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Mismatches in the Concept of Environmental Taxes

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Research Papers

As a result of cooperation between Aarhus University, Vienna University of Economics and Business, CEU San Pablo University and IBFD, in October 2013, Aarhus University hosted an International Exploratory Workshop focusing on: *State Aid, Taxation and Sustainable Growth – Beyond 2020*.

This workshop provided an opportunity for academics, practitioners and consultants to come together, exchange ideas, and discuss emerging issues, and further the possibility of identifying fields of research which generally fall within the theme of *Environmental Taxes and EU State Aid law*. The overall objective of the workshop was to incite further-reaching collaborative projects among academics, practitioners and consultants from EU and non-EU countries.

The workshop consisted of plenary sessions and seminar-based working groups involving presentations from EU and non-EU academics and practitioners from the perspectives of law, economics and political science. The seminar-based working groups involved a mix of invited speakers and speakers chosen following a call for papers. This combination brought up lively and interesting discussions and suggestions for the future development of the area.

In this respect, we are proud to present some of the most important working papers as part of the WU SSRN developed on the basis of the call for papers and the subsequent discussions.

Along with acknowledged experts in energy, taxation, competition law and environmental issues, several of the researchers participating in the workshop have recently joined an *Erasmus+ Jean Monnet Project* specifically concerning '*Energy taxation and State aid control: looking for a better coordination and efficiency*'. The project is funded by the European Commission and coordinated by Marta Villar in the CEU San Pablo University, Madrid, which is the holder of the project grant. The project involves 30 researchers and 11 institutions from various EU Member States, and will – during the next two years – promote different research activities focusing on the role of tax benefits to the energy sector and the regulatory limits imposed by EU and international legal systems to the tax authorities and legislators in EU Member States.

Under this Jean Monnet Project framework, the next International Workshop entitled '*Energy Taxation, Environmental Protection and State Aids: Tracing the Path from Divergence to Convergence*', will take place 29th and 30th January 2015, at CEU San Pablo University, Madrid. The contributions to the conference will on this occasion be published by the IBFD.

We are very happy once again to provide a forum for this international network of researchers to stimulate academic debate in these important areas of law. Only then can we make progress.

Pasquale Pistone, Professor, Institute for Austrian and International Tax Law, WU, Vienna; IBFD Academic Chairman

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Mismatches in the concept of environmental taxes¹

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Summary:

- I. Introduction.
- II. Environmental taxes as a way to control externalities.
- III. Well-designed eco-taxes.
- IV. Some real examples of mismatching.
- V. Conclusion.

Abstract:

Environmental taxation has become as a key element of green economy and sustainable growth. The relevance of taxation in this field is based on the effectiveness of eco-taxes to control the environmental cost. Nevertheless, the use of environmental taxation is not free from criticisms due to the fact that a tax is addressed to fund public expenditures. In this paper, the author tackles the mismatches found in the concept of environmental taxes. With the purpose to turn into a Sustainable and Green European Economy, environmental taxes could promote the reduction of pollution or avoid the most dangerous activities for the environment.

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I. Introduction.

The development of economic activities implies the consumption of goods and services and with the aim to contribute to a more efficient use of resources in Europe, this paper will analyze the factors included in the definition of eco-tax.

The market is a valuable mechanism for the organization of any economic activity and normally it guarantees the effective allocation of resources. Nonetheless, pollution is generated out of the market without any economic compensation and this reveals the existence of a negative externality³, being necessary to correct it.

The protection of the environment generally requires collective action, usually led by government⁴. Therefore, government intervention is necessary to make companies and households take into account environmental damage. The challenge now is to turn the EU into a smart, sustainable and inclusive economy delivering high level of employment, productivity and social cohesion⁵.

II. Environmental taxes as a proper way to control externalities.

With the challenge in moving to a green European economy, governments can make use of several tools to protect the environment and to affect people's behaviour, such as regulations, economic instruments, innovation policies and information programmes. Nowadays, the main instrument is «command-and-control» regulations, which consists in a set of laws or rules that are mandatory for producers and consumers. A classical example of regulations is the high number of vehicles which uses a catalyst as the principle after-treatment emission control device. It is said, the obligation of using a catalyst is addressed to reduce the emission of chemical substances.

