CONFERENCE PAPER

Environmental Taxation as a Tool for Sustainable Development Policy-State Comparison of Serbia and Application of Ecological Taxation Reform in European Union*

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ABSTRACT *– National Strategy for Sustainable Development of Serbia has given clear guidelines for the direction of the economy, respect for ecological principles, development and implementation of better social and institutional policies. Environmental taxes and all other taxes, the fiscal revenue, but its application has special significance, because in addition to economic, it is ecological, institutional and social character, and as such it is an instrument of sustainable development. With this work the authors suggest moving the value of revenues from environmental taxes in the EU in the period 2005-2010. As this is a period characterized by economic problems caused by the crisis in all countries, there has been a decline in revenues from environmental taxes even in the most developed EU countries. n average, the EU has achieved the highest revenues from environmental taxes in 2008. The largest revenue from environmental taxes has made Germany (EUR 56.031,00 million) at the beginning of the period, while the lowest income in the value of (138,21 million EUR) has made Malta. It should be noted that a downward trend in the character of all countries except Slovenia and Estonia, which joined the EU in 2004. Income that is realized by the collection of environmental taxes is significant and is measured in tens of million, but there is a possibility that the position of business entities that pay for it because it makes it difficult to become less competitive. This paper provides an overview of key economic issues in the use of taxation as an instrument of environmental policy.*

KEY WORDS: *sustainable development, environmental taxation, revenue from environmental taxes, trend, tax reform*

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Introduction

Sustainable development consists form four mutually related subsystems: economic, ecological, social and institutional. Application of those instruments which are simultaneously support all subsystems is encouraged.Contemporary development of European countries is, apart from economic and financial problems (economic crisis) burdened by ecological problems and high requirements imposed by ecological standards. Therefore, the role of government and economic integration, such as the European Union to provide answers to questions on how to harmonize economic development without compromising the ecological environment. The active role of government in the implementation of economic instruments for environmental protection is necessary because market solutions do not provide the best results.

How can sustainable development consists of four interrelated Subsystems, preferred application of those instruments that support them in practice. The aim is to show that environmental taxes are an instrument that supports and influences the smooth development of the four subsystems of sustainable development. Ecological tax is a fiscal instrument that has all the features of the tax. Therefore the role of government is crucial because without legislation there will be positive effects, which makes use of environmental taxes (Golušin, Munitlak Ivanović, 2009). For application of any fiscal instrument, including ecological taxation, it is necessary to have consistent legal regulations, which can be provided only by the state. The state relies on direct regulations which provide curtain pollution: if the environment pollution is banned above a defined level, that is, if the pollution is regulated by sanctions, then the maximal level of pollution is known in advance (Coase, 1960). Of all the subsystems that make up sustainable development, institutional development is the latest. This indicates the importance of environmental taxes as an instrument for the development of institutional subsystems. The existence of legislation is necessary for the implementation of environmental taxes.

Arthur Pigou, theoretic of welfare economic, in 1912 gave an idea of implementing special instrument of tax system which would be in the function of preserving environment. Pigou explained that ecological taxation introduction with the need to internalize external costs, which are made as a consequence of nature devastation (Pigou, 1918). External cost is made outside the market, in the situation when economic situation of a certain business entity is influenced, positively or negatively, by other entity activities. Ecological taxation is capable to correct market limitations and imperfections incurred by externalities.

External effects occur when the market is unable to efficiently allocate resources. There are several ways to remove the negative consequences of externalities. According to the OECD division, there are following instruments (OECD, 1999): compensations and taxes for emissions, users' compensations and taxes, compensation for products, performance and indemnification guarantee.

