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POLLUTER`S BEHAVIOUR IN THE ACTUAL FISCAL CONTEXT

Case
Study

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Abstract

The development of a sustainable fiscality represents the most important concern of a strong economy. Achieving the optimal taxation represents the trend of performance meaning. C.Pigou considers that the polluter has to pay a special tax for his actions. This issue was debated by Pigou in 1920, being applicable nowadays to macro level. The question that we are trying to answer is if these taxation systems might be applicable to whole population, taking into account that the consumer is a permanent polluter. In the article we analysed the polluter`s behaviour and we analyzed he pigowian taxes that must be regulated by the fiscal system of taxation. Also, we realised an analysis at European level, about the welfare standard and the level of the environmental taxes.

INTRODUCTION

The economic system is trying to accommodate and to respond to new challenges: maximizing profits while generating fewer “negative externalities”.

“Win win” concept is trying to replace the industrial period thirst that generated high returns also causing huge losses in future (for example pollution). Thus, an important attention is given to “sustainability” globally.

Although this thematic is approached since ancient times, C. Pigou in 1920 trying to introduce the concept which specifies that the polluter has to pay, but the issue is not regulated yet.

The conflict is generated by the fact that the consumer isn't aware that he supports the cost of these externalities. When a company X, produces a product Y which is supposed to use of a pollutant substance, during manufacturing process, the taxes` costs is found in the price of Y product.

The consumer bares the cost of Y product without being aware that he pays for the negative externalities as well. The simply regulation of negative externality by setting fees is not enough.

In the same topic we find the issue of the unfair competition: for example in country Z is regulated charge for use of the substance t to get the product „shampoo” . The cost of this product, manufactured in country Z, is too large compared to the same product „shampoo” which is brought from another country that does not tax it and because of this production is very low or even close in time. Bottom line the productivity is very low or will be down soon. The problem is that country Z has covered the cost of negative externalities, but the charge for domestic production, so if local firms are producing pollution to pay.

METHODS

In order to understand the tax optimum for that economy which generates negative externalities, the debate starts with the analysis by S. Frone (2011). The study contains a theoretical analysis comparing the optimal environmental tax and marginal social damage.

C. Pigou demonstrated, early in his studies that at the point of optimal tax environment will be equal to marginal social damage if there aren't tax revenue collection. S. Forone (2011) in his study examines whether optimal environmental tax increases or decreases to DSM when there are taxes on income (for the collection of budget revenues).

Below, in figure nr. 1, S Forone (2011) demonstrates the case of a pollutant consumption good x.

Where:

MB(x) - describes the marginal benefit of consumption;

MC_{priv} - private marginal cost,

MC_{soc} - social marginal cost of good x.

Considering that in the assumption there is no regulation for the environment protection, the counterbalance point of the market is made for the consumption level of x_0 .

For market balance, the social damage is equal to CDF surface, because at that point the social marginal cost MC_{soc} exceeds the marginal benefit of MB consumption for all units consumed in addition to X_p .

However, some increase in real consumption pollutant x from 0 to X_p rises the social welfare. Pareto Optimum is achieved when private marginal cost MC_{priv} plus external cost EC equalize the marginal benefit S. Forone (2011).

Since 1990, Europe is trying regulations of issues by introducing the environmental tax reform (RFM) and the double dividend.

RFM is trying to regulate and to change the polluters` behaviour by introducing the concept of “green” jobs, encouraging the environmental policies, polluting production tax, etc.

Analyzing the consumer behavior regarding the consumption of polluting products it has been noticed a significant change after introducing the environmental tax. For example, the introduction of ecotax applied on shopping bags, manufactured of materials obtained from non-renewable resources determined the consumer to buy alternative products (paper bags, fabric bags, etc).

Meanwhile, the change of consumer`s preferences is influenced by market offers alternatives and awareness campaign.

Consumer education is the most important part of environmental fiscal policy which can lead to sustainability.