Due to the «command-and-control» regulations, the pollution dropped significantly in the sixties and seventies. However, the economists affirm there are other instruments more effective than regulations. Instruments based on the economic method can get a more productive and cleaner environment with a low cost⁶.

³ KRUGMAN, P.R. and WELLS, R.: *Introducción a la economía: microeconomía*, Reverte, 2006, p. 151.

⁴ OECD: *Environmental Taxation. A Guide for Policy Makers*, OECD web site, September 2011, p. 2.

⁵ COM (2010) 2020 final: *Europe 2020: A strategy for smart, sustainable and inclusive growth*, Brussels, 3.3.2010.

⁶ KRUGMAN, P.R. and WELLS, R., *ob.cit.* p. 462.

Economic instruments for pollution control and natural resource management are an increasingly essential part of environmental policy in EU and OECD countries. This range of instruments includes environmental taxes (or eco-taxes), fees and charges, green accounting, tradable permits, deposit-refund systems and subsidies for environmental protection, among others.

Environmental taxes in particular are the key part of this toolkit, because of their advantages, such as environmental effectiveness, economic efficiency and transparency. The first benefit is based on the incentive that taxation could mean for producers and consumers. It is said, a tax levied on a polluting activity –such as energy manufacture– will motivate an improvement in its production, because it will be necessary to adapt it to cleaner technologies. The second advantage of environmental taxation given by the OECD is the economic efficiency in the sense of the low economic cost of these measures. In addition, an eco-tax is the proper way for the internalisation of environmental costs. Taxing polluting activities to make producers and consumers take into account the negative effects of their decisions could compensate economically the externalities. Related to the last benefit, well-designed taxes are highly transparent in terms of their coverage and costs. It is generally clear what is taxed, which polluters are exempt, and what the cost to polluters will be per unit of pollution generated⁷.

The OECD considers environmental taxation as an instrument of sustainable economy that makes use of the tax system to encourage a change of attitude for economic agents to reduce the negative impact that their industrial practices cause in the environment. Notwithstanding, the use of eco-taxes could be debatable due to the fact that the main and most widely accepted purpose of taxation is to finance public expenditures. According to JÈZE, G. taxes are defined as a pecuniary payment, required from individuals through authority and without counterparty in view of covering public expenditures⁸. As we can see, this doctrinal concept is only focused on the funding of public expenditures. But, nowadays, other functions have been assigned to taxation.

Apart to raise revenue for necessary government functions, redistribution is a second goal of taxation. Most developed countries see the tax system as a way to redistribute income from rich to the poor. While value added tax (VAT) is the best instrument for

⁷ OECD: *Environmental Taxation. A Guide for Policy Makers*, ob.cit. p. 3.

⁸ BAYONA DE PEROGORDO, J.J. and SOLER ROCH, M.T.: *Derecho Financiero*, Vol. 1, COMPAS, 2nd edition, Alicante (Spain), 1989, p. 648.

raising revenue to fund the government, the individual income tax is the main vehicle for redistribution in developed countries⁹. Moreover, taxation can have a regulatory goal, by incentivizing activities (e.g. tax incentives to foster R&D, such as the patent box regime) and by penalizing others (e.g. levied a tax on the use of fuel oil to reduce the CO₂ emissions).

Thus, taxation could encourage the taxpayers to adopt a specific behaviour. In general terms, several taxes can be created to reduce certain behaviours (e.g. tobacco or alcohol) and also to recover some social costs that a number of activities cause. Despite a tax can be useful to protect the environment and to influence people's behaviour, revenues from environmental taxes can be used to finance public expenditures. As a matter of fact, many taxes are introduced with the purpose not only to influence behaviour by making the use of a product more expensive but also to generate revenue¹⁰.

According to the OECD the environmental effect of a tax comes mainly through the impact it has on the relative prices of environmentally related products and activities, in combination with the relevant price elasticities. With this in mind, the definition of environmental taxes should put emphasis on the potential effect of a given tax in terms of its impact on costs and prices.

III. Well-designed eco-taxes.

The first question is what constitutes a well-designed of an environmental tax. As we said before, an eco-tax is addressed to achieve some benefits. The use of the tax system as an essential part of the environmental policy is justified by its environmental effectiveness, economic efficiency and transparency. This means that the traditional elements of a tax (e.g. tax base) should adapt their structure to accomplish the goals of the environmental policy, for example to be able to motivate a change of attitude in consumers and producers. Otherwise, the result will be a poorly designed tax with reduced environmental effect, higher economic costs and a lack of predictability.

