

MASTER THESIS | MASTER'S THESIS

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The EU Carbon Border Adjustment Mechanism (CBAM): Legal
Nature, Economic Implications and Extraterritorial Effects from
a Tax Law Perspective

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Grad. Gerardo Raúl Monzón Holguín

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Abstract (German)

Diese Masterarbeit untersucht den Carbon Border Adjustment Mechanism (CBAM) der Europäischen Union aus steuerrechtlicher Perspektive unter Einbeziehung rechtlicher, wirtschaftlicher und umweltbezogener Gesichtspunkte. Ziel der Arbeit ist es, die Beweggründe und Zielsetzungen der Einführung des CBAM als Bestandteil des Europäischen Green Deal zu analysieren. Dabei liegt der Schwerpunkt auf seiner Funktion als Instrument zur Vermeidung von Carbon Leakage sowie zur Unterstützung der Klimaneutralitätsziele der Europäischen Union durch die Ausweitung der CO₂-Bepreisung auf importierte Waren.

Zunächst werden die wirtschaftlichen und umweltbezogenen Grundlagen des Mechanismus sowie seine zentralen Konzepte erläutert, insbesondere Treibhausgasemissionen, eingebettete Emissionen, die CO₂-Bepreisung sowie das komplementäre Verhältnis zwischen dem CBAM und dem EU-Emissionshandelssystem (EU ETS). Anschließend untersucht die Arbeit die praktische Funktionsweise des CBAM, seinen Anwendungsbereich, die Methodik zur Berechnung eingebetteter Emissionen, die Bepreisung und Abgabe von CBAM-Zertifikaten, die Anrechnung von in Drittstaaten entrichteten CO₂-Preisen sowie die Verfahren zur Durchsetzung und Einhaltung der Regelungen. Darüber hinaus wird der rechtlichen Einordnung des CBAM besondere Aufmerksamkeit gewidmet. Dabei wird untersucht, ob der Mechanismus als klassische Steuer oder Zollabgabe oder vielmehr als ein neuartiges umweltrechtliches Regulierungsinstrument zu qualifizieren ist. Abschließend bewertet die Arbeit die extraterritorialen Wirkungen des CBAM sowie seine Vereinbarkeit mit den Grundsätzen des internationalen Handelsrechts.

Die Masterarbeit gelangt zu dem Ergebnis, dass der CBAM trotz seiner fiskalischen Elemente und der Generierung von Einnahmen für den Haushalt der Europäischen Union in erster Linie ein umweltrechtliches Regulierungsinstrument und keine klassische Steuer oder Zollabgabe darstellt. Seine finanziellen Elemente dienen vorrangig dem Ziel, die Umweltkosten von Treibhausgasemissionen zu internalisieren und Risiken des Carbon Leakage zu verhindern, nicht jedoch der

Erzielung staatlicher Einnahmen. Obwohl der Mechanismus Einfluss auf Produktionsentscheidungen außerhalb der Europäischen Union ausübt, bleiben seine Wirkungen an den Zugang zum Binnenmarkt der Europäischen Union gebunden und können daher nicht als unzulässige Ausübung extraterritorialer Hoheitsgewalt angesehen werden. Die Arbeit kommt zu dem Schluss, dass der CBAM einen bedeutenden Schritt zur Verknüpfung von Klimapolitik und internationalem Handelsrecht darstellt, Drittstaaten zur Einführung nachhaltigerer Klimapolitiken anregen kann und das Potenzial besitzt, langfristig eine weltweite CO₂-Bepreisung zu fördern.

Abstract (English)

This master's Thesis examines the application of the European Union's Carbon Border Adjustment Mechanism (CBAM) from a tax law perspective, while using legal, economic, and environmental considerations. The present research analyses the reasons and objectives behind the introduction of the CBAM as part of the European Green Deal, focusing on its role as an instrument to address carbon leakage and support the EU's climate neutrality objectives through the extension of carbon pricing to imported goods.

This work first discusses the economic and environmental foundations of the mechanism and its key concepts, such as greenhouse gas emissions, embedded emissions, carbon pricing, and the complementary nature of between the CBAM and the EU Emissions Trading System (EU ETS). It then examines the practical functioning of the CBAM, its scope of application, the calculation methodology of embedded emissions, the pricing and surrender of CBAM certificates, the recognition of carbon prices paid in third countries, and enforcement procedures. Continuously, a particular attention is given to the legal classification of the CBAM, assessing if it should be considered as a traditional tax or customs duty, or as an innovative environmental regulatory instrument. Finally, the research evaluates the extraterritorial effects of the CBAM and its compatibility with international trade law principles.

The master's Thesis concludes that the CBAM is primarily an environmental regulatory instrument rather than a traditional tax or customs duty. Its financial elements are considered to serve a higher objective of internalising the environmental cost of greenhouse gas emissions and preventing risks of carbon leakage, rather than generating revenue. Even when the mechanism influences production behaviours outside the EU, its effects remain linked to the access to EU internal market and, therefore, cannot be considered as an unlawful use of extraterritorial jurisdiction. The CBAM represents a significant step to the integration of climate policy to the regulation of international trade, has the strength to encourage third countries on adopting more sustainable climate policies, and has the potential to promote a global carbon pricing in the future.

Abbreviations

Carbon Border Adjustment Mechanism	CBAM
Carbon dioxide	CO ₂
Court of Justice of the European Union	CJEU
Economic instruments	Eis
European Green Deal	EGD
European Union	EU
European Union Emissions Trading System	EU ETS
Greenhouse gases	GHG
Most-Favoured Nation	MFN
National Treatment	NT
Organisation for Economic Co-operation and Development	OECD
Process and production methods	PPMs
The General Agreement on Tariffs and Trade	GATT 1947
Treaty on the Functioning of the European Union	TFEU
United Nations Framework Convention on Climate Change	UNFCCC
World Trade Organisation	WTO

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Chapter I. Introduction

Climate change has become one of the main challenges of the 21st century for humankind, being the cause of devastating consequences around the globe, raising temperatures both on land and in the oceans¹ and leading adverse impacts for humans, the economy and the environment all over the world.² Some States try to address this global threat by different means such as, for example, the adoption of different environmental and economic instruments (EIs).³ The reducing of greenhouse gases (GHG) emissions by human activity is the target of many of these policies, and the EU has positioned itself as a global leader to foster such behaviour⁴. With the intention to achieve climate neutrality by 2050, the EU presented in 2019 the European Green Deal (EGD)⁵, a series of policies and instruments directed to cut emissions by at least 55% by 2030⁶. Among these instruments, the Carbon Border Adjustment Mechanism (CBAM)⁷ was announced, an EU tool to put a price on carbon emissions during the production of certain carbon-intensive goods (cement, electricity fertilisers, aluminium, hydrogen, iron and steel)⁸. Such tool represents one of the most innovative but controversial measures as observed by the reaction of different trading partners of the EU⁹. The

¹ World Meteorological Organization, *Provisional State of the Global Climate 2023* (30 November 2023) <https://wmo.int/sites/default/files/2023-11/WMO%20Provisional%20State%20of%20the%20Global%20Climate%202023.pdf> accessed 15 June 2026.

² Jos Delbeke, *EU Climate Policy After 25 Years, Delivering a Climate Neutral Europe* (Routledge 2024) 4 <https://www.routledge.com/Delivering-a-Climate-Neutral-Europe/Delbeke/p/book/9781032797618> accessed 16 June 2026.

³ Jean-Philippe Barbe, 'Economic Instruments in Environmental Policy: Lessons from the OECD Experience and their Relevance to Developing Economies' (1994) OECD Development Centre Working Papers, No. 92, 17 https://www.oecd.org/content/dam/oecd/en/publications/reports/1994/01/economic-instruments-in-environmental-policy_g17a15d4/754416133402.pdf accessed 15 June 2026.

⁴ Alice Pirlot, 'Carbon Border Adjustment Measures: A Straightforward Multi-Purpose Climate Change Instrument?' (2022) 34 J Env L 25 <https://academic.oup.com/jel/article/34/1/25/6423116> accessed 14 June 2026.

⁵ European Commission, 'The European Green Deal' (Communication) COM (2019) 640 final.

⁶ European Commission, 'Fit for 55: delivering the EU's 2030 Climate Target on the way to climate neutrality' (Communication) COM (2021) 550 final.

⁷ Council Regulation (EU) 2023/956 of 10 May 2023 establishing a carbon border adjustment mechanism [2023] OJ L130/52.

⁸ *Ibid*, Annex I.

⁹ Muyu Xu and David Stanway, 'China Says EU's Planned Carbon Border Tax Violates Trade Principles' (Reuters, 26 July 2021) <https://www.reuters.com/business/sustainable-business/china-says-ecs-carbon-border-tax-is-expanding-climate-issues-trade-2021-07-26/> accessed 13 June 2026; Natalie L Dobson, *Extraterritoriality and Climate Change Jurisdiction: Exploring EU Climate Protection under*

range of this newly adopted mechanism is still unknown, being the current year 2026 when verified importers need to report data and start predicting the amount of CBAM certificates that they will have to surrender in 2027¹⁰.

This Master Thesis tries to tackle different questions that arise with the introduction of the CBAM in the framework of EU climate policy, such as the reason of its creation, its functioning and how is it capable of applying an economic burden to the emission of gases, or whether it is an environmental tool whose objective is to reduce the global emission of GHG, or a hidden mechanism of “green protectionism” for domestic producers towards the importation of products. Furthermore, the Master Thesis focus on the questions arisen regarding its legal foundation, such as considering the CBAM as a tax or a customs duty, or a different type of environmental mechanism, and ultimately, if a member of international trade like the EU can impose a measure as such and, if so, if it complies with International Trade Law and WTO principles.

This research tries to examine the impact that the CBAM will have on the import of products to EU market, its influence on the production process in third countries and whether it is capable of having an effect on the environment. It also tries to determine the legal nature of the CBAM, which is of interest to know how the CBAM should be applied and enforced through the EU member states.

The methodology adopted in this Master Thesis is of doctrinal legal research, as the analysis of legal rules, principles and case law is necessary to understand the CBAM’s application. Furthermore, interdisciplinary research is performed between Law and Economics and also between Law and Environmental concepts. Comparative legal methodology is also used between the CBAM and other EU legal tools, such as the EU ETS.

International Law (Hart Publishing 2021) 65; Case C-512/23 *Republic of Poland v European Parliament and Council of the European Union* [2023]; *Russian Federation – European Union – Carbon Border Adjustment Mechanism* (Request for Consultations by the Russian Federation) WT/DS639 (12 May 2025).

¹⁰ CBAM, art 6(1).

The analysis of this Master Thesis proceeds in five parts. First, an introduction to the background of the CBAM, to the concept of greenhouse gas (GHG) emissions and carbon leakage is performed, followed by a discussion of the economic rationale of the mechanism. After an overview of the functioning of the CBAM and its implications, with a focus on the numeric calculation of the embedded emissions of imported products, research of the legal nature of the CBAM will allow us to identify which kind of instrument is it. Lastly, the contribution will evaluate the extraterritorial effects of the CBAM and its compatibility with International Trade Law before concluding.

Chapter II. Greenhouse Gas Emissions, Carbon Leakage and the Economic Rationale for the CBAM

The origin of the CBAM is found in the development of previous carbon emission policies from the EU.¹¹ Its structure, functioning and methodologies can't be comprehended as a newly designed mechanism, but rather as part of the EU "Fit for 55" legislative package¹² and, specially, as a complement to the emissions trading system of the EU CBAM.¹³ Furthermore, to understand the climate policy under the European Green Deal¹⁴, it is necessary to depict concepts such as greenhouse gas emissions, carbon leakage, or the main impacts of global warming, which will also make it possible to understand the CBAM's justification.¹⁵

This chapter provides an overview of the main type of greenhouse gases (GHG) and their impact on the environment and public health. As CBAM's main function is accounting for GHG¹⁶, we will examine the concept of carbon pricing and discuss whether CBAM's intention is to make producers and importers internalize the negative externality of emissions through an economic cost¹⁷, followed by a key definition of carbon leakage and how it concerns EU domestic producers' competitiveness. Before concluding, a discussion about the economic rationale for the CBAM is exposed.

2.1 Greenhouse Gas Emissions and their influence on Climate Change

Climate change comprises the long-term changes in global climate conditions that become evident through changes in temperatures, precipitations, wind speeds, and

¹¹ F. Bachmann & F.J.G. Nellen, 'A Critical Analysis of the Carbon Border Adjustment Mechanism' (2025) 20(7- 8) *Global Trade and Customs Journal* 520.

<https://kluwerlawonline.com/journalarticle/Global+Trade+and+Customs+Journal/20.5/GTCJ2025082> accessed 20 June 2026.

¹² CBAM, recital 10.

¹³ CBAM, recital 20.

¹⁴ European Commission, 'The European Green Deal' (Communication) COM (2019) 640 final.

¹⁵ Recital 6, 9 and 15 CBAM; Article 3(2) CBAM

¹⁶ Patrick Abel, 'The EU Carbon Border Adjustment Mechanism Protecting Steel and Metals Trade?', (2026) 21(2) *Global Trade and Customs Journal* 148
<https://kluwerlawonline.com/journalarticle/Global+Trade+and+Customs+Journal/21.2/GTCJ2026017> accessed 12 June 2026.

¹⁷ CBAM, recital 15.

other climate indicators.¹⁸ The United Nations Framework Convention on Climate Change (UNFCCC), in its Article 1, defines climate change as: “a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere, and which is in addition to natural climate variability observed over comparable time periods”.¹⁹ Therefore, even when natural factors are also a contributor to climate change, greenhouse gas emissions originated by human activity are strongly influencing the environment’s change.²⁰

For the discussion of the main targets of the CBAM²¹, the understanding of greenhouse gases (GHG), their classification, and their contribution to climate change may be necessary. In this sense, GHG are the group of gases that contribute to global warming and climate change²². The Kyoto Protocol²³, which was adopted in 1997 by, among other industrialized countries, the European Union²⁴, ensures that parties convey activities and policies related to the reduction and quantification of emissions, such as enhancing energy efficiency, or applying measures to limit and reduce emissions of GHG.²⁵ In this regard, the type of greenhouse gases²⁶ should be classified as:

- The non-fluorinated gases (those that don’t contain the chemical element fluorine²⁷):

¹⁸ Nataliia Volchenko, Serhii Zhmakin, Roman Udovenko, Serhii Soldatkin and Igor Soldatkin, ‘Combating Climate Change Through the International Law Perspective: The Role of the EU in Environmental Diplomacy’, *European Energy and Environmental Law Review* (2023), 257 <https://kluwerlawonline.com/journalarticle/European+Energy+and+Environmental+Law+Review/3.2.5/EELR2023016> accessed 16 June 2026.

¹⁹ United Nations Framework Convention on Climate Change (adopted 9 May 1992, entered into force 21 March 1994) 1771 UNTS 107, article 1.

²⁰ *Ibid.*

²¹ CBAM, recitals 7, 8, 9; CBAM, art 1(1).

