Development Economics

Development Microeconomics

(by) Bardhan and Udry

Chapter 4

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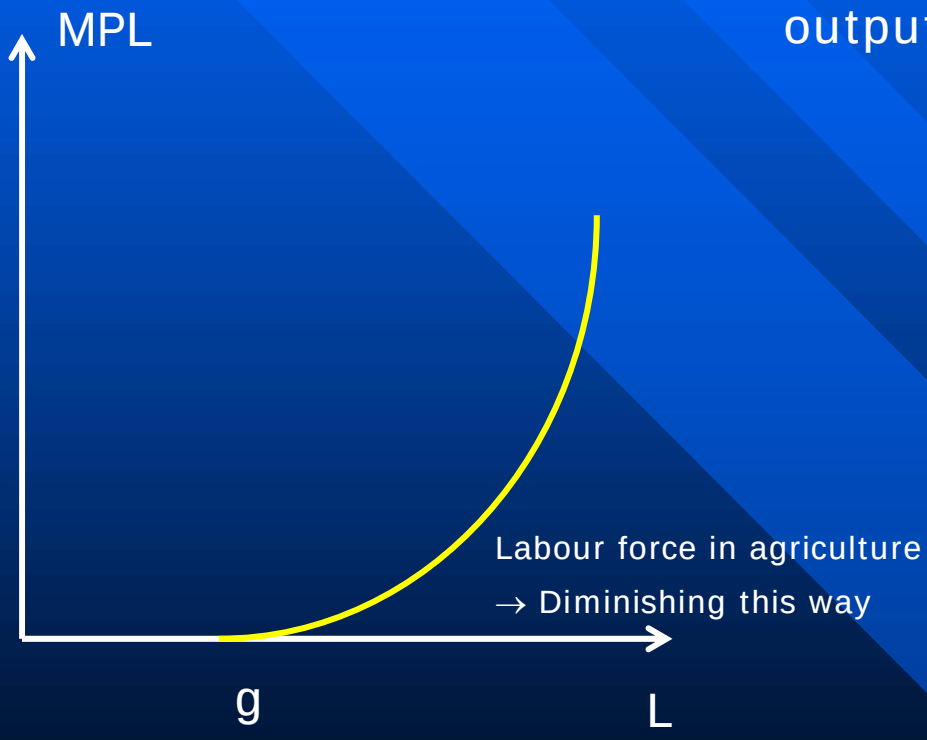
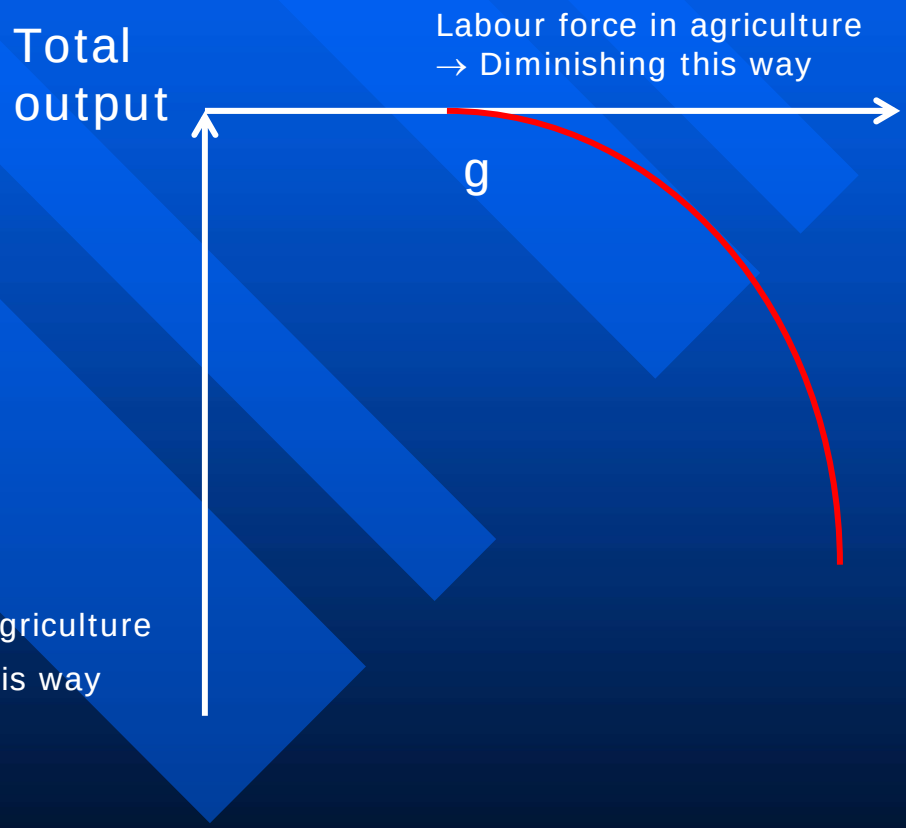
Marginal product vs. total output

