

# REASONS AND PROSPECTS OF THE ENVIRONMENTAL FISCAL REFORM IN THE EUROPEAN UNION

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## Abstract

*In this paper we resume research on the importance and effects of a possible Environmental Fiscal Reform in the European Union member states, as a possible solution to foster sustainable economic development and the transition towards a green economy in Europe.*

*Therefore, we first state some principles of the law concerning the environment and analyse the main features of the environmental taxes, as well as their trends and particularities in the EU countries, including Romania. The next section reminds the debate on the double dividend paradigm, conceptually clarifies the term and the underlying reasons for implementing an Environmental Fiscal Reform.*

*We are now able to figure and analyse in the next section, the main objectives, prospects and issues of implementing this type of fiscal reform in the European Union.*

*In the end are some conclusions and recommendations to highlight some of the most important and current features of environmental taxes which may be used in the Environmental Fiscal Reform to efficiently and more or less directly address most environmental, economic, and social issues.*

**Key words:** *environmental, fiscal, reform, taxation, double dividend, labour*

**J.E.L. classification:** *H30, H230, Q580*

## 1. Introduction

At the European Union and global scale, the environmental urges have become nowadays more and more stringent, since the international increasing recognition of the climate change developments. In order to address these challenges governments and all actors should act to limit the emissions of greenhouse gases and further reduce emissions of air pollutants.

The international environmental agreements, such as the Kyoto Protocol, the Paris Agreement, and the Agenda 2030 for Sustainable Development have raised the relevance of environmental taxation for reaching mid and long-term environmental goals.

Since applying only stricter environmental regulation to accomplish those goals would be costly, the European Union promotes some economic instruments like the environmental taxes especially as more flexible and cheaper means for reinforcing the polluter-pays principle in pursuing environmental policy objectives.

The use of economic tools for the benefit of the environment is promoted in the EU Environment Action Programme to 2020, the EU sustainable development goals and Europe 2020 strategy. However, the environmental issues are not the only ones to be considered and approached by the environmental taxation in view of sustainable development since the social and economic objectives have lately proved to be urgent and significant as well.

This paper will highlight some of the most important and current features of environmental taxes which may be used in the Environmental Fiscal Reform to efficiently and more or less directly address most environmental, economic, and social issues in view of a sustainable development in the European Union member states.

As part of a more extended study, the paper has the objective to present and analyse some of the main characteristic mechanisms and features of environmental fiscal reform, to enhance understanding of its conceptual and practical issues. The methodological approach is mainly based on literature review, conceptual analysis and synthesis as well as new qualitative and quantitative insights from the global and European experience.

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## 2. Principles and features of environmental taxes

In the classical economic theory, mainly in respect to welfare economics, the issue of the externalities and market failure is one of the most significant. A negative externality represents a market failure since it occurs when the production or consumption of a good harms someone other than the buyer or seller of that good so the decisions of the buyers and sellers fail to take into account that external cost.

Generally, pollution and resource consumption create costs, such as those incurred from health impacts, reduced crop yields, and biodiversity loss. If the economy does not internalise these so-called 'external costs', it will operate inefficiently and market distortions and inefficient economic decision-making will result. Consequently, when unregulated and free, the market will generally result in a too high quantity of any good with a negative externality, such as pollution. Therefore, it is by imposing a tax on the externality-generating good that the negative externality can be corrected (internalised).

Environmental taxation can internalise these external costs and include some or all of them in the price of pollution with many benefits such as the generated welfare gains, better environmental quality and increased efficiency in the economy.

The environmental tax is considered to be a Pigovian tax, i.e. a tax levied on the negative externality at a tax rate that is equal to the marginal damage costs and is considered to correct the market outcome back to efficiency. (Pigou A., 1920).

As concerning the level of the environmental tax rate, in theory, it should be commensurate with the environmental damage addressed, or more precisely their marginal damage costs. However, only if the market price corresponds to the real costs of a resource or an activity, the market equilibrium does yield an efficient result (EC, 2014). In reality, though, it is difficult – and in some cases impossible – to calculate these externalities accurately and, as a result, a pragmatic approach to tax rate setting is called for.

