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An Overseas Competitiveness Model for New Energy Vehicle Enterprises to Reduce the Risk of International Trade Rule Conflicts

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Abstract: *On 4 October 2023, the European Commission formally announced launched an anti-subsidy investigation into the imports of new battery electric vehicles (BEVs) originating in China. Provisional conclusions were unveiled on 12 June 2024, and on 4 July the Commission imposed provisional countervailing duties on BEV imports from China. The EU countervailing investigation reflects the difficulties faced by China's manufacturing industry to go overseas in the context of rising trade protectionism and increasing competition of international economic and trade rules. The rapid development of China's new energy vehicle industry has triggered a high degree of vigilance in other countries. The EU's move will significantly raise the barriers to China's new energy vehicles, and may further spread to other manufacturing industry areas, damaging the international image of Chinese enterprises and undermining their confidence to go overseas. Based on the overseas competitiveness model for new energy enterprises, it is suggested to optimize the enterprises' overseas strategy from three dimensions: supply chain, market and ecology, so as to reduce the risks caused by the conflict of economic and trade rules, and improve the competitiveness of China's new energy enterprises in the international market.*

Keywords: *Electric Vehicles, International Trade Rules, Competitiveness Model, Ecology*

1. Introduction

The European Union's anti-subsidy investigation into China's electric vehicles has drawn significant attention from both domestic and international politicians and scholars, sparking renewed discussions about the developmental trajectory of China's new energy vehicle industry. Numerous foreign studies indicate that government incentives can effectively enhance consumers' willingness to purchase electric vehicles[1]. From the perspective of consumer purchasing intentions and behaviors, some scholars use game theory models to analyze the interactions between the government and consumers, suggesting that providing financial incentives and improving infrastructure play a crucial role in promoting the adoption of electric vehicles, as these strategies effectively reduce the initial costs for potential electric vehicle buyers[2]. Additionally, strengthening green education, improving product certification systems, and emphasizing environmental and economic value of products can stimulate consumers' green purchasing intentions, thereby offering insights for policymakers and electric vehicle manufacturers[3]. A substantial body of current research has included much focus on demand-side factors.

Domestic attention regarding the new energy vehicle industry primarily centers on three aspects: the current situation of development, existing challenges, and potential measures. In terms of the circumstances of the industry's development, China's EV industry is experiencing rapid growth, with a sharply rising market share and significant technological advancements, particularly in battery, motor, and electronic control system [4]. The expansion of EV market has driven substantial growth in the downstream lithium battery industry, positioning China as a key player in the global lithium battery supply chain [5]. Relying on its comprehensive advantages in cost, technology and supply chain, and supported by both market dynamics and policy support, China's international competitiveness in the new energy vehicle industry has been steadily increasing. Given the significant growth in export and active expansion into Europe's high-end market, China has become a central force in global sustainable transition and green manufacturing.

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Existing research has analyzed the challenges faced by new energy enterprises from both domestic and international perspectives. Domestically, overcapacity is a significant issue in China's lithium battery sector, fluctuations in commodity prices would inevitably impact the costs and supply chains of downstream companies, the fierce domestic competition and increasing product homogeneity have directly limited the profit margins and the growth rates, thus international expansion has become the only choice for China's new energy vehicle industry [4-5]. In this light, expanding into international markets allows companies to gain greater profit and business growth, enhance global influence, meanwhile accumulate operational experience, promote iterative upgraing of technology, and bring international experience back to the domestic industry to further stimulate domestic growth. However, it is noticed that in the process of internationalization despite the huge number of exports, Chinese brands usually have weak profitability, limited brand influence, and low market recognition abroad, indicating that their international expansion has still been at an early stage. Both internationalization and localization capacities remain underdeveloped.

From the perspective of international trade environment, some researchers find that the rise of protectionism has posed great challenges for the overseas expansion of Chinese enterprises. For instance, both the US and EU have implemented varying levels of trade protection measures against China. The US has adopted relatively direct and strict measures, while the EU is inclined to set up entry barriers by increasing localization requirements and promoting supply chain integration. The containment strategies may increase the cost of international expansion for Chinese manufacturing further elevating trade barriers [6] . Agaist the backdrop of intensified global market competition, the US and EU are working to establish their own supply chain systems. Besides, strict regulations on carbon emissions also serve as a significant challenge. In a word, the uncertainty in political and economic environments represents the primary risk for the entire industry.