- Marginal product of labour



- Total output



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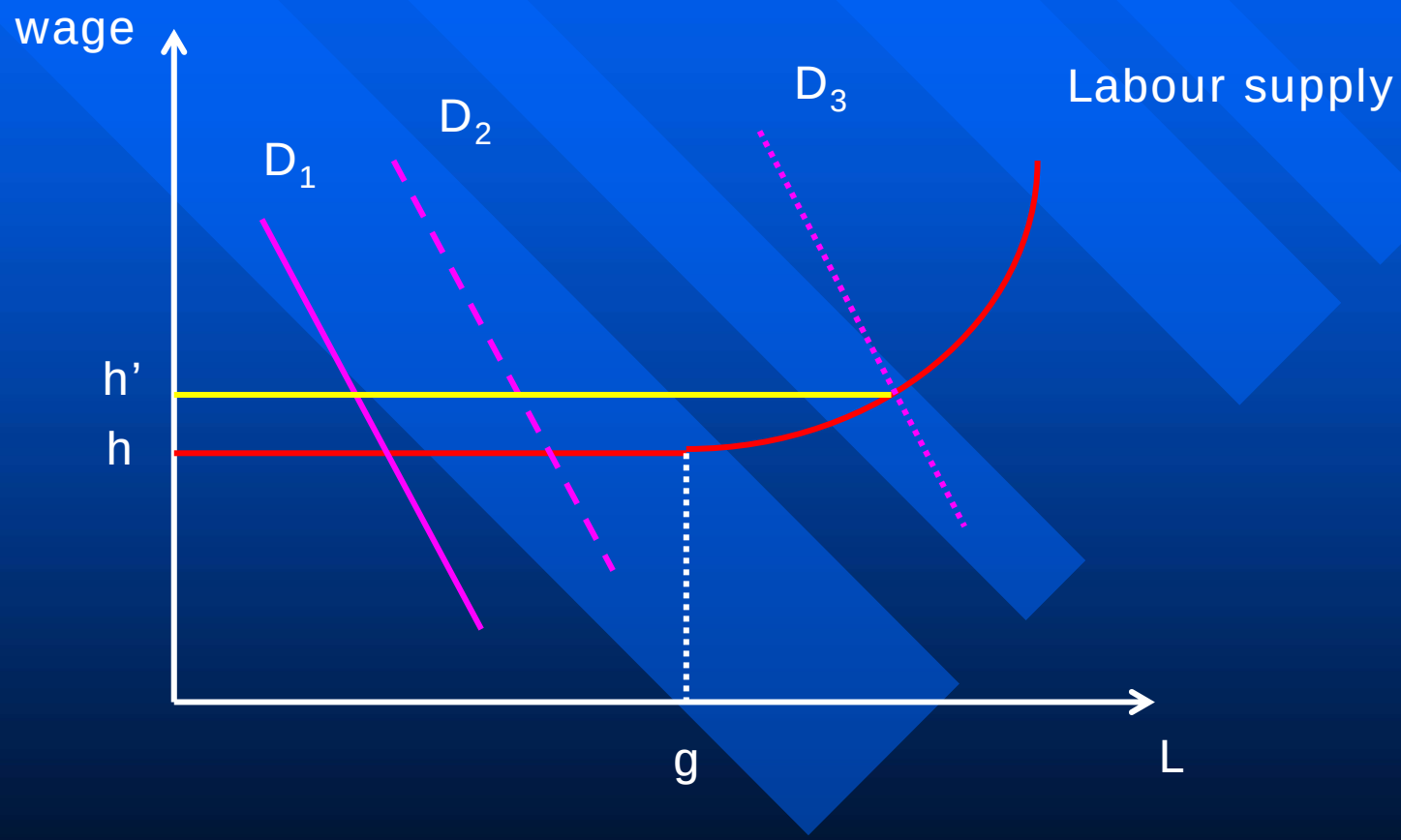
Lewis-Fei-Ranis model [1]

- Assumption.
  - There are surplus labourers in the agricultural sector whose marginal productivity is zero.

