yönetim ve ekonomi araştırmaları dergisi
journal of management and economics research

Cilt/Volume: 21 Sayı/Issue: 3 Eylül/September 2023 ss. /pp. 265-281
D. Özekan http://dx.doi.org/10.11611/yead.1339262

EUROPEAN UNION CARBON BORDER ADJUSTMENT MECHANISM: A SWOT ANALYSIS FOR TÜRKİYE

Asst. Prof. Damla ÖZEKAN (Ph.D.)*

ABSTRACT

The European Union's (EU) proposed Carbon Border Adjustment Mechanism (CBAM) has gained attention as a potential policy tool to address carbon leakage and promote climate policy alignment in international trade. This paper examines the implications of the EU CBAM for Türkiye and conducts a SWOT analysis to evaluate Türkiye's strengths, weaknesses, opportunities and threats in the context of CBAM implementation. In the paper, firstly EU's environmental policy, European Green Deal (EGD) and CBAM are defined and examined in historical perspective. Secondly Türkiye's environmental policy on behalf of CBAM is explained. Then, the effects of EGD and CBAM on Türkiye's foreign trade is discussed. The last part is devoted to SWOT analysis. The analysis begins by exploring Türkiye's strengths including its domestic climate policies and diverse economy. The analysis also highlights the weaknesses that could challenge Türkiye's competitiveness under the CBAM. It identifies opportunities within the CBAM framework including incentives for green investments and collaboration for increased market access and also acknowledges potential threats such as trade disputes.

Keywords: *Carbon Border Adjustment Mechanism, European Union, Türkiye, SWOT Analysis.*

JEL classification: *F18, F42, F64, H23.*

1. INTRODUCTION

There is a linear economy model based on fossil fuels on the basis of the understanding of "more production" resulting from population growth and more consumption. In this model, growth-oriented economic activities based on carbon emissions warmed the world and first caused the climate crisis; afterwards, by confronting the deepening problems of the crisis with the consequences of the destruction of nature such as weather events (heat and cold air waves, storms, floods, droughts, forest fires), loss of biodiversity, humanity has finally brought to the global health threat Covid-19 pandemic. All of the five hottest years on record were experienced after 2015, 25% of all plant and animal species on the planet are in danger of extinction (OECD, 2020), and as a result of record increases in greenhouse gas emissions and heavy destructions, the planet's oceans, glaciers, forests, etc. It has been demonstrated by many different studies that vital variables are moved to irreversible limit points (Ripple et al. 2021).

* Yeditepe University, Faculty of Economics and Administrative Sciences, E-mail: damla.ozekan@yeditepe.edu.tr

Makale Geçmişi/Article History

Başvuru Tarihi / Date of Application : 21 Temmuz / July 2023
Düzeltme Tarihi / Revision Date : 1 Eylül / September 2023
Kabul Tarihi / Acceptance Date : 22 Eylül / September 2023

Araştırma Makalesi/Research Article

According to the Global Risks Report 2023 published by the World Economic Forum (WEF); unless the world begins to cooperate more effectively on climate change mitigation and climate adaptation, this will lead to continued global warming and ecological degradation over the next 10 years. Failure to mitigate and adapt to climate change, natural disasters, loss of biodiversity and environmental degradation represent five of the top ten risks, and biodiversity loss is seen as one of the fastest worsening global risks over the next decade (WEF, 2023). Similarly, the Emission Gap Report 2022 published by United Nations Environment Program (UNEP) affirms that the World is not on track to reach the Paris Agreement goals of limiting global warming to well below 2°C, preferably 1,5°C and global temperatures can reach 2,8°C by the end of the century if current policies are maintained. The report claims that emissions need to be cut by 45% to prevent a global catastrophe (UNEP, 2022).

Additionally, according to the Circularity Gap Report 2023, rising material extraction has shrunk global circularity from 9,1% in 2108 to 8,6% in 2020 and 7,2% in 2023. This means that more than 90% of materials are either wasted, lost or locked into long-lasting stocks such as buildings and machinery and cannot be reused for years (CGR, 2023).

While all these developments make the concept of sustainability, which has been in our lives for the last 30 years, even more important today, it also reveals the urgency of the change and transformation process. The global consequences of the climate crisis, from loss of biodiversity to a pandemic, necessitated a global approach in handling the crisis. Success and sustainability in the fight against climate change seem possible only by fully implementing these decisions with joint decisions to be taken at the global level and acting in harmony. Companies, countries, international institutions and organizations, whether at the local or international level, have to work in a speed and cooperation appropriate to the urgency and severity of the climate crisis. However, since the Industrial Period, linear economic activities that took place in the form of 'buy-build-use-throw' without respecting the boundaries of the planet, unfortunately still continue unabated despite all the warnings of nature. It is vital for the future of the planet and all beings in it to harmonize the existing linear economic structure with the planet's ecosystem, to put an end to exploitative, economic growth-oriented production and to implement a “circular economic model” without delay (Ecer, Güner and Çetin, 2021).

Despite the specific targets (to reduce emissions by 20% by 2020) and deadlines for the reduction of global greenhouse gas emissions with the Kyoto Protocol, which is one of the most important steps towards combating climate change, greenhouse gas emissions increase has not been reduced sufficiently as a result of the rapid progress in the global economy and the increasing use of fossil fuels. For this reason, new policy tools were sought and the Emissions Trading System, which came into force in line with the Kyoto Protocol, was included in the efforts.

The Emissions Trading System defines an upper limit for the total greenhouse gas emissions that are released into the atmosphere for the sectors included in the system in a certain period of time.

