Understanding environmental taxation

SUMMARY

Environmental taxation is one way of encouraging a shift towards more eco-friendly choices; employed in combination with the other instruments available, it can help bring about the adjustments required to tackle the environmental and climate challenges facing us today.

The aim of environmental taxation, in principle, is to factor environmental damage, or negative externalities, into prices in order to steer production and consumption choices in a more eco-friendly direction.

Environmental taxation can potentially address all aspects of environmental protection and conservation. The fight against climate change, pollution – especially air and water pollution – and pressure on the environment, in particular from resource consumption and biodiversity loss, as well as contributory factors, such as gas emissions and the use of potentially harmful substances, can be the subject of tax measures. These are general or sectoral measures which are applied in different ways by individual states and their regional and local authorities.

In the European Union, environmental policy and tax policy determine the scope for action of Member States and the Union. Existing environmental taxation measures account for a modest share of national tax revenue.

Although the environmental aims are generally acknowledged as valid, when environmental taxation measures are implemented a range of factors must be taken into account, in particular competitiveness and fairness, to ensure that environmental taxation is sufficiently transparent to gain acceptance and so become an effective instrument in the transition that society now so urgently needs.

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Taxation and the environment

The current interest in the environment is nothing new. The importance of the environment had already been emphasised, on the basis of specific examples, in the light of the mooted 'natural' limits to growth, and, from a more general perspective, in connection with the concept of sustainable development, which, more than 30 years ago, was the subject of a report published by the United Nations World Commission on Environment and Development (the Brundtland Report, Our Common Future, 1987). The need to take the environment into account in formulating policies and developing specific measures in response to the challenges of climate change, pollution and resource management became a common concern, in particular in the wake of the Rio Earth Summit of 1992.

The terms sustainable growth and development, a national, EU or global 'green deal', green taxation and a climate plan reflect various facets of the same goal of combining economic activity with more effective environmental protection (the green economy). Current thinking is focused on the development of a new approach to economic challenges, an approach that goes beyond growth to encompass other considerations, particularly environmental and social objectives. The environment and climate change are now part and parcel of economic and budgetary policies. Taxation, just like budgetary and investment policies, must therefore take on an ecological, green or environmental dimension, depending on the terminology chosen.

One measure which can encourage a shift to more eco-friendly choices is environmental taxation. It can be employed in combination with regulatory measures – standards, legal requirements or bans – and measures to develop less polluting and less resource-intensive practices and technologies, particularly in the context of the circular economy.

Taxation provides governments and regional and local authorities with revenue, in the form of receipts from taxes, duties and fees, to fund their spending. Public finance is also about competitiveness – for economic operators – and fairness – for taxpayers – and about guiding economic activities or behaviour.

Environmental taxation is one instrument which can be used for this purpose. It is a lever that can help to adjust, redirect or modify economic behaviour in response to the challenges of protecting the environment and combating climate change. Eco-taxation, green taxation and greening the tax system are other expressions used to denote environmental taxation, which is the term we use in this briefing.

Environmental taxation: behavioural price signal

The tax system consists of the taxes and duties set by the state and by regional and local authorities within their respective spheres of competence. Local authorities, for example, may levy taxes for waste management.

Environmental taxes increase the cost of activities that generate pollution or harm the environment by adding in ('internalising') the relevant social costs, known as 'negative externalities', in accordance with the polluter pays principle. In other words, charges are levied on harmful activities. Such charges are known as 'Pigovian taxes', after the British economist Arthur Pigou. They serve as a behavioural or transformational fiscal incentive, because economic operators, faced with a tax that internalises the cost of environmental damage, have a choice of either paying it or avoiding it by reducing the harmful environmental impact of their activities. If the tax is successful in reducing the adverse environmental impact, the fiscal revenue it generates (its yield) will diminish, indicating that economic actors have chosen to modify their behaviour. This is achievable in cases where the latter have an alternative. The yield may also diminish as a result of the relocation of business activity, in which case emissions may be shifted, a process known as 'carbon leakage', if the tax applies to the carbon footprint associated with production rather than consumption.
Taxes created specifically to put a price on environmental negative externalities are generally linked to production or consumption and are indirect taxes. Alongside these tax incentives, the need to protect the environment can be taken into account by means of flexible measures. All taxes, for instance, can potentially address an environmental concern. Direct taxes, such as income and corporation tax, can take account of particular factors relating to environmental protection, as in the case of emissions-based vehicle taxation.

As for fees, these differ from taxes and duties in that they are paid to cover all or part of the cost of a service rendered. They are payable only by actual users of the service and so are not compulsory, in the sense that it is possible to avoid the charge simply by not using the service. Fees may be charged for activities relating to conservation of the environment, such as water treatment or waste collection. The precise arrangements depend on the way these services are organised, which varies from one Member State to another.

The system of environmental taxation also includes tax expenditure, which comprises tax relief, the application of reduced rates and refunds. These measures, which constitute non-collection of tax on the basis of an exemption granted for the sake of another policy objective, such as stimulating economic activity or improving the housing situation, may be applied across the board or within a particular sector. Tax expenditure may weaken the price signal by creating a variation in its degree of leverage between operators who are eligible for tax relief and those who are not.

