CHAPTER 13

Pricing of carbon within and at the border of Europe[1]

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The EU has announced reaching carbon neutrality by 2050 as the key target of its Green Deal strategy. The best coordination signal in this endeavour would be a uniform and encompassing price on carbon. To ascertain that all goods consumed in the EU face the same carbon price, it would be sensible to credibly prepare the implementation of border carbon adjustments applied to imported goods. This column argues, however, that the EU should refrain from exempting exports from carbon pricing, and should consider a border carbon adjustment mechanism only after having established a credible uniform carbon-pricing mechanism within its jurisdiction. This could provide incentives to other countries to join a far-reaching international alliance for carbon pricing.

The EU can become the world leader in the energy transition. It should be the explicit aim of this effort to provide the path towards an effective global approach to climate policy. To tap into a fruitful division of labour, research and investment projects entailing high European value added and policy instruments for setting incentives for the greening of the European economy should be coordinated at the European level. Previous work by the French Council of Economic Analysis (CAE) and the German Council of Economic Experts (GCEE) (GCEE 2019, CAE and GCEE 2019), as well as the interdisciplinary work of the German national academies of science (acatech et al. 2020), advocated the pricing of carbon as the leading instrument of European climate policy.

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UNIFORM CARBON PRICING: A CORNERSTONE OF EUROPEAN CLIMATE POLICY

As explained, for example, by Schlögl and Schmidt (2020), in the diverse and decentralised economic system that characterises the EU, the best coordination signal corresponding to this principle would be a uniform price on carbon that encompasses all actors, sectors, regions, and technologies. Separate pricing systems for different sectors or for different countries can only be interim solutions. Correspondingly, while separate target values for sectors and member states can serve as important gauges of actual developments, it is not advisable to interpret them as binding restrictions. Voluntary participation by all member states in the uniform pricing mechanism might require financial transfers to member states whose energy systems still rely more heavily on fossil resources.

In principle, several pricing mechanisms could be employed to implement a uniform European carbon price – both price (taxes or surcharges) or quantity (emission certificates) schemes. As this already provides a functional and effective system, the best strategy would be widening the scope of the European Emissions Trading System (EU-ETS). Currently, the EU-ETS only covers the industry and energy sectors, and it is pursuing a joint European reduction target for these sectors. For other sectors, the burden-sharing agreement instead stipulates a set of national target values for 2030. With this compartmentalised approach, the EU is foregoing any possibility to enact the principle of division of labour in emissions reduction.

It might be sensible to fortify the EU-ETS with a minimum price floor over an extended time horizon, and also to engage in an extensive reform of national energy taxes and surcharges to support the uniform carbon pricing. In practice, it will take time to integrate EU-ETS and non-EU-ETS sectors; the aim should be to form an integrated EU-ETS well before 2030 and, in parallel with this, to dismantle the multiple national climate policies. The longer the implementation of a uniform coordination signal by a fully integrated EU-ETS takes, leaving the coordination of transformation efforts in the non-EU-ETS sectors to separate (national) pricing schemes, the higher the overall cost of transition.

As long as carbon prices remain too low and limited in scope[2], the EU should regularly estimate and make public the shadow price of carbon that supports its climate ambition[3]. It should be used in the cost-benefit analyses that need to be conducted on its portfolio of existing non-price climate policies, such as bans, norms, standards, and subsidies. By providing additional public revenue, moving to carbon pricing will also help alleviate the regressivity inherent in climate policy. This is a national responsibility of the member

2 This may be due to social acceptability issues in Europe, as shown by Oswald and Nowakowski (2020).
3 A shadow price associated to a collective constraint is defined as the price signal necessary to satisfy the constraint. It would have to be estimated by employing an integrated assessment model.

states (CAE and GCEE 2019), and this revenue would enable member states to fund redistribution schemes[4], energy price reforms and infrastructure investments, according to their individual preferences and institutions.

