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Spatial Growth and Convergence in Indian Agriculture

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Spatial Growth and Convergence in Indian Agriculture

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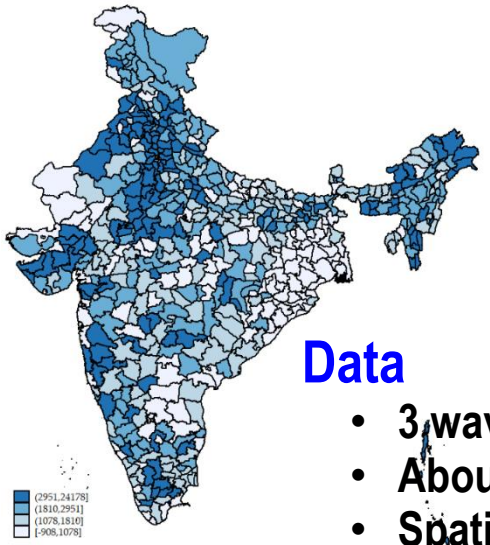
Introduction

- Developing countries are converging with the industrialized west in output per capita since 1990s.
- Simultaneously, a rise in intra-country income inequality is observed, implying persistence of spatial disparities within developing countries.

Objectives

- To study within-country income disparities in India
- To investigate if disparity disproportionately affects some at the cost of others in Indian agriculture, which employs over 200 million people.



Theory & Methodology

- Neoclassical growth theory.
- Conditional spatial convergence

$$\frac{1}{T} ln\left(\frac{y_{i,t_o+T,p}}{y_{i,t_o,p}}\right) = B - \left(\frac{1-e^{-\beta T}}{T}\right) ln(y_{i,t_o,p}) + \alpha_j X_{i,t_0} + u_{i,t_o,t_0+T}$$

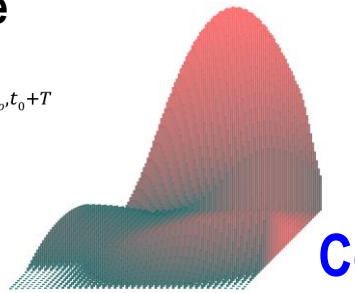
$$u_{i,t_0,t_0+T} = \rho W u_{i,t_0,t_0+T} + \varepsilon$$

Data

- 3 waves of national (NSSO) surveys.
- About 51000 households & 500 districts
- Spatial weight matrices

Results (Spatial Error Model)

	Coefficients across income percentiles					
	2003-13			2003-19		
	P_{20}	P_{50}	P_{80}	P_{20}	P_{50}	P_{80}
ln $INCOME_{2003}$	-0.004**	-0.014***	-0.025***	-0.001	-0.008***	-0.016***
ln $IRRINT_{2003}$	0.005	0.012**	0.032***	0.005	0.012***	0.022***
ln MARKET	-0.066***	-0.093***	-0.058***	-0.025*	-0.024*	-0.019*
ln $DIVERS_{2003}$	0.007	0.007*	0.008**	-0.001	0.002	0.004**
Constant	0.479***	0.693***	0.445***	0.179*	0.179**	0.153*
ρ	0.241***	0.434***	0.486***	0.237***	0.339***	0.476***
σ^2	0.013***	0.009***	0.005***	0.004***	0.003***	0.002***



Discussion

- Income convergence across districts.
- Income grows less rapidly among poor.
- Irrigation, diversification, and market distance explain spatial disparities.

Conclusions

- Link poor to the market; strengthen infrastructure, value chain for the rest.