
GERMANY'S ECOLOGICAL TAX REFORM AS PARADIGM TO BRAZIL

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ABSTRACT

This paper outlines a profile of Germany's ecological tax reform, focused on energy taxation, seeking to comparatively analyze its elements, contributing to the greening of the Brazilian tax system. To this purpose, a parallel is drawn between the legal systems of the two countries, analyzing the constitutionality of ecologically earmarked taxes on energy (*Ökosteuern*), which in Germany were introduced by the 1999 tax reform. Under Brazilian law, CIDE-Combustível's (fuel tax) is scrutinized in its role as starting point for the greening of the tax system. The adopted method is deductive and suggestive in the context of comparative law. The study showed that the constitutional admissibility of the *Ökosteuern* in Germany was much debated and these were approved much more for political than legal reasons. In Brazil, the introduction of this taxation model depends inevitably on an amendment to the Constitution. However, important similarities are found between the German model and the CIDE-Combustível's model and the last can be taken as kickoff for the "greening" of the Brazilian tax system.

Keywords: Tax reform; environmental taxation; ecotaxes; comparative law; CIDE- Combustível.

A REFORMA TRIBUTÁRIA ECOLÓGICA ALEMÃ COMO PARADIGMA PARA O BRASIL

RESUMO

O presente artigo traça um perfil da reforma tributária ecológica da Alemanha, com foco na tributação da energia, buscando analisar comparativamente os seus elementos com a finalidade de contribuir para uma ecologização do sistema tributário brasileiro. É traçado um paralelo entre os sistemas jurídicos dos dois países em relação à constitucionalidade dos impostos ecológicos sobre a energia (Ökosteuern), que na Alemanha foram introduzidos pela reforma tributária de 1999. No âmbito do direito brasileiro, é analisada a CIDE-Combustível, como ponto de partida para a ecologização do sistema tributário. A pesquisa é bibliográfica e documental. O método adotado é dedutivo-propositivo no contexto do direito comparado. O estudo mostrou que a constitucionalidade dos impostos ecológicos na Alemanha foi muito debatida, sendo a sua aprovação decorrente de motivos mais políticos do que jurídicos. No Brasil, a introdução integral deste modelo passa, de forma obrigatória, por uma alteração da Constituição. No entanto, são encontradas semelhanças importantes entre o modelo alemão e o modelo da CIDE-Combustível, podendo esta ser tomada como base para o "esverdeamento" do sistema tributário brasileiro.

Palavras-chave: Reforma tributária; tributação ambiental; impostos ecológicos; direito comparado; CIDE-Combustível.

INTRODUCTION

The search for the enforcement of norms related to the protection of the environment remains intense in the present conjuncture of aggravation of the ecological crisis. The focus of the concerns is the search for ways to reduce the negative influence of economic growth on the environment, aiming at improving the quality of life of the world population. On the other hand, there is no longer any doubt that taxes, as a form of state intervention in the economy, have a great potential to guide the behavior of economic actors and consumers in an ecological way. However, to what extent these instruments can be included in the tax system on a continuous basis is still a much-debated topic. State policy intervention, especially, is problematic in a complex tax order that is still struggling for efficiency.

Among the several areas of environmental protection in which taxation could find efficient results, the energy sector is a fruitful field for the introduction of environmental taxes. Energy sources are among the most valuable natural resources for the economy and the generation of energy is a major cause of CO₂ emissions. The reduction of these emissions was therefore the central theme of the European ecological movement.

The positive results of the European energy policy can be taken as examples for other tax systems, which justifies the comparative approach.

It is observed that the national tax system still neglects the natural resources, favoring non-ecological products and behaviors. And while Brazil has one of the largest renewable energy potentials in the world, the generation of energy from non-renewable sources still dominates. Given this scenario, there is great practical interest in a comparative analysis of the constitutional aspects of environmental protection in industrialized and in transition countries.

An ecological dimension of human dignity is undeniable (FENSTERSEIFER, 2007), which justifies not only the constitutionalization of ecological rights, but also the ecologically oriented interpretation of all constitutional norms, including other fundamental rights, norms of State objectives, and of the economic order (MATTEI, 2016). Both the German and Brazilian constituents have opted for a model of constitutional environmental protection that allows this understanding.

Brazil constitutionally affirmed environmental protection broadly in art. 225 of the Federal Constitution of 1988 (CF) and, more specifically, as a principle of economic order in Art.170, IV, CF, requiring, directly,

considerations between environmental protection and economic rights (MATIAS, MATTEI, 2014).

Germany, however, opted for the insertion of environmental protection through a normative determination of State objectives in Art. 20a of its Basic Law (LF). Regarding the economic order, Article 109, II, LF, which requires the State to take into account, in the fulfillment of budgetary discipline, the requirements of equilibrium of the economy as a whole. By interpreting the term “requirements of the equilibrium of the economy as a whole” in an ecological way, accordingly and due to the principled force of Art. 20a, LF, it is understood that this last device presents itself as a real imperative, as well as a limitation on state intervention in the economy (MATTEI, 2016). As can be seen, despite the constitutionalization of environmental protection, Brazil and Germany have adopted diversified paths to constitutional protection (MATIAS; MATTEI, 2014), which does not rule out, but rather enhances the usefulness of the comparison, in order to verify if the German tax reform can serve as a parameter for Brazilian law.

