THE DETERMINANTS OF RURAL-URBAN MIGRATION IN INDIA'S NORTH-EAST: AN ECONOMETRIC MODEL

Dissertation submitted to Jawaharlal Nehru University
in partial fulfillment of the requirements
for the award of the Degree of

MASTER OF PHILOSOPHY

SUBHOJIT DAS

CENTRE FOR INTERNATIONAL TRADE & DEVELOPMENT
SCHOOL OF INTERNATIONAL STUDIES
JAWAHARLAL NEHRU UNIVERSITY
NEW DELHI-110067
INDIA
2008

CENTRE FOR INTERNATIONAL TRADE & DEVELOPMENT
SCHOOL OF INTERNATIONAL STUDIES
JAWAHARLAL NEHRU UNIVERSITY
NEW DELHI - 110 067

Tel   : 011-2670 4338
Fax   : 91-011-2671 758
Gram : JAYENU

Date: 17-07- 2008

DECLARATION

I declare that the dissertation entitled "**The Determinants of Rural-Urban Migration in India's North-East: An Econometric Model**" submitted by me for the award of the degree of **MASTER OF PHILOSOPHY** of Jawaharlal Nehru University is my own work. The dissertation has not been submitted for any other degree of this or any other University.

SUBHOJIT DAS

CERTIFICATE

We recommend that the dissertation be placed before the examiners for evaluation.

Dr. Sangeeta Bansal
(Chairperson)

Prof. Alokesh Barua
(Supervisor)

Dedicated to Maa and Baba

Acknowledgement

First of all I would like to thank my supervisor Prof. Alokesh Barua for his constant inspiration and help. He has been with me throughout from developing the idea to fine-tuning the results. I am extremely grateful to him for his guidance, which has enhanced my intuitive ability and analytical skills. He has given me a lot of freedom and at the same time has guided me whenever I have faltered. His contribution to this dissertation has been immense and I remain grateful to him for the conducive atmosphere he has provided where I could grow and reach my potential.

I am grateful to Prof. Aparna Sawhney for her helpful comments on the estimation and interpretation of my results which made my work a lot easier.

I am also very grateful to Shovonda who has helped me a lot with the technical aspects of the paper.

I would also like to thank my classmates specially Soma as well as Krantidi for helping me in all aspects and providing me with mental support when I needed the most.

Finally I would like to thank my parents who have always had faith in my abilities. I am indebted to them for the support they have provided in every way.

List of Tables

CONTENTS

Chapter 1

Introduction

The population growth in the north east over the course of the 20th century is higher than the national average.[1] Most of the difference between the rate of population growth in North-east and that of India as a whole can be attributed to the unprecedented migration of population from other regions to North-east.[2] This demographic influx has had adverse effects on the delicate ethnic balance within the population. It has overtime created a deep sense of social and cultural insecurity among the indigenous people and has threatened their political leverage.[3] In a state characterized by increasing unemployment and underemployment, migration is seen as directly reducing the labour market earning opportunities for indigenous people. Migration of poverty stricken marginal economic agents is also responsible, to a significant extent, for the pattern of ruthless ecological destruction – deforestation and overexploitation of open-access biological resource- that the region has experienced in course of the century. One specific aspect of this process is the loss of land and forest facility traditionally used by the tribal population of the state who did not practice settled agriculture in private landholdings. This has resulted in a sharp deterioration in their economic welfare. As the availability of surplus wastelands has disappeared and even the riverine wastelands are overpopulated, migrants have increasingly encroached illegally upon public lands. In reaction to these developments, the last four decades of the 20th century have seen increasing social discontent, ethnic tensions, and political movements against illegal migrants from the neighbouring countries of North-East particularly Bangladesh. The student-led mass movement against illegal immigration during 1979-84 (the 'Assam movement') created a major social and political upheaval and brought the problem into sharp focus.[4]

---

[1] The decadal growth rate of population of North-East is 22.16 % whereas the all India rate is 21.31%. During the period 1980 to 1998 the population growth rate of North-East was 2.4% while the all India rate was around 1.8 (see, Barua and Bandyopadhyay).

[2] It is estimated that only about half the population of Assam in 1971 were descendents of the current territory of Assam in 1901 (see, Santanu Roy 2005).

[3] In Tripura indigenous population constituted 70 per cent of the population in 1901. Immigration reduced the proportion to 30 percent in 1991.

[4] See, Hussain, Manirul (1993), The Assam Movement: Class, Ideology and Identity.

1

There is a widespread feeling in the North-East region that huge number of illegal migrants from Bangladesh may outnumber the ethnic indigenous people just as it happened in case of Tripura. This fear which may be actual or perceived had led to a long political agitation in Assam during 1979-84. The three major issues on which the Assam movement was based were Detection, Deletion and Deportation of the illegal migrants from Bangladesh. So, the widespread adverse reaction to illegal migration from Bangladesh may have been caused by the actual or perceived scale of huge migrant influx. If the scale of migration had been smaller, the flow calmer then the process would have been much more socially acceptable and the threats to the indigenous population at any point of time would have been much lower. The high spate of immigration after independence occurred even while land and other resources as well as the socio-economic infrastructure of the region were under increasing demographic pressure and in a state where the process of economic development was slow, often stagnant. Therefore, the economic costs of migration have gradually outstripped the benefits and that is why a study of migration into India's North-east is of utmost importance.

All the north-east states border one or the other countries such as Bhutan, China, Burma and Bangladesh. The North east's share of the border with the mainland of the country is only 2% and that with international borders is 98%.[5] As a consequence the north-east states face the problem of continuous illegal immigration from neighboring countries like Bangladesh and Nepal. Also, historically the region faces continuous inflow of migrants from within India[6]. So, the region faces inflow from immigrants from two sources- one from within India and the other from neighbouring countries. Therefore the population growth rate in the North east is higher than the national average. It is estimated that, during the period 1971-91, the population of Assam grew at a rate of 52.44% compared to an all-India growth rate of 48.24%.[7]

---

[5] See, Barua, India's North-East Development Issues in a Historical Perspective

[6] Mostly from Andhra Pradesh, Madhya Pradesh, Orissa, Rajasthan, Bihar, Uttar Pradesh, West Bengal etc.

[7] Between 1901 and 1991, the population of India grew by 354 per cent. In contrast, the population of Assam expanded by 676 per cent – from 3.3 million to 22.3 million.

During the last two decades the north-east region has been growing at a very slow pace.[8] The most disturbing factor is the declining share of the manufacturing sector in GDP overtime[9] which has led to slow pace of growth in income in the north-east. The manufacturing sector in the north-east grew at an annual rate of 2.33 per cent against the all-India average of 6.4 per cent. Also the land-man ratio is not favourable to many of the north-east states for agricultural development and these sates cannot rely upon the manufacturing sector for providing employment as the share is declining. Given the fact that the region experiences the highest rate of population growth in India, low growth in output has resulted in a very high proportion of unemployment in the region.[10] The stagnating economies of the region with agriculture and industry being technologically backward, and an ever increasing population put tremendous pressure on the infrastructure and resources of the region. As a result the people of this region are unable to provide themselves with the basic minimum standards of living. In such an economy the society will be subject to violence, chaos, unrest and insurgency of the kind growing in the north east[11]. In this context the study of the migration problem and its determinants will be very helpful to policymakers. The objective of this study is to find out the main determinants of migration from within India and also from the bordering countries of the North-East. For this purpose we formalize an econometric model where the level of migration has been regressed upon a set of plausible determinants influencing migration decision of the agents in order to find out if there is any relationship between migration and these factors. The purpose of this study is to empirically examine, on the basis of the available data if any; *empirical relationship exists between the level of migration in the North east and its main determinants.*

---

[8] The north-east has experienced 3.88 percent annual growth rate in NSDP against the national average of 5.1 percent over the period 1980-81 to 1997-98. See Barua and Bandyopadhyay.

[9] The share of manufacturing has been declining significantly at the rate of -1.55 per annum during the period 1980-81 to 1997-98.

[10] The rural unemployment rate in Assam is 6.2 per cent and 14.3 percent for males and females respectively against the national average of 2 per cent and 1.4 per cent respectively. Similarly, the urban unemployment rates are 6.2 and 28.9 per cent for males and females respectively against the national average of 4.5 and 8.2 per cent respectively. (*Employment and Unemployment in India, NSSO 50th round*).

[11] See Barua (2005).

This study will also look at the migration trends both from interior of India to the North East and also from the bordering countries to the North East region. This will help in identification of the main causes of migration to the region and hence appropriate policy prescription can be formulated. Also a detailed study of why there is non-development for more than half a century in this region and its link with the migration problem will help in formulating a policy prescription for preventing unwanted migration both within the country and also from the neighbouring countries like Bangladesh, Nepal etc.

In our econometric model we shall consider the levels of migration from ten major states of India to the North east region during the period of 1991 and 2001.

To make a more detailed micro level study a separate model will be formulated to explore the factors responsible for migration into the rural and urban sectors of the North-eastern region. This will help in comparing the relative strengths of parameters influencing rural and urban migration decisions. In this way we will be able to approach the migration problem in a more disaggregate level and hence will be able to make the policies more precise. The present study will be an attempt to examine the migration problem of the North-East region with particular emphasis on the problem of Assam.

The plan of this study is as follows. Section II will discuss the history of the region and outline the context so as to why the region historically faces migration. In section III we will discuss the theories of migration. In section IV we will discuss existing literature on migration in the North-East and highlight the main issues. Section V discusses the pattern of migration both internal and external. In section VI we formulate an econometric model which will determine the main determinants of migration. In this section we also discuss the data source, variables and outline the hypotheses to be tested. In section VII we discuss the estimation results and interpret it. Finally, section VIII concludes.

Chapter 2

Migration problem in the North-East: A historical perspective

Apart from the Brahmaputra valley[12], the hilly areas of the state of Assam, as defined immediately after independence were the present states of Nagaland, Mizoram, Meghalaya and Arunachal Pradesh. Obviously, these states did not have their present identity of independent states at the dawn of India's Independence. These states were the integral parts of undivided Assam in 1947 that was essentially the British province of Assam. The British came to rule in this region in 1826 after the decline of the Ahom[13] dynasty that had ruled Assam for a period of over six hundred years (from 1228 AD to 1826 AD). However, the pre-colonial Ahom Assam[14] was not the same as the British province of Assam. The pre-colonial Ahom Assam was essentially the Brahmaputra valley. Only during the colonial period did the British expand the scope of Assam by annexing the surrounding hill regions. A disintegrative process had started in the region soon after Independence. The process of the break up of Assam began in 1963 with creation of Nagaland as an independent state. Meghalaya in 1970 and Mizoram in 1972 were separated from Assam. Finally Arunachal Pradesh was made a separate state in 1987.

The North-east comprises of eight states, namely, Nagaland, Mizoram, Meghalaya, Arunachal Pradesh, Manipur, Tripura, Sikkim[15] and Assam the fulcrum of the North East having access to the important metropolitan markets of the country such as Kolkata and Delhi. No other north-east sate can do so without bypassing Assam. All the states of the North east are basically agrarian and industrially backward with poor infrastructure and very high rates of unemployment and population growth *(Barua & Bandyopadhyay, Structural Change, Economics Growth and Regional Disparity in the North-East:*

---

[12] In the early British administrative reports the Brahmaputra valley can be partitioned into two divisions – the Upper Assam and Lower Assam. The present districts of Goalpara, Dhubri, Kokrajhar, Bongaigaon, Barpeta, Guwahati, Nalbari and Darrang constitute Lower Assam. The rest of the valley is known as Upper Assam. See, A.Guha, Medieval and Early Colonial Assam (1991).

[13] The Ahoms were the offshoot of the great Tai or Shan race. The Shan race spreads from the gulf of Siam northwards into Yunnan and westwards to Assam. See, Barua, The Rise and Decline of the Ahom Dynastic Rule: A suggestive interpretation.

[14] The phrase 'Ahom Assam' is often used in admiration of the power of the Ahoms who had previously ruled Assam.

[15] Sikkim is also now included as the eighth state within the north-east.

Regional and National Perspectives). It is impossible for any of the north-east states to industrialize and develop in isolation, due to the limitations posed by the size of the markets. As these states are land-locked and the peculiar topological features do not allow them to easily expand the markets within, as well as between the states without heavy investment on roads and communication facilities, many modern industries cannot be set up for want of a viable scale of production. These states are small enough to be viable units for the adoption of any policy framework. However, there is an enormous scope for a common strategy of development with Assam as the core of the development program. Assam, as it stands today, had always been the 'core' or the 'hub' of the north-east. All other states are peripheral to Assam- the hub- in terms of trade, commerce and communication. The narrow neck on the western front of Assam provides the only road and railway link for all the states of the region, with the rest of India. Even interlinkages between various states, including Manipur and Tripura are not possible without accessing Assam. As a result, independent developmental possibilities are severely limited for these states and the development of the peripheral states is intricately interwoven with the development of the 'hub'[16]. Therefore to analyze any problem (such as the migration problem in this study) and to formulate any policy prescription for that problem a special focus on Assam is unavoidable.

The economy of Assam on the eve of the British colonization was characterized by acute shortages of labour and capital. A series of civil wars during the last three decades of the eighteenth century and Burmese invasions in the beginning of the nineteenth century brought in depopulation, disorder and all round decadence and left the economy in a state of mess. Then came the British, who rescued the people from the dissolute state and the Burmese were forced to surrender their claim over Assam under the Treaty of Yandabo in 1826.[17] With this, came historic changes in the polity and most importantly, in the economy of this region. By virtue of being the ruler, the British became the sole owner of large tracts of wasteland and other valuable natural resources.[18] The discovery of tea in the Brahmaputra valley in the very beginning of the British administration was a prelude

---

[16] See, Barua, History, Trade and Development: An Exploration of the North-East Economy.

[17] By the treaty of Yandabo the British forces expelled the Burmese from Assam for good and brought the entire region under the control of East India Company.

[18] See, Hiranya K. Nath, The Rise of an Enclave Economy.

to the presence of the British capital in the following years and the subsequent growth of the modern sector which crucially hinged on the growth of the tea plantations. It was in the interest of the British to exploit these resources for profit, which resulted in the growth of a large tea plantation sector in Assam. The British were not interested in the development of the village economy of Assam because they did not perceive any benefit fro it. The growing market for tea was entirely outside Assam. The British looked westward rather than eastward because booming market for tea was in the west where it had to compete with the Chinese tea.

