

# When Are Carbon Border Adjustment Measures Just?

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## Abstract

Arguments in support of carbon border adjustment measures are often based on considerations of justice. Implementing carbon border adjustment measures would be necessary to, first, promote fair competition between corporations and, second, make carbon pricing instruments more effective and thus prevent the harms of dangerous climate change. Yet, both arguments tend to obscure considerations of distributive justice relative to the burdens of climate policies and the benefits of economic cooperation. In this article, we first explain why the case for carbon border adjustment measures based on the ideal of fair competition between corporations is flawed. Second, if the priority of harm avoidance over fair burden-sharing can justify carbon border adjustment measures, we argue that it does not justify all kinds of carbon border adjustment measures. On the contrary, it puts significant constraints on their design. We contend that just carbon border adjustment measures should include design features that allow for some form of carbon leakage risk, either via country-differentiated prices or via country-specific exemptions.

## Keywords

carbon pricing, carbon border adjustment, climate justice, fair competition, global justice

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## Introduction

Given the bottom-up approach of the Paris Agreement, the transition to a low-carbon economy largely relies on domestic and regional climate policies, including carbon pricing measures. However, they may have undesirable effects given the global nature of the climate problem which makes it prone to free-riding. First, they may give rise to a phenomenon called carbon leakage, namely the increase of greenhouse gas (GHG) emissions taking place abroad following the unilateral implementation of climate change policies.<sup>1</sup> Carbon leakage is particularly concerning because it could mean that unilateral carbon pricing policies are ineffective at mitigating climate change. GHG emissions would be outsourced to other countries without resulting in any global emissions reduction. Second,

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unilateral carbon pricing policies can be seen as a threat to economic competitiveness, as they make domestic production more expensive compared with production in countries that do not implement such policies.

In order to limit carbon leakage and the impact of unilateral carbon pricing policies on the economic competitiveness of energy-intensive and trade-exposed industries, countries may want to implement carbon border adjustment measures (CBAMs) on the products of these industries. CBAMs involve (1) a charge on a selection of imported products equivalent to the carbon price imposed on domestic industries and also, sometimes (2) an exemption of the carbon price on exported products. The charge on imports is supposed to create a level playing field between domestic and foreign products sold on the territory of the implementing country, whereas the adjustment on exports is supposed to do the same for domestic and foreign products sold abroad. As a result, carbon leakage would also be avoided. The European Union (EU), for instance, adopted CBAMs, though only on imports, in May 2023, which it has justified by reference to the need to prevent the risk of carbon leakage that would be caused by a more ambitious EU Emissions Trading System (EU ETS) (Pirlot, 2022). Compared with other measures like sectoral exemptions and free allowances (in the case of cap-and-trade schemes), CBAMs can be regarded as an environmentally more effective way to address concerns about carbon leakage and economic competitiveness. Indeed, sectoral exemptions completely mute the price signal, while free allowances imply that there is no full carbon cost and, thus, they reduce the impact of carbon pricing instruments (Ismer et al., 2023). CBAMs can also be seen as a way to push other countries to implement carbon pricing instruments in order to avoid being subject to adjustment measures on their exports.

However, the introduction of CBAMs in the EU would have some adverse economic impacts on low- and middle-income countries, as indicated by a 2021 report from the United Nations Conference on Trade and Development (UNCTAD, 2021). In general, CBAMs have been criticised as protectionist measures, hidden behind an environmental façade, implemented by high-income countries to pursue their national economic interests at the expense of low- and middle-income countries (Carbon Market Watch et al., 2021; Government of India, 2019, para. 19; Ravikumar, 2020). By contrast, proponents of CBAMs often invoke considerations of global justice and fairness to support their adoption. For instance, Ursula von der Leyen, the President of the European Commission, has explicitly framed the European CBAMs as a policy instrument to foster ‘just globalisation’ and ‘fairness’.<sup>2</sup> Similar references to fairness have been used in the policy discourse on CBAMs in the United States and Canada.<sup>3</sup> Whether they are genuine or just a rhetorical trick, they raise important questions about the role and impact of CBAMs: To what extent do CBAMs contribute to a more just world, or, to the contrary, lead to more injustice?

A few authors have questioned the ethical underpinnings of CBAMs (among others, Brandi, 2013; Eckersley, 2010; Roser and Tomlinson, 2014; Steininger et al., 2014). A major argument in this literature is that CBAMs change the global distribution of mitigation costs. Thus, they could clash with ideals of fair burden-sharing, such as those expressed in the ‘common but differentiated responsibilities and respective capabilities’ (CBDR-RC) principle, by shifting burdens from high-income to low- and middle-income countries (Eckersley, 2010). Moreover, the desirability of CBAMs has been discussed based on whether producers or consumers are responsible for climate change. Eckersley and Brandi, for instance, have claimed that, by shifting mitigation burdens onto foreign producers, CBAMs enable countries to evade their responsibilities as their economies

rely on the importation of products with high embodied GHG emissions (Brandi, 2013; Eckersley, 2010). Yet, Roser and Tomlinson have shown that it is unclear whether CBAMs actually correspond to a production-based or consumption-based approach to climate responsibility insofar as the effective allocation of burdens ultimately depends on the tax incidence of CBAMs, which remains uncertain (Roser and Tomlinson, 2014; Steininger et al., 2014). Also, it is ethically debatable whether consumers or producers should bear more responsibility for emissions. Finally, most authors agree that the just character of CBAMs is highly dependent on their design, which is why they have emphasised the need to allocate the revenues from CBAMs to low- and middle-income countries, as a way to offset their economic impacts (Brandi, 2013; Eckersley, 2010; Roser and Tomlinson, 2014).

Nevertheless, the arguments of justice that can be put forward to support CBAMs warrant further analysis. In particular, we think that two questions have been insufficiently examined. First, calls to ‘level the playing field’ have been criticised as overly simplistic and incomplete (Eckersley, 2010; Roser and Tomlinson, 2014). However, what exactly are the normative theories supporting the ideal of fair competition? And could there be a case for adopting such an incomplete conception of fair competition? Addressing these puzzles is crucial given the prevalence of the fair competition narrative in the policy and legal discourse (Espa, 2022; Espa et al., 2022). In the first section, we show not only that the *fair competition argument* is incomplete because it singles out climate policies as a matter of unfair competition without taking other important considerations (resources, historical injustice, taxation, etc.) into account, but also that such incompleteness cannot be justified. Second, CBAMs have been mostly criticised with reference to an account of climate justice as fair burden-sharing (Eckersley, 2010; Steininger et al., 2014). Yet, the lack of progress in GHG emissions reduction and the worsening of the climate change issue could justify a re-examination of that matter. In the face of climate urgency, could the implementation of apparently ‘unfair’ CBAMs be justified by the priority of avoiding the wrongful harms of climate change? We address this question about the *harm avoidance argument* in the second section of this article. Admittedly, avoiding harms should trump burden-sharing considerations. However, we argue that the non-climatic harms that could be provoked by CBAMs cannot be simply overlooked, as they may, in practice, threaten the very same interests that climate policies are supposed to protect. Adopting the perspective of harm avoidance thus puts significant constraints on the design of CBAMs, which we examine in the final section. In particular, we claim that just CBAMs should temporarily allow for what is usually seen as ‘carbon leakage’ and ‘unfair competition’. This could be implemented via a system of either country-differentiated prices or country-specific exemptions.

