An egalitarian carbon tax: revenue-neutral and dual policy package

By Fausto Corvino

Why a carbon tax?

People normally pay the private cost of CO2, but not the social cost. The private cost is given by the price of each unit of CO2, usually measured in tonnes, which in turn is the result of a series of market contingencies: the costs of extracting, processing, and selling fossil fuels, taking also into consideration the interplay between supply and demand. The social cost of CO2, instead, is obtained by summing the private cost of CO2 to the climate damage it is expected to cause (Cho 2021, Wagner et al. 2021). The climate change we are experiencing now is nothing more than the result of the negative CO2 externalities of the past.

If we set aside the complex ethical question of responsibility for past emissions (Meyer & Sanklecha 2017), a simple solution to this market inefficiency is to get people to internalise the social cost of the CO2 they emit, through a carbon tax. This is not only because it is ethically sound (e.g., in virtue of the polluter pays principle) , but also because it is the most effective (and non-coercive) way to make people reduce their emissions to a level that we can consider as economically efficient (Metcalf 2019: 35-71; Rabe 2018: 1-12) – keeping into consideration both the marginal benefits of CO2 emissions and the resulting climate damage.

Which carbon tax?

The carbon tax is usually seen as part of a broader fiscal policy, consisting of both taxation and revenue spending. Regarding the taxation part, there are basically two different approaches. A first approach consists in setting the market price of CO2 on its social cost (SCC). Economists usually calculate SCC through complex mathematical models that take into account future climate change based on the amount of GHGs expected to be in the atmosphere, the effects that certain marginal changes in average temperature will have on the planet, socio-economic data, and the discount rate of future utility (see Nordhaus 2017; Fleurbaey et al. 2019).

SCC is not only a useful fiscal yardstick but also a more general and fundamental parameter of economic policy. It indicates how rational it is to invest in climate mitigation today by deducting avoided climate damage from investment costs. So, for example, the medium-term cost of an economic project that requires N dollars and produces an emission reduction of X tonnes of CO2, should be calculated by subtracting X*SCC from N. The assessment of SCC is both a technical question (what data to include in the models) and an ethical-political one (what discount rate to apply to future utility), so it is not surprising that there are different numbers attributed to SCC. The task force set up by US President Obama, for example, quantified the SCC upwards in 2013 at $51 (measured in 2020 dollars) per tonne of CO2. His successor, Trump, reduced SCC to as low as $1, effectively excluding global damages from the total cost of CO2 emitted in the US and more than doubling the discount rate of future utility. Newly-elected Biden then requested a re-calculation, and his advisers provisionally reset the SCC to $51, reserving a year to study the issue further (Samuel 2021).

The second approach is to set the carbon tax rate not in relation to the SCC but to a specific mitigation target (Kaufman et al. 2020). Suppose, for example, that a country wants to reduce its emissions by half by 2030. The national carbon budget for the climate target is calculated and a carbon tax rate is set to achieve this target. Obviously, an automatic adjustment mechanism will have to be introduced to keep the tax rate steady on the basis of intermediate climate results achieved or missed (Metcalf 2019: 111). This type of approach shifts some of the moral and economic responsibility for past emissions onto the present generation. If the mitigation target is an ambitious one (e.g., it is in line with the Paris Agreement's goal of limiting global warming to 2/1.5 °C, compared to pre-industrial levels) and the SCC is considered to be around $50 (as postulated by the Obama administration), a SCC-based carbon tax will be lower than a target-based carbon tax (see Stern and Stiglitz 2021).

