its basic characteristics comply with the definition of subsidies in the WTO Agreement on Subsidies and Countervailing Measures (SCM Agreement), and it is generally regarded as a government subsidy policy for the automotive industry in the United States. In 2022, the Chip and Science Act of the United States provides subsidies and support for the domestic chip industry. Japan has implemented a large amount of subsidies for specific industries such as electric vehicles, photovoltaics, and wind power, some of which fall within the scope of actionable subsidies stipulated by the WTO, and the scale of industrial subsidies reported by Japan to the WTO is far smaller than its actual subsidy amount. In addition, Japan implements a large amount of industrial subsidies through public institutions such as the Policy Finance Treasury, the International Cooperation Agency (JICA), and the Trade Revitalization Agency (JETRO). In the European Chip Act officially passed in July 2023, the EU government plans to provide 43 billion euros to fund chip manufacturers in Europe to build new factories. In the face of high energy prices, the German Ministry of Economy proposed in September 2023 that the state will subsidize electricity prices to alleviate the pressure on energy intensive industries.

2 Method

At different levels, the binary margin of exports has different definitions. Considering that the "anti subsidy" investigation was conducted by the initiating country targeting specific products. Therefore, this article defines the concept of binary margin from the level of products, that is, intensive margin refers to the expansion of a country's export products in a single direction of export quantity; Expansion margin refers to the increase in the variety of export products or the creation of new product types. This study takes the intensive margin and expansion margin of exports as the dependent variables, and to overcome the problem of heteroscedasticity, this paper takes the logarithmic value of the intensive margin.

2.1 Variable Selection and Model Setting

The core explanatory variable of this article is the situation of Chinese products encountering "anti subsidy" investigations. In order to directly observe the impact of "anti-subsidy" investigations on export margins, the article selects four proxy variables as the core indicators of the situation of Chinese products encountering "anti subsidy" investigation measures. Firstly, in a certain year, whether trading partners initiated "anti-subsidy" investigations against specific products in China, this variable is a 0-1 variable; Secondly, in a certain year, the number of "anti subsidy" investigation cases initiated by trading partners against specific products in China; Thirdly, in a certain year, trading partners initiated a "countervailing" investigation targeting specific products in China, confirming the number of damages caused (Injury); Fourthly, in a certain year, the average countervailing duty rate (duty rate) determined by the final ruling of a countervailing investigation initiated by trading partners against a certain type of product in China. The relevant data is sourced from the China Trade Remedies Information Network.

1)Selection of control variables.

In order to better control the marginal and other factors that affect exports, this article includes the following control variables in the econometric model:

a)The average annual growth rate of GDP in the export destination country.

The average annual growth rate of GDP is an important indicator of the vitality of a country's economic development, and the state of a country's economic development determines its import demand. Generally speaking, if the average annual growth rate of GDP on a global scale is contracted, the more prosperous the world's overall economic development will be, the better China's external export development will be, especially conducive to the expansion of intensive and expanding margins. The data is sourced from the World Bank statistical database.

b)The average tariff of the main export destination countries.

Referring to the econometric model design approach proposed by Wang Xiaosong et al., this article also incorporates the average tariff of the export destination country as a control variable in the econometric model. The reason is that although the focus of this article is on the impact of "anti subsidy" investigations on China's export binary margin, it takes into account that tariff barriers are one of the important influencing factors of trade costs. Among them, the indicator of the variable is the average tariff imposed by the three major economies, namely the United States, the European Union, and Japan, on China. The data is sourced from the WTO website.

c) The signing of the Free Trade Agreement (FTA).

Referring to the econometric model design approach proposed by Wang Xiaosong et al.[5], this paper incorporates free trade agreements as control variables in the econometric model to control for the impact of liberalization on countervailing investigations. The data is sourced from the author's compilation.

d) Revealed Comparative Advantage Index(RCA).

Referring to the design approach of Wang Xiaosong et al. (2014)'s econometric model, this article incorporates display comparative advantage as a control variable to control for the impact of comparative advantage between export destination countries and Chinese products. The export data of each country is sourced from the Global Trade Flow database.

2)Model settings.

