Perspectives of the Environmental Taxes Evolution in the European Union

Daniela Pîrvu[1]
Emilia Clipici[2]

Due to its trans-sectorial nature and to its direct interference with the economic growth, the environmental policy of the European Union is facing a series of specific problems. For example, the adoption of certain environment protection measures, among which the implementation or increase in environmental taxes sometimes generates tensions and opposition, especially from the polluters who denounce restrictions in the industrial development. As a result of the recent downtrend in the environmental tax revenues in the member states of the European Union, the objective of this paper is to foresee the perspectives of the evolution of environmental taxes in the world current economic context.

Key words: *economic policy, efficiency, financial instruments, revenues, utility*
JEL Classification: *H23, H30*

I. Introduction

Although important progress has been made lately for the improvement of the quality of the environment, at the global level, there are still many problems for the solution of which great financial resources should be allocated.

[1] **Daniela PIRVU**, Lecturer of Finances at the Department of Economic Theory and Finance, University of Pitesti, Romania, ddanapirvu@yahoo.com
[2] **Emilia CLIPICI,** Lecturer of Finances at the Department of Economic Theory and Finance, University of Pitesti, Romania, emilia_clipici@yahoo.com

According to Organisation for Economic Co-operation and Development (OECD), the major global challenges concerning the key environmental indicators are (OECD, 2008):

- to limit emissions of CO_2 and other greenhouse gases and to stabilise the concentration of greenhouse gases in the atmosphere at a that would limit dangerous anthropogenic interference with the climate system. This implies, among other aspects, increased efforts for the decoupling of greenhouse gas emissions from economic growth. Due to the fact that in many countries (especially in the Asia-Pacific and North America regions) CO_2 and other greenhouse gas emissions continue to grow, the OECD studies have emphasized that, at the global level, only a relative decoupling has been achieved. Part of the reasons for this situation are to energy production and consumption patterns and trends, often combined with overall low energy prices;

- the reduction of the emissions of NOx and other air pollutants that affect the people's health, ecosystems and buildings and create multiple economic and social consequences. This implies implementing strict pollution control policies and technological progress. In the OECD member states, in 2005 as compared to 1990, the emissions of NOx and SOx were significantly decreased, showing an absolute decoupling of these states from economic growth. However, the steady growth of road traffic, it is difficult to reach the emission ceilings set by the Gothenburg Protocol for 2010;

- the gradual decrease in the production and consumption of ozone depleting substances and, consequently, the increase in the ultraviolet B radiations on human health, crop yields and the natural environment;

- the decrease in wastes and their recycling internalizing waste management costs into the prices of consumer goods and into the tariffs of the services provided by the companies that collect and recycle wastes. The waste management represents a highly important area because the amount of domestic/municipal wastes generated in

the OECD countries has increased from 1980, to more than 650 million tons in 2006 (560 kg per inhabitant);

- decreasing polluting discharges, connecting dwellings to the water supply and sewage systems, increasing investments in water treatment plants and a more systematic integration of the water quality in the sector policies;

- providing for a sustainable management of the forest resources. This implies integrating environmental concerns into forestry policies, especially in the context of the increase in the commercial exploitation of wood (which is the case of the OECD member states).

Among the environment protection measures, the financial instruments have a double function:

- have an influence upon the population and economic agents' behaviour for the purpose of achieving the environment policy objectives;

- produce a series of financial resources that allow the financing of the environment protection actions.

Ever since 1920, in his work entitled "Economics of Welfare", Arthur Pigou argued that emission taxation should reduce pollution in the most efficient way. The implementation of an environmental tax system would generate a double dividend: the decrease in pollution and the increase in the public revenue. Until the end of the 20th century, economists did not take into account that environmental taxes could distort economic activity. However, the taxation of any goods and services generates an increase in their costs to purchasers, thus stimulating them to find more economic alternatives. This is why environmental taxes create economic pressures for the change in the consumer's behaviour, i.e. stimulates the purchase of tax free, and therefore, less desirable goods and services. The direct effects shall be the decrease in the economic welfare (Morgenstern, 1995).