It can be discussed at length whether the carbon tax is regressive or not, i.e., whether it hits the poor more than the rich or vice versa (Andersson 2021 ; Carattini et al. 2019; Metcalf 2019: 91-98). But the fact remains that it is a tax that raises the price of a range of goods and services that everyone needs, from electricity and heating that we use in our homes, to transport, especially on wheels. As such, it obviously meets with social resistance, especially from the poorer classes. As I said before, however, this is only part of the story. Because the carbon tax generates revenues and it is how the revenues are spent that determines whether and how regressive or progressive the tax reform of which the carbon tax is a part is (there is no room here to discuss the magnitude, but suffice it to mention that according to Gilbert Metcalf a carbon tax of $50 per tonne of CO2 would produce a fiscal revenue of $200 billion in the first year alone, see Metcalf 2019: 87).

There are two major ways of investing carbon tax revenues (Marron & Morris 2016; Marten & van Dender 2019; Fried et al. 2020). One is to give revenue back to the people, either through reductions in other taxes or simply through rebates (which can be more or less equal). This is the revenue-neutral carbon tax (RN-CT): the government obtains climate mitigation without increasing its budget. Another method, instead, consists in using revenues to expand government spending, i.e., by earmarking revenues for new projects (either climate or non-climate related) or for reducing public debt. This is a revenue-positive carbon tax (RP-CT).

A RP-CT tends to be regressive, and it also reinforces inequality. The new jobs and the new sectors (climate, AI,

technology, and so on) that could be financed through the carbon revenues require on average a high know-how; therefore, what you take away from the poorest in terms of lost jobs and higher bills, you cannot give back to them through new jobs and new opportunities (at least, not in the short term, before reconverting the poorest part of the workforce). On the contrary, a RN-CT, if designed in the right way, can become an egalitarian policy that not only tries to solve the climate issue but also corrects macroeconomic distortions that are independent of the environment.

An egalitarian use of carbon revenues

There are two main possible ways of devising a RN-CT - and by combining these two methods in different ways, different policy packages can be obtained. One way is to give people equal rebates. By doing so, you obtain a fiscal policy that is slightly egalitarian (Metcalf 2019: 95-98; Cecco 2018). The poorest will probably get back a bit more than they paid through the carbon tax. Those in the middle will see their situation almost unchanged. The richer will receive back a bit less than they were taxed. This is in substance a fiscal reform that seeks to maintain the status quo quite unaltered – except for some redistribution from the top towards the bottom. And also, the fact the everyone is entitled to carbon revenues conveys the message that the carbon tax will not be too intrusive in pre-tax social arrangements – it will seek, as far as possible, not to allocate net costs to anyone. Alternatively, you may want to earmark revenues for certain social groups, thus altering existing power equilibria: e.g., you could distribute the revenues between the poor and middle classes, either through tax credits or even direct transfers (see Paoli and van der Ploeg 2021).[1] This policy would be progressive, but it would involve two problems: where very distortionary taxes are in place (e.g. a high tax wedge, as we will see later), this policy would mobilise a lot of money but would not correct the problems of economic inefficiency (although it would stimulate consumer demand); it would meet with strong political opposition from the wealthiest, and it would therefore be difficult, if not impossible, to get approved.

Arguably, a progressive and leftist carbon tax should be revenue-neutral through a dual policy package: first, it should use some revenues to offset price increases for the poor and middle classes; second, it should use the remaining part of revenues to lower taxes on labour income (both employed and self-employed income) for those below a middle-income threshold. I will briefly examine three reasons why such a revenue-neutral and dual-package carbon tax (RN-DP-CT) could (and should) become central in the political agenda of the European Left – even though much of what I will suggest can reasonably hold also with respect to other countries.

The first reason is simply that the tax wage on labour in the euro area is one of the highest in the world: in some countries, like Belgium, Italy, Austria, France and Germany, the net pay of the employee is over 45 percent lower than the cost of her/his labour for the employer (OECD 2021). The high cost of human labour creates several problems for the working class. Entrepreneurs have all the interest in accelerating investments in automation, faster than any society committed to a sustainable technological transition can stand; and imbalances of market power allow employers to shift the burden of the tax wedge onto workers, by reducing wages. High taxes on self-employment income, in turn, force low- and medium-income self-employed workers in a race to the bottom on the costs of their services (this leads to a reduction in their income and obviously creates strong incentives to evade taxes).