Transaction costs and public goods difficult to find adequate solutions, so there are limitations to the exclusive application of only one measure. In practice, the right to a quality environment is realized by a combination of these instruments:

1. Subsidies for pollution reduction,
2. Ecological taxation and penalties,

3. Transferable permits and
4. State regulation.

Each instrument has its own different effects and features that act differently on the allocation of resources and environmental costs, that have different redistributive effects This refers to the fact that environmental taxes are an important part of the ecological and economic subsystems of sustainable development. Therefore, the authors emphasize the importance of environmental taxes and the amount of income that can collect in this way and trends of revenues made from ecological taxation.

Characteristics of environmental taxes as an economic instruments of environmental protection

In parallel with growing awareness of the potential for "economic instruments" such as environmental taxes to improve the efficiency of environmental policy, there has been interest in the scope for tax reform using the revenues raised from environmental taxes. Some countries that have been concerned about the impact—either economic or political—of high taxes on labour income, have used environmental tax revenues to reduce tax rates on labour incomes. Sweden's 1991 reforms used revenues from new environmental taxes on energy to finance cuts in labour income taxes. Similarly, a number of the UK's environmental tax measures have been accompanied by provisions to return the revenues through a reduction in the payroll taxes paid by employers. The political attractions of 'packaging' environmental taxes and tax reform in this way are, perhaps, obvious. The environmental gains, too, are relatively clear-cut, but the fiscal benefits of this type of tax substitution are much more contentious.

"Environmental taxation" and "environmental compensation" are strict legal regulations in different OECD countries. OECD countries' regulations make strict distinction between expressions „ecological taxation" and „ecological compensation" in terms of allocation of the financial means collected by compensations and taxations. *Ecological taxation* is centralized revenue which is not primarily intended for environment protection, but it increases local and state revenues. "Ecological compensation" paid for the use of a resource. For the state, both instruments bring revenues, but the revenues are allocated differently. *Ecological compensation* is related to the cases when the dominant part of revenue is intended for covering costs and environment protection (e.g. financial means are collected through funds for protection of certain resources). This is in support of the fact that this instrument is a part of economic subsystem of sustainable development.

Ecological taxation is relatively new tax form, which for tax base takes physical unit of the substance which has harmful effect on the environment.

On one hand, ecological taxation includes taxes directly imposed on goods which have impact on increasing of environment pollution, that is, have impact on scarce natural resources due to the degree of their pollution, and on the other hand, different compensations and similar fiscal duties (e.g. registration taxes, taxes for not compiling with ecological standards and regulations). Ecological taxation influences limitation of ecological harmful products consumption. It reduces harmful emissions up to the level which is considered to be „sustainable".

Rio Declaration on Environment and Development (1992) define that, ecological taxation needs to be:

a) efficient in terms of ecology – to achieve goals of environment protection at the least price
b) efficient in terms of economy – to interfere as least as possible in resources allocation in the market
c) simple in terms of taxation and administration
d) „cheap taxation"
e) neutral in comparison to competition terms and free trade.

Ecological taxation reform process in member states of the European Union

The idea of ecological taxation reform is the intention to reduce pressure on environment by encouraging industrial producers to implement more efficient technologies (from the point of view of energy and resources consumption). Ecological taxation reform is a process of implementation of ecological taxation parallel with abolishing ecologically harmful subsidies. Consumers are encouraged to use more often goods produced in „ecological friendly" way, which supports sustainable development concept and do less harm to the environment.

Fiscal duties (ecological taxation) are incorporated into the products' and activities' prices. Producers and consumers are forced to take into consideration cost of polluting environment when making final economic decisions. This is a simultaneous and combined application of two principles: „producers pays" and/or „consumer pays". Since the ecological taxation is incorporated into the selling price, the cost of taxation in the end pays the consumer. It means that this is a final application of the principle „consumer pays".

In the early 1990s, the process of ecological taxation started in EU articles. Ecological tax reform „green tax reform" was first implemented in Sweden (1990), then in Denmark (1993), Spain (1995), Netherlands (1996), Great Britain (1996), Finland (1997), Italy (1999), Germany (1999), France (1999) and Austria (1999). Ecological taxation was imposed only for some products in Serbia, in 2010 and ecological taxation implementation starts in 2013.