Arguably, Europe will only be able to contribute to the objective of reaching global climate neutrality if it manages to design its own transition path in a way that combines climate neutrality with unimpeded prosperity growth. Taking action unilaterally is endangering the international competitiveness of energy-intensive European firms, which are facing serious competition from outside the realm of European climate policy ('carbon leakage'). So far, the EU-ETS has not led to serious carbon leakage problems, but the carbon prices emitters hitherto had to pay were moderate (aus dem Moore et al. 2019). It seems likely that this innocuous result will change at the higher carbon prices that will correspond to the ambitions of the Green Deal.

CLIMATE NEUTRALITY AND THE EUROPEAN GREEN DEAL: GREAT AMBITIONS

In December 2019, the European Commission proclaimed the European Green Deal as its principal growth strategy, announcing as its key target reaching carbon neutrality for the EU by 2050 (European Commission 2019). This ambitious long-term objective has important repercussions for the EU's climate target for 2030; Europe is set to pledge to cut emissions by some 55% compared with their 1990 levels, a substantial accentuation of the previous target of 40%. The Green Deal comprises a wide range of measures to cut emissions in areas such as energy systems, mobility, heating, and agriculture. Most importantly, the Commission is considering the implementation of an encompassing carbon-pricing mechanism covering all relevant sectors.

To implement uniform carbon pricing, the Commission announced its intention to widen the scope of the EU-ETS by 2021 to beyond the industry and energy sectors (European Commission 2020a). The ensuing uniform carbon price would serve as the desperately needed principal coordination signal for the massive public investment and, to an even larger extent, private investment needed to meet the more ambitious European climate targets by 2030. Arguably, carbon prices will have to rise steeply over time in order to meet these targets (Gollier 2021). Moreover, their effect in incentivising investments today already stands and falls with the credibility of their installation as an unalterable coordinating signal.

Until a fully integrated EU-ETS is implemented, reducing emissions in the non-EU-ETS sectors will remain a national affair. France and Germany, in particular, have so far not pursued a joint strategy for the non-EU-ETS sectors. In previous years, with less ambitious transition objectives, the losses in terms of prosperity from disregarding possible efficiency gains were limited. With the announcement of the European Green

4 See, for example, the proposals by Dominique Bureau, Fanny Henriet and Katheline Schubert in CAE (2019).

Deal, however, the setting has changed dramatically: member states will have to increase their efforts to reduce emissions in the non-EU-ETS sectors. To avoid these efforts being prohibitively costly, it is highly advisable to speed up the process of integrating national pricing schemes into the EU-ETS.

Steeply increasing (shadow) prices of carbon will endanger the competitiveness of European companies vis-à-vis their competitors that do not fall under the realm of the EU's ambitious climate policy. As the costs of those emissions-intensive domestic producers who are trading on global markets increase ever further, they might relocate increasing shares of their production to sites outside of Europe. This carbon leakage would be harmful to European jobs and economic prosperity, and it would also hurt the overall cause of climate change mitigation, countervailing the EU's ambitions. The issue of how to incentivise other countries to adopt ambitious carbon emissions reduction targets through carbon pricing is therefore of utmost importance.

Under the EU-ETS, the international competitiveness of domestic producers has so far been protected quite successfully by the free allocation of certificates to emissions-intensive firms facing international competition in, for example, the steel, cement and chemical industries, based on a benchmarking system. Yet, with increasing carbon prices this might change. Outsourcing decisions motivated by rising cost differentials would be difficult to reverse ex post, due to the long investment cycles in the industry sector. Thus, the aim should be to avoid these decisions ex ante. A promising alternative to the cost-free allocation of certificates may be the installation of a border carbon adjustment (BCA) mechanism.

NEW CHALLENGES: TOWARDS REDUCING CARBON EMISSIONS FROM IMPORTS

The principal idea behind the BCA mechanism would be to levy a charge on imported goods equivalent to the carbon payment of the same domestically produced good. Ideally, all goods consumed in the EU would face the same carbon price, irrespective of globally diverging climate policies. As it seems far too complicated to impose the BCA on all imported goods, the system could instead be restricted to very energy-intensive and very tradable goods. Limiting the BCA to applying only to imports would, however, not address the distortion caused by less stringent climate policies outside the EU to the competitiveness of EU companies in external markets and, accordingly, would induce the risk of carbon leakage.

