CHAPTER II

REVIEW OF LITERATURE
LEWIS - FEI - RANIS MODEL
AN EXPECTED - INCOME MODEL
INTRODUCTION

A steady migration of rural population to urban areas in search of jobs and the failure of the urban modern sector to create matching number of job opportunities has given rise to the phenomenon of "Urban Labour Force Explosion". This phenomenon which is more pronounced in developing countries gave rise to several problems. Before an appropriate policy frame is suggested to solve the problem of "urban labour force explosion", it is necessary to understand how this problem has emerged, what its various dimensions are, and what alternative policy measures could be considered. We begin with, a review of available literature on the rural to urban migration of labour and is followed by a critical consideration of alternative policy measures for absorbing the labour force in the urban section.

2.1. The Economics of Labour Transfer

The recent urbanisation process involving a rapid growth of urban areas and a remarkable increase in their urban population particularly in the developing economies,
has been ascribed to rural to urban migration—a process of a massive exodus of rural population to urban areas. Such process of migration to urban areas having been an empirical reality, hence, it has attracted the attention of economists particularly to the analysis of determinants of transfer of labour force to urban areas. The general cause of the 'rural push factor'—the increasing pressure on land resulting in low productivity and low levels of living and the 'Urban Pull Factor'—the prospect of large employment opportunities and urban amenities are too broad a generalisation about the process of rural to urban migration and lack in theoretical rigour and empirical reality. This too simple model of rural urban migration of labour neither gives a precise indication of the relative roles of 'rural push' and 'urban pull' factors nor does it help evaluate the urban unemployment implications of alternative policies. It is in this perspective, that some theoretical models representing attempts to know the determinants of rural to urban migration have emerged in economic literature. There have been models like those of Eckaus,\textsuperscript{2} Lewis,\textsuperscript{3} Fei and Ranis\textsuperscript{4} which attempt a rigorous analysis of the process of rural labour absorption in the urban modern sectors.
2.2. The Lewis - Fei - Ranis Model of Development

Perhaps, the best known of all employment models relating specially to the developing countries is the one originally formulated in 1954 by Prof. W. Arthur Lewis, and extended in 1961 by Prof. Gustav Ranis and Prof. John Fei.

The Lewis - Fei - Ranis model is concerned with the process of transfer of labour from the traditional low productivity sector to the modern high productivity sector of the economy consequent upon the acceleration of economic activities in the modern industrial sector brought about by investment expansion. The model conceives an under-developed economy as consisting of two sectors.

1. a traditional agricultural subsistence sector characterised by zero or very low productivity 'surplus' labour; and

2. a high productivity modern urban industrial sector into which labour from the subsistence sector is gradually transferred.
The Lewis - Fei - Ranis model obviously endorses the Nurksian thesis that the agricultural sector of an underdeveloped economy is characterised by the existence of surplus labour. Lewis says that, in many economies, an unlimited supply of labour is available at a subsistence wage. The main sources from which workers come, as economic development proceeds are subsistence agriculture, casual labour, petty trade, domestic service and an increase in the population. In most but not all of these sectors, if the country is over-populated relatively to its natural resources, the marginal productivity of labour is negligible, zero or even negative. The subsistence wage at which this surplus labour is available for employment may be determined by the conventional view of the minimum required for subsistence; or it may be equal to the average product per man in subsistence agriculture plus a margin.

According to the model, the modern urban industrial sector is the dynamic sector of the economy. Investment and output expansion and the concomitant expansion of employment opportunities-- these are the characteristics of the
urban industrial sector. The expansion of the employment sector and the existence of higher wages in the modern sector result in the transfer of labour from the rural sector to the urban sector.

The growth of urban employment and the rate of labour transfer are conditioned by investment or capital accumulation in the modern sector. Investment is a function of profits. The important assumption here is that capitalists always re-invest all their profits. Lewis argues that capital formation and technical progress result not in raising wages, but in raising the share of profits in the National Income. The Capitalist sector expands, profits grow relatively, and an increasing proportion of National Income is re-invested. He points out, that capital is formed not only out of profits but also out of credit creation.