Due to the dependent variables being intensive margin and extended margin, the model is set as follows:

$$ln\ IM=\alpha_0+\alpha_1 initiation+\alpha_2 number+\alpha_3 injury+\alpha_4 dutyrate+\alpha_5 GDP+\alpha_6 tariff+\alpha_7 FTA+\alpha_8 RCA+\varepsilon_{i1}+\varepsilon_{t1}+\mu_1 \quad (1)$$

$$lnEM=\beta_0+\beta_1 initiation+\beta_2 number+\beta_3 injury+\beta_4 dutyrate+\beta_5 GDP+\beta_6 tariff+\beta_7 FTA+\beta_8 RCA+\varepsilon_{i2}+\varepsilon_{t1}+\mu_2 \quad (2)$$

Among them, IM represents the intensive margin, and EM represents the extended margin. μ1 and μ2 is a random interference term. This article uses a fixed effects panel data model to control for possible variable omissions. The measurement results all show the estimation results that include fixed effects and time fixed effects. Adding product fixed effects can control for various characteristics that may affect the export margin of a certain type of product itself; Adding time fixed effects estimation can help this study control for some situations where time may affect the export margin.

2.2 Empirical results and analysis

1)The Impact of Anti Subsidies on Intensive Margins.

This article uses Stata software to perform regression analysis on the data samples. The specific results are shown in Tables 2 and 3, where Table 2 shows the regression analysis results of the intensive margin and Table 3 shows the regression analysis results of the extended margin. In Table 2, this article takes the intensive margin of China's exports as the dependent variable, the four proxy variables of countervailing measures as the core explanatory variables, and includes the control variables mentioned above for regression analysis. In the regression results of Table 2, the regression coefficient of the binary variable Initiation is negative and statistically significant, indicating that it has a significant "deterrent effect" on the intensive margin of exports when initiating anti subsidy investigations.

The control variables all have a significant impact on the intensive margin, with different directions of influence[6]. The average annual growth rate of GDP has a positive impact on the intensive margin, indicating that the intensive margin will be influenced by macroeconomic factors such as economic growth. That is, in the context of good global economic development, China's export trade will expand outward along the intensive margin. The average tariffs of the United States, the European Union, and Japan are used to represent the tariff barriers faced by Chinese products when exporting to countries around the world. The results show that an increase in tariff barriers will significantly inhibit China's outward expansion along the intensive margin of exports. The regression coefficient of the Variable Free Trade Agreement (FTA) is positive and statistically significant, indicating that the signing of the FTA will not only have a positive impact on the overall development of China's foreign exports, but also lead to the outward expansion of foreign export trade along the expansion margin. The estimated coefficient of Revealed Comparative Advantage Index, (RCA) is significantly positive, indicating that a certain type of export product has a comparative advantage compared to similar products in other countries. Therefore, this type of product is more likely to expand outward along the intensive margin.

Table 2. Factors Influencing China's Export Intensive Margins

	（1)	（2)	（3)	（4)
Constant	8.555*** (0.0754)	8.533*** (0.0753)	8.543*** (0.0748)	8.560*** (0.0739)
Initiation	0.0104* (0.0178)			
Number		0.0183** （0.0103)		
Injury			0.0232*** （0.0124)	
Dutyrate				0.0111*** (0.0179)

	（1）	（2）	（3）	（4）
GDP	0.0918** （0.0478）	0.0978** (0.0478)	0.0967** （0.0478）	0.0918** （0.0478）
Tariff	-0.0918*** （0.0185）	-0.908*** （0.0554）	-0.913*** （0.0553）	-0.920*** （0.0553）
FTA	0.121*** （0.0185）	0.121*** （0.0184）	0.121*** （0.0186）	0.120*** （0.0187）
RCA	0.00584*** （0.00440）	0.0585*** （0.00438）	0.0580*** （0.00439）	0.0586*** （0.00440）
Observations	273	273	273	273
Adjusted R^2	0.502	0.525	0.523	0.52

Note: The self signed values above the cell indicate the test coefficient, and the standard deviation is indicated in parentheses*** The estimated coefficients are significant at the 10%, 5%, and 1% levels, respectively.

Source: The author calculated the results based on Stata software.