The growth and expansion of tea industry, that was almost entirely dependent on the external market, necessitated a reasonably well developed infrastructure. The basic minimum perquisites for the expansion of tea plantations in Assam included the construction of roads and bridges, and the establishment of a regular link route with Bengal. The Public Works Department started constructing roads from the late 1860s onwards. The government started a steamer service on Brahmaputra from 1847. But it became more regular, only from 1861, under a British private company. The construction of railways in Assam was started in 1881, but their importance in communication was greatly enhanced only in 1901 when the Assam-Bengal Railways was started. The railways linked the remote tea gardens with the transit points to the steamer service. There was hardly any concern for providing better communication to the traditional agricultural sector. Coal-mining was first begun in Assam in the year 1828. Regular and consistent exploitation of the coal mines started in 1847, when there arose a steady demand for coal from the government steamers and the Assam Company's tea factory. The development of railways and waterways, and the establishment of other productive enterprises such as coal, petroleum, wood manufacturing etc were all guided by the sole objective of maximization of profit from the plantation economy. As it appears from the above discussion, the growth of a modern sector in the nineteenth century, revolved around the growth of the tea industry, which was triggered by the immediate mercantile interests of the East India Company.[19] Given the infrastructural bottlenecks and topsy turvy market condition in the later half of the 19th century, the British capital did not find it worthwhile to travel all the way to the north-east region of India. However with

---

[19] See, Hiranya K. Nath, The Rise of an Enclave Economy

extremely favourable government concessions, those who were already in business, found it highly lucrative to reinvest their profits and savings in tea plantation and a few other resource based industries. The government contributed to the rise of this modern sector by extracting revenue from the agricultural sector. Thus, in a sense, the modern sector thrived at the cost of agriculture. This cost to the agricultural sector was multiplied by other linkage effects or by the absence of them. The local village economy and the plantation sector maintained distance and never converged and neither sector had any impact on one another. By the end of the nineteenth century the economy of Assam had developed all the characteristics of a dual economy[20], with huge investments pouring into the modern sector and the traditional sector being left out of this development process.

By the early 1870s, tea plantations were established as an industry that held tremendous potential for growth. More than 3 lakh acres of wastelands had been settled with planters in Assam proper[21] alone. These settlements were fee-simple or charged at nominal rate but the shortage of labour posed formidable problems to the tea plantation industry in Assam, in the early years of its expansion. One explanation for this is the disinclination of the indigenous population to take continuous employment in the tea estates due to the prevalence of very low wage rates in the plantation industry.[22] The planters arbitrarily determined the wage rate at a minimum subsistence level while the wage rate in the agricultural sector was determined by the marginal productivity of labour, which was almost twice that of the plantation wage rate. Naturally, with such wage differentials, it was not possible to induce local labour to move to the gardens in search of job. The requirements of labourers for the plantation sector could be met by hiring them at a much cheaper price from outside the province. Since the marginal productivity of agricultural labourers was much above the wage paid to the contractual labourers brought from outside the region, it was therefore natural for planters to hire labourer from abroad. As a

---

[20] The tem 'dual economy' was used by Amalendu Guha in the context of Assam and it refers to the fissure between the traditional agricultural sector and a relatively capital-intensive highly monetized modern sector centered on the tea sector. The tea sector received all the investments and it had no links with Assam's traditional sector through any one of the following: capital, labour or the commodity markets.

[21] In the early British administrative reports, the five districts of the Brahmaputra valley, namely Kamrup, Darrang, Nowgong, Sibsagar and Lakhimpur were known as Assam Proper.
[22] In 1864, while a free labour got around a wage of Rs 7 per month from PWD the average rate in many tea gardens was Rs 3.50 only. (See, Amalendu Guha, A Big Push without a take-off: A case study of Assam 1871-1901).

result internal migration took place mostly from Darrang to the tea districts of upper Assam. The British seemed to make deliberate attempts to draw labour from agriculture to work in plantations. For example, the policy to enhance the land revenue can be seen as a measure to dissuade people from continuing with agricultural operations. Similarly, the planters wanted the British to ban poppy cultivation to prevent people from being indolent, and to exhort them to join the workforce in plantation. These policies failed to attract people from the agricultural sector due to low plantation wages. Thus, labour scarcity was artificially created by the British. Consequently, the proportion of indigenous workers in the plantation workforce in Assam declined from 46 percent in the late 1860s to about 7 percent in 1901. During the same time, the total number of plantation workers rose from an estimated 40,450 to 307, 7000 or by seven times. The process of recruiting indentured labourers from outside started in the early 1860s. The aboriginal tribes and people from the western parts of what was then Bengal, and the eastern parts of the United and the Central Province were imported.

By the middle of the nineteenth century, Assam Proper had become a deficit area in food grains. An increasing inflow of labour recruits to the plantation and railways construction sites led to rising prices of rice as against falling prices of tea and salt. The emigrant labourers from the tea industry were tied down to stationary or even falling real wages while food prices and the wages outside the plantations were rising.[23] On the expiry of contract, the labourers therefore preferred to settle down on wastelands as independent peasants. Many even escaped their contacts to find refuges in Assamese villages as agricultural labour. That is why continued and heavy recruitment drives in other provinces became a permanent feature of the tea industry. Until the beginning of a still bigger population movement from East Bengal to Assam in the early twentieth century, tea remained the biggest factor responsible for migration.

The growth of a modern sector (composed of plantations, coal, petroleum and the associated infrastructure) in Assam in the nineteenth century, revolved around the growth of the tea industry, which was triggered by immediate mercantile interests of the East

---

[23] Scarcity of labour and gradual increase in demand due to expanded activities in the modern sector resulted in a steady rise in the wages of free labourers. The wage rate of agricultural labourers during the latter half of the 19th century reached as high as Rs 10 per month while the wage rate for plantation workers hovered around Rs 3 to 6 per month. (See, Hiranya K. Nath).

India Company. The construction of railways in Assam was started in 1881, but their importance in communication was greatly enhanced only in 1901 when the Assam-Bengal Railways was started. By 1911, transportation through railways became possible between Assam Proper and the rest of India. All this brought forward a qualitative change in the situation in two ways. First, the land hungry jute-oriented peasants of East Bengal could now come by the thousands to colonize the riverine wastelands, on which the production potential of tea or wet rice was almost nil. Secondly, the usury and trading capital which had accumulated over the past decades in the hands of the Marwari *banias* could now be productively used as a short-term finance to tea gardens and jute. Better communications and the emergence of jute trade as a productive channel of rural finance were the two significant factors which, within years, gave a push to the agrarian economy through expanded commerce. For the first time, cultivation of jute became important in Assam proper, the acreage increasing from less than 500 acres before 1901 to over 6000 acres by 1911. The share of tea in the net cropped area decreased from 11.4 percent to 9.4 percent. Henceforth, jute and the associated cultivation of paddy and immigrant jute growers were to play an increasingly important role in the agrarian developments to follow. The East Bengal colonists formed one-fifth of the population of Goalpara by 1911, and thence began to move into Assam Proper. This was primarily because Assam at the end of the nineteenth century was viewed as a land abundant (fourth lowest population density among provinces in British India) and stood in sharp contrast to neighbouring East Bengal where population pressure was beginning to be felt. By the census of 1911, the migration of peasants from Mymensingh, Pabna, Bogra and Rangpur had become quite noticeable particularly to the *char* lands in Goalpara. The process accelerated dramatically in the following decade and the movement had extended to Kamrup and Nowgong. The 1921 census estimated that about 55 percent of population growth in the Brahmaputra valley in the preceding decade was due to migration.[24]

The growth of the tea industry in the 19th century Assam was critically dependent on migrant indentured labourers from Bihar and Orissa as the Assamese, with bountiful land endowments, were not willing to work as wage labourers in the plantations.

---

[24] .(See, Amalendu Guha, A Big Push without a take-off: A case study of Assam 1871-1901).

After Independence and the Partition of India in 1947, East Bengal and the Sylhet district of Assam became a part of Pakistan. Huge streams of Bengali Hindu refugees entered Assam (as well as Tripura and West Bengal) and the transfer of population continued for decades. The 1971 Indo-Pak war which created the nation of Bangladesh was also accompanied by a large influx of refuges. One way to get some idea of the scale of migration is to observe that in 1947, 27 percent of the population in East Pakistan were Hindus. This proportion declined to 14 percent in 1991 and 10 percent in 1991. Most of this difference is due to migration. Refugees coming from areas with geographical contiguity to Assam and which had been the source for past migration to Assam found it easier to move to Assam. The fact that these refugees chose to settle in Assam and did not move to any other part of India is certainly based on economic considerations such as the economic incentives provided by an existing network of past migrants.

In the post Independence period, most migrants have operated outside the formal or legal migration process, taking advantage of an extremely porous border. Even refugees from East Pakistan who were entitled to Indian citizenship have mostly not followed up their entry by formal registration (mostly destitute and illiterate, they were often unaware of any such requirement). The accord signed between the Government and leaders of the Assam movement[25] in 1985 effectively legitimized all immigrants entering Assam before 24th December 1971. Only those entering illegally after that date were liable for deportation. However, subsequent political dynamics, partly motivated by the fear of harassment by minorities, and the nature of the legal framework adopted for detection of such illegal migrants have effectively ruled out any progress on this front beyond trivial.

The flow of migrants in the second half of the 20th century consisted not only of genuine refugees but also of poverty stricken people in search of economic opportunity. The most dramatic influx of refugees from East Pakistan is likely to have taken place in the immediate years after 1947. Immigration in the later years is likely to have been increasingly motivated by economic considerations.

---

[25] The student-led mass movement against illegal migration during 1979-84 (the 'Assam movement') created a major social and political upheaval since continuous migration has put the limited socio-economic infrastructure of the region under increasing demographic pressure leading to slow economic development.

These facts taken together do indicate that migration is highly likely to be significant in the period 1971-91. Further, migrants from Bangladesh to Assam in the final decades of the 20th century, like those in the first half of this century, were much more likely to be destitute, marginal and landless peasant attracted by their perception of better long run economic opportunities in India. [26]

---

[26] See Santanu Roy, 'Why Do They Come?' Economic Incentives for Immigration to Assam.

Chapter 3

Theories of Migration

Most of the world's developed countries have become diverse, multiethnic societies, and those that have not reached this state are moving decisively in that direction. The emergence of international migration as a basic structural feature of nearly all industrialized countries testifies to the strength and coherence of the underlying forces. Yet the theoretical base for understanding these forces remains weak. The recent boom in immigration has therefore taken citizens, officials, and demographers by surprise. The purpose of this section is to explicate and integrate the leading contemporary theories of international migration.

A variety of theoretical models has been proposed to explain why international migration begins, and although each ultimately seeks to explain the same thing, they employ radically different concepts, assumptions, and frames of reference. Neoclassical economics focuses on differentials in wages and employment conditions between countries, and on migration costs; it generally conceives of movement as an individual decision for income maximization. The "new economics of migration," in contrast, considers conditions in a variety of markets, not just labour markets. It views migration as a household decision taken to minimize risks to family income or to overcome capital constraints on family production activities. Dual labour market theory and world systems theory generally ignore such micro-level decision processes, focusing instead on forces operating at much higher levels of aggregation. The former links immigration to the structural requirements of modern industrial economies, while the latter sees immigration as a natural consequence of economic globalization and market penetration across national boundaries.

Given the fact that theories conceptualize causal processes at such different levels of analysis-the individual, the household, the national, and the international- they cannot be assumed, a priori, to be inherently incompatible. It is quite possible, for example, that individuals act to maximize income while families minimize risk, and that the context within which both decisions are made is shaped by structural forces operating at the national and international levels. Nonetheless, the various models reflect different

research objectives, focuses, interests, and ways of decomposing an enormously complex subject into analytically manageable parts; and a firm basis for judging their consistency requires that the inner logic, propositions, assumptions, and hypotheses of each theory be clearly specified and well-understood.[27]

Neoclassical economics:

Probably the oldest and best-known theory of international migration was developed originally to explain labour migration in the process of economic development *(Lewis, 1954; Ranis and Fei, 1961; Harris and Todaro, 1970; Todaro, 1976).* According to this theory and its extensions, international migration, is caused by geographic differences in the supply of and demand for labour. Countries with a large endowment of labour relative to capital have a low equilibrium market wage, while countries with a limited endowment of labour relative to capital are characterized by a high market wage, as depicted graphically by the familiar interaction of labour supply and demand curves. The resulting differential in wages causes workers from the low wage country to move to the high-wage country. As a result of this movement, the supply of labour decreases and wages rise in the capital-poor country, while the supply of labour increases and wages fall in the capital-rich country, leading, at equilibrium, to an international wage differential that reflects only the costs of international movement, pecuniary and psychic.

Mirroring the flow of workers from labour-abundant to labour-scarce countries is a flow of investment capital from capital-rich to capital-poor countries. The relative scarcity of capital in poor countries yields a rate of return that is high by international standards, thereby attracting investment. The movement of capital also includes human capital, with highly skilled workers moving from capital-rich to capital-poor countries in order to reap high returns on their skills in a human capital-scarce environment, leading to a parallel movement of managers, technicians, and other skilled workers. The international flow of labour, therefore, must be kept conceptually distinct from the associated international

---

[27] See Massey et al., Theories of International Migration: A Review and Appraisal.

flow of human capital. Even in the most aggregated macro-level models, the heterogeneity of immigrants along skill lines must be clearly recognized.

Corresponding to the macroeconomic model is a microeconomic model of individual choice *(Sjaastad, 1962; Todaro, 1969, 1976, 1989; Todaro and Mamszko, 1987).*[28] In this scheme, individual rational actors decide to migrate because a cost-benefit calculation leads them to expect a positive net return, usually monetary, from movement. International migration is conceptualized as a form of investment in human capital. People choose to move to where they can be most productive, given their skills; but before they can capture the higher wages associated with greater labour productivity they must undertake certain investments, which include the material costs of traveling, the costs of maintenance while moving and looking for work, the effort involved in learning a new language and culture, the difficulty experienced in adapting to a new labour market, and the psychological costs of cutting old ties and forging new ones. Potential migrants estimate the costs and benefits of moving to alternative international locations and migrate to where the expected discounted net returns are greatest over some time horizon *(Borjas, 1990)*[29]. Net returns in each future period are estimated by taking the observed earnings corresponding to the individual's skills in the destination country and multiplying these by the probability of obtaining a job there (and for illegal migrants the likelihood of being able to avoid deportation) to obtain "expected destination earnings." These expected earnings are then subtracted from those expected in the community of origin (observed earnings there multiplied by the probability of employment) and the difference is summed over a time horizon from 0 to n, discounted by a factor that reflects the greater utility of money earned in the present than in the future. From this integrated difference the estimated costs are subtracted to yield the expected net return to migration. This decision making process is summarized analytically by the following equation:

$$ER(0) = \int_{0}^{n} [P_1(t)P_2(t)Y_d(t) - P_3(t)Y_o(t)]e^{-rt}\,dt - C(0) \qquad (1)$$

---

[28] See, Sjaastad (1962), The Costs and Returns of Human Migration
[29] See, Borjas (1990), Friends or Strangers: The Impact of Immigrants on the US Economy.

