



Financing the European Union: New Context, New Responses

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Executive summary

This paper discusses the introduction of new own resources to finance the EU budget. Currently roughly two thirds of the budget is financed from GNI-based own resources, which are essentially contributions made by the member states out of national tax revenues. While GNI resources are transparent, fair and in line with the principle of subsidiarity, they are criticised for leading to political debates that emphasise the cost of EU spending rather than on the benefits, and for contributing to the framing of discussions on the EU budget in terms of net balances, rather than value added through common policies and the provision of European public goods.

The recent agreement on the Next Generation EU (NGEU) programme has led to a renewed debate on the possibility of introducing new own resources which would be used to service the debt incurred. At its meeting on 17-21 July 2020, the European Council decided that the EU should work towards the introduction of such resources. Its conclusions mention a plastics charge, a carbon border adjustment mechanism and a digital tax as well as a reformed emissions trading system (ETS), and finally a financial transactions tax. We discuss these options in the light of the following criteria for the choice of own resources:

- A. Whether the origin of the revenue can be assigned to a particular member state;*
- B. Whether the corresponding revenue can be raised in isolation or requires pan-European tax coordination;*
- C. Whether the introduction of the new resource can help reduce tax distortions in the EU;*
- D. Whether the resource is related to EU policies.*

We propose to put the revenue from ETS allowances at the centre of the reform of the EU own resources system.

The EU has given itself ambitious climate policy objectives. All but one of the member states have endorsed the goal of EU-wide climate neutrality in 2050. The main EU policy tool to translate these objectives into practice is the ETS, which currently covers emissions from the power sector, industry and intra-EU flights. In the future it would be desirable to expand further the scope of the ETS and to bring in more, ideally all, sectors. It would also be desirable to give up national objectives, because they are incompatible with the EU-wide cost-efficient reduction of emissions.

Consistent with this approach, ETS revenues should accrue to the EU, rather than to the member state where the emissions occur.

The main reason is that the emitting industry through its carbon emissions does not cause any particular damage in that country. Rather, taking the EU cap on emissions as a given, an additional emission in a particular member state should be regarded as a negative externality on the other member states. Emission reduction objectives are set at EU level. Whoever auctions off an allowance, wherever the corresponding emission occurs in the EU, and wherever the resulting good or service is consumed, the impact

on common policy outcomes is the same. In this regard, proceeds from the sale of ETS allowances are not that different from customs duties.

Moreover, the bulk of auctionable emission allowances are allocated to member states on the basis of historical emissions. These revenues therefore have the character of a rent that is granted to member states. The higher the carbon price on the ETS market, the more member states benefit from it. Under this set-up, a decision by the EU to increase the pace of decarbonisation and to reduce the overall volume of emissions may paradoxically result in a higher rent, especially for carbon-intensive countries.

A carbon border adjustment (CBA) mechanism has been proposed as a way of preventing leakage effects of EU carbon pricing. We do not primarily regard a carbon border adjustment mechanism as a direct source of revenue, but rather as a device intended to limit international competitive distortions.

A CBA would however have meaningful indirect revenue effects, through its impact on the ETS. Currently free allocations of ETS allowances are destined for carbon-intensive sectors facing international competition. In the presence of a CBA they could be reduced or possibly abolished; as a result more revenue would be raised from the ETS.

Compared to the ETS, the case for the other candidates for own resources is less convincing. The digital services tax initiative plays a role in the context of stalled international discussions on a new allocation of taxing rights. In view of the single market, we certainly regard a European digital services tax as preferable to a collection of national digital services taxes. However, we doubt it could provide a structural response to the tax optimisation problem, and find the prospect of an agreement on minimum corporate taxation and more market-country taxation as part of the OECD process preferable. If EU member states were to agree to pursue the plan of introducing an FTT, doing so at European level would certainly be preferable to a multitude of national and uncoordinated FTTs, mostly because national FTTs would distort financial transactions within the EU. However, at this stage there is no broad-based consensus regarding the FTT in the economic and the policy debates. As a result, it is set to be introduced only by a minority of member states, making it hardly suitable as a basis for own resources of the EU as a whole.

A shift of the ETS from being a national resource to an EU resource would raise significant transitional and distributional difficulties. ETS revenues will fall as the EU moves towards reaching its CO₂ neutrality goal. But for a time of transition, the ETS will continue to generate revenue. Three factors will gradually contribute to increasing revenues despite falling emissions:

- The increase in the price of carbon;*
- The substitution of free allowances by auctioned allowances;*
- The broadening of the ETS scope to sectors currently not covered.*

Simulations indicate that total ETS revenues in the 30 years to 2050 could approach €800 billion in a realistic scenario and even €1.5 trillion, or €50 billion per year on

average in a maximalist scenario in which most free allowances would be eliminated and most sectors would be covered. ETS allowances are therefore a potentially significant resource.

Transforming auction revenues into an EU resource and reducing GNI contributions accordingly would also entail significant redistributive effects. In particular it would redistribute revenue from carbon-intensive to less carbon-intensive member states.

A possible way to smooth out these effects would be to transfer to the EU the whole proceeds from the auctioning of emission allowances but to redirect annually to member states notional auctioned emissions revenues computed as their shares of the 2019 auctioned emissions multiplied by the annual EU linear reduction factor and corrected for the impact of the MSR. These notional auctions would be valued at a price capped at the level of the 2019 ETS carbon price. This grandfathering strategy would preserve countries' initial revenues while making room for a gradual increase in the revenue accruing to the EU. In addition, side payments from and to the member states could be introduced to correct undesirable distributional effects from the swap of the GNI-based resource for ETS revenue.

Simulations suggest that under a realistic decarbonisation scenario, revenues from the ETS over the 2020-2050 period would be sufficient to repay the Next Generation EU debt, finance the notional auctioned emission revenues accruing to the member states, and leave enough additional revenue to help finance the EU budget or to finance off-setting transfers to certain member states.

Introduction

The debate on the financing of the European Union budget is never-ending. Because it is overly loaded with quasi-constitutional, and at any rate highly political considerations about the nature of the EU, it has consistently served as a battlefield between those who regard the EU as a confederation of sovereign states and those who believe in its federal destiny.

We have no intention of reopening the existential debate. But we posit that two new facts call for a pragmatic re-examination of the financing of the EU budget:

- The decision by the European Council to launch the Next Generation EU (NGEU) recovery programme in response to the COVID-19 crisis. In its conclusions, the European Council of July 2020 requested from the Commission proposals for new own resources that could be used for early repayment of NGEU borrowing;
- The emergence of potential new resources that have an intrinsically pan-European character.

