Political Economy
Letters

The Impact of the European Union's Carbon Reduction Mechanism on the Manufacturing Industry and Potential Response Strategies in Asia Pacific

Lingfeng Ye
Yishan Wu
James Zhang

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- The European Union's carbon border adjustment mechanism (CBAM) represents a significant milestone as it stands as the world's first implementation of trade policies specifically designed to address carbon reduction goals.
- Such policy prospects and the subsequent changes in global economic and trade rules can have a significant impact on developing countries, particularly in East Asia and Southeast Asia, where manufacturing industries play a crucial role.
- The banking industry that provides crucial financing support for the manufacturing needs to accelerate its reform efforts; Industry-leading enterprises take the lead in actively building green internal supply chains within their organizations; Relevant countries in the Asia-Pacific region may request the establishment of stricter regulatory mechanisms to ensure that the EU's use of carbon tariff revenues is fair and transparent; The possibility of strengthening climate financing systems and industrial cooperation between the Asia-Pacific region and the United States.

In October of this year, the European Union (EU) took the lead by introducing a carbon border adjustment mechanism (CBAM), commonly referred to as a carbon tariff. This groundbreaking policy represents a significant milestone as it stands as the world's first implementation of trade policies specifically designed to address carbon reduction goals. The primary objective of the CBAM is to achieve a close alignment in the price paid for equivalent quantities of carbon emissions, both within and beyond the EU's borders. By doing so, the EU aims to expedite the decarbonization efforts within its industrial sector. The launch of the CBAM by the European Union sets out to establish a new paradigm for global trade rules and assert leadership in the evolving trade landscape. This policy initiative serves as a robust political response to safeguard the competitiveness of the EU's manufacturing industry and protect the interests of its workforce. By implementing the CBAM, the EU aims to effectively address concerns such as carbon leakage, where carbon-intensive industries relocate to regions with less stringent emission regulations. In doing so, the EU strives to maintain a level playing field for European manufacturers while simultaneously addressing the broader issue of global carbon emissions.

CBAM serves as a tool to ensure that imported goods are subject to a carbon price equivalent to what EU industries bear, preventing unfair competition and safeguarding the EU's climate targets. Additionally, it allows the EU to exert influence over the design of the global trading system, encouraging other countries to adopt similar carbon pricing mechanisms and contribute to the collective effort of reducing global carbon emissions. By taking this proactive approach, the EU aims to protect its industrial competitiveness, promote the transition to a low-carbon economy, and align its trade policies with its climate objectives. This move demonstrates the EU's commitment to addressing climate change while advocating for fair and sustainable trade practices on a global scale. Indeed, such policy prospects and the subsequent changes in global economic and trade rules can have a significant impact on

developing countries, particularly in East Asia and Southeast Asia, where manufacturing industries play a crucial role.

The implementation of the CBAM could pose challenges for these regions. East Asian countries, known for their export-oriented manufacturing sectors, may face increased trade barriers and additional costs due to the carbon tariffs imposed by the EU. This can potentially affect their competitiveness in the global market, as they would need to navigate the complexities of compliance with carbon pricing requirements. To mitigate the effects, these may need to adapt and respond strategically. They could consider implementing their own domestic green policies, such as promoting energy efficiency, transitioning to cleaner production processes, and investing in renewable energy sources. By doing so, these countries can enhance their own sustainability practices and potentially reduce their exposure to carbon-related trade barriers. Furthermore, regional cooperation and coordination among East Asian countries can play a crucial role in mitigating the impact of the changing global economic and trade landscape. By sharing best practices, harmonizing standards, and jointly addressing environmental challenges, these countries can enhance their collective resilience and competitiveness in the face of evolving global trade rules. It is essential for policymakers in Asia Pacific to closely monitor and analyze the evolving situation, engage in international dialogues, and seek opportunities for collaboration to navigate the potential challenges and leverage the changing global economic and trade dynamics to their advantage.

The banking industry that provides crucial financing support for the manufacturing needs to accelerate its reform efforts

The manufacturing industry in Asia Pacific countries can receive substantial support from the banking system to effectively address the impact of the European Union's carbon border adjustment mechanism (CBAM). To this end, banks can implement specific measures encompassing the establishment of evaluation systems, implementation of monitoring and early warning mechanisms, and provision of innovative financial instruments to help manufacturing companies mitigate risks.

