

The EU's Carbon Border Tax is Likely to do More Harm than Good

By Uri Dadush¹

Summary

The EU's proposed carbon border tax is well intentioned. It is motivated by climate concerns, not by protectionism. However, the tax is based on the false premise of carbon leakage, and its implementation is rife with practical difficulties. Moreover, the tax, as proposed, departs from the Paris agreement principle of differentiated responsibilities, and will be challenged by developing countries. The United States is not ready to adopt carbon taxes, either. The WTO, already in a fragile state, may be dealt another body blow by the proposed tax. Better alternatives are available.

Introduction

The European Union is a global leader in climate policy. It has made considerable progress in reducing emissions of greenhouse gases, whether measured per capita, per unit of GDP, or by its use of renewable energy. It is raising its decarbonization targets under its Green Deal and in the run up to the Conference of the Parties to the United Nations Framework Convention on Climate Change (COP26) in Glasgow in November. The EU's climate plans include a carbon border adjustment mechanism (CBAM), outlined in a leaked preliminary draft and due to be formally proposed in July. This would be essentially a tax on imports designed to offset the (notional) difference in carbon price between the EU and its trading partners in

high emission traded sectors such as steel and aluminum. The EU is under pressure to provide compensation to high emitters who pay higher prices for carbon permits under its emission trading system (ETS). Meanwhile, the CBAM is supported by many in civil society as an effort likely to encourage countries to adopt more ambitious emission reduction measures.

The EU's proposed CBAM represents a well-intentioned effort to deal with the climate emergency. It is viewed by academic economists as the necessary complement to the domestic carbon tax, ideally correcting the market's failure to price the negative externality of carbon emissions. However, the CBAM is likely to run into many practical difficulties and cause unintended consequences. As argued in a comprehensive and prescient 2020 [analysis](#) by Zachmann and McWilliams, calculating a carbon border tax would be exceedingly complex. More fundamentally, the EU's CBAM plan is based on the

1. I thank colleagues at the Policy Center for the New South and at Bruegel, for extensive discussion of previous drafts. Without implicating them, I thank especially Rim Berahab and Ben McWilliams for detailed comments throughout a previous draft.

false premise that ‘carbon leakage’—the tendency of emission-intensive production to move to less-regulated countries—is significant. Their extensive review of the empirical literature on carbon leakage strongly suggests that firms make location decisions based on many factors, of which environmental regulation is only one and is typically not the determining factor. These findings are in line with World Bank **conclusions**: *“there is no evidence that the cost of environmental protection has ever been the determining factor in foreign investment decisions. Factors such as labor and raw material costs, transparent regulation and protection of property rights are likely to be much more important, even for polluting industries.”*

To put the risk of carbon leakage into perspective, it is worth noting that the total revenues from the EU’s ETS—which can be interpreted as the implicit tax on emissions—are small. They reached their highest level in 2019, when the carbon price averaged €20 per metric ton, amounting to around €15 billion. The sectors covered by the ETS are high emitters, accounting for some 40% of EU emissions, and included manufacturing, power generation, and aviation. Assuming that the value added of all sectors covered by the ETS roughly corresponds to that reported as total industry in EU statistics (22% of EU GDP, or €3 trillion), the implicit tax on all sectors covered by the ETS in 2019 was around 0.5% of value added. This is a high-end estimate of the implicit tax paid by trade-exposed and high-emitting sectors such as steel and aluminum since they have benefited disproportionately from free allowances. Even if the carbon price reaches €75 per ton, the level that some analysts believe is necessary to achieve the EU’s emissions targets—and which will be strongly resisted by industry—the implicit tax on trade-exposed sectors would be less than 2% of value added.

But beyond the overstatement of concerns about carbon leakage, the EU’s CBAM proposal—if adopted—would have major international consequences, most of which are unintended and profoundly damaging. Specifically, the CBAM as currently envisaged departs from the principle of *“common but differentiated responsibilities and respective capabilities”* (CDRC), undermining the Paris Agreement which is the foundation of global efforts to reduce emissions. Moreover, even though the CBT can technically be presented as World Trade Organization-compliant, it will aggravate the crisis in the WTO, possibly triggering a new surge in protectionist countermeasures.

Yet, despite its potential for disruption, the CBAM would affect only about 2% of the EU’s imports and is unlikely, as many of its advocates hope, to create incentives for carbon reduction in the rest of the world beyond those that already exist. A detailed examination of alternatives to the CBAM is beyond the scope of this note; I will, however, mention a couple of promising avenues in closing.