We start by reviewing the financing of the EU (part 1). We then turn to arguments for or against reforming the existing system (part 2), before putting forward criteria for assessing potential new resources (part 3). We then take up the potential revenue implications of climate policy, dealing first with the emissions trading system (part 4) and second with the taxation of carbon at the border (part 5). We discuss digital taxation in part 6 and other potential candidates for own resources, especially the financial transaction tax in part 7. As this analysis leads us to conclude that there is a strong case for turning ETS revenues into an EU own resource, we return to the issue in part 8 to discuss implementation issues. Part 9 concludes.

1. The financing of the EU budget

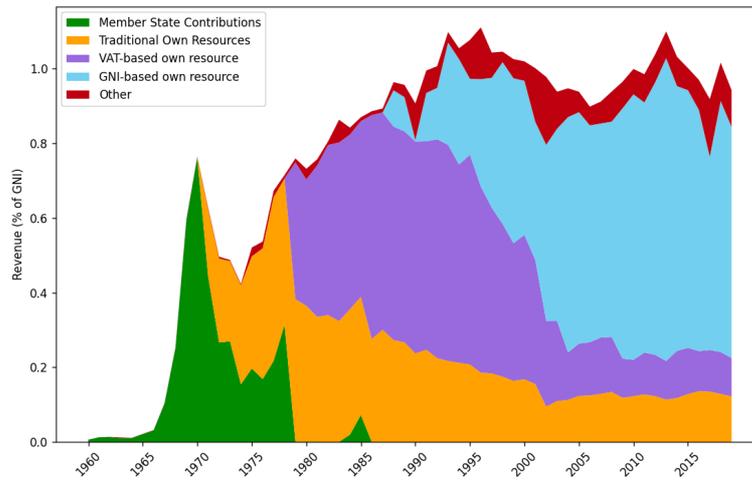
The EU budget has a number of characteristics that make it unique. There is a fixed ceiling on revenues and spending, and there is no debt financing – with the exception of the recent €750 billion EU Economic Recovery Fund (Next Generation EU), which was announced as a one-time measure.

The revenue comes from so-called ‘own resources’. This is a misnomer that combines genuine own resources (the ‘traditional own resources’, mostly tariffs) and statistical aggregates (the VAT resource and the gross national income resource). Custom duties are true own resources because they are levied at the port of entry of foreign merchandises, but result from demand emanating from wherever in the EU the corresponding goods are consumed or utilised. After deducting a fee for administration costs (currently 20 percent of the revenue), the remainder goes to the EU. The VAT resource and the GNI resource, however, are levied by each and every member state and are widely considered by them as national contributions to the EU budget, not as resources ‘owned’ by the EU.

In recent years the EU budget has been financed essentially by the GNI resource. However, this resource was only introduced in the early 1990s (Figure 1). Earlier budgets were mostly financed by the VAT resource and the custom duties, the share of which

in total revenues was about one-half in 1980. In fact, the structure of EU budget resources has been remarkably unstable over time, evolving from an exclusive reliance on national contributions (before 1970) to a combination of genuine own resources and a VAT top-up (from the mid-1970s to the 1980s) and to a renewed predominance of national contributions (from the 1990s onwards)¹.

Figure 1: Structure of own resources of the EC/EU, 1958-2018



Source: European Commission, DG Budget

Today, the GNI resource provides roughly two thirds of the overall financing of the EU budget. Given this revenue structure, it is fair to say that the EU budget is primarily financed through contributions made by the member states out of national tax revenue.

This instability results from a legal factor and an economic factor. The legal factor is that although Art. 311 of the Treaty on the Functioning of the European Union (TFEU) states that *“Without prejudice to other revenue, the budget shall be financed wholly from own resources”*, it does not define what is meant by that, nor does it provide any detail on possible resources. It basically leaves to the Council the responsibility of deciding by unanimity what these resources should be: The Council *“may establish new categories of own resources or abolish an existing category”*. The economic reason is that the genuine own resources the EU relied on after the 1970 decision to *“replace financial contributions from member states by the communities’ own resources”* were unstable: revenues from tariffs dwindled as a consequence of trade liberalisation, and other specific revenues were too limited in the first place to provide stable revenue streams².

¹ See Cipriani (2014).

² See the [Council decision](#) of 21 April 1970 on the replacement of financial contributions from member states by the Communities' own resources.

2. Why change the system of own resources?

In the debate about reform of the own resources system, it is important to distinguish two questions. The first is whether the EU should have its own – possibly limited – power to levy resources through taxation, rather than relying on the fiscal sovereignty of its member states. This debate is about fundamental changes to the institutional setup of the EU, which would move it closer to a federal structure. The other question is whether the system of own resources should be changed *given the current institutional setup*, with a fixed ceiling on expenditure, no deficit financing and national fiscal sovereignty as the bases for the financing of the EU. We focus on the second question, that is on reforming the own resources system, taking as given the current EU institutional setup.

Discussions about reform of the EU own resources system often start from the (undisputable) observation that the existing system of financing is dominated by the GNI resource. Whether this dominance is good or bad is disputed. The GNI resource has a number of advantages: it is transparent, it leads to a distribution of the financing burden between member states that is proportional to their respective capacities, and it allows member states to finance their contributions through the taxes that are best suited to local conditions and local preferences, which is in line with the principle of subsidiarity.

There are two main critiques of the dominance of the GNI resource. First, it is perceived as having a distorting effect on political decisions in the member states about the EU budget. The High Level Group on Own Resources (HLGOR), which was created in 2014 to propose reforms to the own resources system, described this issue as follows.

“Member States that are net contributors to the EU budget first look at their contribution on the revenue side — and try to minimise this amount as much as possible. The costs are immediately visible whereas the consequent benefits are often indirect and more dispersed”¹.

A related observation is that the dominance of GNI contributions encourages thinking about the EU budget in terms of net balances. Perceiving benefits from the EU budget as being reflected by net balances would be appropriate if the budget consisted purely of transfers between member states, essentially leading to a zero-sum game. But EU spending on public goods that benefit all member states and their citizens, and that creates added value that benefits the EU economy as a whole, cannot be looked at through such a lens. Therefore, to the extent that European public goods are financed

¹ High-Level Group on Own Resources (2016), p.23. A different view is taken, for instance, by the German Advisory Board to the Federal Ministry of Finance (2016). This report emphasises the advantages of GNI contributions in terms of transparency and subsidiarity and argues that a significant part of current EU spending is indeed redistributive without creating much added value, so that net balances do have a certain relevance.

through the EU budget, net balances are a misleading measure of national benefits from this budget¹.

The second critique is that, in the same way customs duties were naturally allocated to the common budget in a customs union, the financing of the EU through GNI contributions ignores potential resources that, because of their genuinely European character, should be regarded as an efficient source of funding of the EU budget. This applies, first, to tax bases that have by nature a pan-European character and cannot be mobilised by individual member states, and second to mobile tax bases that can only be taxed if member states coordinate their policies. Potential candidates for such new own resources are for example levies on the carbon content of imports, which should not accrue to the country where the port of entry is located and whose ultimate destination inside the single market is hard to trace; or taxes on profits of multinational companies if they evade taxation through profit shifting unless states coordinate their policies.