⁹ AVI-YONAH, R.S.: «Taxation as regulation: carbon tax, health care tax, bank tax and other regulatory taxes», *U of Michigan Law & Econ. Empirical Legal Studies Center Paper No. 10-020*, Michigan Law ELSC website, August 2010.

¹⁰ See the comparative study between revenue from the Spanish individual income tax and other Spanish regulatory taxes of CENCERRADO MILLÁN, E.: «Reflexión sobre la utilización de la norma tributaria con fines extrafiscales», *Del Derecho de la Hacienda Pública al Derecho Tributario. Estudios en honor a Andrea Amatucci*, Vol. II, Termis S.A. – Jovene Editore, Bogotá – Napoli, 2011, from p. 342 (Annex No. 1).

The factors to take into account when designing an eco-tax are principally the tax base, the tax rate and the use of the revenue generated. This affirmation is related to the concept of environmental tax: «the one whose tax base is a physical unit of a polluting substance or a proxy of it that has a proven and specific negative impact on the environment» (OECD). Instead of focusing on the achievement of a specific environmental objective, it is better to center the eco-tax concept on the tax bases that have a particular environmental relevance, and to consider all taxes levied on these ones as environmental taxes.

In general, the tax base will be the measured or estimated amount of emissions of a polluting substance, such as SO₂ or CO₂. To supplement the environmental protection through eco-taxes, we will also include in this concept taxes levied on the use or extraction of natural resources, such as water and minerals. The last sentence could be debatable because of the regulatory function of environmental taxation. If an eco-tax pursues the reduction of pollution or to avoid the most dangerous activities for the environment, the question is why we tax a natural resource. Of course the use of water does not imply an environmental damage, but an excessive use of this resource can involve a significant environmental cost, especially in those places with water shortage. Thus, we can consider that the reason for the establishment of taxes levied on the use or extraction of natural resources is to warrant a more efficient use of them and to prevent their extinction.

Obviously, it is normally neither easy nor cheap to calculate emissions directly. Also frequently the polluter is not known, so taxes should be based on proxies for emissions. For instance, it would be really difficult to tax directly the emissions from motor vehicles due to the administrative cost of measuring emissions from individual vehicles. However, taxes on motor vehicle fuels are efficient proxies for taxing CO₂ emissions.

Basically, we can say that the polluter is the person or legal entity that pollutes or creates the conditions to spoil the environment. As a result, the polluter has to assume the cost of the measures taken to achieve the required environmental level. Due to this fact, eco-taxes are based on the *polluter pays principle*¹¹ (PPP) and this could mean that anyone who can pay the price has a licence to pollute with impunity. Nevertheless, the target is that polluters take into account the externalities or environmental costs of their

¹¹ So, we can affirm that environmental taxation implements the *polluter pays principle*. In fact, following the PPP, the tax seeks to overcome some of the drawbacks that the market cannot compensate for.

production of goods and services. So, the tax levied on the polluter's activity should not be seen as the polluter has a right to pollute.

The higher cost of the polluting activity that results from the environmental tax makes the activity less attractive to consumers and businesses. But at the same time, an eco-tax leaves consumers and firms full flexibility to decide on how to change their behaviour and reduce the harmful activity. For example, many countries impose significant taxes on motor vehicle fuels like petrol and diesel because their use contributes to global warming and local air pollution. The resulting increase in the cost of driving a vehicle is an incentive to reduce emissions that could be achieved driving less and using public transport, cycling, walking and so on.

Eco-taxes could be seen as the government's answer to discourage those activities that pollute or detract the environment. But, they will only be effective if they can correct and compensate the environmental risks. It means, eco-taxes will only work if they can affect people's behavior, so it is not enough just to tax a polluting substance or the polluter's activity.