Where ER (0) is the expected net return to migration calculated just before departure at time 0; t is time; P_1 (t) is the probability of avoiding deportation from the area of destination; P_2 (t) is the probability of employment at the destination; Y_d (t) is earnings if employed at the place of destination; P_3 (t) is the probability of employment in the community of origin; Y_0 (t) is earnings if employed in the community of origin; r is the discount factor; and C(0) is the sum total of the costs of movement (including psychological costs). If the quantity ER (0) is positive for some potential destination, the rational actor migrates; if it is negative the actor stays; and if it is zero, the actor is indifferent between moving and staying. In theory, a potential migrant goes to where the expected net returns to migration are greatest, leading to several important conclusions that differ slightly from the earlier macroeconomic formulations:

1 International movement stems from international differentials in both earnings and employment rates, whose product determines expected earnings (the prior model, in contrast, assumed full employment).

2 Individual human capital characteristics that increase the likely rate of remuneration or the probability of employment in the destination relative to the sending country (e.g., education, experience, training, language skills) will increase the likelihood of international movement, other things being equal.

3 Individual characteristics, social conditions, or technologies that lower migration costs increase the net returns to migration and, hence, raise the probability of international movement.

4 Because of 2 and 3, individuals within the same country can display very different proclivities to migrate.

5 Aggregate migration flows between countries are simple sums of individual moves undertaken on the basis of individual cost-benefit calculations.

6 International movement does not occur in the absence of differences in earnings and/or employment rates between countries. Migration occurs until expected earnings (the product of earnings and employment rates) have been equalized internationally (net of the costs of movement), and movement does not stop until this product has been equalized.

7 The size of the differential in expected returns determines the size of the international flow of migrants between countries.

8 Migration decisions stem from disequilibria or discontinuities between labour markets; other markets do not directly influence the decision to migrate.

9 If conditions in receiving countries are psychologically attractive to prospective migrants, migration costs may be negative. In this case, a negative earnings differential may be necessary to halt migration between countries.

Migration and job search

In the first two decades following World War II, policy advice in the newly independent developing countries focused upon the transfer of labour from agriculture to industry as a concomitant of growth. That this transfer continued despite burgeoning shanty towns and even open, urban unemployment became both a pressing policy concern and an intellectual puzzle.[30]

Todaro (1969)[31] offered a simple but powerful hypothesis. The essential idea is that urban jobs are more attractive than rural employment; entry to the better urban activities is somehow constrained; and search for urban job openings can be more effectively conducted in close geographical proximity. As a result urban migration is induced as an investment in job search for attractive urban opportunities. Todaro's statements of the migration decision is actually a restatement of the model in Sjaastad (1962), in which Todaro replaces Sjaastad's known urban incomes by their expected values in computing present values, though Todaro continues to assume rural incomes are risk free.

Todaro also makes some strong, simplifying assumptions about the process of urban job search: formal sector wage jobs are the goal of rural-urban migrants; wages in the urban formal sector are exogenous and maintained above clearing by unspecified institutional forces; job search is conducted from a state of open, urban unemployment; workers are risk neutral and derive no utility from leisure. Together these permit expected utility from urban earnings to be expressed as proportional to the going urban wage multiplied by the probability of employment.

---

[30] See, Lucas (1997), Internal Migration in Developing Countries.
[31] See, Todaro (1969), A model of labour migration and urban unemployment in less developed countries.

17

Blomqvist (1978) actually identifies two separate formulations of the Todaro hypothesis, distinguished by the latter element- the probability of employment. According to Blomqvist,[32] Todaro's (1969) specifications of the employment probability is determined in a short-run, dynamic setting, such that

$$P = (g + t) e / u,$$ 1

where P is the probability of obtaining a job, g is the proportional rate of new job creation, t is the proportional rate of job turnover, e is the level of employment and u is the level of unemployment. In other words equation 1 specifies the relevant employment probability as the number of job openings occurring within any period, relative to the number of persons unemployed. In contrast, Harris and Todaro (1970) assume that every urban job turns over in each period and no new jobs are created. In this essentially static case, the probability of employment is simply the fraction of the urban labour force in formal employment, since the chances of obtaining an urban job are equal for all urban workers (who are assumed homogenous), irrespective of prior employment status.

$$P = e / (e + u)$$

Few theories in economics have been the subject of such widespread acceptance in policy circles, of empirical challenges and of theoretical extensions.

Age/education and migration

One of the most universal mobility relationships is that between age and migration. Migration propensities peak during the early to mid-twenties and then decline steadily, with a slight upturn at retirement age in some countries (Plane, 1993). Another important relationship, less well documented than that between age and migration but no less universal, is that migration propensities rises with education.

---

[32] See, Blomqvist (1978), Urban job creation and unemployment in LDCs: Todaro vs. Harris and Todaro

18

For US flows between 1980 and 1985 census, migration propensities are highest for the 25-29 year old group and decline steadily thereafter. Data on US migration indicates that the peak propensity often occurs in the 18-24 year old group. Similar relationships have been observed for other countries, frequently peaking in the early twenties (eg. Netherlands, Vergoossen (1990); Japan, Otomo (1990); Canada, Ledent (1990)).

For the group with 5 or more years in college relative to that of 0-8 years of elementary school, migration propensities ranges from 4.6 times as high (25-29 years old) to 2 times as high (45-64 years old).[33]

The new economics of migration

In recent years, a "new economics of migration" has arisen to challenge many of the assumptions and conclusions of neoclassical theory *(Stark and Bloom, 1985)*.A key insight of this new approach is that migration decisions are not made by isolated individual actors, but by larger units of related people typically families or households-in which people act collectively not only to maximize expected income, but also to minimize risks and to loosen constraints associated with a variety of market failures, apart from those in the labour market *(Stark and Levhari, 1982; Stark, 1984; Katz and Stark, 1986; Lauby and Stark, 1988; Taylor, 1986; Stark, 1991)*. Unlike individuals, households are in a position to control risks to their economic well-being by diversifying the allocation of household resources, such as family labour. While some family members can be assigned economic activities in the local economy, others may be sent to work in foreign labour markets where wages and employment conditions are negatively correlated or weakly correlated with those in the local area. In the event that local economic conditions deteriorate and activities there fail to bring in sufficient income, the household can rely on migrant remittances for support. In developed countries, risks to household income are generally minimized through private insurance markets or governmental programs, but in developing countries these institutional mechanisms for managing risk are imperfect, absent, or inaccessible to poor families, giving them incentives to diversify risks through migration. In developed countries, moreover, credit

---

[33] See, Plane (1993), Demographic influences on migration.

markets are relatively well-developed to enable families to finance new projects, such as the adoption of new production technology. In most developing areas, in contrast, credit is usually not available or is procurable only at high cost. In the absence of accessible public or affordable private insurance and credit programs, market failures create strong pressures for international movement.

The theoretical models growing out of the "new economics" of migration yield a set of propositions and hypotheses that are quite different from those emanating from neoclassical theory, and they lead to a very different set of policy prescriptions:

1. Families, households, or other culturally defined units of production and consumption are the appropriate units of analysis for migration research, not the autonomous individual.

2. A wage differential is not a necessary condition for international migration to occur; households may have strong incentives to diversify risks through transnational movement even in the absence of wage differentials.

3. International migration and local employment or local productions are not mutually exclusive possibilities. Indeed, there are strong incentives for households to engage in both migration and local activities. In fact, an increase in the returns to local economic activities may heighten the attractiveness of migration as a means of overcoming capital and risk constraints on investing in those activities. Thus, economic development within sending regions need not reduce the pressures for international migration.

4. International movement does not necessarily stop when wage differentials have been eliminated across national boundaries. Incentives for migration may continue to exist if other markets within sending countries are absent, imperfect, or in disequilibria.

Family and migration

The influence of family ties on migration has been specifically analyzed by Mincer (1978). "Tied persons" in the family are "those whose gains from migration are dominated by gains (or losses) of the spouse". Presuming that their joint net returns to migrating from i to j exceed their joint net costs of migrating, a husband-wife family would presumably migrate from i to j. If, for example, the wife's expected earnings in j

were less than i, but the husband's were sufficiently greater in j than in i to offset these losses, the wife would be a "tied mover". On the other hand, if the husband's earnings gain in j were to fail to offset his wife's earnings loss in i, the couple would remain in i, and the husband would be a "tied stayer". Moreover according to Mincer such ties tend to reduce the employment and earnings of those wives who do not migrate and to increase the employment and earnings of their husbands. Mincer goes on to show that increased labour force participation rates of women cause an increase in migration ties, which results in both less migration and more marital instability. Increased marital instability in turn encourages migration as well as increased women's labour force participation.[34]

Several testable hypotheses emerge from Mincer's work. First, husband-wife families are less likely to migrate than unattached individuals. Second, when husband-wife family moves, the husband's earnings will generally improve, but the wife who is a tied mover, will work less and have lower earnings. Long (1974) shows that much movement over both short and long distances is connected with marriage and establishment of households, but after these events married men are more residentially stable than unmarried men.[35] Moreover, with the exception of 20-24 year old men, those with working wives had lower rates of interstate movement than those with nonworking wives. However, those with working wives were more likely to move within a county. Long concludes that "having a wife who works may inhibit long-distance movement but appears to promote short-distance movement".

In support of Mincer (1978), Graves and Linneman (1979) also found that the probability of moving is negatively related to marital status. However, Bartel's (1979) results do not reflect a strong marriage effect on migration. Van Dijk (1989) obtained a negative but insignificant effect for US couples without children but a very strong negative effect associated with presence of children.

Sandell (1977) provides further empirical evidence in support of Mincer's position. He shows that the wife's labour market orientation is an important determinant of family migration decisions. Families with an employed wife have a significantly lower probability of migrating, as predicted by Mincer. Moreover, the wife's increased job

---

[34]See, Mincer (1978), Family migration decisions
[35] See, Long (1974), Women's labour force participation and the residential mobility of families.

21

tenure further reduces the probability of migrating. Family migration probabilities increase with the husband's education and decrease with his age. Migration tends to increase the earnings of the husband and to initially decrease those of the wife, but family earnings rise.[36] This particular phenomenon is true especially in the context of North-East region.[37]

The Dual labour market theory

The dual labour market theory argues that international migration is mainly caused by pull factors in the developed migrant-receiving countries. According to this theory, segments in the labour markets in these countries may be distinguished as being primary or secondary in nature. The primary segment is characterized by capital-intensive production methods and predominantly high-skilled labour, while the secondary segment is characterized by labour-intensive methods of production and predominantly low-skilled labour. The dual labour market theory assumes that international labour migration stems from labour demands in the labour-intensive segment of modern industrial societies (receiving countries) *(Piore, 1979; Massey et al., 1993)*.

Piore (1979) has been the most forceful and elegant proponent of this theoretical viewpoint, arguing that international migration is caused by a permanent demand for immigrant labour that is inherent to the economic structure of developed nations. According to Piore, immigration is not caused by push factors in sending countries (low wages or high unemployment), but by pull factors in receiving countries (a chronic and unavoidable need for foreign workers).[38]

World systems theory

Building on the work of Wallerstein (1974),[39] a variety of sociological theorists has linked the origins of international migration not to the bifurcation of the labour market within particular national economies, but to the structure of the world market that has

---

[36] See, Sandell (1977), Women and the economics of family migration.

[37] See, section V of this study, Table No. 7-12

[38] See, Piore (1979), Birds of Passage: Migrant labour in industrial societies.

[39] See, Wallerstein (1974, The Modern World System, Capitalist Agriculture and the Origins of the European World Economy in the Sixteenth Century.

developed and expanded since the sixteenth century *(Portes and Walton, 1981; Petras, 1981; Castells, 1989; Sassen, 1988, 199 1; Morawska, 1990).* In this scheme, the penetration of capitalist economic relations into peripheral, noncapitalist societies creates a mobile population that is prone to migrate abroad. Driven by a desire for higher profits and greater wealth, owners and managers of capitalist firms enter poor countries on the periphery of the world economy in search of land, raw materials, labour, and new consumer markets. In the past, this market penetration was assisted by colonial regimes that administered poor regions for the benefit of economic interests in colonizing societies. Today it is made possible by neocolonial governments and multinational firms that perpetuate the power of national elites who either participate in the world economy as capitalists themselves, or offer their nation's resources to global firms on acceptable terms.

According to world systems theory, migration is a natural outgrowth of disruptions and dislocations that inevitably occur in the process of capitalist development. As capitalism has expanded outward from its core in Western Europe, North America, Oceania, and Japan, ever-larger portions of the globe and growing shares of the human population have been incorporated into the world market economy. As land, raw materials, and labour within peripheral regions come under the influence and control of markets, migration flows are inevitably generated, and some of which have always moved abroad (Massey, 1989).

Chapter 4

Literature Review of Migration in the North-East.

The economics of migration is a fairly well developed field of study. However, much of this literature has studied issues concerned with internal migration within developed countries and immigration to developed countries. The literature on internal migration in developing countries has mostly confined attention to rural-urban labour migration- the process by which hordes of unemployed workers from the agricultural sector join the ranks of the informal sector in urban and semi-urban areas. In contrast, the migrants moving from Bangladesh to Assam mostly move from rural to rural areas and further, a significant part of the incentives for migration to Assam come from elements outside the labour market such as purchase of land, encroachment of public land and forests, exploitation of common property resources, public goods and infrastructure, etc.

In the received paradigm of rural-urban labour migration, the movement from rural sector to the urban informal sector is perceived as an investment in search for high wage jobs in the formal sector[40]. More recently, this literature has been significantly augmented by the 'new economics of migration' which has emphasized the role of factors such as family-based decision making, risk diversification, attitude towards risk, incomplete information and relative destitution in explaining certain features of rural-urban migration.[41] The literature on international migration has also emphasized the role of networks of past migrants and the social infrastructure in host economies in explaining migration flows[42]. In this section we will discuss the literature review on migration especially for the North-East region.

The Dynamic Aspect

Migration is the consequence of decisions taken by socio-economic units motivated by their self interest. The unit making such a decision is more likely to be the family rather

---

[40] See Harris & Todaro (1970), Migration, Unemployment and Development: A Two-sector Analysis, Sjastad 1962, Stark 1991

[41] See Stark and Bloom (1985), The New Economics of Labour Migration

[42] See Massey et al., Theories of International Migration: A Review and Appraisal.

than the individual, even though the entire family may not actually migrate. The welfare that an individual migrant or a family of migrants gives up or attains in course of migration is not a static notion, it encompasses current as well as future welfare. As in any investment decision, the net return from migration is the gain in terms of present value of the stream of welfare over time which the migrant unit attains by moving from the source to the destination. The dynamic nature of the returns implies that comparison of current earning opportunities between the source and destination points do not adequately capture the economic incentives of current migration. Empirical evidence shows that international migrants are often worse off in the initial years after migration relative to their material well being prior to migration.[43] Further, in the initial years, the migrant will spend a lot of time and resources on labour market search, information acquisition and gaining access to common property and public resources. As in any investment decision, the migrant will expect to recover this through future earnings. Thus, economic incentives for migration may be high even if the current earning opportunity for the migrant- in terms of current real wages in a border district of Assam is actually lower than that in Bangladesh.[44]

The Labour Market Aspect

Historically, the most important incentive for migration has been the return to human capital, arising from physical access to the labour market in the host economy. Potential migrants from Bangladesh, particularly the illegal migrants are unlikely to hold any significant amount of assets in the source country. While a significant proportion of migrants have eventually acquired control over the land and other productive resource, the primary source of income for most of them, particularly the new migrants, has been the informal labour market in rural as well as urban areas.

