Environmental Taxation within the European Union†
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Abstract

This paper provides a brief overview of the use of environmental taxes by the EU Member States. It starts out by explaining how environmental taxes and environmental tax reform (ETR) figures in the various economic and environmental policy strategies of the EU, and then demonstrates with a simple set of indicators what quantitative role such taxes play in the Member States. A short analysis showing factors that influence the decision by Member States whether and how to use environmental taxes and implement ETR leads to an overview of efforts to establish a framework for restructuring and harmonising such taxes at EU level. For the different types of taxes, examples are provided on how Member States implemented environmental taxes in the context of common rules or of EU recommendations under the European Semester.

Keywords: Environmental taxes, European Union, Europe 2020.

1. Introduction: The current political context at EU level

The political discussion about the increased use of environmental taxation in Europe already started in the early 1990s and a number of environmental tax reforms (ETR), i.e. shifts from taxing labour (and to a lesser degree capital) to pollution and resource use, were introduced. The Scandinavian countries started with ETR, both to achieve environmental benefits and to increase economic efficiency by reducing distorting taxes on factors of production.

In recent years, the discussion has gained in intensity with changes in the world economy, in particular the growth of the BRICS countries (Brazil,}

†The views expressed in this article are those of the author and may not in any circumstances be regarded as stating an official position of the European Commission. The author wishes to thank Prof. Theodoros Zachariadis and Mrs. Malgorzata Kicia for helpful comments on a previous version of this paper.
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1See for example: European Commission (1993)
2In the early 1990s, Sweden, Denmark and Finland undertook the first ETR which they later followed up with further steps. Germany and the UK followed in the late 1990s/early 2000s.
Russia, India, China, and South Africa) and major increases in global energy and resource prices which are expected to continue in the future. There is thus a need to adapt our economic structures to these changes, captured by the concepts of green growth and enhanced resource efficiency. As this adaptation is seen to open up new areas of future growth and employment creation, a policy to promote them can also be useful to reap short as well as long-term economic benefits.

This need for structural change is one of the key points in the Commission’s Europe 2020 strategy. It puts sustainable growth as one of its three key strands. This concept is further developed through the Flagship Initiative "A Resource-efficient Europe" and the "Roadmap to a resource-efficient Europe" (hereafter: the Roadmap). The latter provides a framework on how to implement the adjustment and contains proposals for relevant targets, milestones and measures. In its analysis, the Commission employs a wide concept of resources which includes not only minerals and metals, but also water, waste and biodiversity.

One of the pre-conditions for advancing such structural change is to “get the prices right”, i.e to ensure that external costs are factored into prices of resources. Market-based (or Economic) instruments (MBI) are advocated as the most efficient means to promote energy and resource efficiency and to curb pollution and emissions as, beyond safeguarding static efficiency, they also maintain a constant pressure for innovation, thus ensuring dynamic efficiency. However, under real-world conditions, it is clear that MBI are not a panacea and that good results require the use of policy mixes, including the use of regulatory or information instruments besides MBI.

Still, it is not surprising that the Roadmap calls for the implementation of ETR by Member States and for the removal of environmentally-harmful subsidies (EHS). Within the annual governance cycle of the Europe 2020 strategy, the so-called European Semester, this issue is followed up via Country-specific recommendations (CSR). This year, 10 Member States (MS) received a CSR to undertake such a tax shift.

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5 European Commission (2011) and (2011a)
6 Sterner (2003), chapter 12.
7 European Commission (2007)
8 The relevant Member States are BE, CZ, ES, IE, FR, HU, IT, LT, LU, LV. To support Member States in evaluating the potential for further use of environmental taxes, a study (Hogg et al., 2014) was prepared for the Commission covering 12 Member States, compared to best practices. The study found significant revenue potential from such taxes, situated between 1% and 2.5% of GDP by 2025 for the different MS.
In the context of the recent economic crisis, the perspective for ETR has changed somewhat. Several MS had seen a major increase in their levels of public debt, and hence focused on the potential of MBI to generate revenues and thus to contribute to budget consolidation. Given their significant future revenue needs, increased income from environmental taxes allowed them to avoid having to raise taxes on labour or capital. Recently, the Netherlands introduced or revived four environmental taxes while France introduced a carbon tax.

