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DETERMINANTS AND POLICY IMPLICATIONS

by

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TABLE OF CONTENTS

TABLE OF CONTENTS

LIST OF FIGURES

v

LIST OF TABLES

LIST OF TABLES - CONTINUED

viii

FORWARD

The African Rural Economy Program was established in 1976 as an activity of Michigan State's Department of Agricultural Economics. The African Rural Economy Program is a successor to the African Rural Employment Research Network which functioned over the 1971-1976 period.

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PREFACE

This paper has been developed as part of a three year study of rural employment problems in Africa financed under a U.S. Agency for International Development Contract (AID/csd 3625) with Michigan State University. The research in Sierra Leone was carried out under a Memorandum of Agreement between Michigan State University and the Department of Agricultural Economics and Extension, Njala University College, University of Sierra Leone and was financed under the terms of Contract AID/csd 3625. The Njala University College research program was also supported by grants from the Rockefeller Foundation and the Population Council. The research in Sierra Leone was under the direction of Dr. Dunstan S.C. Spencer.

INTRODUCTION

Only a decade ago rural-urban migration was regarded as a necessary element of rapid economic development. Popular theories and economic history depicted development as the process of moving labor from agriculture to industry with industrialization as the driving force of economic growth. Moreover this labor transfer from agriculture to industry was, and still is, widely equated with movement from rural to urban areas. The disappointing growth rate of agriculture combined with high growth rates of urban population and urban unemployment has led to a questioning of this strategy. In particular urbanization has been proceeding much faster than industrialization and growth in industrial employment has lagged far behind increases in industrial output.

The magnitude and importance of rural-urban migration in most African countries including Sierra Leone, is increasingly recognized by policy makers and planners as a problem. At least three dimensions of this problem can be distinguished: (a) the rate, (b) the concentration and (c) the composition of migration. The rate of migration may be too high for both economic and social reasons. Numerous authors (e.g., Eicher, et al. [1970], Byerlee [1974], Todaro [1972]) have noted various price distortions such as high urban wage rates and low agricultural prices particularly for export crops, which act to increase rural-urban income differentials and increase migration. Moreover the rapid influx of migrants into urban areas and the stagnation of employment in urban large-scale sectors has contributed to high rates of urban unemployment--usually in excess of 10 percent.

The burden that migration places on the urban labor market is illustrated by the case of Freetown, Sierra Leone, which is estimated to be growing at the relatively modest rate of 5.5 percent annually, while

employment in large-scale sectors is growing at most by 2 percent annually. Given that about half of the urban labor force is employed in large-scale sectors, the implied growth rate of the labor force which must be absorbed in small-scale sectors or become unemployed is of the order of 10 per-cent per year.[1] In addition to these urban problems, high rates of rural-urban migration deplete rural labor which is a limiting factor to agri-cultural production [Byerlee and Eicher, 1974]. In Sierra Leone, there is evidence of a decline in export crops as well as an increase in food imports corresponding to the "diamond rush" of the 1950s.

The problems created by high rates of migration are compounded by the concentration of migrants in one or two large cities. As Hance [1970] notes, most African countries have one "primate" city--usually the capital--which is also the fastest growing city in the country. As a result urban problems of housing shortages and unemployment are also concentrated in the largest city. In Sierra Leone, over half of the unemployed reside in Freetown, the capital city.

The composition of rural-urban migrants is a further dimension of the rural-urban migration problem. Rural-urban migrants are, on the average, younger and better educated than the rural population from which they originate. Since education represents a considerable proportion of total rural investment in many rural areas, rural-urban migration embod-ies a substantial capital transfer to urban areas [Byerlee, 1974; Essang and Mabawonku, 1974; Schuh, 1975]. This is a particular concern because capital investment is a constraint on rural development and migrant school-leavers or the bulk of urban unemployment. There are also distortions

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[1]Byerlee and Tommy [1975] compute that the equivalent figures for Nairobi and Abidjan are 25 percent and 12 percent respectively.

in the educational system such as the emphasis on education as a criteria for job hiring even where education will not increase productivity in that job. In rural areas, too, the selective migration of younger people increases the age of the rural population and the dependency ratio intensifying the problem of rural labor shortages.

Recently there has been concern that the composition of rural-urban migrants leads to rural income inequalities. For example, Lipton [1976] argues that since urban migrants depend upon rural relatives for support while looking for a job, only higher income rural households can afford to send migrants to town. However, if these migrants are successful in their job search they remit considerable amounts of their wages back to their rural households thus increasing income disparities in rural areas. A similar argument would hold if educated migrants originate in higher income households who can afford to educate their children.

Despite the widespread recognition of rural-urban migration as a problem in Africa, research on migration has not led to sound policy solutions for dealing with the problem. As we have discussed elsewhere [Byerlee, 1974], extensive research has been undertaken on migration but the underlying theory and methodology of this research has been such that its policy relevance is limited. Research has often been descriptive in nature leading to a good knowledge of migrants' characteristics and their processes of migration but little understanding of the determinants of migration. Numerous studies of migration in Africa have identified economic motives as dominant in the decision to migrate but only Sabot [1976], Essang and Mabawonku [1974] and Rempel [1971] have carefully measured urban incomes and none have measured incomes of rural households

from which migrants originate. As a result reducing rural-urban income differentials has become a universal panacea for slowing rates of migration; but as we shall show in this paper, this fails to recognize the complexity of the migration problem.

Part of the reason for these deficiencies in earlier studies stems from the methodology employed. Many studies (e.g., Beals, Levi and Moses [1967], Harvey [1975], Mabagunje [1970]) have used census information which is severely limited by information on current rates of migration and rural-urban location and which is of no value for such important variables as incomes. As a result conflicting conclusions are often reached from census information.

Numerous surveys of migration have also been undertaken but these are usually partial in scope emphasizing either the rural or urban side (but not both) and selective streams of migrants--most commonly male adults. The difficulties of using past research results from studies of migration in Africa for policy analysis thus stem from both deficiencies with respect to the underlying theoretical framework for analyzing migration processes and the methodology employed. The basic objectives of this study are therefore (a) to develop a theoretical schema of the decision to migrate, (b) to develop an improved methodology for testing this schema, (c) to apply this methodology to a comprehensive analysis of rural-urban migration in Sierra Leone and (d) to formulate policy recommendations.

This report detailing the initial results of our findings from a comprehensive study of migration in Sierra Leone proceeds as follows. A theoretical schema of the decision to migrate is briefly presented

and discussed, followed by a description of the integrated methodology employed in the study and some preliminary analysis of the sample.

The report then turns to a discussion of the survey results. The characteristics of migrants and the magnitude and direction of migration flows are described followed by an analysis of the migration process with attention to migration decision making and intra-urban and rural-urban income transfers associated with migration. Finally the urban labor market in which the migrant participates is discussed with emphasis on the structure of urban earnings and unemployment.

The remaining sections of the report integrate the findings from the descriptive analysis to econometrically estimate the determinants of rates of migration. This is then used as a basis for a discussion of policy implications of the study presented in the final section.

THEORETICAL SCHEMA OF THE DECISION TO MIGRATE

In figure 1 we present a schema for viewing the decision to migrate. Factors affecting the migration decision can be conveniently segmented into (a)monetary costs and returns relating to incomes, moving costs and employment and (b) nonmonetary costs and returns relating to risk, attitudinal characteristics, social ties and expectations. Also a distinction is made between actual and perceived returns to migration according to the availability of information on urban life.

The monetary benefits of migration are determined by differences in rural and urban incomes. Measuring rural incomes to an individual is difficult where work and income is shared by a household [Knight, 1972].