Existing research has not included a systematic analysis of the causes and consequences of the EU's anti-subsidy investigation and has not explored how Chinese EV companies might respond to this challenging environment at the micro level. China's EV industry is at a critical juncture for global expansion. This paper aims to clarify the factors contributing to the current developing problems and suggesitons optimize overseas expansion strategies, so as to enhance the global competitiveness of EV companies, and mitigate the risk of anti-subsidy measures extending to other manufacturing sectors.

2. Conflicts of International Trade Rules

2.1. WTO SCM Agreement

Subsidies and countervailing measures are inherently interconnected. Given the different stages of industrial development across countries, subsidies are necessary to help safeguard economic interests and achieve policy goals under certain conditions. To minimize the adverse effects of subsidies on other industries and to eliminate unfair competition in international trade, fair and reasonable countervailing rules are needed to ensure the effective and orderly conduct of global trade. The Agreement on Subsidies and Countervailing Measures (SCM) under the WTO framework, has established a solid foundation for regulating the provision of subsidies and the use of countervailing measures.

This agreement clearly defines the concepts of "subsidy" and "specificity". All three basic elements must be satisfied in order for a subsidy to exist: (i) a financial contribution (ii) by a government or any public body (iii) which results in a benefit. categorizing specific subsidies into prohibited and actionable subsidies; only specific subsidies fall under the agreement's provisions [7]. Only specific subsidies are subject to the SCM Agreement disciplines. Specificity is further divided into four types: (1) enterprise-specificity, targeting a particular company or companies; (2) industry-specificity, targeting a particular sector or sectors certain industries receive subsidies; (3) regional specificity, targeting producers in specified parts of its territory; and (4) prohibited subsidies, targeting export goods or goods that use domestic inputs. All specific subsidies into one of two categories: prohibited and actionable. According to the agreement, members may not impose countervailing measures unless a causal link is established between subsidized imports and injury to the domestic industry. A country can use the WTO's dispute-settlement procedure to seek the withdrawal of the subsidy or the removal of its adverse effects. Or the country can launch its own investigation and charge countervailing duty on subsidized imports that are found to be hurting domestic producers.

Some deficiencies of the SCM Agreement have gradually emerged during implementation, such as exclusion of certain forms of subsidies, as well as transparency issue arising from countries' failure to

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accurately report their subsidies to the WTO which leads to more suspicion and mistrust among the members [8]. These gaps call for more detailed, comprehensive guidelines to improve subsidy regulations.

In April 2022, IMF, OECD, World Bank and WTO jointly released the report *Subsidies, Trade, and International Cooperation*, which focused on some long-standing issues with subsidies and attempted to integrate perceptions of subsidies in the new context. Its major tasks are to improve current subsidy rules, strengthen international cooperation on subsidies, and improve transparency, openness and predictability of global trade [9-10]. According to the report, subsidies have been pervasive and continually increasing, prompting unilateral trade defense measures, weakening public support for open trade, exacerbating trade tensions, and obstructing other global trade priorities. To reduce harmful subsidies and improve the effectiveness of subsidy policies, it is suggested to collect, organize and share data to evaluate the cross-border impacts of different forms of subsidies, providing data support as a basis for decision-making. A such, it is expected to further increase transparency and analytical capacity, strengthen intergovernmental dialogue, and reinforce international rules. However, as an independent study by the secretariats of international organizations, this report has limited influence and fails to promote negotiations or updates to the rules. Additionally, it does not address some other critical issues such as discriminatory treatment of state-owned enterprises and the misuse of countervailing measures, which also deserve attention.

2.2. EU Foreign Subsidies Regulation (FSR)

Under the WTO framework, the EU has recently initiated only a small number of anti-subsidy cases with limited impact from imposed duties. Amid economic stagnation in Europe, driven by the need to improve market competition environment and to support industrial renewal, the European Commission released the *White Paper on levelling the playing field as regards foreign subsidies in the Internal Market* on June 17, 2020, claiming that the EU's open trade and investment environment was being challenged by unfair economic activities funded by non-EU countries. On May 5, 2021, the Commission proposed a new Regulation to address distortions caused by foreign subsidies in the Single Market which received final approval from the European Council on November 28, 2022. On January 12, 2023, the *Foreign Subsidies Regulation* (FSR) entered into force and it applies since July 12, 2023. Since October 12, 2023, the notification obligation for concentrations and public procurement above certain thresholds applies.

The Regulation points out that it is necessary to complement existing Union instruments with a new tool to effectively deal with distortions in the internal market caused by foreign subsidies in order to ensure a level playing field. In this light, it introduces a new regulatory dimension – granting the European Commission the power to independently review, monitor and block mergers, acquisitions, public procurement and other market activities, thereby expanding the scope of previous rules. The European Commission has also indicated that it will focus on subsidies from large economies such as China, Japan, and the United States, as well as, in some cases, Korea and Saudi Arabia. It also explicitly identifies subsidies under the US *Inflation Reduction Act* as a primary concern.

