ON MIGRATION AND
THE THEORIES OF LEE AND TODARO

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Economists have studied and debated labour migration and its implications over several decades, with the help of theories. After analysing two main theories of rural-urban migration in this paper the author concludes that the Harris-Todaro model is more sophisticated than that of Lee. It is also more relevant for developing countries like India. However, the model is not free from limitations and needs to be considered in the light of the particular context and situation.

INTRODUCTION

Rural-urban migration has been an important phenomenon in economic literature for the last few decades. Labor migration from country side to towns was considered as a desirable process in which excess rural labor could be gradually withdrawn from the traditional agricultural sector and be used cheaply in the modern industrial projects without causing a reduction in the level of agricultural output.[1] Recently several empirical studies revealed the fact that throughout the developing countries high rates of influx of people from rural to urban areas continue to supercede the rates of urban job creation and thus greatly exceeded the capacity of industry as well as urban social services to employ this increasing flow of labor force effectively.

Thus, migration[2] is creating imbalance instead of helping the developing process. This imbalance has two dimensions: one, it is disproportionately enhancing the rate of urban unemployment relative to urban population growth. The main component of migration stream is the well educated young people who tend to increase the growth of urban labor supply on the one hand and on the other reduce the size of potentially innovative and enterprising manpower of the rural areas. The other aspect of the structural imbalance refers to the difficulties and costs involved in the creation of an urban employment because of the need for substantial complementary resource inputs for most modern sector industrial jobs.

Since all economic policies have direct and indirect impacts on the levels and growth of income of rural and/or urban areas they will influence the magnitude and nature of migration.[3] At the same time migration streams

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determine economic policies by affecting the direction and magnitude of labor movement, population growth and its spatial distribution etc.

So far, several attempts have already been made to design comprehensive, analytical and theoretical framework to investigate the causes and effects of migration and its concomitant impacts on other economic variables in order to improve the effectiveness of development policies.

The objective of this paper is to carefully examine two main theories of rural-urban migration: Lee's social theory and Todaro's economic theory (including its subsequent extention by Harris-Todaro model)[4] and then make a critical evaluation of them in terms of their relevance to real world situation. The paper is divided into five parts. Part I explains the theory provided by Lee, Part II reviews the Basic Todaro Model, part III covers the main features of Harris-Todaro Model which is an extension of the original Todaro model, part IV examines the pros and cons of the models and the last part concludes the paper.

LEE'S SOCIAL APPROACH

Everett S. Lee, a sociologist, gave a most appealing and concise framework for analysing rural-urban migration process. His theory is mainly based on Ravenstein's "Laws" of migration. The "Laws" can be summarised as follows:

a) The rate of migration between two points varies inversely with the distance between these two points;

b) Potential migrants first move into the nearby towns and then eventually gravitate to the most rapidly growing cities;

c) Each current of migration produces a compensatory counter-current. Although rural-urban migration dominates the stream of migration there will always be a counter-stream of urban-rural migration.

d) The town-dwellers are less migratory than their counterparts in rural areas;

e) Migration stream has a built-in tendency to increase over time as a result of increases "in the means of locomotion" and a "development of manufactures and commerce";

f) Economic motive is always predominant in the matrix of factors influencing the migratory decision;[5]

Lee defined migration as "a permanent or semi-permanent change of residence" and pointed out that "no matter how short or how long; how easy or how hard", every act of migration involves an origin, destination and a set of intervening obstacles. He developed a theoretical framework for analysing the volume of migration, development of "streams" and "counterstreams" and characteristics of migrants. Lee summarised the factors influencing the migratory decision into four general categories. a) origin factors; b) destination factors c) intervening obstacles, and d) personal factors.