- Implication.
  - These labourers can be shifted to the industrial sector.
    - » No change in agricultural output.
    - » No change in industrial wage rate.

Lewis-Fei-Ranis model [2]



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Lewis-Fei-Ranis model [3]

- Policy implications
  - Importance of agricultural productivity
  - High wage rate is incompatible with industrialisation.
- Empirical evidence
  - Horizontal labour supply curve questionable

Lewis-Fei-Ranis model [4]

- Lacunae
  - Skill compatibility
  - Choice of industrial technology
  - Comparative advantage

- Puzzle
  - Coexistence of widespread unemployment and downward stickiness of wages

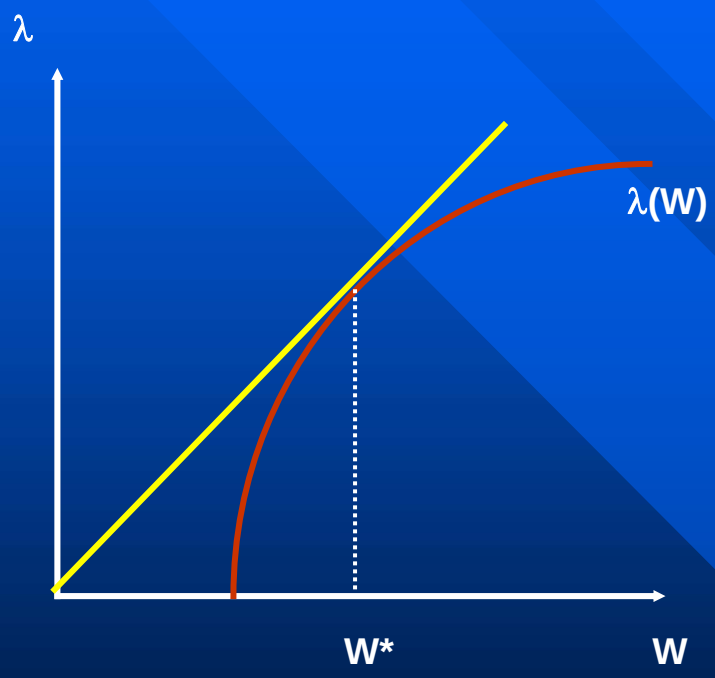
Efficiency wage [1]

- Production function
  - $Q = F(n\lambda(W))$, $F' > 0$, $F'' < 0$, $\lambda'(W) > 0$
  - $Q \equiv$ output; $W \equiv$ wage rate

    $n \equiv$ number of hours/weeks of labour employed

    $\lambda \equiv$ labour efficiency
- Choice variables
  - *n* and *W*
- Firm's problem
  - Max (F – nW), assuming price of output equals 1
  - First order conditions will yield *W** (efficiency wage)

Efficiency wage [2]



- Efficiency wage
  - At $W = W^*$, the firm minimises the ratio $W/\lambda(W)$, i.e., the cost of one efficiency unit of labour
- Changes in $W/\lambda(W)$
  - Initially, $\lambda(W) = 0$, and hence ratio is infinite
  - For $W < W^*$, $\lambda(W)$ rises rapidly but W is still high relative to $\lambda(W)$
  - For $W > W^*$, $\lambda(W)$ falls relative to W because of diminishing marginal productivity