Overall, the econometric model (1) meets the requirements of empirical analysis well. There is a significant relationship between the regression results of the core explanatory variable and the intensive margin and the extended margin: that is, trade partners launching anti subsidy investigations on Chinese products will have a deterrent effect, thereby suppressing the intensive marginal growth of Chinese exports. The trade diversion effect of anti subsidy investigations is highlighted and stronger than its trade restriction effect. Chinese export enterprises should take active and effective measures when responding to anti subsidy investigations in export destination countries.

2)The Impact of Anti Subsidies on Intensive Margins.

The export growth of products along the expansion margin is beneficial for avoiding the drawbacks of excessive dependence on certain important export products and certain export destination countries[7]. This indicates that this is beneficial for diversifying risks in trade export activities and increasing market diversification. Therefore, the impact of countervailing measures on the expansion margin should be a focus of attention.

The expansion margin of China's exports is taken as the dependent variable, and whether a certain type of product has encountered a countervailing investigation (Initiation) is taken as the explanatory variable[8]. At the same time, the control variable mentioned above is included in the regression analysis. In column (5) of Table 3, the estimated coefficient of Initiation is -0.198, which is significant at the 10% level, indicating that when the countervailing investigation is initiated, it suppresses the expansion margin of exports and thus produces a significant "deterrent effect". The regression results (6) to (8) in Table 3 are the results of regressing the indicators of countervailing measures, respectively. In regression result (2), the regression coefficient of variable Number is negative and statistically significant, indicating that the number of subsidy investigation cases initiated by the export destination country for a certain product from China will suppress the expansion margin of the export product. The binary variable Initiation shows whether the export destination country has initiated subsidy lawsuits

against products from China, while the number of anti subsidy investigation cases reflects the frequency of a certain type of product being subject to anti subsidy investigations, thus demonstrating the intensity of China's export products being subject to anti subsidy measures. In the regression results (5) and (6), the regression coefficients of the variable Initiation are numerically greater than the variable number, reflecting that the trade transfer effect of the countervailing survey is stronger than its trade restriction effect.

Table 3. Factors influencing the marginal expansion of China's exports

	（5)	（6)	（7)	（8)
Constant	212.5*** (3.322)	214.1*** (3.298)	214.1*** (3.267)	212.2*** (3.256)
Initiation	-0.198* (0.0786)			
Number		-1.069** （0.0457)		
Injury			-1.392** （0.0539)	
Dutyrate				-0.0246*** -(0.0789)
GDP	0.124*** （0.0210)	0.0846** (0.0208)	0.0767** （0.0206)	0.130*** （0.0212)
Tariff	-13.04*** （2.459)	-12.22*** （2.430)	-12.29*** （2.416)	-13.21*** （2.436)
FTA	2.345*** （0.0816)	2.338*** （0.0807)	2.342*** （0.0805)	2.386*** （0.0822)
RCA	0.0375*** （0.0193)	0.0357*** （0.0191)	0.0387*** （0.0192)	0.0394*** （0.0194)
Observations	273	273	273	273
Adjusted R^2	0.580	0.582	0.583	0.581

Note: The self signed values above the cell indicate the test coefficient, and the standard deviation is indicated in parentheses*** The estimated coefficients are significant at the 10%, 5%, and 1% levels, respectively.

Source: The author calculated the results based on Stata software.

On other control variables, the sign and significance of the regression coefficients are consistent with the regression results in Table 2. The regression coefficients of variables GDP, FTA, and RCA are positive and statistically significant, indicating that as the integration of China's economy with the world economy deepens, changes in the global economy can directly affect changes in China's economy, thereby driving China's exports to grow along the expansion margin. The variable tariff regression coefficient is negative and statistically significant, and is numerically greater than the regression results in Table 2, indicating that tariff barriers have a greater inhibitory effect on

the expansion margin than the intensification margin. In summary, the variable regression coefficients are not only statistically significant but also highly similar or similar to the results in Table 2.

In summary, by comparing the results of Tables 2 and 3, this article believes that the absolute values of the estimated coefficients for the number of countervailing investigations initiated against a certain product, the number of confirmed damages caused, and the average duty rate in Table 2 are all smaller than those in Table 3. This indicates that the initiation of "countervailing" measures has a greater inhibitory effect on the expansion margin than on the promotion effect on the intensification margin, The impact of countervailing measures on the expansion margin is greater than that on the intensification margin.