II. Environmental taxes in European Union

Starting in the early 1990s, a number of countries, in particular in the European Union, have implemented so called "green tax reforms", which generally can consist of three types of approaches: (Barde, 1999):

- reduction or elimination of environmentally harmful subsidies, exemptions in environmentally related taxes potentially harmful for the environment;

- restructuring of existing taxes according to environment criteria;

- introduction of new environmentally related taxes.

The environmental taxes and fees were adopted in the EU member states as a way to promote the use of the fiscal instruments for the purpose of increasing the environment policy efficiency. The environment taxes and fees are not imposed at the level of the Community, but in and by the Member States, and the European Commission permanently encouraged this strategy.

Environmental taxes are an instrument to adjust revenues in national budgets and to some extent serve as an incentive to change the behaviour of citizens by increasing the costs of certain products which have a negative impact on the environment (Steinbach, 2007). The environmental taxes are divided into four categories:

1. Energy taxes include taxes on energy products used for both transport and stationary purposes. The most important energy products for transport purposes are petrol and diesel. Energy products for stationary use include fuel oils, natural gas, coal and electricity. The CO_2 taxes are included under energy taxes rather than under pollution taxes because they are partly introduced as a substitute for other energy taxes (Schlegelmilch, 1998). In October 2003, the European Union introduced a Directive restructuring the Community framework for the taxation of energy products and electricity (2003/96/EC). It

widens the scope of the EU's previous minimum tax rate system from mineral oils to all energy products (including coal, natural gas and electricity) and increases the rates of previously existing minimum tax taxes. It thus aims at reducing distortions that currently exist between Member States and between mineral oils and the other energy products which up to now have not been subject to EU tax legislation. The Directive is considered an essential requirement for both the proper functioning of the internal market and the coherence of energy, transport and environment policies in Europe (Kohlhaas et al., 2004).

2. Transport taxes are related to the ownership and use of motor vehicles. Taxes on other transport equipment and related transport services are also included here, when they conform to the general definition of environmental taxes. The transport taxes may be related to imports or sales of the equipment or they may be recurrent taxes such as an annual road tax. Taxes on petrol, diesel and other transport fuels are included under energy taxes (Streinbach et al., 2009).

3. Pollution taxes include taxes on measured or estimated emission to air or water, management of solid waste and noise. An exception is the CO_2 taxes, which are included under energy taxes (Streinbach et al., 2009).

4. Resource taxes are related to water consumption, forestry and mining. Taxes on oil and gas extraction are excluded from the definition of environmental taxes, as these are often designed to capture the resource rent and do not influence prices in the way that other environmental taxes do (Streinbach et al., 2009).

In most of the European countries the energy tax receipts account for the most important proportion in the total environmental taxes.

Table 1

Environmental tax revenues in the European Union (2008) in % of GDP

Country	Environmental taxes (% of GDP)	Energy taxes (% of GDP)	Transport taxes (% of GDP)
Belgium	2.1	1.3	0.6
Bulgaria	3.4	3.0	0.3
Czech Republic	2.5	2.3	0.2
Denmark	5.9	2.3	2.2
Germany	2.2	1.9	0.4
Estonia	2.3	1.9	0.1
Ireland	2.4	1.2	1.2
Greece	2.0	1.2	0.8
Spain	1.8	1.4	0.4
France	2.1	1.4	0.6
Italy	2.6	2.1	0.5
Cyprus	3.4	1.8	1.6
Latvia	2.1	1.7	0.3
Lithuania	1.8	1.6	0.1
Luxembourg	2.6	2.4	0.2
Hungary	2.9	2.1	0.6
Malta	3.7	1.8	1.7
Netherlands	3.9	1.8	1.4
Austria	2.4	1.6	0.8
Poland	2.7	2.4	0.2
Portugal	2.9	2.0	0.9
Romania	2.1	1.7	0.3
Slovenia	3.0	2.3	0.5
Slovakia	2.3	1.8	0.2
Finland	2.8	1.7	1.0
Sweden	2.6	2.2	0.4
United Kingdom	2.5	1.8	0.5