Since the determined upper limit directly limits greenhouse gas emissions, it provides certainty about the amount of emissions that can occur in a certain period. In addition, the upper limit set by the ETS is gradually reduced over time to reduce greenhouse gases cost-effectively in accordance with the climate policies of the relevant country. For the system participants, namely EU producers, the greenhouse gas emission amounts are allocated according to the emission amounts of the past period or the production projections for the future period. These appropriations, or Emission Allowance Units (EUA) per ton, are made free of charge or through an auction (Koç and Kaynak, 2023). The parties have to use their emission rights as well as the allowances to cover the total greenhouse gas emissions they cause. In case of the emission right allocation is insufficient, the parties' purchase of emission rights from producers with excess emission rights has revealed the carbon market. In other words, the ETS is based on the functioning of the market mechanism. Accordingly, while the European Commission represents the supply side of the market by determining and limiting the total greenhouse gas emission allocation, system participants or EU producers are in the demanding position. With this application, it is aimed that the price paid to buy the right to emit carbon dioxide, in short, the carbon price, when it is high enough, especially the energy-intensive industrial facilities will take initiatives to increase their energy efficiency or they will tend to use energy sources that emit relatively low greenhouse gas emissions. The world's first carbon market is the European Union Emissions Trading System (EU ETS), which started its operations in 2005.

The European Green Deal (EGD), announced by the European Commission on 11 December 2019, aims to reduce greenhouse gas emissions by 55% by 2030 and to become the first carbon neutral continent with net zero emissions by 2050 (European Commission, 2021a). Accordingly, the agreement indicates that more serious commitments should be determined for 2030, apart from setting the 2050 target. On the other hand, EGD is a sustainable roadmap that includes net zero emissions, circular economy[1], zero waste policy, protection of biodiversity and farm-to-table policies. The EU-27 shared with the public the Climate Law proposal, which is one of the key elements for the EGD, on 4 March 2020 in order to clearly set out the conditions for the effective and fair transformation it aims against global climate change and to make the transformation irreversible. In this way, it was aimed to make the climate neutral goal legally binding.

The most important drawback of the EU ETS, which has become one of the most important policy tools in limiting carbon emissions and combating climate change, is that countries that limit greenhouse gas emissions by setting high climate targets, shift their production to other countries with more flexible climate targets to avoid the costs incurred. In such a case, without a reduction in greenhouse gas emissions released into the atmosphere on a global scale, a decrease in production, a decrease in

[1] The circular economy refers to a systemic approach for redesigning the business systems, enabling sustainable economic growth by managing resources more effectively as a result of making the flow of materials more circular and reducing and ultimately eliminating waste flows.

employment and a deterioration in competitive conditions occur in EU-27 member states. This threat, which is defined as "carbon leakage", is planned to be prevented by the Carbon Border Adjustment Mechanism (CBAM), which was proposed by the European Commission as a regulation of the “Fit for 55 Package”, accepted on January 1, 2021 and entered into force on May 16, 2023. CBAM is an important regulation developed to deal with the risk of “carbon leakage” for countries that do not have similar climate policies with the EU-27 and it envisages a "carbon emission tax" at certain rates at the border, based on the carbon content of some products imported by the European Union. Although it is foreseen that this mechanism, which is planned as an additional customs tax, will produce positive outputs in terms of sustainable environment, what kind of effects it will create on international trade is a matter of debate.

Since CBAM is a fairly new concept, although there are various studies in the literature that have examined CBAM over Türkiye-EU foreign trade relations (Koç and Kaynak, 2023), in terms of the harmonization policies of the Turkish economy (Ecer, Güner & Çetin, 2021) and its possible effects on Türkiye's exports (Ertunga and Seyhun, 2022), the number of studies dealing with the issue in all aspects in Türkiye, especially after its entry into force, is quite less. Therefore, in this study, Türkiye's strengths, weaknesses, opportunities and threats (SWOT analysis) will be discussed in terms of CBAM in order to address the issue in all its aspects. It is thought that the results obtained from the study will be a guide for the policies to be formed in the medium term.

2. EU’S ENVIRONMENTAL POLICY, GREEN DEAL AND CBAM

It would not be wrong to say that the beginning of the creation of a common environmental policy in the EU was the Environmental Action Programs (EAP), which started to be prepared in 1973. In this context, eight EAP were adopted and put into practice from 1973 to 2023.

Until 1973, when the first EAP was prepared, the Union did not have a common environmental policy. From the first EAP prepared in 1973 to the Single European Act signed in 1987, the Union has dealt more intensely with environmental issues. With the publication of a total of 120 directives, 27 decisions and 14 regulations during this period, the environment has become the fastest growing policy area in the EU. The report titled “Limits to Growth” and the 1972 Stockholm UN Environment and Human Conference were influential in the environmental gaining importance in this period.

The last program, EAP 8, covering the years 2021-2030, supports the environmental and climate action targets set by the European Green Deal. The European Green Deal is an agreement published by the European Union Commission against the climate crisis at the end of 2019 with the aim of making Europe sensitive and harmless to the climate, environment and nature by 2050. According to the Deal the EU Emissions Trading System should be strengthened and a meaningful carbon price should be established for all sectors by forcing EU countries to increase the price of emissions not covered by this system. In addition, European industry should be strengthened by promoting green innovations. Every

European climate policy proposal must be evaluated taking into account the negative social consequences of climate policies.

