

THE CARBON BORDER ADJUSTMENT TRILEMMA

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KEY POINTS

- As countries move to achieve net-zero targets there is a risk their industries will relocate to countries where emitting CO₂ is cheaper and easier.
- An option for addressing this so-called carbon leakage is applying domestic carbon prices to imported products, or Carbon Border Adjustment (CBA). Both the UK and US are considering CBA and the EU has committed to introducing it.
- It's still unclear how exactly CBA will be designed and the EU Commission will publish a proposal in July.
- CBA design offers up a trilemma between the policy goals of environmental ambition, technical feasibility and fairness.
- This trilemma means that there is no optimal solution for CBA design, but rather trade-offs between goals.
- CBA also gives rise to the need for new forms of trade and climate cooperation to determine which other countries or producers have equivalent pricing, and therefore should be exempted. This might mean simply agreeing broad shared aims, such as net-zero targets, or much more detailed sector-specific analysis.
- The upcoming G7 and COP, both hosted by the UK, provide an opportunity to make progress on these crucial questions for designing CBA and forming a larger transatlantic climate alliance.

INTRODUCTION

It seems the time has come for countries to start extending domestic carbon prices to foreign products, often referred to as Carbon Border Adjustment (CBA). The European Parliament recently voted¹ to apply a so-called Carbon Border Adjustment Mechanism starting in January 2023. The Biden Administration may also introduce US CBA.² And Prime Minister Johnson has indicated that he wants to make CBA a

central issue when the UK hosts the G7 in June.³

Why is this issue at the top of the agenda? In short, countries are worried that the cost of decarbonising their industries will make them globally uncompetitive. The EU Emissions Trading Scheme (ETS), in particular, is starting to do what it's designed for – make high-emissions manufacturing processes too expensive, and coal prohibitively so. The European Steel Association (EUROFER) estimates that the ETS will

¹ European Parliament, 'Carbon levy on EU imports needed to raise global climate ambition' Press Releases ENVI Committee, 05-02-2021. <https://www.europarl.europa.eu/news/en/press-room/20210201IPR96812/carbon-levy-on-eu-imports-needed-to-raise-global-climate-ambition> (11 May 2021)

² The Biden Plan for a Clean Energy Revolution and Environmental Justice, Part III. <https://joebiden.com/climate-plan/> (11 May 2021)

³ J. Shankleman, 'U.K.'s Boris Johnson Considers G-7 Bid on Green Border Levies', Bloomberg, 4 February 2021 <https://www.bloomberg.com/news/articles/2021-02-04/u-k-s-boris-johnson-considers-g-7-bid-on-green-border-levies> (11 May 2021).

cost it €34 billion euros between 2021-30.⁴ The current record price, €49 (£43)/tonne at the time of writing is causing EU industry outcry,⁵ but to be effective the price needs to bite harder. The Grantham Institute concludes that to achieve net-zero emissions by 2050 (the UK target) pricing will have to reach £75/tonne by 2030.⁶

With higher costs comes the risk that industries in countries with ambitious climate targets will simply relocate to countries where they can emit freely. Estimates of the extent to which this so-called **carbon leakage** is happening vary, but the higher the price of carbon, the more likely this is. This threatens not only domestic industries but also, more importantly, the climate benefit of carbon pricing. These are the twin problems that carbon border adjustment aims to address, by applying charges to imported goods that are equivalent to those domestic producers pay.

Border adjustment tax is not a new idea,⁷ and is based on the principle that products should be taxed where they're consumed not produced. But adjusting carbon taxes is particularly tricky. Among other challenges, it requires translating a tax often applied to producers to products instead,⁸ calculating embodied CO₂,⁹ and deciding whether developing countries should be charged less to reflect their differing responsibilities. Choices made here also

affect the likelihood of CBAM complying with WTO rules.