„Green tax reforms" or ecological taxation reform, is enforced in one or a combination of the following ways (Barde, 1999):

- Reduction or abolishing subsidies to production with ecologically harmful externalities, taxation imposing taxes on potentially dangerous substances to for the environment,
- Restructuring of the existing taxation system according to the criteria of environment protection, and
- Implementation of new forms of ecological taxation.

In EU most frequent division of ecological taxations is the one based on the subject of taxation. In the practise, there are several divisions of ecological taxation depending on what is taken as the basis of the division (Pirvu, Clipici, 2010):

1. Energy taxes: refer to energy sources used for transportation and households needs. The most significant taxed energy resources are diesel and gasoline, that is coal, fuel oil, electrical energy, natural gas, and all products which cause negative

externalities. Theese externalities not ecologically acceptable. These are, taxes on products which create pollution either at the moment of their consumption or at the moment of their production. The main advantage of energy taxes is the fact that it is becoming a form of the existing consumption taxation (value added tax, excise tax and other forms of general taxes on sales). This kind of taxation is more efficient and it has lower administration costs which makes its enforcement simpler and cheaper.

2. Transport taxes: refer to the ownership of motor vehicles. Taxes on services related to transport and transportation equipment are also included in this fiscal instrument. This tax can refer to selling of equipment and the import of transportation means and can be calculated annually though road tax. This form of taxation includes taxes on diesel, gasoline and other fuels used in transportation.
3. Pollution taxes: refer to taxes on measured noise pollution, estimated emissions of gas and harmful materials into environment or managing of solid waste. The exception is tax on CO_2 which is included in Energy taxes (Steinbach, N., et al., 2009). This form of taxation is related to estimation of quality and quantity of released polluting material and measuring harmful emission. In terms of ecology, it is most efficient to directly tax the source of harmful emission. However, in most cases harmful emissions are hard to measure precisely.
4. Resource Taxes: refer to exploitation of mineral resources, water and forests. Taxes on gas and oil extraction are excluded from this tax. They are meant to be calculated through the cost of consumption and do not have influence in the same way other types of ecological taxes do.

Methodology

The subject of the analysis is determination of environmental tax revenue in the countries members in the European Union, and monitoring of revenues based on ecological taxation. The subject of the analysis are Iceland and Norway, even they are not EU members (but they are situated in Europe and belong to the group of developed countries). Ecological taxation can improve imperfections of the market mechanism which are caused by externalities.

Table 1 shows Environmental tax revenue in millions of EUR, in all EU countries, Iceland and Norway in the period 2005-2010. On the basis of this table, table 2 was calculated. Table 2 monitors Environmental tax revenue trends in percentages year after year in each country individually. Numerical data in the Table 2 were calculated as chain indices. The level of Environmental tax revenue in millions of EUR from one year is related to the values of the same indicator in the previous year, for each country individually. All datas are based on Eurostat data.

Table 3 represents different revenues collected by institutions for protection of environment in the Western Balkans countries. The main significanse of the table 3 is that shows the differences in calculations and differences in terminology.

Generally, European Union has growth of the environmental tax revenue in the period 2005-2008, but since 2008 the revenue in EU generated through environmental taxes has a

downward trend. Tax revenues generated through ecological taxation in 2009 is decreased in relation to 2008 and in 2010 decreased in relation to 2009. Table 1 indicates that level of tax revenue in the EU generated in this way in 2010 (286.602,86 mil EUR) is almost identical to the values in 2006 (286.896,74 mil EUR)

