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## **Taxation and green growth: the role of carbon pricing**

*Alberto Majocchi*

The use of economic instruments in the management of environmental policy has been greatly strengthened when the seriousness of the problems related to climate change - which derive from an excessive use of fossil fuels globally - clearly emerged. And the most appropriate tool has been identified in the setting of a price for the use of these energy sources, in such a way that through the functioning of the market the effects of the regulations implemented by various countries could be reinforced. At the beginning of 2023, taking into account the effects of the COVID19 pandemic and the Russian invasion of Ukraine, this is a particular important and pivotal time to consider the role of environmental taxation.

In reality, when one speaks of environmental taxation, this implies the levying of a price, in this case for the use of fossil fuels from which a negative externality derives. The environmental damage is global since, even if the carbon dioxide emission takes place in a specific location, a market failure happens everywhere. This means that the price does not include all the costs associated with the production or consumption of a given good and, more specifically, it excludes the damage caused to the environment by polluting emis-

sions. A global environmental tax therefore could be the right solution, with the function of getting prices right.

The Paris Agreement, signed by 196 parties at COP21 on 12 December 2015 and entered into force on 4 November 2016, is an important step forward since it is legally binding international treaty on climate change. This a historic agreement as it is universal and recognizes that the problem of climate change is an issue that involves all of humanity. Implementing the Paris Agreement requires economic and social transformation, based on the best available science and foresees a 5-year cycle of increasingly ambitious climate action, carried out by signatory countries. But the problem that remains open is that the realization of these objectives remains at the level of each country. Consequently, the use of economic instruments, and in particular the setting of a price for carbon, is also determined to different extents in different areas of the world. The goal of a universal carbon price is still a long way off.

In the theory of public finance, and in particular in the Italian tradition introduced by Antonio De Viti De Marco<sup>1</sup>, a tax has been considered the price imposed to obtain the availability of public goods. The environmental tax, which in the Pigouvian considered the optimal tool for correcting market failure in the event of the presence of externalities, is therefore aimed at modifying the behaviour of producers and consumers in order to achieve the goal of a green and sustainable growth and yield a public good.

Although the introduction of a levy for the use of fossil fuels has taken place in various parts of the world, starting from President Clinton's 1993 proposal in the United States, the implementation of this instrument has occurred to a significant extent in the European Union, in particular with the intro-

duction of the Emission Trading System (ETS), which today generates for about 11.000 plants a price of €80 per tonne of carbon dioxide on the market of permits, and has been strengthened with the Green Deal package - presented by the President of the Commission Ursula von der Leyen in the presentation speech of her program to the European Parliament in 2019 -, which predicts a 55% reduction in CO<sub>2</sub> emissions in 2030 and carbon neutrality in 2050. The transition to climate neutrality will offer significant opportunities for green development, strengthening the potential for economic growth, new business models and market structure, new jobs and technological development.

The process started in Europe has come to a sudden halt with the COVID19 pandemic. The Union has been able to react quickly and effectively to this exogenous shock, with the approval of the plan called *NextGenerationEU*, with an endowment of 750 billion euros funded with the issue of bonds on the market. And even greater was the support intervention put in place by the American government. But the recovery on the world market, which also involved the other continents, came to an abrupt halt with the Russian invasion of Ukraine.

In the European Union, after the application of sanctions against Russia and the following increase in gas prices as a result of reductions in Russian gas exports, there has been wide discussion about setting a top price for gas. Beyond the technical difficulties for achieving this objective, it has been immediately remarked that the gas price cap for consumers amounts to an undifferentiated subsidy for fossil fuels – which is the opposite of what it is needed to reach net zero emissions. This subsidy would also mostly benefit the largest and wealthiest households that consume most energy.