THE CBA TRILEMMA

In advance of the EU Commission's CBA proposal in July, which will provide some answers to these questions, I offer here a conceptual framework for evaluating design choices of CBA, in terms of a **trilemma between environmental ambition, technical feasibility and fairness**. With apologies to dedicated CBA watchers for some omissions and simplification, this will help to illustrate some of the tradeoffs involved in CBA design and what they might mean for various stakeholders – from SMEs to customs agents to environmentalists – and the prospect of forming climate clubs between countries with net-zero emissions targets going forward.

CBA has different sets of goals, which in some respects pull in different directions. This means there are no right answers in CBA design, but there are tradeoffs.

ENVIRONMENTAL AIMS: Scope – broad. Rate – high and targeted.

Given that it acts as an extension of a domestic climate regulation, **reducing emissions** is arguably the primary aim of CBA. Anytime domestic products pay a carbon tax that foreign products do not, it gives an advantage to higher-emitting products. Thus, environmentally speaking, CBA should be applied to all products that are taxed domestically. It also must apply to all manufactured products that contain inputs that are taxed. If it doesn't, leakage (ie, production shifting to emissions havens) will still occur for these inputs. Pricing shouldn't just cover the emissions released directly during the production of these products, but also the cost of purchased inputs, such as electricity – so-called indirect emissions. Finally, leakage isn't necessarily limited to sectors covered by carbon pricing. Other types of climate regulation can also be expensive for producers. Thus, there is an argument for looking beyond direct pricing when evaluating which sectors bear greater costs than their foreign counterparts. Agriculture, for example, is often cited by producers as a source of leakage within the EU.¹⁰

We also have to settle on a methodology for determining how many emissions are embodied in each imported shipment of goods. From an

4 M. Moggridge, 'EUROFER offers practical solutions for EU ETS' Steel Times International, 28 October 2015, <https://www.steeltimesint.com/news/eurofer-offers-practical-solutions-for-eu-ets> (11 May 2021)

5 An independent UK ETS is due to begin in the second quarter of 2021 and the permit price remains unknown.

6 J. Burke, R. Byrnes, S. Frankhauser, 'How to price carbon to reach net-zero', Policy Publications LSE/Grantham Institute, May 2019. <https://www.lse.ac.uk/GranthamInstitute/publication/how-to-price-carbon-to-reach-net-zero-emissions-in-the-uk/>

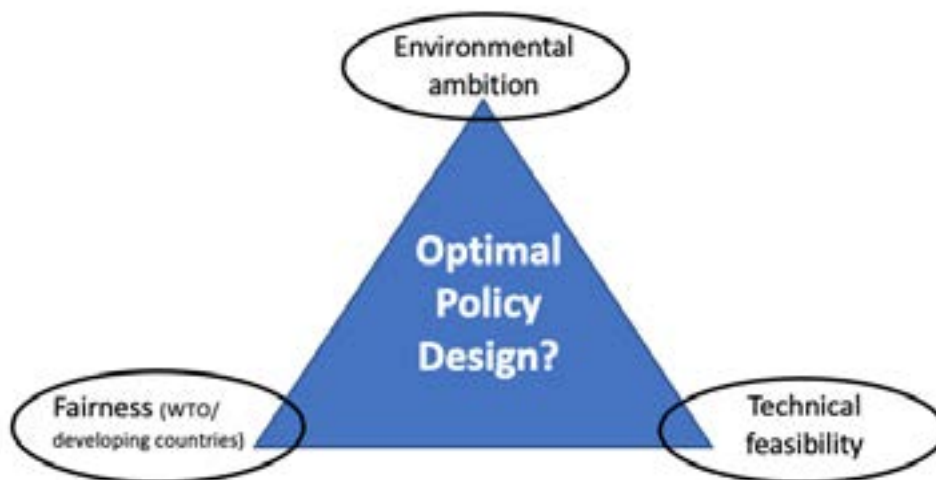
7 See eg, this GATT report: BORDER TAX ADJUSTMENTS Report of the Working Party adopted on 2 December 1970 (L/3464). <https://www.worldtradelaw.net/reports/gattpanels/bordertax.pdf>. download (11 May 2021)

8 For WTO purposes, as set out in the 1970 GATT Border Adjustment Tax report linked above, to be adjusted carbon tax must be applied to products, not producers. Therefore the EU will need to argue that the EU ETS applies indirectly to products. There is some support for this interpretation in WTO case law and Agreements (see analysis in Pauwelyn, J. and Kleimann, D, Trade Related Aspects of a Carbon Border Adjustment Mechanism: A legal assessment, Briefing for the INTA Committee, European Parliament, pp. 8-9). But the fact remains that, in the EU, companies buy permits that correspond with their overall emissions, and applying this permit price to an imported product requires a different approach: identifying how many emissions are inside a product.