In this context, the EU 8th EAP aims to accelerate the transition to an economy that is climate neutral, uses resources efficiently and has a renewable structure. Recognizing that human well-being depends on the healthy ecosystems in which we operate, the Program has set six priority targets for reducing greenhouse gas emissions by 2030 and achieving climate neutrality by 2050, based on the European Green Deal:

- increasing the capacity to adapt,
- strengthening resilience and reducing vulnerability to climate change,
- moving towards a renewable growth model,
- separating economic growth from resource use and environmental degradation,
- accelerate the transition to a circular economy with the goal of zero pollution, including air, water and soil; and
- protect the health and well-being of Europeans; protect and restore biodiversity; to develop natural capital in terms of air, water, soil and forest, fresh water, wetland and marine ecosystems; to reduce environmental and climate pressures related to production and consumption in the fields of energy, industrial development, building areas, infrastructure, mobility and food.

Ensuring that these targets are effectively focused within the scope of EU climate and environmental laws is possible with the active participation of all stakeholders at all levels of management. The program also forms the basis of EU work to achieve the United Nations Sustainable Development Goals.

The European Green Deal (EGD), announced by European Commission President Ursula Von Der Leyen on 11 December 2019, is the EU's new growth strategy that aims to make Europe the world's first climate-neutral continent with net zero greenhouse gas emissions by 2050. The EGD, which envisages bringing the EU to a resource-efficient, competitive and modern economic structure, is a radical transformation plan that covers many areas from production to trade, from energy to transportation, from agriculture to taxation. According to the EGD, it is envisaged that all sectors of the EU economy will be restructured in a way that will contribute to the EU's goal of being climate-neutral by 2050. In order to achieve the EGD's goals, it is planned to realize a sustainable investment of approximately 1 trillion Euros in the next 10 years (MFA, 2023). The main purpose of the deal is to achieve the goals of the Paris Climate Agreement and to initiate a major economic and social transformation (EDF, 2021).

The Paris Climate Agreement is the most important legally binding climate action plan created in 2015 to combat global climate change. The Paris Climate Agreement aims to keep the global average temperature increase below 2°C and below 1.5°C compared to the pre-industrialization period (UNFCCC, 2015). The EU signed the Paris Climate Agreement in 2016 and put it into effect, and paved the way for the Paris Agreement to be accepted globally. (Official Journal of European Union, 2016). In line with the targets of the Paris Climate Agreement, the EU has aimed to reduce its greenhouse gas emissions by at least 40% by 2030 compared to the 1990 level. This rate was later updated in the European Climate Law and set as a target of at least 55% emission reduction in 2030 compared to 1990. At the same time, the target of providing 33.1%-33.7% of EU energy from renewable energy and increasing energy efficiency by 32.5% by 2030 has been determined (Küçük and Dural, 2022).

The European Climate Law was adopted on 30 June 2021 with the aim of translating the political commitment towards Europe's climate-neutral order into a legally binding obligation. In addition, within the scope of the law, the target of 40% reduction in greenhouse gas emissions by the EU for 2030 compared to 1990 was updated as "at least 55% reduction compared to 1990" and became binding. The updated target was submitted to the United Nations Framework Convention on Climate Change (UNFCCC) in December 2020 as the EU's new contribution to the Paris Agreement (MFA, 2023).

Regions and countries that do not share the same emission targets with the EU and have no carbon regulation are a threat to the EU. The risk of carbon leakage will arise when production and investments shift to other countries that give less importance to emission reduction than the EU, or when EU products are replaced by more carbon-intensive import products. In this case, both the EU economy will be damaged and there will be no reduction in global emissions and efforts to reach global climate targets will be insufficient (European Commission, 2021b). Carbon leakage can occur in two ways such as production shift and increase in imports. Production shift is the shift of production facilities from the EU to countries that care less about climate policy and increase in imports is the increase in the share of products from countries that give less importance to climate policy than the EU in the market. The main purpose of CBAM is to protect the competitiveness of Europe and to prevent the shift of production and investments to countries with less emission reduction targets than the EU, in the face of the costs that the policies targeted by the EGD will create on the European industry (Özsoy, 2022).

CBAM which is accepted on January 1, 2021 and entered into force on May 16, 2023, is a policy tool that aims to address the issue of carbon leakage in international trade. Carbon leakage occurs when companies move their production to countries with less stringent climate policies, leading to increased emissions in those countries and potentially undermining global efforts to reduce greenhouse gas emissions. It is designed to create a level playing field for domestic industries that are subject to carbon pricing or other climate-related regulations. It aims to prevent carbon leakage by placing a carbon price on imported goods based on their embedded carbon content. This means that imported products will be subject to a charge that reflects the amount of greenhouse gas emissions associated with their production.

The CBAM operates by requiring importers to purchase emissions certificates corresponding to the embedded carbon content of the goods they bring into the country. The price of these certificates is determined by the domestic carbon price in the importing country. If the exporting country has equivalent climate policies and carbon pricing, the exporter can receive a rebate or exemption for the carbon price paid domestically. It focuses on a limited number of sectors initially, such as cement, steel, aluminum, fertilizers, and electricity. However, the scope of the mechanism may be expanded in the future.

CBAM can be briefly defined as the taxation of the carbon cost that would be incurred if the production of the products imported by the EU was carried out within the Union, at the EU border. In principle, imports of goods from all non-EU countries will be subject to CBAM. However, it is possible for a third country to be exempted from CBAM under certain conditions. For example, some third countries (Switzerland, Norway, Iceland and Liechtenstein) that participate in the EU ETS or have an emissions trading system linked to the Union is excluded from the mechanism (Özsoy, 2022).

