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## 2 Employment and Labor Markets in Less Developed Countries

The purpose of this chapter is to provide the reader with an overview of those aspects of developing countries' labor markets that are important for interpreting data on the trade strategies–employment relationship and to indicate how the countries covered in the project have fared with respect to growth of employment, labor force, and the real wage. To gain insight into the possible order of magnitude of the effect a shift in trade strategy would have on employment, country authors necessarily relied on labor coefficients, average wage rate data, and other observable characteristics of employed workers according to industrial sector. In this chapter, focus is upon the way labor markets function in developing countries and on the ways different institutional characteristics can affect the observed coefficients. Central questions are: (1) what we mean by talking about the determinants of employment; (2) how labor/output ratios may be interpreted; (3) how labor market “distortions” affect the trade strategies–employment relation; and (4) how the role of skills can be analyzed.

The determinants of employment and real wages in LDCs are complex, covering virtually every aspect of the development process. For the rural economy there are questions about the degree to which there may be “disguised unemployment” and about the determinants of average and marginal labor productivity and real incomes. For the urban economy there are extremely difficult questions about the determinants of the structure of real wages, the links between the “formal” and the “informal” sectors, and the factors that influence the level of urban employment and the rate at which it increases. There is another set of issues related to the determinants of migration between rural and urban areas and of the links between the two parts of the economy. Finally, all the factors affecting the rate of population growth are important for analysis

of labor markets, largely because it is rapid population growth that underlies concern about the “employment problem” in most developing countries.

Knowledge and understanding of all these factors in developing countries’ labor markets has increased rapidly over the past decade, but it is still far from adequate. It would require several sets of country studies at least as complex as the ones undertaken in this project to begin to develop with any degree of confidence estimates of the empirical orders of magnitude involved. Indeed, many of the country authors found it necessary to delve into their countries’ labor markets in order to obtain even first approximations to the links between their trade strategies and employment.<sup>1</sup> In this chapter, therefore, focus is on the underlying theory needed to interpret the data. In addition, some estimates of empirical orders of magnitude for population and labor force growth, employment/output elasticities, and related variables for the countries covered by this project are provided. It remains for chapter 7 to examine the country authors’ findings with respect to the existence and magnitude of labor market imperfections, and for chapter 8 to analyze the effect of those imperfections on observed coefficients of the trade strategies–employment relation.

The first section of this chapter assesses the nature of the “employment problem” in developing countries. The second then reviews some key aspects of labor market behavior that are relevant for analyzing the effect of alternative trade strategies. The third section focuses upon some pertinent aspects of urban labor markets. The final section summarizes some salient aspects of the experience of the project countries.

## **2.1 The “Employment Problem” in Less Developed Countries**

Everyone agrees that unemployment is a “problem” and that increased employment opportunities are an “objective” in most LDCs. Employment and employment growth are major points of concern in virtually all of them. There is less agreement, however, on the nature and cause of the “problem” and on why employment creation is desirable.

In part this is because the reasons for concern differ from country to country. They include: (1) increasing relatively high-productivity employment opportunities outside the agricultural sector to absorb the low-income agricultural population; (2) increasing employment opportunities in the urban sector to reduce the number of urban unemployed; and (3) providing employment opportunities for the poor to increase their real income and improve the distribution of income.

The first concern, increasing nonagricultural employment opportunities, has been a focal point of development economics ever since W. Arthur Lewis’s classic article, “Economic Development with Unlim-

ited Supplies of Labour” (Lewis 1954). Because a very large fraction of the labor force is engaged in agriculture with a very low average productivity of labor in the early stage of development, Lewis characterized the development process as that of creating higher-product nonagricultural employment opportunities at a rate rapid enough first to increase the share of the labor force in nonagricultural activities and then to decrease absolutely the number of persons engaged in agriculture.

Although Lewis’s analysis led to the view that there was “disguised unemployment” in agriculture, positing a zero marginal product of labor in agriculture was not really central to his analysis. Rather, the central insight was that additional nonagricultural employment opportunities would raise real income by transferring persons from low-wage/low-product to higher-wage/higher-product employment. Seen in this light, Lewis’s concern with the employment problem was that of increasing the productivity associated with the employment activities of the population.

Although subsequent developments have indicated forcefully that there are many opportunities for increasing real output and income within agriculture, to this day one central strand of concern with employment creation in developing countries is that of raising the average and marginal product of the entire labor force. Emphasis is placed upon nonagricultural employment opportunities largely because it is believed that, given pressures of population growth on the land, nonagricultural employment opportunities will (in conjunction with output increases in the agricultural sector) provide the best means for increasing real income and thereby raising the rate of growth of per capita incomes.<sup>2</sup>

The second concern, absorbing the urban unemployed, focuses more specifically upon the social hardships associated with unemployment in the cities in developing countries. It is well known that urban populations have increased very rapidly in most developing countries in the past several decades (see table 2.1). In many countries that growth has been accompanied by an increasing number of urban unemployed, while the rate of increase in employment opportunities, at least in the “formal” sector of the economy, has been sluggish.<sup>3</sup> Individuals concerned with urban unemployment have regarded urban employment creation as a desirable policy goal because they believe this would reduce urban unemployment and its accompanying hardships. It will be seen in section 2.2 that increasing the number of job opportunities in an urban sector does not always reduce unemployment.