2. **The use of environmental taxes by Member States**

As table 1 demonstrates, the trends in the share of environmental taxes since 1995 rather show a stagnation or slight fall of their weight. Beyond the effect of changes in behaviour on pollution reduction, this is also the consequence of the fact that environmental taxes, which are usually defined in terms of € per physical unit, rise less rapidly compared to taxes, such as income tax or VAT, which are defined as percentages of monetary values. This can be demonstrated by looking at real effective tax rates per unit of energy, where many of the old MS have seen a decline over time. Some stabilisation can be seen since 2008/9, which probably also reflects discretionary increases in these taxes to address budget deficits. However, this trend has not been consistent across all MS.

Currently, the share of environmental taxes in total taxes and social-security contributions is rather limited with 6.1%. Their share in Cyprus is higher due to high revenue from vehicle taxes.

Figure 1 also shows the large differences between MS in terms of using environmental taxes. The bulk of such taxes – around 75% - is made up by taxes on energy; some MS, such as Cyprus or Denmark, obtain significant revenue from taxes on transport, while very few MS have a developed system of taxes on resources (e.g. water, waste, landfill) or pollution (e.g. NOx or SO2).

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9 European Commission (2014).
TABLE 1

Share of environmental taxes in total taxes

<table>
<thead>
<tr>
<th></th>
<th>EU-15/EU-28</th>
<th></th>
<th></th>
<th>Cyprus</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy taxes</td>
<td>5.4</td>
<td>5.2</td>
<td>4.5</td>
<td>6</td>
<td>5.4</td>
</tr>
<tr>
<td>Transport taxes</td>
<td>1.4</td>
<td>1.3</td>
<td>1.3</td>
<td>5.7</td>
<td>2.2</td>
</tr>
<tr>
<td>Pollution taxes</td>
<td>0.2</td>
<td>0.2</td>
<td>0.3</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>Environmental taxes</td>
<td>7</td>
<td>6.7</td>
<td>6.1</td>
<td>11.8</td>
<td>7.6</td>
</tr>
</tbody>
</table>

*Source: European Commission, 2014*

3. Factors influencing the potential for tax reforms

Given the convincing economic and environmental justification for using environmental taxes, one can ask why they are not used more intensively. A number of reasons can be identified: On the one hand, there is a general perception of a high tax burden within the EU which leads to a resistance against further increases, unless crisis situations make them unavoidable. On the other hand, for environmental taxes in particular, there are concerns about their distributional and competitiveness impacts\(^{10}\). As concerns the former, poorer households might suffer proportionately more, especially in case of taxes on water or heating energy (or electricity) consumption, which are basic necessities and make up for a higher share of household income in the lower income groups. Therefore, effects on the most vulnerable groups need to be assessed and targeted measures taken to help them, while maintaining the price incentive.

As concerns the competitiveness impacts, some sectors – in particular the energy-intensive ones - will be worse off through an ETR. One can argue that those sectors were implicitly subsidised before through the non-internalisation of external costs. However, governments fear that these industries would relocate out of the country if they were burdened with high levels of environmental taxes. Labour-intensive sectors with low energy consumption are likely to benefit from an ETR.

\(^{10}\) OECD (2006)
FIGURE 1

Revenue from environmentally-related taxes, in % of total taxes (2002 vs. 2012)

In such situations, further increases in environmental taxes are politically challenging. Hence, there is a need for a careful design and for communication efforts. Various options have been used by governments:

- Revenue recycling is an approach to enhance acceptability: ETR with its concomitant reduction of the tax burden on labour has been implemented to help with distributional and competitiveness concerns, especially if labour tax reductions are targeted on low-income groups.

- Derogations, i.e. tax reductions/exemptions to help the companies/sectors most affected by environmental taxes, have often been used to help energy-intensive firms. While this reduces the burden on them, it also diminishes the environmental effectiveness of taxes, as it weakens the financial incentive to reduce energy or resource consumption or pollution. To limit this effect, the compensation can be applied in a degressive way for a transitional period to make sure that incentives are maintained.