The size and geographical concentration of the existing migrant base in the North-East region has played a crucial role in reducing the initial cost of job search in the casual rural labour market as well as in the informal sector in urban and semi-urban areas. The

---

[43] See Massey et al., Theories of International Migration: A Review and Appraisal.

[44] See Santanu Roy, Why do they come?

network not only increases the probability of finding an initial job but also aids future job search through provision of information as well as guarantees which allow employers to be reasonably certain about the trustworthiness of the new migrant.[45]

Network theory

Migrant networks are sets of interpersonal ties that connect migrants, former migrants, and non-migrants in origin and destination areas through ties of kinship, friendship, and shared community origin. They increase the likelihood of international movement because they lower the costs and risks of movement and increase the expected net returns to migration. Network connections constitute a form of social capital that people can draw upon to gain access to foreign employment. Once the number of migrants reaches a critical threshold, the expansion of networks reduces the costs and risks of movement, which causes the probability of migration to rise, which causes additional movement, which further expands the networks, and so on. Over time migratory behavior spreads outward to encompass broader segments of the sending society *(Hugo, 1981; Taylor, 1986; Massey and Garcia Espaba, 1987; Massey, 1990a, 1990b; Gurak and Caces, 1992).*[46]

A number of existing studies have found that the network of past migrants- their size, composition and economic characteristics performs much better in explaining the rate and destination of migration compared to say, wage differentials. The effect is much more pronounced for illegal migrants because the network of past migrants is an important protection against detection and deportation. The larger the size of the migrant community in the bordering districts, the easier it is for them to merge undetected in the local population and gather the credentials necessary to engage in economic activities. This phenomenon is particularly true in case of Bangladeshi migrants in the North-East region. As migration occurs overtime, the installed base of past migrants expands and also acquires greater prosperity, assets and reputations and this tend to sustain positive

---

[45] See Santanu Roy

[46] See, Massey et al. (1993), Theories of International Migration: A Review and Appraisal: Gurak and Caces (1992), Migration Networks and the shaping of migration systems: Hugo (1981), Village-community ties, village norms, and ethnic and social networks: A review of evidence from the third world.

incentive to migrate for new migrants through the network effect. This occurs despite the fact that as population grows in Assam- naturally or due to migration- the marginal return to migrant labour tends to get depressed particularly in a sterile technological and capital investment climate. Larger the network, stronger the effect. Thus, migration may become self-sustaining. Also the networks of past migrants perform many roles such as providing insurance against starvation and lack of shelter in the initial years, providing information and the access to the informal labour market-sometimes past migrants act as employers of new migrants etc.

One important feature of the network effect is that its strength depends on geographical concentration. Concentration of past migrants and their economic incentives in border areas is enormously more helpful for new illegal migrants than if they are scattered through out the state. Similarly, their political leverage is higher if they are not scattered uniformly across constituencies. [47]

The informational aspect

Trans-border migration, particularly when it is undertaken outside the legal immigration process, takes place under a veil of ignorance. Potential migrants have limited information about the future income prospects and their objective probability distribution as well as the relationship between their own personal attributes and the income prospects. Their perception is based on mass media, popular myths and their own observation of the fortunes of past migrants in their geographical or social neighourhood. In this context two interesting aspects of the process of information acquisition can be highlighted.

First, there is always a selection bias in the observation of the fortunes of past migrants. In the population of past migrants from one's observable neighbourhood, a person is more likely to hear about or observe the fortunes of those who migrated and were relatively more successful in the destination economy. The large numbers who live in squalor and deprivation after migration are not likely to be observed by people in their

---

[47] See Santanu Roy

source village. So, the statistical inference process is comparable to a survey with a large class of non-respondents who are self-selected with a bias. Thus, if one uses only the observed sample, then one is more likely to form a more favourable view perception of the earnings opportunity through migration compared to reality. This creates an incentive for migration which would not have existed under full information.

Second, migration from any area is a sequential process. One way to think about it is that people receive informative signals about the opportunities across the border, observe the actions of those who migrate and decide whether or not to migrate. This creates an ideal opportunity for the phenomenon of 'information herding' where perfectly rational agents ignore their own signals and follow others.

The asset acquisition aspect

Immigrants gain access to earning opportunities not only through the labour market but also through acquisition of return yielding productive assets (which would have been impossible without physical migration). The assets include land, water resources (rivers, lakes and their biological components) and forests. When the assets have well-defined private property rights (as in the case of privately owned farmland), immigrants acquire these assets through voluntary trading. On the other hand, when private property rights are not well defined as in the case of common property resources or publicly owned resources (such as forests), acquisition takes the form of physical occupation or encroachment of the land or forests or of the access to natural resources.

Demographic pressure on land in Bangladesh has been systematically and significantly higher than in north-eastern India *(Homer & Dixon 1994)*.[48] Even nearly after a century of high population growth, population density in Bangladesh was thrice that of Assam in 1991. The extent of land erosion, deforestation,[49] silting of river beds and overexploitation of fisheries has also been at a much higher level. In general, the natural resource base has been seriously depleted and to the extent that the use of such resources

---

[48] See, Homer and Dixon, Environmental Scarcities and Violent Conflicts: Evidence from Cases.

[49] In 1990 a survey done by the Assam Remote Sensing Application Centre revealed that the percentage of area under forest cover had fallen to about 21%. Recently, in seeking a World Bank loan, even the Sate government agreed that it had lost over 2230 sq. km. of forest area since 1989.

were available as common property or open access public property, the asset base of the poor rural population has been extensively damaged. Demographic growth has reduced the average product which has increased the incentive for individual household numbers to acquire land and set up new farms where their marginal productivity is much higher.

As we know the overwhelming motivation for immigration of peasants from East Bengal in the first half of the 20th century was provided by the availability of vast tracts of wastelands owned by the State and its policy of encouraging settlement and cultivation of such land.[50] In the second half of the 20th century the immigrants were no longer looking forward to acquiring virgin public land available for cultivation but increasingly moving towards illegal encroachment of reserved public forest land, public land set aside for grazing and for construction, and even public land along roads and railway tracks.[51]

The asset acquisition incentive for migration has also taken into account the open access water resources-the rivers and the lakes of the state. The rivers of the state, particularly in the Brahmaputra valley, are much less intensively fished than in Bangladesh and this provides a major earning and subsistence opportunity for immigrants.

Also, it is not just natural resources that provide scope for asset acquisition for migrants. Immigrants – even when they are illegal – are able to gain complete access to the public socio-economic infrastructure – schools, medical facilities and other public goods as well as the public distribution system with subsidized food and necessities. These public goods and welfare measures on the whole provide a superior package than that available in rural Bangladesh and form an important element of the incentive to migrate.

The risk aspect

Migration is an investment in a risky project- the returns are subject to a higher degree of uncertainty. For any illegal migrant, there is the primary risk of being detected and eventually deported. Probably more important is the income risk faced in the labour market characterized by unemployment and underemployment as well as uncertainty

---

[50] In 1947, in his letter to the prime minister of Independent India, the then chief minister of Assam Gopinath Bordloi estimated that there were about 200,000 acres of wasteland available in the region.

[51] The Assam Tribune reported on 28 March 2000 that out of total area of 2,800 sq. km. in the Upper Assam forest circle, about 1,500 sq. km. are under encroachment.

about actual acquisition of productive assets- particularly those in the public domain and the possibility of holding such assets in the future. Even if there is no uncertainty in the actual market, uncertainty emerges because of lack of information about the destination. There are three economic insights that are worth pointing out.

First, the potential migrants ought to face much lower income risk at their source location compared to their destination because at the source, they have access to traditional social capital and social insurance- a complex network of income smoothing arrangements. However, if there are well established social and economic networks formed by earlier migrants at the destination, then these networks can partially provide for social capital and informal insurance and thus enable migrants to face the risks in their new location.

Second, one of the most important factors highlighted by the new economics of migration is the role of migration as a means of risk diversification within a large family[52]. Sending out part of a family abroad is equivalent to investing in an asset whose return is relatively uncorrelated with local income risk and thereby holding a diversified portfolio which reduces the aggregate risk for the large family. Extensive empirical evidence points out that this risk diversification argument leads to migration in developing societies even when the expected income of the migrant at the destination point is no different from that of the origin.[53] The probability and ease of repatriation of income to source families influences the desirability of risk diversification through out-migration.

Third, it has been shown that economic agents who are facing threats of survival that is in a danger of not being able to meet a basic threshold level of subsistence consumption are likely to exhibit risk loving behavior in order to maximize their chance of survival.

Relative destitution

The new economics of migration has emphasized the role of relative destitution in the internal migration process of developing nations. The basic idea is that agents care about their relative wealth or income within their community – their status in the context of local distribution. They have an incentive to migrate to a different community where they

---

[52] See, Stark and Bloom (1985), The New Economics of Labour Migration.
[53] See, Ghatak, Levine and Price (1996), Migration Theories and Evidence: An Assessment.

would be 'relatively better off' even if the absolute income at their destination is not higher than that at their current location. Thus, the poorest in a village with high inequality would like to move to a community where the distribution is more equal, even if everybody in the other community is just as poor. Destitute new migrants entering Assam often enter communities of recent immigrants where most people have similar economic characteristics and often differences in wealth due to asset holding are not very large. The marginal migrant is able to reduce his relative destitution by immigrating. The process has a self perpetuating nature to it. The poorest in a village migrate and the people in the next income rung now find themselves at the bottom, their relative destitution worsens, creating new incentives for migration.

The Role of Per Capita Income, Land-Man ratio, Urbanization and Distance

Jayanta Kumar Gogoi made an attempt to study the different streams of migrants in Assam since the arrival of the British in 1826 AD. He divided the migrants into five streams 1) Tea garden labourers, 2) Muslim peasant migrants from then East Bengal, 3) Bengali Hindus, 4) Nepalese Migrants, and 5) Migrants from different parts of India. Now he combined all the migrant streams together and related them with the important common push factors which might have influenced their movement into Assam. Lower per capita income and land-man ratio at the place of origin, and the distance between the place of origin and the place of destination may be considered as three important push factors in this regard.[54] He related these push factors with the volume of migration in Assam by standardizing the latter to proportion of out-migrants/emigrants to total population of the place of origin, as the size of population at the place of origin is also a determining factor in the process of migration. He performed a regression analysis by taking the proportion of out-migrants/emigrants as the dependent variable and per-capita income, land-man ratio and mean geographical distance as independent variables. It was found out that except the coefficient of per capita income, the other two coefficients of land-man ratio and mean geographical distance were significant at 95% level. This

---

[54] See, Datta (2004), Push-Pull factors of Undocumented Migration from Bangladesh to West Bengal

indicates that these are two significant factors in explaining the variation of the dependent variable.[55]

Pushpam Kumar and Suresh Aggarwal (2003)[56] adopted the Harris-Todaro framework to find out the reason for migration from other states to Assam. They took proportion of migrants from a state to Assam as a percentage of total migration from other sates as the dependent variable and regressed the dependent variable upon difference in per capita income of Assam and the states, difference in the rate of urbanization between the states and Assam, difference in the unemployment rate between the states and Assam and distance of the states capitals from the capital city of Assam. The same basic specification was attempted separately for both rural and urban migration to Assam. Instead of per capita income they used poverty gap in case of rural and urban migration to Assam since no separate data is available for capita income in both rural and urban areas. For the total migration they have used the time period of 1991 and 1971 and for rural and urban migration they have used 1991, 1971 and 1961 as the three census time periods. They estimated the equations by pooling the data after taking the log transformation of the variables. It was found out that, for total migration to Assam from other states, it was urbanization which influenced the decision to migrate. But for urban population the distance between the home place and destination place was more important than urbanization. However, for rural migrants urbanization along with distance was a signal to the extent of employment opportunities available at the destination State. The coefficient of unemployment was found to be insignificant and did not contribute to explain the process of migration. Similar result was also obtained by several other studies like Lowry (1966) and Nelson (1959).[57]

---

[55] See, Jayanta Kumar Gogoi, The Migration Problem in Assam.
[56] See, Kumar and Aggarwal (2003), An Econometric Analysis of Causes of Migration in Assam.
[57] See, Lowry (1966), Migration and Metropolitan Growth: Two Analytical Models, Nelson (1959), Migration, real income and information.

International trade

It has been frequently argued that free international trade between Assam and Bangladesh is one of the measures that will help contain migration *(Banerjee et al. 1999)*.[58] One of the predictions of the theory of international trade is that free trade in goods will lead to equalization of factor prices across nations including wages, even though labour and other resources which enter as inputs are not explicitly traded. This factor price equalization theorem holds under certain conditions. In particular in a two country setting, wages are likely to be equalized under free trade if, among other things, both countries have access to the same production technology but differ only in their relative endowments of the various factors of production such as labour and capital. However, if there are differences in production technology across countries, then wage differences may well persist or even expand- wage and productivity of labour will be relatively higher in the country which is technologically superior in the production of the labour intensive goods. A similar effect comes about when one country has a superior infrastructure (roads, telecommunications etc.).[59]

If we accept that free trade reduces the incentive to migrate then it must raise wages in Bangladesh and/or reduce wages in Assam. Relative to India, Bangladesh is more labour abundant in the sense that it has a higher ratio of labour to other factors such as capital, land or natural resources. Trade with India will expand labour-intensive productive activities in Bangladesh and thereby raise the wages which should reduce the incentive to migrate. On the other hand, competition from goods produced in Bangladesh would actually reduce production of some labour-intensive goods in Assam, particularly, in the agricultural sector. In the short-run, earning opportunities for labour will probably decline n Assam. Thus, the short-run effect of free trade will be a reduction in the incentive to immigrate.

In the long-run, manufacturing and tertiary activities are likely to expand in a big way once the transport bottleneck is removed. While these activities are not labour intensive they will eventually drive up wages and the probability of employment in the formal as

---

[58]See, Banerjee, et al., Indo-Bangladesh Cross-Border Migration and Trade.
[59] See, Razin and Sadka (1997), International Migration and International Trade.

well as the urban informal sector. This will not only increase the incentive for rural-urban migration but also trans-boundary migration. More generally, given the technological and infrastructural differences between India and Bangladesh- once Assam's economy is better integrated into the national economy of India it is unlikely that the long-run labour market earning opportunities in Assam will be significantly worse than in Bangladesh. Free trade might actually increase migration in the long-run.

