



PRESS RELEASE: Air pollution affects workers' productivity and thereby economic outcomes

Recent research summarized in a new IZA World of Labor report (publishing tomorrow 6 June) finds improvements in air quality lead to improvements in worker productivity, challenging the often-cited economic argument against environmental regulations

Environmental regulations are typically cast as a drag on the economy leading to higher costs for producers and consumers, plant closings, and job losses. However, the economist Matthew Neidell of Columbia University presents a growing body of evidence indicating that air pollution reduces the production level of workers. These productivity losses arise already at levels of air quality that are below current pollution thresholds and in settings ranging from agriculture to manufacturing to the service sector.

Research has linked worker productivity with two pollutants, ozone and fine particulate matter (PM_{2.5}). Ozone can lead to minor insults that may not necessitate the use of formal health care, such as decreases in measures of lung performance. PM_{2.5} has been shown to affect blood pressure, and cause irritation in the ear, nose, throat, and lungs, and mild headaches. PM_{2.5} has also been linked with cognitive effects, such as reductions in test scores.

A study conducted at a farm in California found that increases in ozone led to significant decreases in productivity. Workers picked fewer blueberries and fewer grapes on days when ozone was higher. Importantly, the study found that even at relatively low levels of ozone there was still an effect on worker productivity. Approximate calculations that apply the estimated effect of this study to the whole of the US suggest that a policy-relevant 10 ppb reduction in the ozone standard would translate into an annual cost saving of approximately \$700 million in labor expenditure in the agricultural sector.

Neidell presents evidence from similar studies conducted in the manufacturing and service sectors. Extrapolating their findings the authors of the service sector study cited by Neidell estimate that bringing the city of Los Angeles into compliance with air quality standards would increase service sector productivity by \$374 million. Yet another study linked PM₁₀ with the performance of professional soccer players.

Neidell suggests there are two related implications from this research: "First, in countries with well-enforced air quality policies, an effect on worker productivity is a thus far overlooked benefit, suggesting a strengthening of air quality policy would lead to greater benefits than previously believed. Second, in countries with more limited air quality policies or ineffective environmental regulations, where the environment is often sacrificed in the name of economic growth, this evidence suggests that such an approach may be misinformed because it overlooks the potential gains to the economy from the improvement in worker productivity."



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Notes for editors:

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The site offers relevant and succinct information on topics including diversity, migration, minimum wage, youth unemployment, employment protection, development, education, gender balance, labor mobility and flexibility among others.

Established in 1998, the Institute of Labor Economics (www.iza.org) is an independent economic research institute focused on the analysis of global labour markets. Based in Bonn, it operates an international network of about 1,500 economists and researchers spanning more than 45 countries.