The CBAM departs from the Paris principle of common but differentiated responsibilities.

The Paris Agreement is a legally binding international treaty on climate change, adopted by 196 Parties and which entered into force in November 2016. Its goal is to limit global warming to well below 2 degrees Celsius compared to pre-industrial levels.

All countries are exposed to climate risk, and poor countries are typically the most exposed and the least able to adapt to higher temperatures and extreme weather. The CDRC principle is founded on this reality, but also reflects the fact that poor countries emit less carbon per capita than advanced countries (and have emitted less historically), and that they will tend to emit more as their incomes rise. Moreover, CDRC recognizes that poor countries are less able than advanced countries to afford, and are less technologically equipped to embark on, the clean energy transition, and certainly not as quickly. The Paris Agreement provides for countries to adopt their own carbon emission targets, known as Nationally Defined Contributions (NDCs), based on their specific circumstances. Consistent with the CDRC principle, developing countries have adopted carbon emission targets that are less stringent and to be achieved over longer periods than advanced countries. These targets are conditional on receiving aid and technical assistance to help the transition in the poorest countries.

Although the Paris Agreement is sometimes seen as giving developing countries a free ride because of their smaller reduction commitments, it is far from clear that their initial pledges, and those that have been adopted since, are less ambitious than those of advanced countries when account is taken of the starting point. A look at recent history helps illustrate the argument. From 2000 to 2016, carbon emissions per unit of GDP have declined more in high-income countries, by 49%, than in

low-and-middle income countries, where they declined by 37%. However, in 2016 emissions per capita in the high-income countries were three times those of low-and-middle income countries.

Under the EU CBAM proposal, as it stands in draft form, countries exporting the covered goods to the EU must pay the EU carbon price as the benchmark, with credit given for carbon prices that they apply internally, if any, or taxes on emissions that they apply internally. Some types of ‘embedded’ emissions, such as purchases of electricity by the exporter in question, are also subject to the CBAM. Note that the proposal as it stands is aimed at taxing the exporter’s total emissions after credits, not the difference in emissions from EU benchmarks. The CBAM as drafted has the effect of taxing the emissions of foreign producers in the same way as EU producers, but it also implicitly assumes—incorrectly—that if the import did not take place there would be no added emissions from domestic EU production. Viewed this way, the CBAM would constitute a clear extra-territorial act on the part of the EU.

The effect of the proposed CBAM—which does not mention any country exemption—would be to penalize poor countries where the implicit carbon price is below the EU price, or where carbon intensity is higher, even though under the CDRC principle, the intent is clearly that the carbon price (or the carbon price implicit in tax and regulatory measures) can be lower in poor countries for extended periods. Indeed, IMF economists recently proposed a **differentiated carbon price**: “...reinforcing Paris Agreement pledges with a three-tier price floor among just six participants (Canada, China, European Union, India, United Kingdom, United States) with prices of \$75, \$50, and \$25 for advanced, high, and low-income emerging markets, respectively and in addition to current policies, could help achieve a 23 percent reduction in global emissions below baseline by 2030. This is enough to bring emissions in line with keeping global warming below 2°C. Most poor countries have not set a carbon price and do not have the **statistical and administrative capacity** to manage carbon-pricing schemes. Additionally, exporters from poor countries, including smaller companies, will have to deal with the complexity of self-certifying the direct and indirect carbon emissions ‘embedded’ in their products, while also covering the costs of independent certification by an expert, presumably a recognized accounting or law firm.

The EU’s violation of the spirit of the Paris Agreement undermines its credibility in other spheres. For example, the EU requires adherence to the Paris Agreement in all its new trade deals and as a condition for development assistance. The CBAM will be viewed as illegitimate by many developing countries. Brazil, China, India, and South Africa formally communicated their strong opposition to the CBAM at the end of their April 2021 **BASIC group meeting** on climate change.

The CBAM will aggravate the crisis in the WTO.

The WTO’s membership now covers essentially the totality of world trade, and the WTO provides the rules on which open and predictable trade depends. However, the organization’s main function, the negotiation of trade deals, has sputtered since its creation in 1995. Its dispute settlement system has been severely damaged by the United States’ refusal to renew the terms of judges in the Appellate Body. The EU—itself a multilateral institution dedicated to free trade among its members—has a fundamental interest in the functioning of the WTO and in its revival.