Also neoclassical theory of trade is true as far as tradable goods are concerned that is trade and labour mobility are substitutes. But if certain goods like services are not tradable then labour mobility will actually increase. This is very true in the context of illegal migrants from Bangladesh border who come to Assam and other north eastern states and work as contractual labourers. These illegal migrants engage themselves in services such as barbers, plumbers and some times invest in small stationary shops. Owners of production inputs or commodities can be traded while themselves staying put, whereas owners of labour must usually move along with their labour which happens in case of non-tradable goods like services. Furthermore, owners of labour have both feelings and independent wills. Indeed, most aspects of human behavior, including migratory behavior, are both a response to feelings and an exercise of independent wills. These simple observations divorce migration research from traditional trade theory as the former cannot be construed from the latter merely by effecting a change of labels.

Chapter 5

Migration patterns and trends

In the pre-British era, the population flow into what is now northeast India almost wholly originated from the east. Being closer to the highlands of Burma and southwestern China than to the power centers of the Indian mainland, this region was exposed to a constant flow of tribes and nationalities belonging to the Tibeto-Burman or the Mon-Khmer stock, one settling down only to be overrun by the subsequent wave. The incomplete process of racial assimilation, the frequency of fresh migrations and the restrictive nature of empire building in the region account for its current ethnic diversity.

But the direction of the population flow changed with the advent of the British. The colonial masters brought peasants and agricultural labourers, teachers and clerks from neighboring Bengal and Bihar to open up Assam's economy. The trickle became a tide, and the sweep was soon to cover states like Tripura, where the Manikya kings offered Bengali farmers "jungle-avadi" or forest clearance leases to popularize settled agriculture that would, in turn, increase the revenue. The hill regions were protected by the Inner Line Regulations; the plains and the Princely domains were not. The steady population flow from mainland India, particularly from undivided Bengal, accentuated the ethnic and religious diversity and introduced a nativist-outsider element to the simmering conflict.[60] The Partition led to a rise in the flow of refugees and migrants from East Pakistan (now Bangladesh). Tripura's demography changed qualitatively in two decades, with the Bengalis becoming a clear majority. The pace of demographic change was slightly slower in Assam than in Tripura, but it was pronounced enough to upset the "sons of the soil," provoking both armed and unarmed protest movements. The fear that other northeastern states would "go the Tripura way" has weighed heavily on indigenous peoples and early settlers throughout the Northeast and provoked the more militant of them to take up arm.[61]

---

[60] See Myron Weiner, Sons of the Soil: Migration and Ethnic Conflict in India (Princeton: Princeton University Press, 1978); Sajal Nag, Roots of Ethnic Conflict: Nationalities Question in Northeast India

[61] Subodh Debbarma, vice-president of the Tribal Students Federation (TSF) of Tripura, told a news conference in Guwahati, Assam, that "Assam would soon become another Tripura, where the sons of the

Jayanta Kumar Gogoi made an attempt to study the different streams of migrants in the North-east particularly Assam since the arrival of the British in 1826 AD. According to him there were five large-scale streams of migrants, namely,

1. Tea garden labourers,
2. Muslim peasant migrants from then East Bengal,
3. Bengali Hindus,
4. Nepalese migrants, and
5. Migrants from different parts of India.

Tea garden migrants

The tea garden labourers were brought by the British capitalists mainly from Bihar, Chhotanagpur, Central Province (presently Madhya Pradesh) and Orissa consequent upon the development of the plantation industry in the state of Assam. Although started as early as in the 1830s, large-scale migration of tea garden labourers took place from the 1870s and continued till 1937 by which time tea garden labourers numbered just under 10 lakh in Assam (Census of India, 1961).

Muslim peasant migrants

The second stream of migration was Muslim peasants from the then East Bengal districts of Mymensingh, Pabna, Borga and Rangpur. Driven by the pressure on the soil at home, and lured by cheap and plentiful supply of both virgin and exceptionally fertile lands in Assam, land-hungry peasants from East Bengal began to pour into the state from the beginning of the twentieth century. They first entered through the districts of Goalpara and the population of the district rose from 49.1 thousand in 1901 to 118.2 thousand in 1911, an increase of 240 percent, forming 19.7 per cent of the actual population of the district.

---

soil have become aliens within half a century." Reported in *Sentinel* daily newsstudy (Guwahati), 3 June 2002.

Bengali Hindu migrants

The third stream of migrants were the Bengali Hindus, who were brought by the Britishers for their office and other professional works. It happened because of the Bengali Hindu's early initiation in English education and the British-India administrative system. The movement of this stream was intensified along with the opening of new railway lines, post and telegraph offices, and development of tea and petroleum industries in particular. The Bengali clerks, doctors and lawyers monopolized the British government jobs and professions. However, the most conspicuous mass migration of this stream took place at the time of Partition and immediately thereafter. In 1958 their number was estimated at 4.87 lakh and it rose to 6.28 lakh in 1961. As per the 1991 cesus report the number of Bengali-speaking population stood at 4.35 million constituting 21.67 per cent of the total population of Assam.

Nepalese migrants

The fourth stream of migrants into Assam consisted of Nepalese immigrants. This started with the British occupation of Nepal who recruited Nepalese into the British army. However, the Government of Nepal was unwilling to allow its men to serve in the Britsh Army and therefore Gorkhas of the army on leave in Nepal were encouraged to smuggle out recruits from Nepal and were rewarded by the British. The British administration first brought the Gorkhas as soldiers and then subsequently as watchmen, peons, etc. for their personal service. However, later on, fresh Nepalese migrants began to come on their own accord and started settling in the forest areas near the foothills along the northern border of Assam.

The period 1911-1931 was the most important for Nepalese migrants and their number was estimated at 83,306 in the 1931 census report. According to the 1991 census report, Nepalese-speaking population constitutes 1.9 per cent of Assam's total population.

Migrants from different parts of India

The fifth stream of migrants into Assam were from other parts of India seeking economic opportunities in trading, construction works and white-collar jobs, particularly from Orissa, Andhra Pradesh, Madhya Pradesh, Rajasthan, Bihar, Punjab, Uttar Pradesh and West Bengal. The migrants from the states like Bihar and Uttar Pradesh were absorbed as washer man, barbers, cobblers, sweepers, load carriers, wage labourers in construction sites. Their inflow increased with the extension of railway lines and steamer service which new avenues for employment in Assam. Their inflow was further intensified after independence when their services were in great demand as a result of industrialization and urbanization in the region. It is to be noted that the majority of migrants from Rajasthan are from Marwar and they are popularly known as Marwaris. They came in a small number in the pre colonial period but their movement became significant with the establishment of the British rule and the subsequent development of the tea industry and other commercial and industrial establishments. They acted as money changers, bankers and general agents to the managers of tea gardens. They were successful in monopolizing practically the entire trade and commerce in Assam by the turn of the 19th century.

Tables explaining migration patterns and trends in the North-east

From Table 1 it is clear that the state of Assam was the major recipient of internal migrants from within India in 2001. Assam received approximately 72% of the total internal migrants migrating to the North-east from within India.

From the table it can also be observed that Arunachal Pradesh has the maximum migrants as percent of population (36%) followed by Sikkim (31%), Mizoram (28%) and Assam (25%).

We can therefore say that in 2001 Assam was the most attractive destination for the internal migrants within India receiving the maximum migrants among all North-east states, but however Arunachal Pradesh has the maximum migrants as percentage of population.

Table 1: Total internal migration in North-east in 2001

North east states	Population	Total migration from other states	As % of Population	As % of total migration
Arunachal Pradesh	1091117	393,866	36.098	4.236
Assam	26638407	6,661,860	25.008	71.655
Manipur	2388634	375,641	15.726	4.040
Meghalaya	2306069	369,570	16.026	3.975
Mizoram	891058	253,445	28.443	2.726
Nagaland	1988636	374,016	18.808	4.023
Sikkim	540493	168,751	31.222	1.815
Tripura	3191168	700,022	21.936	7.529

Source: Census of India 2001

Table 2: Total external migration in North-east in 2001

North east states	Population	Migration from other countries	As % of population	As % of total migration
Arunachal Pradesh	1091117	17,574	1.611	3.806
Assam	26638407	130,966	0.492	28.364
Manipur	2388634	1,418	0.059	0.307
Meghalaya	2306069	9,622	0.417	2.084
Mizoram	891058	15,487	1.738	3.354
Nagaland	1988636	6,793	0.342	1.471
Sikkim	540493	18,236	3.374	3.950
Tripura	3191168	261,631	8.199	56.664

Source: Census of India 2001

From table 2 it can be observed that Tripura was the major recipient of all foreign migrants in the North-east region (57%) followed by Assam (28%). Tripura also has the maximum foreign migrants as percentage of population (8%).

Table 3: Total internal rural-urban migration in North-east in 2001

North east states	Total migration from other states	internal rural migration	internal urban migration	internal rural as % of total migration	internal urban as % of total migration
Arunachal Pradesh	393,866	254,479	139,387	64.611	35.389
Assam	6,661,860	5,186,601	1,475,259	77.855	22.145
Manipur	375,641	277,102	98,539	73.768	26.232
Meghalaya	369,570	252,036	117,534	68.197	31.803
Mizoram	253,445	94,373	159,072	37.236	62.764
Nagaland	374,016	213,083	160,933	56.972	43.028
Sikkim	168,751	136,731	32,020	81.025	18.975
Tripura	700,022	530,665	169,357	75.807	24.193

Source: Census of India 2001

From Table 3 it can be observed that the North-east region as a whole received more internal migrants in the rural areas than urban areas. Sikkim received the maximum internal rural migrants as percentage of total migration (81% approx.) amongst all the North-east states. It can be observed from the table that Mizoram is the only state in the region which received more internal urban migrants (63% approximately) than rural migrants.

Table 4: Total external rural-urban migration in North-east in 2001

North east states	Migration from other countries	external rural migration	external urban migration	external rural as % of total migration	external urban as % of total migration
Arunachal Pradesh	17,574	15,259	2,315	86.83	13.17
Assam	130,966	87,011	43,955	66.44	33.56
Manipur	1,418	916	502	64.60	35.40
Meghalaya	9,622	6,450	3,172	67.03	32.97
Mizoram	15,487	8,215	7,272	53.04	46.96
Nagaland	6,793	4,046	2,747	59.56	40.44
Sikkim	18,236	16,230	2,006	89.00	11.00
Tripura	261,631	202,008	59,623	77.21	22.79

Source: Census of India 2001

From Table 4 it is clear that foreign migrants coming to the North-east choose rural areas over urban areas. In the case of external migrants also Sikkim received the maximum external rural migrants as a percentage of total migration (89%).

Table 5: Reasons for internal migration in North-east in 2001 (in percentages)

North east states	work/employment	Business	Education	Marriage	Moved after birth	Moved with households	others
Arunachal Pradesh	24.336	3.001	3.277	13.023	1.363	27.892	27.107
Assam	5.566	2.806	0.699	36.966	1.049	14.552	38.362
Manipur	3.610	1.027	0.954	25.398	0.366	11.020	57.625
Meghalaya	9.368	1.932	2.905	10.723	1.806	11.062	62.203
Mizoram	18.502	1.731	4.190	8.077	1.931	39.853	25.715
Nagaland	14.568	3.876	2.392	5.586	0.937	15.049	57.593
Sikkim	21.029	2.263	2.250	26.067	2.074	19.292	27.024
Tripura	6.170	0.976	1.095	35.210	0.670	16.434	39.446

Source: Census of India 2001

From Table 5 it can be observed that in the entire North-eastern region "others", "moved with household" and "marriage" are the main reasons behind total internal migration into the region. Therefore it can be inferred that family moved is the dominant motive for internal migration into the north east.

Table 6: Reasons for internal rural to rural migration in North-east in 2001 (in %)

North east states	work/employment	Business	Education	Marriage	Moved after birth	Moved with households	others
Arunachal Pradesh	23.934	2.000	2.934	20.357	1.078	29.555	20.142
Assam	3.405	1.584	0.376	53.630	0.936	16.569	23.500
Manipur	3.946	0.775	1.210	36.464	0.652	16.790	40.162
Meghalaya	6.894	2.013	0.884	19.841	1.260	16.879	52.229
Mizoram	11.125	1.136	0.962	11.278	2.281	48.260	24.960
Nagaland	14.857	2.293	2.127	6.530	1.074	24.616	48.503
Sikkim	20.770	1.667	2.189	34.678	1.458	20.775	18.462
Tripura	5.744	0.831	0.831	52.182	0.380	18.682	21.350

Source: Census of India 2001

From Table 6 it is clear that for internal rural to rural migration also "marriage", "moved with households" and "others" are the major motive behind migration. It seems that family moved, that is dependent persons moving with the family is a clear trend in case of both internal migration and rural to rural migration in the North-east.

Table 7: Reasons for internal rural to urban migration in North-east in 2001 (in %)

North east states	work/employment	Business	Education	Marriage	Moved after birth	Moved with households	others
Arunachal Pradesh	31.901	5.571	6.267	8.856	1.464	29.480	16.462
Assam	21.650	11.970	2.874	24.267	1.319	19.469	18.451
Manipur	11.303	2.990	2.338	47.817	0.142	18.379	17.030
Meghalaya	28.781	3.965	13.774	13.209	1.357	16.140	22.774
Mizoram	23.098	2.097	7.054	7.896	0.448	43.493	15.913
Nagaland	30.809	8.775	5.534	11.003	1.597	16.576	25.705
Sikkim	35.999	5.275	3.653	17.304	1.912	17.878	17.979
Tripura	15.231	2.434	3.979	31.576	0.943	28.000	17.837

Source: Census of India 2001

For rural to urban migration a different scenario emerges. From Table 7 it can be observed that "work/employment" is the major motive for migration for Arunachal Pradesh, Meghalaya, Nagaland and Sikkim. Although "marriage", "moved with households" and "others" combined continues to be the main driving force behind rural to urban migration in the region, the factor "work/unemployment" also gives a clear trend that a lot of migrants who migrate to urban areas come in the region in search of work and employment.

After observing the overall pattern and trend of migration in the region it can be concluded that family moved is the main factor for internal migration in the North-east region. The migrants base their decision to migrants on the basis of family tie that is migration in the region is not an individual decision of a person but a collective decision of the family. However, in the case of rural to urban migration work and employment also forms an important motive in the decision basket of the migrants.