Concurrently, several European countries, including Germany, France, and the Netherlands, have tightened their EV subsidy policies. For instance, a subsidy program initially set to run until the end of 2024 would terminate early on December 17, 2023 due to budget constraints in Germany. This program has provided approximately €10 billion in subsidies for around 2.1 million electric vehicles since 2016. A spokesperson for the Ministry of Finance emphasized that "the German government has no choice due to insufficient funds." The phasing out of subsidies could likely have a negative impact on the competitiveness of its local automakers.

2.3. US Inflation Reduction Act (IRA)

Accelerating the development of the domestic electric vehicle supply chain is a pillar of the Biden administration's green industrial strategy, which seeks to integrate US reindustrialization with decarbonization efforts. In August 2022, President Biden signed the *Inflation Reduction Act of 2022* (IRA) which will invest $369 billion in Energy Security and Climate Change programs over the next ten years. This includes deploying more clean vehicles and supporting the domestic EV supply chain and charging infrastructure. The IRA features consumer tax incentives as well as investment and production subsidies, providing substantial incentives for the local EV enterprises while excluding imported EVs from the list of eligible subsidies. This approach aims at promoting the production and application of EVs and other green technologies within the US, so as to enhance domestic industry competitiveness. It is believed that IRA embodies a strong unilateral and protectionist stance and constitues discriminatory treatment of foreign industries, sparking strong discontent from many countries including US allies in Europe. As

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such, this transatlantic dispute has exposed differing priorities between the US and the EU on EV-related issues including economic efficiency, WTO rules, and national security [11].

In May 2024, the Biden administration announced a series of tariff measures on high-tech products imported from China, including a 100% tariff on EVs and a 25% tariff on EV batteries [12]. This move aims to further protect US strategic industries from competition, marking a continuation and escalation of the trade war. From a domestic political perspective, Biden intends to create more job opportunities for the middle class by increasing investment in clean energy and semiconductor sectors, thereby consolidating support from voters in regions where these industries are based. It is also expected to attract swing voters by taking a tough stance on China. The Biden Administration has conducted the investigation of national security risks review of connected vehicles from China [13]. In addition, during 2024 election, Trump has pledged to take further steps including restricting bilateral investment and outright banning certain Chinese products from the US market. As such, protectionist policies may persist in US trade policy and US-China trade relations for the foreseeable future.

3. Rapid Growth of China's EV industry Triggered EU's Concerns

3.1. EU Conducted Anti-subsidy Investigation on China's EV Company

As of January 2024, China's production and sales of new energy vehicles account for over 60% of the global market share, ranking first in the world for nine consecutive years. The market share of Chinese electric vehicle brands in the EU rose from 1% in 2019 to 8% in 2022 and is projected to reach 15% by 2025[14]. Europe is a major export market for Chinese EVs, and the rapid expansion of China's EV industry has intensified EU concerns over its own industrial development and economic security. In line with WTO rules, EU trade anti-subsidy measures must establish that "imports benefit from countervailable subsidies" and that the "EU industry suffers material injury." As the European Commission stated, the purpose of the tariffs is to "remove the substantial unfair competitive advantage" of Chinese EV supply chains "due to the existence of unfair subsidy schemes in China."

On April 10, the European Commission published the *Working Document on Significant Distortions in the Chinese Economy in Support of Trade Defense Investigations*, indicating that China drives its new energy vehicle industry through state policies such as incentivizing companies that meet production targets and penalizing companies that fail, as well as offering subsidies for purchases. As the world's largest producer and exporter of EVs, China is seen as causing market distortions. In response, the EU has accelerated its anti-subsidy investigations into Chinese EV companies under the *Foreign Subsidies Regulation*. On October 4, 2023, the European Commission announced the commencement of a countervailing proceeding regarding imports of new battery electronic vehicles originating from China. This investigation marks a rare instance where the European Commission has self-initiated a countervailing proceeding without a complaint from third party.

