

The Cost of Air Pollution for Workers and Firms: Evidence from Sickness Leave Episodes*

Marion Leroutier[†], H el ene Ollivier[‡]

Abstract

Air pollution is detrimental to individual health, including for the working-age population. How do health effects on workers translate into economic costs and do firms adapt via their payroll decisions? We answer this question by leveraging French administrative data on sickness leave episodes matched with employer-employee data on workers' flows and pollution and weather data. We exploit short-term variations in wind direction as an instrument for workers' exposure to particulate matter (PM2.5) pollution. We find that a one standard deviation increase in weekly exposure to PM2.5 increases the share of workers starting a sickness leave that week by 4.5%. The effect is higher for workers with higher healthcare costs at the start of the period, a proxy of initial health status, and for those in the middle of the wage distribution. Respecting the WHO pollution thresholds over the study period - which implies decreasing pollution by 18% - would have avoided 3 million days of sickness leave each year. This would have saved at least  88 million per year in publicly-funded benefits and  96 million per year in employer-funded benefits. In preliminary analyses, we find that an establishment exposed to a one standard deviation increase in monthly PM2.5 decreases new workers' inflow rate by 19% on average in the current and following two months. The effect is driven by a decrease both in permanent hires and in the transfer of workers from other establishments of the same firm.

Keywords: air pollution, instrumental variable, administrative data

JEL codes: Q53, I1, J22

*We thank Augustin Colette and Elsa Real from INERIS for sharing the air pollution data for France with us, Camille Regaert from IRDES for answering our questions on the Hygie data, and Tom Verrier for outstanding research assistance.

[†]Misum, Stockholm School of Economics. Email: marion.leroutier@hhs.se

[‡]Paris School of Economics, CNRS.