Green and fair taxation in the EU

Green EU tax systems tend to also be more progressive

Tax systems across the EU are, overall, neither green enough nor fair enough. But Member States (MSs) with greener tax systems – where polluters pay for a bigger share of the costs of their environmental damage – also tend to have more progressive tax systems and lower inequality. There is substantial scope for progressive environmental tax reform in many MSs, with opportunities in Central and Eastern (CE) MSs in particular, to shift taxes away from lower-income labour towards both the environment and higher-income earners. However, only a few MSs have included environmental tax reforms in their National Recovery and Resilience Plans (NRRPs), and those that have done so are among those with the greenest and fairest tax systems already. The European Semester process should put more emphasis on green and fair tax reform in all MSs to underpin a just transition to a carbon neutral and more equal EU.

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Introduction

EU tax systems are, overall, neither green enough nor fair enough. Tax expenditures account for the majority of fossil fuel subsidies in the EU, amounting to some €35bn per year,[1] while EU polluters, on average, are required to pay via taxation or other instruments for just 44% of the climate change and air pollution costs of their greenhouse gas emissions.[2] Eliminating fossil fuel subsidies and greening tax systems to make polluters pay are identified by the European Commission as key to achieving the objectives of the European Green Deal.[3]

Meanwhile inequality has significantly worsened across the EU in recent decades,[4] driven in part by long-run changes in tax systems, including steady reductions in average top rate personal income taxes and corporation taxes across the EU.[5] These trends clearly undermine efforts to achieve SDG 10 on reducing inequality within the EU, the "shared prosperity" ambition of the European Pillar of Social Rights[6] and the social resilience objectives of the Recovery and Resilience Facility.[7]

However, beyond these EU averages there is significant variation in the extent to which MSs use fiscal measures to fight pollution and inequality. In this paper we draw on the MS-level results of our recent IEEP *et al.* study on the extent to which environmental costs are internalised in taxation and other economic instruments[8] to show that green and progressive tax measures tend to go hand-in-hand. This is instructive given that one of the key barriers often cited to greening tax systems is the potentially regressive social impact of such measures.[9]

These internalisation rates reflect the revenues generated by each MS from taxes or other economic instruments that address different types of environmental damage, as a share of the estimated costs of that damage. The higher the internalisation rate, the greater the extent to which polluters in that country pay for their environmental damage. In this paper we draw specifically on the internalisation rates for the costs of climate change and air pollution from the emission of greenhouse gases (GHGs) and other air pollutants,[10] which is the area of environmental damage assessed in our study with both the highest damage costs and highest internalisation rates across the MSs.[11]

We first assess the extent to which MS tax systems[12] with higher internalisation rates of the costs of climate change and air pollution may be associated with lower GHG emissions. Secondly, we assess the relationship between these internalisation rates and the level of inequality in each MS. We then compare the level of internalisation in each MS against their respective rates for a range of taxes associated with reducing inequality. Finally, we summarise the results of an initial review of the environmental tax reform provisions in the NRRPs drawn up by MSs to access Next Generation EU funds.

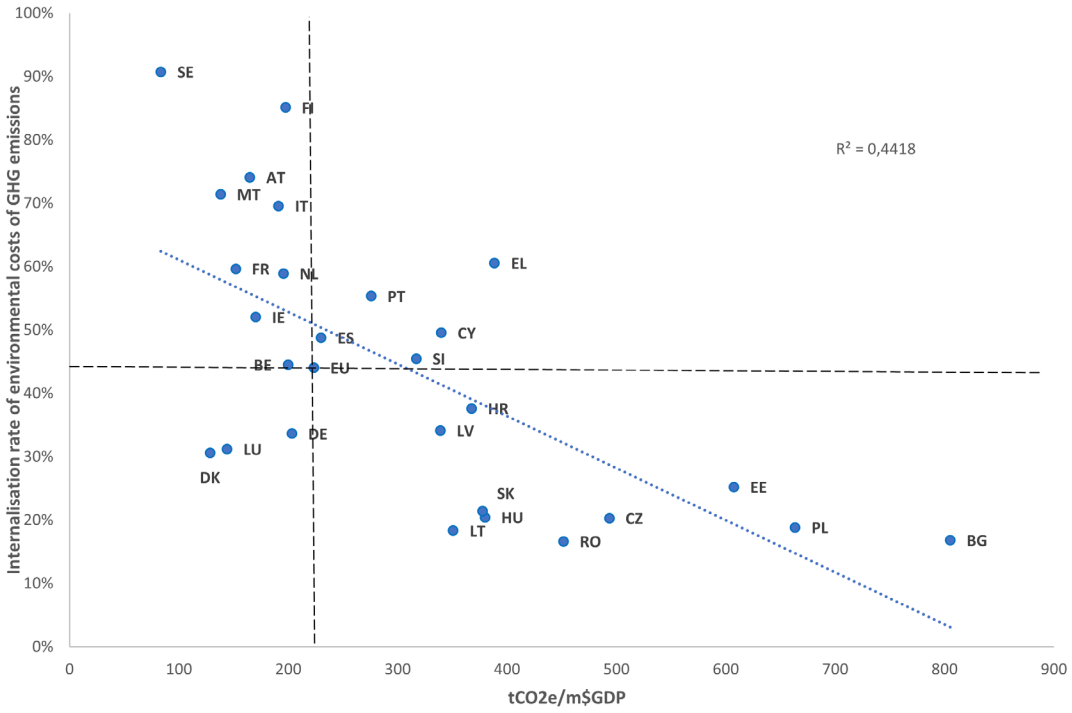
Do EU Member States with greener tax systems have better environmental outcomes?

Before considering their relationship with other types of taxation, it is instructive to consider whether greener tax systems may be associated with environmental benefits. As shown in Figure 1, we find a clearly negative relationship, and a medium level of explained variance, between the extent to which the costs of climate change and air pollution are internalised in MS tax systems and the GHG emissions intensity of MS economies.[13]

Evidently such correlation does not imply causation and many other factors can be identified as important in reducing emissions intensity, as is widely discussed in the policy literature.[14] For example, a MS's natural endowments for renewable energy or use of non-pricing regulatory measures like energy performance standards may also be identified as key drivers of lower GHG emissions (perhaps MSs with green taxes are simply more likely to have such measures too).