Table 1. Environmental tax revenue in millions of EUR

Geo/time	2005	2006	2007	2008	2009	2010
European Union (27 countries)	280.737,30	286.896,74	296.304,06	303.564,96	296.996,98	286.602,86
Belgium	6.845,10	7.083,60	6.846,80	6.989,60	6.790,60	6.874,10
Bulgaria	648,38	695,02	767,26	1.033,64	1.218,89	1.060,50
Czech Republic	2.332,74	2.699,36	2.939,03	3.184,70	3.627,66	3.418,01
Denmark	11.058,33	12.400,02	13.497,55	13.317,34	13.329,06	10.662,62
Germany	56.031,00	55.159,00	55.732,00	54.205,00	54.538,00	54.164,00
Estonia	203,46	254,58	293,42	353,11	379,25	413,00
Ireland	3.740,00	4.090,19	4.417,35	4.678,42	4.506,83	3.781,20
Greece	3.993,00	4.081,00	4.196,00	4.627,00	4.561	4.611,00
Spain	16.857,00	17.630,00	18.396	19.124,00	17.840.00	17.163,00
France	38.683,00	38.550,00	39.660	39.828	40.061.00	39.927,00
Italy	38.281,06	38.928,30	40.064,48	40.028,54	38.130,84	39.864,54
Cyprus	506,97	481,34	483,34	535,22	542,3,	490,10
Latvia	288,92	344,57	383,16	437,27	451,17	429,33
Lithuania	492,39	481,91	433,77	507,97	533,95	543,22
Luxembourg	838,89	892,65	891,93	953,8,	986,15	931,40
Hungary	2.249,15	2.417,32	2.530,74	2.797,81	2.853,33	2.436,09
Malta	138,21	158,21	171,98	205,34	200,51	194,89
Netherlands	18.952,00	20.267,00	21.772,00	21.726,00	23.140,00	22.764,00
Austria	6.350,18	6.445,72	6.401,79	6.621,73	6.795,09	6.658,16
Poland	5.281,02	6.487,79	7.493,08	8.359,52	9.486,9,	7.944,34
Portugal	4.478,84	4.557,71	4.603,88	4.783,40	4.406,32	4.202,98
Romania	1.447,82	1.604,49	1.900,11	2.564,75	2.486,23	2.213,99
Slovenia	899,87	919,83	934,31	1.038,43	1.119,53	1.260,83
Slovakia	849,81	919,48	1.014,53	1.161,84	1.317,32	1.225,48
Finland	4.924,00	4.861,00	4.993,00	4.934,00	4.992,00	4.553,00
Sweden	8.154,39	8.445,47	8.648,32	8.856,76	8.934,30	8.212,71
United Kingdom	46.211,77	46.041,18	46.838,23	50.711,77	43.768,75	40.603,37
Iceland	284,27	365,91	332,10	355,03	181,08	134,85
Norway	6.802,39	7.410,24	8.279,5,	8.535,85	8.148,46	7.370,71

Source: Eurostat Statistical Books, last update: 28.07.2011.

The highest revenue was generated in 2008 at the time of the beginning of the first crisis wave. Under such conditions, investment activities fall and consumption reduced, so it is logical to expect for revenues generated though ecological taxation to be reduced.

The highest ecological taxation revenue has Germany, followed by United Kingdom and France. Territorially smaller countries have substantially reduced revenues of ecological taxes: Malta, Iceland and Cyprus. Very interesting is the fact that the best results for that is the case of Slovenia which in the same year, 2008, generated (1.038,43 mil EUR), five times more ecological taxation than Iceland.

Data in the Table 2 were obtained on the basis of data presented in Table 1 and formula for the calculation of chain indices.

Analyzing the datas whole EU we can see that the highest index was noted in 2007, while negative values are noted in 2009 and 2010. Most countries have that trend. The countries which have positive index values in 2010 in relation to the previous year are: Belgium, Estonia, Greece, Italy, Lithuania and Slovenia. The most intense reduction of the index of Environmental tax revenue have Iceland, Denmark and Ireland.

Most countries have positive values of revenue growth in 2007 in compared to 2006. The highest index value in that period have Romania, Poland and Estonia. These results can be explained with the fact that that was the period of accession of new countries to the EU. Naimly, Estonia and Poland were integrated in 2004 and Romania in 2007. Accession to the EU means adapting to stricter ecological standards.