The implementation of a CBAM has several objectives. Firstly, it helps to protect domestic industries that have invested in reducing their carbon emissions from being undercut by competitors in countries with laxer environmental regulations. Secondly, it can incentivize other countries to adopt more ambitious climate policies to avoid paying additional costs on their exports. Finally, it can generate revenue for the importing country, which can be used to support climate mitigation and adaptation efforts. It will be implemented as of October 1, 2023. The transition period will continue until January 2026, during which GHG emissions of products covered by CBAM will need to be reported by importers. The first reporting period for importers will end on 31 January 2024. The rules and requirements for reporting emissions will be determined in detail by an implementing law to be adopted by the EU Commission.

CBAM will first be applied to the cement, iron and steel, aluminum, fertilizer and electricity sectors, which emit intense carbon emissions during production and carry the most significant risk of carbon leakage. With its expanded scope after being phased in, CBAM is expected to cover more than 50% of emissions under the EU ETS.

After CBAM is fully operational on January 1, 2026, importers will need to report the amount of products and embedded greenhouse gas emissions imported from third countries to EU countries in the previous year by 31 May each year, while also obtaining the number of CBAM certificates corresponding to the amount of embedded emissions. Certificate prices will be calculated to reflect prices in the EU ETS system. If importers prove, based on verified information from third-country producers, that a carbon fee was paid during the production of the products they import, they can deduct this price from their final payment. In line with the gradual introduction of CBAM in the 2026-2034 period, free allowances will be removed in the relevant sector under the EU ETS. A report will be

prepared by evaluating the inclusion of products in other sectors within the scope of EU ETS within the scope of CBAM. The report will also include the timetable for their inclusion by 2030.

The CBAM has received both support and criticism. Supporters argue that it can help drive global emissions reductions by encouraging countries to adopt stronger climate policies and promoting cleaner production methods while critics raise concerns about potential trade disputes and retaliation, as well as the complexity of implementing the mechanism and accurately calculating the carbon content of imported goods.

3. TÜRKİYE'S ENVIRONMENTAL POLICY AND CBAM

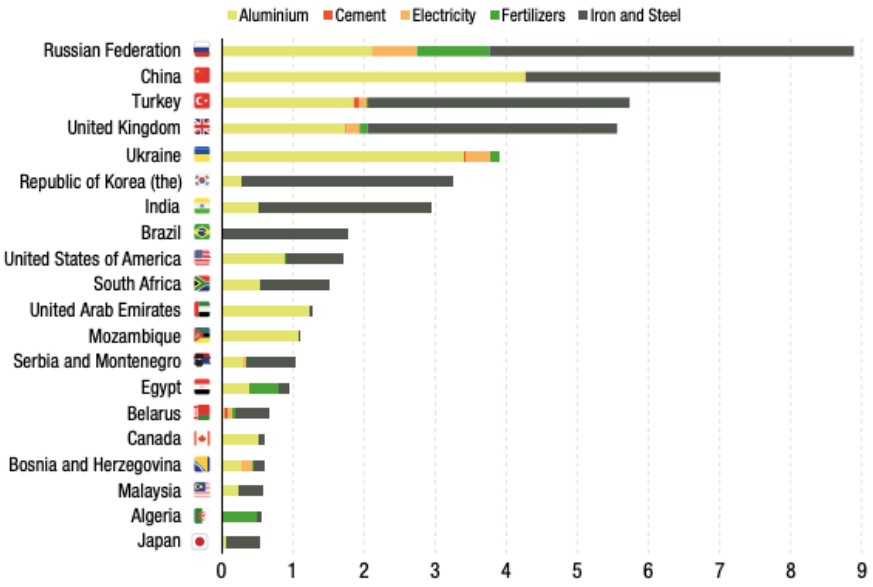
In Türkiye, the "Law Regarding the Approval of the the Paris Agreement" was published in the Official Newspaper dated 7 October 2021 and entered into force (Official Newspaper, 2021). According to the national contribution statement of Türkiye, which is a party to the agreement with the status of a developing country, it is foreseen that greenhouse gas emissions will be reduced by 21% compared to the reference scenario in 2030 (T.R. Ministry of Environment, Urbanization and Climate Change, 2021). At the 27th Conference of the Parties to the United Nations Framework Convention on Climate Change (COP 27), held in Egypt between 6-18 November 2022, Türkiye increased its national contribution statement to 41% (T.R. Ministry of Environment, Urbanization and Climate Change, 2022).

Considered an extension of the Paris Agreement, EGD is a new growth strategy that aims to transform the EU into a fair welfare society with an efficient and competitive economy, without net greenhouse gas emissions, by 2050. In this context, EGD is not only a climate policy, but also an economic transformation program in which a new international trade system and division of labor that is closely related to Türkiye is built (Özsoy, 2022). EGD wants to influence all countries that have commercial, financial and political relations with the EU through two channels according to their level of connection. The first is CBAM and the other is Circular Economy regulations. With these tools, the EU is forcing the countries that want to trade with it to green transformation by using its power from the economy. It is thought that this transformation will have a serious cost to countries such as Türkiye (Aşıcı, 2021).

CBAM is an alternative mechanism to the measures in the EU ETS that address the risk of carbon leakage. It aims to prevent the Union's emissions reduction efforts from being offset by increased emissions outside the Union, either through production repositioning or increased imports. Without such a mechanism, not reducing carbon leakage emissions could only result in displacement (European Commission, 2021c). The pricing of carbon in the EU may reduce the competitiveness of EU manufacturers and shift their production sites to countries where there is no emission pricing system, such as Türkiye (Aşıcı, 2021). CBAM is designed both to prevent the problem of carbon leakage and to require the adoption of the EU's global greenhouse gas reduction target by trade stakeholders. (TÜSİAD, 2020).