Nonetheless, the relationship seems consistent with studies which find environmental benefits from EU carbon pricing.[15] In addition to the wider policy mix, the variation among MSs may also reflect different behaviour change in response to price, as well as the extent to which pricing revenues are invested in support of emissions reduction efforts. Indeed, when applied in contexts of low price elasticity of demand, the use of revenues is often argued to be the most important factor in determining the environmental benefit of carbon pricing.[16]

Figure 1: Internalisation rate of costs of climate change and air pollution in taxation (2017) and GHG emissions intensity of GDP (2018) in EU Member States



[17] carbon intensity data from WRI CAIT.[18]

Are EU Member States with greener tax systems more equal?

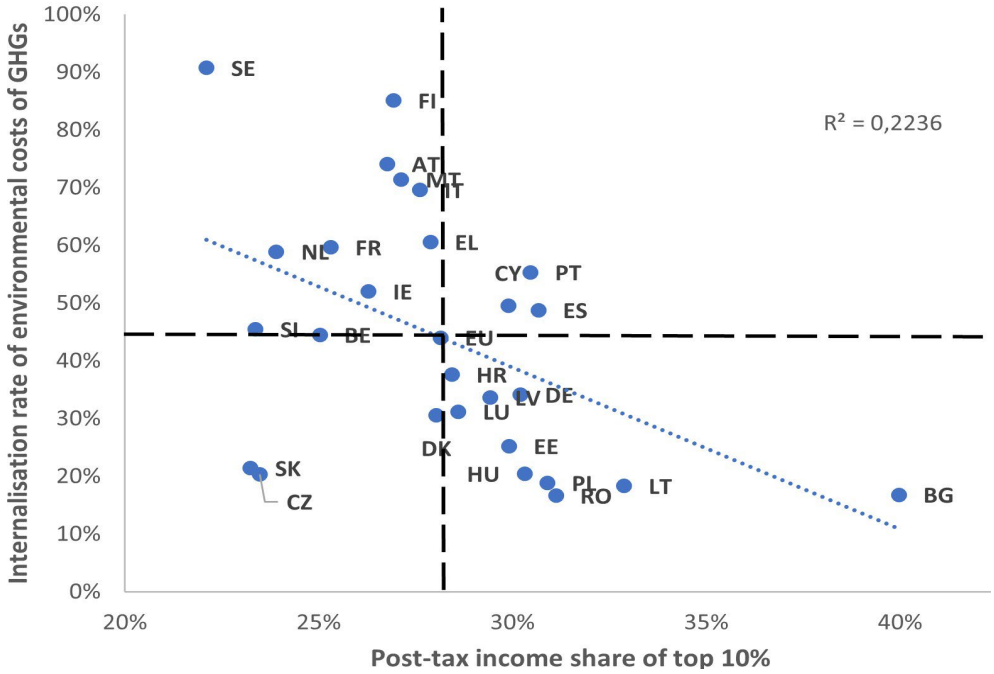
Next we consider whether higher internalisation rates of climate change and air pollution costs tend to be introduced in more equal countries, using the share of post-tax income for the top 10% and bottom 50% of the income distribution within EU MSs as useful indicators of relative levels of income inequality.[19]

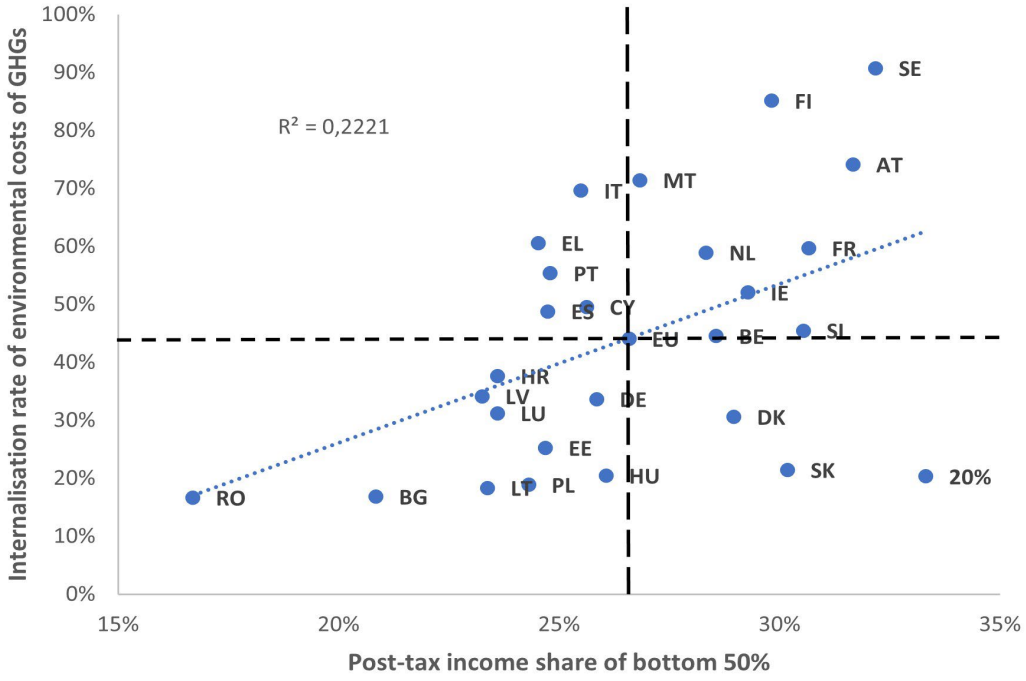
Figures 2 and 3 suggest that MSs with relatively higher internalisation rates tend to have relatively lower income shares for the richest 10% of households and relatively higher income shares for the poorest 50%, and vice versa. This seems consistent with studies that suggest carbon pricing has less regressive impacts – and therefore may have higher social and political acceptability – in more equal countries.[20]

Czechia and Slovakia appear as particular outliers, with very low internalisation rates but also far lower inequality than several other Central and Eastern (CE) MSs such as Bulgaria, Romania and Poland, although it is notable that inequality even in these two countries has increased

dramatically in the last 30 years.[21] While there is significant variation, a clear stylised relationship can be identified in which relatively more equal MSs tend to require polluters to pay for a greater share of the costs of their GHGs.