As proposed, the CBAM can be technically presented as consistent with the WTO because it does not discriminate between European firms and those of the EU’s trading partners, as both are expected to face the same carbon price. Even if that claim is accepted—and it almost certainly will not be in many instances considering the intrinsic complexity and arbitrariness of the EU’s scheme—the CBAM will present three formidable challenges to the already shaky WTO construct. Each of these challenges also represents a risk to EU exporters who face the near certainty of retaliation.

The first challenge facing the WTO is the most fundamental. Assuming the CBAM proposal is adopted and accepted by the WTO membership (an unlikely prospect), the EU will only be the first member to apply a CBAM. As other members follow, the product coverage will vary depending on the member’s domestic politics, and so will the construct of each national scheme and the many assumptions needed to calculate the appropriate tax in each case. Some countries may decide not to adopt an ETS but instead base their border tax on other considerations, such as emissions per capita, a course sure to violate WTO rules. Note that carbon border taxes—whether based on ETS or other schemes—

will vary not only by the country of destination and by product, but also by country of origin, a practice which would be diametrically opposed to the WTO principle of non-discrimination. Moreover, to avoid various forms of trade deviation (from covered products to those not subject to the carbon border tax and from countries with a carbon border tax to those without), the tax calculation will sooner or later have to include rules of origin of various kinds. The CBAM will have to cover carbon emissions embedded in parts and components along the value chain and—for the purpose of carbon credits—account for the carbon taxes and regulations at origin. Not all WTO members will be trusted to devise a fair ETS/CBAM, and many poor countries will lack the capacity to administer it.

The second challenge facing the WTO is more specific. It relates to the United States which is the world's largest economy, the EU's largest trading partner, and the second largest emitter after China. Many attempts have been made to introduce a nationwide U.S. ETS and to establish a carbon price, without success. Instead, the U.S. has opted for (or rather has fallen back on) federal regulations to limit emissions and a decentralized state and city approach to decarbonization. The Biden Administration has placed climate near the top of its priorities but does not control enough votes in the Senate, nor, possibly, in the House (not all Democrats are like-minded), to pass such far-reaching legislation in the face of powerful opposition from the fossil-fuel industry, among others. Nor is it clear that an ETS is the path Biden would choose. After all, the U.S. has also seen large reductions in emissions, despite the Trump Administration's refusal to support decarbonization. Since 2000, carbon emissions per unit of US GDP have fallen by 49% (compared to 55% in the EU). Even if Biden were to insist on establishing an ETS and succeed (a very unlikely prospect), a new Republican administration, or even a small shift in favor of Republicans in the Congress, would likely lead to a course reversal.

Without an ETS and a carbon price, it would be impossible to establish a credible CBAM in the United States. Can one imagine the U.S. standing by as carbon taxes are levied on its products not only in the EU but across the world, as varied schemes are adopted by other WTO members? Given the dire state of relations between the U.S. and China, would China—which has already voiced its opposition to the scheme—be willing to risk adopting a CBAM if the EU does but the U.S. does not? Without a carbon price in the U.S., calculating the effect

of costly U.S. emission regulations and decisions (e.g., the cancellation of the Keystone pipeline; limitations on fracking) for purpose of setting the CBAM would be extremely difficult, if not impossible.

The third challenge that the EU's proposed CBAM poses for the WTO relates to the fact that the tax is selective, covering only sectors that are politically treatable in the EU because of a confluence of environmental and powerful industry interests (e.g., steel) in raising a border tax. The glaring omission is agriculture, which represents some 10% of EU carbon emissions and which the EU subsidizes heavily, but which is exempted from the ETS because it is politically untouchable. Agricultural exporters will join exporters of goods covered under the EU's ETS (some countries such as Canada, Morocco, and the U.S. export both types of products) to argue that, by not taxing emissions in agriculture, and by not accounting for the indirect subsidization of the sector's emissions, the underlying scheme on which the CBAM is based is not only flawed as a mechanism to control emissions in the EU, but also unfair to them². Agricultural exporters including Canada, Morocco, and Tunisia, which have bilateral free trade agreements with the EU, may be especially sensitive to this issue.

The CBAM is unlikely to significantly alter incentives to reduce emissions in the rest of the world.

An important reason given for introducing the CBAM by some advocates is to give global emission reduction targets 'teeth'. The implicit assumption is not only that countries outside the EU are less committed than the EU to reducing emissions, but also that the CBAM represents a sufficient incentive to overcome the resistance to decarbonization. Both assumptions are dubious.

