Ownership and Tenancy

"The metayer [sharecropper] *has less motive to exertion than the peasant proprietor, since only half the fruits of his industry, instead of a whole, are his own."* John Stuart Mill (1848)

Fall 2010

Overview

- Distribution and ownership of land is central to rural development

↪ functioning of the land market — ownership vs. tenancy

↪ linkage to credit markets

↪ linkage to labor markets

↪ rural-urban migration

- Nature of tenancy — fixed rent vs. sharecropping

↪ sharecropping: historically widespread "non-market institution"

↪ currently still common in Asia

↪ consequences for productivity

↪ example of debate over role of institutions

Example: Tenancy in the ICRISAT Villages

Discussed in Ray pp. 420-423

- Sharecropping is dominant as a form of tenancy

- Wide variety of tenancy arrangements

↪ 50–50 output shares, plus input cost sharing

↪ 75% shares, plus tenant pays for all inputs

- "Reverse tenancy" is common

↪ 32% of leasings are from small to large farmers

↪ 47% between farmers that own similar sized plots

Is sharecropping associated with lower yields?

Discussed in Ray pp. 430-431

- Village surveys from ICRISAT

↪ can compare owned and sharecropped land for *same farmer*

- Results:

↪ sharecropped land 16% less productive (controlling for other factors)

↪ no systematic differences between fixed rental and owned land

- Why do we observe sharecropping if it so unproductive?

- Policy question: should the government ban sharecropping ?

↪ Alfred Marshall (1881) on England vs. France

A Simple Analytical Framework

- Value of output:

$$Y = g(L)$$

↪ L = labour effort

↪ decreasing marginal product, MP

- Cost of effort to Tenant:

$$C(L)$$

↪ increasing marginal cost, MC

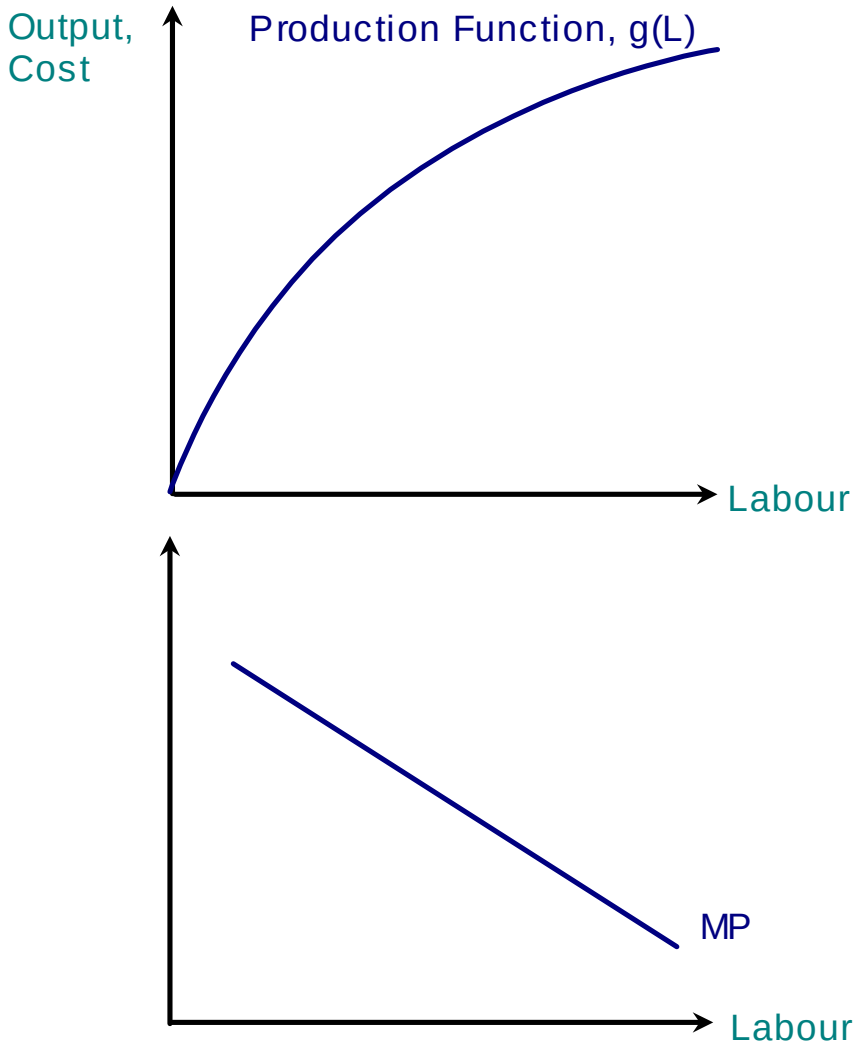

Figure: Production

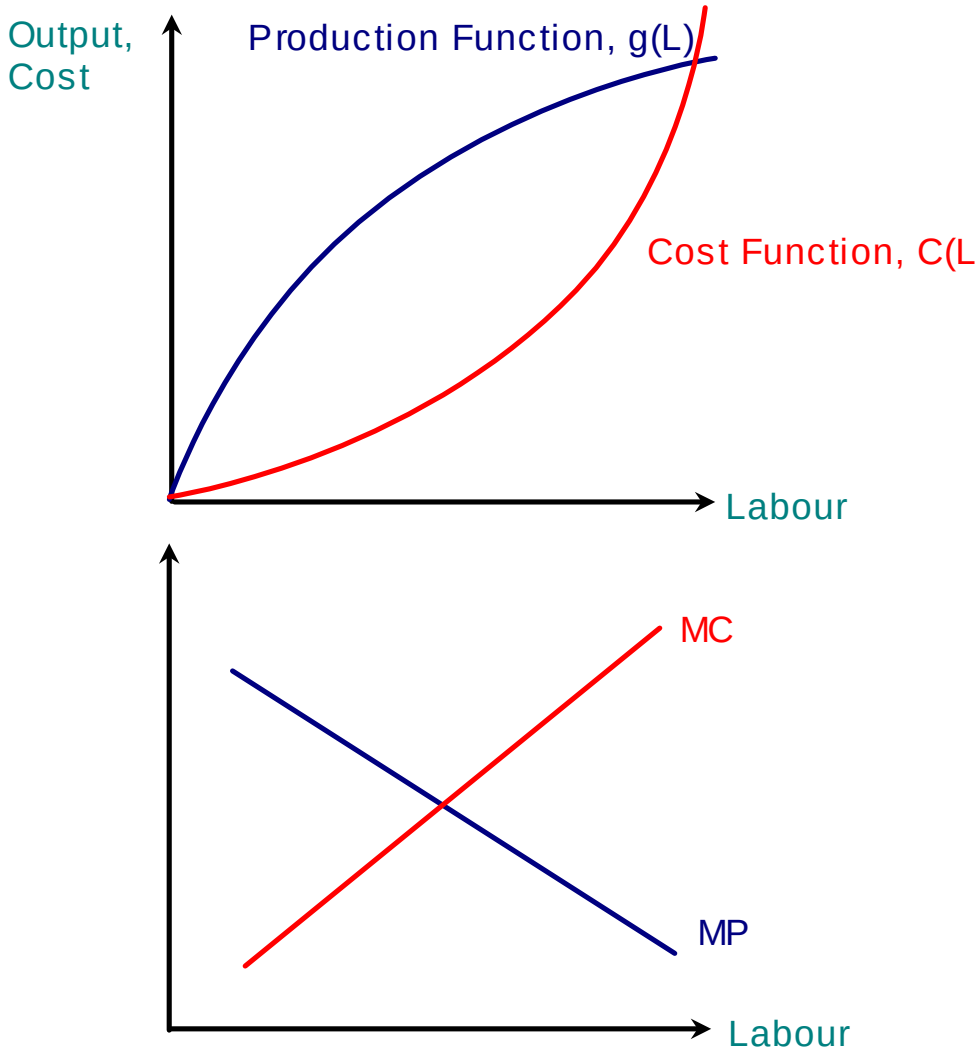

Figure: Production, Cost

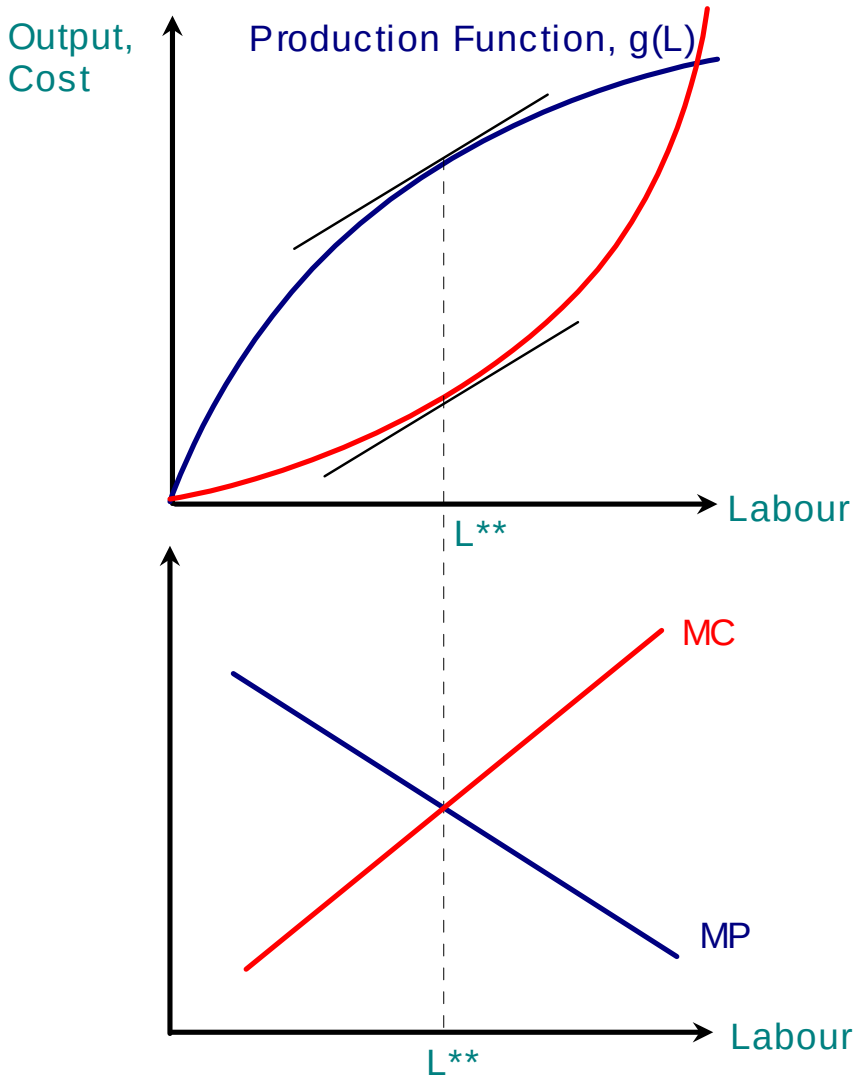

Figure: Production, Cost and Economic Surplus

- Linear compensation schemes:

$$\begin{aligned} \text{Tenant's income} \quad &: \qquad I = (1-\alpha)Y - F - C(L) \\ \text{Landlord's income} \quad &: \qquad R = \alpha Y + F \end{aligned}$$

$\hookrightarrow$ pure wage contract : $F < 0$ and $\alpha = 1$

$\hookrightarrow$ pure rental contract : $F > 0$ and $\alpha = 0$

$\hookrightarrow$ sharecropping contract : $F \geq 0$ and $0 < \alpha < 1$

The Negative Incentive Effects of Sharecropping

Development Planning View

- Assume both parties are risk neutral
- Under sharecropping Tenant exerts effort until:

$$(1-\alpha)MP = MC$$

$\Rightarrow$ undersupply of effort and low output relative to fixed rental

- Policy implication: remove sharecropping and replace with fixed rents

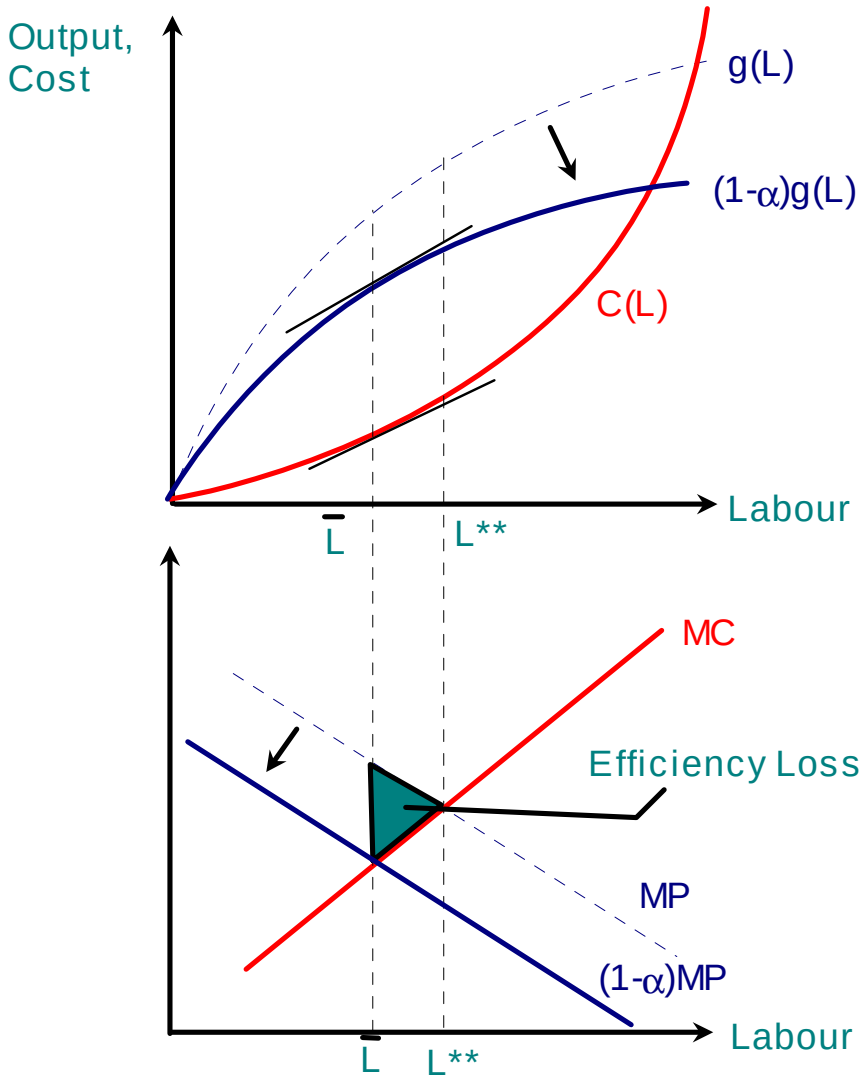

Figure: Inefficiency of Sharecropping

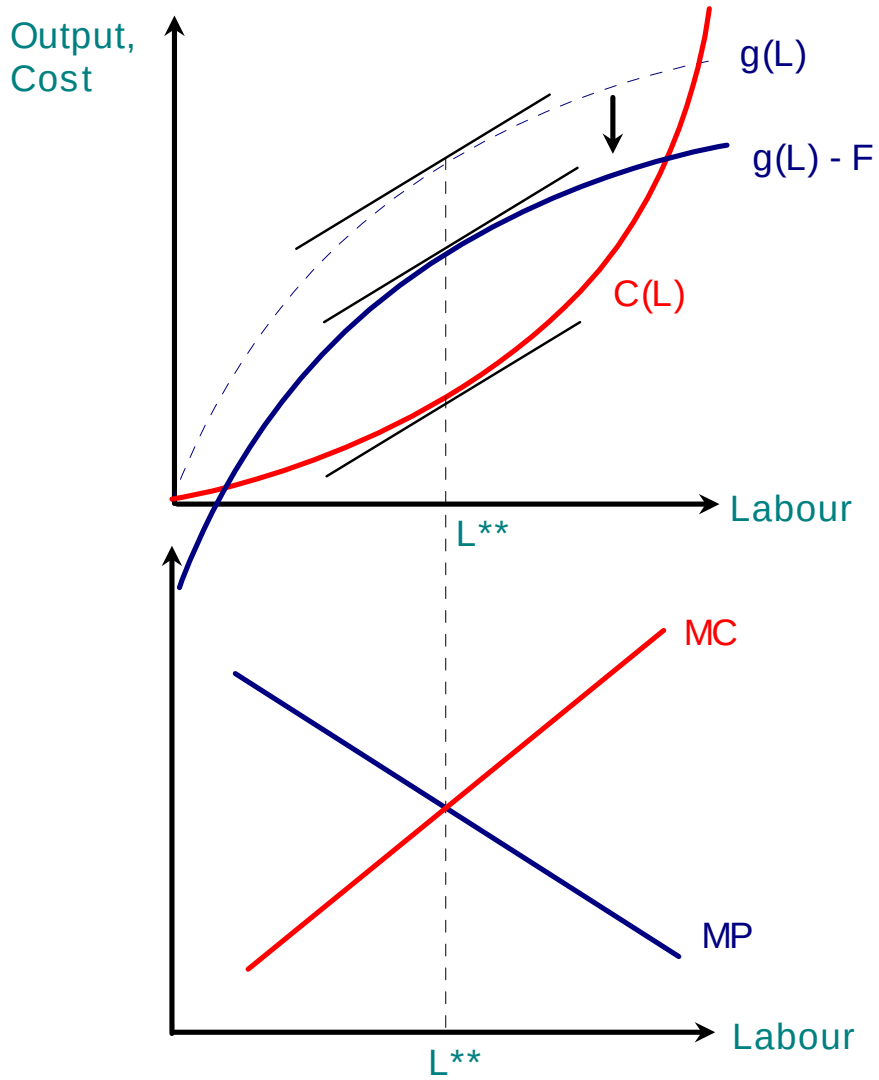

Figure: Efficiency of Fixed Rental Contract

Sharecropping as an Efficient Response to Risk

Chicago School View

- If sharecropping is so inefficient, why is it so common?