To better understand environmental taxation and its reasons, it may be also necessary to state some foundations and principles of the environmental law. The EU environmental principles are used in many of government and public authority decisions.

The main EU principles of environmental law are (clientearh.org, 2019):

a. The precautionary principle;

The precautionary principle allows protective measures to be taken without having to wait until the harm materializes. This principle is valuable in managing risk where there is uncertainty about the environmental impact of an issue.

b. The prevention principle;

This principle requires preventive measures be taken to anticipate and avoid environmental damage before it happens.

c. The principle that environmental damage should be rectified at source;

Working alongside the prevention principle, this ensures damage or pollution is dealt with where it occurs.

d. The polluter pays principle;

According to this principle, the person who causes pollution should bear the costs of the damage caused and any remedy required. It plays a significant role in environmental management, directing accountability for harm.

e. The integration principle;

This principle requires that environmental protection is integrated into all other policy areas, in line with promoting sustainable development.

The EU environmental principles work together to ensure high environmental standards by directing how judges and other decision-makers should interpret the law.

It should be nevertheless noted that, even in the absence of the market, a number of formerly planned economies of Eastern Europe had already implemented a form of

environmental taxes under the old political regime. They did not earn revenues on this market but governmental funds were allocated where necessary. This policy raised environmental awareness and it facilitated the introduction of real tax instruments as these economies started their transition process. (Radulescu M. et al., 2017)

According to the environmental principles and the economic theory, currently within the European Union, there are managed and levied the following environmental taxes (Eurostat, 2019):

- a) *taxes on energy products* (taxes on mineral oils, motor fuels, gasoline, diesel, heating oil, kerosene, petroleum, gas, electricity and taxes on gases that cause the greenhouse effect) ;
- b) *taxes on transportation* (the tax on the registration and usage of motor vehicles, the tax on import and selling motor vehicles, car insurance, the tax on using roads –road toll, the tax on using other transportation means);
- c) *taxes on pollution* referring to the air pollution (CO<sub>2</sub>, NO<sub>x</sub>, SO<sub>2</sub>), taxes on pesticide and artificial fertilizers, tax on waste that endanger the environment (bacteria, rubber, plastic bags);
- d) *taxes on the resources* including water treatment, usage of biological resources, exploitation of mineral raw materials (ores, oil, gas) and of forests.

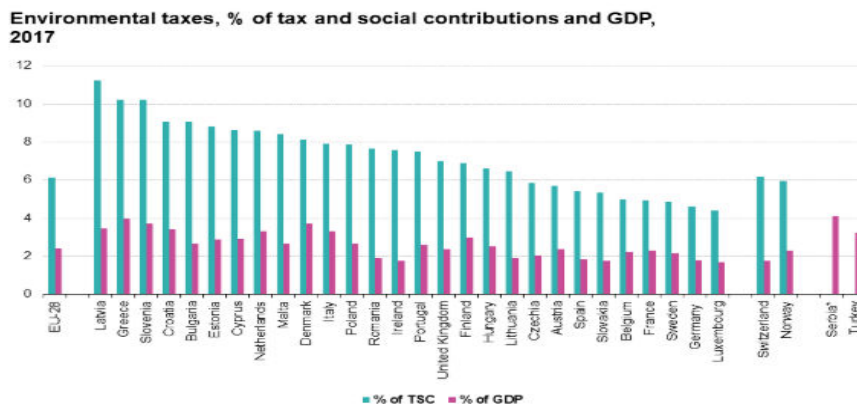
They are of relative importance. In 2017, the total environmental tax revenue in the EU-28 (i.e., revenue from environmental taxes collected by governments in all EU Member States) amounted to EUR 368.8 billion; this figure represents 2.4 % of the EU-28 gross domestic product (GDP) (Figure nr. 1).

Also, on average, environmental taxes in the EU accounted for 6.1% of total taxes and social (TSR) contributions in 2017. This share varies significantly across the EU countries and was considerably higher in 19 EU-countries (see Figure nr.1).

