Summary:
Chapter 43 Labor Market in Developing Countries

Jere R. Behrman

Tung

August 14, 2019

Keywords: rural labor market, urban labor market, household enterprise, missing market

1 Differences from Developed Economies

1. Agriculture and rural labor activities
2. Non-wage labor
3. Labor forces are growing more rapidly
4. Labor force participation rates among 15-64 year olds are higher
5. Lower human capital investment; larger gender gap
6. Non-labor production inputs per worker are smaller

2 Household enterprise model

- Labor supply and labor demand are determined within the same institution
- In the case of complete markets, when there are some market missing, we can solve the problem in two steps: profit maximization $\Rightarrow$ utility maximization
- Setting
  - Household is composed of M members.
    There are D dependents and N workers.
    $M = D + N$
  - Consumption: c , Leisure: l
    Time worked by worker: T_W, Total time: $T = T_W + l$
    Household welfare function: $U = U(c, l)$
  - Land area: A, Labor: L, Other inputs: F
    Production function: $Q = Q(A, L, F)$
  - Wage: W, Other income: Y_O
    Farm profit: $\Pi = P_Q Q - WL - P_F F$
    Full income: $Y_F = \Pi + WNT + Y_O$

  - Household budget constraint:

$$\begin{aligned} Income &= Expenditure \\ P_Q Q + WNT + Y_O &= P_Q Mc + WL + P_F F + WNl \\ \Pi + WNT + Y_O &= P_Q Mc + WNl \\ Y_F &= P_Q M_c + WNl \end{aligned}$$

- profit maximization problem:

$$\max_{L,F} \Pi = P_Q Q - WL - P_F F \text{ s.t. } Q = Q(A, L, F)$$

  FOC for labor used is

$$Q_L = \frac{W}{P_Q}.$$

  Since W and P_Q are given, $Q^* = Q(A, L^*, F^*)$ is given. We use Q^* to solve the second step.

- Utility maximization problem with labor market missing

$$\max_{c,l} U = U(c, l) \text{ s.t. } P_Q Mc = WL + P_Q Q^*, L = N(T - l)$$

  Then from FOCs, we have

$$\frac{U_l}{U_c} = \frac{W}{P_Q} \cdot \frac{N}{M}$$

  If labor market is missing, we have no W or F. Then

$$\frac{U_l}{U_c} = Q_L \cdot \frac{N}{M}$$

  Note that in the case of non-enterprise households, we have $\frac{U_l}{U_c} = \frac{W}{P_Q}$. This means if there are some members not working ($N < M$), MRS is smaller than in the wage rate, i.e. Households give up less unit of consumption to gain one unit of leisure $\Rightarrow$ "disguised unemployment"

- Test of separability and completeness (skip)

- Empirical studies of rural labor supply

  - Rosenzweig (1980) Landless households have lower labor supply elasticities.
  - Skoufias (1993b) The effect of market wagea on time allocation of family members (labor market, domestic production, leisure, schooling)
  - Jacoby (1993) Structural model to estimate time allocation of self-employed households.
  - Newman and Gertler (1994) Structural model to deal with 1) jointly determined consumption and production decision 2) unobserved marginal return in household enterprise
  - Skoufias (1996) Substitution of labor supply among household members.

- Household formation

  - Jacoby (1995) investigates polygyny using a structural model. Wives help with agricultural production.

  - Behrman et al. (1995, 1997b) Better earnings attract more schooled wives.
  - Foster (1996) Assortative mating regarding schooling causes bias in estimating the impact of parenting schooling on child education.
  - Foster and Rozeinweig (1999) Exogenous technological change can induce breakups of extended households.

3 Labor contracts, risks, and incentives

Technology for agricultural production is multi-stage e.g. planting $\Rightarrow$ harvesting. Therefore, when we think about agriculture, we need to consider the following aspects:

1. Agriculture is risky.
   Farmers do not know what the weather would be like in the future. When they calculate the amount of labor and other input during the planting stage, they might overproduce if they think they will get a good weather during the harvest season.

2. Effort in some agricultural task cannot be monitored.
   As a result, wage that is computed from labor time alone is not sufficient to induce high effort.

These aspects can help explain some characteristics in rural labor market, for instance

- In agriculture, household farm is dominant.
  - Household can share risk by sending migrants or through marriage.
  - Household enterprises benefit from revenue directly and have a long-run relation with the farm.
- Longer-run labor contracts are common.
  - The more risk-averse are households, the more attractive are the longer-run contracts. Suppose wage of the longer-run contract is denoted by w_{LR}, and that of the day(spot) wage rate is denoted by w_D
    - Labor buying households with risk aversion: $w_{LR} < w_D$
    - Labor selling households with risk aversion: $w_D < w_{LR}$

    Since poorer households tend to be more risk averse, and labor selling households tend to be poorer, usually we have labor selling households with risk aversion and $w_{LR} < w_D$.
  - If farmers cannot observe effort during the planting period, they have incentives to hire with longer-run contract. (Workers with longer-run contract are induced to exert more effort.)
- Sharecropping is common.
  - Sharecropping allows landlords and tenants to share risk.
  - Sharecropping provides incentives for landlords to have managerial skills and tenants to exert work effort.

$\Rightarrow$ Empirical studies (skip)

4 Human capital investments

- Determinants of health and nutrition investment
  - Household income
  - Expected labor market returns
- Productivity impact of health and nutrition
  - Nutrition-based efficiency model
  - Empirical findings
- Determinants of schooling
  - Household income
  - Parental schooling
  - Opportunity cost
  - Nutrition/health
  - Expected return
- Impact of schooling on productivity

5 Urban labor markets

- In developing countries, there are **formal sector** (urban labor market) that is comprised of relatively high wage producers and **informal sector** comprised of mostly family enterprise.
- Urban labor market of developing countries is closer to labor market of developed countries. Compared to rural labor market in teh above section, urban labor market has more heterogenous production, higher return to education, less seasonality, better access to information, and more intense regulation and union activities.
- Most empirical literature test whether workers are mobile across sector by comparing wage rates. However, sorting between sectors may be endogenous.

5.1 Effects of labor market regulation on urban labor market

- Bell (1997) Minimum wage
- MacIsacc and Rama (1997) Policy mandated benefits
- Gruber (1997) Payroll taxation

5.2 Effects of trade reform on urban labor market

- Revenga (1997)
- Currie and Harrison (1997)

6 Distribution and mobility

- Geographical mobility
  - Harris-Todaro migration model
    Urban wage is set institutionally and is higher than rural wage. Migration occurs until wage is equalized.
  - Stiglitz labor turnover and efficiency wage models
- Formal-informal mobility
  - Funkhouser (1997b)
    Empirical study that observes wage changes of movers between sectors.
  - Pradhan and van Soest (1997)
    This study reports that labor movement is responsive to wage changes, and non-monetary return is greater in the formal sector.