9 This is far from straightforward. See, eg, J. Orr, O. Gibbons and W. Arnold, 'A brief guide to calculating embodied carbon', thestructuralengineer.org, July 2020: <https://www.istructe.org/IStructE/media/Public/TSE-Archive/2020/A-brief-guide-to-calculating-embodied-carbon.pdf> (11 May 2021)

10 C Lambert, 'Carbon leakage devastating for European agriculture', Future Farming, 9 March 2021. <https://www.futurefarming.com/Smart-farmers/Articles/2021/3/Carbon-leakage-devastating-for-European-agriculture-718961E/> (11 May 2021)

Figure 1. The CBA Trilemma



environmental perspective, we shouldn't use default values that allow many producers to pay less than they actually emit. We want the price to prevent leakage and ultimately help incentivize companies to use cleaner technologies (though of course CBA can't prevent countries from exporting their cleaner products and consuming higher-emitting products domestically, or exporting it to non-CBA countries). Therefore, it's important that CBA is high enough to be dissuasive, and that it reflects the actual emissions of imported products so that bad actors feel the effects more.

TECHNICAL FEASIBILITY AIMS: Scope – narrow. Rate – standardized.

From a **technical feasibility** perspective, calculating the emissions profile of each individual installation places an administrative burden on companies. This is particularly true for smaller companies, and for manufactured goods – imagine, for example, that the steel in a car comes from Japan but the aluminium from China. Each of the producers of these materials has their own individual emissions rates that must be calculated and summed. This is burdensome for businesses but also poses challenges in assessing compliance. To determine if charges are correct, customs officers (or whoever is responsible for levying the tax) will need to understand the pricing methodology being employed by each producer for each component.

Changing rates can also make applying CBA and assessing compliance more difficult. If the EU envisages its CBA as an extension of its ETS, the price will constantly shift based on ETS permit prices. Reflecting these changes is important to make this

an accurate adjustment tax, but dealing with price changes on top of everything else clearly adds a layer of complexity. If we leave aside *all* environmental and fairness considerations, the easiest way to administer such a scheme is to use fixed default values for the emissions embedded in particular goods, preferably global averages. Furthermore, the narrower the scope, the easier to apply. If we limit CBA to direct emissions for a few primary commodities, we avoid all the complexities involved in calculating inputs for manufactured goods.

FAIRNESS AIMS (WTO, DEVELOPING COUNTRIES): Scope – narrow. Rate: low if

generalized; targeting must be allowed if charges are higher than actual emissions.

An inconvenient truth about carbon border adjustment is that one of its aims is to protect domestic industry from foreign competition. Thus, the CBA has to be crafted quite scrupulously to avoid being seen as discriminatory. WTO non-discrimination rules provide some scope for trade-restrictive measures such as CBA, as long as they treat domestic and imported products the same (National Treatment) as well as products from all WTO members (Most Favoured Nation).¹¹ From a design perspective, this means ensuring that producers are being charged the same rate of tax per unit as domestic producers, and that the amount of emissions considered to be embodied

¹¹ For more analysis of WTO-compatibility, see eg, M. Mehling et al, Designing Border Carbon Adjustments for Enhanced Climate Action (2019) 113(3) *American Journal of International Law* 461; J. Hillman, 'Changing climate for carbon taxes: Who's afraid of the WTO?' Climate and Energy paper series 2013, German Marshall Fund, pp7-9.

in their products is calculated fairly and accurately. This is complicated by the fact that fairness and accuracy may mean different things to different trade partners. Those who share net-zero emissions targets, for example, may argue that regardless of their exact pricing strategies, their producers should be exempted, because they are undertaking regulations with equivalent effect. Those who do not share net-zero targets may argue that CBA illegally exceeds the obligations of the Paris Agreement, which allows each country to set its own emissions targets and strategy, not pay for others to achieve theirs.

