

Carbon Pricing in High-Income OECD Countries

By Jairo Yunis and Elmira Aliakbari

Most economists consider human-made greenhouse gas (GHG) emissions an unintended negative externality of production and consumption. A negative externality occurs when the effects of producing or consuming goods and services impose costs on a third party which are not reflected in the prices charged for said goods and services. In the context of GHG emissions, this negative externality is calculated using the “social cost of carbon,” which is the future damage to society (adjusted to present value) of one additional tonne of carbon emitted to the atmosphere today.

Governments have a wide variety of policy alternatives to address the negative externality of emissions depending on the degree and depth of the policy intervention. They can either mandate individuals and firms to change their behaviour through command-and-control regulations, grant subsidies and tax credits to foster cleaner energy sources, or use market-based mechanisms to correct the misalignment of incentives. It is widely acknowledged that carbon pricing, one of these market tools, is the most cost-effective policy to reduce emissions, as it relies on price signals and trade to provide flexibility to economic agents as to where and how emissions mitigation occurs.

Generally, there are two main types of carbon pricing mechanisms: carbon taxes and emissions trading systems (ETS). With a carbon tax, governments set the tax rate, generally according to the social cost of carbon, and allow the market to figure out the optimal amount of emissions. In an ETS, governments create a carbon-permits market by capping

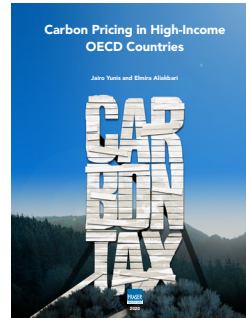
the aggregate amount of emissions and allowing trade between emitters to determine the price.

However, certain conditions must be met for carbon pricing to deliver cost-effective emissions reductions. Carbon pricing revenues should be recycled back into the economy in the form of tax reductions to mitigate the gross efficiency costs of introducing a carbon tax or an ETS into an already distorted taxation environment. Also, carbon pricing revenue should not be used to subsidize specific energy sources as it would defeat the purpose of providing flexibility to individuals and firms. Second, the introduction of carbon pricing tools must be accompanied by the repeal of non-pricing emission control regulations such as emissions caps, mandated fuel standards, technology-based standards, subsidies to electric vehicles, and renewable power mandates. Layering regulations on top of emission-related taxes will have distortionary effects causing disproportionate damage to the economy.

This report includes thirty-one high-income OECD countries, where each country has either implemented a carbon tax, an ETS, or a combination of both pricing mechanisms. Carbon taxes are being implemented in 14 of them whereas 25 of these countries have their emissions covered by an ETS. Our analysis finds that, on average, 74 percent of carbon tax revenues in high-income OECD countries go directly into their general budget with no earmarking for any specific expenditure, while 12 percent are ring-fenced for environmental spending, and only 14 percent for revenue-recycling measures. This means that most governments are using carbon taxes as a revenue-raising tool rather than a mechanism to internalize the negative externalities of emissions in a cost-effective manner. Additionally, the vast majority of ETS revenues are being used to artificially accelerate the use of renewable energy sources, infrastructure, and technology.

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The study also finds that no high-income OECD country has used carbon pricing to repeal emission-related regulations, but instead have introduced new ones following the adoption of the carbon tax or the ETS. Emissions caps, mandated fuel standards, technology-based standards, and renewable power mandates are just some examples of these regulations that undermine the cost-effectiveness of carbon pricing mechanisms. The majority of high-income



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OECD countries have a combination of support schemes for renewable energy sources, carbon pricing tools, and command-and-control regulations.

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Overall, no high-income OECD country is following the textbook model of an optimal carbon pricing system, undermining their theoretical efficiency by design and implementation.