

URBAN SELF EMPLOYMENT AND CHANGING EXPECTATIONS  
AS INFLUENCES ON URBAN MIGRATION

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### Abstract

Initial explorations on the economic motives for urban migration have appeared in the literature. The migrant's perception of the possibility of wage paying urban employment in the modern sector lies at the center of these works.

This paper examines urban opportunities more fully emphasizing the economic conditions surrounding self-employment. In particular, the seeming irrationality of migration to cities in which many residents may earn less than their rural alternative incomes is explored.

A model is developed which extends single-period maximization by the migrants to a multi-period framework, in which changing employment conditions and wage expectations can be considered. Tentative policy implications follow from these results.

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While the literature on urban migration in poor countries and its economic causes (or correlates) is voluminous, recent attention has centered on works by Harris and Todaro (1969, 1970) that examine rural and urban wages together with urban employment possibilities. Their contribution lies in their examination of a rural-urban wage differential in combination with the probability that the migrant would find a wage paying job in the urban modern sector. Theoretical work previous to theirs had emphasized the wage differential while neglecting both the increasingly apparent phenomenon of slow growth in employment in modern sector jobs and the resultant unemployment when migration exceeded employment growth in that relatively highly capitalized part of the urban economy.

In all this work, insufficient attention has been paid to urban alternatives to modern sector employment. The somewhat simplistic view prevails that urban unemployment is indeed the only alternative to wage employment in the modern sector.<sup>1</sup> Open unemployment of the type familiar in more affluent countries is a luxury that workers in poor countries, without stocks of assets or widespread possibilities for transfer payments are unlikely to be able to afford.

For that reason, a somewhat different division of the urban economy is suggested here. This paper deals with a model of urban migration and

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<sup>1</sup>In particular, Todaro writes about an "urban unemployment rate", defined as  $1 - E$  where  $E$  is the proportion of the urban labor force employed in the modern sector. (1969, p. 144) The formulation implies that everyone else ( $1 - E$ ) is unemployed. Zarembka's comment (1970) exemplifies the ease with which this interpretation is uncritically adopted. The possibilities of income-yielding work in cities outside the modern sector are ignored. It should be noted, however, that in his recent book (1972, ch. 3), Zarembka remedies this oversight.

employment that features two productive sectors, the modern sector and what will be designated as the traditional sector. The "traditional" sector in this context is referred to as "informal," "unprotected," or "unorganized" by other writers (International Labor Office, 1972). For our purposes, these descriptions may be considered synonymous. The principal differences between the modern and traditional sectors are four:

1. The modern sector wage is greater, perhaps by some multiple, than the income accruing to those in the traditional sector.

2. The traditional sector serves as a residual employer; the modern sector is the preferred employer.

3. Persons occupied in the traditional sector can engage in both job search and productive activities that maintain an income flow, while simultaneous job-search-and-work is more difficult in the modern sector. If the family rather than the individual were considered the proper unit for analysis, it seems plausible that it might maintain some or even most of its members in traditional occupations that permit simultaneous job search.

4. The two sectors differ with respect to their expected wages and relative expected ease of entry.

The first three of these differences are explored below, while the last is postponed until a later part of this paper.

#### Wages in the modern and traditional sectors

Wages in the modern sector are higher than wages in the traditional sector. Two causal factors for the difference reinforce each other. First, production in the modern sector is more likely to be accompanied by relative capital intensity and by relatively fixed factor proportions. Second,

institutional wage floors exist, established by legislatures and unions. The combination of technological and institutional factors lead to a wage differential between the sectors that may not be eroded by time or by the remaining forces of competition.

The traditional sector is distinguished not so much by outputs different from the modern sector, although these differences are present, as it is by different inputs and the techniques by which they are combined. In particular, flexible factor proportions and generally low initial capital requirements lead to ease of entry. These characteristics are seen in the large proportion of self-employed persons, together with the prevalence of small workshops serving also as residences and retail outlets, that use a few wage-paid employees and unpaid family workers. The only operational floor to their incomes, whether in cash, in kind, or both, is subsistence itself and the alternative attraction of their rural alternatives.

