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Rural – Migration - Urban

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Which relationship?

- Formal and Informal urban sectors
- Two fundamental resources flows from rural to urban areas;
- Two fundamental resources flow from agriculture to manufacture sectors:
- The supply of Labor and
- The surplus of food that allows a non agricultural labor force to survive.
- This is explained well by the Lewis model and after by
- The Harris-Todaro Equilibrium.

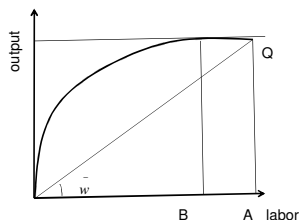
2

Lewis Model (1954)

- Dual Economy:
 - Traditional and modern
 - Labor intensive to capital intensive
 - Old and new techniques
 - Old and new organizations
 - Family farm
 - (generally – mutual insurance – income sharing)
- But the main assumption is: labor is virtually unlimited in supply, being drawn from a vast traditional sector, whereas the rate of savings and investment limits the pace of development.
- Cost of opportunity.

3

Lewis Model and Surplus of labor



After a certain level of labor input, there is not a significant effect on output.

After a point an additional input of labor may have no effect at all.

thus the marginal product of labor at points A is zero or close to zero.

Reducing labor from A to B the production still remain the same.

In this case the average income is given by QA/A (w) while the marginal product is given by the flat tangent at point Q. ⁴

Two extensions of the surplus labor concept

- Disguised unemployment:
- Infact if marginal product is zero on one side and positive in some other activity thus the market should reallocate the labor force in order to balance it. Since the old sector is based on mutual insurance and income sharing thus nobody is interested on moving to the other sector.
- Surplus labor vs surplus laborers:
- In this case, it means that those remained will work for those that left the sector in order to get the same production result. This allows to have enough food for the urban area.

5

Lewis-Ranis-Fei Model

In the traditional sector there is a disguised unemployment where the wage rate is given by income sharing.

On the other hand, the modern sector is capitalistic one.

The figure represent the labor and food transfer from the traditional to the modern sector.

The bottom panel is the previous diagram we represented for the agricultural production function.

In which the segment AB is surplus of labor. Where wage is w given income sharing system. Section BC no surplus of labor but disguised unemployment.

In the C sector there is not surplus of labor.

In the middle panel it's represented the average surplus in which the horizontal line of height w . Those workers migrate from the rural to the urban area should be able to buy food

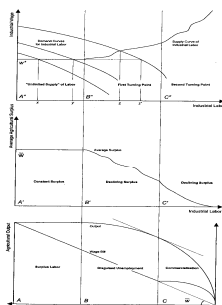


Figure 10.3. The Lewis-Ranis-Fei model.

The minimum industrial wage required to buy the food by the workers is given in the topmost panel.

In phase AB represented with A'B' is equal to w . This is the zone where it's possible to have economic development with "unlimited supplies" of labor: an expansion in the industrial sector does not drive up the wage rate.

When we move to the disguised area, the average agricultural sector begin to decline (second panel phase B'C').

The price of the food and the industrial wage increase (third panel phase B''C'').

In phase 3, area C, the wage in agricultural sector start to increase given the decreasing labor force (commercialization of agriculture).

Now there is a competition between rural and urban wages and labors.

at the end, in the topmost panel we have the demand and supply curves of labor.

Thus capital accumulation in the industrial sector is the engine of growth.

More capital, more jobs thus more migration. But food prices rise. Increase of prices, increase wages and limited the growth.

6

Lewis-Ranis-Fei Model

1) How extract food and workers from agriculture?

Agricultural taxation:

As labor is progressively withdrawn from agriculture then there is more income to share.

Why don't they share and upward wage up to w_w ? If so, then there are two effects:

- The agricultural surplus is reduced;
- The wage for the migrants must rise then the supply curve fails to be perfectly inelastic.

Thus on this model it's implicit that the agricultural sector is taxed in order to lower the rural wage and incentive migration.

Then the question are:

- who would tax the rural area?
- Industrialist, urban or rural workers, small farmers or large landowners?
- Where is the incentive?
- Does democracy help the elite or the government (ie: USSR)?

Problems on the floor:

Informational (no information on food production),

political (farmers are powerful voters)

and economic (disincentives) problems

7

Lewis-Ranis-Fei Model

2) How extract food and workers from agriculture?

Agricultural pricing policy (price support programme) I:

- The government buy from the farmers and sell to the workers and/or subsidy to urban consumers;
- The other way is to keep input price low (water, electricity and fertilizer);
- Or maintain overvalued exchange rate (discouraging food export) but with severe BoP problems.
(See next slide)

Agricultural growth is limited by access to capital and credit;

Thus land reform, credit expansion, infrastructural investment all go a long way to assuring agricultural and industrial growth and unfortunately the market most of the time fails on it.