6

Figure 1. A Schema of the Decision to Migrate
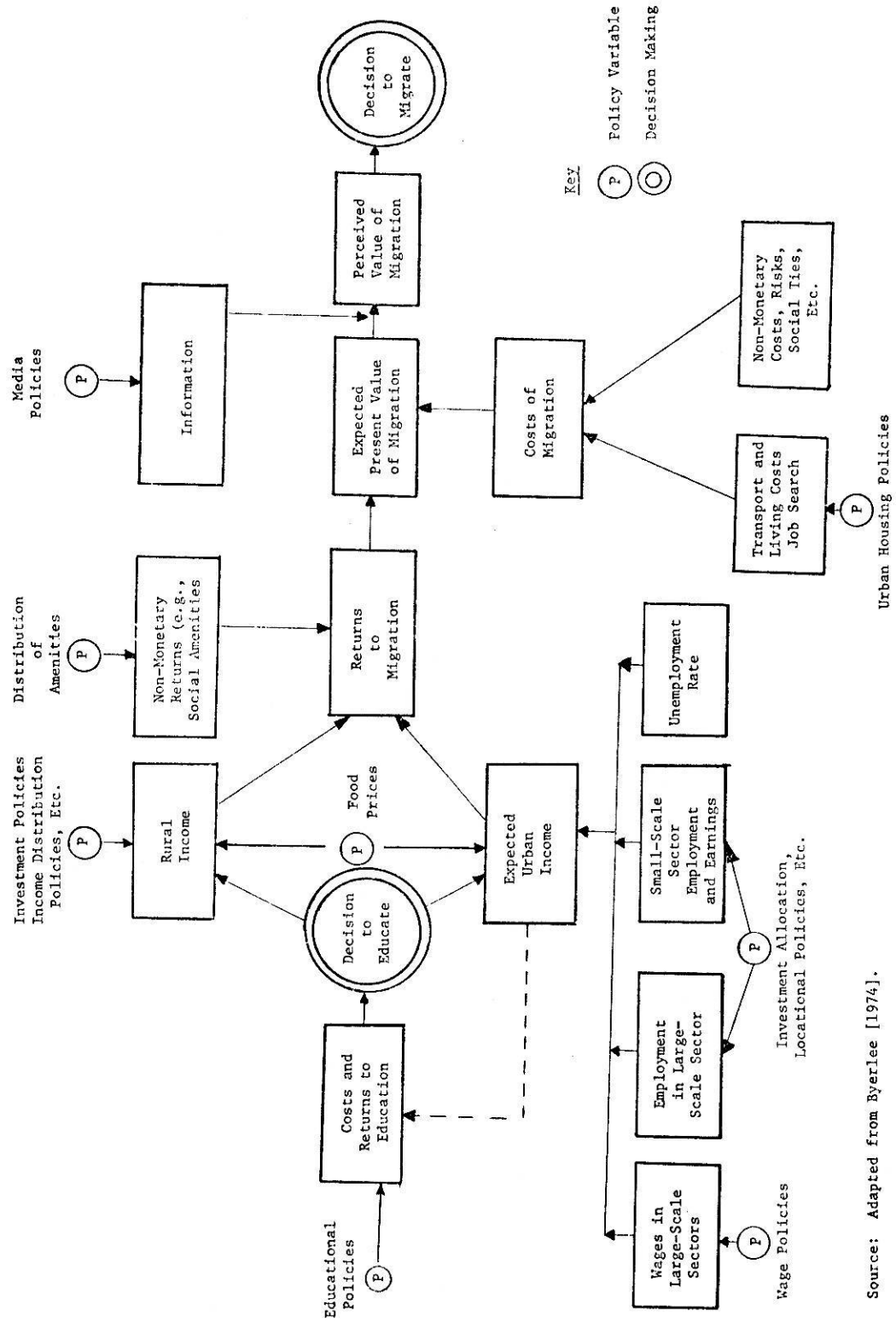
Source: Adapted from Byerlee [1974].

Nonetheless a useful measure of foregone income is the marginal productivity of labor which depends on the age and sex of the migrant as well as a host of other variables such as capital stock and technology.

In urban areas the schema follows Todaro's [1969] expected income model based on the probability that a migrant will obtain a job in the large-scale sector with a high wage or alternatively remain unemployed. The probability that a migrant will be absorbed in the urban traditional sector with lower wages is however explicitly recognized in this schema. There are also nonmonetary returns to migration particularly the benefits from improved social amenities such as schools and hospitals and attainment of higher social status.

Costs of migration include the transport costs of moving, the opportunity costs of looking for a job in the urban area, the higher cost of living and the cost of "setting up house". This latter cost can be greatly reduced by the presence of friends and relatives in urban areas. Finally there are also costs that cannot be readily measured in monetary units particularly the cost of breaking old and establishing new life styles which is most acute for older people.

Since educated migrants are of such overriding importance in the migration stream, we give particular attention to education. Education enters into the migration decision in various ways. First it may increase a migrant's access to knowledge of urban areas. Second it may enable migrants to derive additional value from urban life styles (and perhaps devalue rural life styles). Finally and most important there is ample evidence that despite unemployment the private returns to education are considerably higher in urban areas compared to rural areas (e.g., Todaro [1971], Sabot [1971], Hutton [1973]). An important and unresolved issue

is the extent to which education affects the decision to migrate through each of these three mechanisms.

We would be remiss if we merely accepted education as a given variable in the decision to migrate. It is essential for long run analysis of migration to understand who gets educated—that is, we need to look also at the decision to educate. Again a costs-returns framework is a useful analytical device providing account is taken of how these costs and returns vary with individuals. It is generally true that the costs of education are relatively lower for high income families because of their ability to sacrifice present consumption for investment in education. Thus higher income households invest more in the education of their children [Kinyanjui, 1974; Mbilinyi, 1974].

The difference between costs and returns to migration is the expected present value of migration. However the migration decision is based on the perceived value of migration which differs from the actual value according to the information available on the urban labor market. Although it is generally recognized that informal channels are the most important sources of information there is little evidence on the quality of the information received by migrants.

The above simplified framework is useful in identifying and explaining various streams of migrants. In general we can distinguish three main types of migrants: (1) migrants in the labor force, (2) migrants attending school and (3) women who migrate for reasons of marriage.

Migrants working or seeking work readily perceive that expected benefits of migration are higher than the costs. These migrants will often be young since their time horizon for reaping the benefits of migration is longer and the cost of breaking old and establishing new life styles

are less for young people. Moreover it is convenient to distinguish between the educated and the uneducated in this stream. The significance of this for policy purposes is that we hypothesize that uneducated migrants are likely to conform to the conventional notion that urban migrants originate in poor rural households and in poor regions of the country, whereas educated migrants tend to originate in higher income rural households and more developed sections of the country with long established educational institutions.

The decision of migrants to attend school in urban areas also follow our framework except that the decisions to educate and migrate are taken simultaneously but still based on perceived long-run costs and returns. We hypothesize that there are at least three categories of migrant scholars: (1) those who have to leave home to attend school because there is no school available in the rural area, (2) those who leave because urban education is perceived to be of higher quality than rural education and therefore to have higher returns and (3) those who have urban relatives who can support the costs of education in town.

Finally many women migrate for reasons of marriage. There are those women who are married when they migrate and whose decision to migrate is made by the husband. She can thus be regarded as a dependent and should not concern us in policy analysis. However, a second category of women migrate to find a husband in town. This type of migrant can be readily analyzed within our framework since it can be presumed that the monetary and nonmonetary benefits of a urban marriage induce this migration. Unfortunately most surveys of migration in Africa are based on samples of male migrants and relatively little information exists on the extent to which women migrate for marriage reasons or alternatively to find work.

In summary, the theoretical schema developed here recognizes economic motives as dominant in the decision to migrate. But to adequately analyze these motives, the urban labor market must be disaggregated into large-scale sectors, small-scale sectors and the unemployed. Furthermore it is essential to disaggregate migration streams by educational level to capture earnings differentials between rural and urban sectors and within urban sectors

THE INTEGRATED METHODOLOGY FOR THE MIGRATION SURVEY

Features of the Integrated Methodology

The survey methodology we employed in Sierra Leone was designed to overcome some of the obstacles to policy analysis inherent in current methodologies for surveying migration. Essentially there are seven features in this methodology which lead to generation of an integrated set of data on rural-urban migration.

Rural and Urban Data Collection. Exclusive emphasis on studying migration in rural areas or in urban areas alone gives only one side of the picture. In the Sierra Leone survey, data were collected in both rural and urban areas and as a result direct comparisons can be made between rural and urban socio-economic variables and attitudinal characteristics. Furthermore, expectations of potential migrants in rural areas can be compared to the reality of actual migrants in urban areas. Finally both rural-urban migration and urban-rural migration can be surveyed providing greater insights into the migration process.