²² European Commission Eurostat, ‘Statistics Explained: Greenhouse gas (GHG) Emission Accounts’ https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Greenhouse_gas_emission_accounts accessed 23 March 2026.

²³ *Kyoto Protocol to the United Nations Framework Convention on Climate Change* (adopted 11 December 1997, entered into force 16 February 2005) 2303 UNTS 162.

²⁴ *Kyoto Protocol, ibid*, annex I.

²⁵ *Kyoto Protocol, ibid*, art 2(1).

²⁶ Intergovernmental Panel on Climate Change (IPCC), ‘Annex VII: Glossary’, in V Masson-Delmotte and others (eds), *Climate Change 2021: The Physical Science Basis: Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press 2021) 2233.

²⁷ Royal Society of Chemistry, ‘Fluorine’ *RSC Periodic Table* <https://periodic-table.rsc.org/element/9/fluorine> accessed 19 June 2026.

- Carbon dioxide (CO₂)
- Methane (CH₄)
- Nitrous oxide (N₂O)
- The fluorinated gases (or F-gases, artificial gases created by humans that are commonly used in industrial procedures)²⁸ :
 - Hydrofluorocarbons (HFCs)
 - Perfluorocarbons (PFCs)
 - Sulphur hexafluoride (SF₆)
 - Chlorofluorocarbons (CFCs)

The process by which these GHG are a main cause for climate change starts with the arrival of Sun's energy to the Earth's surface, which is transformed into heat and, later, radiated outwards of our planet. Because of the presence of greenhouse gases, this process is affected and part of the radiated heat doesn't leave Earth's atmosphere. That is how GHG behave similarly to the glass in a greenhouse, trapping the heat that has been radiated from Earth's surface and not letting it flow to space.²⁹ Even when the presence of GHG in the atmosphere is necessary to maintain a temperature to sustain life in our planet, the problem arises when the presence of GHG in the atmosphere is higher than usual, affecting the atmosphere energy flux, known as Earth's energy imbalance.³⁰ These concepts suggest that human activity (such as burning fossil fuels, manufacturing industries, agricultural exploitation, transport, and deforestation) represents the main cause for the presence of GHG in the atmosphere higher than necessary to sustain life, making temperatures rise exponentially and, therefore, damaging the environment.

According to the United Nations, the main effects of climate change are³¹:

²⁸ European Environment Agency, 'What are F-gases and why are they harmful?' <https://www.eea.europa.eu/en/about/contact-us/faqs/what-are-f-gases-and-why-are-they-harmful> accessed 16 June 2026.

²⁹ *Ibid* 26, 2232.

³⁰ *Ibid* 26, 2227.

³¹ United Nations, 'Causes and Effects of Climate Change' <https://www.un.org/en/climatechange/science/causes-effects-climate-change> accessed 17 June 2026.

- Warmer temperatures: higher temperatures increase heat-related illnesses and makes it difficult to work or spend time outdoors. Wildfires start easier and spread rapidly. In difference to the global average, temperatures in the Arctic have warmed at least twice as fast.
- More severe storms: ocean warming and the rise of evaporated moisture facilitates the presence of intense and more frequent destructive storms, rainfalls, floodings, cyclones, hurricanes, and typhons. Such storms often destroy communities and cause deaths and huge economic losses.
- Increased drought: water availability is lowering across regions, putting in risk agriculture and ecosystems. Droughts also produce dust storms, moving billions of tons of sand across continents. Deserts are getting bigger, reducing soil to grow food. Water, being a primary source of life, won't be accessible to everyone.
- Rising ocean: water expands when it gets warmer. Melting ice also contributes to the rising of sea levels, a primary threat to communities in island or coastal territories. Furthermore, the ocean absorbs carbon dioxide, endangering marine life and coral reefs.
- Loss of species: forest fires, extreme weather, and invasive diseases are some of the many threats to wildlife that are a consequence of climate change. Some species will be able to adapt and relocate; others will be extinct within the next few decades.
- Lack of food: extreme weather and changes in climate are some of the reasons why there is a global rise in hunger and poor nutrition. Fisheries, crops, and livestock may be destroyed or become less productive.
- Increase of health risks: health harming through air pollution, diseases, extreme weather events, forced displacement, mental health stressful situations, and increased hunger, is a consequence of climate change as a threat to people's health. Every year, environmental factors take the lives of around 13 million people.
- Poverty and displacement: altogether, the previous effects cause harms to people and make them struggle in poverty, such as by the destroying of their

homes or livelihoods activities. In some regions of the world, which are most vulnerable to the impacts of climate change, people is forced to displace.

Regarding the different types of GHG exposed previously, the functioning of the CBAM only considers Carbon Dioxide (CO₂), Nitrous Oxide (N₂O) and Perfluorocarbons (PFCs).³² This is a narrower consideration of GHG compared to the scope of the EU ETS, which also includes Methane (CH₄), Hydrofluorocarbons (HFCs) and Sulphur Hexafluoride (SF₆).³³ Such lack of consideration of all the types of greenhouse gases in the EU carbon price systems may lead to a discussion of whether their focus is mostly economic or environmental. Leonelli defends that the CBAM has an economic level playing field, being an economic remedy whose scope of application doesn't consider elements with no economic relevance.³⁴ In the same line, Bachmann and Nellen consider that in the CBAM's trade-off between environmental effectiveness and administrative impact on businesses, the decision of including products should be applied to products with a proven, significant ecological footprint.³⁵ The EU defends this position by considering that their CBAM's aim is to match the phase out of EU ETS free allowances,³⁶ thus only considering products (and their GHG) generated by sectors of EU industry that present a higher risk of carbon leakage.³⁷ Following the rationale of an economic remedy, this suggests that the idea behind the limited scope of the CBAM is that carbon leakage can already be considerably reduced by applying the mechanism to certain energy and carbon-intensive sectors.³⁸ This thesis argues that the effectiveness of the environmental aim of the EU carbon price systems (EU ETS and EU CBAM) is undermined by the intention to benefit producers whose GHG emissions are not

³² CBAM, annex I.

³³ CBAM, recital 19.

³⁴ Giulia Claudia Leonelli, 'Practical obstacles and structural legal constraints in the adoption of "defensive" policies: comparing the EU Carbon Border Adjustment Mechanism and the US Proposal for a Border Carbon Adjustment' (2022) 42(4) *Legal Studies* 697 <https://www.cambridge.org/core/journals/legal-studies/article/abs/practical-obstacles-and-structural-legal-constraints-in-the-adoption-of-defensive-policies-comparing-the-eu-carbon-border-adjustment-mechanism-and-the-us-proposal-for-a-border-carbon-adjustment/F67F93676947973AA56539BAEDA92516> accessed 19 July 2026.

³⁵ A Critical Analysis of the CBAM (F. Bachmann & F.J.G. Nellen), *ibid* 11, 522.

³⁶ CBAM, recital 12.

³⁷ CBAM, recital 10.

³⁸ CBAM, recital 30; A Critical Analysis of the CBAM (F. Bachmann & F.J.G. Nellen), *ibid* 11, 522.

included in the scope. From this perspective, the EU CBAM could have had a bigger environmental ambition, but its scope is found limited due to economic interests.

2.2. Carbon Pricing and the Internalization of Environmental Costs

One of the objectives of the CBAM is to apply a carbon price to the embedded emissions of products imported to the EU market.³⁹ Such emissions of GHG is a negative externality of industrial production, a cost imposed to a party that is not included in the business (thus, neither the buyer nor the seller). A factory releasing GHG creates a social cost (impacting the respiratory health of people working or living near the factory or, expansively, contributing to global warming). This social cost is not reflected in product prices and, therefore, the factory doesn't have any incentive to reduce its production and reduce its emission of GHG.⁴⁰ This lack of balance between industrial production and its environmental cost can be considered as a market failure. Because of this, it seems evident that the intervention of policies is necessary to correct this market failure and to give importance to the environmental impact of GHG during the production as another factor in the economical decision-making process of a company.

Environmental policy instruments, which can be differentiated as regulatory and economic ones, have emerged as a fundamental mechanism to internalize the negative environmental cost of GHG emissions.⁴¹ Within these instruments we can find carbon pricing, the method by which an economic cost is attributed to the emission of GHG. The CBAM seeks put a fair price on the emissions of carbon-intensive goods imported to the EU, and to encourage a cleaner industrial production to non-EU countries.⁴²

There are two types of carbon pricing:⁴³

³⁹ CBAM, art 1(1).

⁴⁰ The Editors of Encyclopaedia Britannica, 'Negative Externality' *Encyclopaedia Britannica* <https://www.britannica.com/topic/negative-externality> accessed 1 April 2026.

⁴¹ Economic Instruments in Environmental Policy (Jean-Philippe Barbe), *ibid* 3, 10.

⁴² European Commission Directorate-General for Taxation and Customs Union, 'Carbon Border Adjustment Mechanism'. https://taxation-customs.ec.europa.eu/carbon-border-adjustment-mechanism_en accessed 4 June 2026.

⁴³ Jennifer Morris, 'Carbon pricing' (MIT *Climate Portal*, 11 January 2022) <https://climate.mit.edu/explainers/carbon-pricing> accessed 21 April 2026.

- A carbon tax: A carbon tax sets directly a price per quantity of emissions. Different examples of carbon taxes can be found across EU member states, some of them with a higher rate per metric ton of CO₂ emitted than others. For example, in April 2025, Sweden's carbon tax rate was of €134,06 per metric ton of CO₂ emitted. Meanwhile, Poland's carbon tax rate was of €0,09 per metric ton of CO₂ emitted⁴⁴.
- A cap-and-trade system (or emission trading system): a cap of GHG emissions is set and the competent authority determines the number of emission permits, which will be exchanged between emitters under the principles of supply and demand, depending on their total amount of GHG emission. Therefore, the price of the emission permits is not set before their issuing, but rather because of the demand of emitters that can't reduce their total amount of emissions in a cost-effective way.

In 2005 the EU introduced the European Union Emissions Trading System (EU ETS)⁴⁵. This mechanism establishes a cap-and-trade system in specific industrial sectors (electricity and heat generation, industrial manufacturing and aviation, and maritime transport emissions) within the territory of the EU, Iceland, Liechtenstein, and Norway.⁴⁶ This suggests that, with the progressive reduction of the availability of emissions allowances, the EU ETS seeks to gradually increase the economic rates of carbon emissions and make EU domestic emitters bet for decarbonization in their economic activities. Nevertheless, the introduction of the EU ETS has given rise to competitiveness concerns and, furthermore, the increasing of carbon leakage, where EU domestic producers try to avoid the environmental burdens that the EU applies to them.

⁴⁴ Alex Mengden, 'Carbon Taxes in Europe, 2026' (*Tax Foundation Europe*, 29 June 2026) <https://taxfoundation.org/data/all/eu/carbon-taxes-europe/> accessed 21 July 2026.

⁴⁵ Directive (EU) 2023/959 of the European Parliament and of the Council of 10 May 2023 amending Directive 2003/87/EC establishing a system for greenhouse gas emission allowance trading within the Union and Decision (EU) 2015/1814 concerning the establishment and operation of a market stability reserve for the Union greenhouse gas emission trading system [2023] OJ L 130/134.

⁴⁶ *Ibid.*

2.3. Carbon Leakage and Competitiveness Concerns

Carbon leakage is one of the main challenges that came along with the application of the EU ETS. This practice relies on the relocation of CO₂ emissions from one country to another due to the strict climate policies of the first country compared to the more permissive politics of the later.⁴⁷ Because of this, the main objective of the EU ETS, which is to reduce (domestic) emissions of GHG, can be offset by the continuity of these emissions in another part of the world.

Carbon leakage can be performed in different ways. First, a domestic EU producer can decide to relocate their production to a country outside of the EU and afterwards import their products, free of EU ETS emission allowances. Second, a domestic EU producer may stop its production and start importing products to the EU for a cheaper cost than if they had to produce it within the EU. In both cases, the GHG emissions is relocated to a country with a lower (or non-existent) climate regulation.

In this context, the CBAM was introduced as a mechanism to address carbon leakage and competitiveness disparities.⁴⁸ By also imposing an emissions trading system to imported products, the CBAM's intention is to make sure that imported goods also bear a carbon emission cost like the one imposed to EU producers under the EU ETS.⁴⁹ Bachmann and Nellen consider that the actual effect of the CBAM in the mitigation of carbon leakage is not certain. For instance, the intention to add more products in the CBAM scope in the future can be obstructed by being considered unnecessary due to their less-carbon-intensive nature,⁵⁰ producing fewer environmental gains for the same administrative burden. Similarly, and closely related to the CBAM's compatibility with WTO principles, if a measure is intended to address carbon leakage, but such leakage estimates are low for the

⁴⁷ European Commission, 'Carbon leakage' https://climate.ec.europa.eu/eu-action/carbon-markets/eu-emissions-trading-system-eu-ets/free-allocation/carbon-leakage_en accessed 30 April 2026.

⁴⁸ CBAM, recital 10.

⁴⁹ CBAM, recital 20.

⁵⁰ A Critical Analysis of the CBAM (F. Bachmann & F.J.G. Nellen), *ibid* 11, 526.

targeted sectors, it may be challenging to demonstrate a material contribution.⁵¹ This suggests that the effectiveness of the CBAM in preventing carbon leakage may be constrained by opposition to expanding its scope, as the relatively limited additional emissions covered may not justify the significant increase in administrative burden for both competent authorities and declarants. This thesis finds that this leaves the CBAM in a vulnerable position, with limited resilience to future policy changes that may reflect weaker environmental ambition.

2.4. The CBAM's Economic and Environmental Rationale balance

The CBAM was introduced by the EU as an attempt to overcome indirect issues caused by the implementation of the EU ETS, as carbon pricing instruments are often thought to lead to carbon leakage and a loss of competitiveness for domestic producers.⁵² The economic rationale of the CBAM is defended as a necessity of the EU to preserve the environmental effectiveness of European emissions trading systems and to protect the competitiveness of EU industrial production. On the one hand, the CBAM seeks to avoid the relocation of GHG emissions outside of the EU, a practice that offsets the aim to reduce global emissions (even though it would lower such emissions in European territory). On the other hand, competitiveness between domestic EU producers and imported products would be levelled by the imposition of a carbon pricing to both.

Nevertheless, the environmental and economic efficiency of the CBAM may be undermined. For instance, Meyer and Tucker argue that an overly ambitious CBAM may lead to a lack of international cooperation of different decarbonisation measures.⁵³ Furthermore, some scholars consider that the complexity and trade-offs of applying different CBAMs around the world is neither desirable nor a stable

⁵¹ Michael A. Mehling 'Designing Border Carbon Adjustments for Enhanced Climate Action' (2019) 113(3) *American Journal of International Law* 433, 465 <https://www.cambridge.org/uaccess.univie.ac.at/core/journals/american-journal-of-international-law/article/designing-border-carbon-adjustments-for-enhanced-climate-action/BF4266550F09E5E4A7479E09C047B984> accessed 17 July 2026.