- As an alternative to an ETR, revenues from environmental taxes can be earmarked, e.g. for environmental spending or energy saving. Such an approach is easier to communicate than an ETR, but of course leaves no direct scope for reducing taxes on labour if we assume that the extra spending is equivalent to the revenue from the environmental tax increases.

- A final approach to address competitiveness concerns is to seek a harmonisation of such taxes at cross-national level, here in particular at EU level. If this leads to a limitation of exemptions, it would also improve the efficiency of the tax system. This approach is particularly relevant for smaller open countries where relocation of industry or cross-border shopping (e.g. “fuel tourism”) is easy.

4. Basic elements of the EU legal framework for the taxation of energy products

Such harmonisation efforts have indeed been undertaken at EU level, in particular for energy taxation. All MS use energy taxes. An EU Directive\textsuperscript{11} (Energy Taxation Directive or ETD) sets framework rules for their design to restructure and harmonise national tax systems. However, it does not establish a Community tax, and energy tax revenues accrue entirely to Member States.

\textsuperscript{11} European Union (2003).
One key feature of the ETD is the establishment of minimum tax rates for almost all energy products (oil, coal, lignite, natural gas and electricity) for heating and transport uses. The tax rates are fixed in terms of quantities of product (e.g. per 1000 l or 1000 kg, for mineral oil products) or in terms of energy content (Gigajoule for coal and gas, MWh for electricity).

While taxes that are designed this way provide incentives to reduce CO₂ emissions through higher prices of energy products, the Directive does not establish a system of CO₂ taxation. Hence, the Directive has a limited function as an instrument for environmental policy as it is rather strongly focused on internal-market concerns, e.g. the avoidance of distortions.

The Commission’s 2011 proposal for a review of the Directive¹² seeks to strengthen its environmental dimension and at the same time also make its energy policy component more targeted. It would redefine the minimum tax rates by basing them on two components – energy and CO₂ emissions. The latter would apply only to companies that are not subject to the EU Emissions Trading System.

This “two-tier taxation” would reflect the double-headed purpose of energy taxes. At the same time, it would abolish existing distortions between various energy products: Inter alia, it would lead to a higher taxation of coal compared to gas and would abolish the under-taxation of diesel fuel compared to petrol. An additional feature of the proposal is to introduce an indexation of tax rates that would address the problem of the automatic decline of real tax rates with inflation, as described above.

Given the unanimity requirement in Council for taxation related proposals, the ongoing Council negotiations have proven rather difficult. The current Italian presidency of the Council seeks to find an agreement before the end of 2014 on contentious issues, such as tax levels and structures, transitional periods for Member States to reach the new levels or the scope of derogations for various products and uses¹³. At the same time, some Member States are reforming their energy tax systems at national levels. In 2011, Finland conducted a review of its energy taxation which introduced separate CO₂ and energy components in line with the Commission proposal¹⁴.

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¹³ ENDS Europe (2014).
¹⁴ Speck (2013).
5. Environmental taxes in transport, pollution and resource management

As table 1 showed, transport taxes are the second biggest group of environmental taxes. Most MS apply annual circulation tax and/or registration taxes, using a variety of tax bases.

Vehicle taxation can serve as a potential supplementary instrument to support ETR, since transport is both a substantial source of revenue and an important and growing source of CO\textsubscript{2} emissions and of air pollution, noise and congestion.

In 2005, the Commission had made a proposal on car taxation, which would inter alia have introduced a CO\textsubscript{2} element in circulation taxes that should make up for initially one quarter and later half of revenues from this tax\textsuperscript{15}. However, there has not been progress on this proposal in Council. At the same time, an increasing number of MS have been pursuing this approach individually: While only 3 MS had a CO\textsubscript{2} element in their registration tax in 2007, 11 MS had one in 2014. A similar picture can be seen for annual circulation taxes where 12 MS now have a CO\textsubscript{2} element, up from 4 in 2007\textsuperscript{16}. There are MS, such as Cyprus, that base both their registration and annual circulation taxes on CO\textsubscript{2} emissions. Mostly, these reforms were introduced in a revenue-neutral way.