To induce the rural - to - urban transfer of labour, the urban wages should be at a premium level. Lewis says that earnings in the subsistence sector set a floor to wages in the capitalist sector; but in practice, wages have to be
higher than this, and there is usually a gap of thirty percent or more between capitalist wages and subsistence earnings. The gap may be explained in several ways. Part of the difference is illusory because of the higher cost of living in the capitalist sector. All the same, there is usually a substantial difference in real wages. This may be so because of the psychological cost of transferring from the easy-going way of life of the subsistence sector to the more regimented and urbanised environment of the capitalist sector. Or it may be a recognition of the fact that even the unskilled worker is of more use to the capitalist sector after he has been there for some time than is the raw recruit from the country side. Or it may itself represent a difference in conventional standards, workers in the capitalist sector acquiring tastes and a social prestige which have conventionally to be recognised by higher real wages. That this last may be the explanation is suggested by cases, where the capitalist workers organise themselves into trade unions and strive to protect or increase their differentials. But the differential exists even where there are no unions, says Lewis.
The Lewis - Fei - Ranis model of development, which assumes the level of wages in the industrial sector to be constant and determined as a fixed premium over the subsistence level of wages in the traditional agriculture sector, assumes that, at this constant urban wage, the supply of rural labour is elastic. The process of modern sector growth and employment expansion is assumed to continue until all the 'surplus' rural labour is absorbed in the urban industrial sector. Thereafter, the labour supply curves become positively sloped, and both urban wages and employment continue to grow. A structural transformation of the economy takes place and the process of industrial modernisation increasingly dominates the overall economic activity.

The following diagram provides a simple illustration of the process of growth of the modern sector of the Lewis - Fei - Ranis model.
OA represents the average level of real subsistence income in the traditional rural sector. OW is the real wage in the capitalist sector. At this wage the supply of rural labour is assumed to be 'unlimited' or 'perfectly elastic' as shown by the horizontal labour supply curve WS. Given a fixed supply of capital K, is the initial stage of the modern sector growth, the demand for labour is determined by labour's declining marginal product and is shown by curve D1, K1. Since, profit maximising modern sector employers are assumed to hire labourers up to the point, where their marginal product is equal to the real wage i.e., 'F', total modern sector employment will be equal to OL1. Total modern sector output would be given by the area bounded by points OD1, FL1. The share of this total output which is paid to workers in the form of wages would be equal to the wage bill. This wage bill would be equal, therefore, to the area of the rectangle OWFL1.

The 'Surplus' output shown by the area WD1F would be the total profits that accrue to the capitalists. Since, it is assumed that all these profits are reinvested, the total capital stock in the modern sector will rise from K1 to K2.
This larger capital stock causes the total product curve of the modern sector to rise, which in turn induces a rise in the marginal product or demand curve for labour. This outward shift in the labour demand curve is shown by line $D_2 K_2$ in the figure. A new equilibrium employment level will be established at point 'G' with $OL_2$ workers now employed. Total output rises to $OD_2 GL_2$ while total wage bill and profits to $OWGL_2$ and $WD_2 G_2$ respectively. Once again, these larger profits $WD_2 G_2$ are reinvested, increasing the total capital stock to $K_3$, shifting the labour demand curve to $D_3 K_3$ and raising the level of modern sector employment to $L_3$.

The process of modern sector growth and employment expansion is assumed to continue until all 'surplus' rural labour is absorbed in the urban industrialised sector. Thereafter, the labour supply curve becomes positively sloped and both urban wages and employment will continue to grow. The structural transformation of the economy will have taken place and the process of industrial modernisation will increasingly dominate overall economic activity.

This model has three key assumptions, which are sharply at variance with the realities of underdevelopment in most Third World Countries.\(^5\)
1. The model implicitly assumes that the rate of labour transfer and employment creation is proportional to the rate of capital accumulation. The faster the rate of capital accumulation, the higher the growth rate of the modern sector, and the faster the rate of new job creation. This has a certain Harrod-Domar flavour in it. But what if, surplus capitalist profits are reinvested in more sophisticated labour saving capital equipment rather than just duplicating the existing capital as is implicitly assumed in the Lewis model.