Our reasoning is based on a non-ideal and interdisciplinary approach to global climate justice, which builds on law, philosophy and economics. In discussing arguments about justice, Rawls famously distinguished between the perspective of ideal theory, which assumes a full compliance of agents with their duties as well as conditions favourable to the realisation of justice, and that of non-ideal theory, which rejects these assumptions (Rawls, 1999: 8). More recently, non-ideal theory has also been characterised by a higher degree of fact-sensitivity and a greater attention paid to feasibility constraints – compared with ideal theory – as well as a comparative approach that focuses on reducing injustice rather than imagining a perfectly just society (Hamlin and Stemplowska, 2012; Valentini, 2012; Volacu, 2018). Given the significant obstacles to the implementation of fair and efficient climate policies in the real – and far from ideal – world, a non-ideal

approach to global climate justice may be more action-guiding (Heyward and Roser, 2016). For this reason, our approach here is non-ideal in four respects. First, we assume that states only partially comply with their duties of climate justice. This assumption is necessary to understand the role CBAMs might play in climate policy: if all states fully complied with their duties of justice and reduced their GHG emissions according to their fair share of the burden, there would be no need to implement CBAMs to mitigate climate change. Second, our approach is sensitive to some facts, notably expected economic impacts. CBAMs raise tremendous normative questions of global justice which can be illuminated by philosophical thought. Yet, the just character of CBAMs is highly dependent on their actual design and economic impacts. Third, we consider some feasibility constraints in our discussion, like political acceptability, compatibility with World Trade Organisation (WTO) law and administrative burdens. It is not enough to satisfy the requirements of a conception of justice to be policy-relevant. In particular, one should also be aware of the complexities of the legal framework that affect the legal viability of CBAMs. That being said, we do not provide a full-fledged analysis of CBAMs' compatibility under international climate change and trade law, as this has already been done by other authors (Espa et al., 2022; Mehling et al., 2019). Finally, we tend to adopt a rather comparative approach to justice insofar as undifferentiated CBAMs – rather than perfectly just climate policies – are the starting point of our analysis. Based on an unjust state of the world, we argue for more just forms of CBAMs, which nevertheless still fall short of perfectly just instruments.

## The Fair Competition Argument

One major argument supporting CBAMs is the following: *it is unfair that domestic and foreign companies are subject to different levels of carbon prices* (including no price at all). Fair competition would require to 'level the playing field' by equalising the carbon prices imposed on economic activity through the implementation of CBAMs on imports (with a charge) and on exports (with an exemption). In other words, unfair competition is defined by reference to the fact that corporations based in different jurisdictions pay different carbon prices while competing to sell their products to the same consumers. This argument has been criticised as 'simplistic and lopsided' insofar as it singles out the price of carbon in the definition of unfair competition (Eckersley, 2010: 369). However, little attention has been paid to the normative theories that could support this ideal of fair competition between corporations and to the potential arguments in favour of a narrow focus on carbon pricing.

### *The Level Playing Field Ideal of Fairness*

It is easy to see calls for a level playing field by countries where carbon pricing instruments are implemented as attempts to further national self-interest or to respond to pressure from domestic corporations. CBAMs address the loss of competitiveness of economic activities subject to a carbon price. Implementing them therefore typically serves the interests of emissions-intensive activities based in the country. Yet, concerns about competitiveness must not necessarily be motivated *only* by self-interest – national or corporate – and could include genuine concerns about welfare, efficiency or fairness (Roser and Tomlinson, 2014: 229, 241). While we should bear in mind that it may just be some

rhetorical gloss used to hide less laudable motives, it is important to clarify the normative underpinnings of the ideal of a level playing field.

Traditionally, calls for levelling the playing field in international competition by reducing tariffs and trade barriers can be linked to the ideal of *economic efficiency*. A global market of pure and perfect competition based on free trade, it is assumed, would maximise everyone's welfare. Yet, rationales for CBAMs are necessarily different from arguments in favour of free trade, since CBAMs typically include charges on imports. Some economists consider climate change as a market failure insofar as the negative externalities of GHG emissions lead to inefficiencies, that is, to a suboptimal state of the world for everyone (Stern, 2008: 1). Imposing a carbon price aligned with the social cost of carbon (i.e. the net present value of the negative externalities provoked by one additional tonne of CO<sub>2</sub>e) would address these inefficiencies by forcing economic agents to internalise the negative externalities of GHG emissions (Nordhaus, 2007). Carbon pricing is supposed to maximise aggregate welfare across the world and across generations. However, unilateral carbon pricing may be vulnerable to carbon leakage and free-riding (Fowlie and Reguant, 2018; OECD, 2021). Other countries may not reduce their own GHG emissions, the loss of competitiveness may encourage firms to relocate to jurisdictions where no carbon price applies, and the price difference may encourage consumers to buy products from free-riding countries. Hence, the use of CBAMs would be necessary to address the *ineffectiveness* of unilateral carbon pricing compared with global carbon pricing. In this way, CBAMs could be justified indirectly. Yet, this argument is about economic efficiency and environmental effectiveness (which is discussed in the following section), and not about *fair* competition. Similarly, one could argue that, given the pressure put on governments by economic actors to defend their interests, governments would not be able to adopt ambitious carbon pricing policies without introducing CBAMs at the same time. Moreover, one could consider that implementing CBAMs is necessary for carbon pricing policies to be sustained in the long term. Without carbon leakage prevention measures such as CBAMs, the argument goes, ambitious domestic carbon pricing policies would not be acceptable for domestic corporations and would thus be destined to be overturned. However, this argument is about *political feasibility* rather than fairness itself.

Interpretations of a level playing field as fair competition sometimes seem to rely on a somewhat different normative approach. The purported goal of CBAMs would be to ensure a *fair equality of opportunities* (FEO) for corporations to participate in economic competition on domestic and foreign markets. This is illustrated by the analogy between economic competition and competition in sport, evidenced by metaphors such as 'levelling the playing field' or 'fair play', which are widely used by the EU Commission, for example (Dunne, 2021: 237–244). Some proponents of CBAMs seem to believe that the rules of economic competition between firms should be fair in some way. In order to clarify what rules of fairness should pertain to such competition, let us turn take inspiration from theories of FEO.