Source of data: Eurostat Statistical books, 2010

Having environmental tax receipts of 3.4% of GDP in 2008, Bulgaria exceeded the European average, its tax energy receipts being the highest in the European Union (3.0% of GDP as compared to the European average: 1.9% of GDP).

In Belgium, starting with 1 July 2008, the government offers to purchasers of low-emission cars the possibility to benefit by the decrease in such car prices by their exemption from taxes related to such purchases. This is a 15% decrease in the purchase price for cars that do not exceed a CO_2 emission of 105 g/km (maximum 4350 EUROS) and 3 % decrease in the purchase price of cars that have CO_2 emissions between 105 and 115 g/km (maximum 810 EUROS). Moreover, for the reduction of the conventional energy consumption, the government bears maximum 3440 EUROS of the expenses with the implementation of a solar heating system.

In 2008, Cyprus was on the fourth place among the European Union member states with the largest environmental tax receipts (3.4% of GDP). The high transport tax levels are remarkable (1.6% of GDP), i.e. by 0.9 percentage points above the European average. Denmark has had the highest environmental tax receipts (5.9% of GDP), following the implementation, between 1999 and 2002 of a fiscal reform meant to increase taxes of all pollution sources.

Lithuania had, in 2008 the lowest level of environmental tax receipts (1.8% of GDP), also doubled by a very low level of transport tax receipts (0.1% of GDP). The highest transport tax receipts were recorded in Malta (1.7% of GDP). The transport tax receipts have significantly increased in the Netherlands, too, the Netherlands being one of the few European Union countries with high levels of pollution charges. Moreover, important measures have been taken for the increase in the environment quality: a tax on publicity leaflets, a tax on packaging materials and the increase in the excise duty on the environmentally-unfriendly fuels. The energetically efficient cars benefited, in 2008, by a decrease of 1000 EUR in the registration tax,

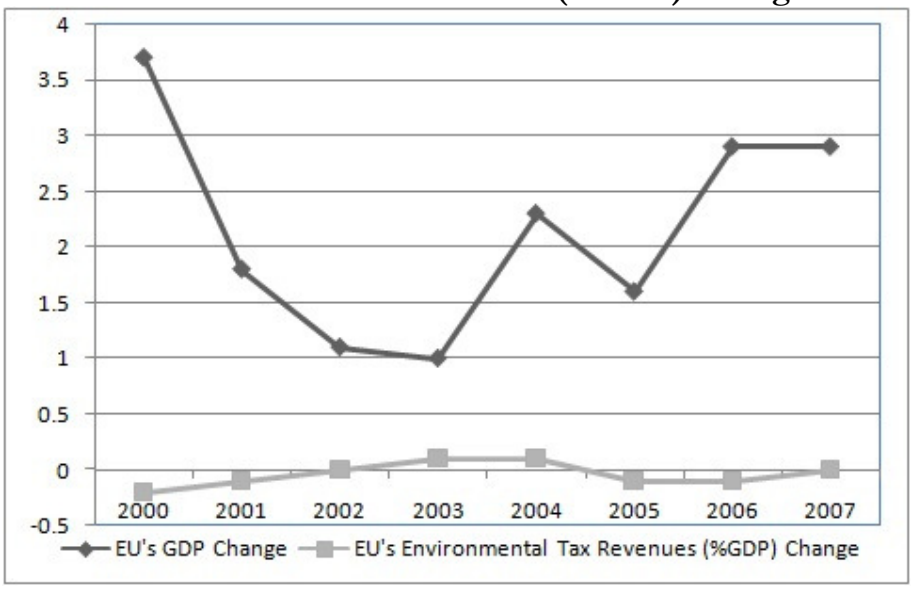
while for the energetically inefficient cars the tax was increased by 540 EUR. The cars with CO_2 emissions that exceed 240 g/km, respectively 200 g/km function of the type of fuel that is used (petrol or diesel) have been subjected to a tax of 80-90 EUR for each additional CO2 g/km.