The third concern, providing employment opportunities to the poor, has somewhat different origins. Persons concerned with employment creation for this motive have believed that a promising means of alleviating poverty is to provide employment opportunities for the poor. Unlike Lewis’s focus, in which employment creation is associated with economic growth and rising per capita real incomes, the objective has been redis-

**Table 2.1** Population, Urban Population, and Labor Force Growth Rates, 1960-70 and 1970-75 (Average Percentage per Annum)

Country	Population		Urban Population		Total Labor Force	
	1960-70	1970-75	1960-70	1970-75	1960-70	1970-75
Brazil	2.9	2.9	5.0	4.5	2.8	2.9
Chile	2.1	1.8	3.7	2.7	1.4	2.5
Colombia	2.9	2.8	5.4	4.9	2.7	2.9
Indonesia	2.2	2.4	4.4	4.7	2.2	2.2
Ivory Coast	3.4	4.2	7.3	6.5	1.9	1.9
Pakistan	2.8	3.9	2.9	5.3	1.9	2.6
South Korea	2.6	1.8	6.2	4.9	2.9	2.9
Thailand	3.1	2.9	4.8	5.3	2.1	2.9
Tunisia	2.1 <sup>a</sup>	2.3	4.9 <sup>a</sup>	4.2	0.7 <sup>a</sup>	2.3
Uruguay	0.6	0.4	1.9	1.7	0.8	1.0

Source: International Bank for Reconstruction and Development, *World Development Report*, 1978.

<sup>a</sup>Mustapha Nabli suggests in correspondence that the Tunisian labor force figures, especially for 1960-70, seem too low.

tribution rather than growth. This focus explicitly raises the questions of the extent to which "employment creation" is compatible with economic growth, or whether providing more jobs may not lower the rate of economic growth.

Conflict would arise, of course, only if job creation meant reducing real output, or if creating more jobs with given investible resources implied achieving a lower increment in real output than creating fewer jobs with those same resources. It is beyond the scope of this volume to analyze that issue in detail. Insofar as policies can be identified that would permit a faster rate of increase in employment (especially of the unskilled) with efficient allocation of resources, everyone would agree that those job opportunities would be preferable to ones that reduced real income and output. It is therefore safe to conclude that, if a trade strategy that is optimal from the viewpoint of resource allocation also creates (in the sense to be defined below) as many new job opportunities as a nonoptimal one, or more, the question of "conflict" between real income and employment does not arise.

For the country studies, authors generally focused their research on urban or industrial employment. Table 2.1 gives data on the rates of population growth, urban population, and labor force growth for the periods 1960-70 and the 1970-75. As can be seen, experiences have been markedly different, but all countries have had rapidly growing urban populations. At one extreme, Chile and Uruguay experienced relatively slow overall growth in population and labor force, but urban immigration has resulted in growth rates for the urban population well above popula-

tion growth rates. However, by 1975, 83 percent of Chile's and 81 percent of Uruguay's population was urban, so future pressures should diminish and the main task is that of creating higher-productivity, predominantly nonagricultural jobs. By contrast, Indonesia has had a more rapid rate of population growth, and her population was only 19 percent urban in 1975. The prospective growth rate of the labor force is substantial for years to come, both because improved health standards should result in increased life expectancies and labor force participation, and because rural out-migration (or at least shifts from agricultural to nonagricultural employment) will continue. Brazil, Pakistan, and Thailand have the highest rates of natural population increase among the countries covered and thus face rapidly growing labor forces; the rate of growth of the labor force was higher from 1970 to 1975 than it was during the decade of the 1960s. The high Ivorian rate of population growth reflects immigration, whereas Tunisia experienced out-migration of workers to Western Europe and Libya, thereby holding down labor force growth up to 1975-76. Future Tunisian labor force growth will probably be more rapid than was the case from 1960 to 1975.

Focus on the link between trade strategies and employment was therefore centered upon the nonagricultural, and often the industrial, sector.<sup>4</sup> This was done partly because we believed that rapid rates of nonagricultural labor force growth made this the pressing policy issue, and partly because most of the key links between choice of trade strategy and employment arise in the industrial sector of developing countries. The rationale for this is spelled out in chapter 4. Suffice it here to point out that this focus is consistent with many views of rural labor markets, including the Lewis viewpoint, and also with the notion that rapidly growing populations must, if per capita incomes are to rise, find productive nonagricultural employment.

The above discussion raises yet another issue. That has to do with what is meant by "job creation" and with what constitute the determinants of (nonagricultural) employment and its growth rate. If labor markets in developing countries functioned well in the neoclassical sense, the "employment problem" would center entirely upon the set of concerns related to productivity and shifting the demand for labor upward. Outward shifts in the demand for labor in excess of the rate of outward shift of supply (owing to population growth and consequent changes in the labor force) would result in rising real wages, since by hypothesis in a well-functioning market all would be employed at a similar wage.<sup>5</sup> Failure to shift the demand curve for labor outward rapidly enough would result not in unemployment, but rather in a decline in the real wage.<sup>6</sup> This provides the motive for concern with shifting the demand for labor outward, which is the interpretation placed on "employment" in this volume.