Naturally, the existence of such resources is not by itself a justification for spending more at EU level, and the corresponding revenue could simply be redistributed to the member states proportionally to their GNI. It would however be more efficient to allocate these resources directly to the financing of the EU budget.

3. Criteria for introducing new resources

Irrespective of the pros and cons of GNI-based resources, it is fruitful to discuss options for introducing new own resources. Most likely, these resources would complement but certainly not entirely replace GNI-based contributions. Taking the volume of spending in the EU budget as given, introducing new own resources would imply a reshuffling of the burden of the financing of the EU across member states. GNI-based contributions would presumably keep the function of balancing the budget at the margin, but their weight would be mechanically reduced.

In the case of a new own resource based on existing national tax instruments, the impact would essentially be distributive, to the extent that the incidence across member states of the new resource differs from the distribution of GNI. There would be no first-order efficiency gain to speak of.

But if the tax base were genuinely EU-wide, or if it is sufficiently mobile to avoid taxation by individual member states, the introduction of the new own resource would lead to lower taxation on other factors. It would therefore result in a change in the structure of taxation and a reduction of existing tax rates, potentially yielding efficiency gains.

The decision to introduce new resources is ultimately political and the discussion about it is likely to involve strong distributional aspects. However, it is important that this decision be based on objective criteria. We suggest the following:

¹ See our report to ministers Le Maire and Scholz on EU public goods (Fuest and Pisani-Ferry, 2019).

- A. Whether the origin of the revenue can be assigned to a particular member state;
- B. Whether the corresponding revenue can be raised in isolation or requires pan-European tax coordination;
- C. Whether the introduction of the new resource can help reduce tax distortions in the EU;
- D. Whether the resource is related to EU policies.

More than one of these criteria should be satisfied. For example, revenues that can be assigned to a member state and can be raised without coordination do not add anything to the public finance equation and therefore are not suited in any particular way to serve as an own resource, even if they correspond to the EU's political priorities.

The focus should be on where a strong case can be made for using tax instruments as a basis for own resources. This applies in particular to revenues that are European by nature because they can only be levied via a common decision, or cannot be ascribed to any particular member state in a meaningful way. The introduction of such resources would both broaden the tax base, potentially reducing distortions, and increase the proportion of the EU budget that is financed from 'truly' European revenue sources.

Customs duties, for instance, were particularly suited as an EU own resource because it would not be appropriate to allocate the revenue to the country where the port of entry for the imported goods is located. In addition, customs duties are related to trade policy, which is a competence of the EU.

At its meeting on 17-21 July 2020, the European Council decided that the EU should work towards the introduction of new own resources. The council conclusions explicitly mention a charge on non-recycled plastic, a carbon border adjustment mechanism, a digital tax, a reformed emissions trading system (ETS), and finally a financial transaction tax. The timing of these potential new own resources is important. The plastics charge is agreed to start already in 2021, the border adjustment mechanism and the digital levy are to be introduced in 2023. There is no specified timetable for the ETS. The financial transaction tax is mentioned as a potential project for the next MFF, which implies that it will play no role in the current reform of the own resources system. The revenues are to be used, among other things, to service the debt incurred for the EU Recovery Fund¹.

¹ *"The Union will over the coming years work towards reforming the own resources system and introduce new own resources. As a first step, a new own resource based on non-recycled plastic waste will be introduced and apply as of 1 January 2021. As a basis for additional own resources, the Commission will put forward in the first semester of 2021 proposals on a carbon border adjustment mechanism and on a digital levy, with a view to their introduction at the latest by 1 January 2023. In the same spirit, the Commission will put forward a proposal on a revised ETS scheme, possibly extending it to aviation and maritime. Finally, the Union will, in the course of the next MFF, work towards the introduction of other own resources, which may include a Financial Transaction Tax. The proceeds of the new own resources introduced after 2021 will be used for early repayment of NGEU borrowing."* Conclusions of the Special meeting of the European Council (17, 18, 19, 20 and 21 July 2020).

In the following, we focus primarily on the suitability of two types of potential new resources: carbon-related levies (through the auctioning of emission allowances within the framework of the ETS, and through a potential carbon border adjustment mechanism), and taxes on the profits or the revenues from the cross-border provision of digital services. We also discuss a number of other potential bases for own resources, albeit with less detail: the financial transaction tax, the tax on non-recycled plastic and the corporate income tax.

Some of the candidates for new own resources, such as a corporate income tax or financial transaction tax, have a presumably permanent character, while others have a temporary character, either because their tax base is set to shrink (not least because that is the very purpose of the taxation), as is the case for carbon levies, or because they are temporary fixes (as for the digital services tax, if international discussions on new cooperative arrangements for corporate income taxation lead to a comprehensive redefinition of taxing rights). Clearly, the EU budget should be financed by permanent resources, but as a consequence of recent decisions, temporary revenue is needed to service and pay down the debt incurred in the context of the NGEU Fund. Given this, a revenue source which is available for a limited amount of time may be appropriate. Of course, the EU will need own resources for other purposes, but using temporary resources for a transition period would buy time to develop other options.

4. Revenues from the emissions trading system

The EU has ambitious climate policy objectives. All but one of the member states have endorsed the goal of reaching EU-wide climate neutrality in 2050, but this political commitment has not yet been translated into an operational strategy¹. Current climate policy is based on a framework that includes EU-wide targets and policy objectives for the period from 2021 to 2030. This framework, which also represents the EU contribution to the Paris Agreement, notably entails a 40 percent greenhouse gas emissions reduction target by 2030 (compared to 1990), as well as renewable energy and energy efficiency targets. President von der Leyen has committed to revise this framework, raising the emissions reduction target to 50-55 percent by 2030.

The main EU policy tool to translate these objectives into practice is the ETS, which covers emissions from the power sector, industry and intra-EU flights (i.e. about 45 percent of total EU emissions). Non-ETS sectors (i.e. transport, buildings and agriculture) are dealt by the Effort Sharing Regulation (ESR, Regulation (EU) 2018/842), which requires member states to pay fines if they fail to reach them.

In the medium term it would be desirable to expand further the scope of the ETS and to bring in more sectors. The same carbon price would then apply to all participating sectors, which would ensure consistency and efficiency. Ultimately, all sectors could be brought in. It would also be desirable to give up national objectives, because they are incompatible with the EU-wide, cost-efficient reduction of emissions. The proper basis for sharing efforts between member states should be the marginal cost of emission

¹ European Council conclusions, December 2019.

reductions. If a member state can exceed its national objective at cost that is lower than the cost for another member state to reach its goal, the common interest dictates that the first country should make the effort, even if it is not in accordance with preassigned objectives.