Collaboration between banks, industry experts, research institutions, and government agencies is vital in creating evaluation systems that assess the carbon footprint and sustainability of manufacturing companies. These systems play a crucial role in identifying areas for improvement and guiding companies towards adopting cleaner production technologies and practices. Banks can further contribute by designing specialized financial products tailored for the manufacturing sector. For instance, they can offer green loans and green bonds that provide favorable terms such as preferential interest rates, longer repayment periods, and flexible conditions. These financial options incentivize companies to invest in sustainable technologies and projects that effectively reduce carbon emissions.

Additionally, risk assessment and mitigation services to manufacturing companies by evaluating the potential financial impacts of CBAM would be very welcome. They can assist in developing strategies to manage these risks, which may include implementing hedging mechanisms, offering insurance products, and utilizing financial derivatives to help companies navigate the uncertainties associated with carbon pricing and trade barriers. To promote the adoption of clean and energy-efficient technologies in the manufacturing sector, investors can establish partnerships with technology providers and offer financing packages. These packages may cover essential aspects such as equipment upgrades, energy management

systems, and renewable energy installations. Such initiatives enable companies to reduce their carbon footprint while enhancing their competitiveness in the market.

Banks can also encourage sustainable practices throughout the manufacturing supply chain by incentivizing suppliers to embrace green initiatives. One effective approach involves implementing supply chain financing programs that provide favorable financing terms to suppliers with robust environmental and social performance. This not only promotes a more sustainable and resilient value chain but also encourages suppliers to align with sustainable practices. Analysts can enhance their advisory services by providing specialized knowledge and expertise on carbon pricing, sustainable finance, and regulatory compliance. They can organize capacity-building programs and workshops to educate manufacturing businesses on critical aspects such as carbon risk management, ESG integration, and sustainable business practices.

Overall, the banking system plays a pivotal role in supporting the manufacturing industry in Asia Pacific countries to adapt to the impact of CBAM. Through financing support, risk management strategies, and the promotion of sustainability practices, banks contribute to the development of a low-carbon and resilient manufacturing sector while safeguarding the long-term competitiveness and viability of businesses in the region.

Industry-leading enterprises take the lead in actively building green internal supply chains within their organizations

The implementation of carbon tariffs by the European Union is part of its broader strategy to combat climate change and reduce greenhouse gas emissions. By imposing tariffs on products based on their carbon footprint, the EU aims to create economic incentives for industries to reduce their carbon emissions and transition to more sustainable practices. The initial focus of the carbon tariffs is on six major products: steel, aluminum, cement, fertilizers, electricity, and hydrogen. These sectors are considered crucial due to their significant contribution to carbon emissions. By targeting these industries, the EU intends to encourage carbon reduction efforts in sectors that have traditionally been heavy emitters. The expansion of carbon tariffs to include products such as plastics and ammonia indicates the EU's commitment to extending the scope of its carbon reduction measures. Plastics and ammonia production also have substantial carbon footprints and including them in the tariff scheme demonstrates the EU's determination to address carbon emissions across various industries.

One of the challenges posed by carbon reduction measures is the high cost of adopting and implementing new technologies. This cost burden often falls heavily on small and medium-sized enterprises (SMEs), which may struggle to invest in expensive carbon reduction technologies or bear the risks associated with technological failures. To address this issue, the industry-leading companies should take the lead in innovation and supply chain transformation, as they can absorb the initial costs and mitigate the risks, creating a pathway for other SMEs to follow suit. The successful implementation of carbon reduction measures and the subsequent sharing of technologies and measures among industry players can lead to enhanced cohesion and competitiveness within domestic enterprises. By adopting and implementing carbon reduction technologies, SMEs can improve their environmental performance, meet regulatory requirements, and gain a competitive edge in the market.