The figure in the previous page reproduces the basic Lewis - Fei - Ranis model. But, the labour demand curve do not shift uniformly outward, but, in fact, intersects. Demand curve D2 K2 has a greater negative slope than D1 K1 to reflect the fact that the additional capital stock K2 K1 is of a more labour-saving variety than K1.

The figure, therefore, provides an illustration of what we might call, "anti-developmental" economic growth. All the extra income and output, growth is distributed to the few owners of capital while income levels of the masses of workers remain unchanged. "The limitations of modern industry as a means of absorbing the available manpower have become increasingly tends to be only about half that in industrial output." In India, between 1961 and 1976, in the modern factory sector, investment increased only by 71 per cent. Therefore, employment per unit of gross output decreased by 34 per cent and employment per unit of Capital declined by 28 per cent. A similar trend has been observed in most other developing countries.
2. The model assumes that 'surplus' labour exists in rural areas, while there is full employment in the urban areas. Whether there is a considerable surplus labour in the agricultural sector of the developing economies is controversial. However, the assumption that there is full employment in the urban sector is certainly not true of many under-developed economies. In fact, in many of these countries, the rate of chronic unemployment in the urban areas is much higher than in rural areas. In India for instance, the estimate of usual status unemployment, as on March 1985, according to 38th round of N.S.S. comprises 3.12 million of urban males and 0.96 million of urban females into the age group of 15-59 years. It was estimated that the overall magnitude of unemployment (usual workers) works out to 8.67 million in this age group.8

3. The third key assumption is at variance with reality is the notion of the continued existence of constant real urban wages until the supply of rural surplus labour is exhausted. One of the most striking features of the urban wage situation in almost all developing countries, however has been the tendency for these wages to rise substantially,
both in absolute and relative terms to average rural incomes, even in the presence of rising levels of open unemployment.

Taking into account the labour saving bias of modern technological transfer, the widespread non-existence of rural surplus labour, the prevalence of 'Urban surplus' labour and the tendency for urban wages to rise rapidly even where substantial urban open unemployment exists, we consider that the Lewis - Fei - Ranis model offers little analytical and policy guidance for solving Third World Employment Problems.

Nevertheless, the model has some analytical value, in that it emphasises two major elements of the employment problems in the less developed countries:

1. The structural and economic difference between the rural and the urban sectors, and

2. The central importance of the process of labour transfer between the rural and the urban sectors.

With these two elements in mind, we now turn to the more widely utilised 'expected income' model of rural urban migra-
tion and urban unemployment in less developed countries.

2.3. An "Expected Income" Model of Rural - Urban Migration:

A major innovation in the analysis of rural - urban migration in developing countries has been the formulation of probabilistic models (Harris and Todaro 1970, Johnson 1971, Fields 1975, Majumdar 1975). This class of models first developed by Todaro (1969) views migration as a two-stage phenomenon in which migrants initially spend sometime in the urban 'informal sector' or remain 'unemployed' before finding a job in the formal sector. Further, employment in the informal sector serves as a means of financing the period of search for formal sector employment. In their decision to migrate, potential migrants balance the probability of 'unemployment' or informal sector employment against the real income differential between the urban formal sector and rural areas.

Thus, Todaro relates the decision to migrate to two principal factors viz.:
1. the Rural - Urban real income differentials; and
2. the probability of securing an urban job.  

Of these two, he seems to be giving more weightage to the second factor. In his view, given the Rural - Urban real wage differentials it is the probability of the getting an urban modern sector job that prompts the decision to migrate. In his own words:

"Even if the prevailing real wage is significantly higher than expected rural income, the fact that the 'probability' of obtaining a modern sector job, say within the next year or two, is very low must certainly influence the prospective migrant's choice as to whether or not he should leave the farm. In effect, he must balance the probabilities and risks of being unemployed or sporadically employed in the city for a certain period of time against the favourable urban wage differential. A 70 per cent urban real wage premium, for example, might be of little consequence to the prospective migrant if his chances of actually securing a job are, say one in fifty. Nevertheless, even if expected urban
real income is less than rural real income for a certain period following migration, it may still be economically rational from a longer-run point of view (e.g. from a discounted present value approach to the rural-urban work choice) for the individual to migrate and swell the ranks of the urban traditional sector. Our underlying behavioural model, therefore, will be formulated more in the spirit of permanent income theories than present wage differential theories. 

