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Environmental Tax Issues of Relevance to Developing Countries

**Carbon taxation – an instrument for developing countries to
raise revenues and support national climate policies**

Report to meeting in the United Nations Committee of Experts on
International Cooperation in Tax Matters

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1. Introduction

The 13th session of the United Nations Committee of Experts on International Cooperation in Tax Matters took place in New York on 5-8 December 2016. One of the items on the agenda was a presentation by (i) a representative from the Swedish Ministry of Finance; and (ii) a representative from the IMF on environmental tax issues of relevance to developing countries. Following a brief but positive discussion, it was decided that a report should be produced to give recommendations on this issue to the next Membership of the Committee. This report was to be discussed at the 14th Session of the Committee of Experts in International Cooperation in Tax Matters (Committee) in April 2017.

2. Why bring this up for discussion now?

Many developing countries are confronted with low government revenue, due to a variety of reasons. The G20/OECD BEPS project has shed a light at how harmful base erosion and profit shifting (BEPS) can be, particularly for many developing countries lacking the resources to control and tax

offshore transactions, even if the main economic activity took place, or value was created in their territories. Tax avoidance strategies, as well as the failure to capture rent deriving from the activities taking place in a country's territory are issues which are inherent to direct tax systems, where the application of the tax will be dependent on the country's ability to attribute the income to an activity taking place in its territory. Additionally, low oil, gas and commodity prices have created a downward pressure on income for resource rich countries. In many developing countries a large portion of economic activity occurs in the informal sector, which hampers revenues raised from broad taxes on labour, capital, and consumption. In contrast, revenues may derive from the indirect taxation of fossil-fuels used by the informal sector, by taxing the fossil fuels prior to reaching the informal sector as a final consumer, thus capturing the rent associated with that (many times) excluded economic sector.

Indirect taxes thus offer developing countries an opportunity to tax income upon consumption of a good or service, at the point which is most convenient for the tax administration to apply the tax. Because indirect taxes tend to lack the cross-country dimension, they can offer a less complex alternative in which for developing countries to accumulate substantial revenues without having to invest in the hiring of additional labour, or the acquisition of new technological resources. Environmental taxes are therefore discussed under that context, as a form of applying indirect taxes that would be easy to administer, would guarantee a steady revenue flow, while requiring little resources from tax administrations. Where concerns in developing countries on achieving sustainable (tax) revenue in view of all these challenges give rise to tax reform considerations, environmental taxes in general and carbon taxes in particular should not be overlooked – to add to the mix of taxation or to replace existing – non-effective taxes.

3. The Climate Change Framework

The 2015 Paris Climate Agreement requires all parties under the United Nations Framework Convention on Climate Change (UNFCCC) to put forward their best efforts through nationally determined contributions and to strengthen these efforts to curb greenhouse gas emissions in the years ahead. It is now time for countries across the globe to deliver on their climate commitments, for the benefit of future generations.

Contrary to the Kyoto Protocol, which had a preference for carbon pricing mechanisms, more specifically for cap and trade systems, the Paris

Agreement does not endorse one particular method for countries to address their excess greenhouse gas (GHG) emissions.

By extending the array of fiscal and financial tools available for countries to tackle climate change, the Paris Agreement shed a new light on the less costly alternative resources available to countries when designing climate change policies. Following the introduction of the Paris Agreement, environmental and carbon taxes have become ever more relevant as an alternative to carbon pricing mechanisms, and an equally effective way of ensuring a country meets its goals under the Paris Climate Agreement.

The Paris Agreement shows that climate change is an international issue that is best dealt with if and when local actions are brought together and coordinated under a global framework. When considering carbon taxes, it is not only important to consider the fiscal framework of the country but also the energy security situation and competitiveness of the local industry. Covering cross border aspects of carbon taxes, considering solutions that could align in the medium term and exchanging best practices should be dealt with now that various countries are considering carbon taxes to help them to address their excess GHG emissions.

