

Air pollution and U.S. internal migration: Evidence from coal plants

US electricity generation has experienced a dramatic shift during the past 20 years. Between 2005 and 2019, generation from coal declined by 52%, while natural gas generation increased by 116%. One of the main drivers for the decline of coal was falling natural gas prices. Therefore, many coal-fired power plants were retired. This transition has brought about significant improvements in US air quality, mainly to regions that have historically had a high number of coal plants.

We investigate the ramifications of pollution reduction from coal plant retirements with respect to internal migration in the US. We leverage a rich dataset from the Internal Revenue Service on yearly county-to-county migration numbers. These data allow us to provide an in-depth analysis of pollution-induced migratory flows. As current federal policies aim to decarbonize electricity generation, a thorough understanding of how such primary and permanent reductions in local pollutants affect the movement of people is important. Migration has a whole cascade of consequences for, e.g., housing and job markets, a county's tax base, and environmental justice.

To estimate the causal effects of air quality improvements, we apply an instrumental variable approach. We leverage emissions from coal plants located far away from a county, and we model the pollution dispersion from these plants. Therefore, we focus on plant retirements that affect a county in no other way than through its pollution level. We are the first to investigate the migratory effects of pollution in a US context.