High index values in 2008 in relation to 2007 were obvious. The highest revenue growth in that period had Bulgaria followed by Estonia, Malta, Lithuania, Slovakia, Latvia (the countries which became membero of EU in the last two enlargements in 2004 and 2007).

The year of 2009 in compare to 2008 is the beginning of growth values fall of Environmental tax revenue in millions of EUR and in percentage. That trend is characteristic for the average for the whole EU.

Downward trend of fiscal revenues becomes clearer in 2010 in relation to 2009, since the crisis continues. Out of 27 EU members, as many as 21 countries note negative revenue growth. The highest revenue reduction is noted in Denmark. It is interesting that six countries made growth: Slovenia (12,62%), Estonia (8,90%), Italy (4,55%), Lithuania (1,74%), Belgium (1,23%) and Greece (1,10%). It is necessary to emphasize that Estonia and Slovenia in the considered period did not have negative revenue growth. The fact is that both countries were integrated in EU in 2004!

The growing attention given to environmental aspects of tax policy partly reflects the higher profile of environmental issues in public, political and policy debate more generally. Additional impetus for environmental tax reform has come from the recognition of the limitations of environmental policies pursued solely through conventional regulatory instruments. Over a number of years, there has been a growing awareness that some environmental problems cannot be tackled purely as technical issues, to be resolved straightforwardly through regulations requiring the use of appropriate abatement technologies.

Table 2. Overview in percentages of Environmental tax revenue trends in EU member states in period 2005-2010.

GEO/TIME	Revenue growth in 2006 in relation to 2005	Revenue growth in 2007 in relation to 2006	Revenue growth in 2008 in relation to 2007	Revenue growth in 2009 in relation to 2008	Revenue growth in 2010 in relation to 2009
EU (27 countries)	2,19%	3,28%	2,45%	-2,16%	-3,50%
Belgium	3,48%	-3,34%	2,09%	-2,85%	1,23%
Bulgaria	7,19%	10,39%	34,72%	17,92%	-12,99%
Czech Republic	15,72%	8,88%	8,36%	13,91%	-5,78%
Denmark	12,13%	8,85%	-1,34%	0,09%	-20,00%
Germany	-1,56%	1,04%	-2,74%	0,61%	-0,69%
Estonia	25,13%	15,26%	20,34%	7,40%	8,90%
Ireland	9,36%	8,00%	5,91%	-3,67%	-16,10%
Greece	2,20%	2,82%	10,27%	-1,43%	1,10%
Spain	4,59%	4,34%	3,96%	-6,71%	-3,79%
France	-0,34%	2,88%	0,42%	0,59%	-0,33%
Italy	1,69%	2,92%	-0,09%	-4,74%	4,55%
Cyprus	-5,06%	0,42%	10,73%	1,32%	-9,63%
Latvia	19,26%	11,20%	14,12%	3,18%	-4,84%
Lithuania	-2,13%	-9,99%	17,11%	5,11%	1,74%
Luxembourg	6,41%	-0,08%	6,94%	3,39%	-5,55%
Hungary	7,48%	4,69%	10,55%	1,98%	-14,62%
Malta	14,47%	8,70%	19,40%	-2,35%	-2,80%
Netherlands	6,94%	7,43%	-0,21%	6,51%	-1,62%
Austria	1,50%	-0,68%	3,44%	2,62%	-2,02%
Poland	22,85%	15,50%	11,56%	13,49%	-16,26%
Portugal	1,76%	1,01%	3,90%	-7,88%	-4,61%
Romania	10,82%	18,42%	34,98%	-3,06%	-10,95%
Slovenia	2,22%	1,57%	11,14%	7,81%	12,62%
Slovakia	8,20%	10,34%	14,52%	13,38%	-6,97%
Finland	-1,28%	2,72%	-1,18%	1,18%	-8,79%
Sweden	3,57%	2,40%	2,41%	0,88%	-8,08%
United Kingdom	-0,37%	1,73%	8,27%	-13,69%	-7,23%
Iceland	28,72%	-9,24%	6,90%	-49,00%	-25,53%
Norway	8,94%	11,73%	3,10%	-4,54%	-9,54%