Initially developed to reflect on the social competition between individuals, theories of FEO might be extrapolated to the economic competition between firms. Like theories of distributive justice in general, these theories may differ both in terms of *principle* and in terms of *currency*. Here, for the sake of simplicity, we will only consider a single principle, namely strict equality: it is generally assumed that fairness requires to *equalise* opportunities.<sup>4</sup> With regard to what is meant by 'opportunities', that is, the currency of FEO, there are at least three main conceptions of FEO that could be relevant (Arneson, 2015). First, *formal* equality of opportunity requires that all positions in society should be

formally open to all, without discrimination. This theory pursues the ideal of an *open* playing field, where everyone is allowed to play, but not of a *level* playing field. Thus, it does not seem to correspond to the policy discourse on CBAMs. Rawls' theory of FEO aims at a more *substantive* equality of opportunity: not only should all positions be formally open to all but people with equal natural talents should have real equal chances of success, independently of their initial socio-economic status (Rawls, 1999: 63). In that sense, the playing field is levelled insofar as the influence of socio-economic status is neutralised, but it is only *partially* levelled since the influence of natural talents is not neutralised. This theory is not easily applicable to the fair competition argument used by proponents of CBAMs. Indeed, Rawls' distinction between socio-economic status and natural talents is not readily transferrable to economic competition between corporations (what would constitute the 'natural talents' of a corporation?). A third conception, Dworkin's *luck egalitarianism*, goes further by claiming that fairness requires people to have equal chances independently of all the circumstances beyond their control, including not only their socio-economic status, but also their genetic endowment, natural environment and so on (Dworkin, 2000). People should be held responsible only for their individual choices. In that sense, luck egalitarianism is the closest expression of the ideal of a level playing field between individuals (Arneson, 2015). To follow the analogy between sports and economic competition, competitive sports are based on elements of luck egalitarianism aimed at neutralising not only social factors but also natural ones: not only is doping banned and competitors must use similar equipment, but in some sports, there are also weight, size or biological sex categories (Loland, 2020: 587). Such a conception of FEO seems to correspond to the fair competition argument in support of CBAMs.

Based on luck egalitarianism, unequal carbon prices could be seen as constituting unequal economic circumstances that are beyond companies' control and affect their chances of success on the market. Of course, big multinational corporations may be able to influence policymakers or they may relocate their activities, thereby choosing the laws they abide to. Yet, for most corporations, the price of carbon remains an unchosen circumstance. Hence, luck egalitarianism would provide a justification for the use of CBAMs aimed at equalising luck between competitors with regard to carbon pricing considerations: an additional charge on imported goods and an exemption on exported goods would neutralise the differences in carbon price levels.

### *A Flawed Conception of Justice*

Yet, this fair competition argument in favour of CBAMs faces a double challenge. First, inequalities relative to the price of carbon are only one aspect of many other unchosen circumstances that a conception of FEO applied to corporations ought to neutralise and it is unclear why it should be our focus (call this the *narrowness objection*). Second, while FEO is a widespread ideal for interpersonal relations, there is no good reason to extrapolate it to corporations (call this the *individualist objection*).

Let us first focus on the narrowness objection: neutralising the influence of carbon pricing on economic competition is a far cry from ensuring equal luck between corporations. A truly level playing field would also require equalising labour regulations, taxation, natural resources, climatic conditions, the longstanding influence of past injustices like colonisation and so on. Hence, CBAMs are insufficient to fully level the playing field between corporations. However, it does not necessarily entail that CBAMs are unfair. According to Eckersley, the fair competition argument seems to wrongly assume that the



playing field is levelled but for climate policies (Eckersley, 2010: 380), but there might be good reasons to single out the specific aspect of climate policies as that which should be levelled. Let us examine three potential responses.

First, one could argue that only some inequalities of luck, namely inequalities in the price of carbon, should be compensated for because they are morally relevant while others are not (call this the *moral relevance response*). This claim recognises that CBAMs are narrow instruments when it comes to equalising luck, but it draws a distinction between narrowness and incompleteness: the playing field should *not* be entirely levelled. As such, it can be characterised as isolationist. ‘Isolationism’ holds that ‘we should apply principles of justice to a good X in isolation of any other consideration’ (Caney, 2018: 672). Yet, there seems to be no good principled reason in favour of such a drastic restriction of the scope of what fair competition means. On which basis should we consider that a company located in a country that does not price carbon emissions benefits from an unfair competitive advantage, whereas a company located in a resource-rich country with a favourable climate, or a country still benefitting from the past injustice of colonisation, does not? One could argue that carbon pricing differs from other factors due to the global impact of climate change (Mintz-Woo, 2018). Yet, the global nature of the climate problem does not demand the adoption of a global carbon price, unless one considers that it is more efficient (but this efficiency argument cannot be equated with fairness).

Second, one could argue that, although neutralising carbon pricing inequalities is not enough to achieve equality of luck between economic competitors, it still contributes to a fairer competition (call this the *step in the right direction response*). After all, unfair competition cannot be addressed by a single policy and the equalisation of luck has to start somewhere. This reason is not principled but pragmatic. Nevertheless, for the neutralisation of carbon pricing inequalities to be a valid first step towards equalising luck among economic competitors, it needs to reduce aggregate unequal luck in general, *all things considered*. This is a shift from isolationism to ‘moderate integrationism’. Following Caney’s definition, this is the view that ‘we should apply principles of justice to a good X, but in doing so we should also take into account other considerations’ (Caney, 2018: 672). A general outlook on unequal advantages and a general luck egalitarian theory are needed. Applied to the context of CBAMs, it is far from clear that they are necessarily a step in the right direction. For example, it could be argued that implementing CBAMs in the EU would not reduce global inequalities of luck between corporations but strengthen them, as EU companies already enjoy an unfair advantage, all things considered, based on favourable resources and climatic conditions, technological advantage, unfair benefits from past GHG emissions and colonisation, and so on. Estimates suggest that the EU CBAM would improve the competitiveness of EU enterprises in comparison to their foreign competitors, in particular those located in China, India, Russia and Turkey (Zhong and Pei, 2022). Instead, it could be said that fair competition would require a very different kind of – say, ‘reverse’ – CBAMs: contrary to what has been proposed, high-income countries should probably put an additional charge on domestic products to level the playing field with foreign products from low- and middle-income countries. This example shows that the fair competition argument in favour of CBAMs cannot be invoked in isolation of wider considerations about what constitutes the morally arbitrary circumstances that should be compensated.

