The Impact of Short-term Exposure to Ambient Air Pollution on Test Scores*

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Abstract

Air pollution in urban centers has become a key public concern around the world. Apart from its adverse health effects, air pollution could impact less visible dimensions like cognitive performance. Standardized tests are a fixture of all education settings that are susceptible to pollution shocks because they require high cognitive function. Given that test scores are widely used as signals by parents, employers, and education institutions, pollution shocks could render tests unfair and unreliable. In this paper, we combine pollution data with test scores from a large testing institution in Iran from 2012 to 2017 to quantify the impact of short-term exposure to air pollution on test performance. Fixed effects and instrumental variables estimation show that exposure to PM10 and PM2.5 on exam day have small but significant negative effects on test performance. Other pollutants show much smaller impacts.

Keywords: High-stakes exams, air pollution, particulate matter, test scores.
JEL Codes: I21, I23, Q51, Q53.

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