Consistent with this approach, ETS revenues should accrue to the EU, rather than to the member state where the emissions take place.

Allocation of revenues from the ETS to a particular member state is perfectly feasible: the location of emissions is precisely defined. But there is no reason why proceeds from the sale of emissions permits should accrue to the country where emissions are taking place. The emitting industry does not impose any particular damage on that country in terms of its carbon dioxide emissions. Rather, taking the EU cap on emissions as a given, an additional emission in a particular member state should be regarded as a negative externality on the other member states (because it forces them to reduce their own emissions, or accept that their common objective will be missed)¹.

The basic reason why ETS revenues should be allocated to the EU is that the corresponding policy is fundamentally a common policy. Emission reduction objectives are set at EU level in view of common Nationally Determined Contributions put forward within the framework of the United Nations Framework Convention on Climate Change conferences. Whoever auctions off an allowance, wherever the corresponding emission takes place in the EU, and wherever the resulting good or service is consumed, the impact on common policy outcomes is the same. In this respect, proceeds from the sale of ETS allowances are not that different from customs duties.

Moreover, the bulk of emission allowances destined for auction are allocated to member states on the basis of historical emissions (and a remainder is allocated on distributional grounds to the least wealthy member states). Revisions are infrequent. Emission allowances therefore have the character of a rent that is granted to member states. The higher the ETS carbon price, the more member states benefit from it. In this set-up, a decision by the EU to increase the pace of decarbonisation and to reduce the overall volume of emissions may paradoxically result in a higher rent, especially for carbon-intensive countries.

These are strong reasons why, on pure economic grounds, proceeds from the auctioning of emission permits should be allocated to the EU and not to any particular member state. Obviously, a shift from national resources to an EU resource would raise significant transitional and distributional difficulties. We return to the issue in section 8.

Like any 'Pigouvian' resource, ETS revenues will fall as the EU moves towards reaching its CO₂ neutrality objective. But for a time of transition, which is likely to last until 2050 at least, the ETS will continue to generate revenue (Box 1). Moreover, proceeds from the auctioning of permits are likely to exceed the 2019 level of €15 billion in the

¹ Since 2013 the cap on emissions has been set at EU level rather than at the level of each individual member state.

years to come. This is because although global emissions volumes are set to decline, three factors will gradually contribute to increasing revenues:

- The increase in the carbon price;
- The substitution of free allowances by auctioned allowances;
- The broadening of the ETS scope to sectors currently not covered.

Simulations indicate that total ETS revenues in the 30 years to 2050 would amount to about €300 billion in an exceedingly conservative scenario (Box 1, scenario 1: no price rise, no reduction in the share of free allowances, no widening of the scope of the ETS). But the amount could approach €800 billion in a more realistic scenario (Box 1, scenario 3: price rise in line with revised carbon neutrality objective, reduction in the share of free allowances), or even €1.5 trillion, or €50 billion per year on average in a maximalist scenario (Box 1, scenario 5), in which most free allowances would be eliminated and most sectors would be covered. We are therefore speaking of a potentially significant resource.

Box 1: Potential future revenues from ETS auctions

The ETS is the world's largest carbon market. Being a cap-and-trade system, it sets a maximum level of emissions, a cap, and distributes emissions permits to firms that produce emissions. Each year's emission allowances are either given out for free (approximately 40 percent) or auctioned. The free allowances are meant to reduce the risk of carbon leakage (transfer of production to countries with laxer emission constraints) and to support new entrants. Currently, the cap is reduced yearly by approximately 48 million tonnes in accordance with the EU decarbonisation objective.

In addition, since 2019, the Market Stability Reserve (MSR) has operated, with the objective of reducing the surplus of allowances that are on the market as a consequence of past recessions, during which demand for emissions was below the cap. In 2020, the MSR reduced the total amount of allowances by a little below 400 million tonnes. The current recession is bound to increase further the surplus of allowances in circulation given the significant drop in industrial production, potentially justifying additional allowance-withdrawal measures.

In order to get a sense of the magnitude of the potential revenues from the ETS until 2050, we ran a couple back-of-the-envelope computations. In line with preliminary data on the decline in industrial activity due to the pandemic, we estimate that 50 percent of the allowances distributed or auctioned in 2020 will not be used, further increasing the total number of allowances in circulation. This implies that the MSR will reduce the number of new allowances by nearly 600 million in 2021.

In all scenarios, we assume that the EU will reach its 2050 carbon neutrality objective. This means that the pace at which the ETS cap is reduced must increase compared to what is currently planned. Scenarios 1 through 4 assume the current scope of the ETS is maintained, with a linear reduction of allowances to achieve the 2050 objective of zero net carbon emissions.

In scenarios 1 through 3, the share of ETS allowances auctioned remains unchanged at approximately 60 percent. Essentially, this means that the EU does not pair the ETS efforts with a border adjustment mechanism meant to reduce the risk of carbon leakage.

Scenario 1 considers the very conservative assumption that the price of carbon will remain more or less constant (at around €25/tCO₂) despite the decrease in supply. It can therefore be viewed as a lower bound for the generated revenue over the next decades. Scenario 2 takes the intermediary price trajectory put forth in the Commission's 2016 EU Reference Scenario (€25/tCO₂ in 2030, €50 in 2040 and €85 in 2050). Note that the predicted price for 2030 has already been attained.

In order to be in line with our assumption that the EU will achieve carbon neutrality in 2050, we consider a third price trajectory, which is put forth in the 'decarbonisation' scenario from the background material to the 2050 Long-Term Climate Strategy. In this scenario, the price reaches €50/tCO₂ in 2030, €100/tCO₂ in 2040 and €200/tCO₂ in 2050.

While scenario 3 maintains the assumption that only 57 percent of allowances are auctioned, scenario 4 assumes that the share of auctioned allowances reaches 80 percent. This decrease in the provision of free allowances to sectors heavily exposed to international competition could result from intensified international cooperation in the reduction of global emissions, or from the creation of a border adjustment mechanism aimed at reducing the risk of carbon leakage.

Finally, in scenario 5, the overall scope of the ETS is broadened in order to include 50 percent of agricultural and transportation sectors. Again, we consider a linear decrease in the amount of emissions. For the sake of simplicity, we assume for scenarios 4 and 5 that the corresponding changes in the functioning and the scope of the ETS take place already in 2021.

Estimates for the revenue generated in 2021-2050 range from €329 billion to €1.5 trillion, depending on the scope and the projected price of carbon.

	Share of auctioned allowances	Scope of ETS	CO ₂ price trajectory	Generated Revenue (€ bns, 2021-2050)
Scenario 1	57%	Current scope	Constant price (€25/tCO ₂)	329
Scenario 2			2016 EU Reference Scenario	442
Scenario 3			'Decarbonisation' price scenario	789
Scenario 4	1120			
Scenario 5	Expansion of the ETS to cover 50% of the agricultural and the transport sectors	1500		

Despite the Market Stability Reserve, ETS revenues would potentially remain volatile. The EU could possibly introduce a floor price to stabilise the carbon price, thereby providing a cleaner signal to economic agents and contributing to a steadier income stream.