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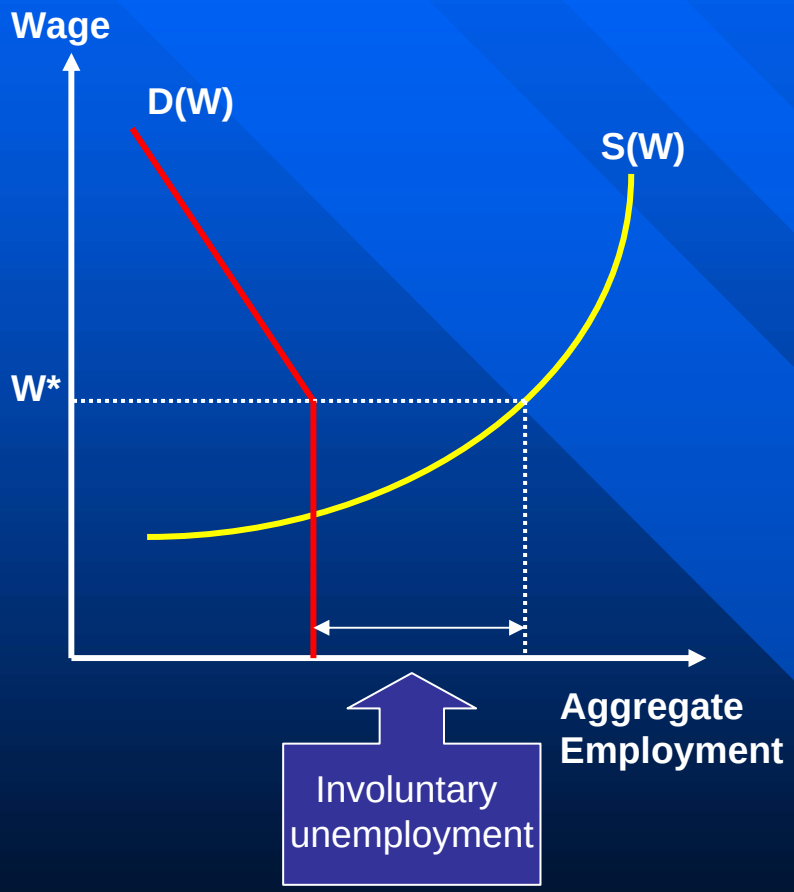
Efficiency wage [3]

- Involuntary unemployment



- Implication
  - The demand for labour is inelastic for wages below W^*, and has the usual downward sloping shape for $W \geq W^*$
- Extension
  - W^* will be higher whenever:
    - » Firms face a search cost $R(W)$
    - » $R'(W) < 0$ and $R(W)$ convex (i.e., $R''(W) > 0$)

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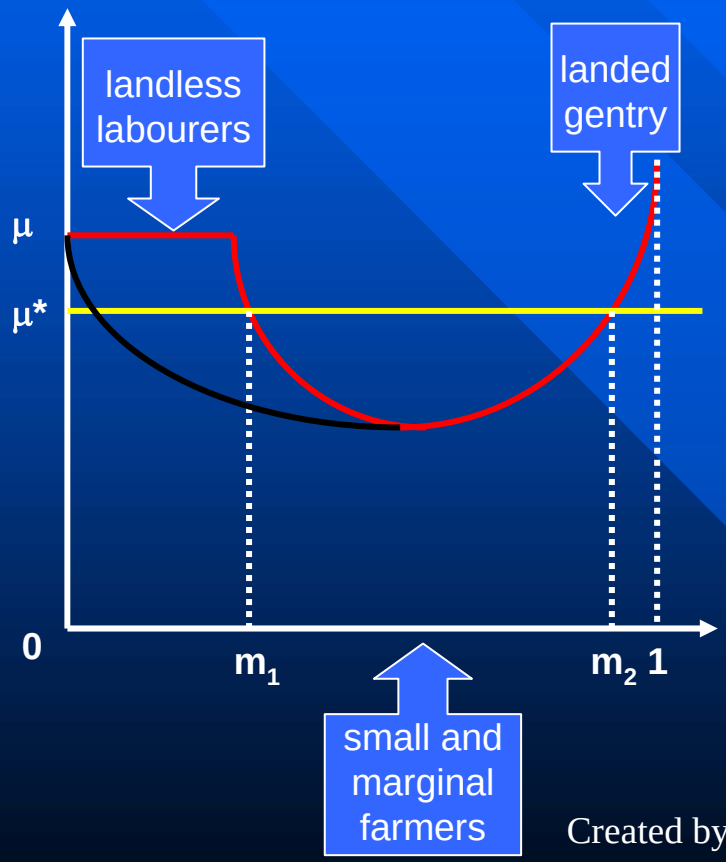
Efficiency wage [4]