Third, although neutralising carbon pricing inequalities is not necessarily a step in the right direction, one could argue that it should be implemented as an indispensable component of a wider policy package aimed at levelling the playing field (call this the *policy*

*package response*). CBAMs should be implemented because they are necessary to achieve a level playing field, along with other policies like labour and tax laws harmonisation, global resource redistribution, rectification of past injustices and so on. Yet, the problem with this argument is that, unless this much wider-ranged levelling of the playing field is achieved, CBAMs could also, as illustrated above, exacerbate unfair competition. In a non-ideal perspective, considering that a wider levelling of the playing field of economic competition seems unlikely in the near future, we do not find the argument of fair competition convincing as a way to defend CBAMs.

In fact, there is an even more fundamental objection to the fair competition argument, which has to do with the type of agents and contexts to which the ideal of fair competition applies. This is the individualist objection. Theories of fair equality of opportunities usually focus on individuals. In the competition for professional and social positions, it is deemed unfair that different individuals have unequal opportunities, because it has a major impact on their quality of life and on the pursuit of their conception of a good life. And, in competitive sports, fair competition can be regarded as having either intrinsic value or instrumental value in highlighting – though imperfectly – the better performance or the higher merit of an individual or a team. But why should we want to promote a level playing field between companies – that is, between legal fictions? It is not because we attach intrinsic value to economic competition or because we think corporations should be rewarded for their merits.<sup>5</sup> Neither do we usually think that fair economic competition is important because of its beneficial impacts *on corporations* themselves (a view that would be difficult to reconcile with the fact that, in a competition, there are winners and losers). Rather, arguments for economic competition generally rest on assumptions about its instrumental value and beneficial impacts *on individuals* (qua consumers, employees or shareholders). And in terms of fairness, what really matters for assessing CBAMs is their effects on individuals rather than firms. Whether or not a corporation goes bankrupt does not matter as such as long as it does not have unjust effects on individuals. Therefore, the fair competition argument in favour of CBAMs is not only flawed because of its narrowness, but it is also implausible insofar as it treats companies as if they were individuals. In fact, appealing to fair competition and to the ideal of a level playing field has mostly rhetorical appeal.

## The Harm Avoidance Argument

Whereas the fair competition argument fails to support their implementation, another reason can be put forward in favour of CBAMs: *it is unjust that, due to ineffective mitigation policies, people have to face the wrongful harms of climate change*. The harm avoidance argument seems to entail that CBAMs should be introduced to maximise the environmental effects of carbon pricing instruments which, in turn, are thought to be necessary to prevent the wrongful harms of climate change. For example, the impact assessment for the European CBAMs indicates that it is important to prevent carbon leakage in order to avoid a ‘dangerous rise in global average temperatures’ (European Commission, 2021). The harm avoidance argument rests on two premises. First, anthropogenic climate change imposes wrongful harms on individuals. This claim can be framed, for example, in terms of human rights violations: by threatening the most basic interests of vulnerable individuals within present and future generations, climate change violates the fundamental human rights to life, health and subsistence (Caney, 2010).<sup>6</sup> We will adopt this rights-based approach in the remainder of this article. Second,



global carbon pricing is assumed to be a necessary component of a successful mitigation strategy. This is supported by framing climate change as a global collective action problem vulnerable to free-riding. And, in the current state of affairs – characterised by a bottom-up approach of climate governance – the implementation of CBAMs is thought to be necessary for unilateral carbon pricing instruments to be effective.

### *Effectiveness Versus Justice?*

There are in fact three different ways in which CBAMs are thought to make unilateral carbon pricing more effective at reducing the harms of climate change: by *preventing carbon leakage*, by *making climate policies more acceptable domestically*, and by *diffusing climate policies at the global level*. First, a unilateral carbon pricing scheme will not promote as high a reduction of global GHG emissions if it bolsters emissions outside of the jurisdiction of the implementing country. It would thus make sense to adopt CBAMs to avoid such carbon leakage. Second, implementing ambitious carbon pricing instruments is sometimes thought to be politically infeasible or unsustainable in the absence of CBAMs. The reason would be political acceptability at the domestic level: carbon pricing policies face a strong political pushback from energy-intensive and trade-exposed sectors and CBAMs can be a response to such pressure insofar as they address some concerns about economic competitiveness. Third, CBAMs could be instrumental in incentivising other countries to implement carbon pricing policies. This is probably the strongest reason why CBAMs would contribute to limiting climate-related harms. In a similar vein, Nordhaus argues for a ‘climate club’, which would require club members to introduce a carbon price within their jurisdictions and impose a penalty on imports from non-cooperating countries (Nordhaus, 2015). The penalty he proposes is a uniform tariff, but CBAMs could play the same role. If some major economies impose CBAMs on imports, this may push their commercial partners to implement carbon pricing instruments domestically. By doing so, they would collect the proceeds from carbon pricing domestically rather than letting other countries collect it on their exports. CBAMs are thus thought to promote the diffusion of carbon pricing policies at the global level.

According to the harm avoidance argument, the goal of CBAMs is no longer to level the playing field, but to bolster the effects of climate policies and promote their adoption at the global level. That is why this strand of justification generally focuses on adjustment on imports rather than on rebates on exports. Adjustments on imports address the issue of carbon leakage, they respond to competitiveness concerns on the domestic market and they are thought to incentivise commercial partners to adopt carbon pricing policies in order to avoid being subject CBAMs. Adjustments on exports, however, would only prevent carbon leakage or increase the political feasibility of carbon pricing instruments in certain cases. Adjustments on exports would be necessary to prevent carbon leakage if we assume that – absent such adjustments – domestic companies would relocate to jurisdictions where they would generate (even more) emissions. From the perspective of political feasibility, the need for such adjustments would depend on the political strengths of different actors: the use of such adjustments is supported by energy-intensive and trade-exposed industries but not by environmental non-governmental organisations (NGOs) as they would consider adjustments on exports as a weakening of the carbon pricing scheme. Adjustments on exports could undermine the diffusion of climate policies: rebates on exports could give the impression that the implementing country is not serious enough about carbon pricing and discourage other countries to adopt carbon pricing instruments.

The harm avoidance argument, according to which implementing some sort of CBAMs – usually on imports only – is required in order to avoid climate harms, seems to rely on a stronger normative background than the fair competition argument. In particular, it links the implementation of CBAMs directly to the wrongful harms imposed by climate change on *individuals* (as opposed to the presumably unfair opportunities faced by *corporations*). The harm avoidance argument also relies on the powerful idea that effectiveness can be a matter of justice (Roser and Tomlinson, 2014: 233). Climate policies that are ineffective in mitigating climate change are unjust insofar as they fail to protect the basic human interests of the most vulnerable and of future generations.