In Poland, small enterprises benefit by a decrease of 20-15% in the profit tax if they commit to protecting the environment.

III. Perspectives of the evolution of environmental taxes

Despite increased interest in environmental taxes generated from the moment of their implementation, the revenues afferent to these taxes have not increased significantly in the European Union in the last few years (see Fig. 1).

Figure 1
Comparative evolution of EU's GDP Change and EU's Environmental Tax Revenues (%GDP) Change



Source of data: Eurostat Statistical books, 2010

In 2007, the environmental taxes revenues in EU-27 represented 2.7% of GDP and 7.2% of the total tax revenues. As compared to 1980, when the environmental tax revenues represented 0.5% of GDP, the increase is significant. Starting with 1999, the environmental tax revenues have begun to decrease, and there was no longer any correlation between them and the changes in GDP or in the total fiscal revenues.

Table 2
The evolution of environmental tax revenues in % of GDP

	1999	*2000*	*2001*	*2002*	*2003*	*2004*	*2005*	*2006*	*2007*
EU 27	2.9	2.7	2.7	2.7	2.8	2.9	2.8	2.7	2.7
EU 25	2.9	2.7	2.7	2.8	2.8	2.9	2.8	2.8	2.7
EA 16	3.0	2.8	2.8	2.8	2.9	2.9	2.8	2.7	2.6

Source of data: Eurostat Statistical books, 2009

At the level of EU 27 and EU 25, the diminution of environmental tax revenues was compensated by the implementation of environmental taxes de by the new member states where an increase in such revenues was noted. For example, in Bulgaria the environmental tax revenues grew in 2006 to 3.1% of GDP as compared to 2.5% of GDP in 2000 and in Poland to 2.8% of GDP as compared to 2.1% of GDP.

However, by analyzing environmental tax revenues as percentage of the total fiscal revenues we notice an increase in the period 1995-2006 in most new member states, as well as in the Netherlands, Denmark, Finland, Germany, and Austria.

In order to explain the decrease in the environmental tax receipts as percentage of GDP, we should mention that these taxes are usually established in nominal terms, and are expressed on the physical consumption unit. Consequently, their real value, in as compared to GDP, tends to decrease, especially if they are only for inflation such as the ad-valorem taxes. On the other hand, the members of the government do not easily consent to increase the rates of such taxes, due to the fact that they have a direct impact on the population's and economic entities' energy expenditure.

The increase in the popularity of other instruments used by governments to encourage population and companies to adopt measures for the reduction of the consumed quantity of conventional

