

THE PROCESS OF DEVELOPMENT: RURAL–URBAN MIGRATION

Perhaps the most important structural difference between developed and less developed nations is the distribution of the population between rural and urban areas. Nearly half of the world’s population lives in cities. But by 2025, two-thirds will live in urban areas. Urban population growth in the developing world is far more rapid than population growth generally: about half the urban growth is accounted for by migrants from the rural areas. Cities in the developing world are growing far more rapidly than those in developed countries. What drives migration and what effects does this have?

The Lewis–Fei–Ranis Model

One of the most influential theories of the development process is that developed by Lewis (1958) and later extended by Fei and Ranis (1961). It gives a central role in the development process to rural–urban migration: the “traditional” agricultural sector acts as a supplier of labour to the “modern” industrial sector. However, the modern sector can only grow if the agricultural sector produces more food than its producers require for their own consumption — there has to be an agricultural surplus.

The coexistence of a “traditional” and “modern” sector is often referred to as a **dual economy**, but the distinction is a bit vague since both agriculture and industry may contain traditional and modern sectors. In the model, exogenous capital accumulation in the modern sector generates a demand for labour which soaks up **surplus labour** from the traditional sector. This surplus labour is labour whose marginal product in agriculture is zero, so that when they leave the sector, agricultural output remains unchanged and output per worker **increases** (see Figure 10.1, p. 355 in Ray). But why would the agricultural sector employ surplus labour ? Surely, if there exist activities with positive marginal product labour would be reallocated to them. Two reasons for the existence of pure surplus labour are often given:

- subsistence
- income sharing on family farms

An alternative view of surplus labour is that its marginal product does not have to be zero, just very low relative to the competitive wage. In effect, this low marginal product reflects disguised unemployment. As we have seen payment systems in agricultural sector are often (necessarily) based on income sharing, not marginal product. As a result, workers receive the average product which may be positive even when marginal product is close to zero. As long as the average product in this activity is equal to marginal product elsewhere, no individual would want to switch. Another observation is that due to inefficient contracts, effort levels may be sub-optimal (we could think of this as disguised underemployment). When workers leave the sector, the “slack” may be reduced if remaining workers provide more labour hours.

Given the existence of surplus labour and/or disguised unemployment, the interactions between the traditional and modern sectors envisaged by Lewis and Fei and Ranis evolves in three phases as illustrated in Figure 10.3 (p. 363) in Ray.

Phase 1: Surplus Labour

As capital accumulates, the demand for increases. Any increase in the wage above the average surplus in agriculture induces migration into the modern sector. The increase in urban labour supply keeps the industrial wage equal to the average surplus in agriculture. However, because the marginal product of labour is zero, this reservation wage does not rise as the supply of workers contracts in the agricultural sector.

Phase 2: Disguised Unemployment

At some point, however, the agricultural surplus starts to decline as labour migrates. Food prices begin to rise and the industrial wage must rise to compensate if firms want to attract workers into the urban sector. However, because of the presence of disguised unemployment, the industrial wage may exceed the marginal product of labour in agriculture (even though it equals the average product).

Phase 3: Commercialization

Once the disguised unemployment has disappeared there is true competition between the modern and agricultural sectors in that the real marginal product of labour in each sector (net of relocation costs) are equated. If the demand, for labour in the modern sector continues to grow, the industrial wage rises driving up the wage in the agricultural sector. As a result, the wage bill in the agricultural sector falls more slowly as labour migrates.

Thus, in this model, the pace of development is driven by the accumulation of capital, but is

eventually limited by the ability of the agricultural sector to produce a surplus of food. However, there are a number of problems with the model:

- It assumes that capital accumulates in an exogenous fashion, but does not explain where this capital comes from and why it accumulates. Presumably capital accumulation must come from the savings of the population which may grow as production grows. However, this part of the development process is not part of the model. In this sense, the model does not really explain the process of development, rather it illustrates one part of it. Moreover, capital accumulation depends on the incentives faced by savers and entrepreneurs as well as the constraints that they face. It is not clear how these factors interact with the process described by the model.
- The LFR model also assumes that labour migrates in the simple way described. However, the decision to migrate also depends on incentives that might be inconsistent with those described. Some of these issues are discussed in the Harris–Todaro model below.

- The assumption that the wage rate in agriculture is fixed until the phase of commercialization is reached is strong. As labour is progressively withdrawn from agriculture there is more income left for the remaining workers. Why don't they share it and raise the wage. If they did then the supply of labour to industry would not be perfectly elastic. The model must implicitly be assuming that farms are being taxed at just the right rate as labour is withdrawn, or that agricultural output is purely for subsistence.

The Harris–Todaro Model

Relative rates of urbanization are not higher in developing countries today than they were in the period of rapid urbanization of today's developed countries. But in today's LDCs this migration is different for at least two important reasons. First, it is much higher in terms of absolute numbers of migrants, and second, in recent years it has been taking place, in many cases, against a background of stagnant living standards rather than one of growth. Problems caused by urbanization, like stress on infrastructure and other urban services, and unemployment are much greater.

