

Can Centralization of Environmental Regulations Reduce Firm Emissions? Evidence from County-Prefecture Centralization Reforms in China

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Abstract: Drawing on a natural experiment generated by prefecture-level centralization reforms in China in the early 2000s, we study whether a centralized regulatory system delivers better environmental outcomes in a developing country context. We examine the impact of centralization reforms on firm air pollution emissions using a difference-in-differences estimation strategy. We find that centralization reform reduces firm air pollution intensities in total waste air, SO₂, and soot. This effect is robust when we control for contemporaneous environmental policy changes and SOE reforms. We instrument the decision of a prefecture centralization reform using thermal inversion and we run placebo tests to further demonstrate that the relationship is unlikely a function of a selection effect and omitted variables. Empirical tests on causal mechanisms reveal that pollution reduction is mainly due to increased pollution removals during the end-of-pipe treatment stage while there is little evidence that centralization increases firm scale of production, productivity, efficiency, and innovation efforts. Finally, we test whether a centralization reform drives local firms away (i.e., a spillover effect) and we find no supporting evidence.

Keywords: Centralization; Firm Emissions; China