Tracing of Migrants. The rural and urban data were made more comparable by tracing migrants from specific locations into urban areas. By focusing on migrants from given villages or other well defined areas (e.g., census enumeration areas), the variance of variables describing the rural environment such as agricultural production systems, incomes, ethnic group, distance, etc., is greatly reduced. This may enable a reduction in overall sample size of urban migrants, and hence a more indepth study of this smaller sample. The advantages (and disadvantages) of tracer studies are discussed in more detail later in this section.

Integration of Migration and Farm Management Surveys. The difficulty of obtaining accurate rural income data can be overcome if a migration survey uses the same sample as a recent or ongoing farm management or household expenditure survey where economic data are collected through continuous interviews over a period of time (or even a detailed one contact interview). Of course, this presumes that the sampling method for the farm management survey is appropriate for the migration survey. In Sierra Leone our migration survey was integrated with a nationwide farm management survey. The farm management survey provides information on various measures of rural incomes such as household incomes, returns to family labor and wages for hired labor.

Complete Coverage of Urban Migration Streams. As shown above migration can be classified into various streams, such as migrants in the labor force, adult migrants (primarily housewives), scholars not in the labor force and children who are sent to town as wards. Each of these streams was included in our survey to take into account the various decision makers and motives involved and produce a more comprehensive analysis

of the migration process than is afforded by surveys which include only male adults (e.g., Rempel [1971] in Kenya).

Interrelationships between the Decisions to Educate and to Migrate.
Education plays a crucial role in the magnitude and direction of migration largely because of higher income and employment opportunities. A modified cost/returns approach is being applied to analyze the decision to educate simultaneously with the decision to migrate. This expands the range of policy variables that can be analyzed to include policies which affect the costs and returns to education.

Simultaneous Analysis of Rural-Rural and Rural-Urban Migration. The opportunity costs of migrating to urban areas is represented not only by the alternative of not migrating but also by the possibility of moving to other rural areas. In Sierra Leone information was also collected on rural-rural migrants and in the analysis of aggregate rates of migration both rural-rural migration and rural-urban migration will be included.

Multi-disciplinary Research on Migration. Since migration research is in the domain of several disciplines a fuller understanding of the migration process can be achieved through involving more than one discipline. In our case we are combining agricultural economics and rural sociology.

The Sierra Leone Migration Survey in Practice

The migration survey was conducted in three phases in 1974/75 beginning in the rural areas, then moving to urban areas and finally back to the same rural areas. Details of questionnaires are shown in table 1.

Table 1. Overview of the Sierra Leone Rural Urban Migration Survey

Question-naire Number	Title of Questionnaire	Sampling Procedure	Sample Size	Frequency of Interview	Contents of Questionnaire	Major Variables Derived
MG-1	Origin questionnaire	All households in 24 enumeration areas of farm level study	About 30,000 persons	Once	Age, sex, education, fertility, last place lived, mortality. Names and addresses of out-migrants	Basic demographic parameters. Population of enumeration areas. Population change. Rates of rural-urban migration
MG-2	Urban migrants	All migrants traced into towns 2,000 above	800 persons	Once	Detailed information on occupation, incomes, job search, support, property, social participation, the migration decision, transport, contacts with home, education, etc.	Urban incomes, unemployment. Rural-urban remittances, etc.
MG-3	Characteristics of rural Villages	All villages in each of 24 enumeration areas	100 villages	Once	Government, communications, social amenities, schools, leadership in each village	Description of rural environment
MG-4	Return migrants	Ten persons in each enumeration area who have lived in town and returned home	150 persons	Once	Migration history, life in town, reasons for returning home	Determinants of return migration
MG-5	Outmigrant households	Heads of households with household members away in town	150 persons	Once	Decision making, exchange of gifts	Decision making for migration. Use of remittances
MG-6	Nonmigrants	Males in each enumeration area, 15-30 years who have not left that enumeration area	150 persons	Once	Migration intentions and perception of urban areas	Determinants of decision to migrate or not migrate
MG-7	Attitudinal characteristics	Three migration streams purposely chosen. Both urban migrants and rural nonmigrants interviewed	110 persons	Once	Attitudes to rural and urban life style, family ties, etc. Occupational prestige	Effects of migration on attitudes
MG-8	Unemployment	All unemployed migrants identified in MG-2	30 persons	Once	Details of job-search, support, expectations	Nature and causes of unemployment

Phase 1: Rural Areas. Since one of the features of our migration survey is its integration with a nationwide farm management survey, the rural sample was essentially the same for both surveys. The country was divided into eight resource regions shown in figure 2 reflecting different ecological zones and hence farming systems. Within each resource region, three census enumeration areas (E.A.'s) were chosen at random with the exclusion of localities exceeding a population of 2,000 (the former Sierra Leone definition of an urban area). For the farm management survey, 20 households were randomly chosen within each enumeration area for a total sample of about 500 households. Each of these households was visited twice weekly over a cropping year to obtain data on labor inputs, output, expenditures, remittances and incomes.[1]

The first phase of the migration survey was conducted in all households in each enumeration area (E.A.) including the 500 selected households in the farm management study. A census was taken of all people in the E.A. to collect data on general demographic characteristics of the people such as age, sex, education, occupation, etc. At the same time, data were collected on fertility, mortality and in-migration (see table 1). Finally each household was asked to provide the names and demographic characteristics of persons who had left that household. Addresses were collected where possible for those who had gone to urban areas.[2] Together these data enable changes in population in an area to be explained in terms of births, deaths and in-and-out migration.

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[1] See Spencer and Byerlee [1976] for more details.

[2] Addresses were obtained from several sources including (a) letters written home, (b) school children in the household who often know the whereabouts of brothers and (c) return migrants from town.

Figure 2. Rural Enumeration Areas and Urban Areas of the Migration Survey
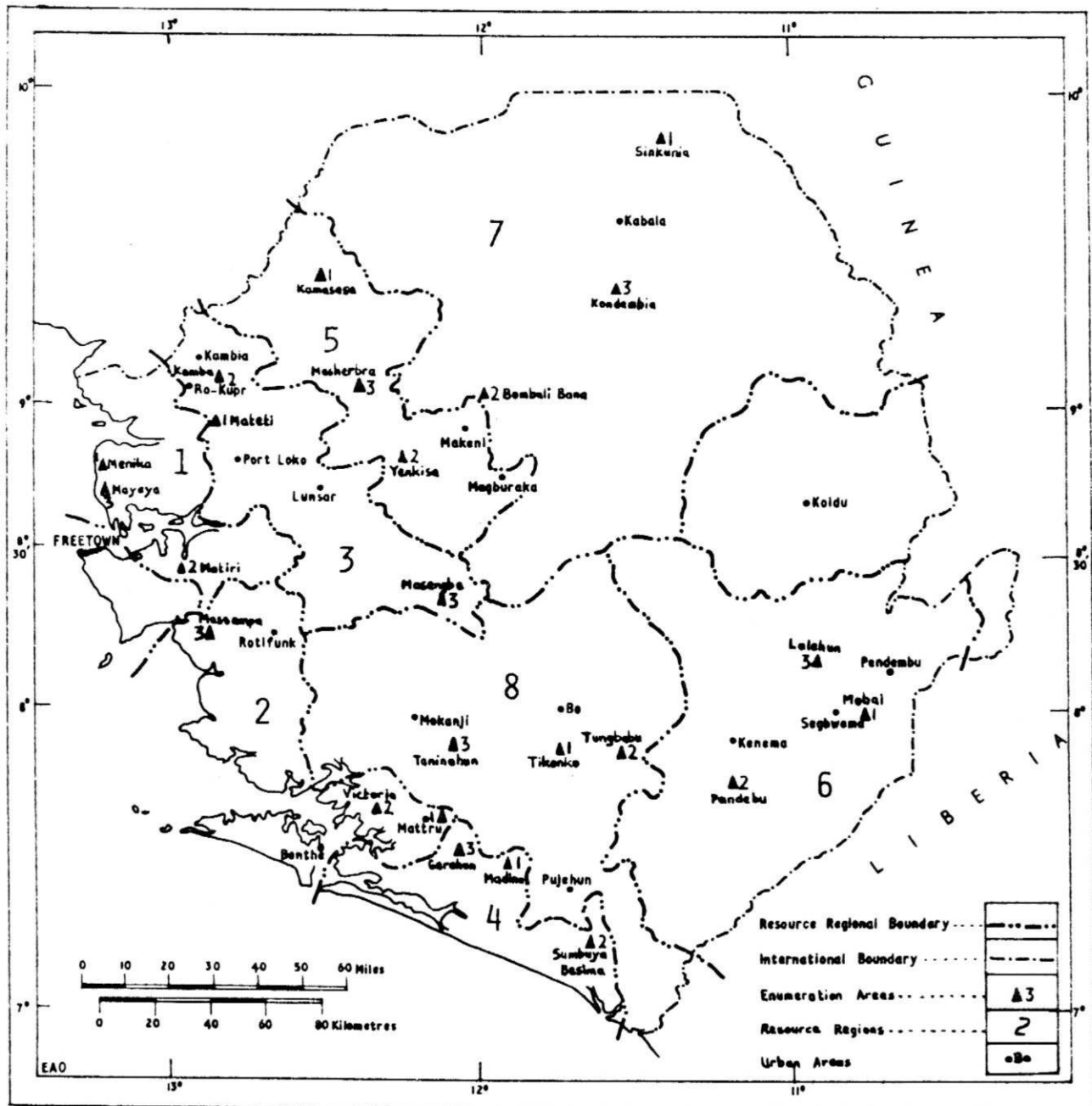
Sierra Leone