A report examining the effects of CBAM on developing countries was prepared by United Nations Conference on Trade and Development (UNCTAD) in 2021. The report noted that countries with the highest export levels to the EU in selected sectors likely to be included in CBAM would potentially be most affected. From this point of view, the top three countries most likely to be exposed to the mechanism are Russia, China and Türkiye (UNCTAD, 2021) as seen in Figure 1.

Figure 1. Exports to the EU 2019 in Selected Sectors Likely to be Considered in the CBAM
20 Most Exposed Countries in Terms of Aggregated Value of Exports (Billion $)[2]



Source: UNCTAD, 2021

In addition, in the CBAM proposal text of the EU commission, it is stated that Russia, Ukraine and Türkiye are among the countries that will potentially be exposed to the mechanism the most. This is because the exports of products included in CBAM's list, such as cement, fertilizer, iron and steel, aluminum, and energy, are at the top of these countries. Türkiye realizes 35% of EU cement imports, ranks 3rd in EU iron-steel sector imports and 9th in aluminum imports (European Commission, 2021c). Moreover, according to the Institute of Advanced Sustainability Studies (IASS); Türkiye, Ukraine, Bosnia and Herzegovina, Morocco, Mozambique and Zimbabwe are among the countries in the "highest risk" category in terms of exposure[3] and vulnerability[4] factors and in the aluminum, iron and steel and cement sectors.

[2] The list does not include Iceland, Norway and Switzerland because they participate in, or linked to the ETS. Therefore, it is likely that these countries are exempt from the mechanism.
[3] Exposure is regarding the importance of trade with the EU for the national economy (the share of GDP of income from trade in energy-intensive sector goods that will affect trade with the EU).
[4] Vulnerability is the ability to comply with CBAM by indicators of export diversity (share of energy-intensive sectors in total exports where trade will be affected), current emissions (carbon intensity of final energy consumption), decarbonisation plans (existence of national emission reduction targets), monitoring, reporting and verification of emissions (national statistical capacities) statuses.

4. THE EFFECTS OF EGD AND CBAM ON TÜRKİYE'S FOREIGN TRADE

It is expected that EGD will lead to significant changes in the international division of labor and trade. The EU is the most important foreign trade partner of Türkiye with which it is affiliated with the Customs Union. In 2022, the total foreign trade volume between Türkiye and the EU was 196.4 billion dollars. The EU has a share of 40.5% from Türkiye's exports with 103 billion dollars in 2022 and ranks first in the country's total exports (Ministry of Trade, 2023).

As of the end of 2022, Türkiye's exports are 254 billion dollars and imports are 363,7 billion dollars. While the European countries (EU-27), which play an important role in Türkiye's exports, have a size of 103 billion dollars, this figure rises to 116 billion dollars with the UK. In 2022, the first three places in total exports to "EU-27 and the UK" (EU-28) are Germany with 21,1 billion dollars (18%), England with 13 billion dollars (13%) and Italy with 12 billion dollars (11%). These are followed by Spain with 9.7 billion dollars (9%) and France with 9.5 billion dollars (9%) in exports to the EU-28 (TUIK, 2023).

Total exports to the EU-28 in 2021 in the iron-steel, aluminum, cement, fertilizer and electricity sectors, which are the 5 sectors that will be most affected by CBAM, is 11.5 billion dollars. This amount corresponds to 5.12% of the total exports in 2021 and 10.8% of the exports to the EU. In these sectors, Italy ranks first in exports to the EU-28 with 1.7 billion dollars, followed by Spain with 1.6 billion dollars, Germany with 1.2 billion dollars and Romania with 1.1 billion dollars (Ertunga & Seyhun, 2022).

Türkiye's exports to the world in CBAM products are 26.9 billion dollars in 2021. Exports of CBAM product groups to the EU-28 constitute 43% of the exports made to the world in the same product group. Among the sectors that will be most affected by CBAM, iron and steel is 20.9 billion dollars in the world; it stands out in exports to the EU-28 with 8.4 billion dollars. This is followed by the aluminum industry with 3.8 billion dollars of exports to the world and 2.6 billion dollars to the EU-28. Italy stands out in the iron-steel group with 1.5 billion dollars and in the cement group with 46.2 million dollars in the distribution of exports to the first 6 EU-28 countries of the 4 product groups that will be affected by CBAM at first. In the aluminum group, Germany ranks first with 679 million dollars and Romania with 27 million dollars in fertilizers. Fertilizers are the smallest CBAM product line at 155.8 million dollars. With 172 million dollars, Bulgaria ranks first with 131.4 million dollars (76%) in exports in the electrical product group and Greece follows it with 38.5 million dollars (22%) (Ertunga and Seyhun, 2022).

In the 2020 report of TÜSİAD, the cost of CBAM to the national economy was investigated under the scenarios of levying a tax between 30 and 50 euros per ton based on the carbon content of the products exported to Europe. While the ton price of carbon under CBAM was 30 Euro/tCO2, which was its value at that time, the total carbon cost that Türkiye's exports may be exposed to was approximately 1.1 billion Euros, and 1.8 billion Euros when priced at 50 Euro/tCO2 e, which is expected to reach when

CBAM is put into operation. If 30 Euros per ton has to be paid for CO2 emissions originating from exports to the EU market, it is predicted that the cement sector will be affected the most, with 170 million Euros. This is followed by machinery, automotive, iron-steel and textile products. Considering Türkiye's export distribution and sectoral carbon efficiency, possible income losses in exports to the EU (depending on the carbon price of 30 or 50 euros per ton) are calculated as; 13.2% - 22% in the cement industry, 1.7% - 2.8% in iron-steel, 1.1% - 1.9% in the chemical industry and 0.7% - 1.2% in automotive industry. (Özsoy, 2022)

In 2023, it is seen that the carbon ton price approaches 100 Euros. This shows that the cost of the CBAM implementation for Türkiye is much higher than that stated in the report of TÜSİAD (almost twice the calculation made over 50 Euros). Another decisive question for the Turkish economy concerns the calculation of emissions for which Turkish producers will be held responsible. The EU allocates free quota up to a certain value to its own producers and gradually reduces this quota. This transition process should also apply to non-EU manufacturers. Otherwise, it would be acting against the principle of "not discriminating between domestic and foreign products" of the World Trade Organization.