In the literature the natural environment is considered a public property that is in the responsibility and management of the state, so the pollution indicator is calculated as a variable in consumer`s utility function, as:

$$(1.1) \quad u_h = u(x_h, e)$$

- h is the consumer;
- e is the pollution indicator;
- x_h represents a vector for quantities of private goods consumed by h, while the pollution level (or atmosphere quality) e is the same for all consumers.

If the pollutes provide resources in order to reduce the negative externalities caused by their activities, the pollution indicator is calculated as follows:

$$(1.2) \quad e = \sum_h f_i(a_j, b_j^h) x_j^h$$

where:

- a_j , and b_j^h are the resources provided for emissions reductions of j good by the h producer and consumer.

POLLUTER BEHAVIOR IN THE CONTEXT OF TAXATION IN ROMANIA

Romania collects some of the lowest amounts of environmental taxes as percentage of GDP. The main question is which are the fees to be paid by the polluter given that he is the one who produces negative externalities in most of his activities. For example: using water for laundry/washing dishes, using oil for cooking, use cleaning solutions.

Environmental Fund regulates and charges an important part of the consumed pollutant products and services but even though it couldn't manage the situation.

One of the most important factors which generates this issue is the insufficient funding for campaigns and educating population campaigns, thus the consumer accept the tax burden and tries to reduce the consumption of products which generates negative externalities. Meanwhile, by educating the population and tax politics is solved the most important issue, the tax avoidance.

Optimal tax can be achieved by environmental taxes when the consumer is aware about the risk and when he is able to observe that the paid taxes return to society (by arranging green spaces, by developing non-pollutant transportation/bicycles etc).

To determine the necessary budget revenue and expenditure Bovenberg and Goulder, 1996 proposed a model which refers to the potential environmental tax optimization of taxation

$$G = T_C^X X_C + T_D^X X_D + T_D^C C_D + T_L W_L$$

where:

C_C and C_D represent the private consumption of households, clean goods (C-clean) and pollutant goods (D-dirty). This consumption is taxed by T_D^C T_C^X and T_D^X represents the taxes on intermediate consumption of clean goods and pollutant goods.

In Romania the most important taxes that are collected from the Environment Fund are (N. Marcu, O. Cercelaru, 2015, p. 223):

- taxes energy products;
- fees for use of resources;
- charges for vehicle engines;
- fees for emissions of gaseous pollutants or greenhouse
- fees for waste disposal.

The problem that rises in environmental policies is the fact that such fees do not generate a correct proportionality between the fees paid by the taxpayer and benefits must create them using the

Environmental Fund. (N. Marcu, O. Cercelaru, 2015 p. 223)

Polluter in Romania has an irresponsible behavior, avoiding as much as possible to pay for negative externalities that are done. Mainly, this reaction is caused by poor management Environment Fund polluter doesn't know how to use the proceeds to protect the environment. Also, lack of education in the field and strong promotional campaigns polluter does not allow realizing the problem.

According to the income and expenditure of the Environment Fund approved by Government, declared income varies significantly over the past 11 years, which demonstrates the instability of tax regulations in the field, as shown in Figure no. 2.

An atypical situation is found in this issue is the restitution amounts of car pollution tax / fee for emissions from cars / stamp medium cars, which generated difficulties on taxation provisions in the field.

Also, another important issue which affects the Environment Fund revenues is the level of tax evasion, thus being estimated an underground economy of almost 50% from tax liability of standing timber selling and tax duties on the national market of tyres.

Correlating the Environment Fund income and expenditure on education and awareness on environmental protection it can be noticed that there is a very small percentage allocated. This explains to some extent the difficulties in collecting taxes which form the Environment Fund since a very small percentage is allocated for awareness. Considering that the Environment Fund was established under Law no. 73/2000, published in the Official Gazette no. 889/09 December 2002 and regulated by Government Decision no. 1989/2004 for the approval of the organization and functioning of the Environment Fund Administration and its organizational structure published in the Official Gazette no. From 1155 to 1107 in December 2004, we analyzed its activity starting with 2006.

