

Towns and Rural Land Inequality in India

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Abstract

Using the universe of land records from a large Indian state we document three empirical facts on rural land holding inequality at the village level in India:

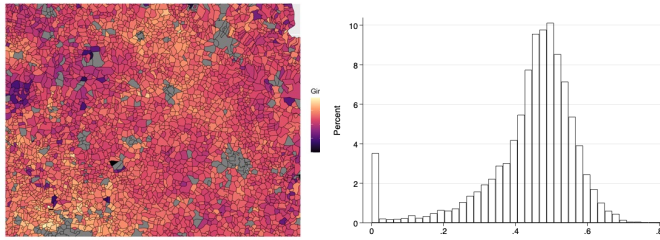
1. Rural landholding inequality is higher close to urban areas and decreases with distance from urban centers;
2. The increase in land inequality is due to fewer mid sized farmers relative to small and large farmers;
3. The distance gradient is a function of town size; larger towns are associated with steeper gradient

We present a simple model where a farmer faces U-shaped agricultural production as a function of land size and financial frictions that explain these patterns. Together, the empirical patterns and model shed light on questions related to the preponderance of small farms, poverty traps and structural transformation in developing countries.

Research Question

- Land is an important asset. Can patterns in landholding inequality offer insights into:
 - The existence of asset poverty traps?
 - The process of structural transformation?

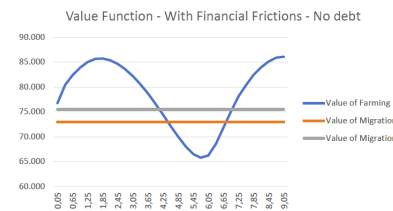
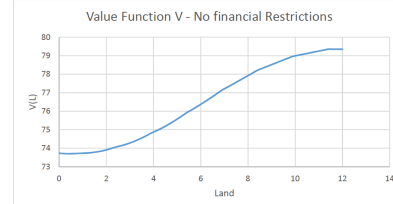
Distribution of Rural Land Gini



Assumptions

- Agricultural productivity follows a U-shape function with respect to land size.
- Financial frictions in land markets; land consolidation is a function of existing land size leading to incremental expansion
- Trade off between agricultural enterprise and net wage income from urban/non-agriculture sector.

Model



A farmer, with Land L , and current debt D , solves the following problem

$$\begin{aligned} V(L, D, P_L) &= \max_{c, N} u(c) + \beta V(L', D') \\ c + rD + T &\leq A(L) \\ L' &= L + N \\ D' &= D + P_L N \\ N &\leq \phi L \end{aligned}$$

where T is the land's transaction fixed cost, P_L is the current land price, and $\phi < 1$ captures financial frictions (collateral requirements).

Sell land today, pay off debt, and migrate to the nearest town of size ψ (and starting to work in the next period)

$$u(P_L L - D) + M(W)$$

$M(W)$ is the value from the urban sector

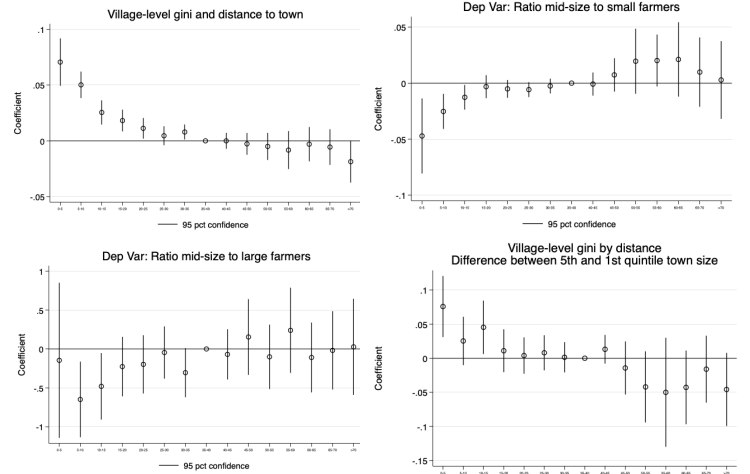
$$M(W) = \sum_{t=1}^{\infty} \beta^t u(W_t)$$

$$W = w(\psi) - d^u$$

Therefore, the tradeoff is

$$\begin{aligned} F(L, D, W) &= \max\{V(L, D), u(P_L L - D) + M(W)\} \\ u(P_L L - D) + M(W) &= V(L', D'); L' \in [L_1, L_2] \end{aligned}$$

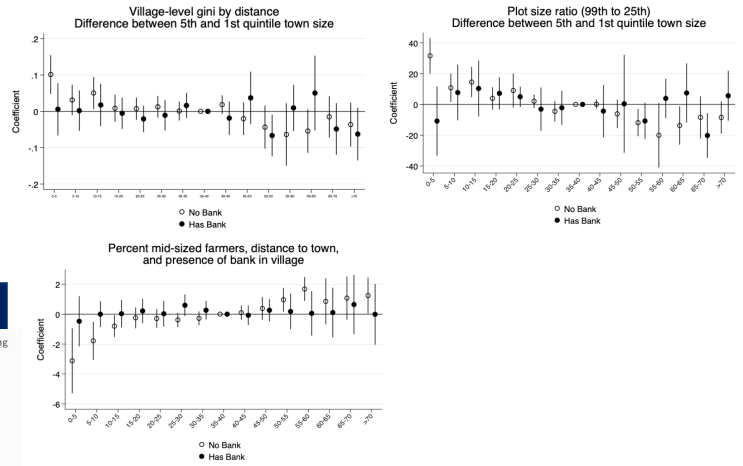
Empirical Facts



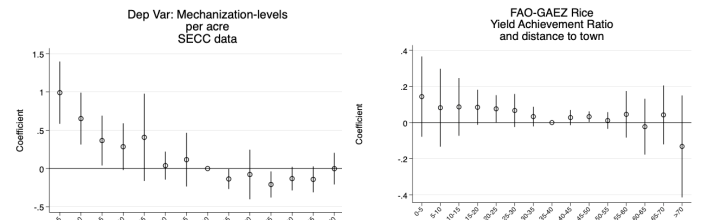
$$y_v = \delta_m + \sum_{j=0, j \neq \{3,5,4,0\}}^{70+} \beta_j D_j + \varepsilon_v$$

y_v is either village-level gini or ratio of mid-small and mid-large farmers; D_j is 5 km distance bins from nearest town; m is the subdistrict

Model Implications: Financial Frictions



Welfare



Caveats and Conclusions

- Model does not account for landless or general equilibrium implications of agriculture exit on price of land or urban wages.
- We do not imply a causal relationship between urbanization and rural land concentration.
- One of the first attempts at documenting spatial patterns in land concentration.
- Potentially important to understand existence of many smallholder farmers in developing countries and the consequences on structural transformation.

Selected References

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