⁵² CBAM, recital 10; Carbon Border Adjustment Measures: A Straightforward Multi-Purpose Climate Change Instrument? (Alice Pirlot), *ibid* 4, 28.

⁵³ Timothy Meyer and Todd N Tucker, 'A Pragmatic Approach to Carbon Border Measures' (2022) 21(1) *World Trade Review* 111, 112 https://www.cambridge.org/core/services/aop-cambridge-core/content/view/B0D224B3A59E9433D10E74DE6D40A0FD/S1474745621000409a.pdf/pragmatic_approach_to_carbon_border_measures.pdf accessed 16 July 2026.

option for global climate action in the long term, being collective climate action the preferable.⁵⁴ The application of the CBAM can lead to different reactions from non-EU countries⁵⁵:

- Opposition: such as political opposition, with a possible legal challenge at the World Trade Organization (WTO).
- Retaliation: meaning, economic sanctions.
- Cooperation: the acceptance of the application of the CBAM and the negotiation between EU and non-EU country for a better outcome of its application, such as a reduction of burdens or better exchange of GHG emissions-related information.
- Domestic policy response: such as the adoption of carbon pricing policies, new decarbonisation measures, etc.

This thesis argues that the CBAM represents a significant evolution in international climate policy. The introduction of a carbon price on goods imported into the EU reflects the recognition that, given the globally integrated nature of modern production and supply chains, a purely domestic EU ETS is unlikely to be sufficient to effectively address carbon leakage. Nevertheless, it remains to be seen whether the CBAM will function primarily as an economic instrument aimed at ensuring a level playing field between domestic producers and foreign competitors, or whether its environmental objectives will ultimately guide its implementations and future development.

⁵⁴ Designing Border Carbon Adjustments for Enhanced Climate Action (Michael Mehling), *ibid* 51, 481.

⁵⁵ Otto Simon, 'The external impact of EU climate policy: political responses to the EU's carbon border adjustment mechanism' (2025) 25 *International Environmental Agreements* 177 <https://link.springer.com/article/10.1007/s10784-025-09667-z> accessed 19 June 2026.

Chapter III. Functioning of the CBAM

After examining the context behind the creation of the EU Carbon Border Adjustment Mechanism, with the introduction to concepts such as greenhouse gases and their effect in climate change, the concept and categories of carbon pricing, the burdens of carbon leakage and its economic rationale, it is necessary to analyse the practical application of the mechanism.⁵⁶ To ensure that imported goods are subject to a carbon price equivalent to the one applied by the EU ETS to products manufactured within Europe, the CBAM establishes a meticulous framework covering main questions, such as the products that will be subject to the mechanism⁵⁷, the procedure by which the embedded emissions in the production are calculated⁵⁸, the method by which CBAM certificates are obtained or surrendered⁵⁹, or the enforcement of compliance obligations⁶⁰.

In order to evaluate the effectiveness of the structure of the CBAM, this chapter examines its operational elements, first considering the scope of application of the mechanism and the types of goods that it covers. Furthermore, an analysis is made on the methodology by which the embedded emissions are determined, followed by the concept of CBAM certificates, along with its pricing mechanism. Continuously, an explanation on the recognition of carbon prices effectively paid in non-EU countries is performed and an explanation on the procedures regarding reporting, compliance and enforcement of the CBAM. To conclude the chapter, a critical assessment will be done regarding the information exposed and its suitability will be discussed.

3.1. Scope of Application

The CBAM determines in its articles that not all imported goods to the EU are obliged to comply with its reporting requirements.⁶¹ The mechanism adopts a targeted approach, focusing on sectors that are considered particularly present in the

⁵⁶ CBAM, art 7; CBAM, Annex IV.

⁵⁷ CBAM, Annex I.

⁵⁸ CBAM, Annex IV.

⁵⁹ CBAM, Chapter IV.

⁶⁰ CBAM, Chapter VI.

⁶¹ CBAM, recital 13 and 38; CBAM, art 2.

practice of carbon leakage and sectors that are involved in a high quantity of greenhouse gas emissions.⁶² Currently, the products covered by the mechanism are cement, fertilisers, aluminium, electricity, hydrogen, iron and steel.⁶³ Nevertheless, some sectors with considerable carbon emissions results are currently not covered by the CBAM.⁶⁴ Even when the intention of the CBAM is to progressively broaden the list of products in its scope of application, Leal-Arcas, Faktaufon and Kyprianou consider that it is not certain whether this will happen due to the lack of gains and the increase of administrative workload that it would carry, thus undermining the CBAM's environmental rationale.⁶⁵ The reason behind such limitation is presented by the EU as a balance between a proper environmental efficiency of the CBAM and an easier application of the mechanism, at least administratively speaking for the imposed obligations to EU certified importers and authorities.

This thesis argues that, although the European Commission has indicated its intention to extend the scope of the CBAM to additional goods in the future,⁶⁶ its environmental potential remains constrained by the uncertainty surrounding the timing and extent of such expansion. The current, limited scope of products restricts the range of GHG emissions addressed by the mechanism, thus reducing its overall efficiency. As currently designed, the CBAM appears to prioritize its economic function of preserving a level playing field over its environmental objectives, relegating its environmental potential to a secondary role.

Additionally, the CBAM also determines a *de minimis exemption*⁶⁷ for those importers that, under the consideration of the European Commission, are not to be bound by the obligations of the mechanism due to their low quantity of imports

⁶² CBAM, Recital 31.

⁶³ CBAM, annex I.

⁶⁴ Rafael Leal-Arcas, Manuliza Faktaufon and Anna Kyprianou, 'A Legal Exploration of the European Union's Carbon Border Adjustment Mechanism' (2022) 31(4) *European Energy and Environmental Law Review* 227 <https://kluwerlawonline.com/journalarticle/European+Energy+and+Environmental+Law+Review/31.4/EELR2022016> accessed 20 June 2026.

⁶⁵ Practical obstacles and structural legal constraints in the adoption of 'defensive' policies: comparing the EU CBAM (Giulia Claudia Leonelli), *ibid* 34; A Critical Analysis of the CBAM (F. Bachmann & F.J.G. Nellen), *ibid* 11, 522.

⁶⁶ CBAM, recital 30.

⁶⁷ CBAM, art 2(a).

listed in Annex I. Therefore, any obligation to importers with a yearly imported products net mass of 50 tonnes⁶⁸ will be exempted. Some authors consider that this threshold has positive and negative impacts. On the one hand, they consider it appropriate to establish a *de minimis threshold* on the basis of the net mass of imported goods rather than their economic value. This approach is intended to prevent circumvention, as a value-based threshold could easily be avoided by splitting imports into multiple lower-value consignments.⁶⁹ On the other hand, given the characteristics of the products listed in the CBAM's scope of application, a threshold of 50 tonnes can be reached relatively easily (particularly heavy materials, such as iron or steel) even by small scale importers.

This thesis argues that both considerations are valid. While a mass-based threshold is more resistant to being eluded than a value-based one, the 50 tonnes threshold does not reflect the nature of the products within the CBAM's scope. This thesis finds that a more effective approach could be to introduce a sector-specific *de minimis threshold* based on the embedded emissions of the imported products, rather than their mass. Furthermore, such threshold would align with the CBAM's environmental rationale by creating incentives for importers to search low-emission producers in order to meet the *de minimis* exception.

Furthermore, apart from defining the types of products and single mass quantity to which the CBAM is intended to apply a carbon price, the mechanism also specifies who is responsible for conducting the reporting and compliance procedures. Only authorized CBAM declarants⁷⁰ are allowed to import to the customs territory of the EU the goods covered by the CBAM. An extensive set of obligations and rules relating to the institution of the authorised CBAM declarant is set through articles 4 and 5 of the CBAM. Accordingly, an important matter regarding the scope of application of the CBAM is the distinguishment of types of emissions: direct emissions and indirect emissions⁷¹. Direct emissions are those happening during the production of

⁶⁸ CBAM, annex VII.

⁶⁹ The EU Carbon Border Adjustment Mechanism Protecting Steel and Metals Trade (Patrick Abel), *ibid* 16, 152.

⁷⁰ CBAM, arts 4-5.

⁷¹ CBAM, arts 3(21) 3(22).

the goods (such as cement, fertilisers, or aluminium) including the heating and cooling processes. Nevertheless, the CBAM takes into account that for the industrial production of these products, it is necessary to use primary sources of energy, such as electricity, which also requires an industrial process and, consequently, also emits GHG. Therefore, indirect emissions comprise the GHG released during the generation of the electricity used in the production of these primary goods. Both types of emissions together are considered the embedded emissions. Martin argues that including indirect emissions in a carbon border adjustment mechanism of imported products lead to a more challenging process for the accounting of data, making it necessary to apply estimated information and, thus, increasing the tasks involved in calculating the mechanism's price.⁷² This thesis argues that, even when accounting for indirect emissions requires more complex methodologies and, in some cases, the use of estimated data, this is not a sufficient reason to exclude them from the mechanism. The CBAM appropriately considers indirect emissions, thus protecting its the environmental effectiveness. To give higher importance to administrative burdens would undermine the environmental potential of the CBAM.

3.2. Determination of Embedded Emissions

The identification of the total quantity of greenhouse gas emissions – embedded emissions – is crucial to determine the first step of the financial burden of authorized CBAM declarants. Article 7 of the CBAM establishes that embedded emissions must be calculated following the method of Annex IV (“Methods for calculating embedded emissions for the purpose of Article 7”). Among the list of definitions⁷³ there is a differentiation of simple goods and complex goods. Simple goods are those goods produced using input materials and fuel with zero embedded emissions, this is, that their production and use didn't convey an emission of greenhouse gases. On the other hand, complex goods are all those goods other than

⁷² Will Martin, 'Border Carbon Adjustments: Should Production or Consumption be Taxed?' (2023) 22(3–4) *World Trade Review* 403 < <https://www.cambridge.org/core/journals/world-trade-review/article/abs/border-carbon-adjustments-should-production-or-consumption-be-taxed/F1A16711DD65C72D0C94DD011BC68EAD>> accessed 20 June 2026.

⁷³ CBAM, annex IV (1)

simple goods, meaning, that their production use input materials and fuels with embedded emissions. For each type of goods, the CBAM offers a formula to arrive to the emission of GHG for each tone of goods produced.

3.2.1. Embedded Emissions of simple goods

$$\mathbf{SEE_g} = \frac{\mathbf{AttrEm_g}}{\mathbf{AL_g}} \mathbf{CO_2e/t}$$

With this equation, the CBAM determines the specific embedded emissions (**SEE_g**) of a product listed in Annex I. The result, which is expressed in tonnes of carbon dioxide emissions per tonne of goods (CO₂e/t), is determined by the attributed emissions of goods (AttrEm_g) divided by the activity level of the goods (AL_g). In order to facilitate an example of the equation, a hypothetical case of an industrial factory in Brazil that produces aluminium will be used:

- The attributed emissions of goods (AttrEm_g) is the quantity of greenhouse gas emissions resulting from the production of the goods. Considering the process of the aluminium production by the company in Brazil, such aluminium requires of practices that emit greenhouse gases⁷⁴, like refining (extracting impurities by purifying the metal) and smelting (melting the material with high temperatures). Furthermore, the smelting of aluminium also requires a massive amount of electricity, which production also emits greenhouse gases. To calculate the attributed emissions of the aluminium, it is necessary to consider the gases emitted during its production (direct emissions) and the gases emitted during the production of the electricity used (indirect emissions). Considering that the Brazilian company emits 8 tonnes of CO₂ during the production of the aluminium, and 60 tonnes of CO₂ to produce the electricity used, the attributed emission of aluminium is 68 tonnes of CO₂:

$$\mathbf{AttrEm_g} = \mathbf{Direct\ emissions} + \mathbf{Indirect\ emissions};$$

$$\mathbf{AttrEm_g} = \mathbf{8\ tonnes\ of\ CO_2} + \mathbf{60\ tonnes\ of\ CO_2};$$

$$\mathbf{AttrEm_g} = \mathbf{68\ tonnes\ of\ CO_2}$$

⁷⁴ Archy de Berker, 'Understand Your Aluminum Emissions' (*CarbonChain*, 27 June 2022) <https://www.carbonchain.com/blog/understand-your-aluminum-emissions> accessed 20 June 2026.

- The activity level of the goods (AL_g) is the quantity of goods produced, represented in tonnes (t). If the factory in Brazil produces 4 tonnes of aluminium, the activity level of aluminium will be 4 tonnes:

$$AL_g = 4 \text{ tonnes}$$

- The specific embedded emissions (SEE_g) is the quantity of greenhouse gases emitted by one tone of goods produced. The specific embedded emission of one tonne of aluminium produced in the Brazilian factor is the result of dividing the attributed emissions of goods (68 tonnes of CO_2) by the activity level of the aluminium (4 tonnes):

$$SEE_g = \frac{AttrEm_g}{AL_g};$$

$$SEE_g = \frac{68 \text{ tonnes of } CO_2}{4 \text{ tonnes}};$$

$$SEE_g = 17 \text{ } CO_2e/t$$

The previous formula allows to calculate the specific embedded emissions of a hypothetical factory of aluminium which used input materials and fuel with zero embedded emissions. With complex goods, an additional factor is taken in consideration to calculate the embedded emissions of these input materials.

3.2.2. Embedded emissions of complex goods

$$SEE_g = \frac{AttrEm_g + EE_{InpMat}}{AL_g} CO_2e/t$$

Complex goods are those goods that use input materials (precursors) with embedded emissions in a production process. It is important to remark that for a good to be complex, the CBAM only considers as precursors the goods listed in Annex I. This additional number of emissions (EE_{InpMat}) can be calculated with the following formula:

$$EE_{InpMat} = \sum_{i=1}^n M_i \times SEE_i$$

The CBAM considers (accurately) that the additional embedded emissions coming from precursors can be originated from more than only one type of precursor. To obtain the embedded emissions for each type of input material, it is necessary to know the mass of input material used in the production process (M_i) and the specific embedded emission for the input material (SEE_i).

The example of the aluminium company from Brazil used for the calculation of embedded emissions may be helpful if the final products are wires of ferroaluminium, an alloy comprising iron and aluminium. This type of wires is commonly used as electric resistances to generate heat, and can be found in, for example, domestic machines (an iron, a toaster, a hair dryer...). To obtain this ferroaluminium, first, the Brazilian company needs to produce or obtain the iron and aluminium; second, it is necessary to use an industrial process by which both iron and aluminium are submitted to heat to become the alloy. Therefore, the embedded emission of ferroaluminium is not only limited to the greenhouse gases emitted and the electricity used during its production: it is necessary to take into account the embedded emissions on the iron and on the aluminium, respectively.