Phase 2: Urban Areas. The collection of names and addresses of urban migrants from about 2,500 rural households in the first phase resulted in the names of about 2,000 migrants fifteen years old and above in urban areas. Of these one-third had gone to Freetown—the capital and main city. Table 2 shows that we were able to obtain some form of addresses for about half of all migrants although this proportion is considerably lower for migrants in the diamond mining areas (Kono-Tongo). We had little difficulty locating migrants because as soon as we had found one or two migrants from a given village they were able to tell us the where-abouts of other migrants from that same area. Indeed through this process we located many migrants who were not originally identified in the rural survey thus increasing the total number of migrants by over a third (see table 2).[1]

Migrants who were traced and located were interviewed to obtain indepth information on jobs, migration history, initial support in town, remittances, expectations, plans to return home and socio-cultural factors (see table 1). The incomes of these migrants were obtained using separate forms for wage and salary earners, self-employed traders and workers in small industries and the unemployed. Incomes for the self-employed which are particularly difficult to estimate are being checked against incomes estimated separately in a small industries survey conducted by Liedholm and Chuta [1976]. Overall, we traced and interviewed over eight-hundred migrants in sixteen urban areas.

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[1] Enumerators were paid a bonus of Le .20 to Le .25 in lieu of overnight allowances, etc. for every migrant located and interviewed (Le 1.00 = U.S. $1.10).

Table 2. Distribution of Rural-Urban Migration Sample by Type of Address, Method of Tracing and Urban Area

| | Urban Areas (By Size) | | | | | | All Urban Areas |
| | 2,000-20,000 | 20,000-100,000 | | | 100,000-200,000 | Over 200,000 | |
	All Small Towns	Makeni	Kenema	Bo	Kono	Freetown	
Sample Identified in Rural Areas							
Percent urban migrants identified by:							
a. Name and address	34	43	52	55	27	52	40
b. Name only	66	57	48	45	73	48	60
Total	100	100	100	100	100	100	100
Sample Located in Urban Areas							
Percent traced through:							
a. Name and address from rural sample	52	56	54	78	43	48	52
b. Name only from rural sample	5	11	2	0	10	7	6
c. Referral from other urban migrants (not identified in rural areas)	43	33	45	22	47	44	42
Total	100	100	100	100	100	100	100

Phase 3: Rural Areas. The final phase of the study involved a return to the same rural areas to interview three groups of rural people.

(1) Out-migrant Households. Heads of households from which migrants have left for urban areas were interviewed to supplement the interviews with migrants in urban areas. This is important since in many cases these household heads have been heavily involved in the migration decision of a household member. For example, the decision of school children or wards to migrate at an early age is almost entirely made by the rural household head. Thus the household head was interviewed to determine the motives and reasons for sending or encouraging some-one to live in town. At the same time estimates of remittances of migrants and the extent to which these remittances were invested in agriculture and other businesses were obtained.

(2) Return Migrants. Phase 1 of the survey indicated that for every three rural-urban migrants there were about two urban-rural migrants, many of whom were return migrants. Hence of particular interest to us are the determinants and consequences of return migration. A sample of urban-rural migrants was interviewed to obtain information on their stay in town, their reasons for returning and the impact that migra-tion has had on their rural social and economic status.

(3) Non-migrants. Non-migrants in rural areas were interviewed to under-stand why people do not migrate. Non-migrants may be classified as not intending migrants and intending migrants. In the latter case expectations of urban incomes and jobs were measured to determine the gap, if any, between rural expectations and urban reality. The sample of non-migrants was weighted toward those most likely to

migrate, i.e., male, young and educated persons.[1]

Preliminary Analysis of the Sample of Traced Migrants

If rural areas are sampled randomly and all migrants identified are traced into town the urban sample will also be random. However because of time constraints it was not possible to trace all migrants and possible biases in the urban sample may result if some groups of migrants are more easily traced than others. Prior to our analysis of the data we have run some checks on sample bias by comparing the characteristics of urban migrants identified by rural residents in Phase 1 of the survey, with the characteristics of migrants actually traced into urban areas. Table 3 gives a distribution of both samples by origin and destination. In general there is good correspondence between the two samples although the traced sample is clearly under-represented in Kono in the diamond mining areas where we had few addresses. In table 4 some general demographic characteristics of the two samples are compared. In the case of the percentage male and the average age in each sample there is a very good correlation in nearly all cases. However our traced sample has a consistently higher level of education than the rural sample. Reasons for this include (a) high success in tracing scholars in the town of Bo and Kenema (see table 4), (b) the concentration of our good enumerators in the better educated southern part of the country leading to higher success in tracing and (c) likely understatement of the education of absent migrants by rural household heads, particularly for scholars who have acquired education

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[1] The sampling for all three questionnaires in Phase 3 was drawn such that selected farm management households were included in the sample if they fitted one or more of the categories: out-migrant households, return migrants and non-migrants. For these selected households accurate income data is available. For other households a short questionnaire on total output of crops was administered. This can be converted to household income through correlations derived from the farm management survey.

Table 3. Distribution by Origin and Destination of Migrants Traced to Urban Areas
Compared to Migrants Identified in Rural Sample

Origin (i) Rural Region	Destination (j)						
Urban Area (By Size)	Over 200,000	100,000–200,000	20,000–100,000			2,000–20,000	Rural Region Total
	Freetown	Kono	Bo	Kenema	Makeni	All Small Towns	
B	2.4 3.6	1.1 1.1	0.0 .3	0.0 .1	.2 .3	.7 1.1	4.4 6.5
C	6.5 3.2	.5 1.1	2.4 1.4	.1 .4	0.0 .2	2.8 2.6	12.3 8.9
D	4.0 7.5	2.7 5.6	.1 .6	0.0 .5	1.1 1.6	1.3 4.4	9.2 20.2
E	3.0 1.5	.5 .9	1.8 1.0	.4 .4	.2 .1	2.7 1.8	8.6 5.7
F	13.1 9.2	1.0 1.6	1.3 .5	0.0 .4	2.3 1.8	2.2 1.9	19.9 15.4
G	1.5 1.9	4.2 3.9	0.0 .8	6.3 4.5	.2 .3	1.5 3.6	13.7 15.0
H	3.4 2.4	1.9 5.5	0.0 .1	0.0 .4	.8 .6	2.3 2.8	8.4 11.8
I	6.5 2.9	5.8 3.8	5.8 3.7	2.2 1.7	0.0 .3	3.8 3.6	24.1 16.0
Urban Area Total	40.5 32.4	17.3 23.5	11.0 8.4	8.8 8.4	5.0 5.2	17.3 21.8	100 100