4. Past Committee Work and relevance of this subject

In its eight Session, the Committee of Experts approved a note on tax treaty issues arising from the granting and trading of emissions permits and emissions credits under the UN Model Convention. That work covered the most relevant tax issues around cap and trade systems, and was contemporaneous to the conclusion of the Kyoto Protocol.

The introduction of the Paris Agreement, and the call for climate change action at a time where financial resources are constrained, calls for the subject to be re-opened and analysed from a different perspective, shedding a new light on the alternative tools that are available to countries in designing effective climate change policies, while being attuned to international flows, and the need to avoid double taxation.

5. In scope

A countries' climate change policy may involve the application of one or more taxes, amongst which are:¹ energy taxes, pollution taxes, a value-added type tax, or a carbon tax. This paper will draw from the Swedish experience in order to discuss the potential benefits applied from the application of carbon taxes.

A carbon tax can be a cost-effective tool to reach emission reductions. By putting an explicit price on carbon, it can drive behaviour towards less polluting energy resources, leading to a reduction in carbon dioxide emissions. The revenue generated can be put to productive use – the most optimal use will depend on the country's level of economic development, the energy mix, and on the array of taxes applied domestically.

On a more micro level, simple carbon taxes are cost-effective because of the simplicity in administration of the tax. Since it would be proposed in most countries as a “new” tax, tax administrations would have the opportunity to design their carbon tax policy in the most beneficial way and in line with national constraints. E.g. if energy taxes are already applied on the consumptions of energy, a carbon tax can be added by electing carbon as the new tax basis.

Increased revenues through a nationally administered instrument may, apart from outside technical support and funding, be an essential means to finance necessary adaptation and mitigation measures in developing countries.

Carbon taxes can be in some countries' own domestic interest because of the domestic environmental benefits, most notably the reduction in exposure to local air pollution to the extent that the use of polluting fuels (like coal and diesel) are reduced.²

Revenues from energy taxation can be raised through a relatively long period of time. The aim in a 2050 perspective is, of course, that revenues should decrease over time, to the extent that countries are able to achieve their

¹ This is a non-exhaustive list. Some countries may apply other types of taxes and connect the tax to an environmental purpose. For instance, many countries in Europe apply an annual vehicle tax and classify it as an environmental tax because the tax is conditional upon the weight of the vehicle or specific carbon dioxide emissions – the policy objective is to stimulate private parties to acquire more efficient vehicles, which will produce fewer harmful emissions per kilometer. Other countries characterize noise taxes as environmental in nature.

² IMF, “Climate Mitigation in China: Which Policies are most Effective,” IMF Working Paper, July 2016, available at: www.imf.org/external/pubs/ft/wp/2016/wp16148.pdf.

GHG stabilization targets and reduce reliance on fossil fuels. Such an achievement would be in line with the adaptation and mitigation measures assumed by countries, to the extent the global community delivers on commitments which are in line with the Paris Agreement. In fact, the goal is to reach the point where the revenues derived from the application of a carbon tax is decreasing over time, as a result of its reduced fossil fuel reliance. At that point the revenues lost as a result of the country's conversion into a green economy can be recaptured by increasing some other tax (e.g. by increasing a general energy tax).

An involvement of Finance Ministries in climate change actions can ensure that adaptation and mitigation policies are supportive and consistent with macroeconomic and growth objectives in the most efficient and effective way. To advance this goal, at the invitation of the Moroccan Presidency to the Conference of the parties to the UNFCCC, a Finance Ministers roundtable took place in Marrakesh in November 2016. The roundtable discussion resulted in a request to the World Bank to further explore the establishment of a more formal mechanism to advance the role of Finance Ministries in climate policy.

