China Shock in Transit: Trade-Induced Freight Traffic and Local Air Pollution

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Abstract

Can international trade worsen air quality in places that connect other regions to world markets? I estimate the local pollution effects of the China shock along predicted US freight routes. A historical multimodal network connects US container ports to inland counties, assigning each destination a least-cost gateway and road or rail route. Combining these routes with the growth of Chinese imports yields a transit-exposure index that excludes the county's own destination demand. In a 2001–2014 county panel, the baseline estimates imply an increase in annual $PM_{2.5}$ of 0.108 $\mu g/m^3$, equivalent to approximately 3.2% of the average county-level decline over this period, when moving from the tenth to the ninetieth percentile of exposure growth. The effect remains positive with transport-corridor-by-year fixed effects, conditional on local import competition, input access, and environmental controls. Many highly exposed transit counties have modest direct industrial exposure to Chinese imports. The findings reveal an environmental cost of globalization that extends beyond the places where traded goods are produced or used.

Keywords: China shock; freight transport; air pollution; transport networks; spatial spillovers.
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