Key: Upper Left Corner: Migrants traced from rural region i to urban area j as percent of all migrants
traced (total 825)

Lower Right Corner: Migrants identified in urban area, j, by survey in rural region, i, as percent
of all migrants identified in rural sample survey (total 1900)

Table 4. Characteristics of Migrants Traced to Urban Areas
Compared to Migrants Identified in Rural Sample

	Urban Area (By Size)						All Urban Areas
	Over 200,000	100,000-200,000	20,000-100,000			2,000-20,000	
	Freetown	Kono	Bo	Kenema	Makeni	All Small Towns	
Percent Male							
a. Rural Sample [a]	64	61	58	54	59	52	59
b. Urban Sample [b]	68	62	59	77	65	55	65
Average Age							
a. Rural Sample	28.2	25.9	25.8	22.9	27.7	28.5	27.3
b. Urban Sample	29.0	28.9	27.8	24.0	26.5	28.7	28.3
Average Education (Years)							
a. Rural Sample	3.5	2.0	4.7	4.6	3.6	3.4	3.3
b. Urban Sample	4.9	3.6	7.2	7.2	5.1	4.2	5.0
Scholars as Percent All Migrants							
a. Rural Sample	13	5	22	27	17	17	14
b. Urban Sample	12	4	30	42	24	25	18

[a] Sample of urban migrants identified by interview in rural areas.

[b] Sample of urban migrants traced to urban areas.

in town. Overall we do not view this bias as serious since in any event urban incomes were estimated for each region of origin and education sub-group. In addition the tracing provides several advantages which outweigh this disadvantage. For example we obtained excellent cooperation in urban areas when migrants learned we had visited their home area and obtained their name and address (and sometimes messages for the migrants) from a relative. This cooperation was important in obtaining accurate data on sensitive variables, such as income.

CHARACTERISTICS OF MIGRANTS AND RATES OF MIGRATION

We now turn to a presentation of the results of our Sierra Leone migration survey beginning with a description of migrants' characteristics and estimation of migration rates. However before proceeding with this analysis we divert briefly to establish an operational definition of categories of migrants used in this study.

Definitional--Who Is a Migrant?

Migrants for the purpose of this study were defined on the basis of both space and time dimensions. To qualify as a migrant an individual must have crossed a chiefdom boundary, or moved to an urban area within that chiefdom. In crossing a chiefdom boundary a migrant was classified as a rural-rural migrant if he moved to another rural location defined according to the previous official Sierra Leone definition of a rural area as a location with less than 2,000 persons. A rural-rural migrant was defined as an intra-regional migrant if he or she moves to an area inside the same resource region and an inter-regional if he or she moves

across a resource region boundary. Alternatively a migrant was classi-
fied as a rural-urban (or urban-rural) migrant if he moved to (or from)
an urban area--i.e., towns above 2,000 persons. In much of the follow-
ing analysis towns are grouped by size as shown in table 5 with each
group having other characteristics related to its economic base. Finally
migrants were classified as international if they had moved across a
national boundary--in this case mainly Guinea and Liberia.

In the time dimension, a migrant must have resided in an area for
longer than six months to be considered a migrant to that area. This
eliminated the problem of counting people visiting towns and school
children returning home at vacation time as migrants. For a migrant
who had left his place of birth and moved to another area and then returned
again he must have resided in that place for six months or more and have
returned for six months or more to be considered a migrant. An individual
who satisfied these criteria is defined as a return migrant since he has
returned to his home area after a period residence elsewhere.

In summary a migrant was defined as a person who had moved across a
chiefdom[1]/ boundary for at least six months. A nonmigrant was defined as
an individual who had resided in his chiefdom of birth all his life or
who had not resided elsehwere for more than six months.

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[1]/ The chiefdom is the basic unit of local government in Sierra Leone.

Table 5. Urban Groupings, Sizes and Economic Characteristics

Groups	Towns	Estimated Population Size of Towns	Total Population in Groups (Approximate)	Economic Characteristics
Freetown	Freetown	275,000	275,000	Capital city and main commercial and industrial center
Kono	All towns in Kono District and Tongo fields	100,000+	110,000	Main diamond mining area
Medium towns	Bo Kenema Makeni	20,000-50,000	100,000	Provincial capitals, educational services and some industry
Small towns	Bonthe Rokupr Segbwema Kabala etc.	Less than 20,000	130,000	Some district capitals, largely commercial centers for rural areas

Classification of the Rural Populations

Using the above definitions the rural population can be divided into various groups--nonmigrants, rural-rural migrants, urban-rural migrants and international migrants. Table 6 shows the disaggregation by each rural region population. Nonmigrants consistently comprise about two-thirds of the rural population. Rural-rural and urban-rural migrants are about equal in importance and together contribute about 25 percent of the rural population. Each of these groups is divided into return migrants and migrants born elsewhere. Return migrants form about half of all urban-rural migrants but a very small proportion of rural-rural migrants.

International migrants are generally unimportant except in Region 7 which borders with Guinea and shares several ethnic groups with Guinea. For this reason international migrants will be ignored in further analysis.

Rural-rural migrants and urban-rural migrants shown in table 6 are in-migrants to that region. The opposite streams of migrants are of course rural-rural out-migrants and rural-urban out-migrants. Rural-rural out-migrants to one region are, of course, rural-rural in-migrants to another region and hence in the following discussion only rural-rural in-migrants are analyzed.

Characteristics of Migrants

Table 7 summarizes the education, age and sex characteristics of various groups of migrants. In general rural-rural migrants have characteristics resembling very closely that of the rural population as a whole which in turn is dominated by nonmigrants (see table 6). However,

Table 6. Disaggregation of the Rural Population in Each Region
by Nonmigrants, Rural-Rural Migrants, Urban-Rural
Migrants, and International Migrants

Migrant category	Percent of Rural Population in Each Region b/								All Rural Areas
	1	2	3	4	5	6	7	8	
Nonmigrants	77	62	76	71	73	66	64	70	69
Rural-rural migrants	11	26	15	21	11	16	6	15	13
(Return migrants)	(1)	(7)	(1)	(3)	(4)	(1)	(0)	(1)	(2)
(Migrants born in other rural areas)	(10)	(19)	(14)	(18)	(7)	(15)	(6)	(14)	(11)
Urban-rural migrants	9	11	9	7	15	16	5	14	11
(Return migrants)	(1)	(5)	(3)	(4)	(5)	(6)	(1)	(6)	(4)
(Migrants born in other rural areas)	(2)	(2)	(2)	(0)	(3)	(2)	(0)	(2)	(2)
(Migrants born in urban areas)	(6)	(4)	(4)	(3)	(7)	(8)	(4)	(6)	(5)
International migrants	2	1	0	1	1	2	25	1	7
Total Rural Population a/	100	100	100	100	100	100	100	100	100

a/ The rural population base used here excludes people who have
resided in the area enumerated for less than six months and hence
fall outside the definition of both nonmigrants and migrants.

b/ See figure 2 for location of regions.

Table 7. Education, Age and Sex of Nonmigrants, Rural-Rural Migrants, Urban-Rural Migrants and Rural-Urban Migrants

Type of Migrant	Education [a]			Mean Education	Age [a]				Mean Age	Percent Male
	None	Primary	Secondary	(Years)	<15	15-24	25-34	>35	(Years)	
	(Percent Distribution)				(Percent Distribution)				(Years)	
1. Nonmigrant	91	8	1	.31	49	15	11	26	22.5	47
2. Rural-Rural Migrant	89	7	4	.47	32	24	17	27	23.7	45
2.1. Return Migrants	87	8	5	.63	8	22	28	42	33.0	61
2.2. Migrants Born Elsewhere	90	7	4	.43	38	24	15	23	21.9	42
3. Urban-Rural Migrants	81	10	9	1.23	30	22	22	26	23.5	53
3.1. Return Migrants	83	8	9	1.35	11	28	28	33	28.5	61
3.2. Urban Born Migrants	78	13	9	1.10	48	20	14	18	18.3	48
Total Rural Population [b]	90	8	2	.44	40	16	13	30	25.1	47
Rural-Urban Migrants	55	12	33	2.82	28	41	20	10	17.5	54

a/ Age and education are computed for the year when migration took place. Education is for persons 15 years and above.

b/ Total rural population includes nonmigrants, rural-rural migrants and urban-rural migrants.

the breakdown of rural-rural migrants into return migrants and migrants born elsewhere reveals that return migrants are substantially older and tend to be predominantly male.