Initially, considerations will be made on the German tax reform, addressing the greening of energy taxation, especially the discussion on its constitutionality. Next, the regulation of CIDE-Combustível in the Brazilian legal order will be approached as an example of ecological taxation. In the sequence, ways will be indicated for the alteration of the Brazilian tax system, with the aim of favoring the greening of water. At the end the conclusions will be presented.

The research is bibliographical and documentary. Deductive reasoning is used as the method.

1 THE ECOLOGICAL ORIENTATION IN GERMAN TAX REFORM

Amid the European discourse on the legal development of environmental protection, the discussion on the achievement of environmental objectives through tax law occurred in Germany alongside the insertion of environmental protection into the Basic Law. In addition to the introduction of taxation mechanisms and the restructuring of some tributary species to better guarantee environmental protection, Germany made use of the standard environmental taxation of environmental taxes (*Umweltsteuern*), based on Pigou's tax theory, however, with a difference that makes the so-called *Ökosteuern sui generis*: the linkage of its revenue

to the social system, making it, therefore, a final tax. For this reason, the term used in the present work is the original *Ökosteuern* and not its literal translation as *eco-tax*, so that it is not confused with other types of ecological taxation.

The concept of environmental tax, following the model of Pigou, gained popularity when introduced the idea of parallel reduction of other taxes, should the *Ökosteuern* be linked to the improvement of the general tax system (BAREIS; ELSER, 2000, p. 1180), seeking to solve the problem of the failure of the social system and unemployment. This led to the beginning of major debates in the early 1990s on a reform of the tax system following ecological criteria at the constitutional level.

The focus of the reform was to put the tax system more strongly in the service of environmental protection. The reform then developed around the objective of transferring, in a neutral, long-term way, the tax burden from the “labor” factor to the “natural resources” factor (JOBS, 1998, p. 1039), leading to the increase in energy use as a response to the central problems of the energy sector.

The reform had four laws enacted between 1999 and 2006: Law for the Beginning of the Ecological Tax Reform (*Gesetz zum Einstieg in die ökologische Steuerreform*), Law for the Continuation of the Ecological Tax Reform (*Gesetz zur Fortführung der ökologischen Steuerreform*), Law for the Development of the Tax Reform (*Gesetz zur Fortentwicklung der ökologischen Steuerreform*) and the Energy Tax Law (*Energiesteuergesetz - LIEn*). These laws have created the electricity tax (*Stromsteuergesetz - LIel*) and gradually changed, according to ecological criteria, the former tax on oil (*Mineralölsteuer*), eventually replacing it in 2006 by the energy tax (*Energiesteuer*), according to the directives of the European Union on the subject.

Both are indirect taxes on consumption that follow the *Pigouvian* tribute model, with the taxation of consumption for commercial and private use of energy (fuels such as gasoline and diesel, fuel oil, gas and electricity) and with the objective of internalizing the environmental costs (pollution from non-use of renewable energies) in energy prices, as will be shown below.

1.1 The German model of green energy taxes (*Ökosteuern*)

Ökosteuern are then taxes on energy (fuels) and on electricity. The competence for the institution, collection and revenue on both belong to the Federation (Art. 105, II c/c Art. 106, I, Nr. 2, LF).

The energy tax is applied on the consumption of raw materials such as mineral oil (petroleum), natural gas and coal, when they are used as fuel for the generation of energy (§ 1, II-III, LIEn). For other uses of these materials, the law grants reductions (§ 2, II-III, LIEn) and tax exemptions (§§ 24-29, 37, 44, LIEn). The ecological tax reform also brought, for political-ecological reasons (SOYK, 2013), an extensive catalog of tax exemptions, in §§ 45 ff. of the LIEn, in the form of pardon, restitution and compensation of the tax. Parallel to its extra-fiscal role, the energy tax has maintained its fiscal relevance to the budget. Its revenue is destined as a rule to the public budget, but is then earmarked, in part, for the road sector, according to Art. 1 of the Road Structure Financing Law (*Straßenbaufinanzierungsgesetz*) and Art. 3 of the Financial Traffic Law (*Verkehrsfinanzgesetz*). In addition, the revenue corresponding to the increase in tax rates since the first ecological reform (*Ökosteuer-Anteil*) should be destined, through the Budget Law, for the reduction of social contributions. In addition, tax rates are increased regularly to guarantee collection.

The electricity tax was based on the model of CO₂ taxation proposed by the European Union and set up as a consumption tax. Tax generating event is the generation of electric energy (§ 1, I, LIEI). Taxpayer is the supplier or the self-producer of electricity (§ 5, II c/c § 2, Nr. 1, LIEI), but the tax burden can be and is usually transferred to the final consumer (§ 5, 1st alternative, LIEI). By this technique, the tax is included in the price of electricity. With regard to environmental protection and the promotion of the use of clean energy, exclusively renewable electricity (*Ökostrom*) is exempt from tax (§ 9, I, Nr. 1, LIEI). Its revenue is integrally destined to the social system. However, the use of income from electricity taxes and part of the energy tax to reduce social contributions was not expressly provided for in tax laws (SOYK, 2013, p. 3), but rather of the legislative process (HAAS, 2005, p. 209) and is a duty of the budget legislator.

In order to ensure the competitiveness of German companies in foreign trade, the manufacturing and agricultural industries, heavily impacted by the *Ökosteuern*, receive a refund of the tax paid through

“advanced compensation” (*Spitzenausgleich*), i.e. by discount of the electricity tax over the income tax (§ 10, I, sentence 2 c /c § 9b, LIEI and § 55, LIEn).