3 Experimental Results

3.1 The "anti subsidy" investigation cannot offset the price advantage and product competitiveness of Chinese electric vehicles

The strong export of electric vehicles in China is not due to receiving huge national subsidies, but because of the strong competitiveness of China's industrial chain under full market competition. China's electric vehicle subsidies have been completely withdrawn by the end of 2022, and in order to regulate market order through fair competition, the country requires local governments to cease providing subsidies for electric vehicles from the end of 2018. According to data from UBS's research on the Chinese automotive industry, it was found that BYD's cost competitiveness is significant through the dismantling of the BYD Seal model. BYD's self-made parts rate is about 75%, and the cost of the Seal is about 15% lower than that of the domestically produced Model 3 in the same level. In summary, the cost competitiveness of Chinese brand electric vehicles is not only affected by the lower cost of production factors in China, but also benefits from the strong strength of the Chinese automotive industry chain and supply chain, as well as the vertical integration and integration capabilities of car companies themselves.

The cost competitiveness of Chinese brand electric vehicles mainly benefits from factors such as lower production factor costs in China, the first mover foundation and strong strength of the automotive industry and supply chain, as well as the vertical integration and integration capabilities of automotive companies themselves. According to data from UBS's research on the Chinese automotive industry, it was found that BYD's cost competitiveness is significant through the dismantling of the BYD Seal model. BYD's self-made parts rate is about 75%, and the cost of the Seal is about 15% lower than that of the domestically produced Model 3 in the same level. Taking the Chinese made Volkswagen ID. series model as an example, this model entered the European market through parallel import, and after adding 10% tariffs (MFN), shipping costs and other various expenses, it is still about one-third lower than the price of the same European made model. In addition, the prices of other electric vehicles under Volkswagen in China are also significantly lower than those in Germany. According to

the official website of Volkswagen Germany, ID The starting price for the 4 pure version is 40300 euros (325000 yuan), the starting price for the ID. 4 pro version is 46300 euros (374000 yuan), and the GTX version is 53300 euros (429000 yuan).

The calculation process of countervailing duty is very complex and highly related to the facts investigated by the European Commission, making it difficult to predict in advance. Preliminary assessment shows that the EU's imposition of "anti subsidy" tariffs on electric vehicles may range from 10% to 50%. The punitive tax rate for companies that do not cooperate with the survey and do not provide sampling questionnaires is relatively high (up to 50%), while the tax rate for companies that cooperate with the survey is relatively low, generally around 10% based on historical experience, with only one case exceeding 20%. Based on the comparison of electric vehicle prices in the European market, although the current European pricing of MG 4 and BYD Atto 3 is not significantly lower than several higher selling European models such as Peugeot e-208, Skoda Enyaq, and Hyundai Kona, the domestic prices of MG 4 and BYD Atto 3 are significantly lower. This is mainly based on a comprehensive consideration of the pricing strategy of the enterprise and the high configuration of the product. If Chinese electric vehicles are able to readjust their pricing strategies or further reduce costs during the "anti subsidy" investigation period (usually ending within 12 months, no later than 13 months), ultimately achieving further reductions in the selling prices of European market models, **we believe that even if the "anti subsidy" investigation is established or cannot obtain purchase subsidies in markets such as France and Italy, It cannot completely offset the price advantage and product competitiveness of Chinese electric vehicles in the European market.**

With the rise of trade protectionism and anti globalization, countries such as Europe and America have refused to grant China market economy status and have taken trade restrictions such as "dual anti" investigations on China's production and export of automobiles, photovoltaics, and other products, hindering the orderly development of global trade. Since 2008, European and American countries have launched multiple "dual anti" investigations and imposed high punitive tariffs on Chinese tire products, weakening the competitiveness of Chinese export products and leading to a significant decrease in tire export volume. In response to the restrictions imposed by major countries such as Europe and the United States on "dual anti" investigations, reducing tariffs and logistics costs, Chinese tire companies have invested and built factories in Southeast Asia and Eastern Europe, such as Thailand and Vietnam, while increasing their efforts to expand overseas markets. In recent years, the EU anti subsidy investigations against China have mainly focused on the photovoltaic field. On January 19, 2022, the European Union decided to impose a countervailing duty of 5.1% and 10.3% on two Chinese production enterprises of fiber optic cables, 7.8% on cooperative enterprises under countervailing investigations, and 10.3% on non cooperative enterprises. Table 4 lists the anti subsidy investigations initiated by the European Union against China in recent years