However, CBAMs have also been abundantly criticised based on the ideal that the burdens of climate policies (here, mitigation policies) should be shared fairly. The *unfair burdens objection* goes as follows: implementing additional charges on imports changes the distribution of the burdens of climate mitigation and could therefore put an unfair burden on some countries. Admittedly, the impact of CBAMs in terms of burden-sharing is difficult to quantify as it depends on their actual incidence. It could be argued that the burden falls exclusively on consumers located in the country implementing CBAMs. Yet, workers and/or shareholders in exporting countries are likely to also bear some of the costs. It all depends on the actual design of CBAMs and on how their revenue will be allocated. The lack of clear data on who will ultimately bear the costs of CBAMs explains why their impact at the interpersonal level remains unclear. In comparison, it is easier to assess the shift caused by CBAMs on the distribution of mitigation burdens at the interstate level. Under international climate change law, states are required to report on the GHG emissions generated over their territory (Breidenich et al., 1998: 328; Hilson, 2020: 207–208; Scott, 2015: 102). By imposing CBAMs on imports, a country would necessarily redefine the way in which mitigation costs are shared with its commercial partners. Assuming that some of its commercial partners did not impose a domestic carbon price on the goods they export, CBAMs will *de facto* impose such a price and, thus, include part of the GHG emissions of the exporting country in the mitigation efforts undertaken at the global level. Therefore, adjustment on imports ‘constitute a step forward or a step backwards with respect to a just distribution of climate policy burdens’ (Roser and Tomlinson, 2014: 238). If CBAMs are implemented by high-income countries, they will shift part of their burden onto low- and middle-income countries (Böhringer et al., 2018; Brandi, 2013: 88; Eckersley, 2010). The latter will either have to bear an additional economic disadvantage when exporting carbon-intensive goods or they will have to bear the burden of investing in low-carbon technologies in order to reduce their GHG emissions effectively. The EU Commission has explicitly recognised this negative impact, stating that its proposal could ‘give rise to unintended economic risks due to additional costs for exporters and deteriorating terms of trade’ in low-income countries; Mozambique, for example, could be at risk because it ‘accounts for 7.7% of the EU’s imports of aluminium’ (European Commission, 2021: 19). Importantly, even if CBAMs encourage countries such as Mozambique to adopt a carbon price so as to avoid the CBAMs, they could still be considered worse off than under the scenario where – in the absence of CBAMs – their economy would have not been subject to a carbon price at all.

This shift in mitigation burdens from high-income countries to low- and middle-income countries is likely to clash with the CBDR-RC principle of fair burden-sharing (Marín Durán, 2023). Mentioned in several provisions of the United Nations Framework Convention on Climate Change (UNFCCC) as well as in the Paris Agreement, it expresses

the idea that ‘developed country Parties should take the lead in combating climate change and the adverse effects thereof’ (United Nations, 1992, Art. 3 para. 1). This implies that high-income countries should adopt economy-wide, absolute emission reduction targets over a shorter timeframe than low- and middle-income countries and should provide them with financial and technological support. In spite of genuine debates, philosophers seem to have reached a consensus on the interpretation of the CBDR-RC principle: a fair distribution of climate burdens should account for countries’ needs, causal responsibility for their GHG emissions and ability to pay (financial, technological, institutional, etc.) (Baer et al., 2010; Caney, 2005; Dooley et al., 2021; Page, 2012; Vanderheiden, 2008). All these criteria converge in ascribing a lower fair share of the climate burden to low- and middle-income countries than to high-income countries. So, CBAMs could be unjust if they make the actual distribution of mitigation burdens deviate further away from an ideal fair distribution. It may not be unjust for a low-income country to implement CBAMs putting additional burdens on high-income countries, as the latter bear major responsibilities for addressing climate change as a result of their significant historical emissions and greater ability to pay. However, the reverse is not true: putting additional burdens on low- and middle-income countries is unjust.

### *Priority or Overlap?*

The impact on burden-sharing constitutes a powerful objection to CBAMs. However, it may be argued that CBAMs should still be implemented because it is more urgent to prevent the harms of climate change than to share mitigation burdens fairly (call this the *priority of harm avoidance response*). The urgency of climate mitigation to avoid dangerous climate change, as defined by the 2015 Paris Agreement, is very clearly highlighted by the Intergovernmental Panel on Climate Change (IPCC): ‘Global warming of 1.5°C and 2°C will be exceeded during the 21st century unless deep reductions in CO<sub>2</sub> and other greenhouse gas emissions occur in the coming decades’ (IPCC, 2021: 14). In a non-ideal perspective, it could then be argued that avoiding the wrongful harms of climate change should have priority over sharing fairly the burdens of climate mitigation (Caney, 2014). Thus, in evaluating CBAMs, the effectiveness of climate policies should trump the fairness of cooperation in the case of trade-offs (Symons, 2019: 158) – for a critical discussion see (Roser and Tomlinson, 2014: 226). Such a claim can be grounded in the ideal of *sufficiency*: distributing the burdens and benefits of social cooperation equitably only matters provided that people’s fundamental interests are already satisfied, enabling them to enjoy basic freedoms (including freedom from deprivation). This articulation can even be found in ideal theory like in Rawls’ theory of justice, where the principle of equal basic liberties enjoys a lexical priority over the difference principle and the principle of fair equality of opportunities (Rawls, 1999: 53–54). Importantly, the priority of basic liberties over equity has a special relevance in a non-ideal world characterised by the partial compliance of states with their duties of justice. Since free-riding imperils the effectiveness of climate policies, the primacy of avoiding the harm of climate change over sharing equitably the burdens of climate policies could justify unfair CBAMs, *assuming* that they prove to be the remedy to ineffectiveness.

Yet, even if the priority of harm avoidance over burden-sharing is valid in theory, the two considerations cannot be completely separated in practice. They *overlap* to a certain extent. Not only can climate change cause wrongful harm, but unfair climate policies too

if they deprive people (especially in low-income countries) of their fossil fuel-based means of subsistence without providing them with cheap low-carbon alternatives to satisfy their basic interests (Shue, 1992). Therefore, rights-based accounts of why climate change is dangerous logically recognise that mitigation policies should respect basic human rights (Caney, 2010). As such, they provide *constraints on burden-sharing*: only through a minimally fair global distribution of mitigation burdens can the basic interests of both future and current generations be protected. This holds true for CBAMs. Although, as mentioned above, it is difficult to predict their precise effect at the interpersonal level, CBAMs imposed by high-income countries are likely to have negative economic effects, at least in the short term,<sup>7</sup> on low-income countries. These economic effects might violate people's basic rights to life, subsistence and health in those countries. To put it bluntly, 'poor countries reductions in exports may also increase deaths' (Casal, 2012: 429). As such, the harm avoidance argument cannot justify all kinds of CBAMs as it would be inconsistent to jeopardise the very interests they are supposed to protect. Thus, it provides constraints to their specific design in terms of minimally fair burden-sharing.