5. SWOT ANALYSIS

In this section, the possible effects of CBAM on Türkiye will be examined using the SWOT Analysis method. First of all, the internal analysis of Türkiye in two areas; strengths and weaknesses which are the controllable areas, will be discussed. Afterwards, external analysis that is the determination of opportunities and threats that the country cannot control, will be started. With the resulting picture, the steps and policy recommendations that Türkiye should take in the future will be discussed.

5.1. Strengths

- *Domestic environmental policies*: Türkiye has been taking steps to address environmental issues and reduce greenhouse gas emissions through various domestic policies and initiatives such as incentives for the use of renewable energy resources, take measures for energy efficiency and to make new rules and regulations related to them. This could position Türkiye favorably under the CBAM as it demonstrates commitment for involving the solution of environmental problems.

- *Diverse Economy*: Türkiye has a diverse economy with sectors such as automotive, textile, agriculture and manufacturing. This diversity can provide opportunities for Türkiye to adapt to the CBAM by focusing on sectors with lower carbon emissions and competitive advantage.

- *Renewable Energy Potential*: Türkiye has significant potential for renewable energy generation, particularly in solar and wind power. Expanding the 42% share of renewable energy in electricity sector (one of the most effected sectors for CBAM) could help reduce the carbon footprint of Turkish industries, making them more competitive under the CBAM.

5.2. Weaknesses

- *High Emissions Intensity:* Some of Türkiye's industries, such as steel and cement, have high emissions intensity compared to global averages. This could lead to higher carbon costs for these sectors under the CBAM, potentially impacting their competitiveness in international markets.

- *Limited Climate Policy Alignment:* Türkiye's climate policies and carbon pricing mechanisms may not be fully aligned with international standards or those of the EU, which is leading the development of the CBAM. This misalignment could pose challenges for Turkish exporters when it comes to exemptions or rebates under CBAM.

5.3. Opportunities

- *Incentives for Green Investments:* The CBAM can serve as an incentive for Turkish industries to invest in cleaner technologies and processes, reducing the carbon footprint. This presents an opportunity for Türkiye to accelerate the adoption of sustainable practices and enhance its competitiveness in low-carbon markets.

- *Collaboration and Market Access:* By aligning its climate policies with international standardized engaging in dialogue with other countries, Türkiye can position itself for collaboration and increased market access. Proactively engaging with the EU and other regions implementing the CBAM can open up avenues for cooperation and reduce potential trade barriers.

5.4. Threats:

- *Trade Disputes:* The implementation of the CAM may result in trade disputes and potential relation from countries that perceive the mechanism as unfair or protectionist. Türkiye needs to carefully navigate these risks to ensure its export-oriented industries are not adversely affected.

- *Administrative and Technical Challenges:* The CBAM implementation requires accurate calculation and verification embedded carbon content in imported products, which can be challenging and resource incentive. Türkiye will need to invest in the necessary administrative infrastructure and technical capabilities to comply with CBAM requirements.

- *Market Competitiveness:* If Türkiye's industries are unable to effectively reduce their carbon emissions and enhance their competitiveness, they may face disadvantages in international markets compared to countries with lower carbon costs. This could impact Türkiye's export performance and trade balance.

6. CONCLUSION

The environmental problems that the world has faced recently, in terms of the extent it has reached, require countries to take more serious steps towards a solution individually or together.

However, the different environmental awareness and infrastructure of the countries bring along problems in fulfilling the responsibilities they will undertake in the solution process, and more importantly, it causes the efforts to be in vain. In this respect, the targets set by the European Union for carbon emissions and the will to achieve these targets are embodied in texts such as the European Green Consensus, the European Environment Law, the European Environment Pact and the CBAM. The CBAM reflects the serious will of the European Union in terms of zeroing carbon emissions, preventing carbon leakage and making it comprehensive enough to concern third countries.

Although CBAM includes environmental-themed measures, it has many aspects that need to be discussed in terms of its consequences for third countries and Türkiye. The mechanism will need to be improved in terms of many issues such as being disadvantageous for developing countries, causing discrimination and protectionism in international trade, difficult to implement for technical reasons, and uncertain nature of the financial burden it contains.

In order to solve environmental problems, practices such as “high penalties for those who emit carbon dioxide”, “additional taxes” or “encouraging investments in clean energy resources” may be in question. The CBAM plans to implement in its trade with third countries is based on the principle of taking a financial burden (taxation) according to the carbon footprint caused by the imported goods. The aim is expressed as "limiting/preventing the leakage" and "protecting local producers from trade that creates a competitive disadvantage". Therefore, the aim of imposing a financial burden within the scope of carbon regulation at the border is to prevent carbon leakage that will result from the shifting of production to third countries by local businesses that want to gain competitive advantage due to the fact that the same emission rules do not apply in the world.