Table 8: Reasons for External migration in North-east in 2001 (in %)

North east states	work/employment	Business	Education	Marriage	Moved after birth	Moved with households	others
Arunachal Pradesh	26.255	1.258	0.501	5.565	0.279	25.185	40.958
Assam	4.832	4.028	0.347	12.203	0.581	42.275	35.734
Manipur	11.072	8.745	1.128	9.450	0.423	38.223	30.959
Meghalaya	15.277	2.453	1.767	10.372	0.946	21.472	47.714
Mizoram	18.654	4.223	0.607	9.653	0.420	40.053	26.390
Nagaland	28.794	4.814	0.972	8.097	0.869	16.782	39.673
Sikkim	34.876	0.883	2.369	23.366	0.570	17.641	20.295
Tripura	3.280	0.884	0.438	11.265	0.238	44.194	39.702

Source: Census of India 2001

From table 8 we observe that "work/employment", "moved with households" and "others" were the main reasons for people to migrate into the North-east region. In the states of Assam, Manipur, Mizoram and Tripura "moved with households" is the main reason for migration establishing the fact that out of the total foreign migrants into these states, a majority are dependents. Only in the state of Sikkim, "work/employment" forms the major incentive for migration.

Table 9: Reasons for External rural to rural migration in North-east in 2001 (in %)

North east states	work/employment	Business	Education	Marriage	Moved after birth	Moved with households	others
Arunachal Pradesh	23.540	1.003	0.511	4.928	0.242	25.120	44.656
Assam	2.700	2.376	0.178	10.958	0.602	43.221	39.965
Manipur	10.262	2.183	1.419	9.279	0.218	45.961	30.677
Meghalaya	7.922	1.535	0.791	8.093	1.039	22.620	58.000
Mizoram	10.298	2.179	0.304	11.430	0.621	47.401	27.766
Nagaland	24.246	3.460	0.321	5.858	0.890	16.856	48.369
Sikkim	34.664	0.733	1.214	24.356	0.591	18.361	20.080
Tripura	2.710	0.668	0.221	11.288	0.213	43.987	40.913

Source: Census of India 2001

For external rural to rural migration in the North-East we see the same trend that we saw for total external migration. "work/employment", "moved with household" and "others" continues to be the main incentive for external rural to rural migration. For Assam, Manipur, Mizoram and Tripura "moved with households" continues to be the main motive behind migration. Also "work/employment" continues to be the main driving force for migrants entering into the rural areas of Sikkim.

Table 10: Reasons for External rural to urban migration in North-east in 2001 (in %)

North east states	work/employment	Business	Education	Marriage	Moved after birth	Moved with households	others
Arunachal Pradesh	44.147	2.937	0.432	9.762	0.518	25.616	16.587
Assam	9.052	7.298	0.680	14.667	0.539	40.403	27.360
Manipur	12.550	20.717	0.598	9.761	0.797	24.104	31.474
Meghalaya	30.233	4.319	3.752	15.006	0.757	19.136	26.797
Mizoram	28.094	6.532	0.949	7.646	0.193	31.752	24.835
Nagaland	35.493	6.807	1.929	11.394	0.837	16.673	26.866
Sikkim	36.590	2.094	11.715	15.354	0.399	11.815	22.034
Tripura	5.211	1.615	1.174	11.187	0.322	44.892	35.599

Source: Census of India 2001

From table 10 it can be clearly said that the "work/employment" reason forms the main incentive for foreign migrants entering into the urban areas of North-east from their source rural areas in states like Arunachal Pradesh, Meghalaya, Nagaland and Sikkim. However in states like Assam, Mizoram and Tripura, "moved with household" forms the main reason for the people to migrate.

We can conclude by stating that in case of foreign migrants entering into the North-East region, "work/employment", "moved with household" and "others" combined are the main reasons for migrating into the region, although "work/employment" becomes a more significant reason when foreign migrants enter the urban areas. Whereas in case of internal migrants entering into the North-East region, "marriage", "moved with households" and "others" combined are the main reasons for migrating. But the reason "work/employment" becomes significant for the internal migrants only when they enter the urban areas of the region.

Comparing both the internal and external migration into the region it can be said that the reason "marriage" is not so significant for external migrants which was a significant reason for the internal migrants when they consider their decision to migrate.

Chapter 6

Determinants of Migration: An Econometric Model

We have already explained the various socio-economic causes responsible for people migrating from the internal regions of India to the North-East (Internal migration) and also from the neighbouring countries of the North-East region (External migration) into the North-East. Now, a simple econometric analysis has been attempted by using the following regression model to identify the magnitude of impact of each of the factors responsible for **internal migration** into India's North-East.[62] A separate model for **external migration** is also specified to identify the main determinants of migration.

For internal migration we select the major ten states from where people migrated into the North-East region. The major ten states are selected according to the volume of migrant flows from these ten states into the North-East region. They are Andhra Pradesh, Madhya Pradesh, Bihar, Maharashtra, Orissa, West Bengal, Rajasthan, Uttar Pradesh, Punjab and Delhi. The North-East region comprise of eight states they are Arunachal Pradesh, Assam, Sikkim, Mizoram, Manipur, Meghalaya, Tripura and Nagaland. Now let us specify the model for internal migration into the North-East region.

$$M_{NJ} = f(Y_{NJ}, U_{NJ}, EU_{NJ}, PD_{NJ}, e)$$

N= eight north east states, J= major ten states from where people migrated to the north east.

M_{NJ}= migration from state J to north-east state N as a percentage of total migration from other states.

Y_{NJ}= ratio of per capita income of north-east state N and state J.

U_{NJ}= ratio of urbanization of north-east state N and state J.

EU_{NJ}= ratio of unemployment of north-east state N and state J.

PD_{NJ}= ratio of population density of north-east state N and state J.

e= stochastic residual

---

[62] This model is in line with a similar work done by Kumar and Aggarwal (2003). In their work they have analyzed the causes of migration in Assam only whereas in our study we will analyze the causes of migration in the entire North-East region (i.e. including all the North-Eastern states). Also Kumar and Aggarwal have analyzed the causes of migration into Assam from within India, here we extend the model to include the causes of migration into the region from the neighbouring countries of the North-East region also.

Basic hypotheses are:

- The ratio of income levels and unemployment levels would induce people to migrate to the destination areas i.e. people would migrate from low income areas to high income areas or from high unemployment areas to areas with low levels of unemployment.

- The ratio of urbanization acts as a deterrent to migration- inter state migration would be low from a highly urbanized state to a state with low level of urbanization.

- People will migrate from an area of high population density to area of low population density.

Now to make a more micro level analysis we will formulate a model to find out the main determinants responsible for migration of people into the rural and urban areas of North-East. This will help in comparing the relative strengths of parameters influencing rural and urban migration decisions. In this way we will be able to approach the migration problem in a more disaggregate level and identify the significant variables which may be insignificant in the case of total internal migration into the North-East.

The same basic specification of the model will be attempted separately for rural and urban migration into the North-East to help us to identify how a significance of a variable changes when we try to estimate the total migration model, rural to rural migration model and rural to urban migration model. The model specification is as follows:

$$M^i_{NJ} = f(Y^i_{NJ}\ U^i_{NJ}, EU^i_{NJ}, PD^i_{NJ}, e)$$

$$i = R \text{ for rural migration}$$
$$= U \text{ for urban migration}$$

Data and methods for internal migration

The data source for estimating the internal migration models are Census of India and NSSO. The time frame used is 2001 and 1991. We could not include 1981 in our time frame since data of 1981 for Assam is not available because no census was conducted there due to political turmoil.

For the migration variable we have used the migration tables (D series) in the Census. The data for migration are based on the place of last residence concept and this data is available both for rural to rural and rural to urban migration for the years 2001 and 1991.

To calculate income we have used monthly per capita consumption expenditure per person on 28 groups of consumption items as defined in NSSO. This data is divided both for rural and urban areas.

To calculate unemployment data we have used the data on economic activity of Census of India specifically the B series. The data for unemployment is based on the concept of Non-Workers Seeking/Available for work classified by age and sex. A person who did not work at all during the reference period was treated as 'Non-Worker' in the Census. The data on 'Seeking/available for work' from among the 'Non-Worker' was collected for the first time at the 1991 Census to get a broad idea of the number of unemployed.

To calculate population density we have used the data of Population Census, Office of the Registrar General. Here we faced a difficulty that is separate data for rural and urban areas are not available for 2 North-Eastern states (Arunachal Pradesh and Sikkim), so we could not estimate the rural to rural migration and rural to urban migration decision for these states.

We have defined the term urbanization as ratio of urban population to the total population of the state. Urbanization refers to the process of growth in the proportion of population living in urban areas. Historically, the concept of urbanization has been related to specialization, industrialization and consequent economic development. The data is collected from the population tables of Census.

It should noted that for the year 2001, Uttar Pradesh and Uttaranchal are clubbed together and presented as Uttar Pradesh, similarly for Bihar and Jharkhand and Chhattisgarh and Madhya Pradesh.

Now having explained the data and variables we know explain the method. The three models of migration that is total migration, rural to rural migration and rural to urban migration will be estimated by using **Pooled Regression Analysis** in Stata. For each of the 8 North-East states we will estimate the total migration, rural to rural migration and rural to urban migration models from the major ten states from where people migrated. Then we club all the eight North-East states and estimate the three regression models, that is we estimate the overall migration from the top 10 ten states into the North-East region. We will be using **Pooled Regression Analysis** for this clubbed estimation also.

External Migration

Now let us specify the model for external migration. For external migration we will try to find out the main determinants of migration using an econometric model. After taking into account the migration tables of Census of India, Bangladesh and Nepal are the only two neighbouring countries from where a significant proportion of migrants enter all of the eight North-East states. While estimating **external migration** from the bordering countries to the north east we will use the following formulation.

$$M_{NJ*} = f\,(Y_{NJ*}, EU_{NJ*}, PD_{NJ*}, e) \quad J* = \text{north east's neighbouring countries}$$

M_{NJ*} = migration from neighbouring country $J*$ to north-east state N as a percentage of total migration from other neighbouring countries.

Y_{NJ*}= ratio of per capita income of north-east state N and neighbouring country $J*$.

EU_{NJ*} = ratio of unemployment of north-east state N and neighbouring country $J*$.

PD_{NJ*} = ratio of population density of north-east state N and neighbouring country $J*$.

e= stochastic residual

We have excluded the urbanization variable from the external migration model since in section IV of this study we have already observed that "work/employment" is a significant motive for the people from neighbouring countries to come into the North-East region and they are basically unskilled workers looking for unskilled work in the

49

North-Eastern region. So urbanization may not be a significant variable for external migration model estimation.

Data and methods for external migration

The data source for estimating the external migration model is Census of India, NSSO, Statistical Pocket Book of Bangladesh, Bangladesh Bureau of Statistics, Census of Bangladesh, World Bank, Central Bureau of Statistics (Nepal), Population Census of Nepal, Demographic and Health Survey of Nepal and Reserve Bank of India. The time frame used is 2001 and 1991.

To calculate migration we have used the migration tables of Census of India. The data is based on the last residence concept. For income we have used per capita GDP for both the North-Eastern States and for the two neighbouring countries. The per capita GDP data for Bangladesh and Nepal is collected from World Bank Development Data. The data is duly adjusted with the exchange rates of both the neighbouring countries. For unemployment we have used the data on unemployment from Census of India for the North-Eastern states, for Bangladesh the data on unemployment is collected from Bangladesh Bureau of Statistics and Census of Bangladesh and for Nepal the data is collected from Central Bureau of Statistics (Nepal). For the population density variable we have collected data from the respective population census of the North-Eastern region and respective neighbouring countries.

Having explained the data and variables we now explain the method. We will estimate the above specified external migration model using **Pooled Regression Analysis**. We club all the 8 North-East states and estimate the external migration model that is we estimate the overall external migration into the North-East region from the two neighbouring countries Bangladesh and Nepal.

Chapter 7

Estimation Results and Interpretation

In this section we present and discuss the estimation results of the migration models that we have formulated in the previous section. We will begin with discussion of estimation results for total migration into each North-Eastern state. Then we present the estimation results for rural to rural migration and rural to urban migration for each state. Finally in Table 17 we present our estimation result for external migration in the North-East region.

Table 11: Estimation results of total internal migration into each North-East state

Independent variables	Dependent Variable: M							
	Assam	Arunachal	Manipur	Mizoram	Meghalaya	Tripura	Nagaland	Sikkim
Constant	-.216 (-1.20)	-.124 (-0.74)	-.158 (-1.20)	-.146 (-0.74)	-.107 (-0.83)	-.206 (-1.07)	-.235 (-1.53)	-.152 (-.57)
Ratio of per capita Y	.373 (1.51)	.24539 (1.28)	.244** (1.89)	.163 (0.75)	.198 (1.26)	.335 (1.52)	.255 (1.50)	.54** (1.70)
Ratio of U	.185 (1.05)	.148 (1.40)	.076 (1.41)	.099** (2.01)	.132 (1.32)	.076 (0.55)	.198** (1.88)	-.361 (-.102)
Ratio of UN	.0015 (0.12)	-1.14 (-0.72)	.027 (0.09)	.494 (0.15)	-.151 (-0.22)	.015 (0.32)	.258 (0.51)	-5.55 (-1.08)
Ratio of PD	-.137* (.002)	-3.89* (-4.47)	-.363* (-3.64)	-1.24* (-3.57)	-.434* (-3.71)	-.156* (-3.96)	-.394* (-3.54)	-.854* (-3.04)
R-squared	0.651	0.74	0.647	0.655	0.636	.6331	0.695	0.475
Adjusted R-squared	0.56	0.66	0.553	0.563	0.538	0.535	0.613	0.335
F statistics	$F_{(4,15)}$ =7.02*	$F_{(4,15)}$ = 10.51*	$F_{(4,15)}$ =6.88*	$F_{(4,15)}$ =7.13*	$F_{(4,15)}$ =6.55*	$F_{(4,15)}$ =6.47*	$F_{(4,15)}$ =8.54*	$F_{(4,15)}$ =3.39*
Number of observation	20	20	20	20	20	20	20	20

Note: figures in bracket denotes the t values

* and ** implies significance at 5% and 10% level respectively.

Table 11 represents the estimation results for total internal migration into each of the eight North-East states where the dependent variable is M (migration from state J to north-east state N as a percentage of total migration from other states). J is defined as the top ten states within India from where people have migrated to the North-East and N is defined as the eight North-East states. The independent variables are ratio of per capita Y (ratio of per capita income of north-east state N and state J), ratio of U (ratio of urbanization of north-east state N and state J), ratio of UN (ratio of unemployment of north-east state N and state J) and ratio of PD (ratio of population density of north-east state N and state J).

From Table 11 we can observe that the ratio of PD variable is significant at 5% for all the north-east states and the sign of the coefficient is negative. This result is in complete harmony with our hypothesis mentioned in section VI that is people migrate from an area of high population density to an area of low population density. This means people who migrate from the internal parts of India into the North-Eastern region base their migration decision on the availability of free land in the region.

The ratio of per capita Y variable has the expected positive sign for all the North-Eastern states which is also in complete agreement with our hypothesis that people migrate from an area of low income to an area of high income. But this variable is significant at 10% level of significance for only two states Manipur and Sikkim and for the remaining states it is insignificant.