While the modern-traditional dichotomy may be suggestive, it should not be used to obscure the mixed nature of employment in most urban families. Intergenerational specialization may characterize their efforts: while older members may hawk in the streets, a middle-aged male may hold a factory job, a woman work in domestic service, and younger members split their time between school, job search, and casual employments. Following the behavior as ascribed by earlier writers to rural families, who maximize total (family) product and consume their average (rather than marginal) product within the family unit, so too with urban families.

The urban traditional sector as residual employer

An important element in the model is the behavior attributed to urban migrants and to the urban labor force they enter. Specifically, all workers, migrants and natives alike, are assumed to seek modern sector employment, because of its generally higher pay, greater fringe benefits, and better working conditions. But not all seekers are successful in achieving modern sector employment, during any given period.

Consider the remainder. The difficulties of classifying them as "unemployed" or "underemployed" or even "fully employed" in the urban traditional sector have been well documented (e.g., Turnham, ch. 3). Given the mass poverty that characterizes cities in underdeveloped countries, together with the absence or near-absence of governmental transfer payments to the unemployed (in the form either of "unemployment compensation" or outright "relief"), it is hard to attach much credibility to the open unemployment figures of 10%, 15%, 20% or more that sometimes emanate from these countries. It seems likely that many of those classified as "unemployed" are persons who are employed or self-employed in the traditional sector and who at the same time are engaged in seeking a better job. The notion of the urban traditional sector as a "residual" employer -- or an employer of last resort, to use language used in another context in the U.S. -- follows from these observations.

The methods of employment surveys, adapted from the more affluent countries, help to cause this result. In richer nations where wage employment in the modern sector occupies the overwhelming majority of the labor force, employment surveys and statistics are oriented to measuring unemployment of this group. The same survey methods used uncritically in

underdeveloped countries, where self-employment and unemployment merge in an undifferentiated continuum of relative degrees of remunerated activity and unencumbered job search, are unlikely to be very sensitive measuring instruments.

One difficulty, in particular, has been almost universally ignored. Insofar as there may be a secular increase in recognition of "unemployment" in the minds of the respondents as a status that the surveyors are seeking to measure, the customary sample surveys may observe increases in measured unemployment at the same time that underlying and unmeasurable real unemployment, however it might be defined, is remaining constant or even declining.

Finally, the almost universal focus of censuses and surveys on the individual rather than the family obscures the underlying economic and labor market processes rather than clarifying them. The particular occupational status in the employment-unemployment spectrum of a specific individual is not the appropriate target of information gathering if, in fact, the family is the maximizing unit. The unsatisfactory state of our understanding of the workings of urban labor markets in low-income countries may be explained by our having asked the right questions about the wrong units of analysis. A clearer focus on the family, resulting in the use of data gathering instruments that permit family income and employment situations to be observed, retrieved, and analyzed will, I suggest, improve considerably the possibilities for effective policy measures related to this central economic problem.

Simultaneous job search and employment

The urban traditional sector with its possibilities for self-employment, low initial capital requirements, and "easy" entry in general, has more economic functions than simply that of an employer and a site for production. In particular, the casual or semi-casual nature of traditional employment in the big cities of poor countries, which characterizes many of the jobs in petty commerce, personal services, and handicraft manufacturing, allow a person both to support himself as well as to search for employment.

Maintaining at least a minimal flow of income while searching for work is facilitated by the widespread practice of living with and possibly working for other relatives who have previously moved to the city. Unpaid family employment allows for simultaneous job search in the same way that self-employment does. Income, as a mixture of cash and in-kind, and productivity may be roughly similar for the two.

Such a combination of continued work coupled with simultaneous job search is far more difficult to sustain for an employee of the urban modern sector. The enforced regularity of his hours and attendance imply a considerably greater sacrifice in terms of opportunity costs if he should look for work, since overt absenteeism will be punished, perhaps even by dismissal.