On July 4, 2024, the European Commission issued a preliminary determination imposing provisional countervailing duties on Chinese-origin battery electronic vehicles, effective from 5 July 2024, with rates ranging from 17.4% to 37.6%. On Oct 29, European Commission concluded its anti-subsidy investigation by imposing definitive countervailing duties on imports of battery electric vehicles from China for a period of five years with effect from 30 October 2024. The investigation claimed that the BEV value chain in China benefits from unfair subsidization which is causing threat of economic injury to EU producers of BEVs. Sampled Chinese exporting producers will be subject to the following countervailing duties: 17.0% for BYD, 18.8% for Geely, 35.3% for SAIC. Other cooperating companies will be subject to a duty of 20.7%. Tesla will be assigned a duty of 7.8%. All other non-cooperating companies will have a duty of 35.3%. It is stated that the EU and China would continue to work towards finding alternative, WTO-compatible solutions that would be effective in addressing the problems identified by the investigation.

3.2. Data analyses on Subsidies of China's EV Company

In support of the European Commission's anti-subsidy investigation, the Kiel Institute for the World Economy in Germany published a report highlighting several significant findings. Firstly, according to publicly released data and relevant company annual reports, industrial subsidies in China would be three to nine times higher than those of large EU/OECD countries, amounting to €221 billion in 2019 or 1.73% of China's GDP[15] . Secondly, as an intersection of green transition and the "Made in China 2025" initiative, Chinese EV manufacturers receive substantial government support via consumer and supplier

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subsidies. For instance, direct subsidies to EV manufacturer BYD rose from €220 million in 2020 to €2.1 billion in 2022 [16]. Thirdly, the report argues that subsidies have not only significantly boosted domestic sales of Chinese EVs but also enhanced their competitiveness in entering and capturing foreign markets. Therefore, it suggests that the EU should use its anti-subsidy investigation into Chinese EVs as an opportunity for conducting negotiations with China.

According to estimates by the Center for Strategic and International Studies (CSIS), Chinese total government support totaled $230.9 billion from 2009 to 2023. From 2009 to 2017 as the sector was just getting off the ground, annual spending averaged around $6.74 billion, which roughly tripled during 2018-2020, and then has risen again sharply since 2021 [17]. On the other hand, the report also notes that subsidies as a proportion of total sales have sharply declined, from over 40% in the early years to 11.4% in 2023, which reflects a pattern in line with heavier support for infant industries then a gradual reduction as they mature. The average support per vehicle in China dropped to just under $4,800 in 2023, which is less than the $7,500 credit as part of the US Inflation Reduction Act. Moreover, it is acknowledged that Chinese EV manufacturers have achieved a first-mover advantage through improving quality, sales momentum at home, and the potential opportunities for overseas markets, with significant advancements in energy intensity, range and reliability of batteries. The overall design, infotainment systems, and autonomous capabilities are also continually improving, motivating the US and EU to actively develop their own industries and cultivate more affordable and high-quality products.

3.3. Anti-subsidy Investigation Poses Challenges for China's EV Company

EU tariffs on Chinese EVs might have a negative impact in short and medium term. Such protectionist measures will significantly increase barriers and uncertainty for Chinese EV companies entering the EU market. Due to the launch of the investigation, Chinese EV exports to the EU have already experienced decline, with a 19.6% year-on-year decrease in the first two months of 2024 according to customs data. From January to June 2024, exports of Chinese EVs to the EU's 27 member states fell by around 15% year-over-year to 220,000 units. In June, exports to the EU dropped to a 2024 low of 27,180 units showing a 25% decrease from the previous month and a 31% year-over-year decline. The sustainability of China's success in European EV market remains uncertain as tariff barriers will likely lead to a market share decline in the coming months.

Anti-subsidy investigations have been employed as a tool for the EU to target other sectors of Chinese industries, affecting Chinese companies' overseas projects, which may also be followed by other countries or regions. The EU has expanded investigations to Chinese railway vehicles, photovoltaics, and wind turbines, and is extending these measures to sectors like steel, medical equipment, and electromechanical manufacturing. From February to April, the EU scrutinized the Chinese rail vehicle corporation CRRC's participation in Bulgaria's locomotive public procurement; Chinese companies bidding in a Romanian solar project; and Chinese wind turbine suppliers in Spain, Greece, France, Romania, and Bulgaria. The investigations have become increasingly aggressive, shifting from procedural audits to unannounced inspections. On April 23, EU authorities raided production facilities of Chinese nuclear equipment company Tongfang Weishi in the Netherlands and Poland under the pretext of anti-subsidy investigations, severely harming Chinese companies' international image and eroding their confidence in going overseas. Additionally, anti-subsidy investigations are being combined with other regulatory tools. On April 24, the EU invoked the "International Procurement Instrument" (IPI) to probe Chinese medical device procurement, further undermining Sino-EU industrial cooperation.