The two simplifying assumptions which Todaro himself admits of his model are the constancy of the rate of growth of urban modern employment sector and the urban real wage premium, which cannot be empirically sustained. That apart, the model assumes that the entry into the urban modern sector from the urban traditional sector is free. The entry is not free at all both for technical and institutional reasons. Thus, the rural migrant who is illiterate, hardly can meet the literacy and skill requirements of the modern factory. Besides, the later is getting its personnel mostly either from the technical institutions or from its own internally trained
personnel, so much so the probability of the pool of workers in the urban traditional sector getting absorbed in the urban modern sector is not so high unless one belongs to the traditional village artisan groups like smiths, carpenters, weavers, tailors, masons and so on. For most of the non-artisan migrants the traditional sector continues to be the first and the last stage of migration.

Now, the question arises as to the experience of the developing world with regard to rural labour absorption as envisaged by the Two sector models referred to above? These models postulated that the surplus labour from the rural sector would be gradually absorbed in the dynamic urban economy as the industrial sector expands, taking advantage of availability of cheap rural labour. But contrary to the predictions made by these models rural labour did not get absorbed in the dynamic urban economy. The reason being that the growth of wage employment opportunities in the modern urban sector has been more sluggish than was once assumed. In another case study, over half of the informal sector entrants had been attracted to Delhi by opportunities in this sector itself: actual and potential
mobility from the informal to the formal sector was low: education and urban experience were rewarded at the same rate in both sectors and education was one of the important determinants of mobility between sectors.\textsuperscript{13}

For industrialisation in most of the underdeveloped countries was not the labour intensive type as was the case with the 19\textsuperscript{th} century West and it was also not of an integrating type in the sense of having induced backward and forward linkages as in contemporary developed economies of the West. As a result, labour migration from rural to urban areas in the third world countries has only added to urban unemployment and poverty.

Yet, there is, however, persistence of rural - to - urban migration in the developing economies. This is somewhat paradoxical, considering the fact that there is severe unemployment in the urban centres of developing countries. Going back to Todaro, we may then formulate the question, why, in spite of a low probability of the rural workers getting absorbed in the urban modern sector, is there a positive rural - to - urban migration? The answer to the question
lies in the nature and pattern of the growth of the urban traditional sector and the premium of real wage which this sector holds out over the rural real wages. A word concerning this may be necessary.

Despite the fixing of minimum wages in the rural agricultural sector, while the wage rates have not moved fast enough the job opportunities, these are also dwindling on account of structural and technical changes. On the other hand, in the urban areas with the rapid expansion of Government administration sector and the organised industrial sector, urban incomes are rising creating demand for basic needs like food, transport, shelter, education, medical, sanitary and other day-to-day family requirements. These developments have promoted the growth of a vast commercial sector known as 'Informal Sector' in recent years as part of the traditional sector. The incomes earned in this sector are high as compared with rural incomes. And what is more, this sector seems to have an infinite capacity to absorb the migrants and entry into it, is practically free, having no entry restrictions worth mentioning. Thus, informal sector gained significance in recent times, as source of employment to urban labour, which is reflected in its
growing size in the urban labour markets. The following Table gives the size of urban informal sector of India and Abroad, emanating from empirical studies conducted during 1970s.