6. Global outlook

Finland was the first country to introduce a specific carbon tax in 1990, closely followed by Sweden, Norway and Denmark. Within the EU such national taxes are now also found in France, Ireland, Portugal and Slovenia and during recent years there has been a significant increase of jurisdictions outside the EU which have launched carbon taxation. Examples are Switzerland, Japan, Mexico, Chile and some of the Canadian provinces. Also, South-Africa is in the process of finalizing a carbon tax.³

The basic logic of taxation for all these countries is to draw a direct correlation between the carbon, a fossil fuel amount, and the tax. Assuming that every y volume of oil, for example, contains x tons of fossil carbon, the tax is thereby incident on the y volume of oil, on a fixed, in rem basis. A carbon price can be applied on a variable volume of fossil fuel. If set up as a proxy for volume, the carbon price tends to vary depending on the carbon intensity of the fossil fuel. Also, national conditions are taken into account in

³ See World Bank, Ecofys, Vivid Economics "State and Trends of Carbon Pricing" October 2016, for a complete overview of the countries that have implemented carbon taxes, or adopted a carbon price to date. The publication also reports on countries' stage of commitment to the Paris Agreement, Available at: <http://www.ecofys.com/en/publications/state-and-trends-of-carbon-pricing-2016/>.

the design of the tax. For example, derogations may be deemed necessary at least during a transitional period to strike a balance between environment and competitiveness as well as to address distributional consequences.

7. Restructure existing taxation of energy to bring it in line with climate policy - key issues to consider when implementing a carbon tax

Putting a price on carbon emissions is another way of expressing the Polluter Pays Principle (PPP), namely that the burden for the damage caused by the fossil carbon emissions is shifted back to those responsible for releasing the carbon emission in the first place. Climate change theory has taught us that by putting a price on carbon, a direct link is created between government policy and what society wants to achieve, namely to reduce harmful emissions. The PPP aims to internalize the external cost of carbon, by quantifying the harm caused by every ton of carbon dioxide emissions released into the atmosphere, and in that sense use precaution to capture the rent associated with increased health care costs from heat waves, droughts or damages to crops or property from flooding and sea level rise, as well as other phenomena resulting from climate change.

However, countries need not attain themselves to an optimal pigouvian price, that is equivalent to the social cost of carbon. Modern climate change tax theory allows countries to adopt a more practical approach and phase in carbon prices that are in line with their intended “nationally determined contributions (NDCs)” under the Paris Agreement, or any other environmental agreement they might have committed to in the past.

One of the major benefits of a carbon tax, if compared to an emissions trading scheme, for example, is that it can be administratively simple to design as well as to collect. A well designed carbon tax system would be of particular interest to developing countries as it raises revenue without requiring a market or the design of a complex MRV⁴ system.

Another advantage of a carbon tax if compared with emissions trading schemes is that it provides more certainty over emissions prices: whereas a carbon tax will invariably be applicable upon occurrence of the tax’s

⁴ Monitoring, reporting and verification (MRV). Monitoring CO₂ emissions, reporting and verifying emissions is not simple. Generally, this is required for carbon trading systems. Carbon tax systems tend to work with a proxy – an assumed amount of carbon released when burning certain types of fossil fuels. The proxy price generally avoids the complexities of carbon MRV at release.

triggering event at the price fixed at introduction, the emissions trading price is subject to price oscillation in the emissions trading markets. Emissions trading markets operate much like a stock exchange, with prices going up when there is demand for emissions permits, and prices decreasing when there is little demand⁵. Price certainty is potentially important for mobilizing investment into clean technologies or other alternative technologies. The authors may work with the secretariat and others in order to draft basic policy recommendations for the design of a carbon tax system for developing countries, should that be of interest to this Membership of the Committee.

In order to help society reach set climate targets, the carbon tax should be set on the content of fossil carbon, as only fossil fuel consumption results in net increases of carbon dioxide in the atmosphere. The carbon tax, or the carbon price, should also vary according to the fossil fuel's polluting ability⁶.