By lowering labour costs (for low- and middle-income earners), a RN-DP-CT is more egalitarian than any RP-CT, because it creates new opportunities for all workers, not simply those who could be easily employed in the mid- and high-tech sectors, and at the same time it shields the unemployed from price increases – the unemployed do not get better off, as the employed, but they neither suffer a net loss. Conversely, a RN-CT that simply gives rebates to the middle and poor classes would benefit both employed and unemployed equally, but it would not be as supportive of economic growth as the RN-DP-CT - which, it should be recalled, can benefit the unemployed indirectly, by enlarging employment opportunities.

The second advantage of a RN-DP-CT is that it will redistribute wealth from capital towards labour in a way that is supposed to be welcomed by the Left: i.e., by taxing more capital that yields income without a proportional increase in labour demand, rather than capital that creates new job opportunities. If, for example, you earn income exclusively in the form of rents, by managing your real estate, or through financial activities, the RN-DP-CT will make you a net-loser.[2] If you are a worker, instead, the cost of your labour will go down, so there will be more (and perhaps even better paid) job opportunities: what you lose with the carbon tax, you get back again through your job contract, in the form of tax cuts.

Therefore, if you are a worker, the RN-DP-CT can make you better off in two ways. First, if you are a low/middle-income worker, your energy consumption is likely low enough to allow you to obtain net benefits from the carbon tax reform. Second, if you also start ethically spending your income, shifting to green products and green energy sources, you are likely to increase even further your net income in the medium term. This is both because you will reduce the impact of the carbon tax on your consumption and because the price of green goods could be reasonably expected to fall over time.

The third argument in support of a RN-DP-CT is that we live in extremely unequal societies. World billionaires now control the same amount of wealth as has been spent by all G20 governments in response to the Covid-19 pandemic, roughly 11.95 trillion dollars (Oxfam 2021: 23). At the same

time, the richest 1 percent is responsible for 15 percent of global emissions from 1990 to 2015 (and the richest 10 percent is responsible for 52 percent of global emissions, see Oxfam 2020: 3). I see no moral reason why a carbon tax reform should not aim, among other things, to take wealth away from the richest.

References

Andersson, Julius. 2021. "Carbon Tax Regressivity and Income Inequality", *FREE Network – Policy Brief*, May, 17. https://freepolicybriefs.org/wp-content/uploads/2021/05/freepolicybriefs20210517.pdf

Carattini, Stefano, Steffen Kallbekken & Anton Orlov. 2019. "How to win public support for a global carbon tax". *Nature* 565: 289-291. https://doi.org/10.1038/d41586-019-00124-x

Cecco, Leyland. 2018. "How to make a carbon tax popular? Give the proceeds to the people " *The Guardian*, December 4, 2018. https://www.theguardian.com/world/2018/dec/04/how-to-make-a-carbon-tax-popular-give-the-profits-to-the-people

Cho, Renee. 2021. "Social Cost of Carbon: What Is It, and Why Do We Need to Calculate It?". *State of the Planet - Columbia Climate School*, April 1, 2021. https://news.climate.columbia.edu/2021/04/01/social-cost-of-carbon/

European Commission. (2020). "Tax Wedge On Labour: Shifting Tax Burden From Labour To Other Forms Of Taxation". *Ref. Ares(2020) 580200* - 30/01/20. https://www.consilium.europa.eu/media/42557/eg-thematic-discussion-on-growth-and-jobs-tax-wedge-on-labour.pdf

Fleurbaey, Marc, Maddalena Ferranna, Mark Budolfson, Francis Dennig, Kian Mintz-Woo, Robert Socolow, Dean Spears, Stéphane Zuber. "The Social Cost of Carbon: Valuing Inequality, Risk, and Population for Climate Policy". 2019. *The Monist* 102, no. 1: 84–109. https://doi.org/10.1093/monist/ony023

Fried, Stephie, Kevin Novan, & William B. Peterman. 2021. "Recycling Carbon Tax Revenue to Maximize Welfare". *Finance and Economics Discussion Series 2021-023*. Washington: Board of Governors of the Federal Reserve System. https://doi.org/10.17016/FEDS.2021.023.