The capital value, then, of the stream of income accruing to a migrant who arrives in the city without having arranged a modern sector job in advance includes two parts. He will serve an initial period in the traditional sector, both "employed" (including self-employed) and looking



for work in the modern sector. Subsequently, a second period may follow, this one featuring higher income in a modern sector job. The elements of job search, as already outlined, are stronger during the initial period, which may last for years, than during the subsequent one in which the opportunity cost of job search has increased.

A single-period model

If traditional urban opportunities are associated with positive income  $W_s$  analogous to income alternatives  $W_a$  and  $W_m$  in agriculture and modern sector activities respectively, then for any individual the expected urban income  $W_u^e$  can be written

$$W_u^e = \pi W_m + (1 - \pi)W_s, \quad (1)$$

where  $\pi$  is the probability of having a modern sector wage-paying job.<sup>1</sup>

While the equilibrium condition, implying no further tendency for rural urban migration or reverse migration, remains

$$W_u^e = W_a \quad (2)$$

as in the earlier literature, equation (1) modifies our interpretation of it.

For example, we might inquire about the circumstances under which rural income would exceed urban self-employment income, thus replicating at least some impressionistic evidence about the urban poverty that

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<sup>1</sup>The important differences between the probability of having a job in any given time period and getting one are covered mathematically by Todaro (p. 142) and Zarembka (1972, pp. 57-58).

accompanies much self-employment. Define the rural-urban income difference in question,  $D_r$ , as

$$D_r \equiv W_a - W_s .$$

Similarly, define an (intra) urban income difference between modern sector wage employment and traditional sector employment,  $D_u$ , as

$$D_u \equiv W_m - W_s .$$

Then setting the right hand sides of equations (1) and (2) into equality and manipulating algebraically yields the equilibrium condition

$$D_r = \pi D_u . \quad (3)$$

The nature of (3) as an equilibrium condition rather than an identity should be underscored. That condition does not imply that the two sides of the equation will always be found to be equal. Instead, it implies that when  $\pi D_u > D_r$ , rural-urban migration will occur (or continue). The condition is symmetrical and allows for "reverse" migration as well. Note that the terms of the equation represent the perceptions of each individual, and presumably would vary among individual potential migrants. The observations of continuing urban migration that are so prevalent in poor countries are a manifestation simply of continuing disequilibrium, implying inequality rather than equality between the two sides of equation (3).

As an equilibrium condition, (3) sheds some light on the relations between urban and rural wage differentials. In particular, if  $\pi > 0$  and  $D_u > 0$ , then  $D_r$  must be greater than zero, which is to say that  $W_a > W_s$  in equilibrium. In effect, since  $W_a$  is a weighted average of  $W_m$

and  $W_s$ , with  $\pi$  and  $1 - \pi$  the weights, the relation between the three, again, in equilibrium, can easily be seen as  $W_m > W_a > W_s$ .

The importance of this wage rate hierarchy ( $W_m > W_a > W_s$ ) should be underscored. That relationship in the model reconciles the paradox of continued urban migration in the face of fairly large numbers of urban residents whose measured incomes ( $W_s$ ) derived from urban traditional activities, while positive, are less than their agricultural alternatives ( $W_a$ ). Reinforcing this point, it has sometimes been observed that money wage rates may understate urban full income to the extent that urban amenities, as perceived by the migrants, outweigh disamenities. In either case, continued migration could be compatible with lower urban wage rates than rural ones without violating the spirit of the model.

Of course, a formulation that relies on a presumed hierarchy of point estimates for three wage rates ( $W_a$ ,  $W_m$ , and  $W_s$ ) has generic similarities to one that relies on only two, i.e., on modern sector and agricultural wage rate point estimates. Nevertheless, the explicit inclusion of an urban alternative to modern sector unemployment, on the one hand, or complete unemployment on the other, may be suggestive in itself.

#### A dynamic variant

Consider the single-period statement of equilibrium that combines equations (1) and (2):

$$W_a = \pi W_m + (1 - \pi) W_s . \quad (4)$$

In a multi-period setting, the wage (or income, in the case of self-employment) variables should more properly be stated in terms of their present values. Two cases will be considered: that of static expectations and that of expectation of change.