Table No. 2.1.
Some Estimates of the Size of Urban Informal Sector
in India

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Study conducted</th>
<th>Study area and reference population year</th>
<th>Total population</th>
<th>Estimated size of the informal sector as a percentage of total population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Joshi &amp; Joshi (1976)</td>
<td>Greater Bombay (1961-1971)</td>
<td>4,152,000</td>
<td>47.7 (1971)</td>
</tr>
<tr>
<td>2</td>
<td>Deshpande (1976)</td>
<td>Greater Bombay (1961-1971)</td>
<td>4,152,000</td>
<td>51.3</td>
</tr>
<tr>
<td>5</td>
<td>Breman (1977)</td>
<td>Valsad Dist. Gujasth</td>
<td>--</td>
<td>75.0</td>
</tr>
<tr>
<td>7</td>
<td>ORG* (1978)</td>
<td>Madras Metro-politan area (1971)</td>
<td>25,00,000</td>
<td>50.0 to 70.0</td>
</tr>
<tr>
<td>8</td>
<td>Abdul Aziz (1985)</td>
<td>Bangalore (1971)</td>
<td>16,53,779</td>
<td>40.34</td>
</tr>
</tbody>
</table>

Sources: 1. Meera Mehta, Urban-Informal Sector:


To serve as a contrast, the size of informal sector as revealed from urban studies conducted abroad is presented below.

**Table No. 2.2:**

Employment in Informal Sector: A Few Estimates

From Foreign Urban States

<table>
<thead>
<tr>
<th>Si.</th>
<th>Study conducted No. by</th>
<th>Study area and reference period</th>
<th>Proportion engaged in informal sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Joshi, Lubell, Mouley</td>
<td>Abidjan 1970</td>
<td>31</td>
</tr>
<tr>
<td>2.</td>
<td>WelI</td>
<td>Lima - 1970</td>
<td>53</td>
</tr>
<tr>
<td>3.</td>
<td>William J. House</td>
<td>Nairobi 1972</td>
<td>44</td>
</tr>
</tbody>
</table>

(Contd.)
<table>
<thead>
<tr>
<th>No.</th>
<th>Study conducted by</th>
<th>Study area and reference period</th>
<th>Proportion engaged in informal sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.</td>
<td>Paponhuds</td>
<td>Lagos 1976</td>
<td>50</td>
</tr>
<tr>
<td>5.</td>
<td>Sethuraman S.V.</td>
<td>Jakarta 1976</td>
<td>41</td>
</tr>
<tr>
<td>6.</td>
<td>Sethuraman, S.V.</td>
<td>Kumasi (Africa) 1977</td>
<td>41</td>
</tr>
<tr>
<td>7.</td>
<td>George Nihan,</td>
<td>Lome 1979</td>
<td>1/5 of the economically active population</td>
</tr>
<tr>
<td></td>
<td>Erick Demol and</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Comlavi Jondoh</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Uppal, J.S.</td>
<td>Jakarta (Indonesia) 1980</td>
<td>53.4%</td>
</tr>
</tbody>
</table>

**SOURCES:**
Contrary to the predications made by the several models cited above, rural surplus cheap labour did not get absorbed in the dynamic industrialised urban economies. The reason being that the growth of wage employment opportunities in the modern sector is not elastic. And it is also evident that the urban informal sector provides opportunities for vertical movement within itself facilitating movement of workers from the low paying to high paying vocations. Therefore, when one looks at the rural to urban migration in the face of the dwindling employment opportunities in the urban modern sector, one should consider the probabilities of earning high incomes in the informal sector itself through vertical mobility say from a mere waste paper collector to a waste paper shop owner, from a street vendor to a retail trader are mere approximation in real life rather than waiting to earn high income through horizontal mobility to formal sector. Todaro's model, therefore, does not take this possibilities into consideration and hence gives an incomplete scenario of the rural urban migration decision making, when the urban informal sector is itself growing as a parallel sector to the modern sector. The role and potential of urban informal sector in a developing economy like India is explained in the following chapter.
REFERENCES:

1. In the Third World Countries the Urban Population has nearly tripled in a short period of 25 years from 275 million in 1950 to 794 million in 1975 and is expected to hit the 2 billion mark by 2000 A.D. As a result, the proportion of Urban Population in total has risen from 13 per cent in 1950 to 27 per cent in 1975 and is expected to shoot up to 43 per cent by the end of this century.


8. Government of India, Seventh Five Year Plan, Vol.II, P.113


10. Ibid., p.140

11. Ibid., p.147


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