Table 4. List of EU Anti Subsidy Investigation on Chinese Products

No.	Products involved in the case	Filing time	Final decision time	Findings
1	Electric Vehicle	2023/10/4		under investigation
2	Graphite Electrode	2021/11/18	2022/7/20	No measures taken to close the case - applicant revocation
3	Optical Cable	2020/12/21	2022/1/19	Positive final determination - tax rate5.1%-10.3%
4	Aluminum conversion foil	2020/12/4	2021/12/22	Positive final determination - tax rate8.6%-18.2%
5	Hot Rolled Stainless Steel Plate and Coil	2019/10/10	2020/11/9	No measures taken to close the case - applicant revocation
6	Glass Fiber Fabric	2019/5/16	2020/6/15	Positive final determination - tax rate 17.0%-30.7%
7	Electric Bicycle	2017/12/21	2019/1/18	Positive final determination - tax rate3.9-17.2%
8	truck\Passenger Car Tires	2017/10/14	2018/11/12	Positive final determination -3.75-57.28€/per-unit
9	Hot-rolled Coil	2016/5/13	2017/6/9	Positive final determination - tax rate4.6%-35.9%
10	Cold Roll Stainless Steel	2014/8/14	2015/7/24	No measures taken to close the case - applicant revocation
11	Polyester Staple Fiber	2013/12/19	2014/12/17	No measures taken to close the case -De Minimis Subsidies
12	Fiberglass Filament	2013/12/12	2014/12/23	Positive final determination - tax rate 4.9%-10.3%
13	Solar Glass	2013/4/27	2014/5/14	Positive final determination - tax rate 3.2%-17.1%
14	photovoltaic	2012/11/8	2013/12/5	Positive final determination - tax rate3.5%-11.5%（Price commitment closed, measures terminated from September 3, 2018)
15	Bicycle	2012/4/27	2013/5/23	No measures taken to close the case - applicant revocation
16	Color Coating Plate	2012/2/22	2013/3/15	Positive final determination - tax rate 13.7%-44.7%
17	Data Card	2010/9/16	2011/3/3	No measures taken to close the case - applicant revocation
18	Art Paper	2010/4/17	2011/5/14	Positive final determination - tax rate 4%-12%

Source: Organized based on public information.

3.2 It will further promote Chinese enterprises to accelerate the pace of localized production in Europe

In May 2023, Great Wall Motor announced that it would achieve localized production in Europe, with Germany, Hungary, and the Czech Republic all within its consideration, but has not yet decided whether to build a new factory or acquire an existing one. In July, SAIC Group announced that it would build a complete vehicle factory in Europe. In September, BYD announced the establishment of its first complete vehicle factory in Europe and will determine its address by the end of 2023. Not only vehicle companies, but also "top" power battery companies are accelerating their European layout. In addition to entering the earlier CATL, SVOLT, and AESC, in June and July 2023, EVE Battery, SUNwoda and BYD all announced plans to build factories in Europe.

3.3 The Regulations on Foreign Subsidies for Distorted Internal Markets will increase the difficulty for Chinese companies to acquire existing factories in Europe.

In July 2023, the implementation rules of the EU's Foreign Subsidies Regulation (FSR) on Distorted Internal Markets officially began to apply. This regulation stipulates that if a foreign subsidy may enhance a company's competitive position in the EU market and actually or potentially harm competition in the EU market, it should be considered to have a distorting effect on the EU market. FSR also traced the time frame of the investigation back to three years before the merger or public procurement bidding. Starting from October 12, 2023, enterprises participating in M&A transactions or public procurement bidding in the European Union who have obtained foreign subsidies in the first three years and met the relevant declaration threshold must make a prior declaration to the European Commission. Only after obtaining approval from the European Commission can they complete the M&A delivery or have the opportunity to win the public procurement contract. This means that Chinese automotive companies are once again finding it more difficult to localize by acquiring existing European factories, especially by acquiring some relatively excellent targets[9].

3.4 If the EU initiates additional anti-dumping investigations, the acquisition of China's "market economy status" will seriously affect the determination of dumping margins.