Relative to GDP, the largest level of environmental tax revenue was recorded in 2017 in Greece (4.0 %), followed by Slovenia and Denmark (both 3.7 %), Latvia (3.5 %), Croatia (3.4 %) and the Netherlands and Italy (both 3.3 %). In six other EU Member States (Lithuania, Romania, Spain, Germany, Slovakia, Ireland) the level of environmental tax revenue was similarly low in 2017 compared to the size of their economies, and did not reach 2 % of GDP (Figure nr. 1).

The proportion of environmental taxes in total revenue from taxes and social contributions (TSC) also varied significantly across the EU Member States. Latvia reported the largest share in the EU (at 11.2 %), ahead of Greece and Slovenia (both 10.2 %). Two other EU Member States recorded a share of 9.1 %: Croatia and Bulgaria.

**Figure nr. 1. Environmental taxes, % of tax and social contributions and GDP, 2017**



\*2016 data  
Source: Eurostat (online data code: env\_ac\_tax)



Source: Eurostat ([env ac tax](#))

At the opposite end of the scale, Luxembourg (4.4 %), Germany (4.6 %), Sweden (4.9%), France and Belgium (both 5.0 %) had the lowest shares of environmental taxes, followed by Slovakia and Spain (both 5.4 %), Austria (5.7 %) and Czechia (5.9 %).

The environmental tax revenue measured as share of the all taxes and social contributions is an indicator to help assess progress towards 'greening' the taxation system.

Part II of the Working Paper on the Roadmap to a Resource Efficient Europe recommends that 10% of taxes and social contributions in the EU are environmental taxes by 2020. This indicator reflects a certain degree of internalisation of environmental impacts in the national economies and the degree of implementing the Environmental Fiscal Reform, as further analysed.

### **3. The Double Dividend and other reasons for the Environmental Fiscal Reform**

The concept of Environmental Fiscal Reform (EFR) has several definitions since it also is currently considered or approached with different meanings:

- In one definition, EFR means “a range of taxation or pricing instruments that can raise revenue, while simultaneously furthering environmental goals. This is achieved by providing economic incentives to correct market failure in the management of natural resources and the control of pollution.” (IBRD – World Bank, 2005)
- A second definition considers the EFR as “a tax shift from labour towards environmental use, supplemented by the reform or removal of environmentally adverse subsidies” (EEB, 2017).
- in the third definition the Environmental Fiscal Reform has a more complicated meaning: it is a ‘tax shift’ in which “a progressive increase in the revenues generated through environmentally related taxes provides a rationale for reducing taxes derived from other sources, such as income, profits and employment, the taxation of which is less desirable.” (OECD, 2017)

In order to better understand the mechanisms of the EFR, it must be acknowledged that the two main components of fiscal theory, respectively the fiscal policies to collect revenue and the fiscal policies to correct externalities, were until recently addressed independently. The argument that the revenue-raising role of environmental taxes is a substantial additional reason to implement such taxes and develop them for the Environmental Fiscal Reform was issued by the “double dividend” literature.

In the original approach of the double dividend by (Pearce D., 1991), the first dividend of the environmental tax reform would be the improvement of environmental quality. The second dividend is that cutting pre-existing and more distortionary taxes (offset with new environmental tax revenue) would result in a reduction of the economic efficiency-cost incurred for raising a given amount of tax revenue. Also, according to (Robertson C., 2016) the basic idea is: “if revenue from an environmental tax can be used to finance a cut in the tax rate for a distortionary tax (such as the income tax), that cut produces an efficiency gain in addition to the other effects of the environmental tax”.

The term “double dividend” refers to the assertion that environmental taxes raise economic efficiency through two separate channels, both by correcting an externality and by raising revenue that can be used to cut other taxes. That second “dividend” has since come to be known also as the “revenue-recycling effect.”

Although, starting from the double dividend theory, there is a rich literature on these issues it is still the need to analyse more on the equity and efficiency of the EFR, especially in emerging-market economies and newer EU member states, where the institutional capacity and experience is not so rich in this regard. To mitigate equity and efficiency issues, environmental taxes should have incentive, but not a conflict character. (Frone S., Constantinescu A., 2019)

The main reasons determining the need for EFR are linked to the following features of the environmental taxation which is considered:

- a) an environmental policy using market-based instruments to reflect the cost of environmental damage in prices faced by polluters;
- b) a fiscal policy meant for raising public revenue and deploying it in a socially useful way.