Figure 2 and 3: Internalisation rate of costs of climate change and air pollution in taxation (2017) and share of post-tax income of top 10% (upper) and bottom 50% (lower) of income distribution in EU MSs (2019)





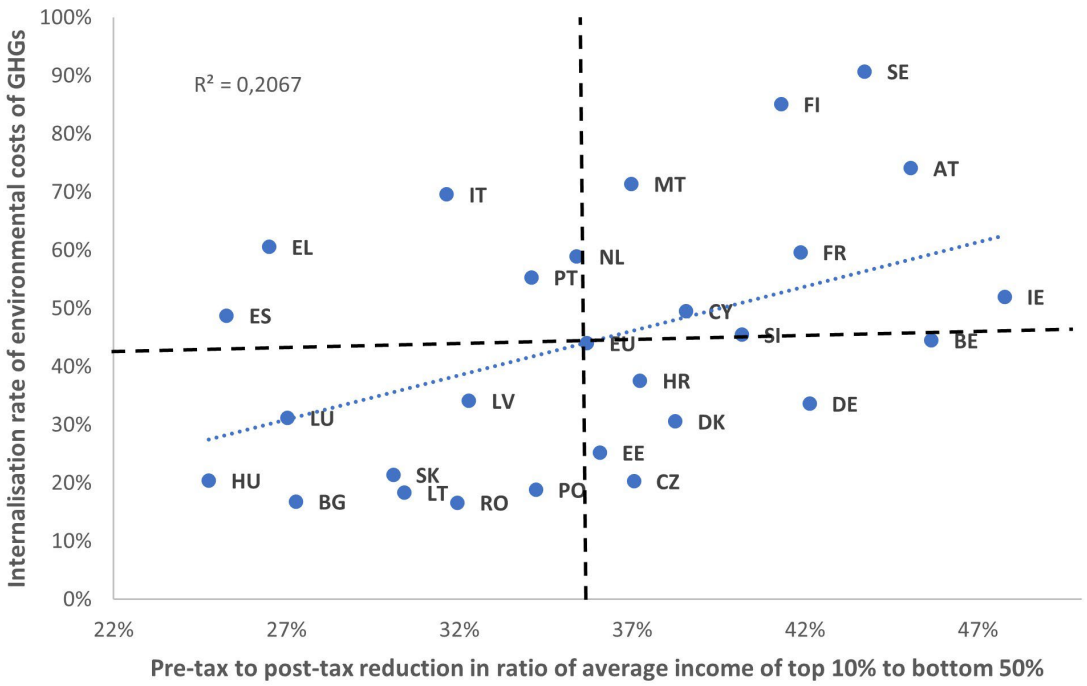
Source: Internationalisation rates data from IEEP et al.;[22] income inequality data from WID.[23]

Do EU Member States with greener tax systems also have fairer tax systems?

Given the relationships identified above, it should follow that countries with higher rates of internalisation of the costs of climate change and air pollution are more likely to have more progressive tax systems that help to reduce inequality (even though fiscal redistribution is certainly not the only – or even necessarily the most significant – driver of income inequality.[24])

Following Blanchet *et al.*,[25] we use the reduction in the pre-tax to post-tax ratio of top 10% to bottom 50% average incomes as an overall indicator of the progressiveness of each MS's tax system. As shown in Figure 4, there is a clear positive relationship between the extent to which MS's internalise environmental costs of GHGs in taxation and other economic instruments and the extent to which their tax system redistributes income.

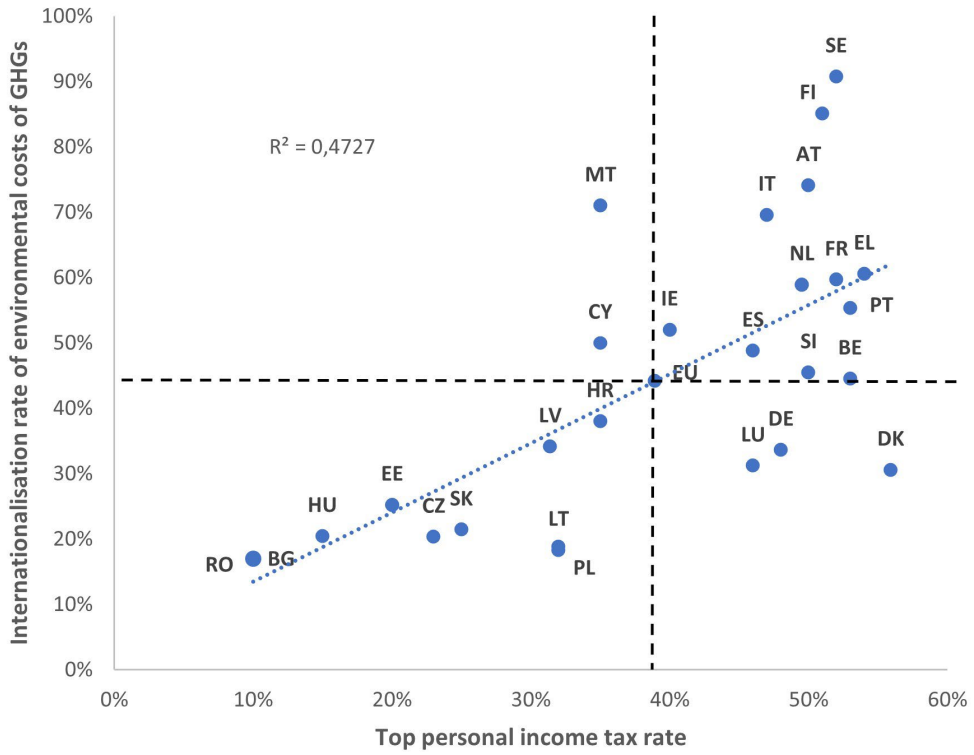
Figure 4: Internalisation rate of costs of climate change and air pollution in taxation (2017) and pre-tax to post-tax reduction of ratio of top 10% to bottom 50% average incomes (2019) in EU MSs



Source: Internationalisation rates data from IEEP et al.[26]; income inequality data from WID.[27]

Turning to specific tax rates associated with redistributive effects, Figure 4 shows that there is a clearly positive relationship, and a medium degree of explained variance, between the extent to which polluters pay for their climate and air pollution damages through taxation and the top personal income tax rate in EU MSs. This is significant given that the top rate of personal income tax has been identified as one of the key determinants of the level of top-end inequality in a range of countries,[28] suggesting that green tax reform may be associated with progressive fiscal efforts targeting high-income earners in particular.