The .first three factors have been illustrated by Lee in the diagram reproduced below. Every origin and destination has positive factors (pluses in the circle) which attract potential migrants or "pull" them to it; negative forces (minuses in the diagram) which repel or "push"·people from it and neutral factors (zeros in the figure) which on the average neither attract to nor repel people from the relevant area. The strength of these "push", "pull" and "neutral" factors vary from people to people and place to place depending on the economic, geographic and socio-political conditions as well as the individual characteristics of the potential migrants.[6]

INTERVENING OBSTACLES

ORIGIN FACTORS   DESTINATION FACTORS
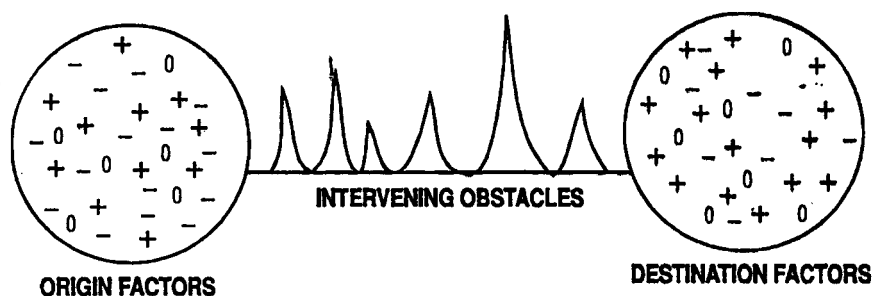
Source : Lee (1966, p, 50.)

Figure 1 : Origin and destination factors and interveniong obstacles in migration

Thus the '+', '0' and '-' may be defined differently at both the origin and destination for different individuals i.e. one man's "+" (e.g. good educational training) may be another's "0" (e.g. someone who already possesses that level of education) or even "-" factor (e.g. as a result of local school taxes levied on all residents of the area. But there are some common factors towards which most people react in the same way, (higher wages, more job opportunities, low crime rate, better climatic conditions, etc.) The distinction between the origin and destination is that the people normally possess a better knowledge and information about the origin factors rather than the destination factors. Thus uncertainty, risks and expectations play an important role in the migration process.

Although origin and destination factors discussed so far explain a great deal of migratory decision, they are not sufficient. Lee, therefore, introduces the concept of "intervening obstacles", some of them may provide only minor friction (distance, transport cost, etc.) but others·may not be overcomed at all (restrictive immigration laws, quotas by national or racial origin, etc.) As in the origin the destination factors ("pluses" and "minuses") along with intervening· obstacles will tend to exert differing influences on different groups of people. What may be a minor obstacle to one potential migrant (transportation cost for a financially well-off individual) may be a major obstacle to another (e.g. the same transportation cost to a poor person). On the basis of these origin and destination factors, intervening obstacles

and a series of personal factors[7] Lee formulated a number of general hypotheses about migration.

Volume of Migration:

1. The volume or migration within a given territory varies directly with the degree of diversity of areas included in that territory;
2. The volume of migration varies directly with the diversity of people;
3. The volume of migration is inversely related to the difficulty of surmounting the intervening obstacles;
4. Unless severe checks are imposed, both the volume and the rate of migration tend to increase with time.

Stream and Counterstream:

5. Migration tends to take place largely within well-defined streams (i.e. from a variety of rural regions to regional towns and then towards the major cities.)
6. For every major migration stream, a counterstream develops (i.e. there will always be return migrants who find that their initial perceptions did not accord with reality or who simply fail to achieve their objectives)
7. The magnitude of the 'net' stream (i.e. stream minus counterstream) will be directly related to the preponderance of minus factors at origin - i.e. origin "push" factors are relatively more important than destination "pull" factors.

Characteristics of Migrants:

8. Migration is selective, i.e. migrants are not random samples of the population at the origin;
9. Migrants responding primarily to plus factors at destination tend to be "positively" selected, i.e. they are of a higher "quality" (more educated, healtheier, more ambitious, etc.) than the origin population at large;
10. Migrants responding primarily to minus factors at origin tend to be "negatively" selected, e.g. most European migrants to North America in the nineteenth and early twentieth century were unskilled rural peasants driven off the land by economic hardship, political and/or religious persecution, etc.;
11. The degree of "positive" selection increases with the difficulty of the intervening variables, i.e. the more educated are willing to travel longer distance to find suitable employment opportunities. (Lee 1966, pp 53-57)