Urban-rural migrants, on the other hand, have a higher level of education and also contain a higher proportion of males. These characteristics are most pronounced for the return migrants who as in the case of rural-rural migrants are also much older than other groups in the population.

The higher education and male ratio of urban-rural migrants is a reflection of these characteristics in the rural-urban out-migrants. Nearly half of all rural-urban migrants have some education as opposed to only 10 percent for the rural population as a whole. It is significant that although urban-rural return migrants have a higher level of education than the rural population, they have only about half the number of years education as those leaving for town despite the fact that many migrants acquire further education while in town. Return migration is selective of persons with little education.

Also consistent with other migration surveys in Africa is the dominance of young people in the rural-urban migration stream. Youths aged 15 to 24 years comprise 41 percent of all rural-urban migrants and the mean age is only 17.5 years.

The characteristics of rural-urban and urban-rural migrants are further disaggregated by urban areas in table 8. Medium size towns which consist of Bo, Kenema and Makeni attract the youngest migrants and migrants with the highest average education. To a large extent this reflects the substantial proportion of scholars migrating to these towns.

Table 8.   Characteristics of Rural-Urban and Urban-Rural
Migrants by Urban Area

Migrants	Urban Areas				
	Freetown	Kono	Medium Towns	Small Towns	All Urban Areas
Number Years of Education					
Rural-Urban Migrants	2.87	1.76	3.81	2.89	2.82
Urban-Rural Migrants	1.47	.82	1.58	1.04	1.23
Average Age					
Rural-Urban Migrants	18.1	18.8	15.6	17.4	17.5
Urban-Rural Migrants	23.9	23.0	23.5	23.7	23.5
Percent Male					
Rural-Urban Migrants	58	58	49	54	54
Urban-Rural Migrants	55	66	55	50	53

Freetown also receives migrants with a relatively higher education while migrants to Kono have a significantly lower education reflecting the dominance of self-employment in diamond mining which does not require educational skills.

The larger urban centers attract a higher proportion of males than medium and smaller towns. Nonetheless the statistic of 58 percent, male migrants to Freetown or Kono, is not unduly high when compared to statistics from other countries, particularly Kenya where males comprise about 70 percent of the migrants to Nairobi.

In Sierra Leone the education of rural-urban migrants is highly regional and sex specific. Table 9 shows that for the southern regions (2, 4, 6, 8) almost three quarters of male migrants have some secondary schooling while for the northern regions (1, 3, 5, 7) only about one-quarter have secondary schooling. Females have much less education but follow a similar regional pattern.

In addition to age, sex and educational characteristics it is instructive to note the occupation of migrants and nonmigrants in the rural population. A higher proportion of rural-rural migrants are in nonfarm occupations such as small industries (tailors, carpenters, blacksmiths), small-scale trading and services and government jobs than is true of nonmigrants or the rural population as a whole (table 10). This dominance of nonfarm occupation is even more pronounced for urban-rural migrants. Almost 20 percent of urban-rural adult migrants have a nonfarm occupation compared to less than 5 percent for nonmigrants. These results indicate that persons with nonfarm occupations are more mobile perhaps in part due to lack of necessity for land and in part because many serve

Table 9. Education of Rural-Urban Migrants by Rural Origin and Sex[a]

Rural Region	Males				Females			
	No Education	Primary	Secondary	Mean	No Education	Primary	Secondary	Mean
	(Percent Distribution)			(Years)	(Percent Distribution)			(Years)
1. Scarcies	74	3	23	1.7	87	4	9	1.3
2. Southern Coast	26	12	62	4.2	46	15	39	2.5
3. Northern Plains	65	10	25	2.3	77	12	11	1.0
4. Riverain Grasslands	18	18	64	4.7	61	19	20	2.0
5. Bolilands	72	2	26	1.9	98	2	0	.3
6. Moa Basin	16	8	76	6.1	60	18	22	2.1
7. Northern Plateau	71	9	20	2.2	84	13	3	.5
8. Southern Plains	12	17	71	6.7	60	20	20	2.6
All Rural Regions	44	10	46	2.8	70	14	16	1.5

[a] Education of adults 15 years and above.

Table 10. Occupational Distribution of Migrants and Nonmigrants Ten Years and Older in the Rural Population

(Percent Distribution)

Migrant Category	Farmers	Small Industries	Trade Services	Government	Housewives	Scholars	Other [a]	Total
Nonmigrants	71.1	1.8	2.7	.7	14.7	6.1	2.9	100
Rural-rural migrants	66.9	3.7	3.9	2.1	16.7	3.4	3.3	100
Urban-rural migrants	60.9	6.0	7.6	3.7	15.5	5.1	1.2	100
Total rural population	66.7	3.4	4.0	1.6	15.5	5.6	3.2	100

[a] Includes unemployed, Arabic scholars, religious workers, etc.

apprenticeships in town because of lower apprenticeship fees (see Lied-holm and Chuta [1976]).

Finally the reasons for migration are shown in table 11. Although reasons for rural-urban migration will be considered in more detail in a later section the comparison of reasons for rural-rural and rural-urban migrants shows considerable similarities in both cases. Significantly only about a quarter of migrants leave for work-related reasons.[1] Marriage is equally important for rural-rural migrants while schooling is the reason given for over one-quarter of rural-urban migrants. This under-scores the limitations of surveys which focus only on male migrants in the labor force.

Rates of Migration

Estimation Procedures. Rates of both rural-urban and rural-rural migration were computed from our demographic survey in rural areas. Persons who had left the area enumerated were identified and the year they departed recorded. Likewise persons residing in the area enumerated at the time of the survey were asked their last place of residence and the years they had lived in their present residence. Rates of migration were computed from the number who had moved in and out of the area each year using the last five years as a base. Two deficiencies are inherent in this approach. First even though our total sample included 30,000 persons it was necessary to use the last five years rather than the last year to provide a large enough sample for measuring origin-destination specific migration rates. Hence there is some recall lapse which tends

[1]Work related reasons include farming for rural-rural migrants.

Table 11.   Reasons Given for Rural-Rural and Rural-Urban Migration

Migrants	Work	Marry	Schooling	Ward[a]	Other	Total
	(Percent Distribution)					
Rural-rural	25	25	15	25	10	100
Rural-urban	26	20	26	19	9	100

[a] Children sent away for upbringing.

to underestimate in- and out-migration by about 25 percent.[1] Second

there is likely to be a better reporting of in-migrants who are resident

at the time of the survey than out-migrants who are absent.[2] For these

reasons the absolute value of both gross and net out-migration are pro-

bably underestimated but since this underestimate should be equally true

of all groups and areas, the relative magnitude of our estimates is valid.

In estimating migration rates two measures are employed. First

is the <u>aggregate rate of migration</u>, m^a_{ijk}, defined as the number of per-

sons in the kth age, sex, education cohort, M_{ijk}, migrating from origin i

to destination j per thousand of the rural population N_i in i. That is,

$m^a_{ijk} = M_{ijk} \times 1,000/N_i$. Second we also computed <u>cohort-specific rates</u>

<u>of migration</u>, m^s_{ijk}, by expressing the migration rate as the rate per

thousand of that specific age, sex, education cohort in the rural popu-

lation, where $m^s_{ijk} = M_{ijk} \times 1,000/N_{ik}$, where N_{ik} is the number of the

k^{th} age, sex, education cohort in the rural population.

These two measures--the aggregate rate and the cohort specific rate--

are both useful in analyzing migration streams. Aggregate rates are a

measure of the number of persons in a specific cohort migrating while co-

hort specific migration rates measure the propensity to migrate. For

example in a given area the propensity for educated persons to migrate--

as measured by the cohort specific rate--may be high but the number of

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[1]Recall lapse was estimated by fitting the function, $M_t = M_o e^{-kt}$
to the cumulative average migration rate where M_t is the migration rate
estimated for t, M_o is the migration rate corrected for recall lapse and
k is a constant and t is time [Sen, 1972].