Figure 5: Internalisation rate of costs of climate change and air pollution in taxation (2017) and top personal income tax rate (2021) in EU MSs



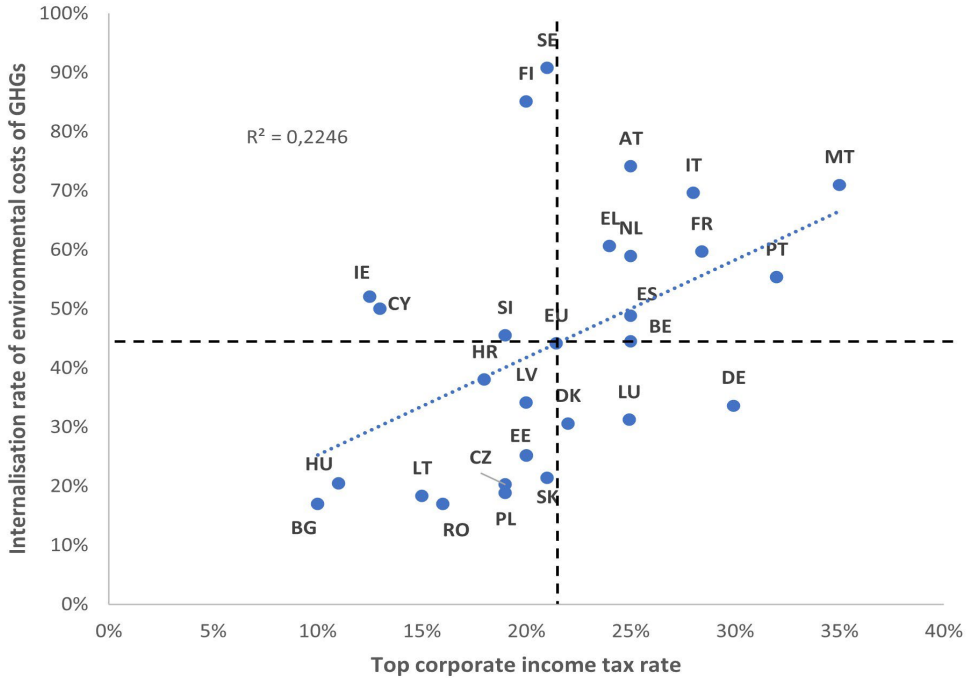
Source: Internationalisation rates data from IEEP et al.[29]; personal income tax rates from EC[30].

A similar relationship, albeit with a lower degree of explained variance, is shown in Figure 6 between the internalisation rates of climate change and air pollution costs in taxation and the level of corporation tax. Conversely, Figure 7 shows that there is a negative relationship between the level of polluter pays taxation and the labour tax wedge on lower-income earners. In other words, this suggests that MSs with higher internalisation rates of climate change and air pollution costs tend to have lower labour taxation on lower-income earners.[31]

While the degree of explained variance is low, it is nonetheless notable that a group of predominantly CEE MSs can be identified (see red circle) that have some of the lowest levels of internalisation of climate and air pollution costs across the EU as well as some of the highest levels of labour taxation on low-income earners. As can be seen in Figures 5-6, these same MSs – among those where inequality has risen most in recent decades[32] – also tend to have some of the lowest levels of taxation on top end incomes and on corporations.[33]

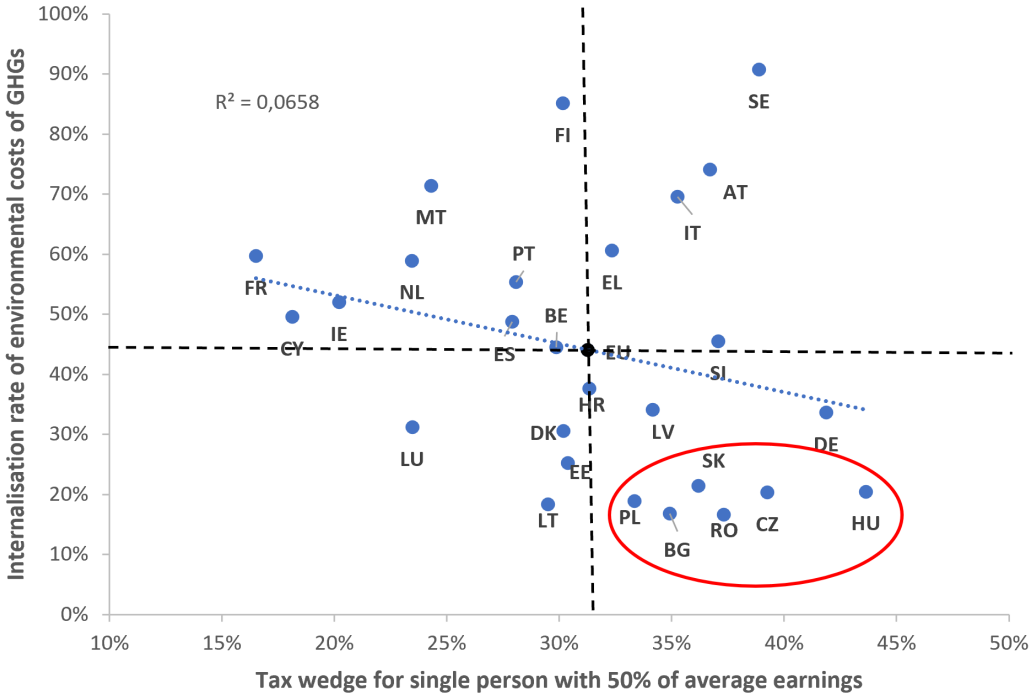
This suggests clear potential in these MSs, in particular, to shift the burden of taxation away from low-income earners towards the environment and towards top-earners and corporations, with the promise of double dividends in terms of GHG emissions mitigation and reducing inequality. Box 1 discusses the Swedish experience in introducing and increasing a national carbon tax alongside progressive labour tax cuts, aspects of which could serve as an example to such MSs, and by contrast Box 2 discusses the French experience in attempting to increase a carbon tax in the context of a regressive wealth tax cut.

Figure 6: Internalisation rate of costs of climate change and air pollution in taxation (2017) and top corporation income tax rate (2021) in EU MSs



Source: Internationalisation rates data from IEEP et al.;[34] corporation tax rates from EC[35].

