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A modest proposal for an effective and efficient CBAM

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EXECUTIVE SUMMARY

World trade must add to its prices the environmental costs of CO2 emissions associated with the production of goods. To this end, the European Parliament has just voted in favor of a Carbon Border Adjustment Mechanism (CBAM) to tax imported products according to their emissions, subjecting them to the same price as European goods that already pay for them in an internal market for emission allowances.

In its current form, the CBAM presents two pending challenges that we consider essential to confront in order to improve and ensure the desired incentive effect to reduce emissions:

- → **Reduced competitiveness of European exports,** due to the fact that the CBAM will increase the costs of several goods needed for the production of companies within the EU. In addition to the impact on companies, this could favor the leakage of emissions, i.e. the displacement of world demand towards products that do not assume the CBAM in their production process and are therefore cheaper but also more polluting.
- → In its current form, **it is not** sufficiently **clear how it will ensure that imported products pay for their real emissions,** leaving the door open to failures in certification or hidden displacement of decisions in the production chain towards high-emission processes that cannot be easily verified.

To address them, we evaluate here the potential pros and cons in both the economic and political dimensions of several alternatives, choosing one of them as the most promising: **supplementing the CBAM with a climate contribution or special tax for the transition period,** which would be applied on basic materials. It would be calculated by applying the ETS price to a standard CO2 intensity factor for each material based on the EU benchmark for emissions, both to domestic production (directly) and to imports.

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This alternative provides six key advantages:

- → It is not a trade measure, but a domestic one (similar to VAT), and therefore does not have to be approved by the WTO, allowing for faster implementation.
- → It covers a wider range of products and eliminates incentives for import substitution.
- → As an excise tax, it allows exporters to be excluded from paying it. However, if the EU wants to prevent dirty products from being exported, it could easily exempt the excise tax only partially and thus penalize the processes that emit the most, even if they are export-oriented.
- → By setting a standard value for imports (as for domestic production), greenwashing is avoided.
- → It guarantees an important source of revenue that can be used for industrial decarbonization as a safety net for the most affected sectors, with special attention to their workers, or to help third countries to decarbonize. In this sense, such an alternative would make a crucial redistributive contribution that would make industrial/commercial decarbonization fairer and help legitimize it.
- → Since industrial emissions are already penalized by the excise tax, the free allocation could continue, to avoid double taxation. However, this free allowance could be granted only if it is subject to specific decarbonization plans, thus strengthening the incentive to decarbonize.

Finally, this measure would imply potential problems that could be faced or downgraded:

- → The fact that it is not a commercial measure does not mean that it should not be negotiated with third parties. However, this can be facilitated if part of the revenue, as mentioned above, is used to help these countries decarbonize.
- → A European excise tax must be unanimously approved by the Member States, which can certainly be difficult. However, this can be avoided if the excise tax is incorporated as an element of the ETS. In this case, majority approval would be sufficient.
- → Setting the excise duty at the EU reference value would still benefit the dirtiest producers abroad, as they would only pay for reference emissions, not actual emissions. The measure should therefore be complemented by foreign aid to help third countries decarbonize.