Requiring the productive or useful revenue use is not an empty statement, however, as it highlights one of largest potential drawbacks of the use of revenue-generating instruments, namely that the revenue would be wasted.

Another good reason for promoting the Environmental Fiscal Reform is that shifting taxation from labour to pollution, energy and resource use in a budgetary neutral way is a policy approach promoted not only by the European Commission, but also by most international institutions such as the Organisation for Economic Co-operation and Development (OECD), the World Bank, the International Monetary Fund (IMF).

Due to the weak tax-evasion possibility and to their lower administrative costs, the environmental taxation schemes are especially well-suited to the post-financial crisis context, in which countries wish to continue to grow while also raising revenues to plug budget gaps. (EEA, 2016).

Furthermore, as shall be further emphasized, environmental taxes have been shown to be the least detrimental to employment and growth.

#### **4. Trends and prospects of the EFR in the European Union**

According to a recent study (Groothuis, 2016) conducted for 27 EU countries (EU 28 except Croatia) using the macro-econometric model E3ME to investigate the effect on growth and employment of shifting taxes from labour towards fossil fuels and carbon emissions, while also increasing standard and reduced VAT rates and raising taxes on electricity and water use for large users, there is a significant potential for positive economic, social and environmental outcomes in the European Union states. By implementing these measures of Environmental Fiscal Reform, a total of EUR 554bn is shifted from labour towards natural resources and consumption, which is equivalent to 13% of labour tax revenue and results in a 5.6%-point reduction of average personal income tax rates.

The econometric model suggested that gradually introducing this tax shift from labour taxation to environmental taxation, over the period 2016 – 2020, would increase employment by 3% in 2020, GDP would rise by 2%, while water use, energy use and carbon emissions would decline by more than 5%. This means that there would be indeed, a substantial double dividend of the EFR.

Another outstanding study (Radulescu M. et al, 2017) was dedicated to the research of the possibility and reality of the double dividend theory in the European Union and in Romania, as a European Union member state. By employing a rich and diversified methodology including modelling and econometric techniques, the outcomes of this research are significant and should be taken into account by the followers in policy making and public finance research development.

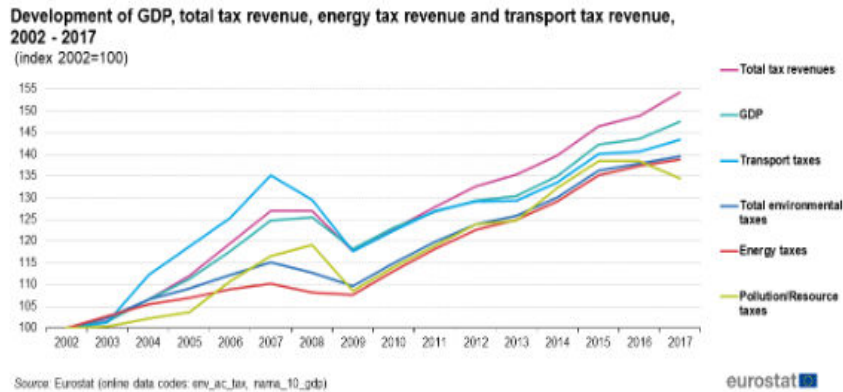
It was demonstrated that in Romania, „the impact of the unemployment on the greenhouse CO<sub>2</sub> emissions is significant and negative, similar to in the EU area, but there is a much more significant impact on greenhouse CO<sub>2</sub> emissions in Romania.” Both in the EU area and in Romania, an increase of the environmental taxes determines a decrease of greenhouse CO<sub>2</sub> emissions, which validates the double dividend theory.

Also, another great conclusion of the study (Radulescu M. et al, 2017) was that „in Romania, a still low level on environmental taxation allows some further increases of the environmental taxes in order to support the GDP growth, by developing a real industry for the

environment protection and thus, supporting much more the employment process. The public budget can further rely on the increase of the environmental taxes, while the labor taxation can decrease, so all three aims of the double dividend theory can be achieved.”