Figure 7: Internalisation rate of costs of climate change and air pollution in taxation (2017) and tax wedge for a single person with 50% of average earnings (2020) in EU MSs

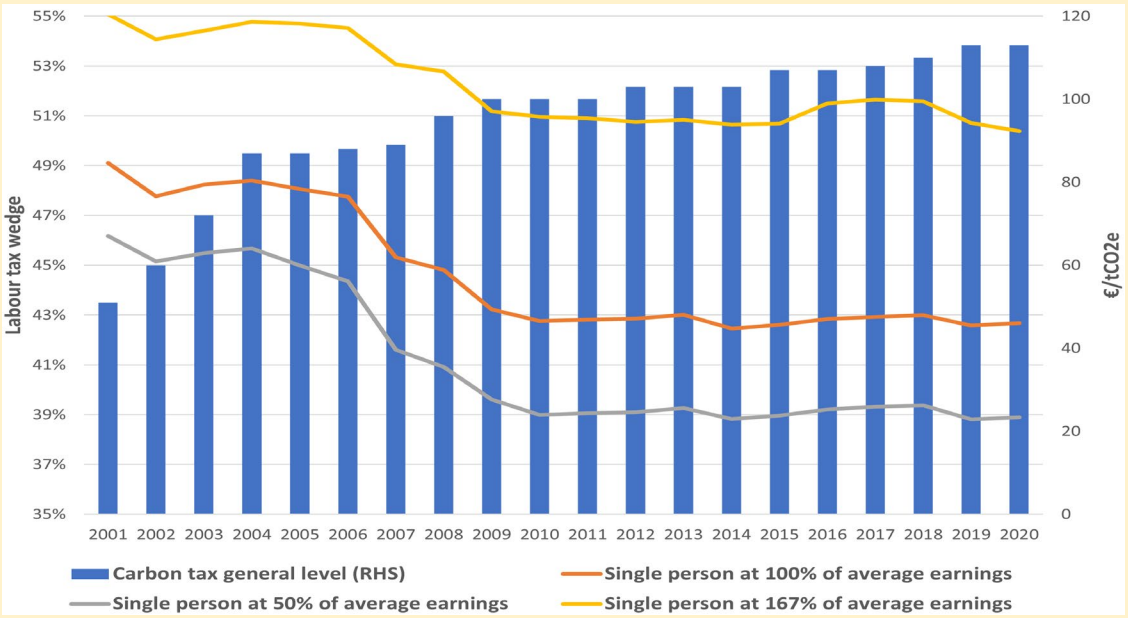


Source: Internationalisation rates data from IEEP et al.;[36] tax wedge data from EC.[37]

Box 1: Sweden's progressive environmental tax reform

In Sweden, a national carbon tax on heating and transport fuels was initially introduced in 1991 as part of a comprehensive environmental tax reform, alongside the introduction of VAT on energy bills, a reduction in energy taxation and – notably – a substantial reduction in labour taxes (from marginal tax rates previously in excess of 60 per cent).[38] As shown in Figure 8, the carbon tax rate was then significantly increased from the early 2000s – from 43€/tCO2e to over 110€/tCO2e – alongside further significant reductions in labour taxes, with the deepest reductions apparent for lower- and medium-income earners relative to higher earners.

Figure 8: Swedish national carbon tax and labour tax wedges for lower-, medium- and higher-income earners (2001-2020)



Source: Carbon tax data from government of Sweden;[39] tax wedge data from EC.[40]

While the labour tax reductions appear to benefit lower-income earners the most, it should be noted that the wider tax reforms in this period also included reductions to corporation tax (alongside increases in and a gradual broadening of the base for the corporate carbon tax) and to capital taxes, including the abolition of the wealth and inheritance taxes, which call into question the overall progressive impact of the reforms.[41]

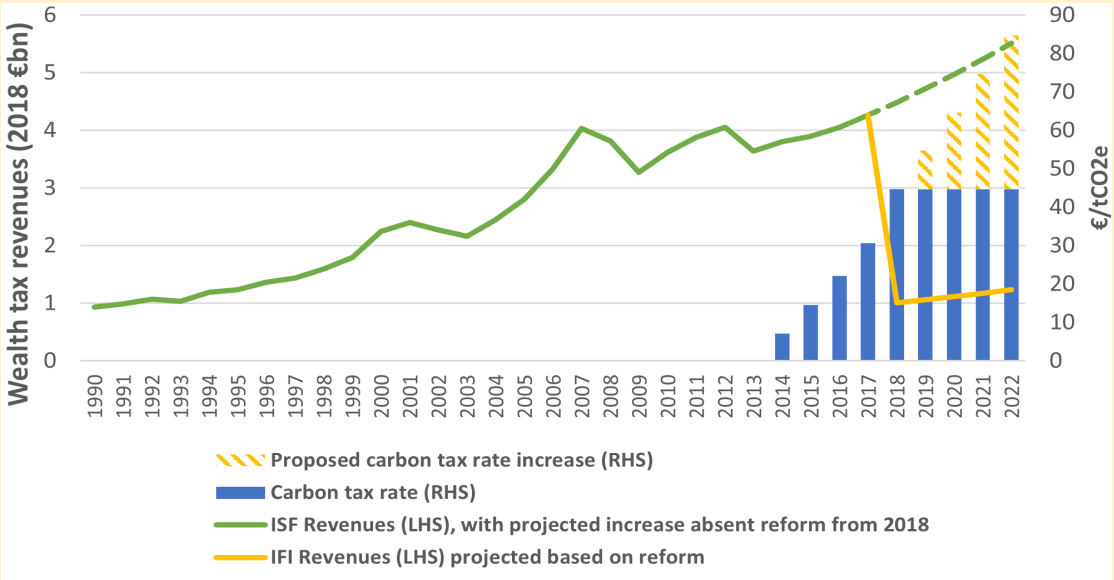
The carbon tax has been credited with contributing to a dramatic reduction in GHG emissions in the heating sector in particular – fossil heating use dropping by 85% since 1990.[42] Alongside the wider tax reforms, other factors that have been identified as critical to both the environmental effectiveness and social acceptability of the carbon tax include government investments in alternative technologies to facilitate behaviour change, such as in district heating systems and temporary subsidies for conversions to renewable heating systems.[43]

Box 2: France's failed carbon tax reform

Whereas the Swedish carbon tax increases were accompanied by significant reductions in labour taxation, in particular benefiting lower earners, the proposed 2018 reform of the French carbon tax – which triggered the 'gilets jaunes' protests – was accompanied, inter alia, by a significant reform to French wealth taxation (replacing the ISF with the IFI wealth tax) which was projected to overwhelmingly benefit the wealthiest citizens.