With a perfectly elastic labor supply from rural areas (either because of the relative constancy of the marginal product of labor within a wide range or because of a divergence between average and marginal product),<sup>7</sup> the motive for concern with employment creation is clearly that additional employment opportunities in the urban sector imply a higher average per capita income (and a more rapid approach to the day when the labor supply from the rural area becomes upward sloping) than would otherwise be the case.<sup>8</sup>

However, there has long been a belief that labor markets do not always function in neoclassical fashion in many developing countries. There are important questions about the determinants of the labor supply to nonrural areas, the degree to which labor markets are fragmented or integrated,<sup>9</sup> and nonmarket influences upon the level and structure of wages. Open unemployment in urban areas has emerged as a major policy problem in some countries, and consideration of the “employment problem” requires a satisfactory analysis of why unemployment exists, who the unemployed are, and what their resources are. Although such an analysis is beyond the scope of this volume, some aspects are crucial to the trade strategies–employment relation.

Table 2.2 gives data on manufacturing employment, the unemployment rate, and the rate of growth of real wages for the project countries and Argentina. As can be seen, recorded urban unemployment was a problem of major magnitude in the mid-1970s for the Ivory Coast, Pakistan, and Tunisia. South Korea experienced very high urban unemployment rates in the early 1960s, and Argentina’s and Uruguay’s unemployment rates were also rather high at that time. Discussion of employment growth rates and the real wage is deferred until section 2.3.

For purposes of analyzing the trade strategies–employment relation, the presence of open urban unemployment must give the analyst pause. In particular, under some kinds of market imperfections, outward shifts in the demand for labor can generate responses that largely, if not entirely, offset any increase in employment that might otherwise result. This can be seen with two simple examples. If labor markets are sufficiently fragmented, outward shifts in demand for labor in some parts of the market may not result in additional employment but instead may raise wages for those already employed in the sector. Likewise, if unions are sufficiently powerful so that all outward shifts in the demand for labor in unionized sectors are fully offset by increased real wages, policies designed to create jobs in the high-productivity unionized sectors are destined to frustration.

Thus, in interpreting data on labor coefficients and average wage rates the analyst must ascertain whether labor coefficients reflect distortions rather than the inherent “labor intensities” that would be observed in a

**Table 2.2** Employment Growth, Unemployment, and Real Wages, 1960–75

Country	Year	Manufacturing Employment	Unemployment Rate	Real Wage (1968 = 100)
Argentina	1963	83.4 <sup>a</sup>	8.8	94.4
	1968	100.0	4.9	100.0
	1973	120.3	5.4	106.2
Brazil	1963	93.4 <sup>a</sup>	n.a.	90.0
	1968	100.0	n.a.	100.0
	1973	159.5	n.a.	122.1
Chile	1963	96.1 <sup>a</sup>	n.a.	65.5
	1968	100.0	n.a.	100.0
	1973	106.7	4.8	82.0
Colombia	1963	98.9 <sup>a</sup>	n.a.	95.4
	1968	100.0	n.a.	100.0
	1973	122.7	n.a.	99.0
Indonesia	1961	185.6 <sup>b</sup>	5.4	102.5 <sup>g</sup>
	1965	205.9	2.3	75.8 <sup>g</sup>
	1971	257.3	8.8	109.3 <sup>g</sup>
Ivory Coast	1960	36.2 <sup>a</sup>	n.a.	99.3
	1968	100.0	n.a.	100.0
	1973	149.8	20.0 <sup>c,d</sup>	131.7
Pakistan	1951	93.3 <sup>b</sup>	3.2	10.3 <sup>h</sup>
	1961	175.8	1.5	100.0
	1972	135.8	13.0	143.0

competitive labor market. Observed trade patterns may be influenced by the existing pattern of wages and may not reflect comparative advantage that would exist under an efficient allocation of resources. Finally, identifying the effect that alternative trade strategies might have upon the demand for labor cannot be equated with identifying its effect on employment when some sorts of distortions are present, as will be seen in the Harris-Todaro model presented in section 2.2.2.

## 2.2 Labor Markets in Less Developed Countries

### 2.2.1 Aggregate Employment

In the first two decades after World War II, the analysis of the determinants of the aggregate level of employment in developed countries focused largely on determinants of aggregate demand. Expansionary monetary and fiscal policy was regarded as the appropriate tool to reduce involuntary unemployment. While there is undoubtedly scope for appropriate fiscal and monetary management in developing countries,<sup>10</sup>



Table 2.2 (cont.)

Country	Year	Manufacturing Employment	Unemployment Rate	Real Wage (1968 = 100)
South Korea	1963	52.1 <sup>a</sup>	16.4 <sup>f</sup>	80.1
	1968	100.0	9.0 <sup>f</sup>	100.0
	1973	151.6	6.8 <sup>f</sup>	136.2
Thailand	1960	66.0 <sup>a</sup>	n.a.	104.7 <sup>f</sup>
	1968	100.0	n.a.	100.0 <sup>f</sup>
	1973	189.6	6.7	109.3 <sup>f</sup>
Tunisia	1961	50.9 <sup>a</sup>	n.a.	89.0
	1968	100.0	n.a.	100.0
	1972	122.2	n.a.	102.0
	1975	162.0	14.0 <sup>e</sup>	130.3
Uruguay	1963	210.4 <sup>b</sup>	10.3	119.1
	1975	205.1	6.7	85.2

*Sources:* All data are from the country study chapters (Krueger et al. 1981), with the exceptions indicated:

Argentina: data are from national accounts estimates; unemployment pertains to Buenos Aires; real wages are for unskilled labor. Data were provided by Julio Nogues.