Having observed this mechanism, it is reasonable to conclude that the calculation of embedded emissions for simple and complex goods allows effectively to attribute a carbon price to the GHG emitted for the production of the products imported to the EU. Nevertheless, the ecological effectiveness of the CBAM may be limited by not including the indirect emissions of certain products,⁷⁵ ignoring carbon-intensive precursors necessary for their production, such as refining heavy metals. On the contrary, an over-inclusive CBAM may lead to a complicated process to identify the scope of indirect emissions.⁷⁶ In this regard, several stakeholders have raised their concerns of including all emissions for companies due to the administrative and technical hurdles it would comply.⁷⁷ This thesis argues that the

⁷⁵ A Critical Analysis of the CBAM (F. Bachmann & F.J.G. Nellen), *ibid* 11, 526.

⁷⁶ *Ibid.*

⁷⁷ Ann-Kathrin Kuehner and others, 'German stakeholder perceptions of an EU carbon border adjustment mechanism' (2022) 17 *Environmental Research Letters* 10

CBAM's duty will be to find a balance between its environmental effectiveness and leveraging importers from administrative burdens.

3.3. CBAM Certificates and Pricing Mechanism

The second step to determine the financial burden of authorized CBAM declarants regarding the embedded emissions of the products they import in the EU customs territory relies on the CBAM certificates system. The CBAM certificates make it possible to equalise carbon emissions to an economic cost. A CBAM certificate is defined as an electronic certificate corresponding to one tonne of carbon dioxide (CO₂e) of embedded emissions in goods.⁷⁸

Regarding the price of a CBAM certificate, the Commission is delegated to calculate it depending on the prices of EU ETS allowances for each calendar week.⁷⁹ Additionally, the CBAM certificates to be surrendered will also depend on the evolution of the phase-out of free allocated EU ETS allowances⁸⁰ (allowances with no cost that have been given to EU producers to avoid carbon leakage); as free allocation of EU ETS allowances decrease, the surrender and economic cost of CBAM certificates become higher.

Some concerns arise from the design of CBAM certificates and their pricing mechanism. Walczak, Huremović and Rungi argue that the price of CBAM certificates is endogenous to the EU ETS allowance price due to the close linkage between the two systems.⁸¹ As a result, the cost of CBAM certificates is dependent on fluctuations in the EU ETS carbon market. This dependence may create a long-term uncertainty for importers, who may find it difficult to predict future compliance costs given to the volatility of EU ETS allowance prices. Such uncertainty could hinder long-term investment and reduce predictability of the CBAM. In addition, Sakuya Sato points out that the CBAM requires declarants to surrender CBAM

<https://iopscience.iop.org/article/10.1088/1748-9326/ac9f23#skip-to-content-link-target> accessed 19 July 2026.

⁷⁸ CBAM, art 3(23)

⁷⁹ CBAM, art 21.

⁸⁰ CBAM, art 31.

⁸¹ Noemi Walczak, Kenan Huremović and Armando Rungi, 'Evaluating the EU Carbon Border Adjustment Mechanism with a Quantitative Trade Model' (2025) *arXiv preprint* <https://arxiv.org/html/2506.23341v3> accessed 20 July 2026.

certificates regardless of whether the embedded emissions of imported goods are higher or lower than those of comparable EU products. This approach may undermine the environmental objective of the CBAM by disadvantaging carbon-efficient imports and, in other situations, encouraging shifts towards domestic EU production with a higher carbon footprint.⁸²

From this perspective, the design of the CBAM certificates could be further improved to reduce legal and economic uncertainty while safeguarding its environmental effectiveness. This thesis argues that a possible improvement would be to calculate the price of the CBAM certificates using a longer averaging period, this is, a monthly or quarterly average of EU ETS allowances price, reducing short-term volatility for importers. Furthermore, a higher reliance on verified actual emissions, rather than default values, would lower the risk of low-carbon imported products being shifted to a more carbon-intensive domestic production.

3.4. Recognition of Carbon Prices Paid Abroad

One of the key elements of the CBAM regarding the determination of CBAM certificates to be surrendered is the recognition of carbon costs already paid in a third country for their declared embedded emissions.⁸³ There are four conditions to be met if an importer wants to receive such reduction:

1. The carbon price must be in the form of a tax, or an emission allowance under a GHG trading system.⁸⁴
2. The price must be paid under a carbon emissions reduction scheme and apply to the GHG emissions during the production of the goods.⁸⁵
3. The carbon price must have been *effectively paid* in the country of origin.⁸⁶

⁸² Sakuya Yoshida Sato, 'EU's Carbon Border Adjustment Mechanism: Will It Achieve Its Objective(s)?' (2022) 56(3) *Journal of World Trade* 388 <https://kluwerlawonline.com/journalarticle/Journal+of+World+Trade/56.3/TRAD2022015> accessed 17 July 2026.

⁸³ CBAM, article 9(1).

⁸⁴ CBAM, recital 25.

⁸⁵ CBAM, article 9(2).

⁸⁶ *Ibid.*

4. The reduction must be adjusted to reflect any rebate or other form of compensation available in the country of origin.⁸⁷

With the introduction of a carbon price recognition system, the CBAM tries to integrate carbon price systems from non-EU countries into the EU carbon pricing framework as a way of promoting decarbonisation in third countries,⁸⁸ while also avoiding penalisation to exporters in countries with ambitious carbon prices by making them purchase CBAM certificates.⁸⁹

Although the CBAM's recognition of carbon prices paid abroad tries to prevent double carbon pricing, its scope has been criticised by different authors for being limited to explicit carbon pricing instruments. Bachmann and Nellen argue that excluding the implicit costs arising from different environmental regulations grants preferential treatment to countries with comparable carbon pricing systems, which could also be environmentally ineffective.⁹⁰ Similarly, Boute points out that by restricting the reduction mechanism to direct carbon pricing, the EU disregards alternative regulatory methods which are commonly used by third countries to promote their industrial decarbonisation.⁹¹ Furthermore, Sakuya Sato observes that carbon pricing is only one of the many different instruments through which countries achieve GHG reductions and that the, by ignoring non-price-based measures, the CBAM fails to ensure an equal playing field between imports and EU domestic products.⁹²

Nevertheless, in the case that the CBAM decides to expand its recognition of carbon prices and consider non-price-based climate policies also leads to practical challenges. Bachmann and Nellen maintain that establishing an equivalence

⁸⁷ *Ibid.*

⁸⁸ CBAM, Recital 10 and 14.

⁸⁹ Anatole Boute, 'Accounting for Carbon Pricing in Third Countries Under the EU Carbon Border Adjustment Mechanism' (2024) 23 *World Trade Review* 172
<https://www.cambridge.org/core/journals/world-trade-review/article/accounting-for-carbon-pricing-in-third-countries-under-the-eu-carbon-border-adjustment-mechanism/795BF6E817CE0979DD0CFFAD70D103F6> accessed 20 July 2026.

⁹⁰ A Critical Analysis of the CBAM (F. Bachmann & F.J.G. Nellen), *ibid* 11, 527.

⁹¹ Accounting for Carbon Pricing in Third Countries Under the EU CBAM (Anatole Boute), *ibid* 89, 175.

⁹² EU's CBAM: Will It Achieve Its Objective(s)? (Sakuya Yoshida Sato), *ibid* 82, 392.

between price-based and regulatory measures would be an extremely complex exercise because of their fundamental different parameters.⁹³ In their view, quantifying the economic cost imposed by these regulatory measures would substantially increase compliance costs, leaving no satisfactory solution to this issue.⁹⁴ On the same page, Pirlot argues that assessing whether foreign climate policies are of an equivalent quality to the EU ETS would raise controversial and potentially unacceptable questions for third countries.⁹⁵ Mehling further notes that even CBAM Article 9 requirement that a carbon price must be "effectively paid" leaves room for interpretation, which can lead to legal uncertainty for trading partners of the EU.⁹⁶

Therefore, this thesis argues that while recognising non-price-based climate policies could enhance the neutrality of the CBAM and better reflect the diversity of decarbonisation strategies adopted by international trade partners, implementing such a reform would lead to considerable legal and administrative difficulties. Rather than advocating directly for a broader equivalence mechanism as some trading partners demand, it is necessary to consider the inherent complexity and uncertainty of equalizing fundamentally different climate policy instruments. Therefore, a great effort will have to be made with EU trading partners to achieve a conciliation of climate policies by also finding a balance between environmental effectiveness and economic interests.

3.5. Circumvention practices and enforcement of obligations

Another critical aspect of the functioning of the CBAM is found in its provision to address practices of circumvention.⁹⁷ Circumvention practices are an automatic result of the application of a Regulation with innovative characteristics. If the provision of a mechanism supposed to overcome this elusive practice fails to be

⁹³ A Critical Analysis of the CBAM (F. Bachmann & F.J.G. Nellen), *ibid* 11, 524.

⁹⁴ *Ibid*.

⁹⁵ Carbon Border Adjustment Measures: A Straightforward Multi-Purpose Climate Change Instrument? (Alice Pirlot), *ibid* 4, 41.

⁹⁶ Michael A Mehling, Geoffroy Dolphin and Robert A Ritz, 'The European Union's CBAM: averting emissions leakage or promoting the diffusion of carbon pricing?' (2025) 27(6) *Journal of Environmental Policy & Planning* 696

<https://www.tandfonline.com/doi/full/10.1080/1523908X.2025.2591794> accessed 20 July 2026.

⁹⁷ CBAM, article 27.

certain or to offer prescribed solutions, a door for arbitrary decisions and further avoidance of obligations is open.⁹⁸ On the one hand, the lack of certainty of the terms used in this CBAM provision allows the European Commission to enjoy of a considerable extent of discretion to decide what is and what can be a practice of circumvention. On the other hand, the mere consideration of primary goods in the scope of the CBAM may lead to importers deciding to change the product to be introduced into the EU to upstream products.⁹⁹ The European Commission has already proposed solutions on this topic in their newly proposed measures with regards circumvention practices, such as extending the scope to downstream products or adding pre-consumer aluminium and steel scrap in the CBAM calculations.¹⁰⁰ Even though there is an active learning from the feedback of stakeholders and from the application of the CBAM, the writing of the Regulation may have to be adapted to these uprising challenges.

This thesis considers that the way in which the Commission drew up this provision can lead to interpretation problems, lack of understanding and, ultimately, legal uncertainty. A solution could be to clarify what is considered as a circumvention practice under the CBAM with a higher degree of precision, or to establish a non-exhaustive list of evidence that can lead to the consideration of circumvention practice under the CBAM.

3.6. Critical Assessment of the Functioning of the CBAM

Even though the functioning of the CBAM is shaped by a structured and organized set of instruments, this thesis finds that its practical implementation raises different legal, practical and economic challenges.

Firstly, this thesis considers that the CBAM relies heavily on the availability of accurate emissions data located in third countries whose regulatory and reporting

⁹⁸ A Critical Analysis of the CBAM (F. Bachmann & F.J.G. Nellen), *ibid* 11, 525.

⁹⁹ Martijn L Schippers and Walter de Wit, 'Proposal for a Carbon Border Adjustment Mechanism' (2022) 17(1) *Global Trade and Customs Journal* 10 <https://kluwerlawonline.com/journalarticle/Global+Trade+and+Customs+Journal/17.1/GTCJ2022002> accessed 20 June 2026.

¹⁰⁰ European Commission, 'Commission strengthens the Carbon Border Adjustment Mechanism' (Press Release IP/25/3088, 17 December 2025) https://ec.europa.eu/commission/presscorner/detail/en/ip_25_3088 accessed 13 June 2026.

systems may differ substantially from the ones in the EU. Obtaining such information could carry an overcomplicated administrative burden both for the foreign producer and for the EU importer. Furthermore, in the case that it is not possible to obtain this emissions data, the use of default values directly affects the environmental effectiveness of the CBAM, as accurate data is lost by an underestimation or overestimation of GHG emissions.

Another open question is which criteria will the Commission follow when adding products to the scope of the CBAM. Even when GHG emissions data will be necessary to argument the addition of a certain sector to the scope of the CBAM, the Commission will have to overcome potential opposition by a low margin of gains by a high increase of administrative burden. This thesis defends that an emission trading system that finds itself limited due to administrative or economic constraints loses its power to have a real impact on the environment and the reduction of GHG emissions to the atmosphere. Only a progressive and constant growth of the imported products considered in the CBAM would prevent carbon leakage and assert that the fundamental rationale is not found in economic reasons, but rather the unsustainable global emission of greenhouse gases.

After reviewing the main elements of the CBAM and considering what some authors say in this regard, this thesis argues that the functioning of the CBAM can still be improved to achieve a better outcome with regards carbon leakage mitigation, economic effectiveness and protection of the environment. At the time of writing, the CBAM is no longer in its transitional period, being 2026 the first year of its definitive phase.¹⁰¹ Practical application of the Regulation during this year will allow to understand which aspects of the functioning of the CBAM should be amended in the future. Some of these changes have already been made or agreed by the Council;¹⁰² the final version of the CBAM is still yet to be established, and the criteria

¹⁰¹ CBAM, Article 32.

¹⁰² Council of the European Union, 'Council moves to strengthen the EU's carbon border adjustment mechanism' (Press Release, 12 June 2026) <https://www.consilium.europa.eu/en/press/press-releases/2026/06/12/council-moves-to-strengthen-the-eu-s-carbon-border-adjustment-mechanism/> accessed 18 July 2026; Regulation (EU) 2025/2083 of the European Parliament and of the Council of 8 October 2025 amending Regulation (EU) 2023/956 as regards simplifying and strengthening the carbon border adjustment mechanism [2025] OJ L2025/2083.

followed by the Council to conduct such amendments is uncertain. This thesis finds that it will be important to perform balanced modifications that achieve to respect the economic and environmental rationale of the CBAM.

Chapter IV. Legal nature of the CBAM

The CBAM was presented in 2021 as part of the “Fit for 55” legislative package as an environmental regulatory mechanism.¹⁰³ Following this consideration, the European Parliament and the Council adopted the CBAM pursuant to Article 192(1) TFEU, which governs environmental policies. Even when there is no doubt about the environmental rationale of the mechanism, its legal nature remains highly debated,¹⁰⁴ considering that its functioning and structural elements present similarities to the nature of a fiscal measure. Elements such as the calculation of financial burdens towards imported goods, the obligation to acquire CBAM certificates, and the enforcement mechanisms established by the EU, makes it possible to raise the question regarding its legal qualification. Because of this, the CBAM has been considered by different scholars as an environmental levy, a tax,¹⁰⁵ or even a customs mechanism, adding more uncertainty to the topic. The following chapter is structured by, firstly, highlighting the importance of the legal classification of a mechanism such as the CBAM. Secondly, definitions and concepts regarding the nature of a tax and related figures are mentioned, followed by their possible similarities with the CBAM’s structure. Lastly, a critical assessment of the legal nature of the CBAM is performed. This thesis finds that, even when it is undeniable that the CBAM counts with fiscal elements, the mechanism should be classified as an environmental tool. Consequently, it is legally justified to consider the CBAM as an environmental mechanism and not a tax or a customs duty, since its fiscal or revenue-generating components are subsidiary to its principal objective of preventing risks of carbon leakage and complementing EU’s climate policy.