Figure 9 shows the substantial drop in government revenues from wealth taxation projected by Thomas Piketty in 2018 to be the result of the reform[44] – falling from around €5bn to around €1bn per year – alongside the proposed approximate increase in the carbon tax through to 2022. The overall impact of the wide package of proposed policy reforms was shown by the Institut des Politique Publiques to entail disposable income losses for the poorest 20% of the French income distribution of up to 1% (and for pensioners of up to nearly 4%), compared to income gains of some 18% for the richest 0.1%.[45] Among the government's changes to the proposed reforms in response to the 'gilets jaunes' protests, the carbon tax was frozen, while the wealth tax reform remained.

Figure 9: French carbon tax rate 2014-18 and proposed increase from 2018 (€/tCO2), and revenues from French ISF wealth tax 1990-2018 and projected 2018-22 in absence of reform and from French IFI wealth tax with reform (2018 €bn)



Source: ISF and IFI revenue data and projections from Piketty, T.;[46] carbon tax data from Agora Energiewende.[47]

Have EU Member States included environmental tax reforms in their National Recovery and Resilience Plans?

Finally we summarise the results of a preliminary, rapid review of the environmental tax reform provisions in the MSs' NRRPs drawn up in 2021 to access Next Generation EU funds, as well as previous recommendations and remarks from the European Commission in the Country Specific Recommendations and Environmental Implementation Report under the European Semester process.

NRRPs were assessed using a simple traffic-light system to reflect whether and with what level of detail the plans include environmental tax reform measures. This is significant given that one lesson from the recovery packages which followed the 2008-09 financial crisis was that the greening effect of recovery funding was limited due to a lack of structural reforms.[48]

As shown in Figure 10, just five MSs - Austria, Cyprus, Finland, Spain and Sweden – have included green tax reforms in their NRRP while also giving detailed information on the specific measures planned. A further 9 MSs – Belgium, Denmark, Ireland, Italy, Lithuania, Poland, Portugal, Romania and Slovakia – refer to green tax measures, but with little or no detail on specific policies. The rest, meanwhile, have no mention of environmental taxation at all.

Figure 10: Analysis of environmental tax reform measures in National Recovery and Resilience Plans of EU MSs

Austria		Denmark		Croatia		Latvia		Sweden	
Belgium		Estonia		Hungary		Malta		Slovenia	
Bulgaria		Greece		Ireland		Nether-lands[49]		Slovakia	
Cyprus		Spain		Italy		Poland			
Czechia		Finland		Lithuania		Portugal			
Germany		France		Luxembourg		Romania			

	Measures for green tax reforms are included
	Measures for green tax reforms are included but are lacking details
	Measures for a green tax reform are not included

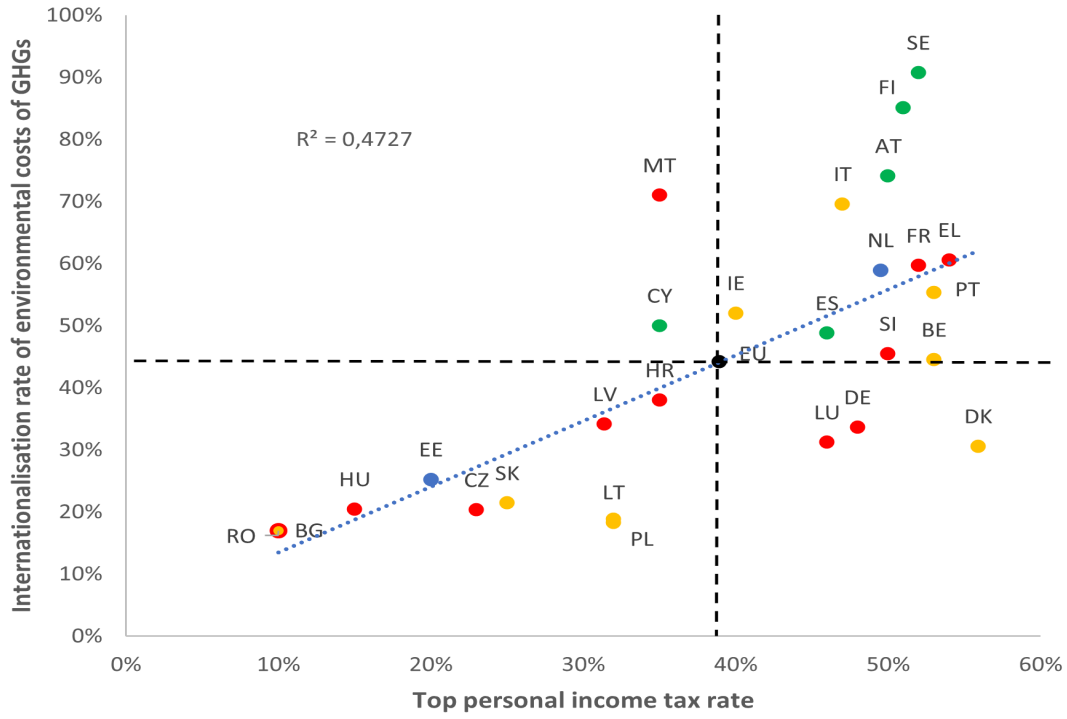
It is notable that almost all MSs that mention environmental taxes in their RRP, include planned tax reforms in the transport sector. Specifically, Austria, Belgium, Cyprus, Denmark, Spain, Finland, Italy, Lithuania, Romania, and Sweden plan reforms to taxation on cars and vehicles to support sustainable mobility. Other mentions refer to improving energy efficiency and expanding renewable energy deployment. There are few examples of taxes targeted at other forms of pollution or resource use, with the notable exception of Cyprus whose plan refers to taxes on

landfill and levies on water usage. Further information on green taxes and reforms in each MS NRRP can be found in the Annex of this report.