1. The current CBAM proposal and its challenges

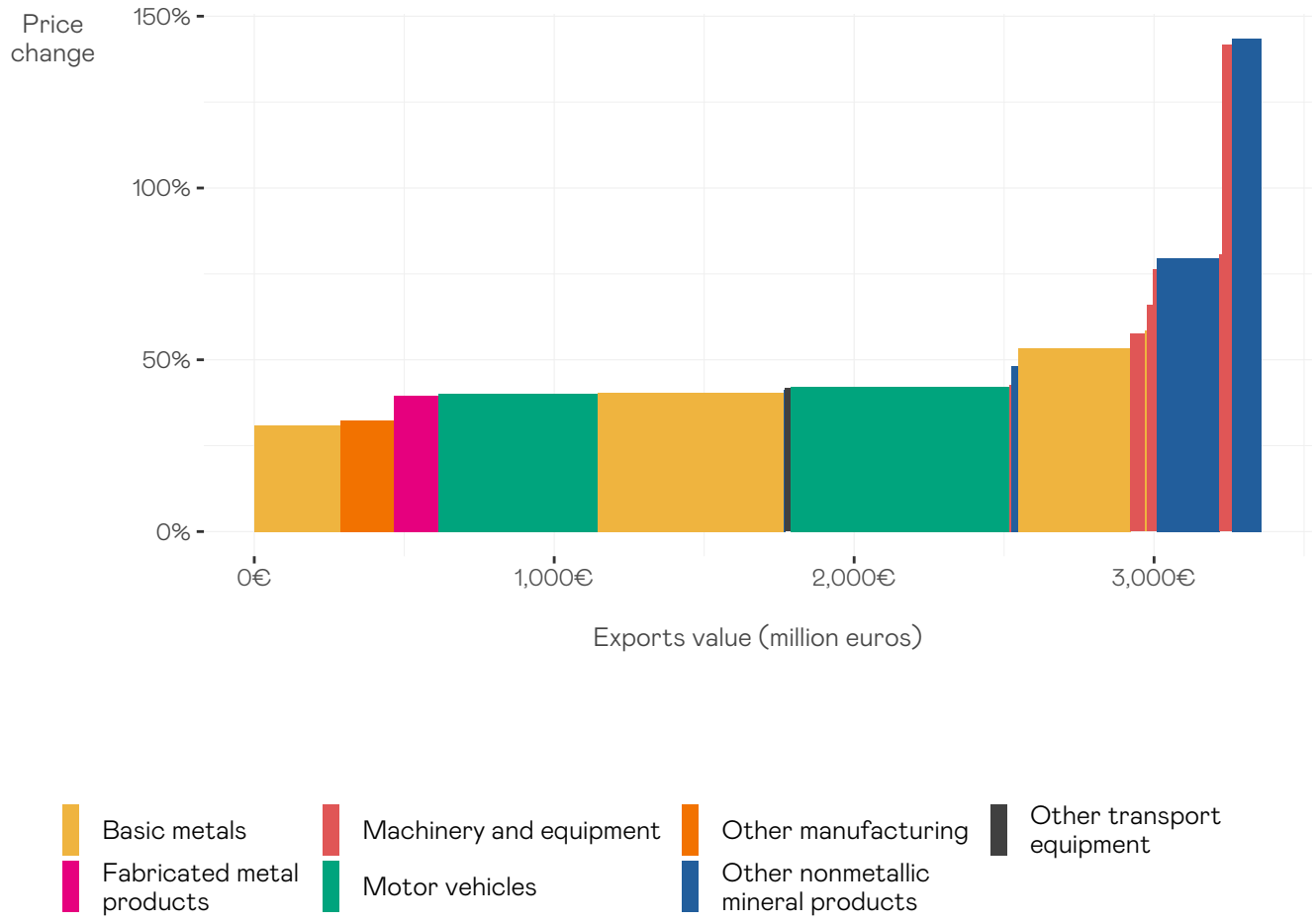
The European Union has significantly increased its commitment towards a zero-carbon economy in 2050, by changing its mid-term goal (2030) to a 55% reduction of GHG emissions compared to 1990 levels. To achieve this, the EC published their "Fit for 55" package, which includes an extension of the EU ETS to transport and buildings, and a tightening of ETS caps to accelerate the reduction of emissions in industry and the power sector. Partly as a result of this, the EU ETS price has experimented a significant increase along 2021, which has again raised concerns about loss of competitiveness of the European industry subject to this price, and to the risk of carbon leakage.

The European Commission's proposal for a Carbon Border Adjustment Mechanism (CBAM), originally endorsed by the European Council, tries to reduce carbon leakage by setting up a new levy on EU imports of cement, steel, aluminum, electricity and fertilizers. This levy would be equivalent to the price of EU ETS allowances, and would be determined based on the actual carbon emissions of the production of these materials. In turn, the free allowances currently given out to most industrial sectors to prevent leakage would be phased out, hence restoring the full price signal to decarbonize (although this has been left out of the Council proposal, to be addressed under the ETS Directive, so there must be coordination among both).

According to recent simulations (e.g. Bellora and Fontagné 2022) the CBAM would perform reasonably well, reducing in two-thirds the rate of leakage (or in half compared to the current free allowance system). However, these authors also find that exports from the EU would be significantly affected, since they will have to pay a carbon price that other producers in the global market do not have to account for.

This **reduction in the competitiveness of exports** is one of the major problems of the EU proposal. In our simulations of the impact of a CBAM on the competitiveness of Spanish industry (Linares and Collado, 2022), for example, we show that sectors that play a large role in Spain, such as cement, car manufacturing, machinery, or plastics would be hit significantly by the CBAM, losing competitiveness in global markets.

Figure. Distribution of price increases by manufacturing groups and importance of the foreign trade sector for outliers



Source: Own elaboration based on data from PRODCOM and Stede et al (2021) | EsadeEcPol

Not including exports has been strongly backed by a number of environmentalist voices, mostly on account of keeping the signal for decarbonization of EU industry, and also defended by the EU to comply with WTO requirements and to ensure the acceptance of CBAM by third countries.