The insertion of the new model of taxation caused great controversy, as will be seen next.

1.2 The constitutionality of the *Ökosteuern*

The introduction of the *Ökosteuern* for ecological tax reform has been criticized in the literature (ENGLISCH, 2013; LIST, 2000; SELMER, 2005) and has been submitted to constitutional review before the German Federal Constitutional Court (TCF) as a constitutional complaint against the violation of fundamental rights (BVERFG, 2004). Therefore, we proceed to the analysis of its constitutionality, according to the literature and jurisprudence of the TCF.

The *Ökosteuer*, following the model of environmental taxation proposed by Pigou (which can be a tribute, tax or contribution), burden the causer of a negative externality (of environmental damage) when taxing polluting activities, so that the tax simulates the price of consumption or use of environmental goods, in the form of products or emissions, including or internalizing the cost of environmental degradation in the decisions of the economic agent, leading the polluting activity to regress to an optimal level for both the market and the environment (STURM; VOGT, 2011). The structure of *Ökosteuer* corresponds to that of a classical consumption tax, and can be passed on by the taxpayer to the consumer. As a result, environmental costs are properly distributed among the producers and consumers (AMARAL, 2008, p. 228; HESSELLE, 2004, p. 5; KLOEPFER, 2004, p. 189), complying with the legal and environmental principles of polluter-pays and user-pays. It has, therefore, the extra-fiscal purpose of environmental protection.

The constitutionality of extra-fiscal norms in tax law or state intervention through taxes to influence behavior is no longer controversial in Germany (HEUN, 2008, p. 921; WEBER-GRELLET, 2001, p. 366) and is based on general admissibility of state intervention in the economy to protect the market and guarantee individuals a dignified existence and other fundamental rights (DERANI, 2008). In addition, extra-fiscal tax is expressly allowed in § 3, I of the German Tax Code (*Abgabenordnung*), where it provides that revenue collection (tax function) may be a secondary

objective of the tax, although it must always be present. In this sense, extra-fiscal taxes had their constitutionality confirmed on several occasions by TCF (BVERFG, 1973, 1991, 2004). Extra-fiscal norms for environmental protection are included in the “social goal norms” (*Sozialzwecknormen*), which express political ideals and employ tax burden or tax relief as an incentive to a particular behavior (GLASER, 2012, p. 168)

For the analysis of *Ökosteuer>s* constitutionality it is important to know, first, if it can be characterized as tax. The TCF confirms this characterization because *Ökosteuer* justifies a general charge, which is imposed on all those who carry out the generating event, as well as for its collection to be independent of any individual consideration and for it to generate a revenue for the financing of the state activities (BVERFG, 2004).

However, the *Pigouvian* model of taxation requires the linkage of its revenues. The extrafiscality of this type of tribute is, in its original form, its sole function, as proposed by Pigou, its revenue will be tied to ensure the neutrality of the tax and so that its function of correcting the allocation of resources is fulfilled (STURM; VOGT, 2011, p. 76). Thus, the revenue from the *Pigouvian* tax for environmental protection works as compensation or indemnification to society for being an instrument to create incentives to reduce polluting products or emissions. It serves as an instrument of financing and redistribution of environmental costs (KHAZZOUM; KUDLA; REUTER, 2011).

The German legislature opted, among the options of the *pigouvian* taxation in the form of tributes, special taxes or contributions, by the finalistic tax. Fees, although they are good instruments to curb behaviors, are a counterpart for a determined and public service of the State. It is precisely this strict linkage of rates that constitutes their limitation as an instrument of environmental protection (HEUN, 2008, p. 925), since global protection of the environment is not possible through them. In terms of special contribution (*Sonderabgabe*), an instrument equivalent to the institute of the same name in Brazilian law, it's main purpose of financing the state activity of the environmental *pigouvian* tax is objected (SIEKMANN, 2014, p. 2165 s.). In general, special contributions for this purpose are only admitted as rare exceptions (BIRK; DESENS; TAPPE, 2014, p. 37). According to Art. 20a, LF, environmental protection tasks are general tasks of the State, and as such they should be financed, not by special contributions, but by means of taxes. In addition, the creation

of special contributions carries with it the danger of creating parallel or masked budgets, which would no longer be available to the State (GOSCH, 1990, p. 210)

According to German tax law, environmental taxes are justified as final taxes, since tax collection neutrality and consequently tax justice can only be guaranteed this way (KUBE, 2014). Ecologically, the final environmental tax is justified when it is a collection instrument for the financing of environmental protection (WALDHOFF, 2007, p. 899). Another advantage of the finalistic tax is that, in the context of budgetary policy, the state is more controlled in its expenses through the linkage of revenues, since the institution - always unpopular - of new taxes is linked to a goal of great acceptance by the population (KISKER, 1990, p. 268s.). For the implementation of linking of revenue, ecological funds are usually created, which serve the state's environmental protection tasks.