Ratio of U also has a positive sign for all the states (except Sikkim). This means as the urbanization level increases more people will migrate to the region. One might argue that when we take ratio of urbanization for some states (i.e. an internal state within India from where people migrate to a North-Eastern state) the value of the ratio may be less than one i.e urbanization level of that north-east state may be less in a relative sense compared to that internal state within India. So why would people migrate to the North-East states? Now, the probable answer to the problem is that the degree of urbanization (urban population/total population) does not necessary capture all the urban and infrastructural amenities (like hospitals, health facilities, roads etc.) which are often associated with urbanization. When potential migrants consider their migration decision they also consider their access to health infrastructure facilities, probability of getting a job in that

region, communication, etc. in their migration decisions. Now our urbanization index might not capture all these variables. Therefore people will still migrate to a region where the urbanization levels are low (by our index) compared to the source state if the health facilities, investment and job opportunities are better in that region[63]. In this context we can state that in October 1996, the then Prime Minister of India announced "New Initiatives for North Eastern Region" and stipulated that at least 10% of the Budget(s) of the Central Ministries/ Department will be embarked for the development of the North-Eastern states. A preliminary exercise undertaken by the Planning Commission revealed that the expenditure on the NER by some Union Ministries during 1997-98 fell short of the stipulated 10% for that year. Planning Commission explored the possibility of creating a Central Pool of Resources (CPR) for the NER out of the unspent amount of stipulated 10% to support infrastructure development projects like power, roads and bridges, education, health etc. in the NER. The CPR was duly passed in 1998-99 by the parliament. Now this type investment initiative will build on the expectations of potential migrants in terms of better access to economic opportunities if they migrate. The time period of our analysis also (1991 and 2001) also affirms that this investment initiative will have a significant impact in our analysis.[64] Though this variable has the expected sign it is significant at 10% level only for Mizoram and Nagaland. For the remaining states this variable is insignificant.

The ratio of UN has the expected negative sign for only three states Arunachal Pradesh, Meghalaya and Sikkim. For the remaining five states the sign is positive, although the variable is insignificant for the entire region. The unexpected positive sign implies more is the level of unemployment in the region more is the level of migration. This can be explained by stating that most of the North-East people are reluctant to work in unskilled work. The people of the region attach a social stigma to the unskilled work since historically these unskilled works are done by the migrants from within India and illegal migrants from the neighbouring countries. Therefore unemployment level is high according to skill levels and there is a scarcity of specific skills. There is a scarcity of

---

[63] Household health expenditure, literacy rates and college enrolment in North-East is higher than the national average, infant mortality rate is lower than the national average (see, North Eastern Region Vision 2020).
[64] See, Rao, Pandey, Barua et al, North Eastern Region Vision 2020.

people in the North-East region willing to do certain type of jobs such as barber, cobbler, construction worker etc. Therefore more is the level of unskilled unemployment of the total unemployment part more will be the level of migration of unskilled people who are willing to do some specific unskilled jobs from within India. This phenomenon can be termed as *Social labeling*. Within receiving societies, once immigrants have been recruited into particular occupations in significant numbers, those jobs become culturally labeled as "immigrant jobs" and native workers are reluctant to fill them, reinforcing the structural demand for immigrants. Immigration changes the social definition of work, causing a certain class of jobs to be defined as stigmatizing and viewed as culturally inappropriate for native workers (Bohning, 1972; Piore, 1979).[65] The stigma comes from the presence of immigrants, not from the characteristics of the job. In most European countries, for example, jobs in automobile manufacturing came to be considered "immigrant jobs," whereas in the United States they are considered "native jobs."

From Table 13 we can conclude that only population density acts as a disincentive to migration whereas the remaining variables act as an incentive to migration.

---

[65] See, Bohning (1972), The Migration of Workers in the United Kingdom and the European Community, Piore (1979), Birds of Passage: Migrant Labour in Industrial Societies.

Table 12 presents the estimation results of rural to rural migration, that is people migrating from the rural areas of the country into the rural areas of each North-East state. It is to be noted that the states of Arunachal Pradesh and Sikkim are not included in this estimation since the data for rural area is not available for these two states and hence rural population density could not be calculated for these two states.

Table 12: Estimation result of internal rural to rural migration into each North-East state.

Independent variables	Dependent Variable: M					
	Assam	Manipur	Mizoram	Meghalaya	Tripura	Nagaland
Constant	-.090 (-.57)	.031 (0.24)	-.150 (-.64)	-.164 (-1.02)	-.192 (-0.90)	-.203 (-1.20)
Ratio of per capita Y	.394* (2.69)	.162 (1.68)	.333** (2.02)	.323* (2.76)	.368* (2.41)	.330* (2.61)
Ratio of UN	-.003 (-1.22)	-.063 (-1.39)	-.962 (-.57)	-.060 (-.45)	-.007 (-0.51)	-.015 (-0.20)
Ratio of PD	-.146* (-4.16)	-.400* (-3.45)	-1.83* (-2.66)	-.456* (-3.21)	-.156* (-2.87)	-.324* (-2.43)
R-squared	0.639	0.516	0.448	0.525	0.489	0.445
Adjusted R-squared	0.571	0.426	0.345	0.436	0.394	0.341
F statistics	F(3,16) =9.44*	F(3,16) =5.70*	F(3,16) =4.33*	F(3,16) =5.90*	F(3,16) =5.12*	F(3,16) =4.28*
Number of observation	20	20	20	20	20	20

Note: figures in bracket denotes the t values

* and ** implies significance at 5% and 10% level respectively.

We have omitted the ratio of urbanization variable for this estimation since the rural areas of North-Eastern region are basically agrarian and hence the urbanization variable is relevant for the urban areas of the region only. Now we make a more micro level study by disaggregating the total regression into rural to rural and rural to urban migration. Here we present and discuss the results of rural to rural migration.

From Table 12 we can observe that the ratio of per capita income has the expected positive sign and is significant for all the states except Manipur. This is in complete conformation of our hypothesis that people migrate from an area of low income to an area of high income.

The variable ratio of unemployment has the expected negative sign but is insignificant for all the states. This implies people in the rural areas of North-East are not reluctant to do unskilled work, so more is the level of unemployment less is the level of migration and hence the negative sign.

The variable ratio of population density has the expected negative sign and is significant for all the states. This implies more is the population density in the region less is the level of rural to rural migration and vice-versa.

Therefore for rural to rural migration we can say that the main incentive for migration is per capita income which is also significant for all the states. Whereas the ratio of unemployment and ratio of population density variables appears to be a major disincentive for migration where the former is insignificant for all states and the latter is significant for all the states.

Table 13 presents the estimation result of rural to urban migration, that is people migrating from rural areas of the country into urban areas of each North-East state. It is to be noted that the states of Arunachal Pradesh and Sikkim are not included in this estimation since data for urban area is not available for these two states and hence urban population density could not be calculated for these two states.

Table 13:Estimation result of internal rural to urban migration into each North-East state

Independent variable	Dependent variable: M					
	Assam	Manipur	Mizoram	Meghalaya	Tripura	Nagaland
Constant	-.2133 (-1.43)	-.270* (-2.32)	-.221 (-1.22)	-.175 (-1.38)	-.178 (-1.55)	-.336* (-2.47)
Ratio of per capita Y	.202 (0.95)	.239** (1.96)	.105 (0.48)	.111 (0.69)	.188 (1.32)	.314** (1.93)
Ratio of U	.698* (3.76)	.308* (4.70)	.233* (3.79)	.470* (3.96)	.428* (4.10)	.413* (4.03)
Ratio of UN	.011 (0.57)	.350 (0.90)	1.28 (0.41)	.601 (0.53)	.041 (0.78)	.580 (0.98)
Ratio of PD	-.249* (-3.88)	-.251* (-4.53)	-1.63* (-3.21)	-.532* (-3.65)	-.252* (-5.10)	-.478* (-4.32)
R-squared	0.695	0.744	0.640	0.675	0.768	0.755
Adjusted R-squared	0.614	0.675	0.544	0.588	0.706	0.690
F statistics	$F_{(4,15)}$ =8.56*	$F_{(4,15)}$ =10.9*	$F_{(4,15)}$ =6.67*	$F_{(4,15)}$ =7.80*	$F_{(4,15)}$ =12.43*	$F_{(4,15)}$ =11.59*
Number of observation	20	20	20	20	20	20

Note: figures in bracket denotes the t values

* and ** implies significance at 5% and 10% level respectively.

Here we present and discuss the results of rural to urban migration. From Table 13 we can observe that the ratio of per capita Y has the expected positive sign for all the states but this variable is significant for only two states Manipur and Nagaland. The expected positive sign again conforms to our hypothesis

In this more micro level approach we find out that the ratio of urbanization has the positive sign and is significant for all the states at 5% level of significance. We get this particular significant result only when we disaggregate the overall migration model into rural and urban migration models. This clearly indicates the advantage of a more micro level approach.

The coefficient of the ratio of UN has the positive sign and is insignificant for all the states. This result again indicates the unwillingness of people living in the urban areas of the North-East region to participate in unskilled work which creates a scarcity of unemployment of this particular kind. This scarcity is fulfilled by the unskilled migrant workers coming from the rural areas of the country specializing in such type of jobs.

The coefficient of the ratio of PD continues to have the expected positive sign for rural to urban migration also, and it continues to be significant for all the states.

From the estimation of rural to urban migration model we can conclude that ratio of per capita Y, ratio of U (which is significant for all states) and ratio of UN variables appears to be major incentive for migration, whereas the ratio of PD variable continues to be a major disincentive for migration.

Table 14 presents the estimation result for total migration into the North-East region as a whole. Here we look into the plausible determinants of migration into the North-East region as a whole instead of considering each single North-Eastern state.

Table 14: Estimation result for total migration into the North-East region

Dependent variable: M	
Independent variable	North-East region
Constant	-.247 (-3.10)*
Ratio of per capita Y	.313* (4.78)
Ratio of rate of U	.00077 (0.66)
Ratio of UN	.0592** (1.68)
Ratio of PD	-.0873* (-2.44)
R-squared	0.266
Adjusted R-squared	0.227
F statistics	$F(4,75)=6.81$*
Number of observation	80

Note: figures in bracket denotes the t values

* and ** implies significance at 5% and 10% level respectively.

We club all the North-Eastern states into a single entity and estimate the total migration model that is we observe the migration pattern from top ten states within India into the North-East region and estimate the model. Also we make one change regarding the formulation of the urbanization variable. Since one might argue that taking the ratio of urbanization as one of the independent variable may give a paradoxical result for eg. the coefficient of the ratio of urbanization may be positive in estimation, while in reality people are migrating to a region having a lower level of urbanization. This phenomenon has been already discussed and reasoned in this section under Table No. 11. We could not take the ratio of the rate of urbanization while analyzing the causes of migration in each north-eastern state since this would have led to a loss in the number of observations for each state. If we consider the two Census time periods i.e. 1991 and 2001 we would get the rate of urbanization for 2001 only. To calculate the rate of urbanization for 1991 we need Census of 1981. Since no census was conducted in Assam in 1981 due to political turmoil we could not calculate the rate of urbanization for 1991. However, this is not a problem in the present estimation since we are clubbing all the North-East states and we could proceed with the rate of urbanization without any loss in significant number of observations. This formulation of the urbanization variable will be kept unchanged for rural to rural and rural to urban migration in the entire North-East.

From Table 14 we can observe that for the entire North-East region the coefficient of the variable per capita Y has the expected positive sign and is significant at 5% level of significance. This result confirms our hypothesis stated in section VI.

The coefficient of the ratio of rate of U variable has the **expected** positive sign but is insignificant for the region as a whole. We can analyze this result further by saying that the rate of urbanization may be higher in the region which is historically industrially backward compared to the sates where urbanization has reached a saturation level. This concept is in a relative sense and where urbanization has reached a saturation level, in that region the rate of urbanization will be lower to the region where urbanization has not reached the saturation level. This is true in the case of North-Eastern states where urbanization rates are high and this implies more economic opportunity for the people so more will be the levels of migration.

The coefficient of the ratio of unemployment has a positive sign and is significant for the entire North-East region at 10% level of significance. This implies that people of the region are reluctant to work in unskilled jobs therefore unskilled unemployment level are high which in turn induces the unskilled workers from the internal regions of India to migrate.

The coefficient of the ratio of PD again has the expected negative sign and is significant for all the states at 5% level of significance. This variable appears to be a dominant disincentive for the people to migrate.

The model for this estimation is significant at 5% level of significance which is indicated in Table 16. From this estimation we can conclude that ratio of per capita Y, ratio of U and ratio of UN variables are the major incentives for the people to migrate into the region, although the ratio of U is insignificant for the region.

Table 15 presents the estimation result of rural to rural migration, that is people migrating from rural areas of the country into the rural areas of North-East as a whole. It is to be noted that the states of Arunachal Pradesh and Sikkim are not included in this estimation since data for rural area is not available for these two states and hence rural population density could not be calculated for these two states.

Table 15: Estimation results for rural to rural migration into the North-East region

Dependent variable: M	
Independent variable	North-East region
Constant	-.156* (-2.35)
Ratio of per capita Y	.235* (4.58)
Ratio of UN	.0008 (0.32)
Ratio of PD	-.054* (-2.49)
R-squared	0.2161
Adjusted R-squared	0.1958
F statistics	F(3,116)=10.66*
Number of observation	120

Note: figures in bracket denotes the t values

* and ** implies significance at 5% and 10% level respectively.

Here we make an attempt of a more micro level analysis by disaggregating the migration model into rural to rural and rural to urban migration. We discuss the estimation results of rural to rural migration here.

From Table 15 we observe that the coefficient of variables of ratio of per capita Y and ratio of PD has the expected positive and negative signs respectively and both the variables are significant for the region as a whole at 5% level of significance.

The coefficient of the ratio of UN has the positive sign but it is insignificant for the entire North-East region. From this result we can conclude that taking into account the overall rural area of the region the North-East people still view people working in unskilled jobs as a social stigma and hence they are reluctant to work in such type of jobs.

The rural to rural migration model is significant at 5% level of significance and we can conclude from this estimation result that for rural to rural migration income and unemployment variables are incentives for rural migration, though the former is significant and the latter is insignificant. Whereas population density continues to be the major disincentive significant factor for migration into the rural areas of the North-Eastern region.

Table 16 presents the estimation result of rural to urban migration, that is people migrating from rural areas of the country into the urban areas of North-East as a whole. It is to be noted that the states of Arunachal Pradesh and Sikkim are not included in this estimation since data for urban area is not available for these two states and hence urban population density could not be calculated for these two states.

Table 16: Estimation result for rural to urban migration in the North-East

Dependent variable: M	
Independent variable	North-East region
Constant	-.574* (-5.54)
Ratio of per capita Y	.644* (6.80)
Ratio of rate of U	.0032 (0.93)
Ratio of UN	.299* (2.75)
Ratio of PD	-.158* (-3.32)
R-squared	0.466
Adjusted R-squared	0.4269
F statistics	$F_{(4,55)}=11.99$*
Number of observation	60

Note: figures in bracket denotes the t values

* and ** implies significance at 5% and 10% level respectively.