8

Lewis-Ranis-Fei Model

2) How extract food and workers from agriculture?

Agricultural pricing policy (price support programme) II:

ie: Russian artificial control of the food (collectivization) led to low productivity and output and import from other members of the bloc selling armament and heavy industry products;

ie: China, with the post-1978 reforms. Land were given to farmers and closed the collective farms. Unregulation of the market and farmers allowed to sell to the market (price incentive and abandonment of regional self-sufficiency). TFP after the collectivization was around 30% lower then 1952 while after the reform came back to 1952 and the output in 1984 increased of 40%. The main reason was the increase of productivity instead of self-sufficiency programme.

9

Rural-Urban migration Harris-Todaro Model (1970)

- The formal (unionized) urban sector pays high wage and high wage creates urban unemployment
- Firms pay high wages
 - i) they get the best and
 - ii) so the punishment is high for those that will be fired because they don't work
- On the other hand, on the informal urban and rural sectors have low wage according to the D-S considerations are most of them family based
- Then migration is a response of the mentioned conditions of the labor market:
- Wage gap (given by wage but as well as by minimum wage laws, pension schemes, unemployment benefits, day care etc)
- And the wage gap is the dream rural population they search when they migrate but if they don't get it then
- They will join the queue of the unemployed, perhaps in disguised form in the informal sector.

10

The basic model

AB demand curve of formal sector where wage is perfectly flexible

CD absorption in rural sector

w^* is the wage to alleviate migration

Then L is total labor force distributed in the formal (F) and Agricultural (A) sectors

But the wage in this case is too high for market clearing.

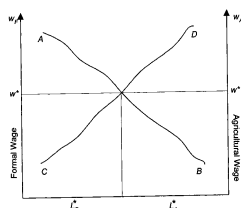


Figure 10.4. Market equilibrium with flexible wages.

11

Basic model I

Then

The minimum formal wage is given by $\bar{w}$ and it lies just above the intersection of the two absorption curves.

Then

The formal sector hires only at $\bar{L}_F$.

The remainder rest on the agricultural sector then their wage will be $\bar{w}$.

No one is unemployed but the wages are different thus no equilibrium. Some of them would migrate. At $\bar{L}_F$ only

Will be hired in agricultural sector. U is the unemployment area some of them migrate.

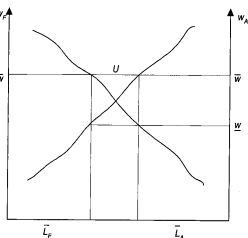


Figure 10.5. A floor on the formal wage.

But the probability to find a job in the formal urban sector is determined by the ratio of formal job seekers to available job.

12

Option potential migrant

Those that would migrate then have the following conditions and probability:

If they would stay in the agricultural sector will earn w_i .

Those that migrate:

They can get job on the formal sector at w_f with probability p given by the ratio of vacancies and job seekers.

Or they can be absorbed on the informal sector at w_i .

Then the expected wage in the urban sector by

$$p \tilde{w} + (1-p)w_i \quad q \tilde{w} + (1-q)0 = q \tilde{w} \quad p \tilde{w} + (1-p)q \tilde{w} \quad 13$$

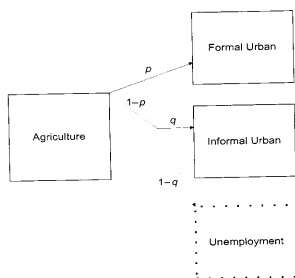


Figure 10.6. Options open to a potential migrant.

Harris - Todaro Equilibrium (H-DE)

The probability to get a job in formal sector is

$$\frac{L_f}{L_f + L_i}$$

The Harris - Todaro Equilibrium is given by

$$\frac{\tilde{L}_f}{L_f + L_i} \tilde{w} + \frac{\tilde{L}_i}{L_f + L_i} w_i = w_A$$

Where no one is interested to migrate anymore but some remarks:

1. ex-ante indifferent to migrate or not. Ex-post not indifferent;
2. The equilibrium implies a particular allocation of labor between the sectors (2 or 3);
3. It's not necessary to have only 2 or 3 sectors but it's important that the people decide according to the expected wage.

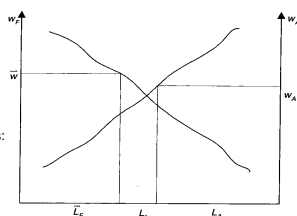


Figure 10.7. Harris-Todaro equilibrium.

