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Taxing Carbon in Developing Countries

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The issue

Today's development policy faces two interdependent challenges: poverty reduction and climate change. To meet the dual challenge of creating acceptable living conditions for billions of poor people and preserving these conditions for future generations, we must de-link economic activity from greenhouse gas emissions.

One of the most urgent requirements is the reflection of the true costs of our economic actions in market prices. The current rules of market economies allow economic agents to externalise many environmental costs. As a consequence, individuals and firms do not factor such costs into their decisions, but pass them on to society. Governments thus need to take measures to ensure these costs are reflected in market prices ("internalised").

Carbon taxes, that is, taxes on units of emitted carbon dioxide, are among the most straightforward measures to internalise climate costs. They send a clear price signal and raise revenue. This provides the opportunity of reaping a "double dividend" of environmental protection and of using the tax revenues for social and economic benefits. Many countries nonetheless hesitate to tax carbon emissions. The political barriers that stand against environmental tax reform are often based on competitiveness concerns. Enterprises fear competitive disadvantages in international markets, which may result in job losses. These concerns need to be taken seriously, particularly when countries' economies are based on carbon-intensive activities that are heavily exposed to international competition, such as some energy-intensive industries. Decisions on carbon tax design and implementation, and potential protective measures for individual industries, should be based on the best available evidence.

Research goals

The study "Taxing Carbon As an Instrument of Green Industrial Policy in Developing Countries" (Pegels, 2016) thus aims to review the existing evidence on the competitiveness, employment and distributional effects of carbon taxation. It does so with a view to informing the decisions of policy-makers in developing and emerging countries. To this aim, it pays particular attention to tax design options to mediate negative and generate positive economic, social and environmental effects. Since empirical studies on carbon taxes in developing countries are still scarce, industrialised country cases complement the body of empirical literature analysed.

Results

Carbon pricing through taxes or cap-and-trade schemes is gaining ground in industrialised and some developing countries, but not to the extent necessary to achieve a uniform global price of carbon and avoid exceeding the limit of 2°C global warming. Where carbon pricing is implemented, for example in European countries or several Canadian and Chinese provinces, governments make use of measures to protect competitiveness, most notably reductions of – or even exemptions from – carbon pricing. However, ex post studies of competitiveness impacts on firms in industrialised countries suggest that, in many cases, these exemptions would not be necessary and could be phased out gradually.

The Green Fiscal Commission of the United Kingdom, for example, concludes from a comparison of a number of firms in various sectors that environmental policies such as carbon taxes have a negative impact on the competitiveness of only a few sectors (particularly the energy-intensive, trade-exposed sectors). Furthermore, it is mostly the marginal, already struggling firms that are challenged. Average firms are able to cope well, while well-managed firms even gain competitiveness since they are spurred to innovate.

Similarly, there is no compelling evidence that environmental taxes have led to significant relocation of companies. Location decisions depend on a number of factors, such as the

Carbon taxes are a straightforward way to align economic incentives with environmental boundaries. However, competitiveness concerns often hinder their implementation.

availability of skilled labour, intellectual property regimes and proximity to markets. Carbon taxation is rarely the decisive aspect. In contrast, a number of studies show that carbon taxes in industrialised countries have even had positive impacts on gross domestic product (for an overview of international experiences, see Withana et al., 2013).

This said, it is notable that the economic structures of developing countries differ from those of countries in the OECD. Despite some convergence, they are, for instance, more energy-intensive on average (US Energy Information Administration, 2016). Therefore, evidence on industrialised countries may not be directly transferable. Since there are few developing countries that have introduced taxes on carbon emissions, little ex post evaluation is possible. Mexico, Chile and South Africa are notable exceptions, but the initial levels of carbon taxes in these countries are too low to expect significant impacts on competitiveness or growth.

Evidence on energy taxes as an indirect form of carbon taxation is more abundant, and there are indications that they can have several advantages for developing countries, especially when compared to other taxes or carbon cap-and-trade schemes (Fay et al., 2015). Energy taxes provide a good tax base and raise revenues, typically with relatively easy monitoring of a few point sources, or at least an established network of measuring infrastructure, such as electricity or petrol metres. Energy taxes also reduce incentives for firms to remain in the informal sector, since formal and informal companies have to pay them alike when purchasing energy – in contrast to, for example, income or sales taxes, which only actors in the formal economy pay. The technical implementation of energy taxes is easier than that of cap-and-trade schemes, since most countries already have a tax system in place, whereas institutions for cap and trade would often need to be newly created. Having said that, energy prices tend to be a highly politicised issue, and increases can meet strong resistance from firms and consumers.

Recommendations

Although evidence shows that carbon taxes can have positive economic and social effects in OECD countries, their individual design features and adaptation to country backgrounds are decisive. The decision about which goods are taxed impacts on the distribution of the tax burden on different sectors, firms and population groups. Smaller firms may have different emission patterns than larger ones, and – depending on their emission sources and exposure to international trade – sectors may be positively or negatively affected. Taxing flight emissions, for example, is likely to mostly affect high-income households, whereas taxing emissions from public transport can have anti-poor effects. Modelling exercises can inform policy-makers about the expected effects of different tax design options. This information can be used to design tax schemes so that negative effects on vulnerable sectors or population groups are avoided, and to allocate revenues to create positive – and alleviate negative – effects.

Revenue use, which has been so crucial for the positive impacts of carbon taxation in industrialised countries, is likely to be central for carbon tax impacts in developing countries as well. However, revenues may need to be used differently here. In industrialised countries, they have often been used to lower labour costs (such as social security contributions) to generate positive employment impacts. In developing countries, in contrast, employment is often informal, and social security schemes are sketchy. Using carbon tax revenues to lower costs of formal labour will reduce incentives to stay in the informal sector, but it may not have a positive impact on overall employment. Other revenue use options may be more effective in creating economic synergies or compensating for potential negative distributive effects. Revenues could, for instance, finance direct transfers or cross-subsidise electricity lifeline tariffs to protect poor people from rising electricity bills as an effect of carbon pricing. Furthermore, empirical studies suggest that revenue recycling to subsidise basic goods, such as food, can have positive effects on poverty. In general, transparency on tax collection and use is key to ensure political acceptance of (carbon) taxes, particularly in countries with low levels of trust in governmental accountability.

Carbon taxes can contribute to alleviating poverty and fostering competitiveness. The choice of taxed goods and the use of revenues are key to creating synergies.

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