In most cases, the percentage allocated for education and awareness in domain is much larger, often above 50%, being considered an investment expense, then a small tax evasion to be registered. In Romania, the share allocated to these expenses registered an upward trend, reaching a peak in 2017, 9.78%, as shown in Table 1.

An issue debated in the analyse is the need to regulate uniform taxation as negative externalities. Thus, the European Union issued European Directives.

For example: Directive. 2004/12 / EC regarding packaging and packaging waste amending the Directive. 94/62 / EC provides for a number of objectives to be achieved by Member States of the European Union. Thus, Romania, should:

- until 2020 to recycle and reuse minimum 50% of the total mass quantities of waste

metal, paper, glass, plastic, etc. from domestic waste or other sources (if necessary);

- until 2020, to capitalize at least 60% of total packaging waste from packaging placed on the national market.

WELFARE AND ENVIRONMENTAL TAXES IN EUROPE

European Environment Agency noticed that in Europe, emissions of air pollutants have declined significantly over recent decades, resulting in improved air quality. But the situation is still serious, air's quality is still below the acceptable thresholds, recording very high atmospheric polluters.

The problem is not yet solved, because still approximately 90% of the urban population in Europe is exposed to high pollutant concentrations considered harmful for health.

For example, particulate matter (PM) in the air reduces life expectancy in the EU more than eight months. Pollutant carcinogen benzopyrene is increasingly worrying in many urban areas, particularly in Central and Eastern Europe, being present in concentrations above the threshold for human health protection. (European Environment Agency, Air Pollution, 2017)

At EU level action programs are trying to resolve the situation at the macro level. It is currently implementing the Sixth Environment Action Program (6th EAP), which is trying to achieve air quality that do not have unacceptable impacts and risks to human health and the environment. In this situation the European Union is trying to regulate by law the Directive, by institutional collaboration with national/regional authorities, by supporting NGOs, including support for research. "Green Fees" are regulated differently in Europe. For example Taxation of sealed surfaces and water run-off are taxed differently from country to country: in Sweden, England, France and Germany. In Germany, a third of cities, the population must pay 'tax rainwater'. However taxpayers receive a discount if you insure retention or filtration. This tax has generated a significant change, citizens are determined to install green roofs, green roofs denied creep thus increased from 10 million m² 1995-84000000 1999. In Stockholm (Sweden), this fee is reduced by up to 50% if attenuated or reduced run-off of rainwater drainage system to the urban areas. Also fee may be reduced to 100% if the building is autonomic and has no need for the public drainage system. London (England), the national authority has adopted a strategic plan to create a framework for integrated economic, environmental and social development and ecological city. Regarding this it is encouraged the

development of a green infrastructure in climate change adaptation and their reducing, reducing of floods, ensuring a sustainable urban drainage, improve water quality by conserving landscapes and cultural heritage, etc.). Thus, in London, about 47% of houses / buildings have green roofs, green walls and other green infrastructure elements. Given the present situation there are significant differences that are found on the negative externalities taxation policies. However the European Union seeks to regulate, with standardization of indicators showing pollution (air pollution, water pollution etc.) communities and gradually imposed by all member states. As noticed Marcu et. al (2016, p. 1195), „the emissions of chemical pollutants in the atmosphere are monitored and evaluated based on the emission ceilings stipulated by Gothenburg Protocol, implemented at EU level by Directive no. 2001/81/EC”.

Analysing Pollution indicator calculated as a percentage of total population for 16 EU countries we observe the waving generated by the changes in its environmental policies (including tax regulations) and were calculated the regression equation in order to observe the trend, using a second order polynomial coefficient function. It can be observed that the function has concavity properties recording a downward trend in recent years, figure nr 3.

The general function of the modules is the following

$$y = -0,1517x^2 + 1,5446x + 16,058$$

The strongest variations are seen in Slovenia, Belgium, Romania and Greece. Economic and social changes that were felt in these countries, financial difficulties registration in Greece, legislative changes relating to environmental stamp in Romania have generated significant changes from year to year in the indicator. About significant changes are recorded, as well, in Spain, where in 2006 the indicator reaches a significant percentage dropping-off from 16.8% 2015 to 10.3%.