The deepening and widening anti-subsidy investigations into China's EV sector may also affect global climate action and green transition goals. Europe's vehicle market will also suffer from the protectionist measures which may lead to higher green technology costs and a slower green transition. Hence, anti-subsidy measures targeting Chinese EVs may harm Europe's own industry and hinder global climate objectives. In this critical period of global green transition, the European business community has advocated for dialogue and decisions from rational perspectives that favor global green transition efforts.

For Chinese EV manufacturers, the European market is characterized as a coexistence of challenges and opportunities. The EU's attempts to establish tariff barriers may necessitate strategic adjustments and global supply chain restructuring. If Chinese EV manufacturers can effectively address the challenges and seize the opportunities, there is still a good chance of achieving sustainable development and growth.

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4. Overseas Competitiveness Model for EV Companies

4.1. Review of Competitiveness Model

Analyzing company competitiveness can offer illuminating insights for making business operation decisions and investment decisions. Constructing a Competitiveness Model is thus highly essential, which comprehensively reflects a company's competitiveness and future growth potential, and requires companies to establish core competitive advantages in terms of market, price, quality, production, function, service, and R&D. For stance, Michael Porter proposed Five Forces model in the early 1980s, which has been widely applied in strategic analysis to assess competitive dynamics within industries and has had a profound impact on company strategy formulation. This model identifies five competitive forces—supplier bargaining power, buyer bargaining power, threat of new entrants, threat of substitutes, and the intensity of competition from competitors in the same industry—as determinants of industry profitability. However, it is contended that the Five Forces model adopts a relatively static perspective, making it hard to dynamically observe changes and interconnections among factors, which presents certain limitations in reality. Further, Chinese scholars have introduced the concepts of "rigidity" and "flexibility," developing an analytical framework to analyze a company's capability based on three dimensions namely market, technology and management [18]. It is held that rigidity and flexibility complement and interact with each other, serving as the fundamental factors to enhance performances in competition. Based on previous studies, some scholars summarize that factors affecting company competitiveness typically can be into internal and external causes. Internal factors focus on a company's marketing and innovation abilities, while external factors primarily relate to its responsiveness to government regulations and market demands [19]. Many research works to sort out the key factors for enhancing competitiveness so as to provide suggestions for company development.

The current literature demonstrates a diverse range of approaches for evaluating company competitiveness. However, most models are too broad and complex, with limited focus on specific industries or needs. Future research should further ground itself in empirical realities, aligning with particular industry characteristics for more targeted and applicable insights. In a comparative study on the competitiveness of Huawei and Apple's smartphone products, scholars analyzed the overall competitiveness from the perspectives of supply chain, market, and ecosystem, finding that Huawei have a greater advantage in hardware performance and software ecosystem while it may heavily rely on international supply chains [20]. Building on this model, this paper aims to further develop a Competitiveness Model specific to the internationalization of EV companies, offering advice for them to optimize their overseas strategies and minimize related risks. It argues that establishing comprehensive competitiveness across the supply chain, market, and ecology dimensions would grant companies more competitive advantages in the global market.

4.2. Overseas Competitiveness model for EV Companies

In general, the international expansion of Chinese companies has gone through four phases: the initial stage, the exploratory stage, the rapid development stage, and the advanced development stage. The modes of global expansion have become increasingly diversified, and the international markets have continued to extensively grow. In recent years, the Chinese government has introduced a series of supportive measures to promote the overseas expansion of the vehicle industry in expanding export destinations, guiding the optimization of export systems, and building channel advantages. These policies have fostered a favorable environment for global market entry and promoted the globalization of the new energy vehicle industry. Simultaneously, rising global demand for EVs offers vast market opportunities for Chinese EV companies. Against the backdrop of intensifying conflicts in international trade and economic rules as well as escalating market competition, EV companies can rely on a competitiveness model to evaluate their strengths and weaknesses, adjust and refine their internationalization strategies, and further enhance their competitive edge. Herein, we propose an Overseas Competitiveness Model *(OCM)* with three dimensions: supply chain, market and ecology (Table 1).