TODARO'S ECONOMIC THEORY

Migration is a selective process being determined by several economic, and non-economic factors. At the same time it is one of the main determinants of the economic conditions and social status of the migrants. The relative strength of economic and non-economic factors in migration process varies widely between nations as well as defined geographical areas and populations. Most of the early research work on migration emphasised social, physical and psychological factors while recognising but not carefully evaluating or qualifying the importance of economic variables. For example, emphasis has been placed on factors and influences as follows:

1. "Social factors, including the desire of migrants to break away from the traditional constraints of inhibiting rural social structures.
2. Physical factors, including climatic and mateorological disasters such as floods, droughts and famine which force people to seek alternative living environments.
3. Demographic factors, including the reduction of mortality rates and the concomitant high rates of rural population growth leading to rapidly rising rural population densities.
4. Cultural factors, including existence of urban "extended family" relationships which provide initial financial security to new migrants and the attraction of the so-called "bright city lights".
5. Communication factors, resulting from improved transportation, urbanoriented educational systems and the "modernising" impact of the introduction of radio, television and the cinema, all of which modify the impact of Lee's "intervening obstacles". (Todaro, Michael. *Internal Migration in Developing Countries,* 1986, p. 26)

Although non-economic factors being considered in the social approach of migration analysis are definitely relevant, it is almost a consensus among economists and non-economists that migration process can be explained to a significant extent by the economic factors which include not only the standard "push" from stagnating rural economy and the "pull" of relatively high urban wages and employment opportunities but also the potential "push-back" of high urban unemployment.[8]

Putting more weight on economic factors Michael Todaro developed a more sophisticated model which attempts to explain the migration of rural populations into urban areas in spite of increasing levels of urban unemployment and underemployment.[9]

The basic Todaro model begins with the assumption that migration is primarily based on rational economic calculations for the individual migrant despite the existence of high urban unemployment. The model postulates that migratory decision is made in response to urban-rural difference in expected rather than actual income. Migrants as rational decision makers

consider the various labor market opportunities available to them as between, say, the rural and the urban sectors, and choose the one which maximizes their "expected" gains from migration. Expected gains are measured by:

a) the difference in real incomes between rural and urban job opportunities and

b) the probability of a new migrant obtaining an urban job.

Todaro explained the multiplicity of factors affecting migratory decision with the help of a diagram reproduced in the next page. The factors illustrated there include both economic and non-economic variables, the economic ones are however assumed to predominate.

The "thought process" of the model has been elaborated by Todaro with a typical example:

"Suppose the average unskilled or semi-skilled rural worker has a choice between being a farm laborer (or working his own land) for an annual average real income of, say, 50 units per year, or migrating to the city where a worker with his skill or educational background can obtain wage employment yielding an annual real income of, say, 100 units. This more traditional economic models of migration, which place exclusive emphasis on the income differential factor as the determinant of the decision to migrate, would indicate a clear choice in this situation. The worker should seek the higher paying urban job.[10].

This interpretation, however, was originally developed for the advanced industrialized countries with an implicit assumption of the existence of full employment or near full-employment situation in the urban areas. In a full employment environment the decision to migrate can in fact be predicated solely on securing the highest job wherever it becomes available assuming other things remaining same. Simple economic theory would then suggest that such migration should lead to a reduction in the wage differentials through geographical changes in supply and demand, both in areas of out migration (where incomes rise) and in points of in-migration (where they fall).

Unfortunately this interpretation is not very realistic in the context of many developing countries where there is a chronic and serious problem of urban surplus labor which results that many migrants cannot expect to secure a high paying urban job immediately upon arrival. Rather it is more likely to happen that on entering into the urban labor market many migrants will either be totally unemployed or seek casual and part-time job in the urban traditional sector.[11] This warrants the modifications of the basic Todaro model.