CONCLUSIONS

The importance of analyse the polluter behaviour in the context of taxation is essential for sustainable development. Concern increasingly larger society on the environment comes as response to the awareness that resources are limited.

The state engagement is fundamental for this issue and the regulation of legal aspects represents it duty (the state might be compare with a invisible hand that supervise the welfare state).

By the analysis conducted we noticed an increase in the tax regulations, but unfortunately in the recent years these were slowed down even recorded regression due to important changes in economy, economic crisis, changing consumers' needs and preferences. Drăcea et al. (2009, p. 39) appreciated that the tax general level has to be "correlated to its effects over the social environment".

Analyzing the polluters' behaviour in Romania there is an irresponsible behavior, avoiding as much as possible to pay for their own negative externalities. This reaction is generated mainly by the wrong management Environment Fund, the polluter doesn't feel the effects of means to use the proceeds in order to protect the environment. Also, due to the lack of education in the field and strong promotional campaigns, the polluter does not allow to realize the problem, eventhough the purchase process is „a decision-making process under risk”. (Girboveanu S-R., 2012). At EU level, the situation is different, the main problem being generated by differences in environmental policies. Regarding the issues studied the transition to the concept "win win" and internalizing of negative externalities becomes critical and absolutely necessary for sustainable development. The concern to ensure natural assets is generated both due to their essential character and limited nature.

Still many companies in the Romanian industry don't see this new perspective. Some authors identified influence factors on the return of equity (profit margin, asset turnover, financial leverage). (Circiumaru D. et al., 2010; Buse L. et al., 2007) However, any strategic approach is based on „a good knowledge of the company and its environment, made possible through the company's diagnosis” (Meghisan G.-M., 2012) Acatrinei M. et al. (2013) also take into consideration the financial uncertainty linked to „the investors' keenness to move capital findings to the Eastern Europe”. However, the globalization represents „the destiny that everybody turns to, an irreversible process that affects all of us”. (Meghisan G-M. and Meghisan F., 2012).

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FIGURES

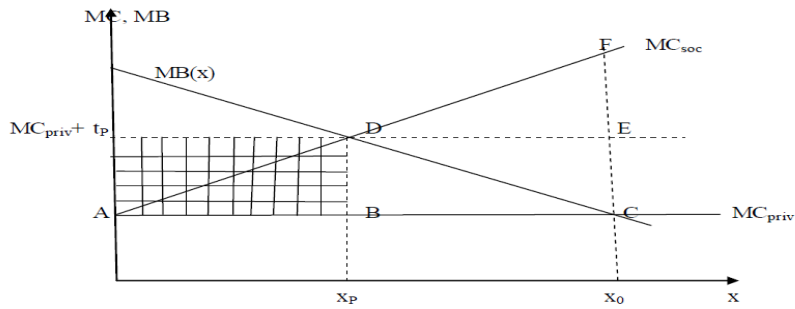


Fig. 1 Piguvian tax

Source: Research report: Economical benefits of environment's protection politics. Aspects regarding the impact over public finances Dr. Simona FRONE

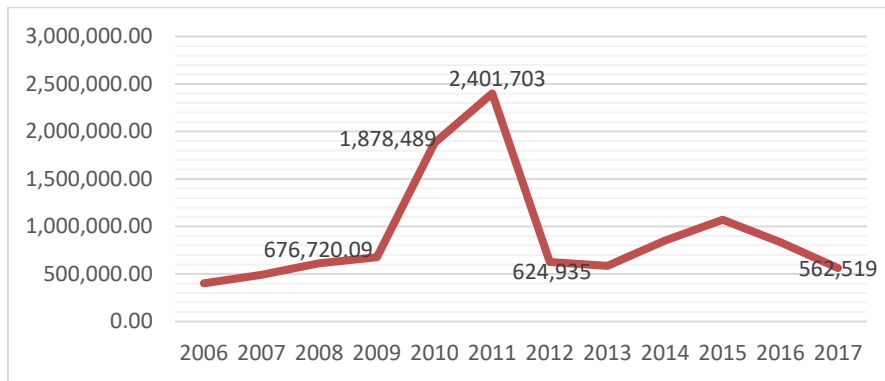


Fig 2. Environment Fund revenues

Data source: http://www.afm.ro/informatii_publice_bvc.php author's own calculations

