Which are the costs of rigidity? A General Equilibrium study of the fuel market in Argentina

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The most widely applied policy around the world regarding biofuels is the mandatory blend of fossil fuels and biofuels. This policy aims to induce the use of biofuels setting a minimum level of biofuel per unit of blended fuel. This paper studies the costs and benefits of this policy. To do so, it develops a Recursive Computable General Equilibrium model which runs between 2019 and 2030 and it is calibrated with an own-elaborated Social Accounting Matrix of Argentina for 2018. The research questions are: what are the costs and benefits of a mandatory blend compared to a full flexibility scenario? Is it better to induce the use of biofuels through a tax on fossil fuels or through the blending constraint? Which are the impacts of international price shocks in different blending regimes? Two scenarios are evaluated: (i) an increase in the international price of oil, and (ii) an increase in the international price of agricultural commodities. The contribution of this paper is threefold. First, it contributes by assessing the cost and benefits that arise from the application of mandatory blends not only in terms of activity but also in terms of poverty, income distribution, and energy security. Second, this paper compares the performance of the mandatory blend with respect to a tax on fossil fuel. Third, this paper contributes by evaluating the impact of international price shocks under different blending regimes. Additionally, this works elaborates a Social Accounting Matrix for Argentina 2018 with an emphasis on energy which is a valuable database. This paper finds that the mandatory policy has a negative impact on economic activity, poverty, income distribution, and energy security and a positive impact in terms of emissions. An interesting result is that, in a flexible context, the economy ends up with a higher biodiesel blend than the initial one. However, this does not happen in the case of bioethanol. When analysing the convenience of a special tax on fossil fuels instead of a mandatory regime this paper finds that the benefits of each policy are distributed differently in time. The special tax on fossil fuels performs better in the short run while the mandatory blend does it in the long run. Finally, this paper finds that a flexible regime allows for cushioning the unwanted effects of different shocks on international prices.