The latter is particularly acute with respect to developing countries. Historically, they did not emit as much and thus have less responsibility to reduce emission now. Also, for a subset, including Least Developed Countries, their contribution to contemporary emissions is much lower. Both the WTO¹² and also the Paris Agreement¹³ contain legal principles that allow for differential treatment of developing countries, and which arguably should be applied here in some form.¹⁴ However, countries who define themselves as developing are also some of the world's biggest emitters.¹⁵ Also, if some countries are being charged, while others are not, either on the basis of their contribution to climate change mitigation or their development status, this might form the basis of a (Most Favoured Nation) discrimination complaint.

These factors point to the likelihood of a WTO complaint on CBA. The fact that the WTO Appellate Body, or high court, is currently out of action adds an additional element of legal uncertainty, and, in making the trading system more volatile, probably increases the likelihood of tariff retaliation against CBA. But certain design principles are obviously desirable to make it less likely that trade partners will raise objections. In order to stand the best chance of WTO survival, the price per unit of emissions must be the

same for domestic producers and all trade partners, and any default charges for embedded emissions in particular products should be equal or lower to those that domestic producers pay on average. There must be an appeal mechanism where individual installations can calculate their own individual emissions. And in overseeing this complex process, the CBA must be administered fairly: a clear and transparent methodology for calculating emissions rates and an accessible route for obtaining approval for lower rates.

Finally, to be seen as non-discriminatory, it's important that CBA is explicitly framed as a measure to achieve climate objectives, rather than support domestic industry. In the WTO, GATT Article XX provides a 'general exception' under which a CBA can be defended as an environmental measure, but this exception requires that trade-restrictive regulation be necessary to achieve its environmental objective, and that there be a strong means-ends relationship between the measure and its objective. Both of these suggest that CBA will be most likely to pass the WTO test if it focuses only on highly-traded primary commodities where it is easiest to prove that leakage is already happening. This is a subset of the ETS coverage, rather than the whole scope. Charging CBA on sectors where there is no ETS, such as agriculture, seems very unlikely to pass the non-discrimination test, as it goes beyond adjusting a domestic tax.

CBA PROPOSALS – TRADEOFFS AND THE TRILEMMA

Putting these together reveals that charging a narrower range of imported products is preferable from a technical feasibility and WTO perspective, but may undermine environmental objectives by exempting some sectors in which leakage isn't captured by pricing, and also allowing for leakage in inputs to manufactured goods. A targeted approach that reflects each producer's actual emissions is easier to justify from a WTO and environmental perspective, but much more challenging to implement. Indeed, it would be so complex to administer that, unless it's done very carefully, it may lead to WTO complaints focusing on administrative unfairness. Higher prices are better environmentally, but more likely to prompt companies to lobby their governments to initiate a WTO dispute. Exempting at least some developing countries from CBA charges is desirable to achieve fairness – but, if done too widely, has the potential to raise tensions with the environmental goals.

No country has yet offered a comprehensive design; the closest we have is a **European Parliament**

12 Special and Differential Treatment provisions, World Trade Organisation, website article. https://www.wto.org/english/tratop_e/devel_e/dev_special_differential_provisions_e.htm (11 May 2021).

13 Climate Nexus, Common but Differentiated Responsibilities and Respective Capabilities (CBDR-RC). <https://climatenexus.org/climate-change-news/common-but-differentiated-responsibilities-and-respective-capabilities-cbdr-rc/>

14 One proposal is here: S. Lowe, 'The EU's Carbon Border Adjustment Mechanism: how to make it work for developing countries', Centre for European Reform, 22 April 2021. <https://www.cer.eu/publications/archive/policy-brief/2021/eus-carbon-border-adjustment-mechanism-how-make-it-work> (11 May 2021)

15 J Friedrich, M Ge, 'This Interactive Chart shows changes in the top 10 global emitters.' World Resources Institute, 10 December 2020. <https://www.wri.org/insights/interactive-chart-shows-changes-worlds-top-10-emitters> (11 May 2021).