The dumping margin refers to the difference between the export price of imported products and their normal value, and is the basis for imposing anti-dumping duties. Taking the MG model with high sales in Europe as an example, its European price ranges from 31000 to 37000 euros (approximately RMB 240000 to 290000), and the domestic market price ranges from 120000 to 180000 yuan. If the EU can recognize China as a "market economy country" when launching an additional anti-dumping investigation on electric vehicles in China, then the export price of MG models is significantly higher than the domestic selling price, and there is no dumping problem. But the EU has al-

ways regarded China as a "non market economy country" and will use prices from alternative countries to determine normal prices. If countries with immature electric vehicle markets such as India are chosen as substitute countries for comparison (MG India is priced at around 35000 euros), it is more likely to be judged as dumping behavior.

4 Conclusion

Although the anti subsidy measures of trading partners have significantly promoted the intensive margin of China's export trade, they have seriously affected the suppression of marginal production. Therefore, the sustained growth of China's foreign trade is facing serious challenges. Various trade barriers such as anti subsidies seriously constrain China's defense against diversified exports. Due to the fact that increasing export trade along the expansion margin is more conducive to diversifying export risks, in order to ensure the sustained growth of China's electric vehicle exports, it is necessary for the Chinese electric vehicle industry to take more proactive measures to respond to countervailing measures, in order to reduce the negative impact on China's electric vehicle industry and trade.

4.1 At the National Level

1)use high-level dialogue mechanisms such as consultation dialogue and mixed committees to strengthen trade coordination and industry exchanges[10].

It is recommended to use mechanisms such as the China Europe Economic and Trade High level Dialogue, the China Europe High level Strategic Dialogue, and the China Europe Environment and Climate High level Dialogue to strengthen strategic dialogue and cooperation exchanges in the electric vehicle industry between China, Germany, and Europe, properly manage differences of opinions, promote the establishment of a battery carbon footprint management mutual recognition mechanism between China and Europe, and ensure the security and stability of China's electric vehicle supply chain.

2)Promote the implementation of the strategy of upgrading the free trade zone, and focus on negotiating the elevation specification free trade agreement with other member countries in the region.

According to the analysis in the third part of the article, it is inferred that the signing of free trade agreements can significantly affect the expansion of China's export margin, while the proposal of tariff barriers will significantly reduce China's export margin. Therefore, China should actively expand its circle of friends in the free trade zone, promote negotiations on free trade agreements such as the Comprehensive and Progressive Trans Pacific Partnership (CPTPP), the Gulf Cooperation Council, Israel, Norway, China, Japan, and South Korea, as well as the upgrading process of the China-ASEAN Free Trade Area 3.0 version, and sign free trade agreements with more key automobile exporting countries and regions. We should actively carry out the first trial of international high-level free trade agreement rules

docking, especially the provisions on intellectual property, state-owned enterprises, labor protection, etc. in the CPTPP and the US Mexico Canada Free Trade Agreement, to guide enterprises to enhance compliance awareness, force industry optimization and upgrading, and improve international market competitiveness. In addition, we should focus on negotiating with ASEAN and Japan, South Korea, and Europe to sign a multi bilateral FTA, and strive to achieve practical tax reduction in the second phase of China South Korea and China ASEAN 3.0 upgrade negotiations.

4.2 At the enterprise level

1)establish a "dual-anti" warning and response mechanism and actively respond to lawsuits.

Enterprises should first fully understand and familiarize themselves with the laws, regulations, and relevant procedures of the "dual anti" policy. Enterprises need to determine whether they have the qualifications to respond to lawsuits and actively respond based on their own direct or indirect export records to the European Union during the investigation period, as well as the types of exported products, in order to avoid being subject to the highest unified "anti subsidy" or "anti-dumping" tariffs imposed by the European Union. When dealing with EU related lawsuits, companies should form a professional legal team consisting of Chinese and EU lawyers to ensure smooth communication with relevant EU government agencies[11].

2)enterprises should establish effective risk prevention and control mechanisms and enhance the comprehensive compliance capability of enterprises.