Still, even if *climate harms* (that CBAMs are supposed to mitigate) and *non-climate harms* (that CBAMs might cause) both jeopardise the same entitlements, other characteristics of climate harms could justify prioritising their avoidance. First, the *number of harms*: from a purely quantitative point of view, CBAMs may be just if they prevent more harms – by enhancing the effectiveness of mitigation policies – than the equally wrongful yet less numerous harms they cause. This argument would be a no-brainer from the perspective of classic utilitarianism – a lesser amount of equally wrongful harm is preferable. However, it would not necessarily be that obvious from a deontological perspective (based on the strict observance of certain duties like the duty not to kill). Second, the *uncertainty regarding the extent of the harms*: it could be argued that we should avoid long-term climate harms in priority, compared with short-term economic harms, because we are more uncertain about the extent of their manifold consequences. For example, one can think about the risk of reaching a tipping point, namely a critical threshold beyond which irreversible changes would happen to the climate system (IPCC, 2021: 27). This uncertainty could justify some sort of precautionary approach. However, the economic harms that CBAMs may cause are also, at least to some degree, uncertain. And they may also affect the long-term future if, for example, they prevent poverty alleviation in low- and middle-income countries. Third, the *non-compensability of the harms*: some consequences of climate change may cause non-compensable losses like the loss of life, health, unique ecosystems or cultural identity. On that basis, one could argue that it is more urgent to mitigate climate change (so as to avoid irreversible damages) compared with preventing the presumably compensable economic losses caused by CBAMs. Nevertheless, one may raise doubts about the compensability of the latter, especially if they make people more vulnerable to the non-compensable effects of climate change. These are important questions for mapping the precise overlap between harm avoidance and burden-sharing considerations with regard to the effects of CBAMs. Unfortunately, we lack space here to address them properly. However, it is clear from our brief discussion that adopting the perspective of harm avoidance to justify CBAMs in any case imposes *some* significant constraints on their design, because of the wrongful harms that CBAMs themselves can cause. Making carbon pricing policies more effective in order to avoid the wrongful harms of climate change might justify implementing *some sort* of CBAMs, but *not all sorts* of CBAMs. This is why we turn, in the following section, to the question of their design.

## Designing Just CBAMs

Until now, we have shown that the fair competition argument failed to justify CBAMs. The harm avoidance argument is more promising, but it puts significant constraints on the design of CBAMs. Even if we think that harm avoidance should take precedence over fair burden-sharing in the face of the climate urgency, the wrongful harms caused by the non-climate effects of CBAMs cannot be overlooked. In general, wider considerations of fair burden-sharing and global economic justice should be taken into account when designing CBAMs. No serious account of justice can completely evacuate them. Then, what would just CBAMs look like? In this section, we make three main claims regarding the design of CBAMs: (1) in general, there should be no adjustments on exports; (2) adjustments on imports should be differentiated based on countries' fair share of the mitigation burden and (3) recycling the revenues generated by CBAMs to low-income countries is desirable but it is insufficient. We also respond to four potential objections to the type of CBAMs we propose, regarding their efficiency, their effectiveness, their compatibility with trade law and the administrative burden they entail.

### *Proposal*

First, CBAMs should not, in general, include adjustments on exports. Adjustments on exports are essential to creating a level playing field for corporations on foreign markets, but we have rejected the fair competition argument as flawed. Under the harm avoidance argument, adjustments on exports would only be justified if they prevent wrongful harms from climate change (by bolstering the effectiveness of carbon pricing instruments) without inflicting wrongful harms (e.g. by disincentivising other countries from implementing mitigation policies). For example, adjustments on exports could be justified on that basis if the citizens of a low-income country rely on imports from a country with a carbon price for the satisfaction of their basic interests. Similarly, such adjustments could be justified if a low-income country were to implement a carbon pricing instrument and a significant part of its economy relied on exporting goods to a better-off country that does not impose any carbon price (or too low a carbon price).

Second, adjustments on imports should be differentiated between countries to reflect considerations of fair burden-sharing, even if only so as to prevent wrongful economic harms. In other words, adjustments on imports that would apply to all imports regardless of the national circumstances of the country of production should be rejected in favour of a more granular approach that takes into account differences between countries based on principles of justice (Eckersley, 2010; Ozai, 2022). Ideally, fair CBAMs, even if unilateral, would entail a theoretical fair carbon price for every country, proportional to its fair share of the mitigation burden. This fair carbon price would increase over time in line with the idea of progression that underlies the Paris Agreement (United Nations, 2015, Art. 4 para. 3). The level of the adjustments would be a function of three main factors: the level of GHG emissions associated with the imports, the carbon price in place in the country of production and what is considered to be the fair carbon price for that country. To calculate the adjustment to be imposed on imports, one would need to account for the difference between the theoretical fair carbon price and the existent implicit<sup>8</sup> or explicit carbon price (or lack thereof) effectively in place in the countries of origin of the goods. In principle, adjustments on imports would reflect each country's fair share. For example, the price of imports from rich and high-emitting countries without a carbon price would



be significantly increased (unless the GHG emissions associated to these imports are nil or very low), while goods from low-income countries with low emissions could be fully exempted of price adjustment. At the very least, this system of country-differentiated prices should avoid jeopardising the basic interests of the inhabitants of low- and middle-income countries whose economy relies heavily on exports.

Third, even though it is desirable to recycle the revenues generated by CBAMs to low- and middle-income countries, it is unlikely to be sufficient to undo all their potential negative effects in terms of justice. The solution of revenues recycling has been endorsed by many authors commenting on the potentially unjust character of CBAMs (Brandi, 2013: 90; Eckersley, 2010: 388; Roser and Tomlinson, 2014: 244; Zhong and Pei, 2024). The problem is that such financial transfers are unlikely to undo the impact of CBAMs on how climate mitigation burdens are shared between countries (Perdana and Vielle, 2022). Moreover, from the harm avoidance perspective, low- and middle-income states would have to allocate these revenues in a way that effectively compensates the *individuals* affected by CBAMs. To meet this requirement would be particularly complex given the uncertainty surrounding the actual tax incidence of CBAMs. This gives us reasons for caution. Revenue recycling should not serve as a substitute for country-differentiated adjustments.