Although it seems to be a result of an environmentally sensitive approach, it is difficult to say that proposals for CBAM are accepted all over the world. Because some countries, including the United States, China, India, Brazil, South Africa and the least developed countries, have expressed their concerns about the CBAM and "retaliation against imports from the European Union" means that "countries will not be able to regulate their own border carbon regulation." They consider options such as "to implement the regulation", "to move the regulation to the World Trade Organization as a dispute" or at least to "negotiate the regulation with the European Union in order to obtain an exemption".

In line with the rules determined by the EU, Türkiye's action in areas related to climate change will ensure that its commercial relations and competitive advantage are preserved and that it does not fall behind from the "new green economic order". In fact, the environmental chapter, which was opened on the basis of the process of harmonization with the EU and the status of candidate country, was also influential in the enactment of environmental-themed regulations. Therefore, every step that Türkiye will take in terms of CBAM and financial burden content will lead to positive changes in many areas related to the environment.

With the transition of the Union to carbon regulation at the border, Türkiye, which is the most important trade partner of the European Union in terms of exports, will inevitably be affected economically and commercially. Because the EU, which imposes a customs/carbon tax or similar financial burden on carbon-rich imports, will try to prevent carbon leakage and maintain a competitive balance between local producers and producers located abroad. In addition, since the CBAM requires the determination of carbon emissions and the traceability of the carbon footprint, it creates the need for additional reporting, verification and calculation and declaration of their own carbon footprints, which means additional costs for businesses. Studies show that the European Union carbon price will bring an additional financial burden of approximately 1 billion dollars per year to Türkiye's trade. Moreover, there is a need for regulatory practices to have an effective institutional structure through the studies of the Turkish Environment Agency. Again, the customs union should be reviewed and expanded to cover new areas and its functionality should be increased with additional mechanisms. Otherwise, it is likely that the issues put forward by the EU in the fight against climate problems will come before Türkiye "as an obstacle".

Although the EGD and the CBAM seem to be an “imposition” on the one hand, on the other hand, it is considered as an “opportunity” and “a late transformation opportunity” for Türkiye in terms of commercial transformation. If Türkiye can establish a carbon pricing system compatible with the EU, there will be no question of measuring export products at the border or paying a financial burden.

Depending on the deepening of environmental-themed initiatives in the EU, Türkiye should also make structural reforms in the same direction in the face of any regulation to be made by the EU, its biggest commercial partner. However, Türkiye's compliance with the CBAM remains uncertain at this stage. There is customs union between Türkiye and the EU and the rules regarding this prohibit customs duties and similar financial burdens. However, although there are opinions that the content of CBAM will not have the characteristics of a customs tax, the fact that the system has a customs leg leads to the conclusion that the financial burden in question will be subject to the provisions regarding customs duties. Updating the customs union is an important opportunity for Türkiye to implement the regulation.

In order for Türkiye to make the transition to 'green production' sustainable without experiencing economic losses, it is necessary to plan and support the sectoral effects of the EGD and the smooth transition to compliance. In this framework, an Action Plan, which includes thirty-two objectives and eighty-one actions under nine basic criteria, with the coordination of all public and private sectors under the leadership of the Ministry of Commerce, has also been announced. With this plan, which is a road map, it is aimed to improve competitiveness in exports, to continue and strengthen Türkiye's competitiveness in the international arena, to increase green investments in Türkiye, to become a center of attraction for green investments and to support green transformation.

In line with this goal, although the CBAM brings an annual burden of 1.1-1.8 billion euros to Türkiye's exporters in its trade with the EU, this burden should be seen as a transformation opportunity for the "circular economy" or the new "carbon neutral" economy.

REFERENCES

Aşıcı, A.A. (2021) ''Türkiye Küresel İklim Rejimi'ne Neden Uyum Sağlamalı?'', TESEV Değerlendirme Notları, 2021/4 Retrieved from: https://www.tesev.org.tr/wp-content/uploads/rapor_turkiye_kuresel_iklim_rejimine_neden_uyum_saglamali-1.pdf, on Jun 16, 2023.

Ecer, K., Güner, O ve Çetin, M. (2021) ''Avrupa Yeşil Mutabakatı ve TüRkiye Ekonomisinin Uyum Politikaları'', İşletme ve İktisat Çalışmaları Dergisi, 9(2): 125-144.

Economic Development Foundation (EDF), (2021) ''AB Yeşil Mutabakatı Temel Unsurları ve Yol Haritası'', No: 319, ISBN:978-605-7756-14-5, Retrieved from: https://www.ikv.org.tr/images/files/AB_Yesil_Mutabakati_Temel_Unsurlari_ve_Yol.pdf, on Jun 12, 2023.

Ertunga, E.İ., Seyhun, Ö.K. (2022) ''Sınırda Karbon Düzenleme Mekanizması ve Türkiye'nin İhracatına Olası Etkileri, Ege Stratejik Araştırmalar Dergisi'', 13 (1): 1-13, DOI: 10.18354/esam.1119230.

European Commission (2021a) ''Delivering the European Green Deal'', Retrieved from: https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal/delivering-european-green-deal_en, on Jun12, 2023.

European Commission (2021b) ''Carbon Border Adjustment Mechanism: Questions and Answers'', Retrieved from: https://ec.europa.eu/commission/presscorner/detail/en/qanda_21_3661, on Jun 12, 2023.

European Commission (2021c) ''Proposal for a Regulation of the European Parliament and of the Council Establishing a Carbon Border Adjustment Mechanism'', Retrieved from: https://www.europarl.europa.eu/doceo/document/A-9-2022-0160_EN.pdf, on Jun 15, 2023.