Table 1: Overseas competitiveness model for EV companies

Supply chain competitiveness	Raw material supply: mineral resources, chemical materials, electronic components
	Key components: batteries, motors, electronic control, charging equipment

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	Other components: body, trim, chassis, engine system
	Technology: battery, automation, intelligent cockpit, Internet of Vehicles, etc.
Market competitiveness	International transportation network: Railway, Shipping
	International marketing network: sales and after-sales service system
Ecology competitiveness	Integration: compliance with local policies and rules
	Co-existence: differentiated competitiveness

Supply chain competitiveness (SCC) forms the foundation of a company's global expansion competitiveness, reflecting on profit margins across various links of the supply chain and related to supply chain network resilience and production cost control. Production costs directly affect profitability of a company and reflect its abilities in technology R&D, manufacturing processes, and quality management. The breakthrough of core technologies is crucial. Companies should prioritize product quality improvement and technology innovation, and also ensure supplies of key raw materials and core components. In this way, it is expected to maintain stable growth with reduced costs and increased revenue, so as to enhance both profitability and sustainable growth. To assess SCC, it should include both domestic supply capacity and local production capabilities in overseas markets. Companies can expand supply channels and ensure an adequate supply of materials by establishing research centers, manufacturing bases, battery system plants, and other facilities in destination countries to bolster local production.

$$SCC = (\sum W_{DP} + \sum W_{LP}) \times P \quad (1)$$

W_{DP}: Domestic production competitiveness

W_{LP}: Localized production competitiveness

Market competitiveness (MC) refers to a company's ability to capture market share, evidenced by market share and shipment volumes. For EV companies expanding globally, two critical aspects of MC are long-distance transportation capacity and international marketing capacity, which require abilities of cross-border coordination and resource integration. Firstly, signing medium- to long-term agreements with shipping companies can reinforce the resilience of transport networks. Secondly, companies must build and improve their international marketing service systems to strengthen brand promotion, sales presentation, and after-sales service capabilities, thus maximizing channel advantages. Actively building overseas production capacity will further reduce customers' operational costs and cooperation concerns by accelerating inventory turnover and realizing efficient procurement, which helps EV companies enhance risk resilience and better adapt to globalization demands. However, the increasing restrictions of trade regulations serve as a substantial and enduring obstacle to MC.

$$MC = \sum DLC = S \times f \quad (2)$$

DLC: Distribution and logistics competitiveness

S: shipment

f: prediction factor

Ecological competitiveness (EC) includes two key aspects: actively integrating into the local ecosystem and seeking acceptance in a symbiotic relationship. Integration into local ecosystems requires understanding local culture and adhering to regulatory policies, thus enhancing compliance in overseas operations. Companies must actively adjust to the varying regulatory standards imposed by different markets. For example, the European market proposed requirements of localized material recycling systems and set up strict carbon emission limits across the entire industrial chain. In this case, companies should pay attention to talent development and recruitment for overseas operations. More specifically, they may have to allocate efficient management teams, build flexible structures, and certainly show respect for local cultural and work habits. Think-tank consultants can provide end-to-end support for the companies including resource alignment, project management, and post-investment management, which can help reduce decision-making risks. Also, companies should strengthen cooperation with local financial institutions such as banks to formulate effective fundraising and investment strategies. Improving an efficient partner ecosystem and delivering satisfying customer experiences will then improve consumer loyalty, enhance brand reputation and influence, and achieve stable and sustainable

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growth. On the other hand, co-existence should be the ultimate goal for companies of enhancing competitiveness. Drawing from evolutionary theory in biology field to address market competition, companies must identify their ecological niche within the local ecosystem and cultivate unique competitive strengths within specific market segments when entering new markets, thus achieving differentiated competitive advantages.

For Chinese EV companies, particular attention should be paid to developing "soft" capabilities—adapting to various market demands and regulations, building localized service and partnership systems, looking for an appropriate niche and co-existing path with local companies. Addressing these aspects is crucial for EV companies expanding internationally. In this model, the core indicators of EC are *Regulatory Burden Adjustment*[1] and *Ecology Niche (EN)*.

In summary, the competitiveness model for EV companies going overseas is as follows:

$$EVIC = \frac{SCC \times MC}{1 + RB} \times EN \tag{3}$$

4.3. Case Study: Taotao Vehicles

Founded in 2015, Taotao Vehicle is a China *little giant enterprise* focusing on new energy intelligent mobility. The company's product portfolio includes intelligent low-speed electric vehicles and specialty vehicles, catering to diverse age groups and scenarios. According to the company's 2023 annual report, Taotao's revenue increased by 21.44% year-over-year driven by factors such as sales growth, reduced shipping costs and RMB depreciation. Net profits attributable to shareholders rose by 36.09%. Notably, the company derives 98.87% of its revenue from overseas markets particularly with a strong presence in North America and its business operations have also expanded across Europe, Asia, Oceania, and Africa.

