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CARBON TAX IN SMALL OPEN ECONOMIES: AN ANALYSIS ON ITS ECONOMIC EFFICIENCY

Abstract:

The environmental objectives of the Paris Agreement imply that all policy levers will be eventually used to curb carbon emissions, including a carbon tax and specific taxes on fossil fuels. In this context, we identify the optimal tax-mix for oil, natural gas and coal in order to achieve a specific carbon emissions target for Spain, a competitive and small open economy. In a second step, we compare the optimal tax-mix to a standard carbon tax. This analysis is conducted in a general equilibrium framework. The results of the model suggest that: first, a carbon tax is suboptimal from a second-best point of view. In particular, carbon taxes are an unsatisfactory policy tool for mild environmental targets. Second, governments must always tax coal heavily to reduce CO_2 emissions. In addition, subsidizing oil and natural gas could be part of an optimal strategy. This is a counterintuitive and innovative result. Third, we also find that the tax on oil should always be lower than both the tax on natural gas as well as the tax on coal. Fourth, marginal abatement costs of CO_2 in terms of social welfare increases as the environmental policy becomes more ambitious. Finally, revenues from a carbon tax are higher than those arising from an optimal tax-mix, which could create a dilemma for policymakers.

Keywords:

carbon tax, CO2 emissions, environmental policy, fossil fuels, optimal taxes.

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