In Germany, the prohibition on the linking of tax revenues derives from the expression "revenue obtainment" of § 3, I, of the Tax Code and Art. 110, I, LF, which determine that the revenue derived from the collection of taxes will be to the public budget. The TCF acknowledged the possibility of an exception to this general constitutional provision, as well as to its principle of *non-affectation* (*Gesamtdeckungsprinzip*), provided for in Paragraph 7 of the Law on Budgetary Principles (*Haushaltsgrundsätzegegesetz*), when the destination of revenue for a purpose determined by law or in the budget plan itself, and therefore does not require a special justification (KUBE, 2014). According to the TCF (2004, p. 294), finalistic taxes, especially the *Ökosteuern*, are constitutional when the bound amount does not weigh heavily in comparison with the total tax revenue of the State. In other words, the principle of non-affectation of revenues is a principle of budgetary law, a political-financial requirement, but it is not a constitutional principle (BVERFG, 1995, p. 348; GOSCH, 1990, p. 209). Only a disproportionate measure linkage, which would actually restrict the legislature's freedom of budgetary provision, would not be compatible with the principle of non-affectation (BVERFG, 1995, p. 348; SIEKMANN, 2014, p. 2146).

Once the admissibility of finalist taxes is accepted, it remains to be seen whether the linkage of revenues to non-ecological objectives is also constitutional in the context of budgetary law.

As seen, Germany innovated by bringing a *Pigouvian* environmental tax bound not to ecological funds, but to the social system as a whole. In view of the crisis in the social system, due mainly to the

aging of the population and thus the continuity of its financing, new ways of maintaining the social system were sought, without any greater burden on companies. This time, through the ecological tax reform, the compensation mechanism was developed between the payment by companies of new taxes on natural resources and the payment of social contributions, remaining neutral for the entrepreneur, at least in theory, the introduction of new taxes.

With the ecological tax reform, a double dividend was therefore sought: on the one hand, the improvement of environmental quality through the stimulation of energy saving and the consequent reduction of pollution (LIST, 2000, p. 1216), and on the other, the reduction of unemployment due to the dismissal of work, and the guarantee of continuity (at least in the medium term) of financing the social system. The desired occupational effect of the reform played a key role in the acceptance of the *Ökosteuern*, since the achievement of only environmental objectives would not be a sufficient reason for a considerable increase in the tax burden (STURM; VOGT, 2011, p. 72).

Although politically excellent, the *Ökosteuern*'s link being not to ecological funds, but to the social system, run into tax justice issues. Unlike to what happens in Brazil regarding the special contributions and their linkage to specific groups, in German environmental taxation the group of taxpayers does not coincide with the group benefiting from the use of tax revenues: energy-intensive sectors (industries) are heavily taxed, while labor-intensive economic sectors (services) are the ones most benefited by the fall in social contributions. Individually, only the *Ökosteuern* taxpayers who are obliged to pay social contributions benefit from the reduction of these, and not individual entrepreneurs, public servants, students and retirees, all indirect taxpayers (LIST, 2000, p. 1218). The TCF, in dealing with the question of this need for the nexus between tax burdens and use of revenues, in the case of final taxes, has only stated that the groups affected need not be equivalent (SELMER, 2005, p. 414 s.; WALDHOFF, 2002, p. 304).

The characterization of *Ökosteuern* as taxes also depends on the existence of the fiscal function of taxes. When this is ruled out in practice, the principle of prohibition of “strangling” taxes (*Erdrosselungssteuer*) or prohibition of confiscation remains broken. As the idea of the extra-fiscal tax is to curb a certain behavior, which generates the tax, the more success it obtains, the more its revenue will tend to zero. In the case of environmental

taxes, this usually does not occur, due to a technique used to avoid the exclusion of the fiscal function from tax: the periodic increase of tax rates, guaranteeing collection (JACHMANN, 2004, p. 709). Thus, zero collection, in the case of environmental taxes, is not to be expected (BALMES, 1997, p. 153; HAAS, 2005, p. 208), so that *Ökosteuern* is constitutional in this respect (BIRK; DESENS; TAPPE, 2014, p. 63; GOSCH, 1990, p. 214).

Another aspect to be considered is the fact that *Ökosteuern* is a tax that seeks to curb an economic activity, and may end up impeding it, which would also characterize a confiscation. The *Pigouvian* tax, however, leaves an area of freedom of choice for the economic subject (he may not perform the conduct and not pay the tax or continue to pay it). Only if this possibility of choice were excluded would an unconstitutionality be present. This would come about when the good that one wants to protect when taxing is so essential to life that taxation can not be avoided. This is the case of water and air consumption, for example, in which the elasticity of demand is low (STURM; VOGT, 2011, p. 77). However, through other tax techniques such as reduction of tax rates and tax exemptions, the value of the tax can be adjusted in order to avoid the exclusion of the choice, thus remaining the tax as constitutional.

In terms of competence for the *Ökosteuern* institution, the federation (*Bund*) has the concurrent jurisdiction to impose taxes on consumption, provided that they do not coincide with taxes collected by the federal states (Art. 105, II c/c Art. 106, I, Nr. 2, LF). Some voices in the literature questioned the constitutionality of *Ökosteuern* because it was a tax on the use of natural resources in the production chain, which would make it a business tax (not consumption) (JOBS, 1998, p. 1042). However, as in taxes on production and distribution of goods, by the technique of passing on taxation to the consumer, the consumption of the good by the industry/company will not be taxed (BVERFG, 2004).