1. Static expectations

Suppose that urban and rural wages and the probability of finding a modern sector job are expected to remain constant. If  $r_d$  is the internal rate of time discount applied by the potential migrant to receipt of future income and  $T$  is the length of his expected work life, then the present value of the terms in equation (4) can be represented by the definite integrals

$$\int_0^T W_a e^{-r_d t} dt = \int_0^T \pi W_m e^{-r_d t} dt + \int_0^T (1 - \pi) W_s e^{-r_d t} dt$$

which, when evaluated, become

$$\frac{W_a}{r_d} (1 - e^{-r_d T}) = \frac{\pi W_m + (1 - \pi) W_s}{r_d} (1 - e^{-r_d T}). \quad (4')$$

Of course, the present values expressed in (4') differ from the single period formulation of (4) only by a constant factor, owing to the static expectations assumed. The familiar properties of present value functions of this class are present here as well. Each side of the equation is larger the larger the size of the initial (and hence the subsequent) income flows and the longer the expected working life, and smaller the greater is the discount rate.

2. Changing expectations

Although the potential migrant may, in fact be guided by static expectations, a more general case results from considering the possibilities that both rural and urban wages, together with the probability of finding a modern sector job, may change over time. Consider first the

agricultural wage in the initial period,  $W_a$ . Postulate a continuously compounded growth rate for it,  $r_a$ , which can be either positive or negative. At any time  $t$  in the future, the wage will be  $W_a e^{r_a t}$ . The present value of the wage expected with certainty in period  $t$  will be

$$\frac{W_a e^{r_a t}}{e^{r_d t}} = W_a e^{(r_a - r_d)t}.$$

If he remains in the agricultural sector, the present value  $P_a$  of the income stream until time  $T$ , the end of the individual's work life, is

$$P_a = \int_0^T W_a e^{(r_a - r_d)t} dt.$$

Analogous formulations describe the present value of urban modern-sector wages,  $P_m$ , and urban self-employment incomes,  $P_s$ .

To complete the conversion of (4) to treat a multi-period horizon, first assume  $\pi$  to be constant in each time period under consideration, including the present. Then

$$P_a = \pi P_m + (1 - \pi)P_s. \quad (5)$$

Once again, as in equilibrium condition, the equation describes a situation that would leave the would-be rural-urban migrant indifferent between remaining at home and moving to the city.

A more general formulation would allow the success probability represented by  $\pi$  in the initial period, to change. It could grow, reflecting the transformation of the economy toward one in which regular wage-paid employment was more prevalent. It could, with equal plausibility, shrink, as increases in modern-sector productivity allowed wage paying

employment there to grow less rapidly than the urban labor force. Let  $r_\pi$  be the rate of growth of  $\pi$ .<sup>1</sup> Then the expected value, discounted to the present, of the modern sector wage in the  $t^{\text{th}}$  period is

$$(\pi e^{r_\pi t}) [W_m e^{(r_m - r_d)t}] = \pi W_m e^{(r_m - r_d + r_\pi)t} \quad 2$$

An analogous statement can be made about self-employment income and the growth of  $1 - \pi$ ,

$$P_a = \int_0^T \pi W_m e^{(r_m - r_d + r_\pi)t} dt + \int_0^T (1 - \pi) W_s e^{(r_s - r_d + r(1 - \pi))t} dt \quad (6)$$

Simplify the notation by defining

$$r_m - r_d + r_\pi \equiv m$$

$$\text{and } r_s - r_d + r(1 - \pi) \equiv s.$$

Then, evaluate the definite integrals in (6) to get

$$P_a = \frac{\pi W_m}{m} (e^{mT} - 1) + \frac{(1 - \pi) W_s}{s} (e^{sT} - 1). \quad (7)$$

Let the right-hand side of (7), which represents the sum of the present values of the urban alternatives, be represented by  $P_u$ . Then, as before, the individual's decision process can be described as follows:

$$P_a < P_u, \text{ migrate;}$$

$$P_a > P_u, \text{ remain at home.}$$

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<sup>1</sup>In a more complete formulation,  $\pi$  could be an endogenously determined variable. In such a model, its value in any given period would depend on the relative number of job vacancies and job applicants in that period, which in turn presumes that "vacancies and "applicants" could be operationally defined.