EXTENSION OF THE BASIC TODARO MODEL

The basic Todaro model has been extended and modified by Harris-Todaro
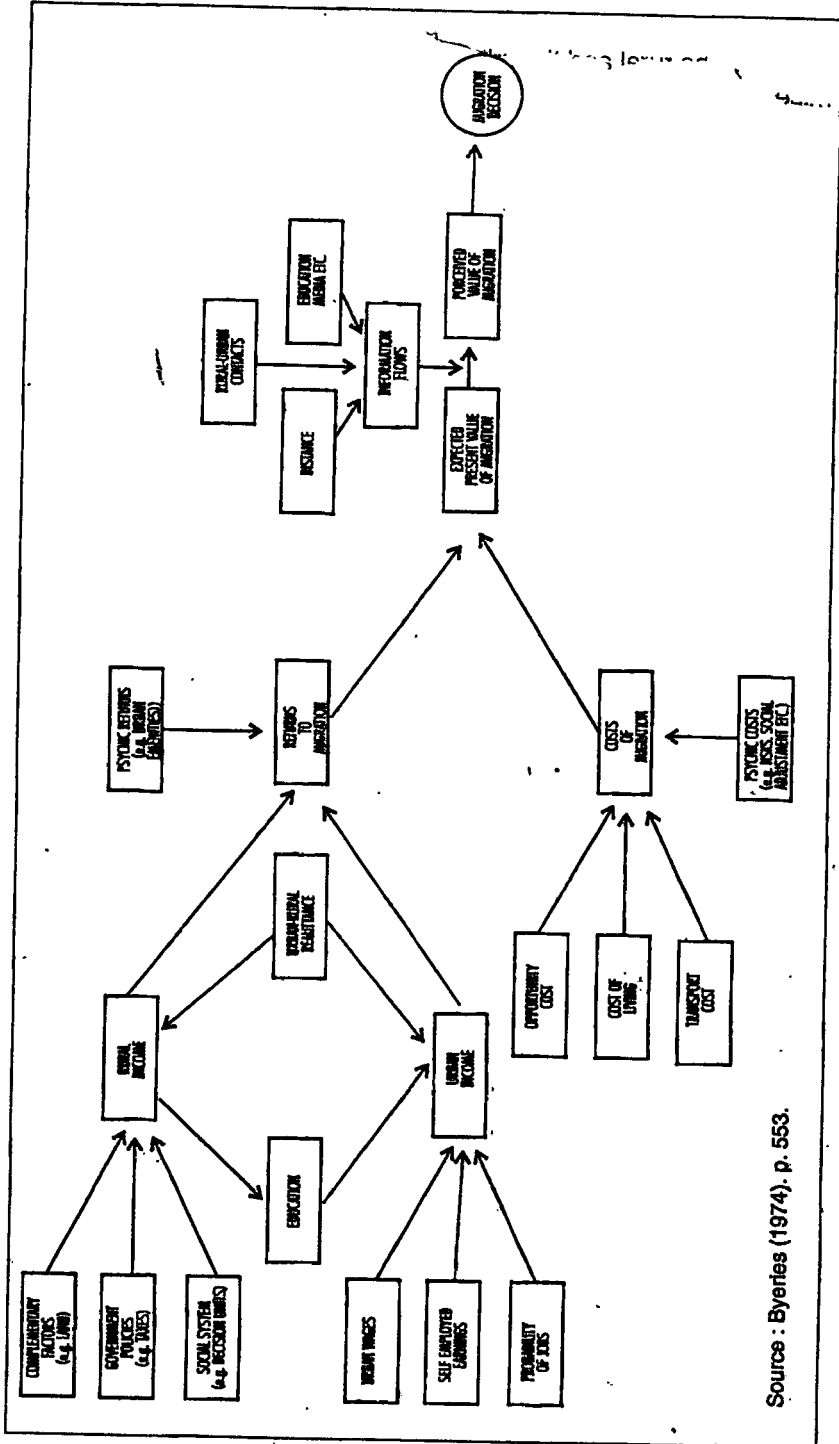
Source : Byeries (1974). p. 553.