Despite *Ökosteuern's* primordial extra-fiscal role, it must obey the constitutional principles of taxation. The extrafiscality of taxes or tax rules has always been and will be the subject of many criticisms, since their insertion in the tax system leads to the conflict between the rigidity of the principle of legality in tax law and the need for flexibility in a state intervention instrument (SCHOUERI, 2005, p. 240), leading to the destabilization of the desirable legal certainty of the system. Legality is understood when the tax follows its sub-principles, such as priority and non-retroactivity of the tax law and precision of definitions (objectives,

taxable event, taxpayers, tax rates), among others. The issue of tax equality in extra-fiscal taxes is more complex due to the principle of tax capacity. According to German literature and jurisprudence, a breach of this principle is acceptable when there is a valid reason for doing so (BALMES, 1997, p. 162; HEY, 2015, p. 74; SCHOUERI, 2005, p. 246). In the case of environmental taxes, “ecological relevance of the burden” (*Ökologische Belastungswürdigkeit*) (BALMES, 1997, p. 163) is determined by the analysis of proportionality or prohibition of excess criteria (*Übermaßverbot*): adequacy, enforceability and weighting.

The adequacy of the tax is first verified when it aims to meet a particular public interest or the common good. It is in the public interest everything that consolidates, maintains or improves the subsistence conditions of the community and its members (TIPKE, 2000, p. 341), and there is no doubt that environmental protection is essential for a subsistence worthy of the human person (MATTEI, 2016). It is also assessed here whether the tax is an appropriate means to achieve that particular public interest, i.e. whether a change in taxpayer behavior in an environmentally sound sense can be achieved by levying the environmental tax. The German TCF gives the tax legislature this prerogative in extra-fiscal cases (MÖSLEIN, 2012, p. 247), which does not exclude a more detailed analysis of the economic consequences of the insertion of the tax in the specific case.

The enforceability of the environmental tax is verified when the objective of taxation can not be achieved by some other milder means of same effectiveness (BALMES, 1997, p. 157). Different from other economic instruments that can be used for environmental protection and that imply a change in the behavior of the polluter, the environmental taxation model shows, alongside the emission certification market, more bland than command and control mechanisms, because it allows the taxpayer a choice, and is therefore a flexible economic instrument (BERNARDI, 2008, p. 65; KIRCHHOF, 1993, p. 592; SOUZA FILHO, 2012, p. 336). In relation to the emissions market, it has the advantage of not depending on the fluctuations and characteristic variations of the said market.

To be constitutional, the environmental tax must still be reasonable, that is, it must be a result of a balance between the public interest in environmental protection and intervention in the individual private sphere of taxpayers. In the context of the current environmental crisis of natural resource depletion, the intensity of the intervention is

generally seen as appropriate (BALMES, 1997, p. 159), and also does not exclude an analysis of the reasonableness of the measure in the concrete case.

After this preliminary analysis of the ecological relevance of taxation, the tax legislature must also consider the principle of equality in the strict sense. Environmental protection, as matter, then becomes the criterion for the fairness of taxation (HEY, 2015, p.101), and this should be escalated along the burdened behavior. As a criterion of comparison for determining inequalities, the principle of equivalence and the sub-principle of benefit are used (HEY, 2015, p.75), both reflecting the tax-based ideal of tax justice. It appears that, as seen, tax subsidies are granted to certain taxpayers, such as energy-intensive companies, for non-environmental reasons, mainly against the loss of competitiveness of these companies in the foreign market. The TCF (2004, p. 297 s.) Justified such a breach in the principle of equality in relation to environmental justice by claiming that subsidies are linked to subjective characteristics of the consumer and not to consumption per se and should not be assessed by material environmental criteria, but rather economic. In this sense, he argues that the legislator can pursue several objectives with the same tax and distinguish different groups of taxpayers by imposing different rules. Differentiation is in this case valid since the subsidizing rule is aimed at ensuring the neutrality of taxation while preserving business competitiveness.

The TCF's decision on the constitutionality of the ecological tax reform laws was not without its criticism: on the one hand, it was alleged that the court was superficial in stating that the *Ökosteuern* taxpayer and beneficiary *groups* need not be matched, without addressing the tax justice issue involved. On the other hand, it is understood that the exception rules for highly polluting companies are not ecologically justifiable, contrary to the purpose of taxes (HESSELLE, 2004, p. 64; SELMER, 2005, p. 424), and that this decline in ecological purpose reform was not satisfactorily examined by the TCF (HAAS, 2005, p. 212). It was also left out the analysis of compliance of *Ökosteuern* with the principles of budget law (HAAS, 2005, p. 212). In addition, the criteria of adequacy, necessity and proportionality of taxation on the screen were not evaluated point-to-point (HAAS, 2005, p. 213).

Despite the controversy, there is no doubt that the reform opened up new prospects for the greening of taxation.

2 CIDE-COMBUSTÍVEIS AS A BRAZILIAN ENVIRONMENTAL TAX

The theme of environmental protection was introduced in the discussion on tax reform in Brazil. While some progress has been made in this area, many attempts at ecological change have failed. The Brazilian tax system is still, especially at the constitutional level, not very ecological (BLANCHET; OLIVEIRA, 2014, p. 163; COSTA, 2011, p. 340). Although there are specific tax rules related to environmental protection, Brazilian tax law still lacks a clear system of rules that can lead to effective environmental protection. Notwithstanding the environmental protection commandment, both as a fundamental right and as a principle of the economic order, its degree of abstraction still makes difficult its implementation in the field of tax law.

Among the various tax mechanisms, CIDE-Combustíveis is still the only instrument that actually presents directly ecologically relevant effects. In this case, state intervention is justified by the need to subsidize the prices or transportation of alcohol fuel, natural gas and its derivatives, and petroleum products, since these are fundamental to the development of the nation (CUNHA; BEZERRA, 2011, p. 316). Although the motivation for its institution to be of an economic and fiscal nature, this special contribution can be seen as an important step in the use of taxation for the reduction of CO₂ emissions, approaching, in this sense, the German *Ökosteu*r.