The mentioned studies are two of several recently developed in the EU, after the 2008 economic downturn, when new concerns and challenges called for the urge to use environmental fiscal reform to address rising unemployment, i.e. to increase environmental taxes by reducing labour taxes and thereby encourage employment creation.

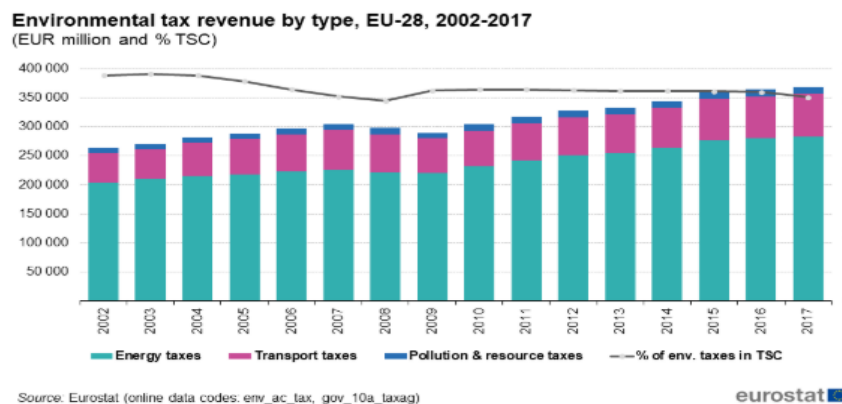
**Figure nr. 2 Development of GDP, total tax revenue, energy tax revenue and transport tax revenue, 2002 - 2017 (index 2002=100)**



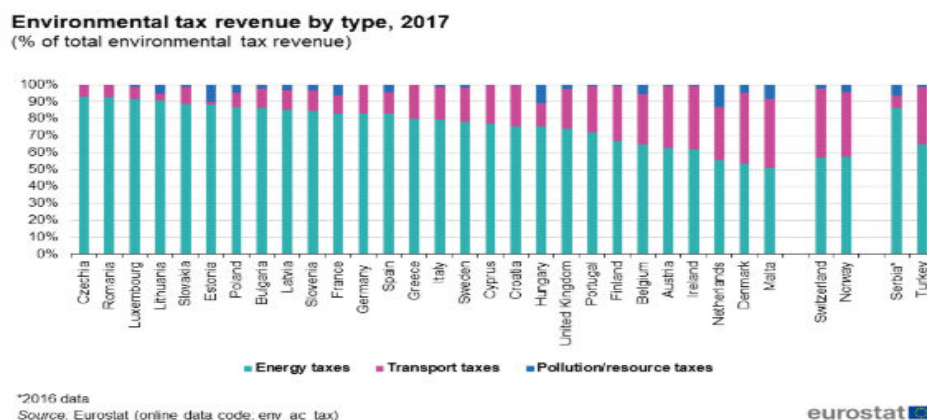
However, as may be noticed from figure nr. 2 there is no such significant progress in this kind of tax shift at the EU level, marking the further implementing of an EFR. Following the financial crisis, the economy (GDP), and the total tax revenue, grew at a faster pace than environmental taxes in the EU (see in figure nr. 2). This lack of progress comes in spite of renewed interest in environmental fiscal reform, driven by various factors including the push for fiscal consolidation and the growing recognition of the financial burden of certain measures such as fossil fuel subsidies. (EEA, 2018)

In addition to taxing energy and carbon, the pollution and resource taxes offer opportunities to further reduce environmental pollution and improve material resource efficiency, moving towards a green economy.

**Figure nr.3: Environmental tax revenue by type, EU-28, 2002-2017 (EUR million and % TSC)**



**Figure nr. 4: Environmental tax revenue by type, 2017**  
(% of total environmental tax revenue)



Unfortunately, this type of environmental taxes are still largely unused in the EU, comprising only 3.3 % of revenues from all environmental taxes in 2017, which corresponds to around 0.08 % of gross domestic product (GDP) in the EU (Figure nr. 3).

Although the economic recession may have brought, in EU and Romania as well, some positive effects or opportunities of cutting resource-intensive production, the issues have been more or less powered and acknowledged by the public and private stakeholders in the national economy (Frone D.F., Frone S., 2015).