Resolution¹⁶, which scores relatively high on the environmental goals of the trilemma but lower on technical ones. It proposes that CBAM cover all products made with materials charged under the ETS, including manufactured goods and indirect emissions (ie the electricity purchased to power manufacturing plants). It also proposes that producers can determine individually how much they should be charged based on their own emission profile and whether they pay domestic carbon tax. The resolution is a bit weak on developing countries, saying only that ‘special consideration’ will be given to Least Developed Countries and Small Island Developing States. The European Commission proposal,¹⁷ due in July, may well propose different tradeoffs.

In the US, the picture is even less clear, with Kerry recently describing CBA as a ‘last resort’.¹⁸ If, however, the US decided to introduce CBA, it’s very difficult to see how it could do so in a way that would fulfil the requirements of **WTO non-discrimination**. Whilst most states that hug the coasts do price carbon, there is no national carbon price or trading scheme. The US would thus have to make an argument for applying a tax to imports that its own producers don’t face, which would be very difficult to justify in the WTO.

CBAM DESIGN DECISIONS AND THE CLIMATE CLUB

Just as no country has yet designed a CBA, none has provided guidance for how to avoid it. Carbon leakage is an obstacle – political as much as environmental – to net-zero targets, and an ambitious multilateral solution isn’t on the table yet. The basic idea of a climate club¹⁹ is that, absent a high international carbon price, countries with ambitious climate targets band together against the rest of the world and impose import duties on them. Countries in the club do not need to levy CBA on each other, and the idea is that if enough countries do this, then this increases the incentives for others to join the club, and limits the need for CBAs.

¹⁶ European Parliament resolution of 10 March 2021 towards a WTO-compatible EU carbon border adjustment mechanism (2020/2043(INI)). https://www.europarl.europa.eu/doceo/document/TA-9-2021-0071_EN.html (11 May 2021).

¹⁷ European Commission, EU Green Deal (carbon border adjustment mechanism). <https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12228-EU-Green-Deal-carbon-border-adjustment-mechanism-en> (11 May 2021).

¹⁸ M Khan et al, ‘New US climate strategy opens up old faultlines with Europe’, *Financial Times*, 23 April 2021. <https://www.ft.com/content/b95de724-75c8-4155-88ed-5808fb761942> (11 May 2021)

¹⁹ Above n. 11.

CONCLUSION

Questions remain unanswered about which countries will apply CBA, how it will be designed and on what basis countries will exempt each other. If countries share a net-zero emissions by 2050 ambition, is this enough to exempt all exports? Or is this a much more granular process of determining equivalence in carbon charges across products and sectors? The recently-concluded UK-EU Trade and Cooperation Agreement provides a potential template. It’s the first to commit both Parties to maintaining effective carbon pricing²⁰ and to work toward linking their Emissions Trading Schemes (which would effectively guarantee that they have the same basis for national carbon pricing). This however is backed up by an enforcement mechanism that allows either side to impose tariffs if the other isn’t keeping pace.

It remains unclear what it will take to be exempted from EU CBAM. This in turn is important for global trade and climate cooperation, and the prospect of forming climate clubs. The UK has not yet produced a domestic proposal on CBA. However, as a country that has committed to net-zero by 2050 target and the host of the upcoming G7 and COP, it is well situated to convene these discussions on making climate clubs a reality, and will hopefully take up the challenge.

²⁰ See M Gehring, ‘The UK-EU Agreement is the first to make climate a make or break issue,’ UK in a Changing Europe, 21 January 2021. <https://ukandeu.ac.uk/the-uk-eu-agreement-is-the-first-to-make-climate-a-make-or-break-issue/> (11 May 2021).

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FURTHER INFORMATION

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