From Coal to Clean: The Impact of Clean Energy Adoption on Children's Health

Yvonne Jie Chen, Li Li, Shiko Maruyama, Peiyao Shen*

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Abstract

This study examines the health effects of a clean heating policy in rural areas of a county in northern China. Exploiting the staggered rollout of the policy and linking administrative health insurance claims with village-level policy timing, meteorological data, and meter-level electricity records, we estimate a difference-in-differences model. We find that clean heating significantly reduces respiratory disease incidence among children aged 0–14, with larger effects during cold periods. The benefits are concentrated among younger children and in villages with lower pre-treatment electricity consumption, where households were more likely to rely on coal heating before the policy. Clean heating also reduces hospitalization expenditures and length of stay. Mechanism analyses suggest that the policy increases household electricity use and that reduced indoor coal-combustion exposure is the primary channel.

Keywords: winter heating; clean energy; health; energy consumption; air pollution

*Yvonne Jie Chen: Asian Development Bank, jichen@adb.org; Li Li: School of Economics and Management, East China Normal University, liliecon10@gmail.com; Shiko Maruyama: Osaka School of International Public Policy, The University of Osaka, shikomaruyam@gmail.com; Peiyao Shen: University of Basel, njsy2004@gmail.com.