5. Taxing carbon at the border

One of the challenges for carbon pricing policy in the EU is that it may generate leakage effects and undermine the competitiveness of producers of carbon-intensive goods. If the carbon price increases in the EU but not in other countries, European companies will lose domestic and foreign market shares and production could simply

be relocated to other countries. This would be counterproductive in terms of both climate protection and economic development in Europe.

A carbon border adjustment (CBA) mechanism has been proposed as a way of preventing this leakage effect. In principle, a CBA could be applied symmetrically to imports and exports. Its logic is similar to that of border adjustment in the case of indirect taxes such as value added tax and excise taxes. Goods imported to the EU would pay a charge which reflects their 'carbon content' – that is the CO₂ emissions generated by their production (the charge being calculated so that the overall price on these CO₂ emissions is the same as the EU carbon price). Symmetrically, goods exported to other countries would get a rebate reflecting the difference between the carbon price paid for their production in Europe and the carbon price in the destination market. A symmetric CBA would level the playing field between producers facing different carbon prices in the countries where their production is located¹.

If a CBA was indeed symmetric, it would by itself generate little revenue – in fact its revenue could even be negative if the carbon content of exported products was higher than that of imports². A CBA applied to both imports and exports would also imply that the EU would not be able to effectively steer the carbon content of domestic economic activity. This is because carbon pricing with full and symmetric border adjustment implies that the carbon price effectively applies to domestic consumption but not domestic production. Production in the EU could remain highly carbon-intensive as long as the produced goods are exported. Whether this would be perceived as compatible with climate protection objectives is doubtful.

In fact, the EU intends to introduce a CBA which is restricted to imposing a levy on carbon-intensive imports³. This has consequences for leakage and competitiveness issues. The competitive disadvantages of EU production relative to production outside the EU would be neutralised for sales in EU markets, but not in markets outside the EU. Nevertheless, a properly designed CBA restricted to imports could make a significant contribution to reducing carbon leakage (Box 2).

Box 2: The design of a carbon border adjustment mechanism

Setting up CBA raises a number of questions about the design of the import levy. Policymakers need to decide which goods are covered, which emissions will be taken into account, how the CBA levy is calculated, whether carbon pricing in the countries of origin should be recognised and, last but not least, how it can be designed comply with WTO rules⁴.

A pragmatic approach would be to restrict the CBA to the sectors with the greatest leakage risk. In a pilot phase it could start, for instance, with only steel, chemicals and cement. Taking into account carbon prices and the carbon content of production in origin countries would be appropriate, given the objective of preventing leakage, but raises technical difficulties, unless these countries themselves rely on an ETS or an explicit carbon tax.

¹ See, for instance, Krenek *et al* (2019), p. 10.

² There is an impact of CBA on ETS revenues that needs to be taken into account.

³ See European Commission (2020).

⁴ See Horn and Sapir (2019), and Droege and Fischer (2020).

It would also be necessary to avoid conflicts with WTO principles. There are many ways to achieve this, which differ in terms of their administrative complexity and the incentives they create for foreign producers and governments to reduce CO₂ emissions¹. At a more general level, WTO compatibility requires that a CBA does not discriminate against foreign producers relative to domestic producers. This suggests that free emissions allowances for domestic companies in sectors with a high risk of carbon leakage would have to be phased out if a CBA is introduced.

Some commentators hope that a CBA would raise significant revenue, and that taxes would be paid by foreign producers rather than European consumers. This is in part an illusion. Revenues will depend on a number of factors (the coverage of the CBA, the extent to which carbon pricing in the origin countries is taken into account, the way in which the carbon content of products is calculated, how carbon intensity of foreign production develops over time and of course how the EU carbon price develops). The range of possible outcomes in terms of revenue is broad. Krenek *et al* (2019), who used a simulation model and considered CBA scenarios with broad coverage, found that, for 2023, revenue raised could be between €36 billion and €83 billion². These are very large numbers. For instance, in 2018, customs duties on all products imported to the EU amounted to €25 billion. Whether the trading partners would accept new import duties of this magnitude is questionable. A realistic CBA system would probably collect significantly less revenue³.

Finally, the fact that revenues from a CBA would be paid by importers does not mean that the burden of taxation would fall on foreign producers exclusively. Domestic consumers would face higher prices on imported final goods and, indirectly, on domestic final goods with a high content of carbon-rich imports. These higher prices would be the channel through which information on the carbon content of imported goods would reach the European consumer, and because of which consumers would tilt their consumption baskets in favour of less carbon-intensive domestic goods.

Overall, we do not primarily regard a carbon border adjustment mechanism as a direct source of revenue, but rather as a device intended to limit competitive distortions in a world in which countries do not move at the same speed towards decarbonisation. The primary objective in fighting global emissions is that the largest possible number of countries should strive to decarbonise their economies, in which case the CBA would raise no revenue whatsoever.

A CBA would however have major indirect revenue effects, through its impact on the ETS. From 2013 to 2020, only 46 percent of ETS allowances were sold or auctioned; the rest were allocated for free⁴. For 2021 to 2030, the goal is to increase the share of auctioned allowances to 57 percent, still far from complete coverage. Free allocations are essentially destined for carbon-intensive sectors facing international competition. In

¹ For a detailed discussion see Droege and Fischer (2020), p. 32-33.

² See Krenek *et al* (2019), p. 19. These numbers refer to a scenario group which plausibly assumes that carbon intensity continues to decline over time.

³ The numbers in Krenek *et al* (2019) are based on the assumption of broad coverage and a carbon price of €69. It is more likely that, at least in the short to medium term, coverage will be more limited, and the EU carbon price may take more time before it reaches €69.

⁴ Source: European Environmental Agency, <https://www.eea.europa.eu/data-and-maps/dashboards/emissions-trading-viewer-1>.

the presence of a CBA, they could be further reduced or possibly even abolished. As a result more revenue would be raised from the ETS.

6. Digital taxation

The European Council conclusions of July 2020 mentioned the possibility of an own resource based on a digital levy. In recent years the implications of digitisation for taxation have attracted great attention in the international tax policy debate. The view is widespread that current principles for allocating taxing rights are not suitable for companies with digital business models, and that as a consequence these companies do not pay taxes where they should and as they should. There is also growing evidence suggesting that existing international tax rules allow multinational companies to avoid taxes¹. This gives them a competitive advantage over national firms and brings into question the fairness of the overall tax system.

This applies in particular to corporate income taxation. Companies pay corporate income tax in the countries where they are legally resident or have a physical presence. Digital business models allow firms to operate in foreign countries without a physical presence and without legal residence.