[2]Evidnece that this is the case is obtained for rural-rural migrants
where rural-rural outmigrants should equal rural-rural in-migrants because
we had a nationwide sample. In fact, we found that in-migrants outnumbered
out-migrants by about 50 percent.

educated persons migrating as measured by the aggregate rate may be low
simply because there are very few educated persons in that rural popula-
tion. It should also be noted that aggregate rates are additive over
cohorts (k) and destinations (j) but cohort specific rates are only
additive over destinations (j).

Finally we estimated both gross and net migration flows. Aggregate
net migration rates were computed from gross rates by the equation, $N^a_{ijk} =$
$(M_{ijk} - M_{jik}/N_i)$ x 1,000 where M_{ijk} is the number of persons of the kth
cohort migrating from i to j and M_{jik} is the number of persons of the kth
cohort migrating from j to i. Cohort specific net migration rates were
similarly estimated. Gross rates are, of course, a measure of the total
movement of people while net migration rates are an indicator of changes
in population size and structure.

Rates of Rural-Urban Migration. Gross specific rates of rural-urban
migration measuring the propensity to migrate for twelve age, sex and
education cohorts are shown in table 12. Both age and education have
marked effects on the propensity to migrate to urban areas. Consequently
the 15 to 34 year age group has the highest propensity to migrate and
the over 34 year age group the lowest propensity for both sexes and educa-
tion groups. Likewise the propensity to migrate for educated persons is
consistently five to ten times higher than those without education for all
ages and sexes. On the other hand, sex has relatively little effect on
the propensity to migrate although there is a slight tendency for educated
females to have a lower propensity to migrate compared to males in the
same age cohort.

Table 12. Gross Cohort Specific Rates of Rural-Urban Migration by Sex, Education and Age for Eight Rural Regions and Four Urban Centers a/

Rural Regions and Urban Centers	Sex											
	Male						Female					
	Education											
	Uneducated			Educated b/			Uneducated			Educated b/		
	Age (Years)											
	<15	15-34	>34	<15	15-34	>34 a/	<15	15-34	>34	<15	15-34	>34
By Rural Origin	(Rate Per Thousand)											
1. Scarcies	1.6	15.8	8.8	22.2	145.5	n.a.	11.0	9.4	3.3	100.0	100.0	n.a.
2. Southern Coast	5.1	10.5	1.9	55.6	134.9	16.7	16.1	7.7	2.8	46.2	87.0	n.a.
3. Northern Plains	3.8	37.6	6.5	23.5	248.6	75.0	5.7	14.3	3.2	120.0	428.6	n.a.
4. Riverain Grasslands	6.4	5.2	1.9	54.5	116.3	n.a.	11.9	9.2	2.1	55.6	146.7	n.a.
5. Bolilands	4.7	30.2	4.2	12.1	85.0	44.4	13.2	16.6	4.7	100.0	22.2	n.a.
6. Moa Basin	8.0	12.7	1.3	55.8	170.5	23.1	15.4	11.4	3.3	25.0	98.0	n.a.
7. Northern Plateau	5.8	3.0	3.0	133.3	107.1	50.0	3.9	11.8	3.1	n.a.	72.7	n.a.
8. Southern Plains	10.0	22.7	2.8	33.3	154.1	85.1	14.6	21.8	3.8	61.6	108.8	n.a.
By Urban Center c/												
Freetown	.7	4.4	1.2	21.7	43.5	20.5	2.1	2.3	1.0	14.0	28.7	n.a.
Kono	1.3	10.5	.9	2.3	23.2	5.6	1.8	5.5	.7	n.a.	18.2	5.7
Medium Towns d/	2.6	4.5	.3	14.5	46.2	8.2	4.6	3.9	.8	25.4	44.8	11.3
Small Towns	1.9	3.4	1.0	23.7	37.0	10.8	2.4	2.1	.9	9.2	34.3	22.0
All Rural-Urban Migration	6.4	22.9	3.4	62.1	149.9	45.1	10.9	13.7	3.3	49.6	125.9	39.0

a/ Cohort specific rates of rural-urban migration are computed as the number of rural-urban migrants per year of a particular age, sex, education cohort per thousands persons of that cohort in the rural population.

b/ The number of educated migrants in the age category 35 years and above is sometimes too small to estimate a cohort specific migration rate.

c/ Computed from all rural regions weighted by population.

d/ Medium size towns are Bo, Kenema and Makeni.

n.a. = not available because sample too small for estimation.

Overall there are substantial differences in cohort specific migra-
tion rates by rural region of origin and urban centers of destination.
As observed earlier uneducated migrants have a high propensity to migrate
to Kono while educated migrants tend toward Freetown and provincial capi-
tals (medium towns).

Aggregate gross rates of migration shown in table 12 follow a similar
pattern to cohort specific rates except that the female uneducated are more
important and female educated migrants less important than males because
females have a much lower level of education. However, aggregate net
migration rates also shown in table 13 reveal several points of interest.
First for uneducated migrants of both sexes, net rates for persons 34 years
and older are negative indicating that the urban-rural flow exceeds the
rural-urban flow. For males this urban-rural flow is so large that the
net rate of migration for uneducated males of all ages is negative.[1]
For educated persons, however, even those above 34 years the net flow is
always positive. In fact, educated males 15 to 34 years comprise almost
exactly half of all net rural-urban migration.

A second interesting finding of table 13 is that the most important
destination in terms of net flows to urban areas is Kono. For example, the
net migration rate for all people to Kono is 2.12 compared to 1.45 to
Freetown. In fact, using (a) net rates computed here, (b) approximate
urban population figures of table 5, (c) urban natural growth rate of
2.5 percent and (d) allowing for the underestimation bias against out-
migration reported previously, we can compute rough population growth rates
for Freetown of 4.5 percent; Kono, 9.0 percent; medium towns, 5.1 percent

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[1] Bear in mind, however, that we believe our out-migration figures
are an underestimate as discussed earlier.

Table 13. Aggregate Gross and Net Rates of Rural-Urban Migration by Sex, Education and Age for Four Urban Centers a/

Urban Centers	Sex												Total Rate All Per-sons
	Males						Females						
	Education												
	Uneducated			Educated			Uneducated			Educated			
	Age												
	<15	15–34	>34	<15	15–34	>34	<15	15–34	>34	<15	15–34	>34	
	Gross Migration Rates												
Freetown	.13	.49	.15	.09	.77	.09	.39	.41	.13	.04	.17	0	2.88
Kono	.26	1.11	.12	.03	.47	.04	.33	1.04	.09	.01	.15	.01	3.67
Medium Towns	.50	.42	.04	.19	1.17	.07	.82	.71	.12	.13	.43	.02	4.62
Small Towns	.38	.36	.14	.08	.57	.09	.43	.37	.14	.05	.20	.05	2.86
All Urban Centers	1.27	2.38	.45	.40	2.98	.30	1.97	2.52	.48	.23	.96	.07	14.01
	Net Migration Rates c/												
Freetown	-.08	.27	-.04	.05	.66	.07	.20	.18	-.02	.03	.14	-.01	1.45
Kono	.03	.70	-.22	.02	.40	.02	.17	.80	.03	.01	.13	.01	2.12
Medium Towns b/	-.12	-.05	-.42	.12	.83	-.04	.31	-.02	-.10	.05	.26	0	.82
Small Towns	-.03	.04	-.20	.06	.46	.06	.05	-.19	-.10	.05	.15	.03	.38
All Urban Centers	-.20	.97	-.88	.24	2.35	.12	.73	.77	-.19	.15	.68	.03	4.77
	←	-.13	→	←	2.71	→	←	1.31	→	←	.86	→	4.77
	←	←	2.58	→	→		←	←	2.17	→	→		4.77

a/ Aggregate rates of migration are computed as the number of migrants for a given age, sex and education cohort per thousand total rural population.

b/ Medium towns are Bo, Kenema and Makeni. Small towns have less than 10,000 population.

c/ Net rates of migration are computed by subtracting the rate of urban-rural migration from the rate of rural-urban migration.

and small towns, 3.5 percent. These growth rates are consistent with estimated growth rates for these centers.

