

The Incremental Impact of China's Carbon Trading Pilots

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Abstract

China has adopted the carbon emissions trading system (ETS) due to its advantages on efficiency and cost grounds. Prior to the national carbon market, China operated seven ETS pilots as experiments for eight years in addition to the existing Energy Conservation and Carbon Abatement Target Responsibility System (ECCA-TRS) in order to accumulate experience with carbon markets. However, the incremental effects of these pilots are unclear so far. Here, we show that the ETS pilots have produced no additional carbon abatement effect or abatement cost-saving effect, while ECCA-TRS contributed primarily to the relative decline in CO₂ emissions and absolute decline in CO₂ intensity of covered industries in pilot regions. A binding target is necessary to permit ETS to act as the backstop emissions constraint. Adjusting local governments' abatement achievement using the buy-in and sell-out of carbon allowances can allow the ECCA-TRS and ETS to act as well-integrated instruments.

Keywords Carbon Emissions Trading Scheme, Target responsibility system, Policy evaluation, Triple difference-in-differences

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