Setting the carbon tax based on the carbon content of fossil fuel is also the way global emissions of carbon dioxide are reported according to procedures that the global community has agreed upon under the Kyoto Protocol. The average carbon dioxide emission and energy factors used in this reporting can also be used when calculated national carbon tax rates. It is not necessary to measure the actual emissions. In order to ensure a simple administration, the tax rates can in national tax law be expressed in weight or volume units for the different fuels. A carbon tax can be collected in the same way as excise duties in most countries to some extent already are levied on petrol, diesel, coal and gas. This gives low administrative costs for the tax authorities as well as for the operators.

The rationale behind using a policy based instrument such as a carbon tax is that the price signal created by the tax will in itself lead consumers to purchase the least carbon intensive energy product, thus resulting in emissions reduction. Focusing the taxation on the price signal to ensure emissions reduction, there is no need for Governments to engage in administratively burdensome ways of 'picking a winner' (e.g. a particular

⁵ Such oscillation will allow automatic adjustment of the price e.g. in case of economic downturn or upturn when consumption decreases or increases. In case of a carbon tax, the rate will have to be adjusted through a law change in case changes in economic activity require a decrease or increase of the price.

⁶ The tax applied on diesel, should therefore be higher than that applied on gasoline, which in turn be higher than that applied on natural gas.

technology or a particular fuel), making the instrument cost efficient. A carbon tax rather allows households and multinational entities to choose the measures that are best (which typically coincide with least cost) for them. Such measures can include investments in new technologies with low or zero greenhouse gas emissions, such as a more extensive use of public transport, large scale energy systems that use non-fossil energy and small scale energy solutions for households in the countryside. It also creates a consumer market for alternative, non-carbon intensive energy resources. For example, household waste could be used as a resource to produce space heating or cooling in district heating systems instead of using fossil fuels.

8. An example – Sweden’s +25 years of experiences of a carbon tax

Carbon taxation came into effect in Sweden back in 1991, as part of a major tax reform that among other things implied lower marginal income taxes on capital and labour, the elimination of various tax shelters and base broadening of the value added tax. The general carbon tax rate chosen per tonne fossil carbon at the time was reasonably low (26 €), and it has taken Sweden more than 20 years to reach the current – what some may call exceptionally high – level of 118 €

The key to enable a raised tax level over the years has been to engage into a step-wise approach, giving households and firms time to adjust. In order to manage negative impacts on the international competitiveness of local industry and to cater for potential carbon leakage the rate for firms and corporates in the manufacturing industry started out lower. At the same time, state resources were allocated to supplementary measures ensuring that feasible options are available for households and firms to make sustainable, green choices. This includes for example investments in local public transport, grants to stimulate households to choose cleaner space heating options and buy less polluting cars as well as also general tax relief in other areas to avoid increases in the overall level of taxation.

The carbon tax is the cornerstone of the Swedish climate policy and has served Sweden well during the past decades. The domestic carbon emissions have dropped by 25 percent during the 1990–2015 period. At the same time Sweden has experienced long-term economic development and prosperity, opposing the widespread yet unfounded belief that a sound and effective climate change policy cannot be combined with long-term economic development.

9. Recommendations to the next committee

As briefly outlined in this paper, carbon taxation can be a cost-effective instrument for developing countries to raise revenues and support national climate policies. The Paris Agreement has made the application of environmental taxes in general, and carbon taxes in particular, a timely subject. The Committee can play an important role assisting countries in developing new self-sustainable resources for revenue mobilization, while at the same time complying with its climate change commitments.

There is a vacuum in legislative policy in the field of environmental taxation, and the Committee can lead the way in this field. The Committee could be an important agent in drafting policy recommendations for countries interested in introducing environmental taxes, such as a carbon tax. It could also provide a forum in which for countries to learn from other countries' experiences, and engage into more proactive policies to curb GHG emissions.

The authors are willing to work with the secretariat and others in order to discuss environmental taxes and draft basic policy recommendations for design features of a carbon tax system. This paper could form the basis for the next Membership of the Committee to analyse the relevance in creating a Sub-Committee on environmental taxation.