Alternatively, the EU might opt to implement a full-fledged symmetric variant of the BCA, in which exporters would receive a corresponding remuneration. Consequently, goods consumed abroad would face the carbon price determined by the country where they are consumed. The system would then be reminiscent of a value-added tax, where imports are taxed and exports are exempt. This is not the route to take: by implementing a symmetric BCA, the EU would contradict its own communication and forfeit control over

the extent of carbon emissions generated in the region, since EU carbon pricing would only curb emissions caused by the production of goods and services actually consumed in Europe.

To preserve the EU's self-conception of taking responsibility for the global climate, it will be necessary to present the BCA not as a trade, competition or industrial policy, but as an environmental policy. Its proclaimed ultimate objective should therefore be reducing global carbon emissions, not increasing the competitiveness of European industry. Thus, it should be restricted to applying only to imported goods. This fundamental dilemma between climate protection and preserving competitiveness would be less prevalent if the international alliance for carbon pricing were to grow, obviating the need to impose a BCA on products being imported from (and exported to) other members of this 'carbon club'.

Following the initiative of the French and German governments, the European Council has not only emphasised a BCA mechanism as an instrument to prevent carbon leakage, in contrast to our appraisal, but also announced in the conclusions of its meeting in July 2020 that starting from 2023, a BCA could be used as a source of revenue for the EU budget. The explicit objective of the BCA should, however, be to induce a reduction of carbon emissions, not to serve as an instrument to raise public revenues. Contrary to a popular view, such a tax on imports would not be paid by foreign producers; due to a high pass-through of import taxes, it is European consumers who would bear the majority of the burden.

While the principal idea of a BCA is reminiscent of the well-established concept of value-added taxes, a sizeable number of technical, regulatory, and legal challenges would have to be overcome (Mehling et al. 2019). Accurately measuring the carbon content of individual goods is far from easy (Droege and Fischer 2020), since one would have to capture all of the carbon emissions caused throughout the good's entire value chain. This is costly, since for the same good there are many possible production processes with varying carbon intensities. Simply applying the benchmarks employed for the cost-free allocation of EU-ETS emission certificates is precluded, since those only measure the direct carbon emissions caused during the production process.

A related issue concerns the question of possible exceptions. Which exporting countries will be subject to the BCA – all countries outside the regulated area, or just countries with no 'equivalent' climate policy? If the EU opted to take the latter approach, it would have to make up its mind on how to define an equivalent climate policy. While, in principle, this could be a policy inducing at least a shadow carbon price of similar magnitude as in the EU, in a real-world application it is very difficult to estimate the underlying carbon value of the wide range of implemented regulatory measures. It will therefore be difficult to prevent countries subject to the tax considering it as a political choice, and therefore contesting it.

Furthermore, if the EU would not only be levying charges on imported goods but also offering rebates to exporters, this might also endanger conformity with GATT rules and lead to protracted trade disputes. This risk would be all the more grave the more openly the EU views the BCA scheme as a device to ascertain economic competitiveness, instead of for global climate protection (Droege et al. 2018)[5]. Irrespective of the sophistication with which any legal obstacle might be circumnavigated, EU trading partners might interpret any unilaterally introduced BCA as a protectionist measure anyway (GCEE 2020). Nevertheless, it could be possible to implement a BCA mechanism that is compatible with the existing body of law (European Commission (2020b).

The chances of avoiding a severe trade conflict would likely rise substantially if the EU, instead of introducing the BCA unilaterally, were to take this action in a joint effort with other trading partners, especially the US. However, the EU should consider a BCA mechanism only after having established a clear and credible uniform carbon pricing mechanism within its jurisdiction. This credibility is key to provide incentives to other countries, the US and China in particular, to join a far-reaching international alliance for carbon pricing (Nordhaus 2015). Most specifically, trade partners could be invited to join the EU-ETS mechanism. The chances of a successful courtship will increase as the number of countries pricing carbon grows.

Authors' note: This is a condensed version of a report by the Franco-German Council of Economic Experts (2021).

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