

## Development Economics

### Land issues - Tenancy

Ray, Debraj. 1998. *Development Economics*, Chapter 11 and Chapter 12 (pp403-436).

- Objectives of today's lecture:  
To understand economic incentives behind two major forms of tenancy – fixed-rent tenancy and share cropping tenancy.
- Farming needs both land and labor (among others) as inputs.
  1. Large landlords have too much land relative to labor.
  2. Landless farmers have too little land relative to labor.To make farming feasible, we need either labor market or land market or both.
- Land transactions  
Two main types of land tenancy (leasing) are as follows:
  1. fixed-rent tenancy (or leasing)  
A tenant pays a fixed amount of rent to the landlord, no matter how much crop yields the tenant produces.
  2. sharecropping tenancy (or leasing)  
A tenant and the landlord share crop yields in accordance with a ratio agreed between them (for example, tenant share : landlord share = 50 : 50).
- Marshallian argument (by Alfred Marshall)  
His claim: Sharecropping is inferior to fixed-rent if your purpose is to maximize crop yields.  
Assumptions:
  1. A fixed amount of land is assumed.
  2. The only inputs for farming are land (which is fixed) and labor.
  3. The marginal product of labor is decreasing.
  4. The marginal cost of labor is constant. (The outside option or the opportunity cost of working on your own field is wages available if you are hired by someone else.)
- Risk concern  
Agricultural yields are subject to risks (bad weather, insect pests, and the like).

Question: If the expected value of a tenant's profit is the same between the two types of tenancies, which type of tenancy (fixed-rent or sharecropping) does a tenant prefer?

Assumptions:

1. We consider two states in terms of monetary values of crop outputs. Let  $G$  represent the monetary value of the good crop output and let  $B$  represent the monetary value of the bad crop output, where  $G > B$ . Further, Let  $p$  and  $1 - p$  denote the probability of the good state and the bad state, respectively. Finally, let  $R$  represent the amount of a fixed rent, and let  $s$  denote a share of the landlord in a sharecropping lease.
2. A tenant is risk averse.

- Risk averse, risk neutral, risk loving

Lottery A	Lottery B	Lottery C (Fixed income)
With prob. 0.5, US\$100 With prob. 0.5, US\$0	With prob. 0.5, US\$60 With prob. 0.5, US\$40	With prob. 1, US\$50
Notice that the expected value is US\$50 for all options.		
If you are risk neutral, you are indifferent across the three options.		

- Conclusions

Land tenancy must consider two contradicting factors: work incentives and crop risk. A fixed-rent tenancy would be better in maintaining work incentives but imposes full crop risk on a tenant. A sharecropping tenancy shares crop risk between a landlord and a tenant but reduces work incentives of a tenant. Which tenancy (fixed-rent or sharecropping) is prevalent in a society depends on which problem (work incentives or crop risk) is relatively easier to address for a society in question.