A price cap makes little sense both in climate and socio-economic terms. Indeed, in the contingent situation the setting of a top price for gas appears temporarily justified in order to guarantee the profitability of businesses and the standard of living of households, even if the actual price is rapidly diminishing and it is now lower than before February 14, 2022, when Russia invaded Ukraine. But in perspective the goal of carbon neutrality requires that a sufficiently high price for carbon-intensive fuels is set, in such a way as to favour, on the one hand, energy saving and, on the other, the switching from fossil fuels to renewables - which obviously also requires the elimination of subsidies to traditional fuels.

The level of the carbon price must therefore be fixed, as part of a long-term plan to achieve carbon neutrality, in parallel with the establishment of a minimum price for traditional fuels, which guarantees the profitability of the investments necessary to develop the alternative energies, even if the price of oil or natural gas falls on the world market. It will therefore be necessary to provide that any reductions in the price of fossil fuels at the source, if they affect the final consumer price to such an extent as to fall below the minimum price, can be compensated on the domestic market. Compensation can occur by an increase in the carbon price on emissions in the internal market, accompanied by a carbon border adjustment on imported products. In the European case, this would mean adjustments in the price of emission permits under the ETS and implementation of the Carbon Border Adjustment Mechanism (CBAM).

The introduction of a CBAM presents two sets of problems. On the one hand, while it makes it possible to avoid a loss of competitiveness for European companies and the risk of car-

bon leakages, at the same time it must be structured in such a way as to be compatible with the WTO rules so as not to run the risk of retaliatory measures by exporting countries. On the other hand, it is essential for the Union to ensure that the weakest countries are not harmed, and in particular African countries, whose collaboration is essential for achieving carbon neutrality, guaranteeing the availability of renewable energy resources for Europe that come from the southern side of the Mediterranean sea.

The containment of carbon dioxide emissions is a difficult task and requires a set of measures: a) a package of rules to limit the use of fossil fuels and, ultimately, bans on the use of fossil fuels in some sectors (combustion cars, domestic fossil fuel-fired boilers, etc.); and b) a carbon price for the use of fossil fuels.

The introduction of all these measures must take place gradually, but relatively quickly and defined in advance, to provide end users and businesses with the possibility of adapting to the new conditions of the energy market. From this perspective, the role of carbon pricing is decisive since it provides not only the opportunity to internalize the externalities linked to the use of fossil fuels, but also to represent the reference point for the consumption and investment decisions of households and businesses. The twentieth century was the century of oil and the dollar, and both marked the dominance of the United States after World War II. But oil and the dollar together are now seeing a reduction in their global role.

Indeed, with the emergence of the phenomenon of global warming, the international community has set for itself the goal of reducing carbon dioxide emissions through a drastic reduction in the consumption of fossil fuels. It follows that

the world economic system can no longer rely on the price of oil as a reference indicator for guiding economic operators and, more generally, the economic policies of states. The problems posed by the sustainability of the global economic system seem to indicate that the new reference price for investment decisions and the use of resources must be the price of carbon.

The imposition of a carbon price will not only help to correct a market failure, but will also allow for a profound reform of the public finance structure and of the economic system, towards a technologically innovative and socially equitable economy. With the 20<sup>th</sup> century industrial method of production, physical capital plays a fundamental role, therefore the primary objective of the taxation system is to favour the accumulation of savings to finance investments and the main burden of taxation falls on labour. But, following the scientific and technological revolution, linked in particular to the information and communications technology (ICT) sector, the fundamental factor of competitiveness becomes the human capital. Consequently, the relative weight of taxation on labour will have to decrease, in parallel with a growing imposition on financial income, on multinational companies and on consumption which weighs heavily on the use of natural resources, starting with fossil fuels.

Within the OECD a global agreement on the minimum rate of corporate tax has recently been reached. A similar agreement could be reached at a forthcoming COP on a global minimum level of carbon pricing, but remains to decide in which currency to define the carbon price. On this point, considering the effects of a single quotation currency, and given the international impact of the carbon price quotation, it would be appropriate to anchor the price to the SDR (special drawing

rights, the unit of account of the International Monetary Fund) instead of using the currency of a single area.