CIDE-Combustíveis is a contribution of intervention in the economic domain, of competence of the Union, in the mold of Art. 149, *caput* and § 2, CF, specifically constitutional in Art. 177, § 4, CF. It taxes activities for the importation or commercialization of petroleum and its derivatives, natural gas and its derivatives, and fuel alcohol. Thus, it follows the structure of an indirect tax on consumption, having as direct taxpayers the producers, importers and traders, and, indirect, the final consumers, through the technique of transfer of the tax in the price of the product or service. Its revenue is linked, through annual budget laws, to the payment of subsidies on prices or transportation of alcohol fuel, natural gas and its derivatives, and petroleum products; the financing of environmental projects related to the oil and gas industry; and the financing of transportation infrastructure programs (Art. 177, § 4, II, CF e Art. 1, § 1, Lei 10.336/01) The STF (AI 737858 ED-AgR/SP, 2012) made it clear that

direct linkage between the benefits arising from a CIDE and the taxpayer is not necessary. However, its revenue must finance activities related to the sector or the economic group reached by the intervention, and thus, there must be at least one same context between the use of revenues and the taxed economic area, to guarantee the neutrality of the tax, which not always occurs (CUNHA; BEZERRA, 2011).

The contribution under analysis raises questions about its constitutionality. Since its destination is part of its generating fact (CHARNESKI, 2006, p. 15 s.; SANTI et al., 2008, p. 61), budgetary laws that establish in a detailed way the destination of their revenues must also be submitted to the tribute constitutionality control (DOMINGUES; MOREIRA, 2009, p. 226). CIDE will only be constitutional when its law determines precisely its objective and when revenues from its collection are allocated by budgetary laws to these objectives (GOMES, 2008). Under this aspect of the fulfillment of its constitutional destination, most of the specialized literature, such as Domingues and Moreira (2009), Tôrres (2012) and Gomes (Gomes, 2008), understands that CIDE-Fuels is deficient, and its constitutionality must be annually assessed according to the budget law.

According to the OECD (2005) definition, CIDE-Combustíveis is considered an *environmental tax*, since it taxes a physical unit that has a proven negative impact on the environment (polluting fuel), which complies with the principle of polluter pays. However, it is relevant to the broad concept of environmental taxation that it has the potential to generate ecologically positive effects, not only by changing the behavior of taxpayers in fuel consumption, but also by the use of their revenues (MATTEI, 2016). Thus, the success of the extra-fiscal function of the environmental tax can be confirmed by the statistical analysis of the behavior of the economic agents and by the evaluation of the adequate use of their revenues.

Analyzing the impact of the CIDE-Combustíveis on the behavior of the economic agents, it has been that, when dealing with fuels, an increase in the tax burden on their consumption does not necessarily imply more efficiency (GUSMÃO, 2006, p. 129), especially where there is no cheaper or equivalent alternative to polluting fuel. In a comparative analysis of the average tax burden on gasoline (very pollutant) and ethanol (low pollutant), Tôrres (2012) finds, for example, that in 2012 this was 36.79% for gasoline, compared to 31.92% for ethanol. In addition, the

CIDE-Combustíveis tax rate was zeroed from 2012 to 2015 (Decree n. 7.764/2012 and Decree n. 8.395/2015), reducing the price of gasoline. The difference between more and less polluting fuels is still small, and ethanol taxation is still very high. Thus, ethanol consumption is not favored over gasoline consumption, as the principle of environmental protection actually requires (TÔRRES, 2012). It is observed that political-economic factors still prevail in the state decisions, causing an unburdening in the use of fossil fuels (REIS; FERREIRA, 2017, p. 172).

The linkage of CIDE-Combustíveis revenues, in part, to environmental projects, confirms its ecological character (REIS; FERREIRA, 2017, p. 167; SOUZA FILHO, 2012, p. 337). Thus, environmental projects related to the oil and natural gas industry and the improvement of transport infrastructure are financed, which can positively affect the environment. However, other possible uses of its collection can generate detrimental effects to the environment, since its revenue is also linked to the subsidy of polluting fuels (Art. 177, § 4, II, a, CF). With Law 10.336/2001, it was expected to create a fund for environmental protection in the field of fuels for the proceeds of the CIDE-Combustíveis collection, which, together with Bill 623/2003 for the creation of the Fundo para Reparação de Danos Ambientais Causados por Poluição por Hidrocarbonetos (Fund for Reparation of Environmental Damage Caused by Hydrocarbons), contemplated with CIDE-Combustíveis resources, failed (DOMINGUES; MOREIRA, 2009, p. 228; TÔRRES, 2012).

From the foregoing, it can be deduced that CIDE-Combustíveis, even if its main function is fiscal, can be characterized as an environmental tax. It has, in theory, a positive effect on the environment and can therefore be characterized as an ecological state intervention in the economy. In addition to the ecological effect of collection, the proceeds of the collection of the contribution are used, although only in part, for the financing of environmental programs. Most of it is, however, used to guarantee tax neutrality, benefiting taxpayers through, for example, the construction, maintenance and improvement of roads and highways, and subsidizing the price of pollutant fuels, which may go against environmental protection.

Thus, although its structure and purpose is close to the *Ökosteuern*, mainly the energy tax, CIDE-Combustíveis is only partly intended for environmental protection and yet, in practice, its application is questionable for its intended purposes.