To make any serious impact on some of the major environmental problems now facing policy-makers—acid rain, global warming, traffic congestion—environmental policies will

need to achieve extensive and far-reaching changes to existing patterns of production and consumption. These changes inevitably entail substantial economic costs. The search for instruments capable of minimising these costs, and capable of achieving behavioural changes across all sectors, has led policy-makers in the last decade to pay much closer attention to the potential for incentive-based environmental regulation, through taxes, charges, tradable permits, and other 'economic instruments'. In parallel with growing awareness of the potential for "economic instruments" such as environmental taxes to improve the efficiency of environmental policy, there has been interest in the scope for tax reform using the revenues raised from environmental taxes. Some countries that have been concerned about the impact—either economic or political—of high taxes on labour income, have used environmental tax revenues to reduce tax rates on labour incomes (Fullerton Don, et al., 2007)

Different forms of taxes on environment protection in the countries of the Western Balkans

In most Western Balkans countries the taxation reform has not started yet. Ecological taxation reform is at the very beginning in this region. Fact that there are several forms for collecting and calculation of revenues on environment protection. Different counitres of Western Balkans region use not only different terminology (compensations, taxes, duties), but essentially there are different instruments which are treated differently.

The way of calculation for collecting revenues by different instruments is different. It means that the revenues made by them are treated and are used for different purposes. Depending on the kind of instrument, the revenues can be reinvested into environment protection or they can be centralized and directed as the state revenues or local management revenues.

Table 3. Kinds of ecological taxation in the countries of Western Balkans

Country	Different forms of taxes on environment protection in the countries of the Western Balkans
Albania	- plastic containers taxes - taxes on import of motor vehicles, carbon tax
Bosnia and Herzegovina	- compensation for releasing of industrial water into water flows and using transportation means - compensation for emission of sulfur oxides expressed as sulfur dioxide - compensation for emission of nitrogen oxides expressed as nitrogen dioxide - compensation for non-harmful industrial waste disposal
Croatia	- compensation for harmful industrial waste disposal - special compensation for motor vehicles - compensations for packaging materials and packaging waste - compensation for waste tires management - compensation for waste motor vehicle management

Country	Different forms of taxes on environment protection in the countries of the Western Balkans
Macedonia	- compensation for electrical equipment management - compensation for CO_2 emission - compensation for possessing waste batteries - compensation for waste motor oils - compensation for environment - taxes on gasoline and diesel - import tax on vehicles favoring new vehicles - general tax on motor vehicles
Montenegro	- gasoline tax - fossil fuels tax - CFC tax - CO_2 emission tax
Serbia	- taxes on using motor vehicles (enforcement delayed) - eco taxes on special waste flow (enforcement delayed) - eco taxes on new automobiles (enforcement delayed)

Sources: *Program of the Foundation for Environment Protection and Energy Efficiency 2010-2012*, Zagreb, March, 2010; *Report on Foundation for Environment Protection in Bosnia and Herzegovina 2010*, Fund for Environment Protection, March, 2011; *Fund for Environment Protection of the Republic of Serbia,* Belgrade, *December 2011.*

It is obvious that Croatia has made most progress in collecting and enforcement of tax reforms. Among the abovementioned. Croatia have 14 compensations (this equals taxation) collected by the Fund for Environment Protection and Energy Efficiency of the Republic of Croatia. Because of the crisis, revenues on ecological taxation made by the Fund in Croatia had an upward trend in the period 2004-2008, after which the revenue started to fall (Foundation for Environment Protection and Energy Efficiency, 2010).