As the table below shows, of the ten largest exporters of covered products to the EU—accounting for 36% of the EU's total imports of those products—all have seen large reductions in CO₂ emissions per unit of GDP, and four (Russia, the United Kingdom, Ukraine, and Switzerland) have seen larger reductions proportionally. Essentially, the EU's pace of carbon reductions is at the median of this group. China and India have seen slower emission reductions.

2. While the EU's Green Deal does not envisage reductions in agricultural subsidies, it will place tighter emission-related standards on agriculture, such as reducing the use of pesticides and chemical fertilizers; these standards may be applied to imported products as well.

Year: 2020

Country	Total Value of CBAM Exports ³ to the EU (USD)	Share of CBAM Exports to EU in Total Exports to World	Change in CO2 Emissions per PPP \$ of GDP from 2000 to 2016
Russia Federation	5,814,588,094	2.00% [1]	-68.57%
Norway	3,873,989,914	4.69%	-44.38%
Turkey	3,482,797,032	2.05%	-50.36%
United Kingdom	2,758,229,400	0.69%	-62.44%
Ukraine	2,474,302,840	5.03%	-73.24%
Switzerland	2,268,017,017	0.71%	-58.83%
China	2,219,462,748	0.09%	-42.74%
Korea, Republic of	1,806,646,719	0.35%	-40.41%
Iceland	1,515,020,563	33.22%	-55.17%
India	1,451,738,888	0.53%	-33.21%
EU-28			-55.17%

[1] Data from 2018

The proposed CBAM covers only about 2% of the EU's imports of goods. The EU's goods imports account for only about 15% of world imports, so the covered products represent only 3% of world goods exports to the EU. As the table shows, of the ten largest exporters of covered products to the EU, only Norway, the UK and Iceland direct more than 3% of their total exports in the form of covered products to the EU. Assuming that the average EU CBAM will be in the range of 5%—a high estimate and more than sufficient to compensate EU producers for the implicit tax on them—the cost to the EU's trading partners will on average be 0.15% of total exports, or about 0.045% of GDP (one twentieth of 1% of GDP).

These aggregate statistics mask the potentially much larger effects of the EU's proposed CBAM on specific sectors and firms among its trading partners, some of whom are small developing countries dependent on exports of covered products to the EU. The damaged parties are likely to seek redress, including in the form of retaliation. But the aggregate effects are unlikely to be large enough to change the domestic political calculus of decarbonization policies. Certainly, it is difficult to imagine that the largest emitters, including the United

States, China, India, and Brazil, whose exports of affected products to the EU represent a tiny fraction of the total, would be prompted to change course on carbon policies because of the EU's CBAM.

Concluding Thoughts

As they consider the CBAM proposal, European policymakers should bear in mind the Hippocratic Oath, *Primum non nocere*. The CBAM proposal is well intentioned—it is not motivated by protectionism. However, the CBAM proposal is likely to cause more harm than good. It will do so on account of the dubious premise of carbon leakage, its complexity and partial nature, its violation of the spirit of the Paris Agreement, its threat to the viability of the WTO, and the minimal incentive it provides to countries outside the EU to accelerate decarbonization.

Instead, the EU should return to the spirit of the Paris Agreement, allowing poor countries the space to reduce emissions consistently with their national circumstances. To achieve faster progress in reducing carbon emissions abroad, the EU should aim to deploy its diplomacy, development assistance (conforming to

3. CBAM exports are exports of goods covered by the CBAM proposal. These goods are trade exposed products of high emitting sectors.

Paris commitments), technical expertise, and bilateral trade and investment agreements more effectively. This is an endeavor in which cooperation with China and the United States is realistic and likely to yield results without upending the world trading system. A good example is the G7's recent agreement to stop financing coal power plants in developing countries, an approach that China has signaled it is open to.

At home, the EU should respond to pressure for protection from the sectors covered by the ETS by providing various forms of assistance to promote decarbonization. These could include increased investment in research into clean technologies and their commercialization, and a more gradual phase-out of free emission allowances to ease the transition in trade-exposed sectors. The extension

of the ETS to other high-emitting sectors including maritime and road transport, buildings and, politically challenging as it is, agriculture, should also be adopted as a form of burden sharing and equitable and efficient carbon taxation. Emissions of some sectors presently covered by the ETS may be reduced faster and more effectively by enforcing regulations, rather than through market mechanisms. As in the case of the automobile sector, where several countries have set a ban on sales of gasoline and diesel cars by a certain date, **appropriately designed** emission regulations may serve the interests of firms in the sector and those of developing country exporters by setting a clear direction. Clear rules on emissions do not only reduce uncertainty but also encourage investment in transformational technologies which would not occur otherwise.

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