3 PERSPECTIVES OF AN ECOLOGICAL TAX REFORM IN BRAZIL

The need for a reform of the Brazilian tax system is undeniable. The regulation of the system dates back to 1966 and the structure of the main taxes and revenue sharing have remained practically unchanged since then, and the 1988 Constitution integrated this system in its tax and budget order.

In the midst of some attempts, some with more consistent proposals in ecological terms, such as PEC 353/09, and others with specific proposals related to ecological protection, such as PEC 41/03, transformed into Constitutional Amendment 42, the idea of a major reform in the core of the system has taken concrete proportions since 2007 in several proposals for constitutional amendments, which entered as appended to the PEC 31/07 in the Chamber of Deputies. This PEC and the appendices are still pending since 2008. According to Pereira and Ferreira (2010), although the main objective of PEC 31/07 is to reduce the cumulateness of the system through the dismissal of labor and the insertion of a federal value-added tax, it defines environmental protection as one of its goals. According to the justification of PEC 31/07, environmental protection would be promoted especially by transferring part of the ICMS revenue to the cities (ICMS-Eco) and by collecting the IPI according to environmental criteria, but the ecological changes would be limited to these measures.

Even with the possible approval of PEC 31/07, the tax system will still be lacking in ecological terms. The insertion of a CIDE-Ecológica or an environmental tax is still an idea far from being possible, but an analysis of its viability contributes to the discussion of the tax reform.

An environmental tax in the form of a CIDE-Ecológica of competence of the Union would be constitutionally protected in Art. 149, CF, that does not determine a specific generating fact for the CIDE and delegates its format to the infraconstitutional legislator (SILVA; ELALI, 2012, p. 61). However, state intervention through contributions to the economic domain is only justified when it aims to protect the economic order and observes its principles, especially the sustainable development of each economic area (STJ, REsp 1120553/RJ, 2010). By economic area, it is understood here every part of the economic order in which private actors act and for which a state intervention is required for inspection, control, incentive and planning. In addition, CIDE should be temporary,

due to its exceptional nature in the context of the tax system (TÓRRES, 2005, p. 140): according to Art. 177, § 4, CF, it is an exception to the constitutional principles of legality and of the previous financial year (CUNHA; BEZERRA, 2011, p. 314). In order for its revenue to be neutral, it cannot go through the public budget, but rather must be used in the area that has undergone the intervention, to which the taxpayer belongs (COSTA, 2012, p. 96; CUNHA; BEZERRA, 2011), so that its extra-fiscal function is directly performed and fully implemented.

CIDE-Ecológica would then be constitutional, if the assumptions of Art. 149, § 2, CF are observed. Thus, it would also need to represent an intervention in a particular economic area and be used as an instrument of action in this area, in addition to seeking the protection of the economic order and its principles. Costa (2011, p. 345) cites as an example a CIDE that taxes the timber industry for the financing of reforestation programs.

However, CIDE-Ecológica would remain limited to the economic area targeted for intervention, and the link between the use of revenues and contributors should exist. Although taxpayers do not bear the burden of taxation, which is passed on to final consumers, CIDE has a considerable influence on their chances of competition in the market and should therefore return as compensation when tax revenues are used, neutral. Given the idea of introducing new special contributions in the CIDE-Combustíveis model, it should be considered that the Brazilian constitutional legislator is confronted with the recurrent problem that extra-fiscal taxes are often diverted from their original purpose (HARADA, 2013, p. 30 s.). They are, for example, created as exceptions to the rigid principles of taxation and are used to increase the tax burden. Therefore, care should be taken with the insertion of such taxes, especially CIDEs, which, as a contribution, have less rigid constitutional assumptions than taxes.

On the other hand, the idea of introducing an ecological tax according to the model proposed by Pigou is not new in the national literature, but may run counter to constitutional principles. Extra-fiscal norms in Brazilian tax law can be found in the Brazilian Constitution itself and its admissibility is always confirmed by the jurisprudence of the higher courts. The tax extrafiscality, based on the concept of tax of Art. 16 of the CTN, which does not exclude the pursuit of other purposes by the tax, was consolidated in both theory and practice of tax law. Its constitutionality, as in German law, is based on the general admissibility of state intervention in the economy to protect the market and guarantee individuals a dignified

existence and other fundamental rights (DERANI, 2008). An infringement of the Article 3 of the CTN, when it determines that the tax cannot be sanctioned by an unlawful act, is irrelevant, since the consumption of pollutant fuels is not prohibited, but must be discouraged, at least initially (SCHOUERI, 2005, p. 252).

The issue of environmental taxes and the prohibition of confiscation is also a relevant issue for the country's law. This is because, according to Art. 150, IV, CF, the tax can not be used for confiscation purposes. As discussed above, although the consumption of environmental goods is essential for life and for economic activities, the possibility of the taxpayer choosing between paying the tax or not, as well as the application of tax techniques such as the granting of subsidies, can ensure the constitutionality of the tax in this respect. In terms of tax jurisdiction, the Union has the power to institute new taxes, provided that they are non-cumulative and do not have a taxable event or basis of calculation specific to those in the Constitution (Art. 154, I, CF). An environmental tax as an indirect tax on fuel consumption would not encounter constitutional problems, as long as its non-cumulativeness with other taxes is preserved. In relation to its compliance with other principles of tax law, an environmental tax may be constitutionally admissible, according to an analysis already made for the *Ökosteuern*.