As shown in Figure 11, it is also striking that the few MSs that do include detailed plans for environmental tax reform are among those who already have the greenest and fairest tax systems in the EU, based on the correlation between internalisation rates for costs associated with GHG emissions and the top income tax rate discussed above. Austria's plan, notably, includes an "eco-socio" tax reform agenda, describing how green and fair tax reforms can complement one another to enhance inclusive, lower carbon growth.

But while a few of the MSs among those with the least green and fair tax systems by this measure – such as Lithuania, Poland and Romania – do at least mention energy tax reforms, there is little detail given. And significantly, despite its commitment to environmental fiscal reform, the European Commission did not include strong guidance for MSs in this area in its feedback to the NRRPs. Overall, then, the NRRPs appear as a major missed opportunity for the kind of progressive tax shift from low-income labour to the environment and higher income earners identified above.

Figure 11: Internalisation rate of costs of climate change and air pollution in taxation (%, 2017) and top personal income tax rate (%, 2021) in EU MSs*



Source: Internationalisation rates data from IEEP et al.[50]; personal income tax rates from EC[51].
*Red dots refer to MSs without any mention of environmental tax reform in their NRRP; orange dots to MSs whose NRRP mentions environmental tax reform, but with little detail; and green dots to MSs whose NRRP includes detailed provisions for environmental tax reforms.

Conclusion

While tax systems across the EU are, overall, neither green enough nor fair enough, there is significant variation in this regard between MSs. Building on the MS-level results of our recent IEEP *et al.* study on the extent to which the costs of climate change and air pollution are internalised in taxation and other economic instruments, some stylised conclusions can be drawn that suggest efforts to strengthen green taxation and the polluter pays principle are best pursued in the context of wider progressive tax reform.

Firstly, we find that MSs with higher internalisation rates of the costs of climate change and air pollution associated with greenhouse gas emissions tend to have less GHG-intensive economies. More significantly, we find that higher green taxes and other polluter pays instruments tend to be introduced in countries that are more equal and that have more progressive tax systems, notably including higher top income tax rates, as well as higher corporation tax rates and lower labour taxes on low-income earners.

We identify a group of predominantly CEE MSs that have some of the lowest internalisation rates, but also simultaneously some of the highest labour taxes on low-income earners, and lowest taxes on high earners and corporations. This suggests clear potential for shifting the burden of taxation in these MSs in particular – where inequality has grown rapidly in recent decades - from low-income labour towards the environment and high-income earners, that could yield a double dividend for the fights against both climate change and inequality.

However, despite this potential, we find that far too few MSs currently include environmental tax reform in their NRRPs. The proposed revision of the Energy Taxation Directive provides an ideal opportunity to trigger this kind of wider tax reform.[52] But it will be vital that the European Commission uses the European Semester process to more methodically address the need for wider progressive environmental tax reform across the EU, to underpin a just transition to climate neutrality and a more equal European society.[53]

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[3] European Commission (2019) Communication from the Commission to the European Parliament, the European Council, the Council, the EESC and the COR: The European Green Deal. EC: Belgium https://eur-lex.europa.eu/resource.html?uri=cellar:b828d165-1c22-11ea-8c1f-01aa75ed71a1.0002.02/DOC_1&format=PDF See p.17: *"Well-designed tax reforms can boost economic growth and resilience to climate shocks and help contribute to a fairer society and to a just transition. They play a direct role by sending the right price signals and providing the right incentives for sustainable behaviour by producers, users and consumers. At national level, the European Green Deal will create the context for broad-based tax reforms, removing subsidies for fossil fuels, shifting the tax burden from labour to pollution, and taking into account social considerations."*

[4] Blanchet, T., Chancel, L. and Gethin, A. (2019) How unequal is Europe? Evidence from distributional national accounts 1980-2017. World Inequality Lab: France https://wid.world/document/bcg2019-full-paper/

[5] For example, the average top personal income tax rate across the EU27 was 47.3% in 1995 and 38.8% in 2021, and the average top corporate income tax rate was 35.3% in 1995 and 21.4% in 2021. See European Commission (2021a) Taxation trends in the EU. EU: Luxembourg https://op.europa.eu/o/opportal-service/download-handler?identifier=d5b94e4e-d4f1-11eb-895a-01aa75ed71a1&format=pdf&language=en&productionSystem=cellar&part= and European Commission (2010) Taxation trends in the EU. EU: Luxembourg https://ec.europa.eu/eurostat/documents/3217494/5718201/KS-DU-10-001-EN.PDF.pdf/bd63fe10-7339-491f-afcb-08bd4c8daa8b

[6] European Commission (2021b) The European Pillar of Social Rights Action Plan. https://op.europa.eu/webpub/empl/european-pillar-of-social-rights/en/#A2 Note also the indicators related to income inequality and the impact of social transfers in the revised Social Scorecard https://ec.europa.eu/eurostat/web/european-pillar-of-social-rights/indicators/social-scoreboard-indicators

[7] European Commission (2021c) Communication from the Commission to the European Parliament , the European Council, the Council, the EESC and the COR: Annual Sustainable Growth Strategy 2021. EU: Luxembourg https://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX%3A52020DC0575

[8] Mottershead *et al. op. cit.* Hereafter, tax measures is used to refer to both taxes and other economic instruments (such as emissions trading schemes, charges, levies and so on.)

[9] Vona, F. (2021) Managing the distributional effects of environmental and climate policies: The narrow path for a triple dividend. OECD: France https://one.oecd.org/document/ENV/WKP(2021)20/en/pdf

[10] Hereafter we simply refer to costs of GHGs as short hand for GHGs and other air pollutants.

[11] Taxes on energy and the EU Emissions Trading Scheme constitute the vast majority of the revenues of the polluter pays economic instruments assessed in the study. Other instruments include pesticide taxes, landfill levies or water extraction charges, for example.

[12] In this paper we use the term tax system to refer to the use by MSs of both taxes and other economic instruments (such as emissions trading schemes, charges, levies and so on.).

13 We also ran sensitivity checks using per capita GHG emissions in MSs instead of carbon intensity, and found a similarly negative, though much weaker, correlation.