¹⁰³ European Commission, 'Fit for 55: delivering the EU's 2030 Climate Target on the way to climate neutrality' (Communication) COM (2021) 550 final.

¹⁰⁴ Rita Szudoczky and Dilara İnal, 'Environmental or Fiscal? A Contribution to the Debate on the Legal Basis of the European Union's Carbon Border Adjustment Mechanism' (2026) 80(1) *Bulletin for International Taxation* 50 <https://shop.ibfd.org/journal/environmental-or-fiscal-contribution-debate-legal-basis-european-unions-carbon-border> accessed 20 June 2026.

¹⁰⁵ Krishna Bhattacharya and Jamshed Ahmad Siddiqui, 'EU and Unilateral Environmental Measures: Legitimate Protection or Disguised Protectionism' (2025), 20(6) *Global Trade and Customs Journal* 479 <https://kluwerlawonline.com/journalarticle/Global+Trade+and+Customs+Journal/20.4/GTCJ2025078> accessed 21 July 2026.

4.1. Importance of the CBAM's Legal Classification

The determination of the legal nature of the CBAM constitutes one of the most significant legal questions arising from its adoption (and by which method this adoption was conducted) by the EU. The fact that the mechanism pursues multiple objectives makes the choice of its legal basis far from unequivocal.¹⁰⁶ On the one hand, it seeks to mitigate climate change effects by preventing risks of carbon leakage and encouraging the reduction of GHG emissions embedded to imported products to the EU. On the other hand, it contributes to the financing of the European Union budget through the exchange of CBAM certificates among authorized CBAM declarants. The coexistence of these objectives makes the CBAM difficult to classify within a sole category of article 192(1) TFEU, due to its duality as an environmental policy and a measure with fiscal nature.¹⁰⁷ This thesis defends that only an exhaustive study and understanding of the CBAM's application will allow to determine its legal classification. Only after this, it would be possible to determine the appropriate EU legal basis and legislative procedures that will apply to the CBAM and, ultimately, the legality of the mechanism itself.¹⁰⁸ This conclusion is consistent with the jurisprudence of the Court of Justice of the European Union (CJEU): *the choice of legal basis determines the applicable decision-making procedure, the institutional balance between the Union institutions and the extent of the participation of the European Parliament in the legislative process. Therefore, the classification of the CBAM is not merely terminological, but has significant institutional consequences for the exercise of the EU competences.*¹⁰⁹

The relevance of the legal classification of the CBAM extends beyond purely academic literature or political considerations. Under EU law, environmental measures and fiscal measures follow different legislative procedures.¹¹⁰ The Union legislature adopted the CBAM pursuant to Article 192(1) TFEU, which governs environmental policy and requires the ordinary legislative procedure with qualified

¹⁰⁶ Environmental or Fiscal? (Rita Szudoczky and Dilara İnal), *ibid* 104, 60.

¹⁰⁷ Environmental or Fiscal? (Rita Szudoczky and Dilara İnal), *ibid* 104, 50.

¹⁰⁸ *Ibid*, 43.

¹⁰⁹ Case C-133/06, *Parliament v. Council*, Opinion of AG Maduro, para 32.

¹¹⁰ TFEU, arts 192(1), 192(2)(a).

majority voting in the Council, this is, at least 55% of the votes from the members of the Council, comprising at least 65% of the population of the Member States.¹¹¹ Conversely, if the mechanism were considered primarily fiscal in nature, Article 192(2) TFEU would have required unanimity within the Council. Because of all of this, this thesis argues that the CBAM's legal classification has direct implications for both its validity and the degree of discretion it will enjoy in its implementation. It further considers that determining the true legal nature of the CBAM cannot be achieved solely by reference to its denomination or pointing out similarities with other mechanisms; rather, it requires an examination of how the CBAM operates in practice.

The EU ETS and the CBAM are mechanisms that were shaped with the combination of different factors, such as global warming, international trading, or domestic market constraints.¹¹² Even when these mechanisms have been influenced by non-environmental considerations, there is no doubt that they have a founding objective to influence on the GHG emissions. On the contrary, Pirlot remarks that there are policies that are presented as “environmental”, but they are rather just an economic instrument whose sole objective is to generate revenues with no interest in protecting the environment.¹¹³ Because of this, the present thesis finds that environmental instruments, such as the CBAM or the EU ETS, require an exhaustive examination of its elements and application to effectively settle its legal classification. The fact that an environmental policy has been presented as such should derive on an additional control of its objective and avoid a possible shift to a sole revenue-generating tool.

From this perspective, this thesis finds that the legal classification of the CBAM should not depend exclusively on the existence of a compulsory economic burden (this is, the carbon price that the authorised CBAM declarants must comply with),

¹¹¹ TFEU, art 238(3)(a).

¹¹² CBAM, recitals 5, 7, 10, 20.

¹¹³ Alice Pirlot, ‘Exploring the impact of EU law on energy and environmental taxation’, in Christiana Panayi, Werner Haslehner and Edoardo Traversa (eds), *Research Handbook on European Union Taxation Law* (Edward Elgar 2020) 361
<https://www.elgaronline.com/edcollchap/edcoll/9781788110839/9781788110839.00025.xml>
accessed 23 June 2026.

but rather on its real purpose and regulatory design. The legal characterization of the CBAM constitutes the necessary starting point for assessing both its compatibility with European Union law and its broader implications for International Tax Law. Therefore, the following section examines the concept of a tax and related legal figures to determine whether the CBAM can properly be determined in already existing fiscal categories, or if it should be instead considered as a predominantly environmental instrument.

4.2. The Concept of a Tax and Related Legal Figures

The legal characterization of the CBAM requires an examination of the traditional concept of taxation and of the various economic instruments available to public authorities for pursuing environmental policy objectives.¹¹⁴ Environmental policy instruments do not only consist of regulatory policies, but increasingly employs economic instruments designed to internalize negative externalities¹¹⁵. Such economic environmental policy instruments may be divided into taxes, subsidies, deposits, administrative fees, penalties and emissions trading systems.¹¹⁶ Within this framework, environmental taxes occupy a particularly important position within the European Commission, which has recognised environmental taxes and charges as economic instruments capable of implementing the "polluter pays" principle by incorporating environmental costs into the price of goods and services.¹¹⁷ This can be a justification that an environmental instrument's function is not limited to the revenue it creates but rather expands its effect to focus on negative externalities.

As we have mentioned previously, this thesis considers that only by reviewing CBAM's elements and its practical application will it be possible to determine the legal nature of the CBAM. This argument is aligned with the Commission's

¹¹⁴ Environmental or Fiscal? (Rita Szudoczky and Dilara İnal), *ibid* 104.

¹¹⁵ Julien Bueb, Lilian Hanania and Alice Le Clézio, 'Border Adjustment Mechanisms: Elements for Economic, Legal, and Political Analysis', in Douglas Arent and others (eds), *The Political Economy of Clean Energy Transitions* (Oxford University Press 2017), 60
<https://academic.oup.com/book/16547/chapter/172500473> accessed 23 June 2026.

¹¹⁶ Economic Instruments in Environmental Policy (Jean-Philippe Barbe), *ibid* 3, 10-12; Pietro Mastellone, 'The Emergence and Enforcement of Green Taxes in the European Union – Part 1' (2014) 54(11) *European Taxation* 482 <https://shop.ibfd.org/journal/emergence-and-enforcement-green-taxes-european-union-part-1> accessed 3 July 2026.

¹¹⁷ Commission, 'Environmental taxes and charges in the Single Market' (Communication) COM(97) 9 final.

consideration that the legal assessment of environmental taxes depends not upon their denomination but upon their characteristics and practical effects¹¹⁸. Two elements are particularly relevant. First, environmental taxes consist of compulsory and unrequited payments to public authorities. Second, the taxable base must either have a clear negative impact on the environment, or the levy must generate a discernible positive environmental effect. This approach suggests that environmental instruments cannot be classified only considering their legal denomination or basic terminology but must instead take into consideration their substantive objectives and functioning.

From an economic point of view, the defining feature of an environmental tax is its Pigouvian function of correcting market failures rather than its revenue-generating capacity.¹¹⁹ By imposing an economic burden on activities that generate negative externalities, environmental taxes seek to ensure that private actors bear the full social costs of their conduct.¹²⁰ GHG emissions are a clear example, as the environmental costs of production are generally excluded from the market price of goods. Carbon pricing mechanisms therefore operate by internalizing these external costs and influencing economic behaviour from producers or other parties involved. This thesis finds that, to the extent that the CBAM requires importers to comply with carbon costs associated to the importation of products to the EU, it performs the same corrective function as a Pigouvian tax. Therefore, this functional similarity provides an important argument in favour of classifying the CBAM as a fiscal measure, irrespective of the terminology adopted by the EU legislature.

The mere existence of a financial charge is insufficient to conclude that an environmental measure constitutes a tax. Conversely, neither the adoption of environmental objectives avoids an instrument from being classified as a tax. Therefore, this thesis considers that the decisive question is not whether a measure has an environmental purpose, but whether its financial component performs the

¹¹⁸ *Ibid.*

¹¹⁹ European Commission Eurostat, *Environmental taxes: A statistical guide – 2024 Edition* (24 January 2024) 15 <https://ec.europa.eu/eurostat/web/products-manuals-and-guidelines/w/ks-gq-23-016> accessed 20 June 2026.

¹²⁰ Encyclopaedia Britannica, *ibid* 40.

legal and economic function of a tax. As discussed previously, some measures merely employ environmentally harmful activities as a tax base while pursuing predominantly fiscal objectives, whereas others are specifically designed to influence behaviour by internalizing environmental costs.¹²¹ This distinction between ordinary revenue-raising taxes and environmentally driven taxes is central for the legal classification of the CBAM.¹²² Since the mechanism is expressly designed to apply an economic cost to the embedded emissions of imports, this thesis argues that its environmental objective cannot, by itself, determine its legal nature. Instead, the CBAM must be assessed according to its substantive design and operation, rather than the policy goals it seeks to advance.

There are different definitions of the concept of taxation to take in consideration. For instance, the definition of the Organisation for Economic Co-operation and Development (OECD) of taxation (*compulsory, unrequited payments, in cash or in kind, made by institutional units to government units*)¹²³, when applied to the CBAM, generates a noticeable debate on its taxational nature. CBAM obligations arise only when products are imported into the EU, thus, after emissions have already occurred abroad. From the OECD perspective, the CBAM shares certain characteristics with taxation, since the mechanism arguably resembles a tax on embedded emissions rather than compensation for a pre-existing right to pollute. In another words, the emissions in third countries, which already existed before the importation of products to the EU, raise the obligation to comply with the CBAM. This order of actions (emission of GHG and later importation) brings the CBAM closer to a tax on emissions interpretation, different from the EU ETS's behaviour of a right to pollute.¹²⁴ Nevertheless, this thesis argues that these similarities are not sufficient to classify the CBAM as a tax. Although the mechanism imposes a compulsory financial burden for the embedded emissions of imports, that burden cannot be separately considered from its regulatory objective of equalising carbon

¹²¹ Environmental or Fiscal? (Rita Szudoczky and Dilara İnal), *ibid* 104, 51.

¹²² Exploring the impact of EU law (Alice Pirlot), *ibid* 113.

¹²³ OECD, *Glossary of Statistical Terms* (2008) 533

https://www.oecd.org/content/dam/oecd/en/publications/reports/2008/09/oecd-glossary-of-statistical-terms_g1gh9ad7/9789264055087-en.pdf accessed 20 June 2026.

¹²⁴ Environmental or Fiscal? (Rita Szudoczky and Dilara İnal), *ibid* 104, 53.

costs between domestic and imported products and preventing carbon leakage. Therefore, the financial obligation operates as a way to regulate an environmental behaviour rather than as an independent fiscal instrument, supporting the consideration that the CBAM is an environmental mechanism with subsidiary fiscal elements.

In contrast, several structural characteristics distinguish the CBAM from a classical tax under EU case law. Following the CJEU decision on the *Air Transport Association of America and Others v Secretary of State for Energy and Climate Change*,¹²⁵ there are certain characteristics to see if a financial burden constitutes a tax or a charge.¹²⁶ For instance, the cost for a public service used is unilaterally established by a public institution, also being possible to be established beforehand¹²⁷. Such characteristic is not present in the CBAM. The price of CBAM certificates is not established unilaterally by public authorities but rather by reference to the average auction price of allowances under the EU ETS,¹²⁸ being a value that itself fluctuates according to market supply and demand. Consequently, neither the basis of assessment nor the applicable rate is fixed in advance, distinguishing the mechanism from a conventional taxation¹²⁹. This suggests that the CBAM does not function as a conventional fiscal instrument, but rather as a regulatory mechanism that counts with market related elements to achieve an environmental objective.

Another requirement to consider a mechanism as a tax is the existence of a direct and inseverable link between the quantity of emissions and the burden on the importer of the product.¹³⁰ The pecuniary burden imposed by the CBAM is not directly determined by the quantity of greenhouse gas emissions alone but by the market value of EU ETS allowances.¹³¹ Therefore, the absence of a direct and inseverable relationship between emissions of GHG during the production of the

¹²⁵ Case C-366/10 *Air Transport Association of America and Others v Secretary of State for Energy and Climate Change* [2011] ECR I-13755.

¹²⁶ Case C-366/10 *Air Transport Association of America and Others v Secretary of State for Energy and Climate Change* [2011] ECR I-13755, Opinion of AG Kokott.

¹²⁷ *Ibid*, para 214.

¹²⁸ CBAM, art 21.

¹²⁹ Opinion of AG Kokott, *ibid* 126, 215.

¹³⁰ Environmental or Fiscal? (Rita Szudoczky and Dilara İnal), *ibid* 104, 52.

¹³¹ CBAM, art. 21.

import and the amount payable by the authorized CBAM importer weakens the argument that the CBAM should be regarded as a tax in the strict EU legal sense.¹³² Rather, this thesis considers that these characteristics support the interpretation that the CBAM functions primarily as an environmental instrument with financial components designed to reinforce its climate policy objectives.

The same reasoning differentiates the CBAM from customs duties. According to the OECD definition, “a tariff (customs duty) is a tax imposed on a good imported into a country”.¹³³ Similarly, the CJEU establishes that “any pecuniary charge that is unilaterally imposed on goods by reason of the fact that they cross a frontier” should be treated as a customs duty.¹³⁴ Therefore, customs duties are imposed because products cross a frontier and are paid upon importation as a condition of entry into the customs territory. Similarly, the CBAM is considered by some scholars as a destination-based carbon tax, a mechanism that isn’t affected by a sudden change of location of the tax base (in this context, where the GHG are emitted).¹³⁵ This thesis finds that this position is not appropriate and can be thus discussed. The CBAM does not impose an economic cost for market access¹³⁶ but seeks to attribute a carbon cost to emissions embedded in imported goods.¹³⁷ This suggests that, far from being a customs duty, the CBAM’s objective is therefore environmental rather than commercial or protectionist. The nature of the scope of the CBAM¹³⁸ is not limited to the consequence of entering the customs territory of the EU and being able to access the Union market but rather designed to attribute a carbon cost to the embedded emissions of products originating in third countries when they access the European Union.