Figure 2 : A framework for the analysis of the decision to migrate

Model[12] in order to improve the explanatory power of the model by introducing certain elements of reality. But by and large the fundamental characteristics of the model remain intact until today and they provide the framework for most contemporary econometric migration studies.

Todaro and his colleague John Harris extended the original Todaro framework to construct a two-sector internal trade model of migration and unemployment which made it possible to give explicit attention to the impact of migration on rural incomes, urban and rural output and total social welfare. The two sectors - rural and urban are distinguished for analytical purposes from the view point of production and incomes. Rural sector specializes in the production of agricultural goods particularly food-stuff while urban sector specializes in the production of manufactured finished goods. Part of agricultural products are traded to the urban area in exchange of finished goods. It is further assumed that rural sector has the option between using all the available labor to produce agricultural goods[13] or using only a part of its labor to produce food while exporting the remaining labor to the urban sector.[14] in return for wages paid in the form of manufactured goods. Thus it is assumed that the typical migrants retain their ties with the rural sector.[15] The income that they earn is considered to accrue to the rural sector for analytical purposes. Although these assumptions about intersectoral linkages enable Harris-Todaro to assess the welfare and distributional consequences of internal migration, they are not necessary for demonstrating the private rationality of continued migration in the face of increasing urban unemployment. The crucial assumption for this proposition is once again Todaro's hypothesis i.e. "the rural-urban, migration will continue so long as the expected-urban real income exceeds real agricultural income at the margin"[17]

The complete Harris-Todaro model then-represents a simple extension of traditional two-sector neoclassical trade model. Thus there were variable proportions of agricultural and manufacturing production technologies for the rural and urban sectors, neoclassical behavioural rules for the determination of levels of factor use and output in each sector, and a traditional trade theory mechanism for determining the terms of trade between agricultural and manufactured goods. But it is the migration equation which represents that unique and most innovative feature of the over-all model.

PROS AND CONS OF THE THEORIES

Lee's theory appeals greatly mainly for its straightforwardness and simplicity. Most of its hypotheses are intuitively valid and this is one of the reasons for its apparent persuasiveness. But it is of limited use for policy analysis in developing countries since the theory is too general and many of its hypotheses are interdependent. More important, the apparent validity of its hypotheses does not lead us to determine which plus factors and which minus factors at both origin and destination are quantitatively the most important to different groups and classes of people. Nor does the existence

of intervening obstacles help us to know which are major and which are minor. Moreover, the theory does not provide any insight into possible "trade-offs" between "plus" and "minus" factors nor the range of possible migration responses to alternatives in the magnitude and/or the sign of "plus" and "minus" factors. In short, by not specifying the inter-relationships between dependent and independent variables within the context of a rigorous theoretical framework, Lee's theory of migration and, indeed, most other "non-economic" social science migration models offer little practical policy guidance for decision makers in developing nations.[18]

Specific policy recommendations can be found in economist's formulation of the migration problem and to econometric methods for evaluating the quantitative significance of alternative explanatory variables. Although the rigorous economic literature on migration in developing countries is a phenomenon of the very recent past, it is a potent literature with important new theoretical insights into the migration process and the beginnings of a carefully documented, econometric specification and quantification of the most important determinants of internal migration in a small but growing number of developing countries.

Todaro's basic model along with the subsequent modifications done by Harris-Todaro is more comprehensive in the sense that it takes into account the distributional and welfare aspects of migration process. In relation to Lee's theory it is more powerful in its explanatory behaviour since it includes expected income differential (between rural and urban sectors) as an important determinant of migratory decision. Todaro/Harris-todaro model avoids the "all or nothing" problem of having to assume that the migrant either makes the average income or makes nothing in the periods right after migration: consequently it reflects the fact that many underemployed migrants will be able to generate some income in the urban traditional sector while searching for a regular full-time job.[19] and it modifies somewhat the assumption of random selection since the probability of a migrant's having been selected varies directly with the time he has been in the city: This permits adjustments for the fact that longer-term migrants usually have more contacts and better information systems so that their expected incomes should be higher than those of newly arrived migrants with similar demographic characteristics and skills.