[14] See for example European Commission (2020) Communication from the Commission to the European Parliament , the European Council, the Council, the EESC and the COR: Stepping up Europe's 2030 climate ambition. EU : Luxembourg https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020DC0562; Braungardt, S. et al. (2021) Carbon pricing and complementary policies: Consistency of the policy mix for decarbonising buildings in Germany. Energies : v14 https://mdpi-res.com/d_attachment/energies/energies-14-07143/article_deploy/energies-14-07143.pdf

[15] See eg Bayer, P. and Aklin, M. (2020) The European Union emissions trading scheme reduced CO2 emissions despite low prices. PNAS: 117. https://www.pnas.org/content/117/16/8804; Andersson, J. (2019) Carbon taxes and CO2 emissions: Sweden as a case study. American Economic Journal: Economic Policy Vol. 11 https://www.aeaweb.org/articles?id=10.1257/pol.20170144

[16] Thomas, S. et al. (2021) Pricing is just the icing: The role of carbon pricing in a comprehensive policy framework to to decarbonise the EU buildings sector. Regulatory Assistance Project https://www.raponline.org/wp-content/uploads/2021/06/rap-ETS-alternatives-carbon-pricing-report.pdf; Chancel, L. and Ilse, S. (2014) Environmental taxes and equity concerns: A European perspective. Background paper prepared for the Spring Alliance conference 'Go Green, Be Social' https://www.socialplatform.org/wp-content/uploads/2014/01/environmental-taxes-and-equity-concerns_final.pdf

[17] Mottershead *et al. op. cit.*

[18] See https://www.climatewatchdata.org/ghg-emissions

[19] The income shares of the top 10% versus bottom 50% of the income distribution has advantages over other indicators of inequality such as the Gini coefficient, notably in terms of better capturing top-end income inequality. See Blanchet, T. et al *op cit.* We ran a sensitivity check using the Gini coefficient and found similar correlations.

20 Andersson, J. (2021) Carbon tax regressivity and income inequality. Stockholm School of Economics Policy Briefs https://www.hhs.se/en/about-us/news/site-publications/publications/2021/carbon-tax-regressivity-and-income-inequality/. Some studies argue that the level of inequality is a critical contextual factor in determining the social and political feasibility of environmental and climate policies in general. Vona, F. op cit.; Banzhaf, H. S. et al (2019) Environmental justice: Establishing causal relationships. Annual Review of Resource Economics. Vol. 11. https://www.annualreviews.org/doi/full/10.1146/annurev-resource-100518-094131#article-denial

[21] Blanchet *et al. op. cit.*

[22] Mottershead *et al. op. cit.*

[23] See https://wid.world/

[24] Pre-distributive factors such as labour market governance and access to essential services may be (far) more significant. See eg Bozio, A. et al (2018) Predistribution vs. Redistribution : Evidence from France and the US. World Inequality Lab – Working Paper No. 2020/22 https://wid.world/document/predistribution-vs-redistribution-evidence-from-france-and-the-u-s/

[25] Blanchet et al. op. cit.

[26] Mottershead *et al. op. cit.*
[27] See https://wid.world/
[28] Dabla-Norris, E. et al. (2015) Causes and consequences of income inequality: A global perspective. International Monetary Fund: USA https://www.imf.org/external/pubs/ft/sdn/2015/sdn1513.pdf
[29] Mottershead *et al. op. cit.*
[30] European Commission (2021a) *op. cit.*
[31] We also tested the relationship between internalisation rates and capital tax rates, for which simple indicators are harder to define, and found a similarly positive though weak correlation as with top rate income and corporate tax rates.
[32] Blanchet *et al. op. cit.*
[33] Blanchet *et al.* find that on average taxes and transfers reduce the income gap between rich and poor citizens about two times less in Eastern European countries than in Western European countries, with Southern and Northern European countries in-between. Blanchet *et al. op. cit.* pp44-45.
[34] Mottershead *et al. op. cit.*
[35] European Commission (2021a) *op. cit.*
[36] Mottershead *et al. op. cit.*
[37] European Commission DG Taxud https://europa.eu/economy_finance/db_indicators/tab/#
[38] Ministry of Finance of Sweden (2021) Carbon Taxation in Sweden. https://www.government.se/48e407/contentassets/419eb2cafa93423c891c09cb9914801b/210111-carbon-tax-sweden---general-info.pdf
[39] Personal correspondence with Ministry of Finance of Sweden.
[40] European Commission DG Taxud https://europa.eu/economy_finance/db_indicators/tab/#
[41] As evidenced by increasing inequality in Sweden during this period, albeit from a much lower starting point relative to other EU MSs. See Blanchet *et al. op. cit.* It should also be noted that in general labour tax cuts – even those directed in particular at lower income earners – have little benefit for the very lowest income groups, who may be outside of the labour market or earning below the minimum threshold for income tax.
[42] Ministry of Finance of Sweden *op. cit.*
[43] *Ibid.*
[44] Piketty, T. (2018) Yellow vests and tax justice. Le Blog de Thomas Piketty. Le Monde. https://www.lemonde.fr/blog/piketty/2018/12/11/yellow-vests-and-tax-justice/
[45] Gagnebin, M., Graichen, P. and Lenk, T. (2019) The French CO2 pricing policy: Learning from the Yellow Vests protests. Agora Energiewende : Germany https://static.agora-energiewende.de/fileadmin/Projekte/2018/CO2-Steuer_FR-DE_Paper/Agora-Energiewende_Paper_CO2_Steuer_EN.pdf
[46] Piketty *op. cit.*
[47] Gagnebin *et al. op. cit*
[48] Molho, N. (2021) Delivering a sustainable, durable and inclusive recovery for Europe. Think2030 policy paper. https://think2030.eu/wp-content/uploads/2021/02/Delivering-a-sustainable-durable-and-inclusive-recovery-for-Europe-WEB.pdf
[49] Not available at time of assessments.
[50] Mottershead *et al. op. cit.*
[51] European Commission (2021a) *op. cit.*
52 See Gore, T. (2021) The revision of the Energy Taxation Directive could underpin a fair and green tax reform in Europe. Heinrich Boell Foundation https://eu.boell.org/en/2021/09/13/revision-energy-taxation-

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[53] See also Charveriat, C. and Bodin, E. (2020) The role of a reformed European Semester within a new sustainable economy strategy. IEEP https://ieep.eu/publications/role-of-a-reformed-european-semester-within-a-new-sustainable-economy-strategy ; Charveriat, C. (2020) European Semester Spring Package: Towards green shoots of sustainability? IEEP https://ieep.eu/news/european-semester-spring-package-towards-green-shoots-of-sustainability