In terms of SCC, Taotao has achieved vertical integration of independent research and manufacturing abilities of core components, including engines, frames, wheels, motors, batteries and primary cables. By nearby sourcing raw materials including steel, aluminum, engine parts, and frame components, Taotao can reduce procurement and production costs, thus enhancing profit margins while ensuring product quality. Additionally, the company has introduced a series of advanced equipment and invested in production line automation to optimize production processes and improve overall efficiency. Nearly 70% of Taotao's patents are in exterior design, indicating room for improvement in research and development capabilities. Besides, Taotao is also proactively expanding its international presence by establishing multiple sales centers, warehouses, logistics bases, and assembly plants in North America, and currently advancing plans to set up a factory in Vietnam. As such, it anticipates to develop a global manufacturing footprint.

In terms of MC, Taotao has channel strengths which conducted downstream retailers in EU and US, and has established a multi-channel online and offline marketing network with close cooperation with international retailers such as Walmart, Amazon and wholesalers and distributors. Those factors have strengthened its bargaining power to mitigate adverse effects from fluctuations in shipping costs, exchange rates, tariffs, and raw material price. The market resilience provides a solid foundation for Taotao's stable growth amid complex market conditions.

In terms of EC, Taotao has established an international professional team of over 100 staff members in the North American. It strives to optimize organizational structure, create efficient communication platforms, and develop a flexible operational decision-making mechanism, forming a smooth process from research and production to sales and after-sales services. Taotao also introduced equity incentives to enhance its long-term incentive mechanisms. Additionally, the company prioritizes hiring local talents and assembling local teams in order to ensure direct alignment with end markets, closely tracking and responding local consumer needs. As such, it is able to boost customer satisfaction, enhance brand credibility, and expand market share. This strong localization capability enables Taotao to swiftly adapt to shifts in the North American market and maintain a competitive edge in a challenging environment.

Based on the model, it can be seen that Taotao's core competitive strengths include cost advantages from a resilient supply chain, channel advantages from a multi-dimensional and well-penetrated marketing network, and ecological advantages from early localization strategies. These elements form the foundation for the company's sustainable growth in overseas markets. Specifically, Taotao's SCC is

[1] Regulatory Burden Adjustment: $1+RB$ accounts for the friction caused by foreign regulations, reducing the overall competitiveness based on the difficulty of compliance.

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rated with 7/10. It has demonstrated solid vertical integration in its supply chain particularly in core components, which helps control production costs, ensure product quality, and reduce procurement risks. But further development in technological innovation and global supply chain expansion are necessary to improve its competitiveness. Secondly, Taotao's strong distribution channels and international marketing capacity position makes it a leader in MC rated with 8/10. It should continue expanding into additional regional markets to further strengthen its global footprint. Thirdly, Taotao plays well by integrating into local ecosystems through strong localization strategies in North America such as establishing a professional international team, and is rated with 9/10 in EC. It is necessary to continually focus on adapting to local regulations to improve its overall competitiveness. Overall, the *OCM* underscores the importance of both "hard" factors in terms of supply chain and "soft" factors defined by adaptation, in establishing sustainable competitive advantages abroad.

5. Suggestions

5.1. Set up Think Tank-led Working Group to Support Diversified Strategies for Overseas Expansion

It is recommended to organize think tank-led working groups to strengthen the analysis and assessment of anti-subsidy investigation and coordinate perceptions of issue prioritization, foster consensus and unify efforts. Firstly, during the pre-ruling period of anti-subsidy investigation, sustained consultations could be conducted to enhance understanding and acceptance of the Chinese position, proactively seeking mutually agreeable solutions to resolve differences. The goal would be to address trade frictions fairly within the WTO framework, prevent the escalation of trade conflicts, and avoid a broader trade war. Countermeasures could be considered to counter EU protectionist actions, thereby encouraging concessions in negotiations. Secondly, enterprises are encouraged to diversify their overseas arrangement, including exploring new markets in Latin America and Australia alongside charging infrastructure companies. This would reduce dependency on single markets, mitigate complex and uncertain market risks. By developing new models for EV supply chain globalization, it is expected to enhance our manufacturing competitiveness.

5.2. Promote the Transformation of Industrial Policy to Build a Functional Policy Framework

It is essential to deepen market mechanism reforms and strengthen the legal and regulatory framework, to shift industrial policies from differentiated and selective to inclusive and functional. This will foster a unified, open, and competitive market system. Within the inclusive policy framework, further optimization of industrial subsidies is needed, gradually shifting from supply-side incentives to demand-side subsidies. Strict regulatory standards should be enforced to ensure fair competition. At the stage of high-quality development, the transformation toward functional industrial policies should focus on two areas: strengthening support for technological innovation by encouraging EV companies to increase R&D investment, fostering integration across academia and industry, accelerating technological advancements, and increasing product performance, quality, and brand influence to secure a competitive edge internationally; and effectively resolving excess production capacity by establishing market-driven, law-based long-term mechanisms to promote sustainable and high-quality industrial growth.