The European Parliament, in its initial report, endorsed the general ideas of the Commission proposal about exports, although proposed an extension of the CBAM to other materials (hydrogen, organic chemicals), included indirect emissions, and also supported an accelerated phase-out of free allowances. However, quite expectedly, the CBAM file was initially voted down in the Parliament, together with the reform of the ETS.

After some compromises by different parties, the proposal of the European Parliament on the Carbon Border Adjustment Mechanism (CBAM) was finally passed on June 22nd. The final proposal keeps the extension of the CBAM to hydrogen and organic chemicals, but also had to include consideration of export rebates, although subject to their WTO compatibility. And in this regard, the WTO will only consider acceptable the exemption of exports if there is a clear advantage in terms of emissions reductions (which is not necessarily guaranteed).

It might look as if there is a simple trade-off between competitiveness and protecting the price signal: competition must be sacrificed to account for externalities. But that apparent simplicity falls apart once one accounts for carbon leakage: as long as only some producers internalize externalities in their prices, demand will have incentives to move towards other producers, more competitive and carbon-heavy as well.

But carbon leakage is unlikely to succeed as a sole argument to defend any sort of export exemptions before the WTO and other actors, given that leakage and competitiveness are much related in the short term. In the long term, however, not finding a balance might end up *hurting* the aggregate level of worldwide emissions. In other words: the price signal cannot be fully protected unless it is incorporated across the whole market. Since this won't happen overnight, renouncing to a part of the internalization might paradoxically serve to protecting it in the medium term.

The other major problem of the EC (and the EP) proposal, which the inclusion of export rebates does not solve, is that, in its current form, it is not clear enough **how will the CBAM setup ensure that imported products pay for their actual emissions. Some producers (e.g. those using electricity) may opt for certifying their products as low-carbon, which does not ensure an actual reduction in emissions.** Others will rely on default values, which incentivize higher emissions outside the EU. Some producers may engage in "resource shuffling", exporting to Europe the "clean" products and sending to other markets the "dirty" ones, not changing the average emissions. Finally, others will resort to substitution of exports, e.g. exporting cars instead of steel, since cars are not subject to CBAM. All these potential actions put into question the effectiveness in practice of the CBAM proposed.

To address these crucial challenges, two alternatives are considered in the following Sections.

2. Improving the current CBAM. Is it possible to make the current version of CBAM efficient and include exports?

Given the abovementioned problems with the current CBAM proposal, several parties have been looking at alternative proposals that fix these issues. There are two main approaches here: to try to make the current proposal more efficient and acceptable for exporters; or to substitute or complement it, at least for a transition period, with one of the other alternatives considered by the European Commission in their proposal.

The inclusion of exports has been addressed from a predominantly legal point of view in a recent report by Marcu et al (2022). Assuming that free allowances are effectively phased out, as seems consistent with the Fit for 55 package, these authors argue for the inclusion of incentive-aligned export adjustment certificates. Under this mechanism, exporters would be awarded non-tradable, non-transferable export adjustment certificates corresponding to the average emissions intensity of the 10% least carbon-intensive producers in the EU (the benchmark level), or lower if they are already below the benchmark. These certificates could then be redeemed to comply with their obligation to surrender ETS allowances.

However, as they point out themselves, no export adjustment option is free of legal risk, which probably explains the reluctance of the European Commission to defend it before the WTO and third countries.

Another way to include exports would be to move towards climate clubs, or to define standards together with third countries, which ensure that exports stay competitive within the club or within the standard-complying countries. That would however compartmentalize trade, hence losing the advantages of global trade. And of course, these options depend on the willingness of third countries to engage in such schemes. This option would also risk deepening the rift among rich and less-rich countries which already affects the international climate change conversations. That would strengthen the argument put forward by some instances, generally against the decarbonization process or at least willing to slow it down, that rich countries are demanding others to assume sacrifices that rich countries never assumed when they used polluting technologies to support their social and economic development.

Making the current proposal efficient is more complicated. That would require:

- Measuring and attributing emissions correctly to the different products, to prevent greenwashing or resource shuffling.
- Extending the CBAM to all products to prevent shifts in imports towards non-covered products.

These elements are probably not realistic, at least in an early phase. Therefore, some compromise may be needed to prevent the current gaps that would allow countries to circumvent the CBAM. Some parties have argued for using a default value for carbon emissions (e.g. estimated from the content in basic materials) which would be set for all countries. This would avoid discrimination among countries, but in turn would not allow for "clean" producers to avoid paying the CBAM, which would be considered discriminatory on environmental grounds, particularly if the default is set at a high level to punish the higher emitters. This would make it difficult to accept by third countries or the WTO.

