

## Abstract

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This study examines how export growth affects local economic activity and rural–urban inequality, using nighttime luminosity as a proxy for income. We construct bilateral export values for each country pair from 1997 to 2020, covering countries with at least one major port. Trade-hub areas are defined as locations within a 50 km radius (30 km in robustness checks) of each country’s three largest ports and three largest international airports. To account for zero export values, we estimate a gravity equation using Poisson pseudo–maximum likelihood. To address export endogeneity, we employ a two-stage least squares (2SLS) framework in which export volumes are instrumented using predicted trade from a dynamic gravity equation that captures exogenous variation arising from changes in transportation costs across modes. To avoid mechanically capturing lights from ports and airports themselves, we exclude nighttime luminosity within a 3 km radius of each port and airport.

Our results show that a 1 percent increase in exports raises nighttime luminosity by 0.31 percent in trade-hub areas and by 0.06 percent in non-trade-hub areas, widening the rural–urban income gap by an estimated 15–17 percent between 1997 and 2018. Export growth also increases nighttime luminosity per capita by 0.19 percent in trade-hub areas and by 0.04 percent elsewhere, although modest migration into trade hubs partially offsets per capita gains. Overall, the results indicate that export growth has heterogeneous spatial effects, with substantially larger gains in trade-hub areas, thereby contributing to widening rural–urban income disparities.