As noted above and shown in Table 3, environmental taxation In Republic of Serbia are included as an instrument of environmental protection in 2010, only for some products. The implementing of ecological taxation - eco-taxes on special waste flow, using motor vehicles and eco-taxes on new automobiles are delayed until 2013 (Fund for Environment Protection of the Republic of Serbia, 2011). Albania, Bosnia and Herzegovina, Macedonia and Montenegro, have not made much progress in environmental taxation, comparison to Republic of Serbia (Fund for Environment Protection, 2011). Generally speaking, the Western Balkan countries have a much faster and stronger to become involved in the implementation of environmental standards if they want to become full EU members.

Conclusion

Environmental policy has been transformed over the past decade by the use of environmental taxes, emissions trading and other economic instruments. These allow stringent environmental policies to be introduced at lower economic cost than with less-flexible forms of conventional regulation, which dictate the abatement measures that firms

must take. The cost-reducing flexibility in pollution abatement offered by economic instruments will become increasingly important, the higher the standards of environmental protection which are sought. The fact that there are differences between terms „ecological compensations“ and „ecological taxes“, both instruments bring revenues for the budget of the country. The difference is that the revenue from environmental compensations is reinvest in environmental protection but environmental taxes as a fiscal revenue of the state. Ecological tax reform is aimed to encourage the production and consumption in environmentally suitable products and to discourage neither consuption or production “ecologicaly not friendly” products.

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 environmenta ltaxes 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.

As a result of the effects of the international financial crises, in the years 2008 – 2010 the collected fiscal revenues decreased, so that the European Union member states have great difficulties in financing not only their environmental objective, but also all the objectives of the economic and social policy. 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: energy (exemptions from part of the taxes, subsidizing more energy-efficient production technologies, solar heating systems, 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 in the next few years we may see a revival of the views that appreciate the economic and social utility of environmental taxes.

On the datas and research presented in this paper, it is obvious that revenues collected by ecological taxation are not negligible. Thus they are measured in tens of millions of EUR. Ecological taxation contributes to total public revenue in a country, even they have limited fiscal significance. Analyzing of flow of revenues made by collecting ecological taxes shows that revenues have downward trend, since 2008 (the beginning of the crisis). Only two EU countries members (Slovenia and Estonia) did not have negative values. Collection of ecological taxation contribute country with revenues and, in the same time encourages development of environmentally friendly production and consumption. However, producers who pay the environmental tax, the market less competitive than those manufacturers who do not.

As research showed, Croatia has made most progress in ecological area, in area of ecological taxation reform and collects most kinds of ecological taxes. The countries situated in Western Balkans which are (or tend to be) candidates for EU membership and those which are in this process should start with or intensify ecological taxation reforms. Serbia, Albania, Bosina and Herzegovina, Montenegro and Macedonia, must do the same and make more effort in order to implement ecological taxation reform and national strategy of sustainable development.

References

Barde, J.P. 1999. "Green tax reforms in OECD Countries: on overview". *Journal of Business Administration and Policy Analysis,* 2(1): 145-156.

Coase, R.H. 1960. "The Problem of Social Cost". *Journal of Law and Economics*, 3(1): 1-44.

Eurostat Statistical Books, last update: 28.07.2011. http://epp.eurostat.ec.europa.eu/portal/page/portal/product_details/publication?p_product_code=CH_11_2011_XLS

Foundation for Environment Protection and Energy Efficiency. 2010. "*Program of Foundation for Environment Protection and Energy Efficiency 2010-2012*", Zagreb: 23-25.

Foundation for Environment Protection and Energy Efficiency. 2010. "*Program of Foundation for Environment Protection and Energy Efficiency 2010-2012*", Zagreb: 23-25

Fullerton, Leicester and Smith. 2007. "Envormental taxes - Reforming the tax Systems for the 21st Century". *Mirrlees Review*, 4(1): 1-5.

Fund for Environment Protection of the Republic of Serbia. 2011. "Information Booklet", Belgrade: 1-24.

