

Resolving the Fossil Fuel Subsidy Reform Dilemma with Social Protection

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Fossil fuel subsidies, despite their regressive distribution and environmental costs, persist due to concerns over poverty and inequality. This paper uses a Social Accounting Matrix (SAM) model to evaluate the effects of fossil fuel subsidy removal on poverty, inequality, and emissions, and to assess the effectiveness of compensatory policies. A global SAM table is constructed, covering 168 countries, 65 sectors, and 201 expenditure bins, integrating data from the Global Trade Analysis Project (GTAP-v11 for 2017), the World Bank Global Consumption Database (WBGCD), and the Luxembourg Income Study (LIS) data. Unlike previous studies, our compensatory policy scenarios are based on real-world data and offer a cross-country perspective. The model captures household responses to energy price changes, providing deeper insights into subsidy reform's economic and environmental impacts. Our results show that while fossil fuel subsidies are inefficient in supporting low-income households, their abrupt removal without compensatory measures could worsen poverty and inequality. Replacing subsidies with cash-based social protection programs is the most effective approach to support vulnerable populations. However, social assistance policies may partially offset emission reduction benefits, with a more significant impact in emerging economies like China, India, Brazil, Mexico, and Russia. Developing countries, particularly upper-middle-income nations, pose the greatest challenge in phasing out fossil fuel subsidies. This paper provides a practical framework for subsidy reform that ensures both environmental effectiveness and social protection and emphasizes the need for interdepartmental collaboration in aligning social protection with subsidy reforms.