From Table 16 we observe that ratio of per capita Y has the expected positive sign and is significant at 5% level of significance. The ratio of rate of U also has expected positive sign but it is insignificant for the entire region as a whole. The important result of this rural to urban migration model estimation for the entire region is that the coefficient of the variable of UN is positive and significant at 5% level of significance. This implies that this variable has a significant impact on the migration decision of the people coming from the rural areas of the country and settling in the urban areas of the North-Eastern regions. The people in the urban areas of the North-East are reluctant to work in unskilled jobs which they consider as a social stigma and hence the unskilled migrants flood the urban areas in search of unskilled jobs. This explains the positive sign of the coefficient. For urban migration also the population density variable has the expected negative sign and it is significant at 5% level of significance.

From this entire exercise of migration model estimations we can come to the conclusion that the ratio of population density is the only variable which appears to be significant in all the estimations we have performed both for each North-East state taken into consideration and for the entire region as a whole. The population density variable is a major disincentive for migration into the region. Whereas the significance of all the remaining variables change as and when we disaggregate the migration model into rural to rural migration or rural to urban migration or on the basis of each North-East states or considering the North-East region as a whole.

Table 17 represents the estimation result of external migration, that is people coming from the neighbouring countries of the North-East region. The choice of the neighbouring countries is discussed in details after the estimation table.

Table 17: Estimation result of external migration into the North-East region

Dependent variable: M	
Independent variable	North-East region
Constant	.394 (1.29)
Ratio of per capita Y	.157 (.61)
Ratio of UN	.847** (1.62)
Ratio of PD	-.219* (-2.34)
R-squared	.1943
Adjusted R-squared	.108
F statistics	$F_{(3,28)}=2.25$**
Number of observation	32

Note: figures in bracket denotes the t values

* and ** implies significance at 5% and 10% level respectively.

For external migration we consider the neighbouring countries of the North-Eastern region. Depending upon the volume of foreign migrants received by the region from the neighbouring countries according to the migration tables in Census of India we choose Bangladesh and Nepal as the neighbouring countries for our analysis. From the migration tables of the Census periods of 1991 and 2001 we have observed that in the entire North-East region these two countries have sent the maximum number of immigrants.

From Table 17 we observe that the coefficient of the ratio of per capita Y has the expected sign but is insignificant. The coefficient of unemployment has a positive sign and is significant at 10% level of significance. This implies that people migrating from the neighbouring countries into the North-East region are basically unskilled and they are willing to do unskilled jobs to which the North-East people are reluctant since they view it as a social stigma. The coefficient of the ratio of population density has the expected negative sign and is significant at 5% level of significance. This explains the fact that a lot of migrants particularly from Bangladesh come from a relatively very high population density area to an area of low population density in search of lands for cultivation. Historically also the North-East region has witnessed huge streams of migrants coming from Bangladesh in search of land for cultivation especially jute and have settled in the region permanently.

The model for external migration is significant at 10% level of significance. From this external migration model estimation we can conclude that only the population density variable appears to be significant and is a major disincentive to migration.

Chapter 8

Conclusion

Since the beginning of the 20th century, the North-East region has experienced higher growth in population as compared to many other states and the country as a whole. It is partly due to huge inflow of migrants from other states and other countries. Bangladesh and Nepal are the two major foreign source of migration to the North-East region.

We find that in case of rural to rural migration into the region family related reasons and other reasons were important reasons for migration. While considering the rural to urban migration work/employment appears to contribute significantly in migration decisions along with family related reasons and other reasons. We can see that for internal migration people consider their decision to migrate collectively not individually. However for foreign migrants the reason for their migration has been mainly work/employed, family moved and others. But in case of external rural to urban migration work/employed becomes a significant reason for migration into most of the North-Eastern States. Among the key economic reasons, we find from our econometric analysis is that population density acts as a major deterrent to migration at all levels of analysis (rural to rural, rural to urban). Per capita income is found to be significant and a major incentive for internal rural to rural migration into each North-East state and for internal rural to rural migration to the North-East region as a whole and it is also significant for rural to urban migration to the North-East region as a whole. Urbanization is found to be an incentive for migration only for internal rural to urban migration into each North-East state. Unemployment appears to be a major incentive for migration for total migration into the region as a whole and rural to urban migration into the North-East as a whole. For foreign migrants the main economic reason for migration seems to be their unemployed status. Thus we observe different reasons for different categories of migrants.

The incentive to migrate depends not only on the prospects for a migrant in the host economy but also in the source economy. In this context, even if the incentive to migrate for an individual migrant remains constant and the distribution of income and other characteristics in the source economy remain unchanged overtime, the number of

migrants entering every year is likely to increase simply because of increase in the overall population density. This phenomenon is particularly true for the neighbouring countries of the North-East region especially for Bangladesh. To add to this, there are important factors which may tend to increase the incentive to migrate for an individual migrant.

Increasing economic uncertainty and pressure on land is likely to increase the incentive for large rural families in Bangladesh to ask individual members to migrate in order to diversify overall income risk. In course of our discussion of economic factors behind migration, we suggest some measures which might reduce incentives for migration and social unrest. They are as follows:

- Restrictions on transfer of land, particularly agricultural land, to people who cannot establish residence for a certain period in a certain demarcated zone and, in addition, a ceiling on the total amount of land that can be transferred in a village area within a certain time frame.[66]

- Eviction of all illegal encroachment of public land and forests, and licensing their management to private agents if the state finds itself unable to protect its property rights.

- Promotion of more self-help or self-employment groups among the unemployed who are reluctant to work in unskilled jobs as they view it as a social stigma creating more social tension. Promotion of groups of this kind may reduce the economic frustration of the unemployed and reduce unrest in the region.

- An interesting suggestion made recently is the introduction of temporary visa for
- workers from Bangladesh who want to work in Assam during the peak agricultural season or some major construction activity, and who are sponsored by bonafide employer. This would significantly reduce the incentive for immigration by workers in Bangladesh who currently immigrate in order to access temporary opportunities or peak season demand for agriculture labour.[67]

Whatever may be the reasons or the remedy for migration but the consequence of migration over the years has been to put pressure on population and changed the linguistic and religious composition of the region. This combined with a stagnating

---

[66] See, Santanu Roy, Why do they come?
[67] See, Banerjee et al. (1999)

and industrially backward economy of the region led to social and economic unrest in North-East. The unrest signifies dissatisfaction and frustration in the region. Apart from stopping the inflow of illegal migrants in the region, it is also very important to initiate and accelerate economic development in the North-East, with the complete involvement of the local people at each stage and reduce poverty. Any effective government intervention, therefore, must recognize the different reasons and consequences of migration and design suitable economic policies to benefit local people through employment and improved production at the grass root.

References:

- Bandyopadhyay and Chakraborty (1999), "Migration in the North-Eastern Region of India during 1901-1991: Size, Trend, Reasons and Impact", *Demography India,* 28(1), 75-97

- Banerjee, Paula, et al. (1999), "Indo-Bangladesh Cross-Border Migration and Trade", *Economic and Political Weekly:* 2549-2551.

- Bangladesh Bureau of Statistics, Statistics Bangladesh 2006.

- Barua and Bandyopadhyaya, "Structural Change, Economic Growth and Regional Inequality in the North-East: Regional and National Perspectives," in *India's North-East: Developmental Issues in a Historical Perspective,* ed. Alokesh Barua, Centre De Sciences Humaines, 2005.

- Barua, Alokesh, "History, Trade and Development: An Exploration of the North-East Economy", in *India's North-East: Developmental Issues in a Historical Perspective,* ed. Alokesh Barua, Centre De Sciences Humaines, 2005.

- Barua, Alokesh, "The Rise and Decline of the Ahom Dynastic Rule: A Suggestive Interpretation", in *India's North-East: Developmental Issues in a Historical Perspective,* ed. Alokesh Barua, Centre De Sciences Humaines, 2005.

- Blomqvist, A.G. (1978), "Urban job creation and unemployment in LDCs: Todaro vs. Harris and Todaro", *Journal of Development Economics* 5: 3-18

- Borjas, George. (1990), *"Friends or Strangers: The Impact of Immigrants on the U.S. Economy",* New York: Basic Books.

- Dass K., Susanta (1980), "Immigration and Demographic Transformation of Assam, 1891-1981", *Economic and Political Weekly:* 850-859.

- Datta, Pranati (2004), "Push-Pull factors of Undocumented Migration from Bangladesh to West Bengal: A Perception Study", *The Qualitative Report.*

- Demographic and Health Survey of Nepal.

- Egretau, Renaud (2006), "Instability at the gate : India's Troubled Northeast and its External Connections", *CSH Occasional Paper No. 16*

- Ethier Wilfred J. (1986), "Illegal Immigration: The Host-Country Problem", *The American Economic Review*, Vol. 76, No. 1: 56-71.

- Ethier, Wilfred (1997), "Illegal Immigration and Resource Allocation", *International Economic Review*, vol.38: 97-117

- Fernanda, Walter (1999), "Conflict in North East: A Historical Perspective", *Economic and Poliical Weekly*, 18

- Ghatak, Levine and Price (1996), "Migration Theories and Evidence: An Assessment", *Journal of Economic Surveys*, vol.10: 159-98

- Gogoi K., Jayanta, "The Migration Problem in Assam: An Analysis", in *India's North-East: Developmental Issues in a Historical Perspective*, ed. Alokesh Barua, Centre De Sciences Humaines, 2005.

- Guha, Amalendu (, "A Big Push without a Take-off: A Case Study of Assam 1871-1901", in *India's North-East: Developmental Issues in a Historical Perspective*, ed. Alokesh Barua, Centre De Sciences Humaines, 2005.

- Gurak, Douglas T., and Fe Caces. (1992), "Migration networks and the shaping of migration systems," in Mary Kritz, Lin Lean Lim, and Hania Zlotnik (eds.), *International Migration Systems: A Global Approach*. Oxford: Clarendon Press, pp. 150-176.

- Harris J.R., and P. Michael Todaro (1970), "Migration, Unemployment and Development: A Two-sector Analysis", *American Economic Review*, col. 60,: 126-142.

- Household Consumer Expenditure and Employment Situation in India 1994-95, NSS 51st round, Report No. 436.

- Household Consumer Expenditure and Employment- Unemployment Situation in India, 2000-2001, NSS 56th round, Report No. 476

- Hugo, Graeme J. (1981), "Village-community ties, village norms, and ethnic and social networks: A review of evidence from the Third World," in Gordon F. DeJong and Robert W. Gardner (eds.), *Migration Decision Making: Multidisciplinary Approaches to Microlevel Studies in Developed and Developing Countries*. New York: Pergamon Press, pp. 186-225.

- Hussain, Manirul (1993), *"The Assam Movement: Class, Ideology and Identity"*, Delhi, Manak Publications.

- Kumar and Aggarwal (2003), "An Econometric Analysis of Causes of Migration in Assam", *Demography India,* vol. 32, No.1: 107-122

- Long, L.H. (1974), "Women's labour force participation and the residential mobility of families", *Russell Sage Foundation,* New York.

- Lowry, I.S. (1966), *"Migration and Metropolitan Growth: Two Analytical Models"*, San Fransisco: Chandle Publishing Co.

- Lucas E.B. Robert (1997), "Internal Migration in Developing Countries", in *Handbook of Population and Family Economics,* vol. 1b, ed. M.R. Rosenzweig and O. Stark, Amsterdam: Elsevier Science B.V.

- Massey, Douglas S. et al. (1993), "Theories of International Migration: A Review and Appraisal", *Population and Development Review,* vol. 19, no.3: 431-466

- Mincer, J. (1978),"Family migration decisions", *Journal of Political Economy* 86: 749-773.

- Murayama Mayumi (2006), "Borders, Migration and Sub-Regional Cooperation in Eastern South Asia", *Economic and Political Weekly*: 1351-1359.

- Nath K., Hiranya (2005), "The Rise of an Enclave Economy", in *India's North-East: Developmental Issues in a Historical Perspective,* ed. Alokesh Barua, Centre De Sciences Humaines,

- Nelson, P., (1959), "Migration, real income and information", *Journal of Regional Science:* 43-74

- NSSO *Sarvekshana,* various issues.

- Piore, Michael J. (1979), *"Birds of Passage: Migrant Labour in Industrial Societies"*: Cambridge: Cambridge University Press.

- Plane, D.A. (1993), "Demographic influences on migration", *Regional Studies* 27: 375-383.

- Population Census of Nepal

- Rao, Pandey, Barua et. al (2007), *"The North-Eastern Region: Vision 2020"*, NIPFP

- Razin, Assaf and Efraim Sadka (1997), "International Migration and International Trade", in *Handbook of Population and Family Economics,* vol. 1b, ed. M.R. Rosenzweig and O. Stark, Amsterdam: Elsevier Science B.V.

- Roy, Santanu, "Why Do They Come? Economic Incentives for Immigration to Assam", in *India's North-East: Developmental Issues in a Historical Perspective,* ed. Alokesh Barua, Centre De Sciences Humaines, 2005.

- Sandell, S.H. (1977),"Women and the economics of family migration", *Review of Economics and Statistics* 59: 406-414.

- Singh, D.P. (1998), " Internal Migration in India: 1961-1991", *Demography India,* 27(1): 245-261

- Singh, J.P. (1986), *"Pattern of Rural-Urban Migration in India",* New Delhi: Inter India

- Sjaastad, Larry A. (1962), "The Costs and Returns of Human Migration", *Journal of Political Economy,* vol.70, Supplement: 80-93

- Stark and Bloom (1985), "The New Economics of Labour Migration", *The American Economic Review,* Vol. 75, No.2, May 1985: 173-178.

- Stark and Katz (1986), "Labour Migration and Risk Aversion in Less Developed Countries", *Journal of Labour Economics,* vol.4, no.1:134-149

- Statistical Yearbook of Bangladesh, 2006, 26th edition, Bangladesh Bureau of Statistics.

- Taylor et. al (1996), " International Migration and National Development', *Population Index,* vol. 62, no.2: 181-212.

- Thomas, F. Homer-Dixon (1994)," Environmental Scarcities and Violent Conflict: Evidence from Cases", *International Security,* vol.19, no.1, 5-40

- Todaro, Michael P. (1969), "A model of labour migration and urban unemployment in less developed countries." *The American Economic Review* 59: 138-48.

- Wallerstein, Immanuel. (1974), *"The Modern World System, Capitalist Agriculture and the Origins of the European World Economy in the Sixteenth Century":* New York: Academic Press.

- Weiner Myron (1978), *"Sons of the Soil: Migration and Ethnic Conflict in India",* (Princeton: Princeton University Press, 1978);