Fund for Environment Protection. 2011. "Report on Foundation for Environment Protection in Bosnia and Herzegovina", Sarajevo: 24-28.

Golušin, Munitlak Ivanović. 2009. "Definition, characteristics and state of the indicators of sustainable development in countries of Southeastern Europe". *Agriculture, Ecosystems and Environment*, Elsevier 4(2): 67-74.

OECD. 1999. "Survey on the Use of Economic Insruments for Pollution Control and Natural Resources Management in the New Independent States". *EAP Task Force*, Washington: 56-58.

Pigou, A.C. 1918. *The Economics Welfare.* London: MacMilan.

Pirvu, Clipici. 2010. "Perspectives of the Environmental Taxes Evolution in the European Union". *The Romanian Economic Journal,* 38: 147-161.

Steinbach, Palm, Cederlund, Georgescu, Haas. 2009. "Environmental taxes", 14th Meeting of the London Group on Environmental Accounting Canberra, Discussion Paper LG/14/18 27-30.

United Nation Conference on Environment and Development "The Rio Declaration on Environment and Development". Rio de Janeiro, June 1992: 1-19.

Economic Analysis (2012, Vol. 45, No. 1-2, 32-44)

Ekološki porezi kao instrument politike održivog razvoja – komparacija stanja u Srbiji i primene ekološke poreske reforme u zemljama članicama EU

REZIME *– Nacionalna strategija održivog razvoja Srbije je dala jasne smernice za pravac kretanja ekonomije, poštovanja ekoloških principa, razvoj i primenu bolje socijalne i institucionalne politike. Ekološki porez, kao i svi drugi porezi je fiskalni prihod, ali njegova primena ima posebni značaj, zato što pored ekonomskog, on ima ekološki, institucionalni i socijalni karakter, i kao takav on je instrument politike održivog razvoja. Ovim radom autori ukazuju na kretanje vrednosti prihoda od ekoloških poreza u članicama EU u periodu 2005-2010. godine. Kako je to period koji karakterišu privredni problemi usled krize u svim zemljama, uočen je pad prihoda od ekoloških poreza čak i u najrazvijenim zemljama EU. Posmatrano u proseku, EU je ostvarila najviše prihoda od ekoloških taksi 2008. godine, da bi taj trend do 2010. godine beležio pad. Najveći prihod od ekoloških taksi je ostvarila Nemačka (56.031 mil EUR) i to na početku posmatranog perioda, a najniži prihod u vrednosti od (138,21 mil EUR) je ostvarila Malta i to iste, 2005. godine. Potrebno je naglasiti da trend ima opadajući karakter u svim zemljama osim u Sloveniji i Estoniji, koje su pristupile EU 2004. godine. Prihod koji se ostvaruje naplatom ekoloških poreza je značajan i meri se desetinama miliona EUR, ali postoji mogućnost da se položaj privrednih subjekata koji ga plaćaju otežava jer postaju manje konkurentni.*

Od zemalja Zapadnog Balkana, koje nisu članice EU, ali su u procesu pripreme pristupanju, Hrvatska je najdalje otišla u primeni zakona koji se odnose na ovu oblast i primenjuju čak 14 različitih ekoloških poreza. Prema podacima Fonda za zaštitu okoliša i energetsku efikasnost, prihodi Fonda od ekoloških taksi su bili u velikom porastu od 2004-2008. godine da bi usled krize taj prihod tada počeo da beleži pad.

Ekološka poreska reforma „green tax reform" je u zemljama EU počela krajem XX veka. (prvo je implementirana u Švedskoj 1990.) U Srbiji, nije sprovedena ekološka poreska reforma ali postoji nekoliko taksi (na emisiju CO_2 su najznačanije) pri čemu je primena nekih taksi odložena.

KLJUČNE REĆI: *drživi razvoj, ekološki porez, prihod od ekološkog poreza, trend, kriza, ekološka poreska reforma*

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