An environmental or ecological tax with the main purpose of curbing polluting behaviors without linking revenues would certainly encounter resistance from the population. The increase in the already very high tax burden, the non-linkage of collection to environmental programs, and especially the lack of transparency of the budget in Brazil make it difficult to justify a political decision to create an environmental tax. It should also be economically analyzed how a tax in this model would change the economic reality of the country, since the price of energy would be raised considerably.

A fundamental question for the constitutionality analysis of a hypothetical environmental tax in Brazil is, then, the obligatory linkage of the revenues of the *Pigouvian* model, which aims to guarantee its neutrality. In Brazil, the prohibition of tax revenue binding is deduced from Art. 16 of the CTN, which defines them as independent of any specific state activity. In addition, the Constitution prohibits the budget legislator from linking tax revenue to an organ, fund or expense, with the exception of the linkage in favor of health, education and tax administration (art. 167, IV, CF). Thus, it

can be concluded that an environmental tax with a linkage of revenues, both for environmental protection and for the social system, is unconstitutional. For its insertion in the tax system, a constitutional amendment would be required, which included in *Art. 167, IV, CF* the objective “environmental protection” or - with a tax equivalent to *Ökosteuern* – the “social security” objective.

The idea of a tax on the model of the German *Ökosteuern*, with the linking of revenue to the dismissal of the labor factor, would represent an economic-political alternative to the creation of a *Pigouvian* environmental tax. As in Brazil there is also the big problem of the high tax burden on companies due to the large amount of social taxes, an *Ökosteuern* could help in the company tax exemption. From a business point of view, the German model has the advantage that tax collection is used directly to its benefit through the early compensation system, even if only part of the amount paid with the social system is compensated. In this case, the fact that revenues collected are used directly in a population-relevant area (social system) increases the population’s acceptance of tax, which would raise fiscal morale and probably lead to a regression of tax evasion.

In Brazil, the concentration of the system in the taxation of consumption is still problematic. Gassen et al. (2013, p. 215-230) find that the State, in emerging and developing countries, concentrates its tax collection on consumption taxation: in Brazil, consumption taxation represents 68.20% of the total state revenue, while this percentage in the OECD countries is on average 30.4%. This leads to a regressive tax matrix and, consequently, to a strengthening of social inequality. In Brazil, where, due to this regressivity of the system, the lower social strata, with little or no income, are proportionally more taxed (GASSEN; D’ARAÚJO; PAULINO, 2013, p. 223). An additional indirect tax would only aggravate the inequality.

The failure of the PECs with ecological proposals demonstrates how difficult it is to carry out a major reform that includes the insertion of extra-fiscal taxes for environmental protection according to ecological principles. To that end, the implementation of environmental taxation should be gradual and take into account the environmental efficiency of the instrument, its effectiveness to achieve the specific objectives, equity, political acceptance, administrative feasibility and its flexibility in adapting to changes (ALVES; PORTUGAL JÚNIOR; REYDON, 2017, p. 77). It is agreed with Alves et al. (2017) when they conclude that the

application of environmental taxes, such as a CIDE-Ecological or an environmental tax, as well as any environmental policy for the application of economic instruments, must be linked with other government policies in order to synchronize conflicting objectives of economic growth and the preservation of the environment. Therefore, it is easier and timely to make small adjustments to the current tax system, rather than creating new environmental taxes (FIORILLO; FERREIRA, 2010; SILVA; ELALI, 2012; TÔRRES, 2012).

Despite its shortcomings, CIDE-Combustíveis is considered an environmental tax and an *Ecotax* - as defined by the OECD - which can be seen as a start for a more comprehensive ecological tax reform. The next most appropriate step towards a greening of the tax system would be an abdication of revenues by the State, through a greater concession of tax subsidies for non-polluting activities (CAVALCANTE, 2011, p. 366). In the context of the paradigm shift towards a State of Ecological Right, this gradual ecological adaptation of the national tax system should lead to a systematization - according to ecological criteria - of the tax system focusing on environmental taxes (CAVALCANTE, 2011, p. 363).

CONCLUSION

In the context of Germany's ecological tax reform, the *Ökosteuern* } , final taxes based on the tax model proposed by Pigou, were successfully inserted into the tax system. Due to the linkage of their income to the exemption of the "labor factor", that is to say, to expenses with the social system, the *Ökosteuern* received good acceptance from citizens and businessmen. Despite the criticisms that were mainly directed to the lack of competence for its collection, the lack of revenue neutrality, the loss of competitiveness in international trade, the dubious creation of a new source of income and other problems of tax inequality, its constitutionality was declared by the Federal Constitutional Court, which inaugurated a new chapter in the greening of the German legal system. Currently the "greening" of the tax system focuses on improving *Ökosteuern* techniques to minimize its *eventual injustices*.

It can also be observed that the *Pigouvian* tax is an efficient and ecologically just instrument for state intervention in the economy and is still preferable to other more rigid forms of intervention. This environmental tax can be designed to be constitutionally admissible, both

by the criteria of the German Basic Law and the Federal Constitution of Brazil. However, in Brazil, the express prohibition of tax revenue is an obstacle to its implementation, which can be overcome only through constitutional reform.

Considering the unconstitutionality of a *Pigouvian* tax in Brazil and the limitations of a CIDE-Ecológica, it seems more appropriate to modify the already existing CIDE-Combustíveis, which can be considered an environmental tax and has the potential to trigger a more comprehensive ecological tax reform.

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