- Risky production:

$$Y = \begin{cases} g(L) + x & \text{with probability } \frac{1}{2} \\ g(L) - x & \text{with probability } \frac{1}{2} \end{cases}$$

↪ average output:

$$\bar{Y} = g(L).$$

- Tenant and Landlord are **risk–averse**

↪ cost of risk is a **transactions cost** that varies with α

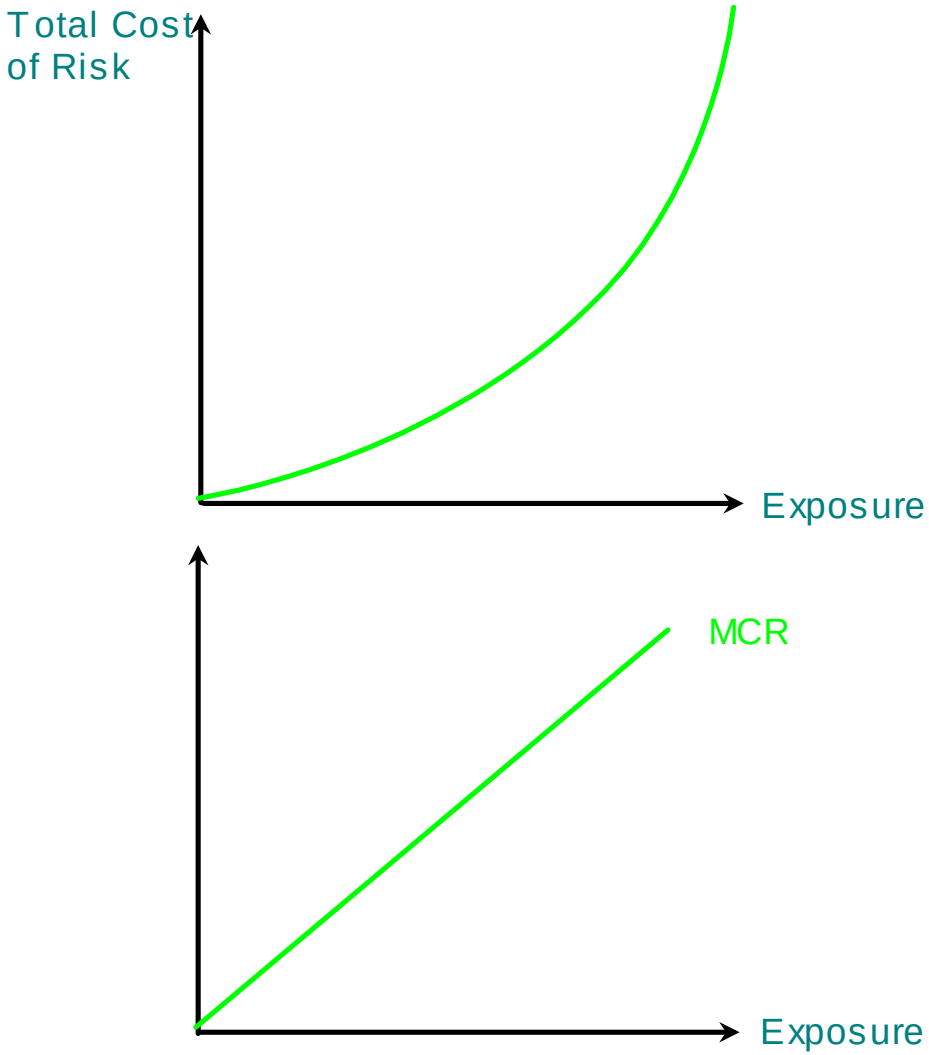

Figure: Marginal Cost of Risk

- Landlord and Tenant can agree on efficent level of effort, L^{**}

↪ if Tenant does not provide this effort, Landlord does not pay him

- Then choose value of α to minimize the total cost of risk to the two parties

↪ since $0 < \alpha < 1$, sharecropping results as an efficient response to risk

- Policy implication: no need for government intervention

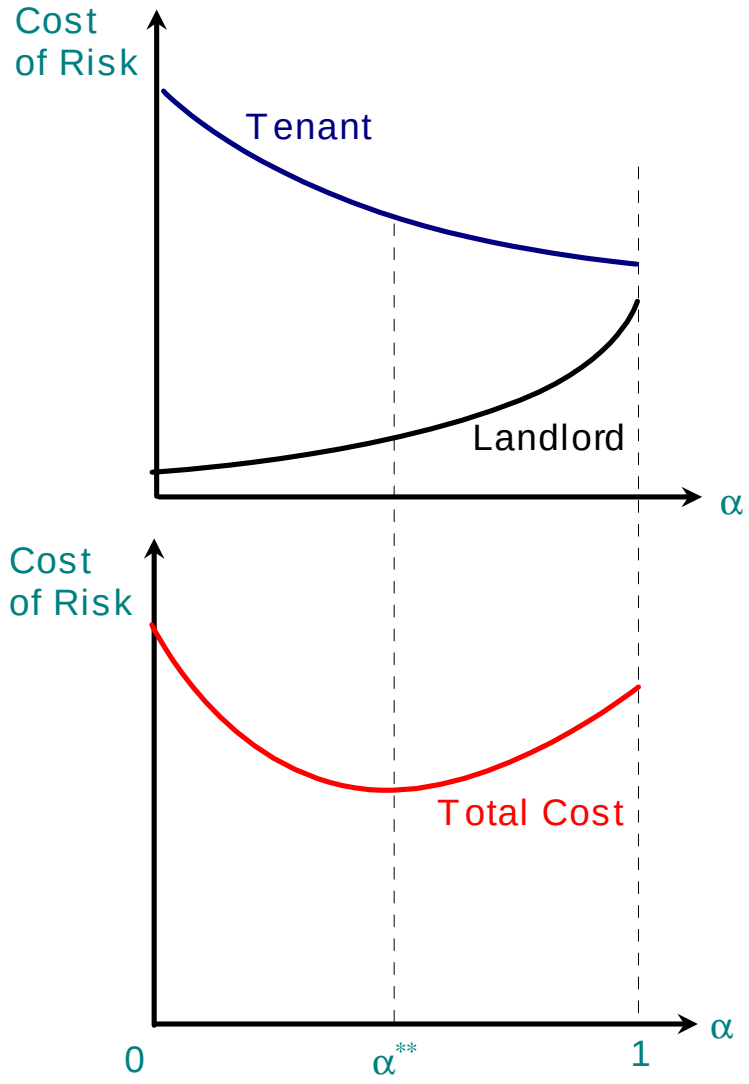

Figure: Cost-Minimizing Sharecropping Contract

Problems

- Assumes away

(1) negative incentives of sharing

(2) cost of monitoring effort

- Does not explain 50–50 splits when Landlord is wealthy (risk–neutral)