Thus the informal sector acts as a necessary counterweight to the attractiveness of the formal sector and slows the pace of rural-urban migration. 14

Government policy I: the paradox of urban job creation

- Informal urban sector is characterized by congestion, pollution and high crime rate thus the policy makers would avoid those problems with incentives to the formal sector or through public spending.

- Initially this approach decrease unemployment and employment in the informal sector and increase the formal sector (increasing the probability) but this approach will incentive new migration therefore informal sector and unemployment rise again (decreasing the probability).

- Then the new H-TE condition

$$\frac{\tilde{L}_f}{L_f + L_i} \tilde{w} + \frac{\tilde{L}_i}{L_f + L_i} w_i = w_A$$

- Then

$$\frac{\tilde{L}_f}{L_f + L_i} > \frac{\tilde{L}_i}{L_f + L_i}$$

- Thus the informal sector still increase therefore the result of this policy is to exacerbate migration

Government policy II: Migration restriction

- All individuals who do not have formal sector jobs are prevented from entering in the cities.
- Under policy of migration restriction, we have too few people in the cities relative to the efficient allocation.

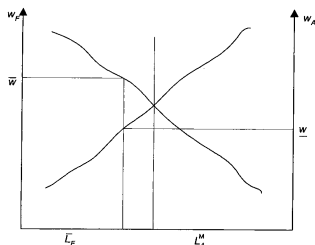


Figure 10.8. Migration restrictions.

16

Government policy III: Formal sector subsidy

- Suppose that the subsidy involves financing s dollars of the formal wage for every extra hour that is hired by a formal-sector employer.
- In this case, the wage paid by the employer is $w - s$, but the worker receives the full wage w .
- If the subsidy is too high the labor demand in the formal sector will rise and push the wage of the agricultural sector to w and absorbing the informal sector as well as. No migration at all.
- Even if the informal sector is removed but there is too much labor in the urban sector relative to the efficient allocation.

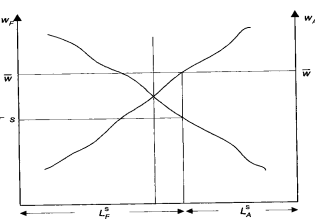


Figure 10.9. A formal-sector wage subsidy.

17

Government policy IV: A combination of MR and WS

- Wage subsidy is introduced on the formal sector in moderate way in order the wage still remain w .
- While taking into account that the wage equilibrium is $w = w_A$.
- In this way, the agricultural wage is still lower than the formal sector wage thus migration restriction is needed.
- In this way, avoiding the migration of those L_A^E in the rural area.
- Then migration restriction is always important or we can avoid it?
- See the next slide.

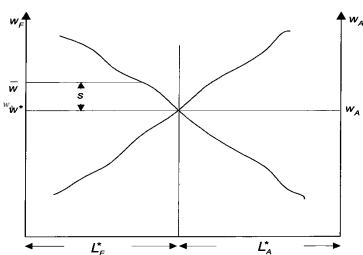


Figure 10.10. A combination policy of migration restrictions and wage subsidies.

18

Government policy V: Uniform wage subsidy

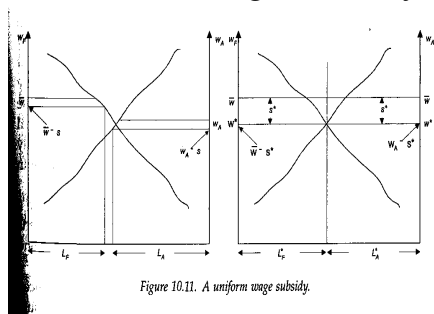


Figure 10.11. A uniform wage subsidy.

19

Criticisms

- How to decide the amount of the subsidy?
- This is not a problem because automatically will be in equilibrium .. It take time but it happens;
- Who finance it?
- The firms through taxation thus there will be a redistribution from profit to wage?;
- How to verify if in agriculture the employer declare the truth?
- This is not possible.

20

Risk aversion and migration

Expectation of any project is given by

$$E = \sum_{i=1}^n p_i x_i$$

Where x are the number of possible outcomes indexed and i th outcome has a monetary value with a probability of occurrence p_i , x_i

Then a more risk averse a person is, the lower will be the minimum compensation he will need to be paid. Thus the risk adersion works as the diminishing marginal utility. The expected utility is lower than the utility expected value thus is risk averse. With diminishing utility one dollar lost is always dearer than a dollar gained.

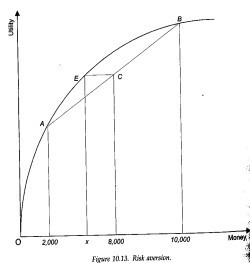


Figure 10.13. Risk aversion.

What makes an individual risk averse? 22
Taste, wealth and diversification.