Thailand: National Statistical Office. Data were supplied by Narongchai Akrasanee.

Tunisia: real wage is the average industrial real wage. Data were provided by Mustapha Nabli.

<sup>a</sup>1968 = 100.

<sup>b</sup>Thousands of workers.

<sup>c</sup>Urban unemployment rate.

<sup>d</sup>Rate for 1976.

<sup>e</sup>Estimate.

<sup>f</sup>Nonfarm unemployment rate.

<sup>g</sup>1967 = 100.

<sup>h</sup>1954 rate; the real wage is that applicable to large-scale manufacturing.

n.a. = not available.

most analysts of the determinants of aggregate employment have concentrated on other aspects. These have centered upon supply constraints, either technological (as in Eckaus's model) or economic (as in the Chenery-Bruno two-gap model) as limiting output and employment and their growth, at least in the nonagricultural sector. According to the technological hypothesis, there is insufficient scope for substitution between labor and other factors of production to permit full employment at existing levels of factor availability. The empirical validity of this proposition is one of the questions of this project.<sup>11</sup> Under models in the spirit of Chenery-Bruno, a "shortage of foreign exchange" limits the rate of expansion of output and employment; if that model correctly described reality, a trade strategy that generated greater foreign exchange earnings would result in greater aggregate (urban) employment, since more for-

eign exchange would permit a higher level of investment and production.<sup>12</sup>

In most developing countries, as was seen above, the primary concern is not aggregate demand determination, but rather increasing the demand for labor, especially in the urban sector. It is at this juncture that questions arise about wage determination mechanisms and the link between outward shifts in the demand for labor and employment. In countries where it is generally believed that the labor market is imperfect,<sup>13</sup> there is a sizable wage differential between rural and urban employment (and often also between types of urban employment). There are numerous hypotheses about the causes of the differential,<sup>14</sup> but essentially only two models of the effects on the overall allocation of labor. One is that all those who cannot find employment in the urban sector (given its higher wage) are employed in the rural economy at a lower marginal product and income. The alternative hypothesis is that some persons become unemployed in the urban sector as they seek higher-paying alternatives there. This latter version, known as the Harris-Todaro model, is a convenient basis for outlining the various issues important for analysis of labor market behavior as it affects the trade strategies–employment relation in developing countries.

### 2.2.2 The Harris-Todaro Model

We start by setting up the model, which can then serve as a framework within which the various aspects of LDC labor markets can be analyzed. Essentially, there are two sectors, rural and urban. In its simplest form, there are six variables in the Harris-Todaro model: the rural labor force, the rural wage, the level of urban employment, the urban wage, urban unemployment, and the number of migrants from the rural to the urban sector. Migration serves as the link (and equilibrating variable) between the two sectors.

The relations in the basic model are as follows:

- (1)  $w_a = f(L_a)$
- (2)  $w_e = \bar{w}_e$
- (3)  $L_e = g(w_e)$
- (4)  $p w_e = w_a$
- (5)  $p = L_e / (L_e + L_u)$
- (6)  $L_a + L_e + L_u = \bar{L}$ ,

where:

$L_a$  is labor employed in agriculture, an endogenous variable

$L_e$  is labor employed in the urban area, also endogenous

$L_u$  is unemployed labor in the urban area, also endogenous  
 $\bar{L}$  is the total labor force, exogenously given  
 $w_a$  is the agricultural wage, endogenous  
 $w_e$  is the urban wage, and  $\bar{w}_e$  is the minimum urban wage, exogenous  
 $p$  is as defined in equation (5), endogenous.

In the form presented, the model describes an equilibrium configuration of variables. It can be used to perform comparative statics exercises, investigating what happens to key variables in response to shifts in the parameters of the model. For any such exercise, the change in the sum of urban unemployed and urban employed is equal to migration.

An equilibrium configuration is given by a circumstance in which, given the predetermined urban wage  $\bar{w}_e$  above the rural wage (a decreasing function of the number engaged in agriculture), unemployment is sufficiently high so that additional persons from rural areas do not wish to migrate despite the wage differential. That is, for an equilibrium, out-migrants from rural areas must have flowed to the city in sufficient numbers so that the urban wage times the probability of employment (which is in this representation equal to the fraction of the urban labor force employed) is equal to the rural wage. One can modify the model to allow for any particular variation in the form of the migration relationship.<sup>15</sup>

Figure 2.1 illustrates some of the key properties of the model. The length of the horizontal axis represents the entire labor force, with labor employed in agriculture measured from left to right and labor employed in the urban sector measured from right to left. Wage rates (at assumed fixed terms of trade) are measured on the vertical axis with that in agriculture on the left side and that for the urban sector on the right side. The demand for labor (the marginal product of labor schedules) is drawn downward-sloping. An equilibrium, in the absence of any distortion in the urban wage, is represented by the urban wage  $w_e^o$  at which  $L_1\bar{L}$  individuals would be employed in industry and  $OL_1$  persons would be employed in agriculture at the same wage.