Current rules about the international distribution of taxing rights do not foresee that firms pay corporate income taxes in countries where they sell their products. Income taxes are paid primarily in the countries in which corporations reside and where they develop and produce their products and services. According to these rules, it is appropriate that United States digital companies that develop and produce their services in the US do not pay corporate income taxes in Europe. In the same way, European automotive companies that export cars to the US should pay corporate income taxes primarily in Europe, not in the US.

The matter is being discussed at global and EU levels. The tax challenges of the digital economy are being addressed within the framework of the Organisation for Economic Co-operation and Development's base erosion and profit shifting (BEPS) action programme. The aim is to agree on new principles for the allocation of taxing rights: a country in which digital companies operate without significant physical presence (a market jurisdiction) would be granted taxing rights on the basis of a formula determining that a share of the profits of multinational firms are to be taxed in the market countries where the company sells its products. Digital companies would not be subject to specific taxation, but the new international architecture would be designed in such a way that part of the corresponding tax base would be reallocated to the jurisdictions where users of digital services are located (OECD Pillar I proposal).

At EU level, the matter is being addressed within the framework of long-standing discussions on the Common Consolidated Corporate Tax Base (CCCTB). The European Commission tabled in 2011, and relaunched in 2016, a proposal for a Common Consolidated Corporate Tax Base that would redefine the tax base for multinational companies operating in the EU. In 2018, the Commission proposed a reform of international

¹ See Beer *et al* (2020), Tørsløv *et al* (2020) and Fuest *et al* (2020).

corporate tax rules, which would introduce the concept of 'digital presence', so that companies with digital business models would be liable to corporate income taxation even in countries where they operate without a physical presence. But since such a reform requires international coordination and would only be feasible in the medium term, the European Commission also proposed as an interim solution the introduction of a tax on the revenue from the provision of certain digital services¹.

This digital services tax would define a set of services provided through the internet and would require companies above a certain size to pay a 3 percent tax on revenues from delivering these services. In the Commission proposal there would be no deductibility of costs, so that this is a tax on turnover, not on corporate income. A possible alternative also considered would be a tax on net income (after deducting a series of costs incurred in the market jurisdiction). Some EU countries have already introduced, or have announced that they intend to introduce, digital services taxes.

Given the complexity of the issue and differences of views that remain, discussions at OECD level will certainly require additional time before an agreement can be reached. In the meantime, the EU could still move ahead with its digital service tax. To provide a significant and lasting contribution to EU own resources, such a tax would however have to meet a number of challenges:

- The aim of discussions held at the OECD is to reach agreement on a structural response that would redefine the allocation of taxing rights to national jurisdictions. Many EU member states are adamant that a structural solution of this sort should be put in place and the EU itself has been consistently supportive. But such a solution would allocate revenues to individual member states and deprive the EU of a new own resource;
- The Commission proposal for a Common Consolidated Corporate Tax Base that would redefine the tax base for multinational companies operating in the EU does not envision allocating taxing rights to the EU, but rather to redefine them for member states;
- For these reasons, a digital services tax could only serve as a temporary fix for an interim period. Moreover, its unilateral introduction would be contentious, especially with the US, as it would be seen (and actually is seen) as targeting US digital giants. The US government has already announced that it would respond with tariffs on EU exports to the US;
- Finally, revenues would be limited. The Commission estimated in 2018 that a 3 percent tax on the gross turnover of companies with total revenues above €750 million and EU revenues above €50 million would yield €5 billion annually². The actual resource flow could be significantly lower, if the tax is levied on net turnover or if other amendments are introduced to accommodate US concerns. In

¹ See European Commission (2018b).

² See https://ec.europa.eu/commission/presscorner/detail/en/MEMO_18_2141.

its factsheet of May 2020, the Commission actually lowered its estimate to €1.3 billion annually¹.

Given this, while we see the potential role of the digital services tax initiative in the context of the complex international discussions on a new allocation of taxing rights, and while in view of the single market, we certainly regard a European digital services tax as preferable to a collection of national digital services taxes, we doubt it could provide a structural response to the tax optimisation problem. We think that for the reform of the EU own resources system, the focus should be on other instruments.

7. Other resources

Several other revenue sources have been mentioned as potential candidates for new own resources. In addition to the ETS, a carbon border adjustment mechanism and a digital levy, the July European Council conclusions mentioned the possibility of a financial transactions tax and confirmed a charge on non-recycled plastic.²

Irrespective of the ongoing discussion on the potential merits and drawbacks of a financial transactions tax from the point of views of efficiency and fairness, the following should be borne in mind when assessing the suitability of the FTT as an EU own resources:

- The European Council explicitly mentions the FTT as a potential resource not for the next MFF but for the subsequent one;
- Proposals for an FTT are supported only by a minority of member states, at least at this stage. An enhanced cooperation procedure was initiated in 2013 by 11 member states. The latest proposal, on the initiative of Germany, is supported by 10 member states in total. A variable-geometry approach would not be suitable for financing the EU budget, unless countries that do not introduce the FTT make other contributions to the EU budget as compensation. In addition to being complex, this solution would require the negotiation of an *ad-hoc* agreement;
- According to the Scientific Council of the German Ministry of Finance, expected revenue would be around €3.5 billion annually³. This would be a comparatively small contribution to the financing of the recovery plan. Estimates of the revenue from an FTT are furthermore highly uncertain, since market structure and the volume of transactions can evolve significantly in response to taxation;
- One could argue that the FTT would be particularly suited as a basis for own resources because financial transactions related to activities in the EU as a whole are concentrated in leading financial hubs including Luxemburg, Paris and Frankfurt. However, one should bear in mind in this context that regional specialization is a general feature of the European internal market. This fact alone

¹ See https://ec.europa.eu/info/sites/info/files/factsheet_3_en.pdf.

² Strictly speaking it is a charge member states would pay from their national budgets

³ See Wissenschaftlicher Beirat beim BMF (2020).

is not sufficient as an argument that revenues should not be ascribed to the country where they are collected.

However, if EU member states were to introduce an FTT at European level for use as an EU own resource, it would certainly be preferable to a multitude of national and un-coordinated FTTs, primarily because national FTTs may distort financial transactions within the EU.

The tax on non-recycled plastic, meanwhile, will be payable as of the start of 2021. In the light of the criteria discussed in section 3, this tax is not particularly suitable as an own resource. To start with, the revenue can easily be (and actually is) ascribed to the member state where it is collected. Moreover, the main purpose of the tax is to reduce plastic litter, which is primarily a local environmental issue.

The European Commission fact sheet of May also mentions a levy “*on operations of companies that draw huge benefits from the EU single market*” and mentions revenue of €10 billion annually. Although this would be significant, we regard this levy as a rather uncertain temporary substitute for the common consolidated taxation of corporate profits, and doubt it could be a stable resource for the EU finances.

