Long-distance Water Infrastructure, Rural Development and Urban Growth: Evidence from China

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Dates: Jan. 2025

Abstract:

Water is unevenly distributed across regions, yet the effectiveness of long-distance water transfer in addressing this issue remains understudied. This paper employs a difference-in-difference design to examine the impact of the world's largest water transfer project on water resources, rural development, and urban growth. We find that the project enhances water supply and agricultural production in water-receiving areas, while it leads to agricultural declines in water-sourcing areas. Such diverging patterns contribute to various consequences on labor market and rural welfare, thereby generating further differential impacts on nearby urban growth. The water-receiving areas witness urban expansion and economic activities thrive in the rural-urban fringe, but in the water-sourcing areas, economic activities decline outside the core urban areas. Further analysis reveals significant heterogeneity between the two water-transfer routes, distinguished by their engineering designs.

Data and codes:

The replication package contains the following files:

1) Main Run.do
2) WaterDemand_county.do
3) WaterDemand_county_urban.dta
4) WaterDemand_county_wgdp.dta
5) WaterDemand_household.do
6) WaterDemand_household_consumption_assets.dta
7) WaterDemand_household_income.dta
8) WaterDemand_village.do
9) WaterDemand_village_labor.dta
10) WaterSupply_county.do
11) WaterSupply_county_urban.dta
12) WaterSupply_county_wgdp.dta
13) WaterSupply_household.do
14) WaterSupply_household_consumption_assets.dta
15) WaterSupply_household_income.dta
16) WaterSupply_village.do
17) WaterSupply_village_labor.dta

The data and codes are only for the replication purpose. In each dataset, all identifiers are de-identified. The files with the prefix "WaterDemand" replicates the analysis in the water demand area at the levels of county, household and village. The files with the prefix "WaterSupply" replicates the analysis in the water supply area at the levels of county, household and village. STATA 16.0 or above is recommended in running the do-file.