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Poverty and distributional impacts of energy subsidy reform in Indonesia

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Poverty and Distributional Impacts of Energy Subsidy Reform in Indonesia

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Abstract

In Indonesia, fossil fuel energy subsidies have a higher government spending share than health, education and social protection together. To date, all attempts to reduce the subsidies for gasoline, kerosene and electricity have only achieved partial success at best. Due to the high level of subsidy spending, a reform towards reducing or eliminating these subsidies has not only the potential to create a less carbon intensive growth path alone. It may also create political turmoil and a substantial change in the income distribution. While the economic and fiscal impacts of fuel subsidy reforms in general have been widely discussed in the literature recently, evidence on the welfare impacts beyond the representative household is scarce. In particular, despite the high level of subsidy spending and political relevance, a comprehensive analysis of poverty and distributional impacts of potential subsidy reform scenarios is still missing for the case of Indonesia. We aim to fill this gap by taking a comprehensive look at all consumer subsidies for the fossil fuels gasoline, kerosene and LPG as well as electricity. Essentially, we show the importance of taking household heterogeneity and behavioral responses into account. This differentiation has a strong influence on the assessment of welfare effects and related distributional matters. Based on the Indonesian household expenditure survey SUSENAS, we estimate a Quadratic Almost Ideal Demand System (QUAIDS) to identify consumer substitution behavior over the income distribution and for socioeconomic groups. Based on the parameters of the household demand system, we simulate energy subsidy reduction scenarios for several reform scenarios, including subsidy cuts for single as well as joint cuts for all energy carriers. We show that welfare impacts depend in magnitude on household consumption behavior, the exact nature of subsidies, tariff structures and the respective subsidized energy carrier. In contrast to prior findings and conventional wisdom, we observe a progressive distributional pattern only for the case of gasoline subsidy cuts while for electricity, LPG and kerosene the welfare impacts are slightly regressive. Finally, we demonstrate that the way how the subsidy cut is recycled is crucial for the ultimate impact on household welfare.