Finally, the introduction of a Common Consolidated Corporate Tax Base is primarily a project to reduce compliance costs for businesses operating across borders. Currently they have to deal with 27 different national tax systems, which is a burden in particular for small and medium-sized firms. In principle these benefits are independent of the use of this tax as a base for an own resource. In some ways, ascribing the revenue to the member states would be easier under a CCCTB than it is now, because the CCCTB would use formula apportionment rather than separate accounting, which is arguably more vulnerable to tax planning. In any case, using corporate taxes as a basis for own resources would require agreement on a common tax base. Past attempts to achieve this have not been successful; progress will take time. Moreover, in the area of corporate taxation, an additional and more fundamental consideration is that the flexibility to react to current developments, such as changes in international tax competition or economic crises and booms, is important. The question is whether this flexibility is compatible with the principle of unanimity in EU-level decision-making in taxation. Given this, corporate taxes could be a future candidate for own resources, but only after reforming the institutional framework and creating more room for decision making by majority.

8. An ETS-based own resource: implementation issues

The conclusion from the previous analysis is that revenue from the ETS is not the only, but by far the most promising candidate for new EU own resource and for financing the recovery plan. The potential introduction of an ETS-based own resource however raises two related issues:

- How the potential revenue stream would compare to the debt repayment stream resulting from the legacy of the Next Generation EU recovery plan;

- How the transition from a member-state resource to an EU own resource should be managed.

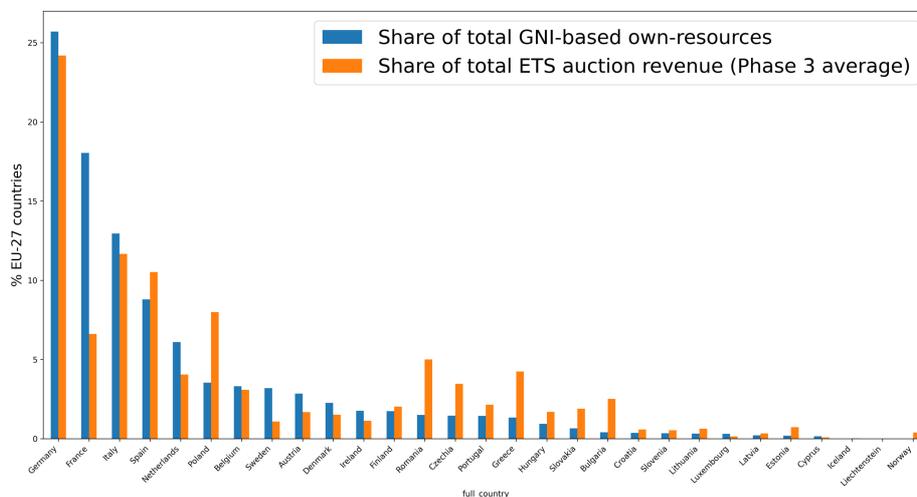
On the basis of the July 2020 European Council conclusions, the EU is expected to borrow up to €390 billion (in 2018 prices) from 2021 to 2026 and to pay down the corresponding debt by 2058 at the latest. Given that, at the time of writing, the euro yield curve for AAA-rated bond is entirely in negative territory, interest costs can be ignored in a first approximation at least. The simulation presented in section 4 indicates that expected revenues from ETS auctions from 2021 to 2050 period would represent an amount commensurate, and possibly in significant excess of the future debt repayments. In particular, scenario 3, which we regard as realistic, would lead to a cumulated €789 billion revenue stream over the next 30 years.

In 2018 the European Commission proposed to use 20 percent of current ETS revenues as an EU own resource. Under the current practice of allocating more than 40 percent of the ETS allowances for free, the revenue raised would be small – the European Commission (2018a) estimated that between €1.2 billion and €3 billion annually would be raised for the EU budget, which is very little. Even if the share of free allocations was reduced significantly, the effect on the overall composition of own resources would be small. But these are conservative estimates. Moreover, as we have explained, there are no convincing reasons why ETS allowance ownership and, as a consequence, auction revenues should be allocated to member states as they currently are. This suggests that the greatest part of the revenues could be used to fund the EU budget.

Transforming auction revenues into an EU resource and reducing GNI contributions accordingly would however entail significant reallocation from carbon-intensive to less carbon-intensive member states (Figure 2). There are sound justifications for such a reallocation: if the distribution of emission allowances across member states is kept constant, the rise in the ETS carbon price would result in major gains for some member states: for example, under the realistic scenario (scenario 3), ETS auction revenues for 2030 would amount to 0.51 percent of GNI for Bulgaria and 0.35 percent in Slovakia.

Anyhow, redistributing existing rights would be opposed by some member states, so at minimum, a transition period would be necessary. Offsetting excessive short-term redistributive effects could furthermore require side payments, possibly through rebates or other compensation measures. But we see no reason why the EU should depart from the principle that revenue from ETS auctions has the character of a genuine own resource.

Figure 2: Comparative distribution of GNI contributions and ETS revenues



Source: Own calculations based on European Commission data.

A way to avoid an abrupt shift in revenue from member states to the EU would be to transfer to the EU the whole proceeds from the auctioning of emission allowances, and to redirect annually to member states notional auctioned emissions revenues, computed as their share of 2019 auctioned emissions multiplied by the annual EU linear reduction factor and corrected for the impact of the MSR. These notional auctions would be valued at a price capped at the level of the 2019 ETS carbon price. This would preserve countries' initial revenues while making room for a gradual increase in the revenue accruing to the EU. Such a formula would amount to a recognition that countries are entitled to a grandfathering right and should not be deprived of it. In addition, side payments from and to member states could be introduced to correct for any undesirable distributional effects from the swapping of the GNI-based resource for ETS revenue.

In practical terms therefore, proceeds from ETS auctions would become a new EU resource. Compensatory mechanisms would be introduced to ensure a gradual transition and address distributional concerns.

As EU budget expenditures would remain unchanged while GNI contributions would be swapped for ETS revenues, our proposal would be budgetarily neutral. Currently, member states must devote at least 50 percent of ETS revenues to energy and climate-related objectives¹. This commitment could easily be translated into pluriannual targets for specific climate-related spending, which would be financed by member states out of the diminution of the GNI contributions.

Simulations suggest that in a realistic scenario, ETS revenues could be sufficient to repay the Next Generation EU debt, finance the gradual phasing-out of national ETS

¹ See EU Directive 2003/87/EC.

auction revenues, and contribute to the financing of the EU budgetary expenditures, or to the financing of offsetting transfers to certain member states (Box 3 and Figure 3).