If this "improved" CBAM goes ahead, the largest risk is that it may not be able to prevent "dirty" products entering Europe, while at the same time removing the protection from free allocation to sensible industrial sectors, and hence maintaining carbon leakage and incentives for industrial relocation. If free allocation is not automatically removed, but made conditional on the effectiveness of the CBAM, the risk is that the carbon price signal may not be there, and European industry may not decarbonize in time. Avoiding these risks may require some time, and lengthy negotiations with importing countries.

3. A potentially fruitful addition: Complementing the CBAM with a climate contribution for the transition period

While as explored above it would be theoretically possible to improve the design of the CBAM, making it efficient, and addressing adequately the concerns of third parties (to avoid WTO issues or retaliations), this would take time. We could use, during a transition period, an alternative design that would address the concerns of exporters, and also make the CBAM more effective by preventing resource shuffling and import substitution, without the need to engage in negotiations with the WTO.

One way to include exports, and to ensure the effectiveness of the border adjustment, would be to use one of the alternatives mentioned (and discarded) in the EC proposal: setting a climate contribution or excise on basic materials. The excise charge would be calculated by applying the ETS price to a standard carbon intensity factor for each basic material (cement, steel, fertilizers, aluminum), based on the EU benchmark for emissions.

This excise would be imposed on domestic production and imports, which would then pass through the excise along the value chain. Imported products would also be charged the excise based on their content of basic materials (e.g. cars, based on their steel or aluminum content). The excise would be waived if basic materials or products containing them are exported, as happens with other excises. More details can be found in Neuhoff et al (2022).

Once there is an international agreement or an approval by WTO of the improved CBAM, the climate contribution would be phased out.

This alternative would bring six key advantages to the table:

- → It is not a trade measure, but a domestic one (similar to VAT), and hence does not have to be approved by the WTO, allowing for a quicker implementation.

- → By design, it covers a wider range of products, and hence prevents import substitution; since manufactured products pay for their material content, there is no further incentive in substituting imports of basic materials with manufactured products.

- → Being an excise, it allows excluding exporters from paying it. However, if the EU wants to prevent dirty products to be exported, it could easily waive the excise only partially (based e.g. on benchmark emissions), and thus penalize the higher emitting processes even if they are export-oriented.

- By setting a standard value for imports (as for domestic production) it prevents resource shuffling or greenwashing, since there is no possibility to use potentially misleading "clean" processes or certificates.

- All these measures, by reducing loopholes, ensure a significant revenue source that can be earmarked for industrial decarbonization (e.g. funding carbon contracts for differences or helping with a just transition) or for helping third countries decarbonize. This would allow to take care of the redistributive issues of the industrial/trade decarbonization, making it fairer.

- Given that industrial emissions are already penalized by the excise, free allocation could continue to avoid double-charging. However, this free allocation could be awarded only if subject to specific decarbonization plans, reinforcing the incentive to decarbonize.

Of course, there are also some disadvantages to be taken into account, specifically three. For each of them we also offer potential solutions.

- The fact that it is not a trade measure does not mean that it should be negotiated with third parties. This however may be facilitated if a part of the revenue, as mentioned before, are used to help these countries decarbonize.

- A European excise tax needs to be approved unanimously by Member States, which can certainly be difficult. However, this can be avoided if the excise is associated to the ETS, by including consumption into the system, as argued by Ismer and Haussner (2016). Modifications to the ETS need only majority approval.

- Setting the excise at the EU benchmark would still benefit dirtier producers abroad, since they would only pay for the benchmark emissions, not the real ones. Therefore, the measure should be complemented by foreign aid (e.g. funded by the CBAM) to help third countries decarbonize, or by sustainable finance, carbon footprinting, or the use of standards for imports and domestic production.

So, to conclude: We believe that the current proposal for a European CBAM, tabled by the European Commission, and endorsed with some modifications by the European Council and Parliament, presents several shortcomings that may affect its effectiveness in protecting against carbon leakage, as well as its political support from export-oriented countries.

Addressing these shortcomings within the WTO framework in which the proposal is currently inscribed would probably take a significant amount of time, delaying the necessary and urgent push towards decarbonizing European industry.

Hence, we propose implementing, during a transition period, an alternative or complement to the proposed CBAM: an excise on basic materials, based on their embedded carbon emissions. This excise would be applied to all domestic and imported products, preventing import substitution, resource shuffling, and greenwashing, and hence improving the effectiveness against carbon leakage. This in turn would also provide much welcome revenues with which to fund the decarbonization of industry in Europe and abroad.

In addition, this excise can be waived on exporters, thus addressing carbon leakage in the global market and also the concerns of export-oriented countries.

The inclusion of this transitory period would only require minor adjustments in the current CBAM and ETS files. These minor adjustments would create an efficient CBAM, and help Europe decarbonize its industry without relocating it.

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