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Environmental Regulation, Emissions and Productivity: Evidence from Chinese COD-emitting Manufacturers*

Chunhua Wang^a, JunJie Wu^b, Bing Zhang^c

Abstract: In recent years, China's environmental regulation efforts have mainly focused on severely polluted "key regions." The central government has designated the "three rivers and three lakes basins" (3Rs3Ls) as key regions for water pollution control and has imposed a variety of regulations to improve water quality in those basins. This paper evaluates the effects of the water quality regulations on firms' emissions of chemical oxygen demand (COD) and productivity in the 3Rs3Ls basins. We find that although the water quality regulations forced many small, heavily-polluting firms to shut down, they had no statistically significant effects on surviving firms' productivity because they were ineffective in reducing their COD emissions. A policy that forces the surviving firms to reduce their emissions would reduce their output values and productivity, at least in the short run. However, the effect is likely to be small. Specifically, a 10% reduction in total COD emissions from the industrial sectors would require only a 0.1% reduction in output values under the current production technologies. These findings are robust to alternative specifications and sampling strategies.

JEL Classification: O44, Q52, Q53

Keywords: Environmental regulation; emissions; productivity; chemical oxygen demand;

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