Moreover, by its very nature environmental taxation alters the circumstances of taxpayers (households and companies) by affecting income (household purchasing power) and the position of companies vis-à-vis others (competitiveness). Environmental taxation thus has effects that must be taken into account when setting tax policy in general. This is particularly true of the distributive effects on households, especially given the fact that not all households have equal access to greener alternatives to which the environmental tax would not apply. Then there is the geographical factor, whereby the same measure can have different effects depending on the area in which households and businesses are located. It is generally recognised that accompanying measures to ensure fairness are essential if environmental taxes are to secure public consent. Accordingly, the following principles have been highlighted as means to this end: the tax yield must be transparent, fairness is essential, and the tax must contribute to environmental conservation by promoting the energy transition and funding the reduction of pollutant emissions and pollution levels.

**Scope of environmental taxation**

The scope of environmental taxation is potentially as broad as the areas of environmental protection and conservation.

**EU environmental protection legislation** covers a wide variety of subjects, which can be categorised under the following six broad headings: air, chemicals, climate, nature, waste and water. EU environmental policy identifies nine areas for which targets and objectives have been set. These areas are: energy; greenhouse-gas (GHG) emissions and ozone-depleting substances; air quality and air pollution; transport-sector emissions of greenhouse gases and air pollutants; waste; water; sustainable consumption and production; chemicals; biodiversity and land use. For each of these areas there are binding and non-binding targets and objectives, established by the applicable rules and covering the period from 2013 to 2050; some of them, particularly those relating to greenhouse gases, are better known than others, such as the objective of no net land take.

Tax measures are used to varying extents in each of these areas. The use of tax measures may be one of the options available to Member States to meet obligations, such as the energy-efficiency requirements arising from Directive 2012/27/EU on energy efficiency, or to provide for total or partial exemptions from provisions such as those of Directive 2003/96/EC restructuring the Community framework for the taxation of energy products and electricity.
Outside the European framework, environmental taxation may comprise general or sectoral taxes, cover specific sectors, such as energy, transport, waste management or agriculture, or target particular substances, such as NOx or SO2.

Environmental taxation addresses various causes of damage to the environment, various types of pollution and the potential underlying factors.

The first cause of damage to the environment is global warming. The existing measures address greenhouse gases. Their emissions and their effects vary and are targeted by specific measures. Tax instruments are used to supplement measures to reduce emissions. For carbon dioxide emissions in particular, the European Union emissions trading system (EU-ETS) puts a cap on emissions and regulates trading of emission quotas. Some Member States have combined this instrument with a carbon tax. At EU level there are plans to levy a carbon tax at Union borders in order to prevent carbon leakage and thus guarantee fair competition with companies that are not subject to these measures (because they produce elsewhere) but still operate in the European market (selling their goods and services). This measure was announced as part of the European Commission’s Green Deal. As far as the other greenhouse gases are concerned, quotas for fluorinated gases have been set by a European regulation. Measures targeting polluting activities may include taxes on gas emissions.

As regards measures to combat pollution, these cover air pollution, either in connection with climate change or relating to specific types of pollution, and water and soil pollution (discharges and other releases into the environment).

As regards air pollution, the emission of pollutants in the form of fumes or particulates is the subject of national emissions-reduction measures and of local objectives for the reduction of pollutant concentrations. Sectoral tax measures can also be employed. These include measures to encourage people to replace vehicles emitting particulates with less polluting vehicles, in the form of purchase grants (tax expenditure), deduction measures (higher depreciation allowances for traders) or emissions-based reductions in vehicle road taxes. Other potential additional instruments include the taxation of motor fuel and road-use charges – environmental tolls, for example – to take account of the characteristics of geographical areas and the need to use vehicles. Fuel taxes are sometimes geared to the way fuels are used. Moreover, the clarity of the price signal may be obscured by fluctuations in the price of oil itself.

As regards water pollution, rules seek to restrict the use of certain pollutants, such as nitrates and detergents, with the aim of reducing levels of phosphates and phosphorus compounds in water, and to regulate the use and management of water resources. In terms of taxation, the 'polluter pays' principle is applied in the form of fees or taxes levied by water management bodies, depending on how these services are organised in Member States.

Another aim of environmental taxation may be to preserve biodiversity and to contribute to the sustainable use of resources. Other tax measures may boost efforts to achieve these objectives, particularly measures focusing on particular substances and pollution sources. Waste management may also be the subject of tax measures designed to prevent pollution and encourage recycling. Charges relating to household waste may be levied by the state or by local authorities; depending on the administrative system, these may take the form of taxes or fees. Another possibility is to introduce taxes on highly polluting industrial plants and on raw materials such as aggregate and sand.
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What is the state of play in the European Union and its Member States?

Who can do what

The division of competences between the Union and the Member States in the area of taxation differs from that laid down in the Treaties in the area of environmental policy.

Tax matters have featured in the Treaties, in the broader context of the single market, since the Union was established. They are accorded a specific status and are always subject to a special legislative procedure in which the Member States have a key role (unanimity requirement).

