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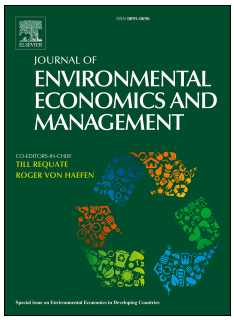

The impact of environmental regulation on fetal health: Evidence from the shutdown of a coal-fired power plant located upwind of New Jersey

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The impact of environmental regulation on fetal health: Evidence from the shutdown of a coal-fired power plant located upwind of New Jersey ☆

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ABSTRACT

Our study examines a case where cross-border air pollution had not been effectively dealt with by a decentralized, state level policymaking, letting a coal-fired power plant located on the border between two states pollute the downwind state for years without being controlled. We find that the shutdown of the power plant, thanks to a landmark ruling by the federal government, reduces the likelihoods of having a low birth weight baby and having a preterm birth by 15 percent and 28 percent, respectively, in areas downwind of the power plant. The ruling marks the first-ever federal level regulation under the Clean Air Act that overrides state-level regulations and is directly imposed upon a single pollution source. Our empirical setting emphasizes the importance of such regulation in curbing environmental free riding induced by jurisdictional borders, where pollution cost-shifting can be aided by natural forces such as prevailing winds.

Introduction

While generating electricity, coal-fired power plants can put human health at risk. Nevertheless, coal is expected to remain in the U.S. energy portfolio in the foreseeable future, together with renewable energy sources such as solar, wind, and hydropower.[1] Because of the Earth's wind patterns and air pollutants' long-distance transportability through wind, some regions of the United States, such as the Northeast, are particularly affected by interstate air pollution due to transboundary emissions from upwind coal-fired power plants. While in nature there is no border for wind, jurisdictional borders do exist in our society. Under the U.S. system of federalism, enforcement of environmental regulations imposed by the federal government largely depends on individual states. Therefore, in theory a "free riding" problem can occur for a power plant located on the border between two states: the upwind state by having the plant creates jobs and tax revenue, and by locating the plant near the border the upwind state can shift the pollution cost to the downwind state, thanks to the wind.

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[1] For more information see: "Perry Says Coal-Fired Power Plants Important in US Future," *U.S. News*, July 6, 2017 (retrieved from https://www.usnews.com/news/best-states/west-virginia/articles/2017-07-06/perry-says-coal-fired-power-plants-important-in-us-future on August 27, 2017).

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