¹³² Environmental or Fiscal? (Rita Szudoczky and Dilara İnal), *ibid* 104, 55.

¹³³ OECD Glossary of Statistical Terms 2008, *Ibid* 123, 534.

¹³⁴ Joined Cases 2/62 and 3/62 *Commission of the European Economic Community v. Grand Duchy of Luxembourg and Kingdom of Belgium* ECLI:EU:C:1962:45, 432.

¹³⁵ Michael Devereux, ‘Tariffs and other destination-based taxes: The Loughlin Hickey Annual Memorial Lecture’ (2025) *British Tax Review*.

¹³⁶ M Sadovsky, ‘Impact of the Carbon Border Adjustment Mechanism’ (2025) 36(2), *International VAT Monitor* 51 <https://shop.ibfd.org/journal/impact-carbon-border-adjustment-mechanism-vat-and-customs-duties-european-union> accessed 22 June 2026.

¹³⁷ CBAM, art 1.

¹³⁸ CBAM, art 2(1).

This thesis concludes that, in light of the arguments developed throughout this chapter and the prevailing academic discussion, the CBAM should not be classified as a traditional tax or as a customs duty. Although the mechanism incorporates certain fiscal elements in its structure, such as a compulsory carbon price to GHG emissions, these elements do not define its legal nature. Instead, the CBAM is better understood as a hybrid economic instrument whose financial elements subsidiarily operate as a means of achieving environmental objectives rather than as an independent revenue-generating measure.¹³⁹ Recognising the CBAM as an environmental mechanism with fiscal characteristics, rather than as a tax *stricto sensu*, provides the appropriate conceptual framework for assessing its legal structure. Continuously, the following chapter will examine the structural elements of the CBAM and discuss how they reflect its hybrid legal nature.

4.3. Structural Elements of the CBAM

The legal nature of a regulatory mechanism cannot be determined only by its terminology or by the mere existence of an economic burden.¹⁴⁰ As discussed in the previous chapter, the classification of the CBAM depends on its substantive structure rather than its formal denomination. This requires an analysis of its structural elements, its objective, its calculation of embedded emissions and CBAM certificates, and its relationship with the EU ETS. It is these structural elements that reveal the true legal nature of the CBAM.

One of the first structural elements concerns the objective of the CBAM, which aims to address GHG emissions embedded in imported goods while reducing their global presence, prevent the risk of carbon leakage, and comply with the objectives of the Paris Agreement.¹⁴¹ Furthermore, the Regulation of the CBAM explicitly provides that the CBAM complements the EU ETS¹⁴²; thereby integrating into the Union's climate policy structure rather than constituting a newly autonomous mechanism whose aim is to generate revenue. This environmental rationale is equally reflected in the recitals of the Regulation, such as confirming the connection of the CBAM with the

¹³⁹ Environmental or Fiscal? (Rita Szudoczky and Dilara İnal), *ibid* 104, 50.

¹⁴⁰ *Ibid*.

¹⁴¹ CBAM, art 1(1).

¹⁴² CBAM, art 1(2).

European Green Deal, the Paris Agreement and the Union's objective of climate neutrality by 2050,¹⁴³ and the necessity to apply a CBAM due to the risk of carbon leakage and the increasing embedded emissions in imported products¹⁴⁴. Particularly significant is Recital 10, which describes the CBAM as part of the "Fit for 55" package and emphasises its role in promoting decarbonisation in third countries. This thesis argues that, even when a legislative recital cannot, by their own, determine the legal classification of their instrument, they can suggest the environmental aim of the CBAM.

The CBAM certificates' mechanism reinforces this conclusion.¹⁴⁵ Unlike a traditional tax, the CBAM does not impose a fixed price unilaterally decided by the Regulation. Instead, the price of CBAM certificates corresponds to the weekly average auction price of EU ETS allowances.¹⁴⁶ Consequently, the amount payable for the CBAM certificates depends upon the fluctuation of the EU carbon market, the trading of certificates¹⁴⁷ and their period of validity.¹⁴⁸ Furthermore, the calculation of the financial burden confirms this regulatory function. The carbon price under the CBAM is not determined solely by the amount of GHG emitted, but also by the market value of EU ETS allowances and the recognition of carbon prices already paid in the third country. Consequently, this method of calculation reveals that the obligation to pay the carbon price is a way to achieve an environmental objective, such as preventing carbon leakage to avoid the undermining of the EU ETS. Therefore, this thesis argues that this design is difficult to assimilate to the one of a traditional tax, where certainty and predictability are met due to the pre-established value of the economic burden. Instead, the market-based mechanism and further recognition of carbon price paid in third countries to establish a price demonstrates that the financial obligations of the CBAM are intended to mirror the carbon price directed to importers, thus ensuring that EU domestic producers and importers comply with equal carbon costs.

¹⁴³ CBAM, recitals 1-5.

¹⁴⁴ CBAM, recitals 8-10.

¹⁴⁵ CBAM, art 20.

¹⁴⁶ CBAM, art 21.

¹⁴⁷ CBAM, recital 22.

¹⁴⁸ CBAM, arts 23-24.

Finally, the structure of the CBAM reflects the economic logic of internalising environmental externalities. The introduction of an economic burden is part of the mechanism to internalise environmental externalities and, therefore, achieve an environmental objective.¹⁴⁹ By requiring the purchase of certificates, the CBAM seeks to incorporate an environmental cost into market prices and to eliminate risks of carbon leakage. This suggests that the pricing component are instrumental to the achievement of environmental objectives, rather than an end in itself. This thesis finds that the structural design of the CBAM suggests that there is a major interest to become an environmental instrument rather than a financial revenue generator for the EU budget, making its environmental objective the reason to exist of the CBAM.

4.4. Competing Approaches to Its Legal Nature

The legal nature of the CBAM remains contested in both academic literature and CJEU pending case law.¹⁵⁰ Generally, three different approaches may be identified. The first characterises the CBAM as a fiscal measure, the second as an environmental regulatory instrument, and the third as a hybrid mechanism that combines elements of taxation and environmental regulation.¹⁵¹ While each of these approaches consider similar features present in the CBAM, they differ on the importance or weight given to such elements. This thesis argues that the important question is not whether the CBAM counts with fiscal characteristics (an issue that, at this point, is more than certain) but whether those characteristics define its legal nature. As it will be argued below, this thesis considers that the fiscal elements of the CBAM do not characterize the legal nature of the mechanism.

The first approach emphasises the fiscal characteristics of the CBAM because it establishes an economic obligation to importers which generates revenue for the

¹⁴⁹ Commission, 'Environmental taxes and charges in the Single Market' (Communication) COM(97) 9 final, 2 <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:51997DC0009> accessed 21 July 2026.

¹⁵⁰ A Critical Analysis of the CBAM (F. Bachmann & F.J.G. Nellen), *ibid* 11; Xinyan Zhao, 'Can WTO Rules Support the Dissemination of the EU-Style CBAM in HICs?' (2025) 59(5) *Journal of World Trade* 881 <https://kluwerlawonline.com/journalarticle/Journal+of+World+Trade/59.5/TRAD2025044> accessed 22 June 2026; Case C-512/23 *Republic of Poland v European Parliament and Council of the European Union*, *ibid* 9.

¹⁵¹ Environmental or Fiscal? (Rita Szudoczky and Dilara İnal), *ibid* 104.

EU budget. From this perspective, the CBAM regulates access to the internal market through the payment of a carbon price, thus falling under article 192(2)(a) TFEU and not being able to be an environmental mechanism.¹⁵² This position has been advanced in *Poland v Parliament and Council*, where Poland argues that the CBAM establishes taxation rules whose fiscal function prevails over their environmental function.¹⁵³ Similarly, some commentators have described the CBAM as a destination-based tax that exploits the attractiveness of the EU market to impose a carbon pricing on the importation of products.¹⁵⁴

Although this first approach correctly identifies the existence of financial obligations in the CBAM's scheme, this thesis considers that it gives a disproportionate emphasis to a single feature of the mechanism, while not taking into account the broader framework of the carbon price system. The mere fact that an environmental measure requires the payment of a price and, thus, generates revenue, cannot itself determine its legal classification. If this approach was accepted, a variety of regulatory instruments that rely on financial obligations would have to be considered as taxes without even considering their design or objectives. Therefore, the present thesis considers that this approach wrongly establishes a consequential link between the existence of financial elements in the CBAM and its legal nature.

The second approach considers the CBAM to be fundamentally an environmental measure. Its principal argumentation relies in the close relationship between the mechanism and the Union's climate policy structure. This interpretation relies primarily upon the legislative objectives expressed in the Regulation itself¹⁵⁵, which consistently presents the mechanism as an instrument designed within the EU climate policy to support the European Green Deal, contribute to implement the Paris Agreement and prevent carbon leakage by promoting decarbonisation both inside and outside the EU. This interpretation is reinforced by the mechanism's

¹⁵² *Poland v Parliament and Council*, *ibid* 9.

¹⁵³ *Ibid*.

¹⁵⁴ Tariffs and other destination-based taxes (Michael Devereux), *ibid* 135.

¹⁵⁵ CBAM, recitals 1, 3, 8, 10.

integration into the EU ETS.¹⁵⁶ The Regulation expressly provides that the CBAM complements the emissions trading system rather than replacing it¹⁵⁷ and, moreover, the price of CBAM certificates is directly linked to the market price of EU ETS allowances.¹⁵⁸

This thesis finds that these facts provide stronger evidence that the CBAM reproduces the carbon pricing logic already applicable with the EU ETS rather than introducing a new fiscal burden disconnected from climate policy. The financial burden imposed to importers is not created independently from the EU ETS but rather derives from it. Therefore, the economic obligation is best understood as a tool by which the Union extends its domestic carbon pricing framework to imported goods. Therefore, the financial component appears to be instrumental to the achievement of environmental objectives rather than being an independent fiscal measure.

The third approach tries to reconcile the exposed competing positions and understands the CBAM as a hybrid fiscal-environmental instrument.¹⁵⁹ Under this point of view, the mechanism possesses undeniable fiscal characteristics, since it creates a carbon price whose payment generates revenue for the European Union budget. Furthermore, it states that the CBAM's primary purpose is environmentally driven. Particularly significant for this approach is the fact that the Regulation does not provide for export rebates, similar to those found in classical border tax adjustments, which could have been expected if the CBAM had the objective of merely levelling the competitive playing field of EU domestic producers and imported products. The absence of such rebates suggests that the CBAM is concerned with ensuring that carbon-intensive production bears an appropriate environmental cost.¹⁶⁰

This thesis agrees with the third approach to the extent that it considers the CBAM's as a hybrid environmental instrument with fiscal characteristics. Nevertheless, the

¹⁵⁶ CBAM, recital 19.

¹⁵⁷ CBAM, art 1(2).

¹⁵⁸ CBAM, art 21.

¹⁵⁹ Environmental or Fiscal? (Rita Szudoczky and Dilara İnal), *ibid* 104.

¹⁶⁰ *Ibid*, 59.

notion of a *hybrid* instrument does not cover the necessary identification of the predominant legal nature of the CBAM. The relevant question is not solved by this approach, which is to know which function predominates in the CBAM's scheme. As this analysis has observed, the financial obligations imposed by the CBAM are inseparable from its objective of mirroring the EU ETS and accomplishing an environmental effect. Its fiscal elements, therefore, constitute part of its regulatory structure rather than an autonomous end. Consequently, this thesis finds that the legal nature of the CBAM should be understood as predominantly environmental, notwithstanding the characteristics of a tax that inevitably are part of a market-based carbon pricing mechanism.

4.5. Critical Assessment of the Legal Nature of the CBAM

The preceding analysis demonstrates that the legal classification of the CBAM cannot be solved by asking whether it counts with characteristics associated with a tax or a customs duty. Such approach risks reducing the legal classification of a mechanism to the mere presence of an economic obligation, without considering that this obligation may have a function inside a broader regulatory scheme. As discussed throughout this chapter, the decisive criterion is not the sole existence of fiscal elements but whether those elements constitute the principal purpose of the CBAM or they serve to a higher objective. It is therefore necessary to assess the characteristics and effects of a measure by their structure and not by its denomination.¹⁶¹

It is undeniable that the CBAM incorporates structural elements that resemble taxation.¹⁶² There is a compulsory economic obligation imposed to declarants and importers¹⁶³, as also an inevitable generation of revenue for the EU budget.¹⁶⁴ This thesis considers that such characteristics shouldn't be ignored or minimised. However, they are insufficient to legally consider the CBAM as a tax. Unlike traditional taxes, the CBAM does not establish a predetermined tax rate or a fixed price. Instead, the financial obligation is determined upon the behaviour of the

¹⁶¹ Environmental or Fiscal? (Rita Szudoczky and Dilara İnal), *ibid* 104.

¹⁶² CBAM, annex IV (1).

¹⁶³ CBAM, art 1.

¹⁶⁴ Environmental or Fiscal? (Rita Szudoczky and Dilara İnal), *ibid* 104.

market price of EU ETS¹⁶⁵ allowances and the carbon price resulting from the quantity of embedded GHG emissions from imported products.¹⁶⁶ Such economic burden therefore depends according to the carbon market rather than according to fiscal policy choices. This close dependence upon the EU ETS suggests that the mechanism functions primarily as an extension of the Union's carbon pricing system rather than as an independent tax regime.¹⁶⁷

The same conclusion is obtained from the economic perspective. The CBAM undoubtedly reflects the logic of Pigouvian environmental taxation¹⁶⁸ by seeking to internalise the environmental cost of GHG emissions through market mechanisms. Nevertheless, the fact that a mechanism adopts a Pigouvian function does not necessarily determine its legal nature. What distinguishes the CBAM from a conventional carbon tax is that it does not impose a fixed price on emissions but rather operates through the purchase and surrender of certificates whose value is directly linked to the price of EU ETS allowances. Pricing is not an end in itself but a way to obtain environmental effects. Therefore, the CBAM should be understood as a market-based regulatory instrument that uses pricing mechanisms to influence economic behaviour¹⁶⁹ rather than as a purely fiscal measure designed to raise public revenue.

This interpretation is reinforced by the CBAM's intention to encourage decarbonisation beyond the territory of the EU, creating economic incentives for foreign producers to reduce the carbon intensity of their production processes and, therefore, incentive third countries to adopt similar carbon pricing mechanisms.¹⁷⁰ In this sense, the CBAM's objective is to contribute to handling the crisis of global GHG emissions and to guide international parties to lower-emission industrial production.

¹⁶⁵ CBAM, art 21.

¹⁶⁶ CBAM, art 1(1), 22(1).

¹⁶⁷ Opinion of AG Kokott, *ibid* 126, para 214.

¹⁶⁸ Greenhouse gas emission (Eurostat), *ibid* 22.