Assume now that the urban wage is somehow set at  $w_e'$ . At that wage,  $L_3\bar{L}$  will be employed in the urban sector. If all other workers were engaged in agriculture, the agricultural wage would be  $w_a'$ . But, according to the Harris-Todaro model, such a point does not represent an equilibrium, owing to the disparity between the two wage rates. Rural workers will migrate to the city seeking higher-wage employment. Drawing a rectangular hyperbola through the point  $b$  (on the urban demand for labor curve at the fixed urban wage) permits finding the point where the average urban wage (taking into account both the employed and the unemployed) is equal to the rural wage. In figure 2.1 that equilibrium is represented by the point  $c$ , with  $OL_2$  persons employed in the rural

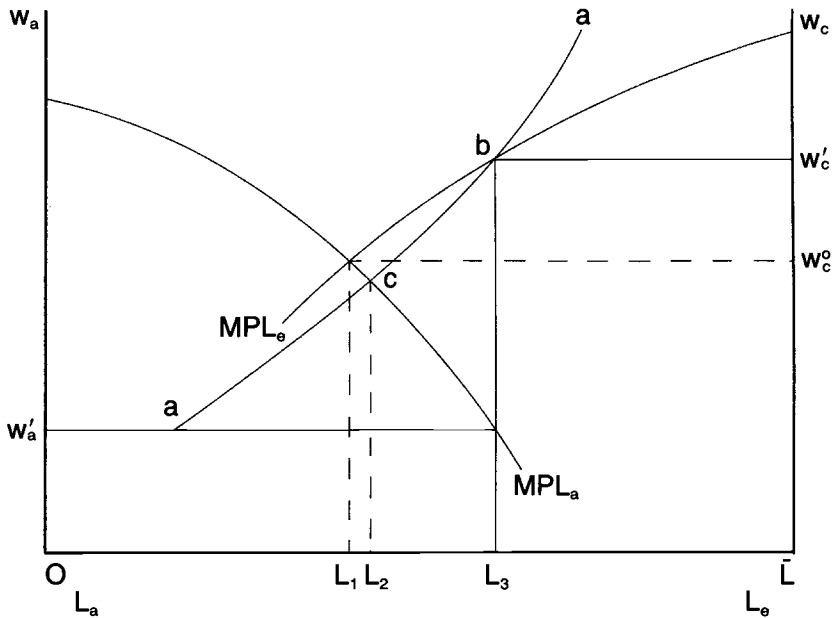


Fig. 2.1 The Harris-Todaro model.

sector,  $L_3\bar{L}$  persons employed in the urban sector, and  $L_2L_3$  persons unemployed in the urban sector. It is easy to see that a higher urban wage would result in more urban unemployed. Moreover, depending on the slopes of the two demand for labor curves, it is possible that an upward shift in the urban demand for labor might even result in more urban unemployment as rural workers sought urban jobs.

It should be noted that, in the absence of an exogenously given urban wage, unemployment would not exist and wages would be equated between sectors (allowing for differences in skills and living costs).<sup>16</sup> Indeed, with a sufficiently low urban wage, a zero unemployment level is a feasible outcome of the model. Also, a higher urban wage always leads to greater urban unemployment and hence larger out-migration from the rural sector. In the absence of a mechanism for raising the rural wage to a sufficiently high level, efforts to achieve full employment in the urban sector are doomed to failure: creating additional jobs will induce more immigrants to the urban sector than the number of jobs created. The greater the number of urban employment opportunities, the more unemployed persons there will be to maintain the equality in equation (5) after the upward shift in equation (3).<sup>17</sup>

A number of qualifications and refinements can be made to the model, but its basic structure indicates the factors that must be considered in analyzing developing countries' labor markets: the behavior of rural labor markets and the nature of the out-migration function; the determinants of the urban wage level and structure; and the characteristics of urban unemployment. Even in its simplest form, the model already indicates that the relation between policies to increase employment and policies to reduce unemployment may not be straightforward, and that changing the mechanism by which urban wages are determined may be crucial to domestic employment objectives. It will be seen in chapter 4 that an inappropriate real wage may also significantly distort a country's pattern of trade. All these considerations point to the crucial importance of the wage determination mechanism in analyzing the trade strategies–employment relationship.

### 2.2.3 Agricultural and Rural Labor Markets

The NBER project on alternative trade strategies and employment was focused primarily on the implications of alternative trade strategies for the commodity composition of trade and production in the industrial sector. In this section, discussion of agricultural and rural labor markets therefore addresses two interrelated issues: why it makes sense to focus on nonagricultural employment opportunities; and the extent to which one can consider the opportunity cost of rural labor to be relatively low.

A key characteristic of almost all LDCs is the high fraction of the population engaged in agriculture.<sup>18</sup> Whether a shift from the rural to the urban areas is necessary in order to shift from agriculture to other economic activities is a difficult question, and no answer is attempted here. What does seem to be the case is that a shift of part of the labor force away from agriculture and into other economic activities, which will be called urban for simplicity, is a necessary concomitant of the process of economic growth. Certainly, in all now-developed economies, the fraction of the labor force engaged in agriculture has rapidly diminished as living standards and productivity have increased.

A key question is the extent to which out-migration is cause or effect. On one view, labor is redundant within the agricultural sector, and any transfer of persons to other lines of economic activity with a positive marginal product constitutes a net gain to society and therefore constitutes part of the growth process. On the other view, agricultural output and productivity must be enhanced in order to release labor for other pursuits: individuals cannot leave the agricultural sector unless there are offsetting sources of productivity and output increases within that sector. Obviously the relationships are simultaneous: higher productivity in agriculture provides a “push,” and additional jobs in other sectors of the economy provide a “pull.”

