
Agricultural Organization and Productivity: Land Reform

1. Introduction: Land Ownership

- The enormous inequalities in land holdings (refer to the Introduction to the lecture notes on Land Rental Contracts) gives rise to four major questions:
 1. Is such inequality compatible with **productive efficiency**?
 2. If there is an efficiency loss, can it be repaired through the operation of **land rental markets**?
 3. If land rental markets are not adequate to restore efficiency, would **land sales** from rich to poor spontaneously redress the balance?
 4. If neither land rental markets nor land sales markets are sufficient, what is the role of **land reform**?

2. Farm Size and Productivity

- Stylized fact: Small farms are more productive than large farms.
- **Table 12.5** summarizes the findings of Sen (1981) from West Bengal.
 - A clear evidence of a negative relationship between productivity and farm size among owner-cultivated farms.
 - Among farms that have some tenanted land, there is no clear trend.
 - The very smallest farms have the lowest productivity, but among the remaining classes of farms, productivity continues to decline with size.
 - Note that in every size class, productivity per acre on sharecropped land is lower than the productivity of the same farms under owner cultivation.
- **Tables 12.6** and **12.7** present aggregated information for India (as a whole), north-east Brazil, the Punjab (Pakistan), and Muda river region (Malaysia).
 - The evidence supports the decreasing farm-size productivity relationship.

Table 12.5. Rupees of output per acre by size group and tenure: West Bengal.

Operated area (acres)	Pure owners (Rs/acre)	Farms with some crop sharing		
		Overall productivity (Rs/acre)	Productivity on owned land (Rs/acre)	Productivity on sharecropped land (Rs/acre)
0-3	1313	798	867	604
3-5	1044	909	1099	709
5-8	960	842	1130	676
8-12	691	843 ^a	959 ^a	604 ^a
12+	624			
All	902	851	1047	658

Source: Sen [1981: Table 7].

^aThe last two size groups have been merged because of an insufficient number of observations.

Table 12.6. Farm size and land productivity: India.

<i>Range of farm size (acres)</i>	<i>Average farm size (acres)</i>	<i>Income per acre (rupees)</i>
0–5	3.0	737
5–15	9.3	607
15–25	19.5	482
25+	42.6	346

Source: Berry and Cline [1979, Table A-1].

Table 12.7. Farm size and land productivity: Selected regions.

<i>Farm size</i>	<i>Northeast Brazil</i>	<i>Punjab, Pakistan</i>	<i>Muda, Malaysia</i>
Small farm (hectares)	563 (10.0–49.9)	274 (5.1–10.1)	148 (0.7–1.0)
Largest farm (hectares)	100 (500+)	100 (20+)	100 (5.7–11.3)

Notes: Largest farm productivity is normalized to 100. “Small farm” refers to second smallest size range. Source: Berry and Cline [1979].

Is This Surprising? Arguments for Increasing Returns:

- Technology with fixed costs (tractors, harvesters, threshers, pump sets).
- Larger farmers have better access to credit.

Is This Surprising? Arguments for Decreasing Returns:

- Agency problems: large farms are cultivated by hired labour, which has fewer incentive to work hard.
 - Small farms are owner cultivated; does not suffer from these agency problems.
- Imperfect labour markets with unemployment reinforces the last point by reducing the opportunity cost for family labour relative to that of hired labour.
- **Conclusion:** Available evidence suggests that the productivity gains arising from incentives (in the background of imperfect markets) do outweigh the technological returns to scale from larger plots.

3. Land Sales

- The empirical evidence in the last section shows that there are clear productivity advantages of small farms over large farms.
 - This brings us to the issue of land sales: if small landowners can buy land from rich landowners, then productivity gains can be realized.
- The question is: Do land markets work adequately?
 - The available empirical evidence suggests that they do not.
 - Land sales from relatively rich to relatively poor, while not entirely absent, are not very common either.
 - There is some evidence for land sales by the relatively rich, perhaps to finance weddings or large investments.
 - But most land sales appears to be in the form of distress sales that occur from poor to rich: land transfers in lieu of debt repayment.

Why are land sales markets so thin?

- When credit markets are imperfect, the value of land consists of two components.
 - The first component is the discounted sum of income streams that will emanate from working the land.
 - The second component comes from imperfect credit markets:
 - land can be used as collateral, and this ability has value measured by the profitability of the additional loans that can be obtained by mortgaging the land.
- A seller will therefore want to sell the land for a price that is no less than the sum of these two values.
- Now consider what a buyer is willing to pay.
 - If the buyer must obtain a loan to buy the land and must mortgage that very piece of land for the loan, then he can't reap the collateral value until the loan is paid off.
 - Hence the buyer's present valuation of the land must be less than that of the seller.
- Buyer's valuation being less than the seller's valuation, no sale of land will occur.

4. Land Reform

- Put together all that we have discussed so far.
 - Productivity is higher on smaller plots than on larger plots.
 - These productivity gains cannot be realized by tenancy, because tenancy contract itself erodes the productivity gain.
 - Land sales markets cannot adequately substitute for land tenancy markets.
- To realize the productivity gains, we are then left with the only option of land transfers from rich to poor by the measures that is collectively known as land reform.
- It takes tremendous political will (resistance from powerful landed lobbies, in particular) to push a land reform program through.
- Major land reforms in the world have been the product of political upheavals in society where large landowners are viewed as enemies, and so there is immense popular support for land reform.

5. References

1. Berry, R. A. and W. R. Cline (1979), *Agrarian Structure and Productivity in Developing Countries*, Geneva: International Labour Organization.
2. Sen, A. (1981), "Market Failure and Control of Labour Power: Towards an Explanation of 'Structure' and Change in Indian Agriculture: Part 1", *Cambridge Journal of Economics*, 5, 201-228.