Sharecropping as an Incentive Scheme

New Institutional View

- Assume for simplicity

$\hookrightarrow$ Landlord is risk–neutral, but Tenant is risk–averse

$\Rightarrow$ wage contract is optimal according to Chicago school

$\hookrightarrow$ costly monitoring

$\hookrightarrow$ cannot infer effort due to risk

$\Rightarrow$ **trade–off between risk and incentives**

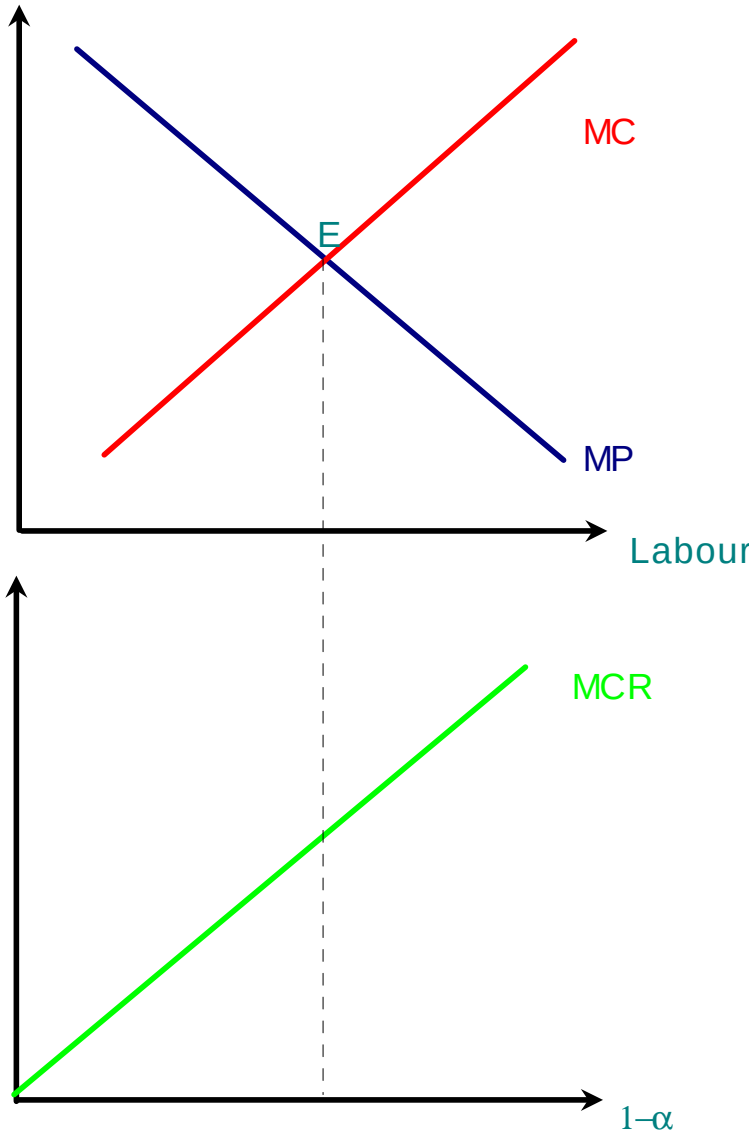