All these issues are underlying the analyses carried out in this volume, which takes stock of international research on taxation and green growth. On two points there seems to be a fairly universal agreement by now: the origins of climate change, which represent the most serious, although not the only, major environmental problem, is of anthropic origin and must be tackled through a gradual evolution towards a global carbon price, starting from the European experience; and secondly, the transition to carbon neutrality must be accompanied by measures aimed at guaranteeing social equity. The ecological transition requires a profound transformation of production and consumption patterns and in the short term may risk imposing excessive burdens on the weakest parts of world society.

For this reason it may be useful to conclude this Foreword by recalling an innovative proposal by Raghuram Rajan<sup>2</sup>. Industrialized countries such as the US are concerned that while they work hard to reduce emissions, developing countries will keep pumping them out with abandon. But at the same time, developing countries like Uganda point out that there is profound inequity in asking a country that emitted just 0.13 tons of carbon dioxide per capita in 2017 to bear the same burden as the US or Saudi Arabia, with their respective per capita emissions of 16 and 17.5 tons.

Here two different themes emerge, the risk of free riding and the need for burden sharing. On the one hand, given that the reduction of climate risks has the characteristics of a global public good, virtuous countries fear that others will behave like free riders, enjoying the benefits without bearing the costs

of the interventions necessary to eliminate CO<sub>2</sub> emissions. On the other hand, the economically less developed countries highlight the inequity of imposing the same effort on countries that emit large quantities of carbon dioxide and those that emit much less, given the lower level of development.

The most reasonable solution to address this dilemma is to reach a multilateral agreement that imposes a policy of reducing emissions on all countries, but at the same time guarantees adequate financial support to the least developed countries. And here Rajan advances his proposal to introduce “a global carbon incentive (GCI)”. Every country that emits more than the global average of around five tons per capita would pay annually into a global incentive fund, with the amount calculated by multiplying the excess emissions per capita by the population and the GCI.

The importance of this proposal by Rajan lies in the fact in the fact that it represents a further contribution to the growing awareness of the fact that a multilateral initiative is necessary to deal effectively with the solution of global problems. But this proposal, while certainly appreciable, is nevertheless not sufficient. Distributing resources to the weakest countries with incentives financed by the richest countries responsible for a higher level of emissions is right from an ethical and political point of view, but it is not able to guarantee the achievement of the carbon neutrality objective by the middle of this century. In fact, the funds would be distributed to governments, which in turn would have to implement the necessary policies to guarantee the energy saving and fuel switching processes that could lead to an effective reduction in emissions.

The most efficient tool to achieve the carbon neutrality goal is certainly the introduction of a carbon price, and in this per-

spective the European Union can play a decisive role in completing the carbon pricing process, on the one hand with an extension to all sectors of the ETS or similar mechanisms which ensure the payment of a price by all those who use fossil fuels and, on the other hand, with the introduction of a carbon border adjustment mechanism to charge the carbon price also on goods coming from countries that have not yet introduced it, in this way encouraging exporting countries to put a price on carbon, whose proceeds would flow into their own budgets instead of being burdened at the Union border by a compensatory duty targeted to finance the European budget.

This would be a first step, capable of giving a strong boost to the introduction of a carbon price at a global level.

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## Notes

- 1 A. De Viti De Marco, *First Principles of Public Finance*. Jonathan Cape, London (Harcourt Brace & Co., New York), 1936.
- 2 R. Rajan, *A Global Incentive Scheme to reduce carbon emissions*, University of Chicago Booth School, 2022.

## CENTRO STUDI SUL FEDERALISMO

The **Centro Studi sul Federalismo (CSF)** founded in 2000, is a foundation under the auspices of Compagnia di San Paolo, the Universities of Turin, Pavia, Milan and the Turin Polytechnic.

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