<sup>2</sup>While  $\pi$  and  $1 - \pi$  may (and probably will) grow at different rates, they are constrained to maintain their complementary relationship in every period in the future.

Interpersonal differences

The foregoing analysis has not taken pains to distinguish among migrants or potential migrants. Yet the differences in perceptions of economic and other stimuli and the varying responses to those differential perceptions are apparent. In particular, any model claiming to represent the process of migration should be able to deal with reverse migration, given its presence in all underdeveloped countries.

Why do people respond differently to the migration decision? The model presented above suggests three sources of variation, considered in turn below.

1. Different alternatives. Persons in the countryside considering their urban alternatives, as well as those in the city looking back on their former rural lives, perceive different alternatives. Even within the simple framework in which the alternatives can be stated in terms of  $W_a$ ,  $W_m$ , and  $W_s$ , and heterogeneity in the labor force characteristics and qualifications of the potential migrants would result in varying rural-urban and intersectoral wage differentials among them.

2. Different expectations. Not only do perceived alternatives among persons vary at any given time, but their expectations about rates of change of these alternatives vary as well. The foregoing model considers explicitly the rates of change of the wage variables as well as the change in the probability of modern sector employment.

The latter probability contains more than one element. In particular, for an individual, the establishment of  $\pi$  depends both on the state of the labor market (vacancies vs. applicants), but also on the

changes in the acceptability of the migrant himself as a potential employee. It seems plausible that the likelihood of transfer to the urban modern sector (from the urban traditional sector) would grow as time passed, owing to:

A. The migrant's increased stock of information about efficient urban modes of behavior, including job search, and

B. The migrant's increased acceptability to employers because of greater productivity as his responses to urban ways of life become more (economically) functional. The migrant has served an apprenticeship in the observation of urban norms, in this case, while he was a member of the urban traditional sector.

3. Different ages. As noted widely in the capital theory literature, younger persons respond more readily than older persons to wage differentials as a migratory stimulus. These observations are consistent with the capital-theoretic principle that investments with long periods of returns are (cet.par.) more attractive than those with short periods. A young person with longer expected worklife is therefore more likely to migrate than an old person facing exactly the same wage differential and with the same expectations of future change.

An interesting and unresolved (unresolvable?) question that arises here is the following: Are  $\pi$  and  $r_d$  themselves functions of age and thus of  $T$ ? At least impressionistically, employability and impatience, directly reflected in  $\pi$  and  $r_d$  respectively, have usually been associated with age, although the relations are not necessarily monotonic ones.

#### Interpretations and conclusions

The model is subject to at least two complementary interpretations:

1. If the potential migrant were to act in an economically rational fashion, his behavior would accord with decision rules it dictates.



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#### Interpretations and conclusions

The model is subject to at least two complementary interpretations:

1. If the potential migrant were to act in an economically rational fashion, his behavior would accord with decision rules it dictates.

2. Migrants, although they do not in fact perform the projections and subsequent calculations of the comparative present values attached to their alternatives, behave as if they do. This is a valid hypothesis, capable, at least in principle, of being empirically tested.

The second interpretation, I hope it is clear, is the stronger of the two since it characterizes migrants with an "as if" economic rationality.

It should be noted that the model avoids speculation on the (macro) economic effects of migration. For the individual, the most orthodox assertion declares that migrants who remain at the destination (or, at least, who do not return to the origin) manifest behavioristically their feelings of improvement accompanying the move. Since, in general, return migration (urban-to-rural) is not greater than rural-urban migration, most individuals feel that they are better off as a result of migrating.

This orthodoxy has much to recommend it, especially when compared to a more impressionistic view. The latter regards the low urban standards of living -- "low" perhaps by ethnocentric and absolutist points of view -- as prima facie evidence that the process of migration damages the migrants themselves. Unless one associates a strong taste for masochism with the migrants, this view seems ingenuous at best.