In the early stage of investment, enterprises should conduct thorough research and due diligence to assess the risks of trade remedy investigations; During and after the investment period, enterprises should also make appropriate adjustments to their internal control systems, processes, and operations based on the dynamic of "anti-dumping and anti subsidy" measures, and do a good job in warning and responding to "anti-dumping" and "anti subsidy" measures. Enterprises should sort out the records of past government subsidies received, establish a system to record possible future government subsidies, and provide targeted training for company executives to cope with the "dawn raid"is to Strengthen the ability to respond to new barriers, such as carbon barriers (carbon border mediation mechanism, battery and waste battery regulations), data barriers (general data protection regulations), etc; At the same time, compliance requirements for supply chains within Europe must also be met, such as Supply Chain Due Diligence, Corporate Sustainability Reporting Directive, Corporate Sustainability Due Diligence, and Forced Labor Regulations[12].

3)accelerate the localization development of enterprises in Europe, implement diversified market strategies, and adjust pricing strategies in the European market.

Chinese automotive and power battery companies should develop localized production and operation in Europe in a strategic, hierarchical, and step-by-step manner, taking into account the premise of preserving appropriate survival and development space for local enterprises, and deeply integrating into the European electric vehicle industry chain. At the same time, guide enterprises to actively explore markets in ASEAN, Central Asia, the Middle East, Latin America, and other regions, avoid excessive reliance on the EU market for electric vehicles, and minimize the adverse effects of trade measures such as countervailing measures on export margins, especially expansion. Given the huge cost advantage of Chinese electric vehicles, companies are targeting the European market, especially in the special stage after anti subsidy lawsuits or final rulings, to avoid significant price fluctuations and tax evasion through false customs declaration[13].

References

1. Regulation (EU) 2016/1037 of the European Parliament and of the Council of 8 June 2016 on protection against subsidised imports from countries not members of the European Union (codification) [EB/OL].
2. Kee, H.L. Nicita, A., Olarreaga, M. Estimating Trade Restrictiveness Indices[J]. Economic Journal,2009,119(534):172-199.
3. Henn, C., McDonald, B.Crisis protectionism: The Observed Trade Impact[R].IMF Economic Review, 2014,62(1):77-118.
4. Huang Zhihong. An Exploration of the Motivation of Countries around the World's Anti dumping and Anti Subsidy Measures Against China and the Influence of Recognizing China's Market Economy Status [D] Fujian: Xiamen University. 2018.
5. Wang Xiaosong, Shi Bingzhan Xie Shenxiang How Trade Barriers Affect China's Export Margins_Empirical research using anti-dumping as an example[J] Economic Research, 2014(11): 58-71.
6. Liang Junwei, Wei Hao. Non tariff measures and China's export margin. Research on Quantitative Economy, Technical Economy[J]. 2016(03): 3-22. http://images. mofcom. gov. cn/trb/201809/20180928150612248.pdf.
7. Jonesday, Reining In Foreign Subsidies Distorting the EU Market: The European Commission Takes One Step Closer[EB/OL]. June 2021.
8. Tang Zhongkun. A Study on the Motivation of the EU's Implementation of Non tariff Barriers to China-Analysis based on negative binomial regression model [D] Shandong: Shandong University, 2021.
9. Hu Jianguo, Chen Yujin. Draft EU Foreign Subsidies Regulations and WTO Compliance Analysis [J]. European Research, 2021, 39 (5): 101-102.
10. Li Ben, Xu Huanyan. Regulatory Motivation, Review Framework, and China's Response to Overseas Investment Subsidies: Taking the EU's Draft Regulations on Foreign Subsidies as a Starting Point [J]. Intertrade, 2021 (11): 91.
11. Zhang Sheng, Li Ni. EU Foreign Subsidy Legislation: Development, Impact, and China's Response [J]. International Trade, 2022 (03): 54-55.

12. Yang Jingyao. The Characteristics, Motivation and China's Response to Cross border Production Subsidy Rules: From the Perspective of the EU's Anti Subsidy Cases against Related Products in Egypt and Indonesia[J] Intertrade. 2023 (03): 24-29.
13. Huang Juan. Analysis of the Trends and Legitimacy of EU Regulation on Foreign Subsidies[J]Practice in Foreign Economic Relations and Trade. 2023(01):38-43.
https://www.jonesday.com/en/insights/2021/06/reining-in- foreign- subsidies- distorting-theeu- market-the-european-commission-takes-one-step-closer.