¹⁶⁹ Commission, "Environmental taxes and charges in the Single Market" (Communication) COM (97) 9 final, 2.

¹⁷⁰ CBAM, recital 14.

In conclusion, this thesis argues that the CBAM should be classified as an environmental regulatory instrument that uses fiscal mechanisms as means to achieve its climate objectives. Denominating the mechanism as hybrid helps understanding the coexistence of environmental and fiscal elements but does not solve the legal question of which of these features are predominant. The analysis reproduced in this chapter shows that the fiscal elements of the CBAM are subsidiary to the environmental rationale of the mechanism and, therefore, are not determinative of its legal nature.

This conclusion, far from being merely conceptual, carries important legal consequences. Understanding the CBAM as an environmental mechanism rather than a tax or a customs duty allows to assess its compliance with international law not only through the principles of fiscal sovereignty or international tax law. Instead, its extraterritorial effects will have to be examined under the EU's competence of creating environmental measures that can address climate change and carbon leakage. Therefore, the following chapter evaluates the CBAM's extraterritorial effects and whether they are compatible with international trade law.

Chapter V. Extraterritorial effects of the CBAM and its compliance with International Trade Law

As demonstrated in the previous chapter, the CBAM is best understood as an environmental regulatory instrument that employs financial components to achieve climate policy objectives.¹⁷¹ This conclusion has important implications for the further assessment of the CBAM's legality under international law. If the CBAM is analysed from the fiscal point of view, its extraterritorial effects may appear to constitute an illegal extension of EU fiscal sovereignty. On the other hand, if the CBAM is understood as an environmental tool, its international effects become a direct consequence of regulating access to the EU market. The central argument of this chapter is that CBAM's extraterritorial effect is not created by an attempt of the EU to expand its regulation capacity to third countries, but rather due to the nature of GHG emissions contributing to climate change irrespective of where they are generated. Because of this, measures aimed at preventing carbon leakage inevitably interact with international trade and activities outside the EU territory.¹⁷²

Critics have questioned whether the mechanism produces illegal extraterritorial effects or incompatibilities with international trade obligations.¹⁷³ This thesis argues that such legality should be assessed through the principles of international trade and environmental law rather than just focusing on a matter of territorial jurisdiction.

5.1. Territoriality and Extraterritoriality in International Trade Law

By the time of writing of this thesis, the proposal of the CBAM has created concerns with regards its consistency with WTO non-discrimination rules¹⁷⁴, such as the Russian Federation, China and the United States of America.¹⁷⁵ The main legal objection to the CBAM is that it attributes legal consequences to GHG emissions

¹⁷¹ Environmental or Fiscal? (Rita Szudoczky and Dilara İnal), *ibid* 104.

¹⁷² Carbon Border Adjustment Measures: A Straightforward Multi-Purpose Climate Change Instrument? (Alice Pirlot), *ibid* 4; The EU Carbon Border Adjustment Mechanism Protecting Steel and Metals Trade? (Patrick Abel), *ibid* 16, paras 147-157.

¹⁷³ China Says EU's Planned Carbon Tax Violates Trade Principles (Muyu Xu & David Stanway), *ibid* 9.

¹⁷⁴ *Ibid*.

¹⁷⁵ Extraterritoriality and Climate Change Jurisdiction, (Natalie L. Dobson), *ibid* 9, 65.

generated outside EU territory.¹⁷⁶ This phenomenon has already contributed to concerns under WTO law by how international actors address carbon leakage, among other issues¹⁷⁷. At first sight, this may appear to be an impermissible exercise of extraterritorial jurisdiction. This thesis finds that such conclusion, however, adopts an overly formal conception of territoriality, which fails to account for the transboundary nature of climate change. The important legal question is not whether the CBAM produces effects outside the borders of the EU, but whether those effects are legally permissible under international environmental law.

Climate change does not understand about borders. The emission of GHG contributes to the global warming irrespective of the territory where they are released. The use of CBAMs to prevent carbon leakage is likely to produce effects outside the territory of the State that regulates such mechanisms, considering the objective of mitigating the relocation of carbon-intensive production. Consequently, this thesis argues that the existence of an extraterritorial effect on CBAMs should not, by itself, be considered as evidence of unlawful practices, but rather as an inherent element of climate policies that seek to mitigate a practice with a cross-border nature.

This conception is supported by the WTO law under the acceptance of measures on process and production methods (PPMs). Unlike product requirements,¹⁷⁸ which regulate the physical characteristics of imported goods, measures based on PPMs consider the way in which products are manufactured¹⁷⁹. Under WTO law the requirements related to the PPMs of an imported product are not controversial, as long as there is level of discretion for the third country producer on how to meet such environmental production requirements.¹⁸⁰ This distinction is relevant for the CBAM.

¹⁷⁶ *Ibid*, 61.

¹⁷⁷ Patrick Low, Gabrielle Marceau, Julia Reinaud, 'The Interface Between the Trade and Climate Change Regimes: Scoping the Issues' (WTO Economic Research and Statistics Division, Staff Working Paper ERSD-2011-1, 2011) 1 https://www.wto.org/english/res_e/reser_e/ersd201101_e.pdf accessed 23 June 2026.

¹⁷⁸ *European Communities – Measures Affecting Asbestos and Asbestos-Containing Products*, (Appellate Body Report) WT/DS135/AB/R (12 March 2001) [67].

¹⁷⁹ World Trade Organization, 'Labelling' https://www.wto.org/english/tratop_e/envir_e/labelling_e.htm accessed 25 July 2026.

¹⁸⁰ Extraterritoriality and Climate Change Jurisdiction, (Natalie L. Dobson), *ibid* 9, 64.

The mechanism does not establish a specific method that third countries should model. Instead, it merely attributes a carbon cost to imported products with regards their embedded emissions, giving producers a vast level of discretion to decide how or whether they reduce such emissions. Therefore, this thesis considers that the CBAM seeks to influence economic incentives with an environmental purpose rather than regulating manufacturing activity outside the EU.

The CBAM produces incentives that influence industrial behaviour in third countries, giving rise to allegations that the EU is extending its regulatory influence beyond its territorial jurisdiction.¹⁸¹ Dobson argues that the existence of extraterritorial effects should not be equated with an unlawful exercise of extraterritorial jurisdiction.¹⁸² Abel considers that the environmental rationale of the CBAM rests upon the premise that effective climate policies require addressing GHG emissions embedded in international goods rather than exclusively those generated within domestic territory.¹⁸³ Accordingly, this thesis considers that treating every climate measure that influences foreign behaviour as unlawful would make effective action against carbon leakage practically impossible. Therefore, the CBAM's external effect does not derive from an intent of the EU to extend its regulatory authority beyond its territorial competence but rather as a derivation of the transboundary nature of climate change.

5.2. Criticism on The Extraterritorial Effects of the CBAM

The strongest criticism directed against the CBAM is that it seeks to influence production methods by attaching financial burdens to GHG emissions entirely generated outside the EU. Critics argue that the Regulation constitutes an impermissible exercise of extraterritorial jurisdiction because the mechanism regulates foreign production processes¹⁸⁴. While this criticism correctly identifies

¹⁸¹ Case C-366/10 *Air Transport Association of America and Others v Secretary of State for Energy and Climate Change* [2011] ECR I-13755; *Russian Federation – European Union – Carbon Border Adjustment Mechanism* (Request for Consultations by the Russian Federation) WT/DS639 (12 May 2025).

¹⁸² Extraterritoriality and Climate Change Jurisdiction, (Natalie L. Dobson), *ibid* 9, 64.

¹⁸³ The EU Carbon Border Adjustment Mechanism Protecting Steel and Metals Trade? (Patrick Abel), *ibid* 16, paras 147-157.

¹⁸⁴ Environmental or Fiscal? (Rita Szudoczky and Dilara İnal), *ibid* 104.

the international scope of the CBAM, this thesis argues that it overlooks the legal difference between regulation conducts abroad and regulating access to the internal market. This distinction is supported by the CJEU judgement in *Air Transport Association of America and Others v Secretary of State for Energy and Climate Change*.¹⁸⁵ In this case, the CJEU rejected the argument from several airlines that the inclusion of international aviation within the EU ETS constituted an unlawful exercise of extraterritorial jurisdiction. Instead, it held that the European Union was not regulating activities occurring abroad as such, but rather regulating access to its internal market, where the obligation to surrender emission allowances arose because aircrafts voluntarily landed at or departed from airports located within the EU, thereby establishing a sufficient territorial connection with EU law.¹⁸⁶

The same reasoning applies to the CBAM. Although the embedded emissions are generated entirely outside the EU, the legal obligations of the CBAM arise only when goods are voluntarily introduced into the customs territory of the Union by an authorised CBAM declarant.¹⁸⁷ Consequently, the Regulation does not directly regulate foreign production but establishes conditions on the participation in the European internal market.¹⁸⁸ Sadovsky considers that this distinction between regulating foreign conduct and regulating market access constitutes one of the strongest legal arguments supporting the compatibility of the CBAM with international law.¹⁸⁹ Accordingly, this thesis finds that the territorial connection of the CBAM is established not by the location of the emissions but by the voluntary decision of accessing the EU's market.

As the Court observed in *Air Transport Association of America and Others*, a climate measure does not become a tax, a charge or a duty, or unlawful merely because it produces economic effects outside the territory of the EU, provided that the carbon price arises from a sufficient territorial connection with the Union territory¹⁹⁰. This

¹⁸⁵ Case C-366/10 *Air Transport Association of America and Others v Secretary of State for Energy and Climate Change* [2011] ECR I-13755.

¹⁸⁶ *Ibid*, para 124.

¹⁸⁷ CBAM, articles 1 and 2.

¹⁸⁸ Case C-366/10 *Air Transport Association of America and Others*, *ibid* 194, para 133.

¹⁸⁹ Impact of the Carbon Border Adjustment Mechanism (M. Sadovsky), *Ibid* 129, 52.

¹⁹⁰ Case C-366/10 *Air Transport Association of America and Others*, *ibid* 194, paras 141-143.

suggests that the products imported to the EU (taken into account by the scope of the CBAM)¹⁹¹ have a sufficient territorial connection with the EU and, therefore, it is legal to apply a carbon price to their embedded GHG emissions.

In conclusion, this thesis argues that the CBAM is not to be understood as an instrument imposing EU legislation upon third countries. Rather, it is an environmental mechanism¹⁹² that regulates access to the EU internal market upon the internalisation of carbon costs that would otherwise remain outside of the equation of market decisions. In this sense, foreign producers remain entirely free to determine their production methods and climate policies. However, if they choose to introduce their products to the EU market, the CBAM seeks to ensure that such products comply with a similar carbon cost that EU domestic producers comply with under the EU ETS.¹⁹³

5.3. Compatibility with WTO and International Trade Law Principles

The international legality of the CBAM has been one of the most debated aspects of the Regulation, especially in its view as an obstacle to trade while countries protect the production of their domestic companies.¹⁹⁴ The principal challenge of the CBAM under WTO law is not that it affects international trade but whether it discriminates imported products in a way that is prohibited under the General Agreement on Tariffs and Trade (GATT).¹⁹⁵

The first criticism concerns the principle of General Most-Favoured Nation (MFN) treatment contained in Article I GATT 1947.¹⁹⁶ Critics argue that the amount payable by authorized CBAM importers depends on the carbon price already paid in the country of origin, resulting in different financial burdens depending on the country

¹⁹¹ CBAM, annex I.

¹⁹² Exploring the impact of EU law (Alice Pirlot), *ibid* 113, 361.

¹⁹³ Case C-366/10 *Air Transport Association of America and Others*, *Ibid* 194.

¹⁹⁴ Joost Pauwelyn and David Kleimann, 'Trade Related Aspects of a Carbon Border Adjustment Mechanism. A Legal Assessment' (Briefing Requested by the INTA Committee, European Parliament 2020)

[https://www.europarl.europa.eu/cmsdata/210514/EXPO_BRI\(2020\)603502_EN.pdf](https://www.europarl.europa.eu/cmsdata/210514/EXPO_BRI(2020)603502_EN.pdf) accessed 24 June 2026.

¹⁹⁵ A Legal Exploration of the EU's CBAM, (Rafael Leal-Arcas, Manuliza Faktaufon and Anna Kyprianou), *ibid* 64.

¹⁹⁶ *Ibid*.

where the products originate¹⁹⁷, since the producers from countries with lower climate mitigation standards create a higher amount of GHG during their production and, therefore, will have to surrender a higher amount of CBAM certificates.¹⁹⁸ Such differentiation appears to be capable of conflicting with the obligation to treat products from different WTO Members accordingly to the treatment of like products. This thesis finds that this criticism, however, attributes the source of differentiation to the wrong factor. The CBAM does not distinguish between products regarding their nationality of the country where they were produced, nor does it attribute a preferential treatment to particular trading partners. The mechanism differentiates according to environmental circumstances rather than national origin. This conception is supported by De Stefano's contribution that such focus seeks to incentivize environmental action in third countries rather than discriminating them by geographical origins.¹⁹⁹

The second criticism concerns the principle of National Treatment (NT) under Article III GATT 1947.²⁰⁰ The application of different instruments (CBAM for imported products – EU ETS for domestic products) constitute the main argument for scholars or international trade actors that consider that the CBAM doesn't comply with the National Treatment principle.²⁰¹ This thesis considers that this argument wrongly overlooks the environmental regulatory purpose underlying both mechanisms. The CBAM and the EU ETS constitute different legal instruments, but they pursue the same objective: ensuring that products consumed within the EU internalise an equivalent carbon cost. Therefore, regulatory differentiation does not necessarily

¹⁹⁷ The EU Carbon Border Adjustment Mechanism Protecting Steel and Metals Trade? (Patrick Abel), *ibid* 16, 150.

¹⁹⁸ *Ibid*.

¹⁹⁹ Carlo De Stefano, 'The International Law Reading of the EU Carbon Border Adjustment Mechanism (CBAM)' (2026) 11(1) *European Papers* https://www.europeanpapers.eu/system/files/pdf_version/EP_eJ_2026_1_SS1_2_Carlo_De_Stefano_00869.pdf accessed 23 June 2026.

²⁰⁰ GATT 1947, art III.