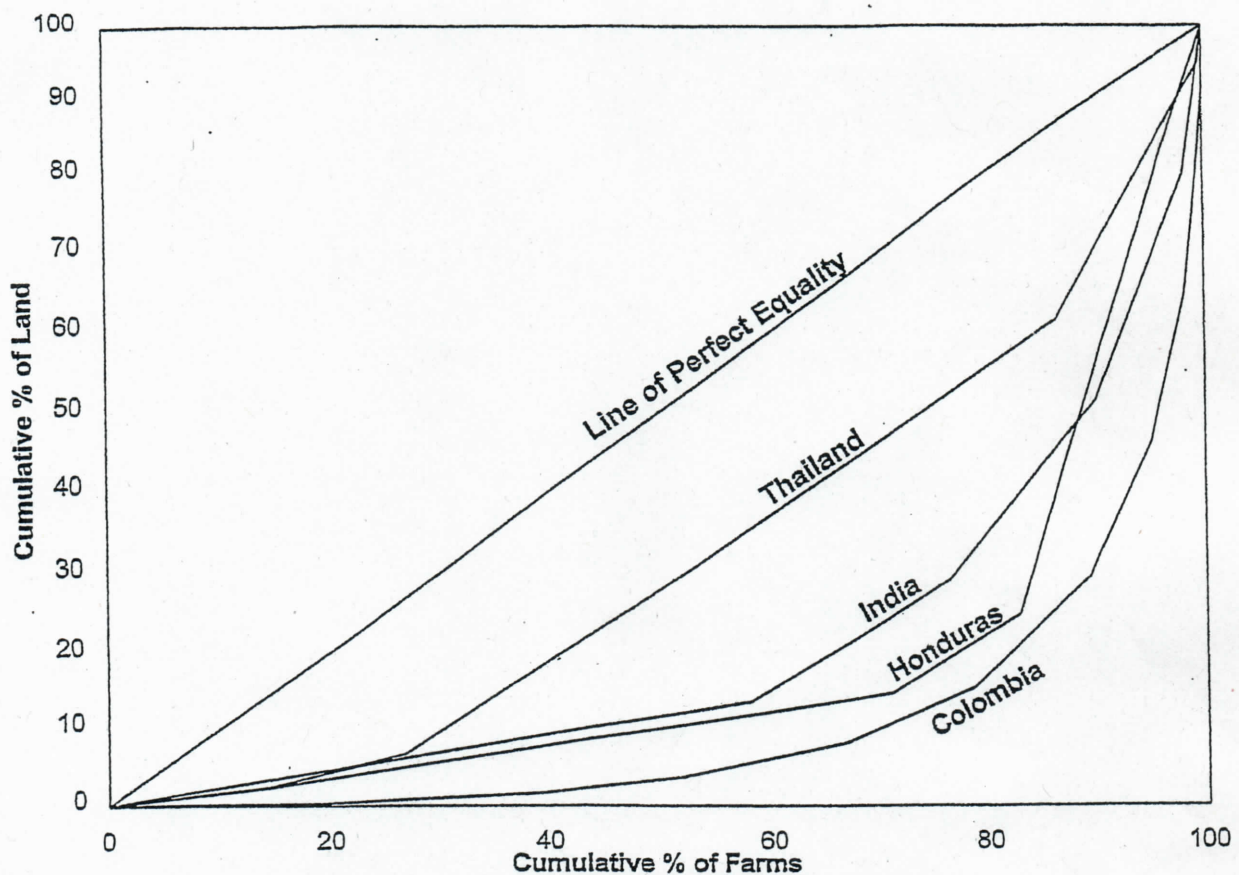


Figure 12.1. Lorenz curves for land holdings in two Asian and two Latin American countries. Source: Agricultural Censuses of Colombia [1988], Honduras [1993], India [1986], and Thailand [1988].

American countries (Honduras and Colombia). The differences in the two sets of Lorenz curves are fairly evident.

The low per capita holdings of land in Asia and the high inequality of landholdings in Latin America have a similar effect: a significant fraction of the farms are owner operated and cultivated. In Asia this fraction is particularly high, standing at around 86% (see Otsuka, Chuma, and Hayami [1992]). The Latin American fraction is lower and also includes a significant fraction of very large farms that are cultivated with the use of hired labor. Table 12.2 shows the percentage of owner-cultivated farms in different parts of the world.

The African countries are somewhat of an outlier in this respect. Much of the land is held under forms of group or communal tenure, and individual claims on such plots are weak. Thus we see that a small proportion of land is under owner cultivation simply because property rights are not well defined. The reported data are probably an understatement for all practical purposes, which reflects the ambiguity of property rights (*use rights from plot to plot are better defined*).

Table 12.3. Tenancy in ICRISAT villages by household.

Villages	Households	Owners	Sharecropping tenants (%)	Fixed-rent tenants (%)	Mixed tenants (%)
Aurapalle	406	90.7	1.2	8.1	0.0
Dokur	220	82.3	15.9	0.9	0.9
Shirapur	437	69.1	30.4	0.5	0.0
Kalman	296	68.6	30.7	0.7	0.0
Kanzara	320	80.6	11.0	5.3	3.1
Kinkheda	187	85.0	14.5	0.0	0.5
Boriya	186	56.5	29.0	12.9	1.6
Rampura	216	76.4	14.8	5.6	3.2
All	2,268	76.8	18.2	4.1	1.0

Source: Shaban [1987, Table 1 (adapted)].

It is interesting to note that 80% of all tenants cultivate some land that they own (Shaban [1987]).

Clearly, the land-lease market is fairly active (even if we neglect possible under-reporting). It is also of interest to see that, overall, sharecropping is dominant as a mode of tenancy. This will yield a puzzle once we consider the Marshallian argument for the inefficiency of sharecropping (see the next section). Fifteen percent of all plots are sharecropped, whereas under two percent are in the form of fixed-rent tenancy. But there is variation across the villages. Fixed-rent tenancy is dominant in the village of Aurapalle, for instance.

Table 12.4 provides estimates of tenancy by area. The percentages of land that come under different forms of tenancy are quite similar to the corresponding percentages by household. The table brings out additional features of some interest that

Table 12.4. Tenancy in ICRISAT villages by plots.

Village	Owned			Sharecropped			Fixed rent		
	Plots (%)	Area (acre)	Value (Rs/acre)	Plots (%)	Area (acre)	Value (Rs/acre)	Plots (%)	Area (acre)	Value (Rs/acre)
Aurapalle	96.4	1.9	21.2	0.5	1.5	13.8	3.1	2.0	14.0
Dokur	84.1	1.6	42.2	14.9	2.2	40.2	1.0	1.9	40.0
Shirapur	64.5	1.6	29.7	35.5	2.5	24.9	0.0	0.2	21.3
Kalman	77.6	1.6	17.6	22.1	2.0	13.4	0.3	4.0	10.0
Kanzara	83.9	2.6	22.6	12.3	3.7	18.9	3.8	3.6	11.7
Kinkheda	92.2	3.5	15.1	7.7	2.9	10.6	0.1	2.0	10.0
Boriya	67.1	0.7	39.3	25.5	0.8	39.3	7.4	0.7	35.2
Rampura	80.7	1.0	62.8	16.1	1.2	60.7	3.1	1.4	56.2
All	80.9	1.8	29.20	17.5	2.2	27.08	1.6	1.8	27.45

Source: Shaban [1987, Table 2].