The question whether there is “disguised unemployment” in rural areas, in the sense of individuals who can switch from farming to other occupations with no loss in product, has been hotly debated. There is a great deal of evidence suggesting that, at least during peak periods of planting and harvesting, the entire labor force is fully employed, and that more workers would increase the size of the harvest. Individuals may therefore be working fewer hours than they would wish during the nonpeak seasons, and seasonal underemployment may be a factor, but labor is not redundant. On that interpretation, moving an individual from a rural to an urban job does not in fact create “employment,” but it may raise output if the urban job has a higher marginal product than the rural one.<sup>19</sup>

Regardless of which interpretation is correct, there is agreement that in countries with large rural sectors agricultural productivity and output must grow if economic development is to be sustained. To the extent that there is success in increasing agricultural output, the rate of increase in nonagricultural employment should substantially exceed the rate of growth of the labor force. This can happen with rising rural employment, since the nonagricultural sector absorbs a greater share of new labor force entrants than its share in the overall labor force. If, for example, a country with 3 percent growth of its labor force initially had three-quarters of its economically active population engaged in agriculture, nonagricultural employment would have to grow at a rate of 12 percent simply to keep the agricultural population constant. Any rate of growth of the nonagricultural labor force in excess of 3 percent but below 12 percent would imply a rising share of the nonagricultural sector in total employment, but an increasing absolute number of persons engaged in agriculture.

To be sure, any sustained rate of growth of the nonagricultural labor force greater than the rate of growth of population will eventually result in declines in the agricultural labor force as the share of the nonagricultural sector rises over time. Nonetheless, the time period during which the agricultural labor force continues increasing, although at a slower rate than population, may be substantial for most developing countries.

For present purposes, the main point is that it can make sense to regard a rapidly growing demand curve for nonagricultural labor as a policy objective provided it is recognized that agricultural production must be increasing simultaneously. Insofar as the demand curve for nonagricultural labor shifts outward reflecting the creation of alternative uses of labor with higher marginal productivity than can be attained in agriculture, the consequent higher incomes will be consistent with development objectives. Whether more nonagricultural employment implies increased total employment may not be important, provided the jobs so created reflect genuinely preferred opportunities for the individuals undertaking

them. It was for this reason that the NBER project focused on nonagricultural employment implications of alternative trade strategies.

### 2.3 Urban Labor Markets

There are several key issues that frequently arise in analysis of urban employment and wage structures. These issues were important in interpreting the results for the individual country studies and therefore merit discussion here. They are the coexistence of “formal” and “informal” sectors within the urban economy; the extent and effectiveness of government-imposed regulations governing employment and wages; and the determinants of the wage structure in relation to characteristics of workers. All are interrelated and hinge in large part on the assumption that institutional or government-imposed constraints prevent the realization of an efficient competitive-market-determined outcome.<sup>20</sup>

#### 2.3.1 Formal and Informal Sectors

Perhaps the most widely accepted modification to the basic Harris-Todaro model has been that suggested by Fields, relating to the characterization of the nonagricultural sector. Fields noted that in the development literature there was widespread recognition that large-scale organized industry usually coexists with small-scale “informal” activity.<sup>21</sup>

There are many characterizations of this split. Some refer to it as “modern” and “traditional,” others as large-scale and small-scale, while in yet other instances the characterization is “factory” and “craft.” Each of these picks up some of the features, which themselves can vary from country to country, of dichotomization among urban firms into two groups. The “formal” sector usually consists of larger-than-average firms, relying on fairly modern and capital-intensive techniques of production, over which government regulations governing conditions of employment are presumably enforceable. The small-scale sector, by contrast, has a large “craft” component and usually consists of much smaller enterprises, including many one- or two-person operations.

Of the countries covered in the project, Brazil, Chile, Colombia, the Ivory Coast, Tunisia, and Uruguay all had visible and identifiable informal sectors coexisting alongside the large-scale sector.<sup>22</sup> Average wages paid, and the labor intensity of individual activities, differed significantly.<sup>23</sup> For Hong Kong and South Korea the labor market did not seem to have this dichotomy to a noticeable degree.

By its nature, it is difficult to obtain reliable information about the informal sector. In countries for which any data are available, the evidence is that wages paid in the informal sector are considerably below those paid in the formal sector, and important questions arise about the relations between labor markets in the two sectors.

Fields's characterization of the informal sector may be close to the consensus. In his model, wages in the informal sector are flexible, and all who seek employment in that sector find it: the more workers there are, the lower the wage. The traditional-sector worker stands a lower chance of finding modern-sector employment than does an unemployed individual but is nonetheless a job-seeker in the formal sector. The typical migrant in Fields's model might move to a town, live with his cousin, and work in the cousin's shop in return for room and board until he finds modern-sector employment (with a lower probability of finding a job than someone fully unemployed, however). The effective supply of labor to the modern sector therefore includes not only the urban unemployed, but also workers in the urban informal sector and rural workers. However, because the latter two groups have smaller probabilities of locating modern-sector jobs than urban unemployed, they have smaller weights in the pool of job seekers than do the unemployed.