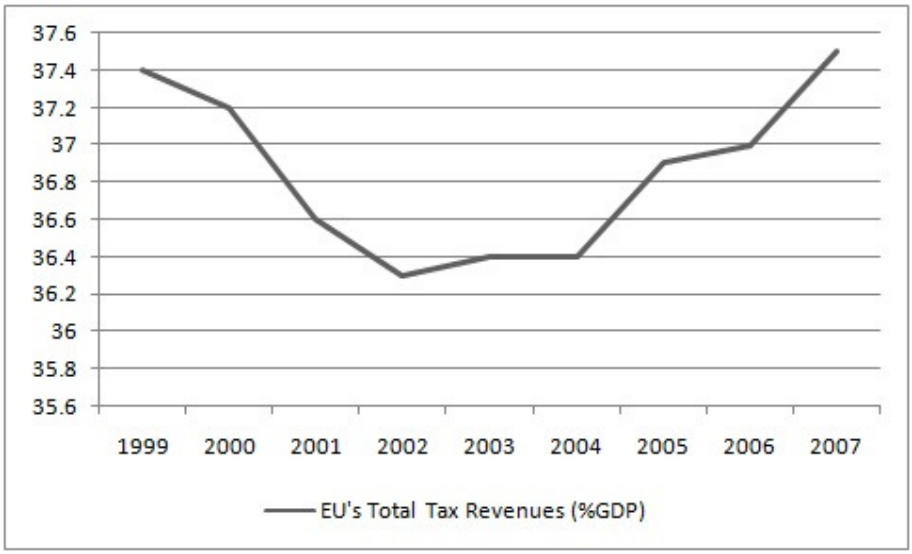
energy (subsidizing more energy-efficient production technologies, solar heating systems, exemptions from part of the taxes, etc) and the prospects of the increase in the oil price that generated new pressures on the prices of goods and services, diminished the interest for the increase in environmental taxes.

Taking into account the changes that are currently taking place within the fiscal systems of the European Union countries, as well as the peculiar economic context, in the next few years we may see a revival of the views that appreciate the economic and social utility of environmental taxes. For example, currently, we see a decrease in the percentage of fiscal revenues in GDP (see Fig. 2) as a result of:

- the decrease of the average general corporate tax rate in the EU-27 with 11.8 percentage points in the period 1995 to 2009, with the purpose of attracting direct foreign investments;

- the promotion of new social security policies focused on the private component of the insurances for disease risks, accidents, old age, etc and that have led to a reduction of the compulsory contributions to public funds.

Figure 2
The evolution of total tax revenues in EU 27 in % of GDP



Source of data: Eurostat Statistical books, 2009

As a result of the effects of the international financial crises, in the years 2008 – 2010 the collected fiscal revenues are expected to decrease, so that the European Union member states will have great difficulties in financing not only their environmental objective, but also all the objectives of the economic and social policy. Consequently, the increase in the environmental tax receipts may constitute a breath of life for the currently severely tried public budget.

However, most environmental taxes should be applied very carefully and taking into account the distortions that can be generated by such taxes in the economic environment. The popularity of higher energy taxation differs substantially depending on the stakeholders. While it is supported by the population, several enterprises, trade unions and the majority of governments, it is opposed by the energy intensive industry and some countries. Other barriers of a legal, institutional or administrative nature are also discussed:

- The difference in economic development between the Member States has proven to be an obstacle when it comes to the point of implementing higher energy taxation.
- A major obstacle to higher energy taxation seems to be the perceived impact on competitiveness, particularly of energy-intensive sectors. If energy-intensive companies are shut down in a country and their activity reallocated to another region of the world, this would coincide with a decrease in jobs on the domestic market.
- The impact on inflation. Some Member States fear that additional energy taxation could negatively affect the Maastricht criteria for the European Monetary Union.

Can be recommended the increase in the transport taxes especially for the countries that are currently confronted with financial difficulties and in which the related tax revenues are very low (Lithuania, Romania, Slovakia, Czech Republic etc). Moreover, measures can be adopted for the increase in pollution taxes and in raw material taxes, considering the low level of these taxes, or even the absence of budget revenues from such taxes in some countries (the Czech Republic, Greece, Estonia, Cyprus, Austria, Portugal etc).

IV. Conclusions

Due to the increase in the people's exigencies related to the quality of the environment, many countries have shifted their focus on environmental taxes.

Despite the contradictory signals related to the efficiency of environmental taxes as well as to the downtrend in the revenues from such taxes at the level of the European Union, the situation of the resources available to the state for the achievement of the economic and social policy objectives, also influenced by the current global context suggests that, in the future, the importance environmental

taxes might grow. The increase in environmental tax revenues, especially in the new member states, may generate an increase in the capacity to attract European funds, by providing for appropriate co-financing.

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