By implementing similar measures, these countries can incentivize their industries to reduce carbon emissions and align with global climate goals. In Taiwan, where the semiconductor manufacturing industry is concentrated, Taiwan Semiconductor Manufacturing Company (TSMC), as a leading company, has taken the initiative in implementing technological innovations such as green energy and wastewater recycling projects. In September 2022, TSMC achieved a groundbreaking milestone in the global semiconductor industry by introducing recycled water from a water treatment plant in southern Taiwan. This serves as a precedent for industrial water recycling in the semiconductor sector. The success of TSMC's water recycling initiative provides a model for other industries in Taiwan to follow. By adopting similar approaches, Taiwan's industrial peers can collectively work towards the sustainable goal of diverse water resource recycling and regeneration.

Embracing this model of water recycling and sustainability not only benefits the environment but also contributes to the long-term viability of the semiconductor industry in Taiwan. By reducing water consumption and implementing efficient recycling measures, companies can mitigate the strain on water resources, enhance their environmental performance, and strengthen their competitiveness in the global market. The pioneering efforts of TSMC in implementing green energy and wastewater recycling projects have positioned Taiwan as a leader in sustainable semiconductor manufacturing. This serves as an inspiration for other industries to explore innovative solutions and contribute to the pursuit of a circular economy and sustainable development.

Improve the monitoring mechanism for EU carbon tariff revenue

The imposition of carbon tariffs by the European Union on imported goods from other regions has raised concerns regarding the utilization of the resulting tax revenues. While these tariffs increase the EU's revenue, there is currently no explicit precedent to guide the allocation of these funds. This lack of clarity has given rise to significant apprehensions about how the EU will use these revenues and the potential implications for global trade. Countries in the Asia-Pacific region have valid reasons to worry that the EU may employ the tax revenue to subsidize its manufacturing industry, leading to unfair competition on a global scale. This concern stems from the possibility that the EU's subsidized industries would enjoy a competitive advantage over their counterparts in Asia-Pacific nations, which could disrupt markets and hinder the growth and development of these economies.

The fear of unfair trade competition resulting from the EU's utilization of carbon tariff revenues has the potential to trigger trade disputes between the EU and affected countries in the Asia-Pacific region. Resolving these disputes becomes a pressing concern for nations in the region, as they seek to protect their industries and ensure a level playing field. To address these issues, there is a need to explore and establish mechanisms for dispute resolution that are fair, transparent, and consistent with international trade rules. In potential future cases of unfair trade competition and resulting litigation, the existing mechanisms for dispute resolution may require further improvements. Relevant countries in the Asia-Pacific region may request the establishment of stricter regulatory mechanisms to ensure that the EU's use of carbon tariff revenues is fair and transparent. This could involve setting up independent regulatory bodies or international organizations to oversee and evaluate the EU's fund utilization, ensuring compliance with international trade rules and upholding principles of fair competition.

One possible approach is to strengthen the role of international organizations such as the World Trade

Organization. The WTO already serves as a platform for resolving trade disputes among member countries. However, in the context of the EU's utilization of carbon tariff revenues, the WTO may need to enhance its mechanisms and procedures to effectively address the concerns of Asia-Pacific nations. This could include establishing specialized panels or dispute settlement bodies with expertise in trade, environmental policies, and economics. Furthermore, to ensure transparency and accountability, the EU could implement measures such as regular reporting on the allocation and utilization of carbon tariff revenues. Independent audits and evaluations of fund usage could also be conducted to ascertain compliance with international trade rules and fairness in competition. These transparency measures would help build trust among countries and minimize the potential for trade disputes.

International cooperation and negotiation are key to finding solutions that safeguard the interests of all nations and promote fair competition principles. Manufacturing nations in the Asia-Pacific region have legitimate concerns and demands regarding the regulation and mediation mechanisms pertaining to the use of carbon tariff revenues by the EU. Through diplomatic channels and discussions at the international level, countries can work towards establishing frameworks that ensure fair competition, transparency, and compliance with international trade rules. It is essential for all stakeholders to engage in constructive dialogue and negotiation to address the concerns arising from the EU's utilization of carbon tariff revenues. This includes the EU, countries in the Asia-Pacific region, and relevant international organizations. By fostering collaboration and seeking mutually agreeable solutions, it is possible to strike a balance between environmental objectives and fair competition in global trade.