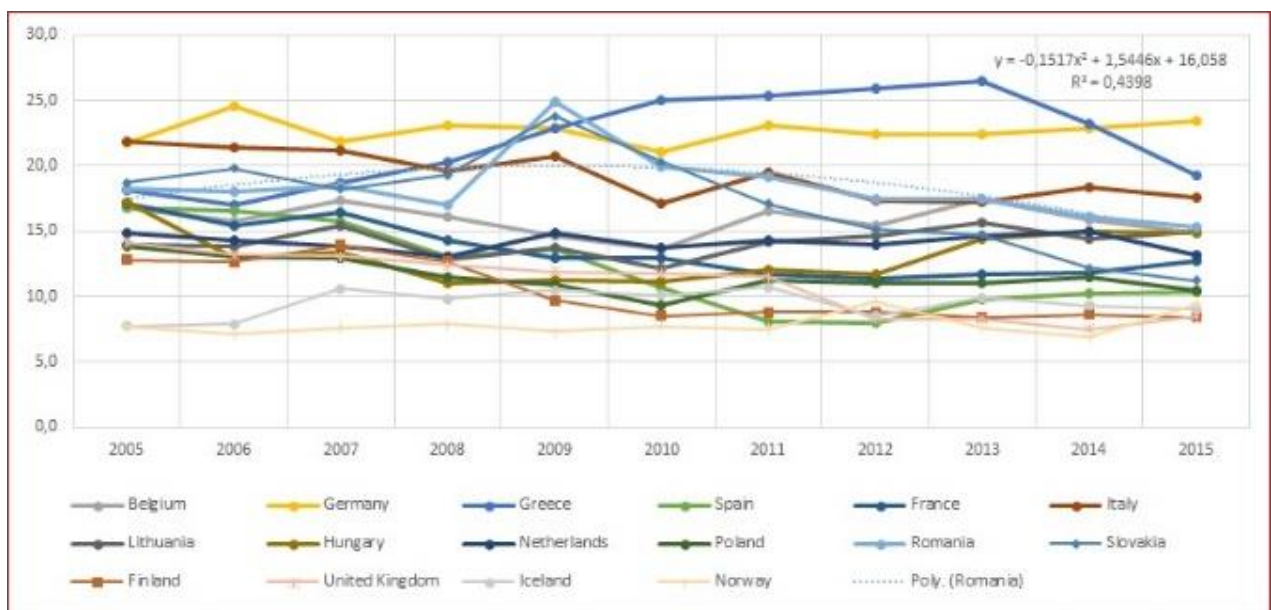


Fig. 3 Pollution indicator

Data source: <http://ec.europa.eu/eurostat>, author's own calculations

TABLES

Table nr. 1 Datas regarding Environment Fund

An	Veniturile Fondului pentru Mediu (mii lei)	Cheltuieli pt educatia si constientizarea privind protectia mediului (mii lei)	% cheltuielilor alocate pentru educatia si constientizarea privind protectia mediului alocat din totalul veniturilor
2006	401.468,11	4.000,53	1,00%
2007	489.869,39	9.359,75	1,91%
2008	611.990,46	9.208,92	1,50%
2009	676.720,09	10.763,63	1,59%
2010	1.878.489	34301	1,83%
2011	2.401.703	49731	2,07%
2012	624.935	14.348,00	2,30%
2013	586.242	18.560,00	3,17%
2014	852.485	46.000,00	5,40%
2015	1.071.000	55.000,00	5,14%
2016	836.461	50.000,00	5,98%
2017	562.519	55.000,00	9,78%

Data source: http://www.afm.ro/informatii_publice_bvc.php author's own calculations