

Household Fuel Use in Rural China

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Abstract: The household transition from dirty to clean fuels is important because of its economic, health and environment consequences, locally, nationally and globally. In order to study fuel choices, a non-separated farm household model for fuel demands is developed. Then, discrete choice equations of fuel uses, consistent with this theoretical model, are estimated using microeconomic household panel data from rural China.

The estimation results support the theoretical approach that implies that the fuel demands depend not only on income, fuel prices, and demand-side socioeconomic factors, as would occur in the standard fuel demand models in the literature, but also on food prices, agricultural assets, and original household and community characteristics that shape the household responses to market failures. Finally, we present a few policy simulations that reveal the complex substitution impact of energy price policies in China.

We provide the first evidence on: price sensitivity of fuel stacking, that food prices exert some pressure on the fuel transition, the role of farm work and activity specialization in fuel choices. Policies should incorporate some of the complexity of the non-separated decisions of rural households in this context of market failures. The complex cross-price effects imply that the policy pricing mechanisms should account for all energy types and food prices. Finally, market-based policies should be coupled with policy interventions aimed at increasing the opportunity cost of dirty fuels.

Keywords: Fuel Use, China, Consumption Demand, Energy.