In conclusion, the imposition of carbon tariffs by the EU and the utilization of resulting tax revenues raise significant concerns regarding fair competition and potential trade disputes. Countries in the Asia-Pacific region rightly worry about the possibility of unfair competition arising from the EU's subsidized industries. To address these concerns, mechanisms for dispute resolution should be strengthened, transparency measures implemented, and international cooperation fostered. Through these efforts, nations can work towards finding solutions that uphold fair competition principles, promote sustainable development, and ensure a level playing field in the global economy.

The possibility of strengthening climate financing systems and industrial cooperation between the Asia-Pacific region and the United States

The Asia-Pacific region plays a crucial role in global manufacturing and is increasingly focusing on sustainable development and climate change mitigation. While the United States has not expressed interest in joining regional trade agreements such as the Regional Comprehensive Economic Partnership (RCEP) and the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), its Indo-Pacific Economic Framework (IPEF) presents an opportunity for enhanced collaboration in the region. Under the IPEF, the United States aims to promote economic growth, infrastructure development, and technological advancement in the Indo-Pacific. This framework can significantly impact the manufacturing industry and technological innovation in Asia-Pacific countries. By fostering cooperation in these areas, countries in the region can enhance their competitiveness and contribute to global climate goals.

One area of potential collaboration is climate financing. Climate change mitigation and adaptation require substantial financial resources, and establishing effective climate financing systems is crucial. The

United States, as a major global economy, has the capacity to contribute significantly to climate finance. By strengthening cooperation with Asia-Pacific countries, the United States can support their efforts in transitioning to low-carbon and climate-resilient economies. Asia-Pacific countries can benefit from increased access to climate finance, which can be utilized for renewable energy projects, sustainable infrastructure development, and capacity building for climate resilience. The United States can offer technical expertise, investment, and financial support to assist these countries in achieving their climate objectives. This collaboration can foster technology transfer, knowledge sharing, and best practices in climate change mitigation and adaptation.

Furthermore, the United States' intention to introduce a new version of carbon tariffs indicates its commitment to addressing climate change through economic measures. These tariffs can incentivize industries to reduce emissions and promote cleaner production practices. Asia-Pacific countries, as major manufacturing hubs, can collaborate with the United States to align their industries with low-carbon principles and reduce their carbon footprint. This cooperation can include technology transfers, joint research and development initiatives, and capacity building programs. China's dominant role in the RCEP, coupled with its ongoing cooperation with the United States on climate change policies, presents an opportunity for enhanced industrial and climate investment and financing cooperation. As China and the United States engage in a competitive process regarding climate policies, RCEP participating countries can leverage this situation to strengthen their partnerships with both countries. They can seek collaboration with the United States on climate financing, industrial innovation, and clean technologies while maintaining their cooperation with China.

Moreover, increased industrial and climate investment and financing cooperation can improve the competitiveness of Asia-Pacific countries within the global economic and trade system. By embracing sustainable practices and leveraging technological advancements, these countries can position themselves as leaders in the transition to a low-carbon economy. This can attract foreign investment, enhance trade relations, and create new opportunities for economic growth and job creation. To facilitate and strengthen such cooperation, it is essential to establish platforms for dialogue and coordination. Existing regional organizations, such as the Association of Southeast Asian Nations (ASEAN) and Asia-Pacific Economic Cooperation (APEC), can serve as forums for discussing climate financing mechanisms, sharing experiences, and promoting collaboration. Bilateral agreements and partnerships between individual countries can also play a vital role in facilitating industrial cooperation and knowledge exchange.

The potential for strengthening climate financing systems and industrial cooperation between Asia-Pacific countries and the United States is significant. By leveraging the United States' IPEF framework, Asia-Pacific nations can access climate finance, enhance their industrial capabilities, and promote sustainable development. Collaboration in areas such as renewable energy, sustainable infrastructure, and clean technologies can drive economic growth, create employment opportunities, and contribute to global climate goals. Through dialogue, coordination, and strategic partnerships, Asia-Pacific countries and the United States can collectively address the challenges of climate change and build a more sustainable and resilient future.

Lingfeng Ye *is a research assistant at Shenzhen University;* ***Yishan Wu*** *is a research assistant at Shenzhen Senior High School;* ***James Zhang*** *is the executive director of APRDIHK.*