Shantytowns and similar makeshift settlements represent over one third of Third World urban residences. About half of the urban labour force works in the informal sector of low-skilled, low-productivity, often self-employed jobs in petty sales and services. Still, this sector may generate up to a third of urban income, and features a low capital-intensity, low cost training, waste

recycling, and creation of surplus as well as employment creation. Prior to the work of Harris and Todaro (1970), migration was widely viewed as irrational or driven by non-economic motivations, sometimes termed the “bright city lights.” In the Chicago school version of the bright city lights theory, people rationally migrated on the basis of costs and benefits. In this approach, it was assumed that if migrants appeared to be worse off, this was because other benefits were being overlooked, with the effect of migrants feeling better off (or raising their overall utility).

The Harris–Todaro migration model postulates that observed migration is individually rational, but that migrants respond to urban–rural differences in expected rather than actual earnings. A key assumption of the Harris–Todaro model is that the formal sector wage is above the market wage. There are many reasons why this might be: workers in the formal sector may be highly unionized, there may exist government interventions to support the effective wage (e.g. minimum wage laws, unemployment benefit, pension schemes, day care, etc.), or efficiency wages to induce effort may be more common than in other sectors. Urban formal sector earnings are much higher than rural earnings, which in turn are even higher than urban informal sector earnings. Migration occurs until **expected** rather than actual incomes are equal across regions, generating excessive migration and equilibrium unemployment in the urban sector.

Figure 10.4, p. 374 in Ray illustrates a competitive equilibrium. The curve D^F is the labour demand curve in the formal sector, which reflects the marginal product of labour. The curve D^A is the demand curve in the agricultural sector, which is also the effective supply curve to the formal sector since this is the opportunity cost of a unit of labour. In a competitive equilibrium the wages would be equalized at w^* and the allocations of labour to the formal and agricultural sectors would be L_F^* and L_A^* , respectively, where

$$F'_F(L_F^*) = F'_A(L_A^*) = w^*.$$

Now suppose we introduce a wage floor, \bar{w} , in the formal sector. If they don't receive a job in this sector, migrants enter the informal sector where they receive some lower wage w_1 . When migrating to urban areas, workers know that with some probability p they will receive \bar{w} and with probability $1 - p$ they will receive w_1 . Thus, assuming they are risk neutral, they will migrate until the equilibrium wage in agriculture, w_A , is equated with the expected wage in the urban sector:

$$w_A = p\bar{w} + (1 - p)w_1.$$

If all workers are identical, then this probability will equal the fraction of workers in the formal

sector relative to the total urban sector labour force

$$p = \frac{L_F}{L_I + L_F} = \frac{\bar{L}_F}{L_I + \bar{L}_F},$$

where $F'_F(\bar{L}_F) = \bar{w}$. Since in agriculture, $w_A = F'_A(L_A)$, the equilibrium allocation of labour satisfies

$$\begin{aligned} F'_A(L_A) &= \frac{\bar{L}_F}{L_I + \bar{L}_F} \bar{w} + \frac{L_I}{L_I + \bar{L}_F} w_I \\ L_I + L_A &= L - \bar{L}_F \end{aligned}$$

The Harris–Todaro equilibrium is depicted in Figure 10.7, p. 379 in Ray.

The Harris–Todaro Paradox

The informal sector of LDCs often have a number of undesirable properties due to the pressure on infrastructure. These include congestion, pollution, insanitary water usage, a high crime rate, etc. This has led many LDC governments to try to accelerate employment growth in the formal sector. One approach has been to provide tax incentives for formal sector firms so as to cause them to expand labour demand, or to expand demand directly through public sector job creation. However, the Harris–Todaro model illustrates that such a policy could actually expand the informal sector — the so-called Harris–Todaro paradox. The reason for this is that an increase in formal sector employment increases p and hence the expected wage. This induces further rural–urban migration until the agricultural wage increases. If the labour supply curve is sufficiently elastic, the increase in demand for labour may induce more migration than the increase in demand, thereby expanding the informal sector. Similarly, attempts to reduce the costs of urban living by reducing pollution, congestion or expanding health facilities could end up worsening these indicators due to the induced migration.

Alternative policies have been suggested to reduce the size of the informal sector. The goal of such policies should be to get as close as possible to an efficient allocation (i.e. the intersection of the D^F and D^A curves). One such policy might be to restrict individuals without formal sector jobs from entering the city (this is a bit like an international immigration policy where you must have a job to immigrate). However, this is not efficient because there would be too few workers in the city. Another possibility would be to subsidize formal sector employers on a per worker basis thereby inducing a movement along the demand curve (rather than a shift in it). This, in principle, could achieve efficiency, but requires that firms truthfully report their number

of employees. Ensuring this (just like ensuring that individuals honestly report their taxable income) could be very costly.

Rural–Urban Migration in Botswana

Evidence on rural–urban migration decisions in developing countries suggests that the Harris–Todaro model is broadly consistent with the facts. Although many of these studies are based on macro–level data, a recent study by R. E. B. Lucas (AER 1987) in Botswana uses detailed microeconomic data on individual migrants and non–migrants. Lucas finds that

- unadjusted urban earnings are much higher than rural earnings — 68% higher for males — but these differences become much smaller when schooling and experience are controlled for.
- the higher a person’s expected earnings and the higher the estimated wage and probability of employment given a move to the urban centre, the greater the chances that a person will migrate.
- the higher the estimated wage and probability of employment for a person in his or her home village, the lower the chances that the person will migrate
- at current pay differentials, the creation of one job in an urban centre would draw more than one new migrant from the rural areas, thus confirming the Harris–Todaro paradox.