5.3. Strengthen EV Companies' Understanding of International Trade Rules

Industry associations should conduct overseas compliance training for companies, assisting them in developing flexible internationalization strategies against overseas challenges. Firstly, companies should be guided to strictly follow the international regulations and keep up with policies on market entry, environmental protection, data protection, etc. Emphasis should also be specifically placed on soft factors, such as organizational structure, talent allocation, business ecosystem, and local culture. Drawing on global advanced management experience, companies need to focus on management and operational capabilities, thereby elevating brand image and product competitiveness. To do so, employing professional consultants with global perspectives could assist in planning overseas strategies, providing end-to-end services, conducting market research based on sufficient understanding of different markets' requirements and policies. Secondly, Chinese companies are encouraged to explore new paths for financing and listing in European capital markets, develop localized service ecosystems and partnerships, to increase consumer brand awareness and foster strong ties with local societies. Thirdly, relying on multilateral platforms such as the WTO, IMF, and World Bank, relevant industry organizations can advocate for the concept of free trade and actively participate in the formulation of global green standards,

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enhancing their influence in international discourse. Strengthening communication with EU and other international industry organizations would contribute to creating a more open, inclusive, fair, and reasonable trade environment, better enabling the international community to address global climate challenges together.

5.4. Explore Finance, Mergers, Acquisitions and Strategic Partnerships to Improve Risk Management

Firstly, financing strategies. Chinese EV companies can increase equity capital through issuing new shares or bringing in new strategic investors, providing sufficient funding for R&D, production, and market expansion. Issuing corporate bonds or convertible bonds aims to employ the bond market to secure long-term funding and reduce financing costs. Collaboration with domestic and foreign banks for low-interest or specialized loans could further satisfy companies' capital needs. Depending on their financial conditions and market environment, companies should reasonably balance debt and equity ratios to ensure healthy capital structures, optimizing capital through debt restructuring and equity swaps to reduce financial risks.

Secondly, mergers and acquisitions. Chinese EV companies can select companies in Europe's electric vehicle industry with technological advantages, market channels, or strong brand influence for acquisition. After due diligence and negotiations, mergers or acquisitions could rapidly provide access to target companies' resources and technologies. It would also be helpful to build strategic partnerships with EV companies and research institutions in Europe with a purpose to strengthen international cooperation in development of new technologies and products, thereby achieving mutual benefit.

Thirdly, capital market operations. Companies may repurchase stocks during market downturns using internal funds or bank loans to reduce circulating shares and improve stock price. Major shareholders or management teams could increase their shareholdings to send positive signals to the market in order to bolster investor confidence. Designing reasonable stock incentive plan, such as stock options and restricted stock, could align employees' interests with the companies' long-term growth and motivate employees to work hard to enhance overall efficiency.

Fourthly, exchange rate and supply chain risk management. Monitoring international exchange rate fluctuations along with utilizing financial derivatives for exchange rate risk management can mitigate the impact of currency volatility on business. It is recommended to establish a diversified supplier network to reduce reliance on single suppliers. Enhancing cooperation and communication with suppliers is necessary to ensure stable supply of key components and raw materials.

In summary, strategies based on capital market for coping with EU tariffs in China's EV companies include adjustments to financing strategies, mergers and acquisitions, capital market operations, risk management, and policy advocacy. The adoption of these strategies would help enhance the international competitiveness of Chinese EV companies.

6. Conclusion

The European Union's anti-subsidy investigation into China's electric vehicle exports marks a significant challenge for the international expansion of Chinese new energy vehicle companies. As global trade protectionism rises, Chinese EV enterprises face heightened barriers in international markets. This study highlights the importance of a comprehensive competitiveness model that can guide Chinese EV companies through these challenges. By focusing on three critical dimensions – supply chain, market, and ecology – Chinese EV firms can better assess their strengths and weaknesses, adjust their strategies, and enhance their international competitiveness. Industry associations should play a key role in facilitating knowledge sharing, regulatory compliance, and fostering international cooperation to reduce the adverse impacts of protectionism. Overall, while the EU's move represents a significant hurdle, it also highlights the need for Chinese companies to rethink and refine their overseas strategies. By integrating supply chain resilience, market adaptability, and ecological integration into their global expansion plans, Chinese EV companies can not only overcome current challenges but also secure long-term success in the increasingly competitive global market.

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