European Commission, (2021d) ''European Climate Law'', Retrieved from: https://ec.europa.eu/clima/euaction/european-green-deal/european-climate-law_en, on Jun 13, 2023

Koç, B.E. ve Kaynak, S. (2023) ''Sınırda Karbon Düzenleme Mekanizmasının Türkiye - AB-27 Dış Ticaret İlişkisi Üzerine Olası Etkisi'', Verimlilik Dergisi, 57(2): 273-288.

Küçük, G. ve Yüce D. B. (2022) ‘‘Avrupa Yeşil Mutabakatı ve Yeşil Ekonomiye Geçiş: Enerji Senaryoları ÜZerinden bir Değerlendirme’’, Anadolu Üniversitesi Sosyal Bilimler Dergisi, 22(1): 137-156.

OECD. (2020) ‘‘Biodiversity and the Economic Response to Covid-19: Ensuring a Green and Resilient Recovery’’, OECD Policy Responses to Coronavirus (COVID-19), 28 September 2020, Retrieved from: https://www.oecd.org/coronavirus/policy-responses/biodiversity-and-the-economic-response-to-covid-19-ensuring-a-green-and-resilient-recovery-d98b5a09/, on Jun 10, 2023.

Official Journal of European Union. (2016) ‘‘On The Conclusion, on Behalf of the European Union, of the Paris Agreement Adopted under the United Nations Framework Convention on Climate Change’’, Retrieved from: http://data.europa.eu/eli/dec/2016/1841/oj, on Jun 12,2023.

Official Newspaper (07.10.2021) ‘‘Paris Anlaşmasının Onaylanmasının Uygun Bulunduğuna Dair Kanun’’. Retrieved from: https://www.resmigazete.gov.tr/eskiler/2021/10/20211007-7.pdf, on Jun 15, 2023.

Özsoy, C.E. (2022) ‘‘Sınırda Karbon Mekanizması: Türkiye için Yeni Bir Risk mi Fırsat mı?’’, VI. Anadolu International Conference on Economics, May 13-15: 2022, Eskişehir, Türkiye.

Republic of Türkiye Ministry of Environment (2023) ‘‘Urbanization and Climate Change, Paris Anlaşması’’, Retrieved from: https://iklim.gov.tr/parisanlasmasi-i-34, on Jun 15, 2023.

Republic of Türkiye Ministry of Foreign Affairs Directorate for EU Affairs (2023) ‘‘Department of Sectoral Policies, (MFA),(2023)’’, Chapter 27-Environment and Climate Change, Retrieved from: https://www.ab.gov.tr/92_en.html, on Jun12, 2023.

Republic of Türkiye Ministry of Trade (2023) ‘‘Yanı Başımızdaki Dev Pazar Avrupa Birliği’’, Retrieved from: https://ticaret.gov.tr/dis-iliskiler/avrupa-birligi/yani-basimizdaki-dev-pazar-avrupabirligi, on Jun 17, 2023.

Ripple, W.J, Wolf, C., Newosme, T.M., Gregg, J.W., Lenton, T.M., Palomo, I., Eikelboom, J.A.J., Law, B.E., Huq, S., Duffy, P.B., Rockström, J., (2021) ‘‘World Scientists’ Warning of Climate Emergency’’, Bioscience, 71 (9): 894-898.

The Circularity Gap Report (CGR) (2023) ‘‘Circle Economy’’, Retrieved from: https://assets.website-files.com/5e185aa4d27bcf348400ed82/63ecb3ad94e12d3e5599cf54_CGR%202023%20-%20Report.pdf, on Jun 10, 2023.

Türkiye İstatistik Kurumu (TÜİK) (2023) ‘‘Dış Ticaret İstatistikleri’’, December 2022, Retrieved from: https://data.tuik.gov.tr/Bulten/Index?p=Dis-Ticaret-Istatistikleri-Aralik-2022-49633, on Jun 17, 2023.

TÜSİAD (2020) ‘‘Ekonomik Göstergeler Merceğinden Yeni İklim Rejimi’’, Retrieved from: https://tusiad.org/tr/yayinlar/raporlar/item/10633-ekonomik-gostergelermerceginden-yeni-i-klim-rejimi-raporu, on Jun 16,2023.

United Nations Conference on Trade and Development (UNCTAD), (2021) ‘‘A European Union Carbon Adjustment Mechanism: Implications for Developing Countries’’, Retrieved from: https://unctad.org/system/files/official-document/osginf2021d2_en.pdf, on Jun 17, 2023.

United Nations Environment Programme (UNEP) (2022) ‘‘Emissions Gap Report 2022: The Closing Window, Climate Crisis Calls for Rapid Transformation of Societies’’, Retrievef from: https://www.unep.org/resources/emissions-gap-report-2022, on Jun 10, 2023.

United Nations Framework Convention on Climate Change (UNFCCC) (2015) ‘‘Paris Agreement’’, Retrieved from: https://unfccc.int/sites/default/files/english_paris_agreement.pdf, on Jun 12, 2023.

World Economic Forum (WEF), (2023) ‘‘Global Risks Report 2023’’, 18th Edition, Retrieved from: https://www3.weforum.org/docs/WEF_Global_Risks_Report_2023.pdf, on Jun 10, 2023.

Hakem Değerlendirmesi: Dış bağımsız.

Çıkar Çatışması: Yazar çıkar çatışması bildirmemiştir.

Finansal Destek: Yazar bu çalışma için finansal destek almadığını beyan etmiştir.

Teşekkür: -

Peer-review: Externally peer-reviewed.

Conflict of Interest: The author has no conflict of interest to declare.

Grant Support: The author declared that this study has received no financial support.

Acknowledgement: -