

Rural and Urban II

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Today's Agenda

1. Lewis-Ranis-Fei Model
2. Harris-Todaro Model
- A. Efficient allocation and migration policy

1. Lewis-Ranis-Fei Model

- Traditional sector: surplus labor, disguised unemployment, income sharing
 - Industrial/modern sector: capitalistic
 - Economic development proceeds by the transfer of labor from agriculture to industry and the simultaneous transfer of surplus food-grain production, which sustains that part of the labor force engaged in nonagricultural activity
- A. Let's sketch out *supply curve* of industrial labor as people migrate from agriculture to industry
- i. Phase 1 (Surplus Labor regime): $A \rightarrow B \iff A'' \rightarrow B''$
 - No difference in agricultural wage rate, but **total** wage bill in agriculture falls since there are fewer people
 - Output does not change since we had surplus labor, remaining people just increase their own output
 - Thus, the average surplus= total wage/total output opens up
 - There is a minimum industrial wage paid to workers so they can buy food, but it does not change because average agricultural surplus is not changing (so the amount of food in economy stays the same, price of food is not changing)
 - This is the zone where it is possible to have economic development with “unlimited supply” of labor: an expansion in the industrial sector does not drive up the wage rate
 - ii. Phase 2 (Disguised Unemployment Regime): $B \rightarrow C \iff B'' \rightarrow C''$
 - Disguised unemployment because the MPL of labor in agricultural (is no longer zero but it) is higher than agricultural wage rate.
 - The average agricultural surplus begins to fall because total output in agricultural begins to fall but people there still consume same amount (i.e. there is disguised unemployment), food prices rise, industrial wage must rise—“first turning point”
 - iii. Phase 3 (Commercialization of agricultural Regime): $C \rightarrow \iff C'' \rightarrow$
 - Now no more disguised unemployment because MPL in agricultural is greater than wage in agricultural.
 - Now it becomes profitable to actively bid for labor, because additional contribution of labor in agriculture production exceeds cost of hiring labor.
 - Agriculture wage rises, and the total wage bill falls more slowly (people still leaving but you must pay remaining guys more than before)
 - Even sharper decrease in agriculture surplus
 - Second turning point in industrial wage—not only must wage compensate for higher food prices but also because opportunity cost has gone up.

Supply curve is now complete.

B. Demand curve

- i. Start with lowest demand curve:
 - x amount of labor hired in industry at w^* Profits are realized, some saved for capital accumulation, demand for labor rises,
 - Economy is in surplus labor phase, labor is forthcoming from agriculture
- ii. Move up one demand curve
 - Industrial employment now at y
 - Further investment
- iii. We end up on highest demand curve
 - We are at point
 - Could have been at z' if it had not been for first turning point
 - Thus, the fall in agricultural surplus chokes off industrial employment, because it raises costs of hiring industrial labor.

In conclusion: Capital accumulation in industrial sector drives growth. More capital means greater demand for labor, which in turn induces greater migration. But food prices rise, so industrial wages rise. The pace of development is driven by the accumulation of capital, but is limited by the ability of the economy to produce a surplus of food.

2. Rural-urban migration: Harris-Todaro Model

- Lewis model tells us that agricultural surpluses and labor must be transferred in tandem for industrial development to begin
- What determines patterns of rural-urban migration
- Main idea of HT Model: Formal urban sector pays a high wage to workers and it is this high wage that creates urban underemployment
- Why is there an overly high urban wage? Unionization, benefits by law, high wage to induce effort.
- So, migration in the HT model is viewed as a response to the significant wage gap that prevails between urban formal sector and informal urban sector + rural sector.

A. Basic model

Equilibrium wage = w^*

Labor in formal urban sector = L^*_F

Labor in agriculture = L^*_A

B. Floors on formal wages

- So far we have assumed urban wage is perfectly flexible—but this is not the case.
- What are the implications when the urban wage is too high for market clearing to occur?
- But with full employment in both sectors, there is no migration
- But if there is only one wage at \bar{w} then, there will be a pool of unemployed people
- But then why are they not rushing into agriculture and driving down wage over there?
- Therefore they are located somewhere in the urban sector—the informal urban sector.

C. Migration Model—Harris-Todaro Equilibrium

- Workers rationally migrate to the urban formal sector, even though the wages there are the same as those in agricultural and there is significant risk of unemployment.
- Cannot be equilibrium
- But what will an equilibrium look like?
- Main idea—potential immigrants choose between a relatively safe (but unpleasant option) of staying in agriculture or moving to urban sector where high-paying urban job may or may not be attainable.
- Probability of getting such a job is determined by ratio of formal job seekers to the available formal jobs.
- Frustrated formal job seekers may enter informal sector, where they can find job but it will be low-paying
- Let's look at options available to potential immigrant
- This is an ex ante equilibrium—ex post, “losers” will not be indifferent about migrating
- Equilibrium implies particular allocation. Example—say formal sector is small. Individuals will have small p , thus w_{bar} will be smaller so they will be less likely to migrate. Now proportion of formal sector rises, which feeds back into p .
- We could expand this to more than two sectors. Key condition is that *expected* wages are equalized over sectors.
- What does new equilibrium look like (kind of)?

D. Government Policy

- We see that the informal sector is an outgrowth of the fact that the formal sector has wages that are too high, so that not everyone is capable of obtaining employment in this sector.
 - But not everyone else can stay in the agriculture sector, for that would make the formal sector look too attractive and induce a great deal of migration
 - Informal sector is the result—acts as a necessary counterweight to the attractiveness of the formal sector and slows the pace of rural-urban migration.
 - In purely economic terms, what is government policy trying to achieve by getting rid of the informal sector?
 - The crossing of the curves represents spot where values of marginal products in two sectors is equalized.
 - In the HT allocation, there is discrepancy between MP of two sectors. Also, informal sector has an even lower MP.
 - These allocations cannot maximize value of total national product—as long as MPL's are not equal—a small transfer of labor from sector where MP is lower to one with higher increases total national income.
 - We want to get as close to the efficient allocation of labor resources, epitomized by the crossing of the two demand curves.
 - What policies could a government try?
- ii. Restricted migration
- We end up with too few people in F

- iii. Subsidy to employers in the formal sector: the government will finance s dollars of the formal wage for every extra labor hour that is hired by a formal-sector employer.
 - We end with too many people in F
- iv. Combination of migration restrictions and subsidy
 - It works, but can we do something without migration restrictions?
- v. Uniform subsidy—we must subsidize agriculture as well
 - Start at HT equilibrium
 - Subsidy s in both sectors, demand for labor increases in both sectors because from viewpoint of employer, they are paying $w - s$ and $w_A - s$
 - The worker continues to compare w and w_A (they don't pocket subsidy after all)
 - Informal sector shrinks, urban wage goes up (p rises), agricultural wage rises to keep people in agriculture
 - Process continues until uniform subsidy reaches level $w - w^*$
 - Agricultural wage must have risen to same w .
 - Now there is full employment in both sectors, no informal sector, and no need for migration restrictions because wages in both sectors are perfectly equalized.

Next time: Rural-Urban Migration