A problem for analysis of the employment implications of alternative trade strategies in the countries covered by the project was that labor coefficients were substantially higher, and wages substantially lower, in the informal sectors of many countries, and no single interpretation of this phenomenon seemed entirely satisfactory. In the Ivory Coast, for example, artisanal workers constitute 88 percent of the labor force and are 62 percent of the labor force even in activities producing HOS goods.<sup>24</sup> Monson provides separate estimates of labor coefficients for the artisanal and the modern sectors and notes that the influence of trade strategies upon employment hinges crucially not only upon which industries expand (although that too is a factor), but even more upon whether the expansion occurs in the modern or in the traditional sector (Monson 1981, table 6.11).

Too little is known about the informal sector in most LDCs for us to be confident that one can identify the size of firm associated with manufacturing for export or for import replacement. In general, country authors chose to use modern-sector coefficients for their estimates. In part this reflects the perhaps defensible belief that production of import-competing goods, or significant expansion of exports, is more likely to occur in large, modern firms than in small ones. Certainly there is considerable impressionistic evidence that import substitution production has expanded mostly in the "modern" sector. It should be recognized, however, that there may be a downward bias in the estimates of employment creation to the extent that small-scale firms might expand output for export markets or for import replacement.<sup>25</sup> If export (traditional) industries have a greater proportion of small-scale firms using labor-intensive techniques than do import substitution industries, the estimates of the differences in employment implications of alternative trade strategies are understated. Without substantial further research on



that topic, however, it is difficult to draw any conclusions about the probable magnitude of such biases.

### 2.3.2 Wage Level Determination

Recall that the basic Harris-Todaro model posits that the urban wage rate is somehow exogenously determined: by hypothesis, endogenous determination of a market clearing wage would result in fewer migrants to the urban sector, more jobs, and a lower rate of unemployment.

Turning back to table 2.2, we see that data on the behavior of real wages in the project countries can be contrasted with data on the growth of manufacturing employment. In some of the project countries, most notably Pakistan, the real wage in large-scale manufacturing grew sharply while employment in manufacturing seems to have declined from 1961 to 1972. In others, such as Chile from 1963 to 1968, very slow employment growth was accompanied by a rapid increase in the real wage.

The country authors' analyses of wage determination mechanisms in their countries are reviewed in chapter 7. At this point the purpose is only to identify the variables crucial to analysis of the phenomenon. Suffice it to indicate that real wage behavior in the urban sector does not appear to have been market determined in all cases.

If the unskilled wage is set exogenously and at a high level—say by minimum wage legislation—two consequences will follow. First, firms attempting to maximize profits are induced to substitute capital for labor (and skilled for unskilled labor) to a greater extent than would be warranted for an efficient use of the country's resources. In addition, for developing countries that are relatively well endowed with unskilled labor, trade theory indicates that an efficient allocation of world resources will be one in which those countries produce and export goods that are relatively intensive in the use of unskilled labor. As will be seen in chapter 4, if too high an unskilled wage rate can be established and maintained, the commodities in which a labor-abundant country should have a comparative advantage will not be competitive on international markets. The source of comparative advantage will be removed as firms in other countries, despite their relatively less labor-abundant situations, become able to compete effectively in international markets. It thus follows that knowledge of the mechanisms by which the wage level for unskilled workers is established is of considerable importance for evaluating the optimality of existing techniques of production and also the pattern of production and trade.<sup>26</sup>

The hypothesis that rising minimum wages and other phenomena might lead to the substitution of capital for labor and to a lower rate of growth of employment than of output is given some preliminary support by inspection of rates of growth of the industrial work force, manufacturing output, and the implied employment/output elasticity for the project

countries for the period 1960–70. These are given in table 2.3. As can be seen, most countries' manufacturing output grew fairly rapidly, but in all but two—the Ivory Coast and Pakistan—the rate of growth of employment was considerably lower. Three countries—Chile, Tunisia, and Uruguay, had implied employment elasticities of less than 0.4.<sup>27</sup> These were all countries for which the country authors believed that substantial intervention in wage determination occurred. Pakistan, Indonesia, and South Korea are among the countries in which it is believed that during the 1960s the labor market functioned fairly well:<sup>28</sup> in the first two, employment elasticities were fairly high, while in South Korea, the rate of employment growth—10.8 percent annually, appears to have been so high that real wages rose and capital deepening occurred in response to market forces.

It is for countries with low employment/output elasticities, high real wages, and open unemployment that questions pertaining to the informal labor market, the nature of the “modern” sector, and issues regarding the extent of skills possessed by the “unskilled” workers in the industrial labor force are crucial. For some governments have legislated conditions of work, including wages and salaries, fringe benefits, and working conditions, in a way that has led observers to believe that the resulting labor costs to firms far exceeded an “equilibrium” wage. This was the case in many of the project countries. In other countries it may be that unions have had sufficient market power to permit them to raise wages,<sup>29</sup>

**Table 2.3** Estimates of Industrial Employment Elasticity of Manufacturing Output, 1960–70

Country	Continuous Average Annual Percentage Rate of Growth		Implied Employment Elasticity
	Industrial Labor Force	Manufacturing Output	
Brazil	4.5	5.6	.833
Chile	1.1	3.2	.343
Colombia	3.8	5.2	.731
Indonesia	3.7	4.2	.881
Ivory Coast	12.2	9.2	1.327
Pakistan	9.0	7.7	1.169
South Korea	10.8	16.6	.651
Thailand	6.0	10.1	.594
Tunisia	1.2	4.5	.267
Uruguay	.6	1.6	.375