It is said that authentic eco-taxes have to evade negative effects, to improve life conditions, to preserve biodiversity and so on. In other words, if they do not contribute to these purposes, they will just be taxes to finance public expenditures, even if they have been defined as environmental taxes. So, the name of the tax or the purpose stated by the tax legislator are not sufficient to turn a tax into an eco-tax. We could say that the definition given above is uncompleted, because it does not include an environmental motivation. That is the reason that OECD prefers to use the more precise term «environmentally related taxes». So, we can reformulate the concept adding the element of *motivation*, saying that an environmental tax will be that one whose tax base is a physical unit of a polluting substance or a proxy of it that has a proven and specific negative impact on the environment and it is available to make polluter's activity less attractive and to affect people's behavior.

The OECD suggests that an environmental tax generally should be levied as directly as possible on the polluter or on the polluting action. Therefore, the tax base will have to be defined accordingly. The OECD reminds the general principle of taxation «taxes should as far as possible be levied on final production, consumption and incomes», because taxes levied on intermediate products impose additional economic costs by distorting methods of production. Precisely, the aim of environmental taxes is

to provide incentives to change production techniques to make them less polluting. Therefore, a good environmental tax design will do just that and will not introduce other distortions to production technologies.

A well-defined environmental tax should be set at the Pigouvian level¹². Pigou has shown that an optimal tax on emissions has to be set equal to the marginal environmental damage (MED). That is, where the tax equates the marginal damage from pollution with the marginal cost of pollution abatement¹³. So, a *Pigouvian tax* can ensure that polluters pay for the marginal social cost of their consumption of polluting goods completely.

The environmental effectiveness depends not only on the tax base, but also on other factors, such as the tax rate and the use of the revenue generated. In the case of setting the rate, further externalities or environmental costs need to be considered because of the influence by a number of factors, such as society's wealth, society's valuation of the environment, the extent of the damage and so on.

Therefore, the tax rate should generally be set to reflect society's value of the environmental damage and other negative effects of the activity. In contrast, a tax defined as an eco-tax whose tax rate has the purpose to raise revenue to fund public expenditures, cannot be considered an environmental tax. For example, a recently Spanish tax levied on energy production establishes a tax rate addressed to reduce the deficit of the Spanish energy system. Obviously, this purpose is not related to the environmental effect that an eco-tax has to achieve.

Setting the tax rate to reflect the environmental damage ensures that prices faced by producers and consumers reflect the environmental cost of their actions. This provides them with a financial incentive to take those impacts into account in their decisions. In other words, the tax rate must be predictable in order to motivate environmental improvements. For instance, in the example given above, the tax rate is the same for all energy makers. There are no differences between producers that make energy through renewable energies and producers that do not use them. Even if this tax was created with an environmental purpose, we cannot consider it as an eco-tax because it does not promote the use of renewable energy and neither the more effectively use of electricity.

¹² For further information see PIGOU, A.C.: *The Economics of Welfare*, Vol. 1, London, 1920.

¹³ BAUMOL, W.J.: «On Taxation and the Control of Externalities», *The American Economic Review*, Vol. 62, No. 3 (June, 1972), p. 311.

In theory, revenue from environmental taxes should be used to compensate the environmental damage. But, in practice, this could not be always possible because of the difficulty to measure the impact of the environmental damage or to determine who was affected by it. Generally, revenue from this kind of taxes is treated as general government revenue and used to maintain spending in other areas or reduce debt. In spite of that, a tax whose tax base has an environmental relevance and its tax rate motivates a change of attitude on consumers and business, could perfectly have the consideration of an eco-tax or an «environmentally related tax». In fact, it is absolutely possible that environmental taxes also contribute to reduce the distortions of existing taxes on labour and capital income.

Regarding this, it has been generally accepted to include all taxes on energy and transport in the definition of environmental taxes¹⁴. Otherwise, value added type taxes (VAT) are excluded from the definition of environmental tax. VAT is a tax levied on all products and it is deductible for many producers, but not for households. As a result, it does not influence relative prices in the same way as other taxes on environmentally related tax bases do. However, consumption taxes are one of the tax categories least detrimental to growth, as we will see in next section.

IV. Some real examples of mismatching.

Since the beginning of 2013, there are four new Spanish taxes on energy to reach the challenge of a green economy¹⁵. The purpose stated by the Spanish tax legislator has been to achieve a more effectively and respectful use of the resources with the environment and the sustainability¹⁶. In contrast, the results of the new taxes are far from this purpose and closer to be a way to finance public expenditures.