In terms of budget revenue, taxes on pollution and resources only play a marginal role in most Member States (see figure 1) and are often implemented at local level. Furthermore, this category includes a large variety of tax bases, some of which are exploited only in a couple of Member States. Two taxes that are rather commonly applied are those on water abstraction and consumption (and also waste water discharges) and on waste generation (including specific packaging-waste taxes and those on types of waste management, such as taxes on landfilling or incineration)\textsuperscript{17}.

In the area of water, the Water Framework Directive\textsuperscript{18} obliges Member States to introduce water pricing to ensure an allocation of costs in line with the polluter-pays principle and thus to give an adequate incentive for an efficient water use. Its objective is to make all groups of users (i.e. households, industry and agriculture) bear the costs, both of providing the infrastructure and service, as well as the external environmental and

\textsuperscript{15} European Commission (2005).
\textsuperscript{16} ACEA (2014).
\textsuperscript{17} It has to be said that for both waste and water, it is not always easy in practice to distinguish charging covering the service cost from environmental levies.
\textsuperscript{18} European Union (2000).
resource costs. The annex to the Directive details the approach for the economic analysis behind such pricing mechanisms. Following the adoption of the Water Blueprint by the Commission\textsuperscript{19}, a guidance document on the methodology to assess costs and benefits is under preparation. Member States also need to report about the implementation of their river-basin management plans, which include such pricing mechanisms.

Taxes and charges have been used successfully in a number of Member States with a significant impact on consumption and water losses through reduced leakage. Examples include waste water taxes in the Netherlands, where pollution levels were reduced by 90\% over a period of 25 years, and the water consumption tax in Denmark where consumption fell by 26\% over 10 years in the 1990s. In both cases, revenues from the taxes were used for support measures to reinforce the effect\textsuperscript{20}.

The aim of the use of policy instruments, and in particular market-based instruments, in waste management is to decouple waste generation from economic growth and to reach collection and recycling targets under EU legislation and to help turn waste into a resource. Under the Packaging waste Directive\textsuperscript{21}, the Council may adopt economic instruments to ensure reaching its objectives. As long as nothing has been decided (and so far nothing has been decided), MS can adopt national measures to implement the polluter-pays principle, while respecting their Treaty obligations, in particular the internal-market rules, including on non-discrimination.

MS have used very divergent approaches in this area, both regulatory and market-based ones, to provide steer towards a more sustainable resource use. As environmental effects vary between materials, differentiated charges would be useful for more precise internalisation. Such differentiated taxes have been implemented, e.g. in Denmark and Latvia. In some Member states, where significant shares of waste are still landfilled, landfill taxes have also been used, partially dependent on the place and type of waste, to more properly implement the polluter-pays principle, e.g. in Denmark and the UK\textsuperscript{22}.

In the first half of 2014, the Commission has undertaken a waste policy review. Its aims are to boost prevention, reuse and recycling, limit energy recovery to what is not recyclable, virtually eliminate landfilling as well as to simplify and improve monitoring and statistics\textsuperscript{23}. Furthermore, the Commission seeks to ensure the dissemination/use of best practices and

\textsuperscript{20} ECOTEC (2001).
\textsuperscript{21} European Union (1994).
\textsuperscript{22} EEA (2006).
\textsuperscript{23} European Commission (2014a).
notably the use of key economic instruments, such as extended producer-responsibility schemes (EPR), the use of landfill and incineration taxes, and of pay-as-you-throw schemes. Such measures can be supported by the Structural and Investment Funds. Also, measures for specific types of waste (e.g. construction, demolition, packaging waste) are envisaged.

6. Conclusion

While economic arguments speak for an increased use of market-based instruments, in particular environmental taxes, their practical implementation in EU Member States is more limited, not least due to concerns about competitiveness and distributional aspects. Nevertheless, a number of MS have successfully executed environmental tax reforms over the last 20 years.

EU legislation in various areas has helped with this trend. For further progress, it will be important that MS exchange their experiences and best practices in this field. The implementation of the Europe 2020 strategy and the European Semester process can support this.

References