*Source:* Derived from International Bank for Reconstruction and Development, *World Tables 1976*, table 1 of Comparative Economic Data for Manufacturing Output Growth; table 3 of Social Indicators for Industrial Labor Force Growth.

although no country author believed this to be the case for his country. If industrial workers are considerably more skilled than their rural counterparts owing either to more years of formal schooling or to greater experience and on-the-job training, then existing wages may reflect the outcome of market forces rather than government interventions.<sup>30</sup>

Each country author had to form a judgment about the relative importance of government-imposed or union-negotiated floors on wages for unskilled workers. The issue is complicated by a number of considerations. On one hand there are several factors that tend to mitigate the effect of minimum and union-negotiated wages. First, governments (or unions) may not be able to, or may choose not to, enforce minimum wages. Second, the minimum or union-negotiated wage may in fact be set at a level not significantly different from the wage that would prevail in the absence of intervention. In this regard it is noteworthy that the authors for the high-inflation Latin American countries reported that inflation seriously undermined the bite of minimum-wage requirements. On the other hand, there are many legislative measures that affect the costs of hiring or releasing workers and raise the cost of labor as perceived by employers. In several countries the tax on wages for social insurance purposes has risen very sharply; in Brazil it is equal to almost half the wage. In some countries firms are expected to hire more workers than they really need, providing training programs or even accepting redundant labor, in return for "special consideration" in receipt of rationed credit, import licenses, and other administered resources. In other cases housing for workers, health care, and other mandated provisions are costly. Workers fortunate enough to find employment may have high standards of living, but the high labor costs induced thereby may shut off employment opportunities for other potential entrants to the urban sector.

There are those who believe that the key distinction between the formal and the informal sectors in LDCs lies in the enforceability of the minimum wage and other labor legislation over the "formal" sector and their unenforceability in the "informal" sector. It will be seen in chapter 7 that the pattern that emerges from the country studies tends to support this view and to indicate sizable effects on trade and employment.

### 2.3.3 Labor Force Skills and Wage Structure

Improving the skill composition of the labor force is universally recognized as one of the important factors in the process of raising output and living standards. Developing countries normally are abundantly endowed with unskilled workers but have relatively little "human capital" and physical capital per head.<sup>31</sup> For analysis of the implications of alternative trade strategies, therefore, it was desirable to analyze not only numbers of workers but also skill utilization in different activities.

This led naturally to a desire to estimate the skill coefficients of alternative industrial activities in much the same way as labor coefficients were estimated. In some cases country authors were able to provide estimates of “skill coefficients” with data on such variables as “blue-collar” and “white-collar” or “unskilled” and “skilled” workers per unit of output and value added in different activities. In some instances, including Hong Kong and Tunisia, a more detailed breakdown of skill categories was available.

Even when such data are available, however, using these categories is conceptually equivalent to regarding each worker within a category as a perfect substitute for every other on a one-to-one basis. The “human capital” formulation has shown that there are degrees and degrees of skills and that, in a well-functioning labor market, an “earnings function” for individual workers will reflect years of formal education, on-the-job training, years of experience, and other variables.<sup>32</sup> In such circumstances, data on the average wage paid to workers in a given industry may prove a better indicator of the skill coefficients associated with the industry than a counting of categories of workers.<sup>33</sup>

From the viewpoint of the country authors, this led to a major conceptual difficulty. Insofar as there was reason to believe that urban labor markets in their countries functioned imperfectly, differences in average earnings between activities reflected not only differences in “human capital” but also labor market imperfections. Many of the country authors therefore attempted to use whatever data they had at hand to estimate the degree to which earnings differentials were a function of these two separate influences. In some countries, such as Thailand, so little information was available on worker characteristics that the task proved insurmountable. In other countries, such as Tunisia and Chile, authors chose to take mean earnings by occupational groups and weight the different occupational categories by mean wages to construct industry-specific averages rather than using average wages by industry.

For purposes of analyzing the trade strategies–employment relationship, it was reassuring that physical measures of skills and value measures tended to show much the same pattern and to reinforce each other. The country authors’ difficulties in this regard, however, are strong testimony to the need for much further research on the determinants of wage structures in developing countries.

## **2.4 Summary of Country Characteristics**

It is difficult to generalize about experience with employment in each of the project countries, but several patterns seem to appear. First, there are those countries, including Brazil (until 1968), Chile, Colombia (until 1968), Thailand, and Uruguay, where urban employment opportunities

grew relatively slowly and where, for one reason or another, real wages paid to urban workers were either very high or rising fairly rapidly. Second, there is a group of countries where real wages have not risen very much, and where the urban labor force has grown at moderate rates. This group includes Argentina, Brazil since 1968, Colombia since 1968, Indonesia, the Ivory Coast, Pakistan, Thailand, and Tunisia. Finally, there are South Korea and Hong Kong, in which there appears to have developed relatively full employment with rising real wages and expanding urban employment opportunities in the 1960s and 1970s. Except for those two, every project country experienced a significant "employment problem" during part of the period under review. Either unemployment was rising along with real wages, or real wages were stagnant and urban employment still grew only moderately. It remains for later chapters to analyze the degree to which the choice of trade strategy interacted with these outcomes.