By contrast with other proposals, the type of CBAMs we suggest here would neither level the playing field between corporations nor remove carbon leakage risks, not even on the import side. Asymmetries in carbon price levels between countries necessarily entail the risk that GHG emissions grow in countries with lower carbon prices. To put it differently, just CBAMs imply some sort of *redistributive carbon leakage* consistent with the ideal of fair burden-sharing or at least of harm avoidance. The resulting economic disadvantage for high-income countries can be seen as part of what Maltais calls the ‘burdens of leadership’ – that is, the additional costs of unilateral action resulting from partial compliance with ideal climate policies at the global level – that rich countries ought to bear in order to create the conditions of global collective action on climate change (Maltais, 2014: 626). In the context of failing international climate policies, high-income countries have the duty to ‘go first’ in implementing climate policies, which plausibly include domestic carbon pricing. This duty requires them to fully embrace the costs of leadership and it would be unfair for them to offload these costs onto low- and middle-income countries by implementing indiscriminate CBAMs.<sup>9</sup>

### *Objections and Responses*

Four main objections may be raised against our proposal, regarding its efficiency, its effectiveness, its compatibility with trade law and the administrative burden it entails. First, one may argue that considerations of fairness, though important, should not influence the design of CBAMs but be addressed by separate instruments. This view is supported by a two-track approach to climate policy, which claims that the latter should focus on *efficiency* while other policies ought to address global injustice in the distribution of resources (Metcalf, 2019; Posner and Weisbach, 2010: 169–176). Typically, this view rejects the ideal of climate justice as a separate object and leaves questions of justice to be addressed by foreign aid policies. It rests on the assumption that integrating considerations of fairness in the design of climate policies would compromise their efficiency. Indeed, the introduction of a global carbon price – which could be encouraged through the use of non-differentiated CBAMs – is often considered a more efficient solution to



mitigate climate change than an international system of differentiated prices. It would incentivise economic agents to pick the ‘low-hanging fruits’ wherever they are around the globe and would not be prone to carbon leakage. Normatively speaking, the two-track approach adopts a view that can be referred to as strong integrationism, the view that ‘holds that we should treat X merely as one element in the total package of burdens and benefits and then this total package should be regulated by a general principle of justice’ (Caney, 2018: 672). Here, mitigation burdens can be shared ‘unfairly’ as long as the burdens and benefits of global cooperation (natural resources, money, technology, etc.) are shared in such a way that the global package is shared fairly (e.g. according to some ideal of sufficiency or equality). Hence, CBAMs should not be concerned with burden-sharing considerations, but only with economic efficiency, to prevent dangerous climate change at the lowest cost.

In response to this objection, we consider that there is a pragmatic – rather than principled – reason for integrating considerations of global justice in the design of CBAMs. Existing international economic and development institutions have so far failed to balance the extremely unfair distribution of wealth and natural resources that exists between countries. Against this background, unfair CBAMs focused solely on avoiding carbon leakage, would likely lead to further injustices that would not be compensated otherwise. Similarly, it has been argued that the absence of reliable institutions for wealth redistribution could justify using a problem-specific policy to further global justice (Gosseries, 2005: 306). More modestly, if we have reasons to doubt that the wrongful economic harms caused by CBAMs whose design focuses solely on efficiency will be offset by other policies, that design should be revised so as to prevent such harms. We should adopt a moderately integrationist approach (a view described in the first section) to CBAMs. To be sure, we do not mean that other policies aimed at climate justice (e.g. technology transfers, climate finance) or global justice (e.g. foreign aid) should not also be implemented. However, at a non-ideal level, it seems that CBAMs should be at least minimally just rather than to assume that hypothetical policies will undo their unjust consequences. After all, high-income countries are already supposed to provide financial support to low- and middle-income countries, which they have not done so far (or only to insufficient levels) (Timperley, 2021).

Second, one could object that our proposal would not only be less efficient at mitigating climate change than traditional CBAMs, but simply *ineffective* altogether, as it would not sufficiently prevent carbon leakage risks and help diffuse carbon pricing policies across jurisdictions. In other words, our proposal would fail to prevent wrongful harms. Instead, as the objection goes, it would reinforce climate harms. It is true that our proposal does not seek to fully eliminate carbon leakage risks: differences in carbon prices would remain so as to reflect countries’ different fair share of the mitigation burden. Energy-intensive and trade-exposed firms might thus be incentivised to relocate to the jurisdictions with the lowest carbon price levels. However, this would not make our proposal ineffective. First, it would mitigate carbon leakage risks between countries with a similar fair share of the mitigation burden as it would equalise the carbon price on products from such countries. That way, our proposal would also encourage the diffusion of carbon pricing in these countries. Moreover, between other countries, it would reduce differences in carbon prices to the extent that they are not justified by differences between countries’ fair share of the mitigation burden. Our proposal would therefore prevent the relocation of GHG emissions towards *countries that are not doing their fair share* and encourage those countries to adopt carbon pricing policies that align with their fair share. Second, although

carbon leakage risks could still arise in other countries (namely those that have a lower carbon price but are doing their fair share), such form of *redistributive carbon leakage* should gradually decrease over time. Indeed, carbon leakage risks would remain only for as long as differences between countries' national circumstances justify differentiating between countries' climate mitigation burden. Thus, high-income countries would have an incentive to support economic development elsewhere as it would lead to a gradual decrease of remaining carbon leakage risks from their territory to other countries.

Third, one could question the compatibility of our proposal with *international trade law*. Under the law of the WTO, countries are supposed not to discriminate against and between products from other WTO members. This explains why the European Commission has emphasised in its communication on the CBAM regulation that it 'does not apply to countries but to companies which it encourages to decarbonise'.<sup>10</sup> CBAMs whose implementation would be *country-specific* in an effort to integrate considerations of global justice would likely violate the *most-favoured-nation principle*, which forbids discrimination between products from different WTO members. Yet, international trade law recognises exceptions to that principle, including for measures 'necessary to protect human, animal or plant life or health' and measures 'relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption' (General Agreement on Tariffs and Trade (GATT), 1994, Art. XX). Such measures are acceptable under international trade law as long as they do not constitute 'a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail' or a 'disguised restriction on international trade' (GATT, 1994, Art. XX Chapeau). Given that international climate change law explicitly recognises that countries' specific national circumstances should inform their climate commitments, some legal scholars have argued that CBAMs distinguishing between countries on that basis could be acceptable under international trade law (Pauwelyn and Kleimann, 2020: 11; Venzke and Vidigal, 2022). Yet, there is no absolute certainty that our proposal would not be found incompatible with WTO law. However, this does not seem to be a decisive objection. In absence of past case-law on CBAMs, it cannot be guaranteed that any CBAM measure – not even the European one that has been designed to be 'WTO law compatible'<sup>11</sup> – will be found in line with international law in case of a dispute (Mehling and Ritz, 2020). Thus, considering uncertainty about WTO law compatibility as a feasibility constraint would foreclose most policy experimentations to address the climate impact of international trade. This does not seem reasonable. Moreover, Marín Durán (2023) interestingly suggests that a country-differentiated CBAM based on the approach of the Paris Agreement would be more likely to be found in line with WTO law than the indiscriminate approach followed by the EU.