¹⁴ Energy is a key input to production and an important element of consumer spending, but also contributes to significant environmental problems (e.g. climate change or local air pollution). The taxation of energy is a key policy instrument that, whether intended or not, has a significant impact on energy prices, energy usage and the resulting environmental impacts [OECD: *Taxing Energy Use. A Graphical Analysis*, January 2013].

¹⁵ For further information about Spanish energy taxes see CALVO VÉRGEZ, J.: «La nueva fiscalidad de la energía», *Aránzadi – Quincena Fiscal*, No. 4, 2013, p. 17-31; GIL GARCÍA, E.: «Un nuevo modelo de tributación como medio para alcanzar la sostenibilidad energética», *Impuestos, La Ley*, No. 1, January 2014, p. 11-42; VILLAR EZCURRA, M.: «Cuestiones de eficiencia, eficacia y legalidad comunitaria europea hacia un modelo de fiscalidad de la energía», *Aranzadi – Quincena Fiscal*, No. 5, March 2013, p. 19-55.

¹⁶ L. 15/2012, de 27 de diciembre, de medidas fiscales para la sostenibilidad energética (BOE No. 312)

First of all, the tax levied on energy production does not take into account the renewable energy production and is targeted to compensate the deficit situation of the Spanish energy system¹⁷. Secondly, there are two taxes on nuclear energy whose objective is to compensate social costs of this kind of production. Although one of the purposes of an eco-tax is to avoid the externalities, the tax needs to have an environmental motivation to be considered as an authentic eco-tax. Finally, there is a tax (so-called *canon*) levied on the use of water in energy production. The intention is laudable due to the water problems we have in Spain. But, the tax base does not have an environmental relevance and revenue from this tax will be addressed to finance public expenditures.

So, here we have a clear example of the mismatches in the concept of environmental taxes. Because they have been called as eco-taxes and created under an environmental purpose, but they do not contribute to the environmental protection, the improvement of life conditions or the conservation of biodiversity.

According to a recent European Commission Paper¹⁸, in many Member States, a high tax burden on labour, specially on groups with a precarious foothold in the labour market (low-skilled workers and second-earners), coexists with relatively low levels of those taxes considered less detrimental to growth, such as consumption taxes, recurrent taxes on immovable property and environmental taxes.

These three tax categories have been found to be among those which are less detrimental to growth and they have been so-called *growth-friendly tax structures*. So, Member States have room for a shift away from labour taxes to other tax bases. Probably, the broadest tax base for shifting labour taxes is consumption. Nevertheless, revenues from consumption taxes were particularly low in Belgium, Ireland, Spain, Luxembourg, Slovakia and Latvia in 2011.

Environmental taxation is also considered less detrimental to growth. There is potential for raising revenue both by reducing tax expenditure in this area and through

¹⁷ See «Informe sobre el sector energético español. Parte I. Medidas para garantizar la sostenibilidad económico-financiera del sistema eléctrico», Comisión Nacional de la Energía (*Spanish National Energy Council*), March 2013. This report explains the reasons of the deficit situation of the Spanish energy system. Mainly, the problem is based on the higher eligible costs and the lower income generated by the energy prices paying by the consumers.

¹⁸ European Commission: *Tax reforms in EU Member States*, Working Paper N.38 – 2013.

tax rate increases. But, European Commission points that revenue expectations should not be too high due to the relative narrowness of the environmental tax base.

In conclusion, the shift away from labour taxes to eco-taxes is another clear mismatch in the concept of environmental taxation. Even if this tax category enhances growth, the main purpose is to use environmental taxation as a way to solve budget constraints.

V. Conclusion.

The environmental policy pursues the improvement of life conditions, the conservation of the biodiversity and some others environmental effects. An increasingly part of this policy is the use of the tax system for the accomplishment of several goals without a high economic cost. Indeed, environmental taxation controls externalities. It contributes to internalise the cost of the environmental damage –normally borne by society– in the production costs of activities that have a significant negative impact on the environment.

Besides the internalisation of costs, the environmental motivation has to be part of the design of eco-tax. This will be possible with a tax base with an environmental relevance and levied as soon as possible on the polluting substance or on a proxy of it. If the tax has the enough strength to affect people's behaviour and to achieve the environmental challenges, we will call it as environmental tax. As a matter of fact, real eco-taxes are those of them that promote the reduction of pollution or avoid the most dangerous activities for the environment.