The EU’s environmental policy dates from 1972 and has gradually been incorporated into the Treaties. Under Articles 191 to 193 of the Treaty on the Functioning of the European Union (TFEU), Union policy on the environment is to ‘aim at a high level of protection’ and is based on the following four principles: precaution, preventive action, rectification of environmental damage at source and the ‘polluter pays’ principle. The Union is competent to act in most areas of environmental policy, although its scope is limited by the principle of subsidiarity. Its power to legislate on environmental taxation is likewise limited by the unanimity requirement in the Council which applies to the adoption of any tax legislation.

As the attention paid to environmental considerations has increased, environmental taxation has also come to be considered in the context of the European Semester.

In addition, the new European Commission has now placed the environment at the heart of European policy-making by drawing up the European Green Deal.

A few figures

At EU and international level, environmental taxation is categorised statistically using indicators. These indicators are narrowly defined, in that they describe only taxes and duties with an environmental basis, but exclude those with environmental side-effects. This definition also covers the taxation of individual sectors, such as energy, where the purpose is not exclusively environmental and where the tax has specific characteristics deriving from its linkage with fluctuating commodity prices that may impair the transparency of the price signal.

Accordingly, the data below do not, by definition, include tax measures unless their primary or sole purpose is environmental, even though they may have an indirect environmental impact. For example, they do not cover the option of not applying reduced rates of value added tax (VAT) to particular activities.

In the European Union, an environmental tax is defined as ‘a tax whose tax base is a physical unit (or a proxy of a physical unit) of something that has a proven, specific negative impact on the environment’.

Environmental taxes comprise taxes on energy products (which may include a component linked to carbon tax on CO₂ emissions), transport (excluding fuel duties, which fall into the previous category) and taxes on pollution and resources.

Revenue from these taxes amounted to €381.4 billion in 2018, or 2.4 % of the Union’s gross domestic product (GDP) and 6.12 % of the total revenue of the EU Member States.
Table 1 – Revenue from environmental taxes in the EU-28, 2002-2018, as a percentage of GDP and as a percentage of total tax revenue.

![Percentage of total yield from taxes and welfare contributions](image)

![Ratio to GDP](image)

Source: Eurostat (env_ac_tax).

The breakdown of revenue among the various taxes is as follows: 77.2 % of total tax revenue in 2018 for energy taxes, 19.7 % for transport taxes, 3.2 % for taxes on pollution and resources. Table 2 shows the breakdown among the 28 EU Member States and within each Member State in 2018.

Table 2 – Environmental tax revenue by category in the EU and its Member States in 2018

![Bar chart showing environmental tax revenue by category in the EU and its Member States in 2018](image)

Source: Eurostat (env_ac_tax).

Transparency of environmental taxation

Categorising measures on the basis of type of pollution or economic activity fails to take account of the way they are interconnected or their overall impact. In fact, while the overarching environmental objectives are clear, the tax measures that may contribute to their achievement are piecemeal and variable.

As regards efforts to combat climate change, for instance, a number of measures expressly or effectively serve that purpose. Foremost among these is the carbon tax, but it does not apply universally: not only is it not levied in all countries of the world, it also does not apply to all emitters.

As for the taxation of fuels as sources of gas emissions, which also helps to combat global warming and air pollution, it does not exclusively target those problems and is subject to exemptions that act as a disincentive to engage in a transition for the purpose of combating global warming. There are even total or partial exemptions that apply to fossil fuels generating greenhouse gases. These exemptions stem from international provisions, which cover, for example, the civil aviation sector.
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and international flights; they also stem from European provisions, such as those relating to firewood, and from national provisions, such as those governing the domestic air and waterway transport of goods, passengers and services, exemptions made by Member States and authorised by the European Union.

There are, moreover, tax provisions that are not environmentally focused but may have an indirect environmental impact. One example is the option of applying a lower rate of VAT to internal flights, which is open to each Member State. Another example of a tax measure that does not have an environmental aim, but may still affect air pollutant emissions, is the system of income tax mileage allowances for travel expenses.

These examples illustrate the piecemeal nature of the instruments that can contribute to the achievement of one and the same objective, and the difficulty of harnessing individual measures in pursuit of an environmental goal.

Furthermore, environmental taxation is an instrument of behavioural modification and therefore seeks to transform the economy. This means that it affects existing balances. In terms of budgetary yield, environmental taxation brings an increase in revenue, although that tends to diminish as behaviour patterns gradually alter. In terms of fairness, particularly fair competition and social justice (purchasing power), due account must be taken of the fact that measures have different effects on different actors. The impact on households in particular differs according to income bracket, the availability of alternatives and geographical location, in other words whether people live in urban or rural areas. Appropriate accompanying measures take these differences into account, ensure that the tax measures secure public acceptance and achieve the three objectives of modifying economic behaviour, providing budgetary revenue and promoting fairness.

These objectives must necessarily be interlinked and clearly explained if the degree of transparency of environmental taxation is to be commensurate with the environmental goals pursued.
MAIN REFERENCES


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