Finally, one could argue that our proposal would be too complex and too *administratively costly and burdensome* to implement. Implementing CBAMs based on a single carbon price is already administratively costly as it requires carrying out lifecycle assessments for a wide variety of value chains. Implementing just CBAMs would add to that the cost of calculating a set of fair theoretical carbon prices for a wide variety of countries, based on their 'common but differentiated responsibilities and respective capabilities'. Not only would this be technically complex, but the definition of a fair carbon price would also necessarily be controversial. It is difficult to define countries' fair shares in terms of emissions reduction (Rajamani et al., 2021), it would be even harder to define the right carbon price to achieve these fair shares. One approach to this problem would be for the country implementing CBAMs to consult its commercial partners, following a

procedural criterion of justice: all affected states should be consulted (Roser and Tomlinson, 2014: 245). Yet, discussions about fair burden-sharing at the international level have proven to be very slow and tense. As an alternative to our proposal, a simpler option could be preferred: imports from low-income countries or low- and middle-income countries could be systematically exempted from the charge on imports (Casal, 2012: 429; Cosbey et al., 2019: 17). At the very least, countries recognised as ‘least-developed countries’ should be exempted of CBAMs in order to prevent the negative impact on poverty alleviation in these countries and the threat it would represent for basic human rights. Implementing a scheme of country-specific exemptions rather than a more detailed scheme of country-specific carbon prices would dramatically decrease the administrative costs and complexity. It would be a second-best solution in terms of justice insofar as country-specific exemptions would necessarily account for the differences in national circumstances in a less fine-grained – and thus less equitable – manner than a system of differentiated prices. However, country-specific exemptions could still be preferred as a way to reconcile both justice and feasibility concerns.

## Conclusion

This article has analysed whether or not considerations of justice can justify implementing CBAMs. It has shed new light on the design of just CBAMs and the traditional goals that they are supposed to pursue. We have made three main claims. First, the case for CBAMs based on the level playing field ideal of fair competition between corporations is flawed. Not only does it unjustifiably single out carbon price inequalities as the only inequalities that should be neutralised, but it implausibly extrapolates an ideal of interpersonal justice to corporations. Second, the harm avoidance argument in favour of CBAMs can justify the implementation of some CBAMs but not all kinds of CBAMs. In a non-ideal perspective, we may justifiably prioritise the prevention of wrongful harms (by securing the effectiveness of carbon pricing instruments) over the fair sharing of the mitigation burdens. However, this approach still puts constraints on the design of CBAMs as the economic impacts of the latter may also impose wrongful harms on individuals. Third, just CBAMs should allow for some sort of redistributive carbon leakage, either via a scheme of country-differentiated carbon prices or country-specific exemptions for adjustments on imports. Our design proposal for fair CBAMs might thus make CBAMs less adequate to achieve their traditional policy objectives, namely avoiding a loss of competitiveness for domestic enterprises and preventing carbon leakage. Yet, as we have tried to demonstrate, it may be the price to pay for climate justice.

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## Notes

1. Some authors distinguish between ‘strong’ carbon leakage, resulting from the implementation of climate policies, and ‘weak’ carbon leakage, which arises from global trade even in the absence of climate policies (Steininger et al., 2014: 76). In this article, we focus on the former.
2. See State of the Union Address by President von der Leyen at the European Parliament Plenary, 16 September 2020.
3. In the United States, see, for example, the FAIR Transition and Competition Act (H.R.4534, 117th Congress). In Canada, see Government of Canada, Exploring Border Carbon Adjustments for Canada (2021). Available at: <https://www.canada.ca/en/department-finance/programs/consultations/2021/border-carbon-adjustments/exploring-border-carbon-adjustments-canada.html>
4. Other principles may nonetheless be considered, like that of maximin equality: fairness would then require to maximise the opportunities of the least advantaged rather than to equalise the opportunities of everyone.
5. Of course, some people might see economic competition as a kind of game or sport and enjoy it for the sake of it when they read the business pages of economic newspapers. But we doubt that this kind of justification for fair economic competition is widespread or that it has enough weight compared with considerations of economic efficiency and interpersonal justice.
6. Note that this rights-based approach does not aggregate the interests of different individuals, compared with integrated assessment models used to compute the social cost of carbon, which usually assume the ethical approach of discounted utilitarianism. The rights-based approach is committed to safeguarding the basic rights of all individuals. By contrast, sacrificing the basic interests and rights of some individuals to maximise aggregate welfare is justifiable according to discounted utilitarianism.
7. In the longer term, one could argue that low- and middle-income countries will benefit from the fact that carbon border adjustment measures (CBAMs) have incentivised their economy to become climate neutral. Yet, from an individual point of view, the members of current generations, including the least advantaged, will have to bear the economic costs of the CBAMs. Moreover, it might be argued that this argument is problematic from a procedural justice point of view: why should high-income countries be entitled to decide for low- and middle-income countries what is in their best interest?
8. Different types of climate mitigation policies could qualify as implicit carbon prices (e.g. energy taxes, regulatory bans on the use of coal fire stations, etc.).
9. Although this extends beyond the scope of this article, it could even be argued that climate leadership requires developed high-income countries to reform their trade policies in the light of the ideal of a fair distribution of mitigation burdens. For example, Armstrong has argued that high-income countries should cut back their tariffs and subsidies on goods like food and textiles for which ‘many developing countries might enjoy a comparative advantage’, as it could ‘significantly reduce the costliness of a shift away from fossil fuel exports’ for the latter (Armstrong, 2020: 684).
10. See European Commission, Press Release on the Carbon Border Adjustment Mechanism, 13 June 2023. Available at: [https://ec.europa.eu/commission/presscorner/detail/en/ip\\_23\\_3243](https://ec.europa.eu/commission/presscorner/detail/en/ip_23_3243)
11. See European Commission, Carbon Border Adjustment Mechanism, Press Release, 29 September 2023. Available at: [https://ec.europa.eu/commission/presscorner/detail/en/ip\\_23\\_4685](https://ec.europa.eu/commission/presscorner/detail/en/ip_23_4685)

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