Figure: Fixed Rent Case

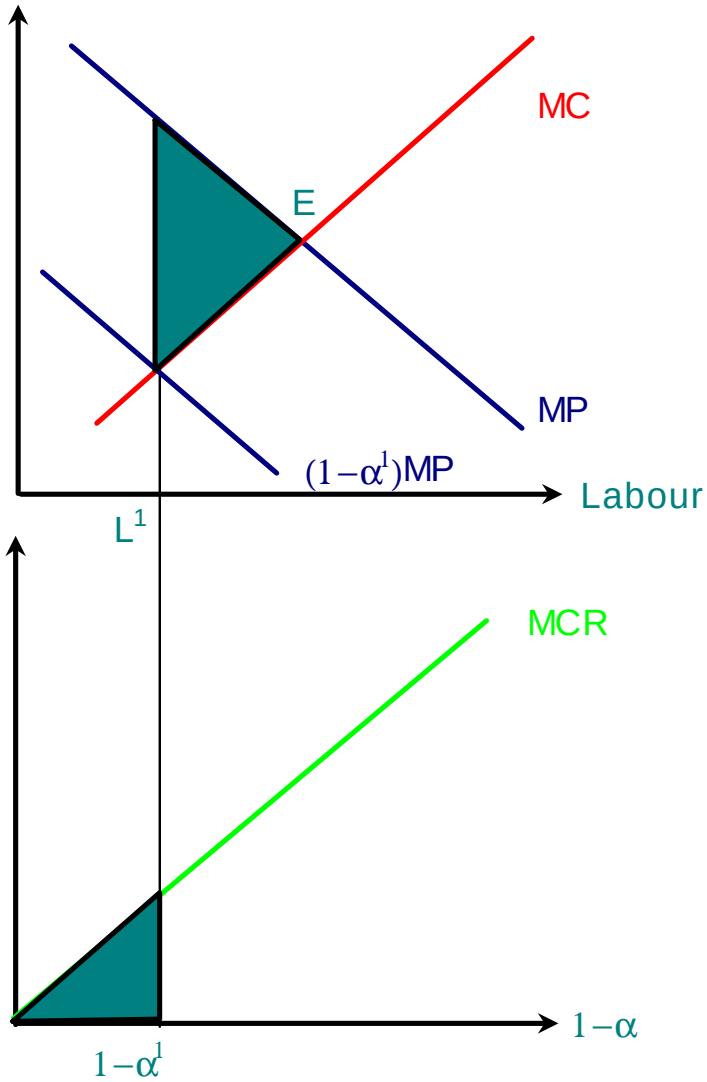

Figure: Too Little Effort

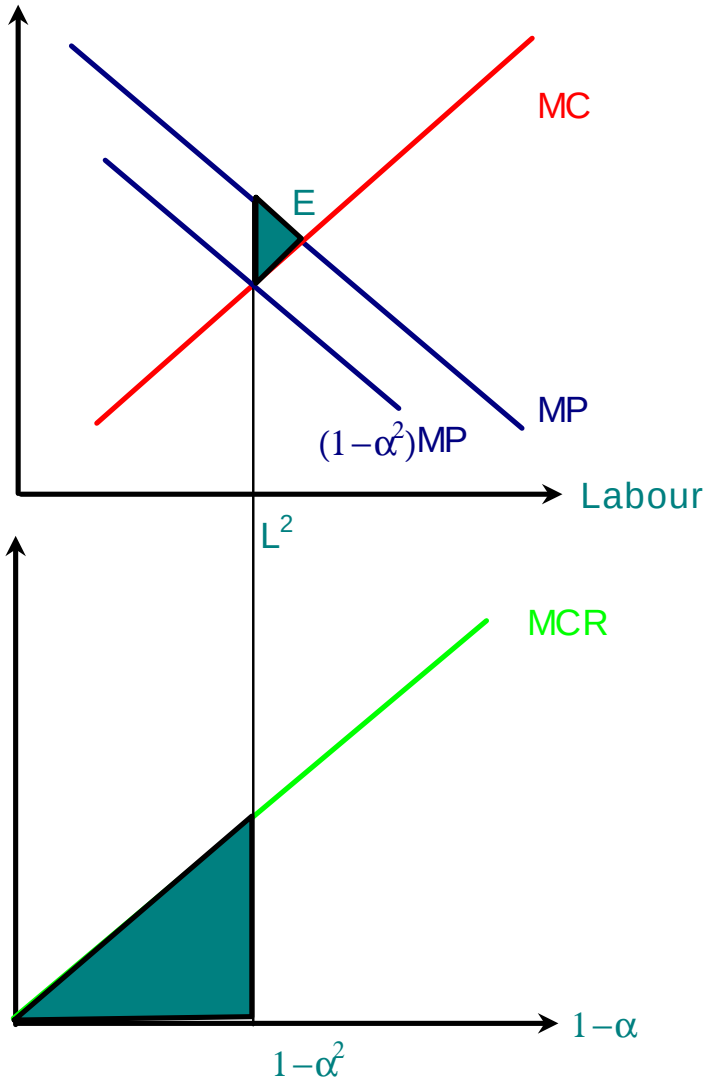

Figure: Too Much Risk

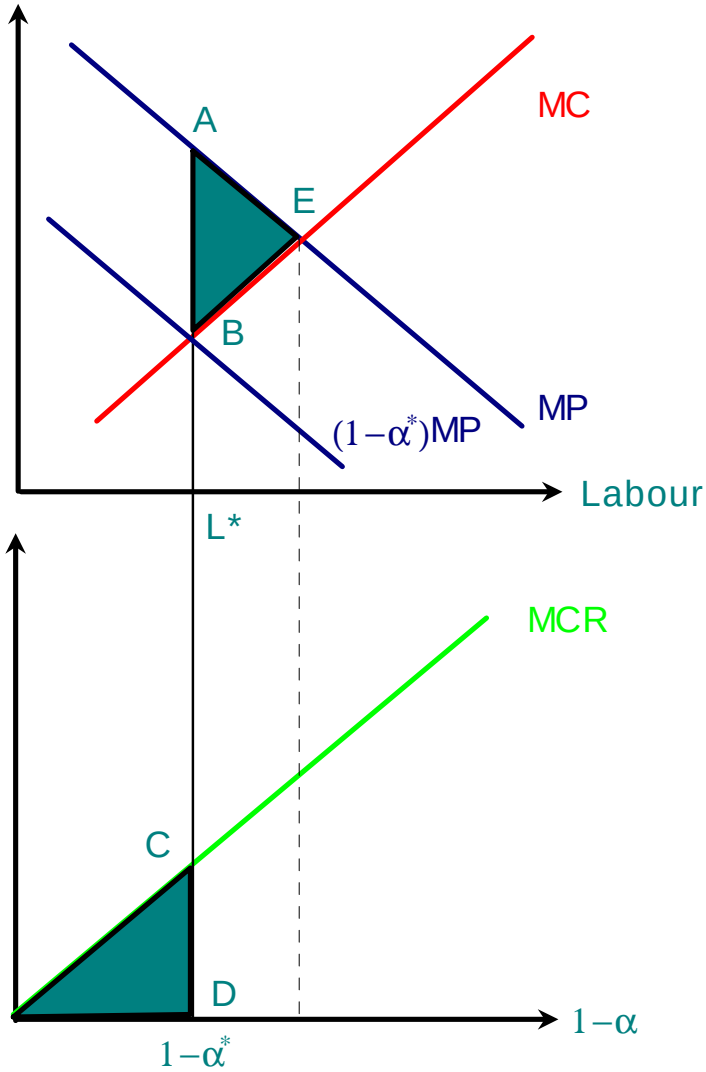

Figure: Constrained-efficient Sharecropping Contract

- The **incentive–constrained** or **second–best** efficient value of α^* is

↪ decreasing in MP

↪ increasing in MC

↪ increasing in cost of risk

- Sharecropping is a **rational** response to risk and incentive problems

  BUT outcome not same as predicted by neoclassical theory (i.e. not efficient)

- Provides explanation of why sharecropping disappears as economies develop

↪ cost of risk may decline with development — why?

- Policy implication: should **not** ban sharecropping, but should encourage institutional changes that reduce risk. How ?