Perhaps more refined is the strict application of a conceptual model that allows migrants both to remain at the destination and to think themselves worse off there than they were at origin, always using the present expected values mentioned earlier. Such a situation is possible if the costs of transportation back to the countryside more than offset the superiority of the countryside as it is perceived by the migrant. These

instances would be more prevalent where long-distance and high-cost moves predominated and where the countryside's advantages were seen retrospectively by the migrant as slight, and less prevalent elsewhere.

Preliminary notes on policy implications

The policy implications follow from the equilibrium condition of equation (7) and the rational decision rules it implies. Besides the trivial observation that relatively better urban conditions will spur migration, some other implications may be noted:

1. Migration in the face of lower urban wages can be economically rational on grounds other than the presence of urban amenities. Specifically, since the present value of future income streams determines the migratory action, if urban wage rates (in either urban sector) are expected to rise faster than rural income, then currently low urban wages will not stop the flow toward the cities.

2. Similarly, the expected present value of the future income streams depends on the migrant's perception of the probabilities, changing over time, of obtaining modern sector work. If the expansion of modern sector output is, correctly or incorrectly, associated in the mind of the potential migrant with growing job opportunities -- or, more accurately, job opportunities growing faster than applicants, such that  $\pi$  rises, then migration may be more strongly determined by those future possibilities rather than by immediately observable present conditions.

The attribution to the migrant of expectations that include urban economic expansion and rural stagnation, replicating more or less accurately the conditions that have been present in many poor countries during the

postwar period, implies that urban employment creation and the provision of further urban services will simply serve to widen the observable and expected rural-urban gap and hence to stimulate further urban migration. Under certain scenarios of economic and social change, the resulting urban-centered tensions could be productive in the long run, removing people from an unproductive countryside and concentrating them in cities where their individual prospects were improved and their political strength enhanced. That greater political strength, in turn, leads in these scenarios to economic policies centering on further job creation, including policies that stimulate capital-saving and import-saving means of production rather than labor-saving ones, and to income distribution toward those who currently receive less.

## APPENDIX I

### Agricultural Self-Employment and Urban Self-Employment

#### Similarities

Most similarities are associated with the nature of family-centered self-employment, in which many of the same economic forces operate regardless of the urban or rural nature of the economic base.

1. The family firm as the basic unit of production

While single independent operators exist, families all of whose able-bodied members work are more common.

2. The maximization efforts of the family firm

The family firm uses labor beyond the point at which the wage equals the marginal productivity of labor, because the wage is the result of institutional as well as strictly economic forces. As mentioned earlier, one of the most important economic attributes of self-employment is its capacity to provide jobs and income at a wage rate less than a legislated one whose height stimulates excess supply of labor. The family firm seeks to maximize output and adds labor up to, but not beyond, the point where the marginal product of labor equals zero. In most analyses, convention assigns to each member consumption equal to the average product of labor.

3. Ease of entry and exit; flexible factor proportions

These two attributes are related. Requirements for initial human capital and physical capital are not great either in agricultural or in urban traditional occupations. But the family firm operates

under production functions which allow variable factor proportions to be productively used.

### Differences

1. The factors of production with which labor is combined, namely, land in agriculture vs. inventories of finished goods and possibly raw materials in urban self-employment.

2. The output of the sectors

In most development models, not only are "agricultural" and "rural" taken as synonymous, but "agricultural production" and "food production" are equated. Thus, rural laborers are pictured as producing an input into their own physical subsistence. By contrast, laborers in the urban traditional sector produce for the market or sell services in a market and, accordingly, buy the means of their physical subsistence.

Such a picture of rural income generation is, as has already been suggested, an overly simple one. The production of cash crops for market which are not (cannot be) eaten, such as cocoa, coffee, tea, jute, cotton, opium, is widespread. Of course, some of these crops are produced under plantation conditions, where wage labor rather than unpaid family workers are employed. But substantial amounts are also grown by family farm firms. To that extent, these persons must also buy their means of physical subsistence, even though they themselves are farmers.

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