However, Todaro/Harris-Todaro model is not free from loopholes. It does not consider the rate of labor turnover and the possibility of the urban employed sharing their income with the unemployed through some form of extended family network. This is pointed out by Johnson.[20] Porter contradicts with the dynamics of the basic Todaro model and attempts to demonstrate that urban unemployment cannot exist in equilibrium if employment in the urban sector is growing at a more rapid rate than the population as a whole while other factors are unchanging.[21]

Bhagwati and Srinivasan criticised the Harris-Todaro model by identifying some of its theoretical loopholes and weaknesses and modifying some of its major policy recommendations, especially those relating to the

migration and employment impact of various wage and production subsidy programs in both rural and urban areas. In particular they pointed out that the Harris-Todaro conclusion that a (second best) combination of an urban wage subsidy along with physical migration restriction would be necessary to achieve economy-wise production efficiency is not correct since a first best solution can be realised by a variety of different tax or subsidy schemes, without the necessity of physical restrictions on internal migration. Corden and Findlay further extended the Harris-Todaro model by introducing intersectoral capital mobility between the rural and urban sectors in response to differentials in the return on capital. They also examine the comparative static effects of economic growth both in the original Harris-Todaro model and in the modified model with perfect capital mobility and with commodity prices determined externally in an open economy framework. They then explore the policy implications of the modified model and reach a number of conclusions which both support and modify those derived by Harris-Todaro.

CONCLUSION

In migration theories Lee's one and/Todaro/Harris-Todaro models have their own merits and demerits. Lee's theory is more general emphasizing non-economic factors involved in migratory decision. Thus its practical importance and policy relevance is little, while Todaro/Harris-Todaro model is relatively more sophisticated as it has the power of being tested empirically. It is also more important in developing countries for its policy recommendations and predictions. But it does not mean that it is absolutely free from theoretical loopholes. Finally it is important to recognize that Todaro/Harris-Todaro model is more complete than the Lee's one but it is not "the complete" theory. In using these theories we should be aware of the contexts and their possible limitations in those contexts.

NOTES

1. This view was held by W. Arthur Lewis in his paper "Economic Development with Unlimited supplies of Labor" assuming that the marginal productivity of agricultural labor is zero in developing countries.
2. Here "migration" refers to internal migration particularly of rural-urban nature.
3. Because rural-urban income differential is a major determinant of migration.
4. Lee, E.S. 1966; Todaro, M. 1969, Harris & Todaro 1970. For bibliographical details see reference.
5. Ravenstein, E.G. (1885, 1889); for bibliographical details see reference.
6. This characteristics may be comprised of their age sex, colour, race, educational level, technical skill, ethnic origin etc.
7. This includes individual's liking, disliking, attitude, temparant etc.
8. This was explained by Lee as counterstream.
9. Thus, this theory is more comprehensive with high explanatory power.
10. Todaro, M. Internal Migration in Developing Countries. 1980; p. 29.
11. For the empirical verification of this hypothesis see (1974) table 4.7., for Tunisia.
12. It is also modified by Johnson (1971), Porter (1973), Bhagwati and Srinivasan (1974),

Corden & Findlay (1975).
13.   Some of which are traded for urban manufactured goods.
14.   ·This may be done through rural-urban migration.
15.   Such an assumption is clearly more valid for most African countries than Asian or Latin American countries where migrants' ties with rural sector is less pronounced.
16.   Expected income is defined as real wage times the probability of getting a job.
17.   This is derived from the proposition that potential migrants as rational human beings are maximizers of expected utility.
18.   ·Specific ·policy recommendations can be provided by economic models which quantify the variables in analysing migration process.
19.   Some critics misread the original 1969 Todaro article by asserting that the author failed to take into account the urban informal sector by assuming that the migrant will be either employed in the modern sector or remain unemployed.
20.   Johnson, 1971, p. 22 for detail bibliography see reference.
21.   A somewhat similar but mathematically more sophisticated dynamic model of internal migration is analysed in Hoopengardner (1974).

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