It may be noticed from figure nr. 4 that, for instance, in Romania the pollution and the resource taxes are almost negligible, since they are so low that they hardly contribute either to the fiscal revenues and/or to the environmental protection, to the increasing of resource efficiency.

Over recent years, there has been no sign of an increase in the share of pollution and resource taxes in environmental taxes. This is despite an increasing focus on material resources in EU policy, represented, for example, by the 2011 Roadmap to a Resource Efficient Europe and the 2015 Circular Economy Package.

The Seventh Environment Action Programme (7th EAP) calls for a shift in taxes from labour towards pollution and resource use as a means of helping to achieve environmental objectives and stimulating employment and green growth.

However, revenues from labour taxation remain eight times higher (about 48%) than the revenues generated by environmental taxes in the EU (about 6%). These relative shares in overall taxes have changed very little over the years and only a limited number of EU countries have decreased their share of labour taxes while increasing their share of environmental taxes. Nine EU Member States shifted taxation away from labour and towards the environment between 2003 and 2016 (Bulgaria, Estonia, Greece, Hungary, Italy, Latvia, Poland, Romania and Slovenia) but changes were quite small (EEA, 2018).

The main reasons for this lack of progress appear to be a combination of the political difficulty of making any changes to a country's tax system, along with the real and perceived economic and social challenges regarding environmental taxes. Research and analysis suggest that, in order for it to be successful, this type of fiscal reform requires careful planning to avoid any negative economic and social impacts, and widespread consultation that reflects good governance principles.

The lack of progress with environmental fiscal reform may be also a result of a number of obstacles in relation to implementing environmental taxation. In the last review of tax reforms in Member States (EC, 2015), the European Commission refers to three such key barriers:

- 1) the potentially regressive nature of environmental taxes and the possible associated equity issues;
- 2) the potentially harmful effect on the competitiveness of the sectors concerned;
- 3) the administrative and enforcement costs of raising these taxes.

As regarding the prospects of the Environmental Fiscal Reform in the European Union, there are no current indications from the vast majority of Member States that they intend to shift taxes from labour towards the environment, so the outlook for 2020 appears negative. However, not only the shift from the labour taxation may be a double dividend to be achieved through the EFR, since it depends from a country to another whether this is the highest priority or not.

For instance, in Romania, there is still quite a large scope to be done in the respect of the Environmental Fiscal Reform, due to the fact that both the environmental and the macroeconomic sectors may benefit from an increase in the size and scope of the environmental taxation.

Consequently, we agree that, in the long run, developing a real industry for the environment protection with EU technical and financial support could be the best solution Romania has for achieving the benefits of the double dividend theory (employment–economic growth–environment protection). (Radulescu M. et al., 2017)

## 5. Conclusions

The environmental taxes are modern and efficient policies with an important role in promoting a sustainable development, since they have both environmental and socio-economic benefits. The integration of taxation for income collection with the taxation to correct behaviour, underpins the inauguration of a new set of problems that take into account, at some level, a "double dividend" assumption.

In the conceptual analysis of the double dividend developed in section 3, the objective was to emphasize the fact that the economic and environmental efficiency of EFR may be combined in the so-called double dividend, since it is represented by a combination of income tax cuts and a greater emphasis on taxation of natural resources, as inputs and outputs - for example, water, energy and CO<sub>2</sub>, much needed in view of a transition to the green economy.

Although there are quite important obstacles and barriers that have prevented most EU countries from implementing a strong EFR, the European Commission, nevertheless, offers successful implementation strategies, namely transparency and early engagement with those affected by the tax, gradual implementation of the tax according to a pre-announced schedule and making such tax measures part of a broader policy package designed to achieve the specific environmental objective.

However, for now, the absence of policies promoting a shift of the tax base from labour to environmentally damaging goods and practices over past years, and the lack of plans by the vast majority of Member States to implement these changes, make it unlikely that the 2020 (10% of the TSC) objective will be met in the European Union.

A direction of further research is to show that in Romania, the further development and increase in the environmental taxation for the EFR is needed in order to promote a sustainable and greener economic development.

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