Fried, Stephie, Kevin Novany, William B. Peterman. 2020. "How Should Carbon Tax Revenue be Recycled?". Federal Reserve Bank of San Francisco – Working Paper. https://www.frbsf.org/economic-research/files/carbon-tax-revenue-be-recycled-fried-novan-peterman.pdf

Kaufman, Noah, Alexander R. Barron, Wojciech Krawczyk, Peter Marsters & Haewon McJeon. 2020. "A near-term to net zero alternative to the social cost of carbon for setting carbon prices". *Nature Climate Change* 10: 1010–1014. https://doi.org/10.1038/s41558-020-0880-3

Marron, Donald B. & Adele C. Morris. 2016. "How to use carbon tax revenues". *Brookings Institution*, February 23, 2016. https://www.brookings.edu/research/how-to-use-carbon-tax-revenues/

Metcalf, Gilbert E. 2019. *Paying for Pollution: Why a Carbon Tax is Good for America*. New York/Oxford:Oxford University Press.

Meyer, Lukas H. & Pranay Sanklecha (eds.). 2017. *Climate Justice and Historical Emissions*. Cambridge: Cambridge University Press.

Nordhaus, William D. 2017. "Revisiting the social cost of carbon". *PNAS* 114, no.7: 1518-1523. https://doi.org/10.1073/pnas.1609244114

OECD. *Taxing Wages 2021* - summary https://www.oecd.org/tax/tax-policy/taxing-wages-brochure.pdf

Oxfam 2021. *The Inequality Virus*, January 25, 2021. https://oxfamilibrary.openrepository.com/bitstream/handle/10546/621149/bp-the-inequality-virus-250121-en.pdf

Oxfam. 2020. *Confronting Carbon Inequality*, September 21, 2020. https://oxfamilibrary.openrepository.com/bitstream/handle/10546/621052/mb-confronting-carbon-inequality-210920-en.pdf

Paoli, Maria Chiara & Rick van der Ploeg. 2021. "Recycling revenue to improve political feasibility of carbon pricing in the UK", *VoxEU*. October 4. https://voxeu.org/article/recycling-revenue-improve-political-feasibility-carbon-pricing-uk

Rabe, Barry G. *Can We Price Carbon?*. Cambridge (MA): MIT Press.

Samuel,.Sigal 2021. "We've been radically underestimating the true cost of our carbon footprint". *Vox*, September 4, 2021. https://www.vox.com/future-perfect/22643358/social-cost-of-carbon-mortality-biden-discounting

Stern, Nicholas & Joseph E. Stiglitz. 2021. "Getting the Social Cost of Carbon Right", *Project Syndicate*, February 15. https://www.project-syndicate.org/commentary/biden-administration-climate-change-higher-carbon-price-by-nicholas-stern-and-joseph-e-stiglitz-2021-02

Wagner, Gernot, David Anthoff, Maureen Cropper, Simon Dietz, Kenneth T. Gillingham, Ben Groom, J. Paul Kelleher, Frances C. Moore & James H. Stock. 2021. "Eight priorities for calculating the social cost of carbon", *Nature* 590: 548-550. https://doi.org/10.1038/d41586-021-00441-0

[1] Consider also that if you believe in trickle-down economics, you may also want to devise a RN-CT that earmarks the rich, i.e., using carbon revenues to lower corporate taxes (see Fried et al. 2021)

[2] You will pay more than you get back, unless you become an ethical investor and consumer.