- Land ownership
  - Continuum from 0 to 1
- Wage and productivity
  - μ ≡ minimum cost of buying one efficiency unit of labour
  - μ* ≡ aggregate marginal product of effective labour
- Unemployment
  - Voluntary and involuntary
- Land reforms
  - Reduce involuntary unemployment

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Efficiency wage [5]

- Empirical evidence
  - Response of wage rates to changes in demand and supply conditions in the labour market not as stable as the physiological relationship between nutrition and productivity
    - » Both for casual labourers and people with long-term contracts who are more likely to get efficiency wage
  - Unemployment probabilities and wage diversity not as influenced by land and asset holding as predicted

Impact of social norms [1]

- Observation
  - Despite developing economies being labour surplus, efficiency wages exist; labourers do not undercut each other to reduce wages to market clearing levels
- Labourer behaviour
  - Perceives a wage vector $w = (W_1, \ldots., W_i, \ldots., W_N)$
  - On the basis of w_i, labourer *i* estimates her own probability of employment
  - Her expected payoff is given by the following:
  - $P_i(w) = p_i(w)W_i + (1 – p_i(w))W_0$
  - when $W_o \equiv$ reservation wage

Impact of social norms [2]

- Inference
  - If all labourers have a reservation wage of W_0, and if that is also the market clearing wage, any $W_i > W_0$ would be better, for a positive *p*
- Problem
  - $W_i > W_0$ can be sustained only if no labourer undercuts the others' wages
- Enforcement
  - Threat to reduce $W_i = W_0$ for all periods $(t + j)$ if labourer *i* undercuts others in period *t*
  - Whether the threat has any effect would depend on the rate at which labourer *i* discounts the future

Impact of social norms [3]

- Problems with the model
  - Assumes *common knowledge* which may not hold if there is a lot of migration
  - The threat that a labourer will forever be penalised by everyone by reducing the wage rate to W_0 is not credible
  - There is scope for cooperation between employers and some labourers who are promised a wage rate a little higher than W_0 in perpetuity

- Other issues
  - Social acceptability of inter-personal variation in wage rates
  - Social processes that match employers and employees along the lines of location, ethnicity, religion etc
  - Emergence of *de facto* insider-outsider models in labour markets, where insiders are used to identify the more productive outsiders, and monitor the latter at a later stage

Labour tying [1]

- Explanation I
  - Employer concern about availability of skilled labourers in the peak season
  - Promise of wage in excess of (marginal) productivity in the lean season, in exchange for guaranteed supply in the peak season
- Explanation II
  - Labourers are more risk averse than employers
  - They accept relatively low wage during peak season in exchange for guaranteed employment in the lean season
  - Casual labourers exist in equilibrium because it is costly to hoard labour

Labour tying [2]

- Explanation III
  - Efficiency wage has to be paid to labourer in lean season because consumption (or nutrition) enhances productivity with a lag
- Modelling labour tying - I
  - In peak season, contracted wage exceeds market clearing wage
  - A labourer has incentive to renege on the contract, after benefiting from it during lean season
  - The premium offered in the tied contract has to be sufficiently large to discourage the labourer from reneging on the contract
  - The higher cost of the contract has to be traded off with the potential cost of not having enough labourers during peak season
  - In equilibrium, there will be an active casual labour market

Labour tying [3]

- Modelling labour tying – II
  - Two periods
  - Work in first period is complex and difficult to monitor, but outcome is known at the end of second period
  - Work in second period simple and easy to monitor
  - Tied labour works for employer in both periods, but casual labour only in second period
  - If outcome is “bad” at the end of second period, tied labourer may lose his contract
    - The threat is *real* if loss of contract makes the labourer worse off
    - The threat is *credible* if the employer can easily find other similarly productive labourers to replace him
  - On account of incentive premium, and given the fact that having casual labourers makes the threat credible, there is casual labour in equilibrium

Labour tying [4]

- Impact of economic development
  - Greater labour tying
    - » Tighter labour markets
    - » Increase in complexity of production, leading to increased demand for job-specific skills
  - Less labour tying
    - » Greater outside opportunity for labourers, increasing reservation wages (and incentive premium)
    - » Greater ‘voice’ and ‘exit’ as opposed to ‘loyalty’
    - » Greater access to capital and technology, making production structure less labour intensive
- Implications for income distribution