Box 3: A proposal for phasing out national ETS revenues

Over the next decades and especially with the prospect of rapidly increasing prices, the ETS has the potential to generate large revenues. The reallocation of these revenues from member states to the EU’s own resources would have to take place progressively. We argue that this ‘phasing-out’ could be engineered simply by capping the amount that member states receive for each auctioned allowance at the current carbon price of €25. All additional revenue, resulting from increases in the number of auctioned allowances compared to 2018, or from the increase of prices above €25, would constitute an EU own resource.

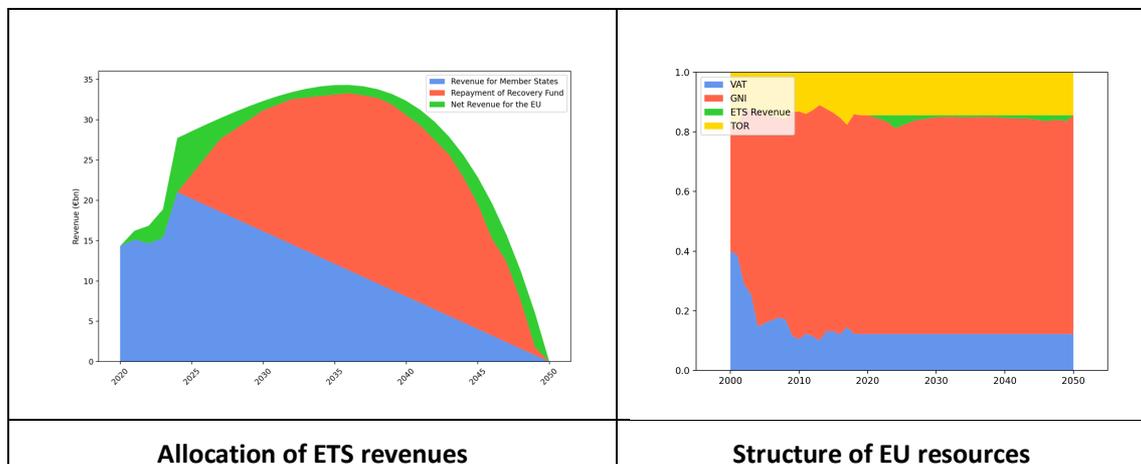
Given the overall trend of decreasing allowances (in order to achieve the 2050 carbon neutrality objectives), this would amount to a reduction in the revenues received by member states from the ETS. The reduction in national revenues would be compensated for by cutting the amount of GNI-based own contributions to the EU budget. Possibly, direct offsetting transfers would be added to limit the distributional effects arising from the member states’ unequal revenues from ETS auctions.

Note that the initial increase in revenues for member states results from the expected intervention of the MSR in order to reduce the amount of allowances in circulation. As a result, the number of auctioned allowances will likely increase in the next few years, despite a tightening of the overall cap.

In addition, the excess revenue would enable the complete repayment of the €390 billion that the EU is expected to borrow between 2021 and 2026. The total €789 billion generated by the ETS under scenario 3 could be used as follows:

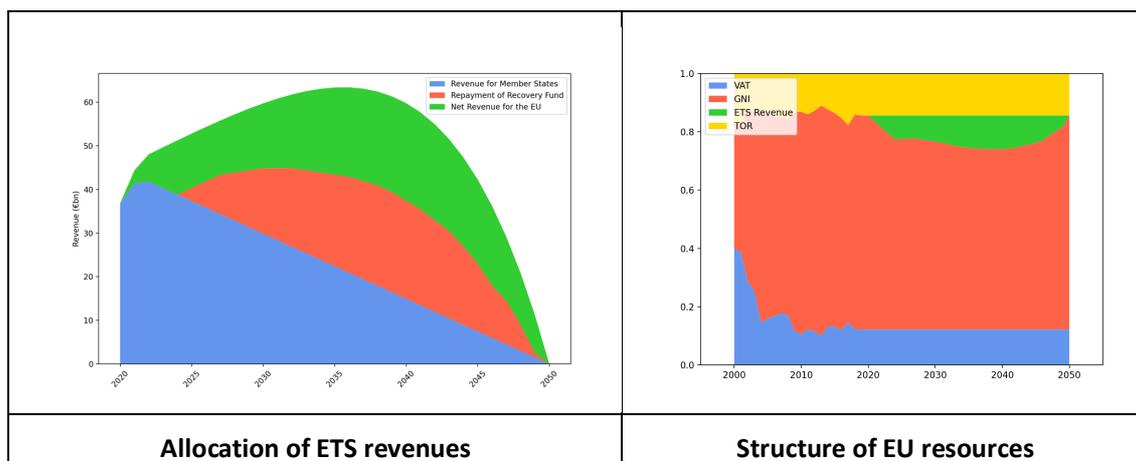
- €329 billion would accrue to member states as grandfather rights;
- €390 billion would be allocated to the repayment of the Next Generation EU debt;
- A remaining €70 billion would finance EU budgetary expenditures, enabling a corresponding reduction in member states’ GNI-based contributions, or could be used to offset transfers to certain member states.

Figure 3: Possible allocation of ETS revenues and structure of EU resources under scenario 3



In a scenario in which 80 percent of allowances would be auctioned off and half of the transport and agriculture sectors would be covered by the ETS, the net revenue to the EU would be more significant and would, at least temporarily, result in a change in the structure of the financing of the EU budget (Figure 4). We do not consider a case in which the EU would miss its decarbonisation objectives and would continue auctioning off allowances beyond 2050, but in this case, obviously, corresponding resources would have a more lasting character.

Figure 4: Possible allocation of ETS revenues and structure of EU resources under scenario 5



9. Conclusions

At its July 2020 meeting, the European Council took the unprecedented decision to launch a new and ambitious recovery programme. This decision, taken in response to what the heads of state and government rightly regarded as a major threat to the future of the EU, has the character of a game-changer. Pre-existing discussions about the financing of the EU budget must be reassessed in the light of this bold move. This applies in particular to the old discussion on EU own resources.

Our conclusion, after having examined the potential candidates for new EU own resources, is that only a swapping of GNI contributions for ETS revenues would match the spirit and magnitude of the decision taken in July. Other options may have merits and can be considered, but only the revenue from the ETS has both the economic characteristics of a genuine EU own resource and the potential to deliver quantitatively meaningful sums. Allocating it to the financing of the budget would be a strong signal of the EU commitment to climate neutrality. Moreover, maintaining the status quo while accelerating the pace of decarbonisation would give rise to unjustifiable rents. The time to decide is now.

The distributional issues raised by our solution are significant, but solvable. We have offered one solution, but other options are possible. Under realistic assumptions, ETS revenues in the EU are set to increase significantly before they ultimately decline and dwindle. The corresponding revenue stream will most likely be sufficient to pay back the Next Generation EU debt, finance grandfather rights, and leave sufficient amounts for offsetting transfers to member states unfavourably affected by the swap. The EU has solved harder problems. It can tackle this one.

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