²⁰¹ A Legal Exploration of the EU's CBAM, (Rafael Leal-Arcas, Manuliza Faktaufon and Anna Kyprianou), *ibid* 64.

lead to discriminatory treatment when both systems seek to achieve equivalent environmental objectives.²⁰²

Even if certain aspects of the CBAM were still considered inconsistent with Articles I or III GATT, such circumstance wouldn't conclude the legal analysis of this chapter. The environmental exceptions contained in Article XX GATT 1947²⁰³ provide an additional legal base upon which mechanisms affecting international trade may be justified. In particular, the CBAM appears to fall within Article XX(b), concerning measures necessary to protect human, animal or plant life or health²⁰⁴ and Article XX(g), relating to the conservation of exhaustible natural resources.²⁰⁵ Climate change mitigation policies seek to reduce GHG that contributes to global warming.²⁰⁶ Accordingly, WTO jurisprudence has recognised the protection of the environment by considering it an exhaustible natural resource under the *United States – Shrimp* case.²⁰⁷

The principal legal challenge for the CBAM doesn't lie in its accordance with the requirements of Article XX GATT²⁰⁸ but rather in its compliance with its chapeau, by which measures must not constitute arbitrary or unjustifiable discrimination, or disguised restrictions on international trade.²⁰⁹ Abel argues that this requirement may be the most serious challenge to the legality of the CBAM.²¹⁰ WTO has established through its jurisprudence three main requirements to comply with this

²⁰² The EU Carbon Border Adjustment Mechanism Protecting Steel and Metals Trade? (Patrick Abel), *ibid* 16; Carbon Border Adjustment Measures: A Straightforward Multi-Purpose Climate Change Instrument? (Alice Pirlot), *ibid* 4.

²⁰³ The International Law Reading of the EU CBAM (Carlo De Stefano), *ibid* 199; Can WTO Rules Support the Dissemination of the EU-Style CBAM in HICs? (Xinyan Zhao), *ibid* 150; The EU Carbon Border Adjustment Mechanism Protecting Steel and Metals Trade? (Patrick Abel), *ibid* 16, paras 147-157.

²⁰⁴ Article XX(b) GATT 1947.

²⁰⁵ Article XX(g) GATT 1947.

²⁰⁶ Patrick Abel, 'The Carbon Border Adjustment Mechanism: Reconciling the Principles of Sustainability and Free Trade in the EU's External Action?' in *EU External Relations Law and Sustainability: Global Europe* (Springer 2024) 120 https://link.springer.com/chapter/10.1007/978-94-6265-655-0_6#citeas accessed 18 June 2026.

²⁰⁷ *United States – Import Prohibition of Certain Shrimp and Shrimp Products* (Appellate Body Report) WT/DS58/AB/R (1998) [128].

²⁰⁸ The EU Carbon Border Adjustment Mechanism Protecting Steel and Metals Trade? (Patrick Abel), *ibid* 16.

²⁰⁹ GATT 1947, art XX.

²¹⁰ The EU Carbon Border Adjustment Mechanism Protecting Steel and Metals Trade? (Patrick Abel), *ibid* 16, para 151.

chapeau.²¹¹ First, the measure has to be genuinely related to the regulatory purpose pursued.²¹² Second, countries should allow countries to adopt alternative policies to contribute similarly to the policy objective²¹³ or, at least, measures comparable in effectiveness.²¹⁴ Third, WTO Members must engage in before unilateral actions to protect the environment.²¹⁵ The design of the CBAM appears significant. For instance, the mechanism recognises carbon prices already paid in third countries, allows producers to demonstrate their actual embedded emissions, and does not require third countries to replicate exactly the EU ETS to obtain an equivalent treatment. The CBAM accepts comparable climate policies, seeking regulatory equivalence rather than uniformity.

In conclusion, this thesis finds that the CBAM should not be viewed as an instrument of economic “green protectionism”²¹⁶ or as a new form of industrial policy promoted by employment concerns²¹⁷. The compatibility of the CBAM with WTO law should not be assessed solely by reference to its effects on international trade. Although its compatibility with WTO law will depend on future judicial interpretation, the CBAM appears considerably more consistent with the GATT principles than many of its critics suggest.

5.4. Carbon Pricing Abroad and Risks of Double Economic Burden

Most probably, the clearest indication that the CBAM’s intention is not to function as green protectionism or as a revenue-generating measure is its recognising of carbon prices already paid in third countries and adjusting the carbon cost accordingly.²¹⁸ This chapter argues that, by allowing authorised CBAM declarants to deduct carbon prices effectively paid in third countries, the mechanism

²¹¹ US – Shrimp Case, *ibid* 208.

²¹² *Ibid*, [136].

²¹³ *Ibid*, [161-165].

²¹⁴ *Ibid*, [144].

²¹⁵ *Ibid*, [153].

²¹⁶ *Joint Statement Issued at the Conclusion of the 30th BASIC Ministerial Meeting on Climate Change hosted by India on 8 April (2021)* 19. <https://www.gov.za/nr/news/media-statements/joint-statement-issued-conclusion-30th-basic-ministerial-meeting-climate> accessed 12 July 2026.

²¹⁷ Karl Aiginger and Dani Rodrik, ‘Rebirth of Industrial Policy and an Agenda for the Twenty-First Century’ (2020) 20(2) *Journal of Industry, Competition and Trade* 189, 191 <https://link.springer.com/article/10.1007/s10842-019-00322-3> accessed 24 June 2026.

²¹⁸ CBAM, art 9(1).

demonstrates that its primary concern is achieving equivalent carbon pricing rather than imposing an additional financial burden on imported products.

This deduction in the functioning of the CBAM suggests two intentions: first, the CBAM seeks to reduce the risk of double carbon pricing,²¹⁹ which would undermine its compliance with international trade. The possibility of recognising foreign carbon prices therefore confirms that the CBAM is designed to equalise carbon costs rather than generate revenue.

Second, the recognition of foreign carbon pricing tries to incentivize third countries to develop their own climate policies. Producers from jurisdictions with effective carbon pricing mechanisms face a lower CBAM obligation when exporting to the Union. The present thesis considers that such feature distinguishes the CBAM from measures that seek to export domestic legislation to third countries, and that the incentive is therefore directed towards international regulatory cooperation rather than an imposition of a unique model of carbon pricing system.

This cooperative objective has broader implications in the evolution of international climate governance. By recognising foreign carbon prices and reducing the corresponding CBAM obligations, the mechanism encourages the development of international carbon pricing systems capable of addressing carbon leakage collectively. The concept of a Climate Club,²²⁰ under which trading parties adopting comparable carbon pricing mechanisms cooperate to reduce carbon leakage while preserving their competitiveness, reflects this objective.²²¹

Accordingly, the CBAM should be understood as a mechanism that advocates for the worldwide expansion of carbon pricing with the ultimate objective of making path to a global carbon pricing framework.²²² Ideally, in order to maintain a fair

²¹⁹ European Commission Directorate-General for Taxation and Customs Union, 'CBAM – Questions and Answers' (28 May 2026) https://taxation-customs.ec.europa.eu/carbon-border-adjustment-mechanism/cbam-communication-and-faqs_en, accessed 14 June 2026.

²²⁰ CBAM, recital 72.

²²¹ Alice Pirlot, 'Climate Clubs: An International Tax Law Perspective' (2024), 52(2) *Intertax*, 104 <https://kluwerlawonline.com/journalIssue/Intertax/52.2/20545> accessed 20 June 2026.

²²² *Ibid* 237.

competition, carbon pricing should be applied internationally²²³; the CBAM is already making an effect to arrive to this ideal, as some countries like the United Kingdom have already started consultations on the application of a CBAM to avoid carbon leakage and embedded emissions in imports.²²⁴ This suggests that, far from exporting EU legislation, the CBAM encourages an idea of global carbon pricing by incentives towards regulatory cooperation.

In conclusion, this thesis considers that the interaction between the CBAM and foreign carbon pricing mechanisms illustrates an eager to interconnect carbon prices around the world in the form of a Climate Club²²⁵ and incentivize their creation in third countries that still don't have a mechanism as such.²²⁶ The CBAM doesn't seem to extend EU's sovereignty to non-EU countries to influence the production of foreign producers but rather seeks to ensure that products entering the EU market comply with an environmental cost similar to the one of the EU ETS, irrespective of their place of production while leaving space for global dialogue and cooperation²²⁷. When a resembling carbon price has already been paid in the third country, it will be considered for the calculation of the CBAM certificates to be surrendered²²⁸, thus avoiding a double economic burden.

5.5. Critical Assessment of CBAM's compliance with International Tax Law

The preceding analysis demonstrates that the legality of the CBAM cannot be assessed solely by the fact that it produces economic effects outside the territory of the EU. Such an approach would confuse extraterritorial effects with extraterritorial jurisdiction and overlook the regulatory function of the CBAM. As discussed through this chapter, the relevant legal question is not whether the CBAM

²²³ Olivier Blanchard and Jean Tirole (chairs), *French Report on Major Future Economic Challenges* (2021) 37 *France Stratégie* <https://www.strategie-plan.gouv.fr/en/publications/major-future-economic-challenges-olivier-blanchard-and-jean-tirole> accessed 23 June 2026.

²²⁴ HM Treasury and Department for Energy Security and Net Zero, *Addressing Carbon Leakage Risk to Support Decarbonization: Summary of Consultation Responses and Government Response* (18 December 2023), <https://www.gov.uk/government/consultations/addressing-carbon-leakage-risk-to-support-decarbonisation> accessed 15 June 2026.

²²⁵ Recital 72 CBAM.

²²⁶ Recital 10 CBAM; Recital 14 CBAM;

²²⁷ A Critical Analysis of the CBAM (F. Bachmann & F.J.G. Nellen), *ibid* 11; CBAM, recital 72.

²²⁸ CBAM, art 9.

influences production decisions in third countries but whether it does it unlawfully by regulating foreign conduct or correctly by establishing conditions for access to the EU market. The analysis undertaken in this chapter supports the latter interpretation.

Although the calculation of the CBAM obligation depends upon GHG emissions generated during production outside the Union, the legal obligation arises only when products are voluntarily introduced into the EU customs territory. The territorial connection is therefore established through participation in the internal market rather than by the external production process. The CBAM does not require third countries to adopt the EU ETS, or change to particular production methods, or implement specific climate policies. Instead, it attributes a carbon cost to imported products in order to ensure that they bear an equivalent cost to that imposed to EU domestic producers.

Such distinction also explains why the CBAM is capable of being reconciled with WTO law. The mechanism does not differentiate between products on the basis of nationality or geographical origin, but according to objective environmental criteria related to embedded emissions of the imports and carbon prices already paid during production. Similarly, its complementary relationship with the EU ETS demonstrates that it seeks regulatory equivalence rather than competitive advantage for EU industry against non-EU producers. Even if the CBAM is ultimately considered to not fall under Articles I and III GATT 1947, the environmental objectives pursued by the mechanism strengthen the argument that it is capable of satisfying the requirements of Article XX's chapeau.

As demonstrated in the previous chapter, this thesis argues that the CBAM is accurately understood as an environmental regulatory instrument that counts with fiscal elements to achieve climate policy objectives. The mechanism regulates the conditions under which products may enter the EU market in order to make them internalise environmental externalities associated with the GHG emitted during their production.

Accordingly, this thesis concludes that the CBAM's extraterritorial effect should be understood as a necessary consequence of addressing a global environmental issue through a market-based regulation. Climate change does not recognise territorial borders, and measures designed to prevent carbon leakage cannot be confined exclusively to the emissions of their territory if they intent to be effective. The CBAM represents an attempt to reconcile an environmental objective with the principles of international trade. Although its compatibility with WTO law will depend upon future judicial interpretation and the way in which the mechanism is applied in practice, its structure, objectives, and relationship with the EU ETS provide enough evidence that it is capable of operating along international trade law. Therefore, the CBAM's cross-border effects should not be regarded as an impermissible exercise of extraterritorial jurisdiction but rather as the inevitable consequence of an environmental regulatory instrument designed to mitigate carbon leakage within a global trading system.

6. Conclusion

The EU Carbon Border Adjustment Mechanism (CBAM) constitutes one of the most significant innovations in the EU's climate policy framework. This thesis has argued that the CBAM cannot be understood by itself, as it is conceived as part of the European Green Deal and the "Fit for 55" legislative package, and operating as a complement of the EU Emissions Trading System. The mechanism seeks to address carbon leakage and influencing on the behaviour of international trading parties and stakeholders, therefore reflecting the growing concept that climate change requires regulatory solutions capable of respecting and interacting with international trade.

From an economic and environmental perspective, the CBAM responds to a persistent market failure: the inability of global markets to internalize the negative externality associated with GHG emissions. By imposing a carbon price on imported goods, the CBAM forces producers outside the EU to internalize the environmental cost of their production processes, costs that would otherwise remain externalized. This thesis has shown that the CBAM's application comes together with a regulatory claim: climate responsibility must be reflected in the price of internationally traded goods.

The legal analysis conducted in Chapter IV supports the conclusion that the CBAM is not a traditional tax or customs duty. Although it employs fiscal techniques and generates revenue, its structural elements and functional link to the EU ETS indicate that it is primarily an environmental regulatory instrument. Its financial components serve an instrumental purpose to achieve climate objectives rather than defining the legal nature of the mechanism as a sole revenue-generator tool. The CBAM thus exemplifies a new category of hybrid regulatory tools that aligns the boundaries between taxation, environmental law, and trade regulation. This classification is essential for understanding its enforcement, its compliance with international law principles, and the supervision of its application.

Chapter V of this thesis showed that the extraterritorial dimension of the CBAM has been the subject of significant criticism, particularly from trading partners who perceive it as an unlawful extension of EU regulatory authority. However, the

analysis in this chapter demonstrates that such criticism wrongly determines the nature of the mechanism. The CBAM does not regulate foreign production directly; rather, it regulates access to the EU internal market. Even when the CBAM influences production decisions abroad, its effects remain linked to the access to EU internal market. This connection is decisive for assessing its compatibility with WTO law, particularly under its principles of non-discrimination and the exceptions for environmental protection.

Nevertheless, this thesis finds that the CBAM also presents limitations. Its restricted sectoral scope and its exclusion of several GHG despite their relevance under the EU ETS reflect political and administrative compromises that constrain its environmental ambition. As argued in Chapter II, the EU's decision to limit the CBAM to sectors with high carbon leakage risk suggests a prioritization of economic competitiveness over an ambitious environmental coverage. This tension between environmental effectiveness and economic interests is inherent to the CBAM's design and will continue to shape its evolution.

In normative terms, this thesis takes the position that the CBAM represents a necessary, though imperfect, step toward integrating climate policies into the regulation of international trade. The CBAM signals a shift in international climate governance, where climate obligations can no longer be reduced within domestic borders, and global supply chains must adapt to a world in which carbon has a price due to its unsustainable input in global warming. Whether the CBAM will successfully incentivize third countries to adopt their own carbon pricing mechanisms remains uncertain. Nevertheless, its symbolic and structural significance is undeniable.

This thesis concludes that the CBAM does not constitute a definitive solution to the global challenge of GHG emissions, yet it represents a significant progress within the EU's climate governance policy. Rather than functioning as an isolated policy instrument, it signals a broader regulatory shift: the EU is prepared to integrate environmental objectives into the conditions of market access to influence global production patterns. In this respect, the CBAM contributes to the gradual reconfiguration of international trade, where environmental protection is no longer

treated as an external consideration but as an inherent component of international economic exchange. Its long-term effectiveness will depend on how it evolves, how third countries respond, and whether it protects its environmental ambition against economic interests. Nevertheless, the CBAM marks an important step toward aligning international trade with climate policies and demonstrates the EU's willingness to assume a leadership role in the fight against climate change through regulatory mechanisms.

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