Finally even casual inspection of table 13 indicates that the difference between net migration and gross migration is largest for educated groups and for smaller towns. For example, gross migration is largest to medium size towns but when net rates are computed medium towns receive only a small proportion of the net flow of migrants. In table 14 a measure of this difference, the ratio of in-migrants to out-migrants is computed. Without exception this ratio is higher for educated migrants than uneducated migrants. This is expected since return migrants are likely to be less educated and move more freely between rural and urban occupations with a relatively low differential in pay. In addition the ratio of in-migrants to out-migrants is highest for small towns and least for large towns. This implies that migration to the large towns of Kono and Freetown is relatively permanent whereas migration to smaller towns is much more cyclical in nature with more return migration. There is then considerable mobility of rural people, particularly uneducated, to and from small towns usually over short distances.

Rural-Rural Migration. Gross and net aggregate migration rates for rural-rural migration are reported in table 15. Again gross migration rates indicate significant flows of migrants for some regions although intraregional flows often dominate. However, when net migration flows are computed the impact on population changes is usually quite small. Regions 2 and 3, the Southern Coast and Northern Plains, are the major out-migration areas while Region 1, the Scarcies Area, is

Table 14.   Ratio of Urban-Rural Migrants to Rural-Urban
            Migrants Per Year for Adults 15-34 Years Age

Towns	Males		Females	
	Uneducated	Educated	Uneducated	Educated
Large Towns: Freetown, Kono	.39	.14	.32	.16
Medium and Small Towns	1.01	.26	1.19	.35

Table 15.   Rural–Rural Migration—Gross and Net Aggregate Rates
by Origin and Destination Region

Region	Destination Region								
	Scarcies	Southern Coast	Northern Plains	Riverain Grass-lands	Boli-lands	Moa Basin	Northern Plateau	Southern Plains	Total Rate All Desti-nations
	1	2	3	4	5	6	7	8	
Gross Migration Rates[a]									
Origin Region									
1. Scarcies	2.5	.2	.3	--	--	--	--	.1	3.1
2. Southern Coast	.6	1.5	.3	3.5	.4	.3	--	6.7	13.3
3. Northern Plains	3.6	.1	1.3	--	.5	.4	.3	.7	6.9
4. Riverain Grasslands	--	1.6	--	1.5	--	1.6	.2	5.2	10.1
5. Bolilands	.3	.4	1.8	--	1.5	--	.4	3.9	4.7
6. Moa Basin	--	--	--	.2	--	3.7	--	.9	4.8
7. Northern Plateau	.1	--	--	--	.1	.2	1.6	.3	2.3
8. Southern Plains	--	--	--	.2	.1	1.7	.3	5.5	8.3
Net Migration Rates[a]									
Origin Region									
1. Scarcies	--	-.1	-4.6	--	-.3	--	-.3	.1	-5.2
2. Southern Coast	.1	--	.1	2.6	-.3	.3	--	5.0	7.8
3. Northern Plains	3.4	--	--	--	-.8	.4	.3	.7	4.0
4. Riverain Grasslands	--	-4.5	--	--	--	-.1	.1	3.9	-.5
5. Bolilands	.3	.2	1.1	--	--	--	.1	.1	1.8
6. Moa Basin	--	-.1	-.2	--	--	--	--	-.3	-.6
7. Northern Plateau	--	.1	--	-.1	--	--	--	.1	.1
8. Southern Plains	--	-1.4	-.5	-.6	--	.4	-.1	--	-2.2

[a] Rate per thousand of origin population.

the main recipient. The determinants of the magnitude of these flows will be analyzed later in this report.

A final observation is that rural-rural migration is relatively unimportant compared with rural-rural migration. Our data indicate that only about 12,500 persons or 0.5 percent of the <u>rural</u> population change rural residence in a year,[1] compared to some 50,000 or about 2.0 percent of the <u>total</u> population who change residence between rural and urban areas each year.

Summary

The methodology employed in our survey allows a disaggregation of migration streams into various categories--nonmigrants, rural-rural, rural-urban and urban-rural migrants. The finding that rural-urban migrants are young, well educated and with a higher percentage of males is consistent with evidence from other African countries [Rempel, 1971; Caldwell, 1969]. Also the propensity to migrate is several times higher for educated persons and is also higher for young adults 15 to 34 years old-- but does not appear to differ by sex. Furthermore in Sierra Leone there is a clear north-south dichotomy with the southern regions producing the bulk of the educated migrants and the northern regions producing most of the uneducated migrants. The necessity of disaggregating migration streams by educational level is demonstrated by these results.

Some important differences were noted between rural-rural and rural-urban migration. Rural-rural migrants do not differ significantly in age,

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[1] That is, move to a village in another chiefdom.

sex and educational characteristics from the rural population as a whole.
Moreover in absolute numbers rural-rural migration is much less than
rural-urban migration and is largely confined to intraregional migration
over short distances.

Our survey provides some of the first detailed information available
in Africa on urban-rural migration. About half of urban-rural migrants
are migrants returning home who are generally older than the rural
population as a whole. Return migrants also have a low level of education
compared to migrants who leave for urban areas. As a result the net flow
of uneducated males to urban areas is negative while educated males com-
prise about half of net rural-urban flows. Also substantial
forth mobility exists between rural areas and small and medium urban towns
as measured by gross migration rates but migration to large towns of Kono
and Freetown is more permanent with less return migration.

Finally a brief examination of the rural-urban migration streams
shows that housewives and scholars are each equally important as those
going to seek work in town, each group comprising about 25 percent of
the total number of rural-urban migrants. These figures underscore the
need to disaggregate migration streams and not stereotype all migration
as "labor" migration.

THE PROCESS OF RURAL-URBAN MIGRATION

Rural-urban migration is a multi-stage process which will be examined in this section with respect to (a) the decision making process in rural areas, (b) the process of moving to town, (c) the settling in town and entry into the labor market, (d) the process of maintaining ties with rural areas particularly through remittances and finally (e) the process by which some migrants return home again and re-enter rural society.

Migration Decision Making in Rural Areas

Our survey revealed two aspects of rural-urban migration important in migration decision making in Sierra Leone. First only a minority of rural-urban migrants initially leave home to obtain work. Migration for marriage and schooling are equally important as migration to find work. Secondly migrants leave home at a relatively young age. In our sample, male migrants without education left home at an average age of 18 years and educated migrants left at the age of 12 years. As a result the decision to migrate is more often made by persons other than the migrant--usually the head of the household--as seen in table 16. Even for migrants seeking to work in town almost half the decisions were made by a parent at home or a relative in town.

Almost all educated migrants initially moved to an urban area to attend school. Typically an educated migrant had attended school for 11 years of which 5 years were at home and 6 years in an urban area. Ninety percent of all migrants with education had attended a school in an urban area. Of these who had completed school in town, only 27 percent were

Table 16.   Persons Identified as Decision Maker for Migrants
            by Type of Migrant and Age of Migrant

| | | Decision Maker | | | |
Type of Migrant	Migrant	Rural Household Head	Other Rural Relative	Town Relative	Spouse	Total
1. Working	32	40	16	7	5	100
2. Housewife	4	44	17	5	30	100
3. Scholar	6	61	14	17	2	100
Age of Migrant						
1. Below 15 years	10	58	14	12	6	100
2. 15-24 years	40	30	17	7	6	100
3. Over 24 years	66	6	15	2	11	100

working in the same town in which they attended school indicating substantial mobility among educated persons.

Since the household head was largely responsible for the decision to send children to school in town we asked why they had chosen a school in town rather than a rural school. Fifty-six percent made this decision because there was a relative or friend in town who could help pay fees. Thirty percent claimed that urban schools were better while 11 percent responded that there was no school in the vicinity of the village.

Most women gave marriage as the reason for their migration. In 20 percent of cases the woman accompanied her husband who was moving to town. Another 20 percent moved to town seeking a husband while most moved to town to marry a man already in town.

Migrants who left home to seek work were primarily interested in obtaining a higher paying job than farming, although a more interesting job and improved social life were also mentioned. Eighty percent of uneducated migrants and 93 percent of educated migrants in town felt they were earning more than was possible at home. Similar beliefs were expressed by nonmigrants in rural areas although only 60 percent of nonmigrants believed that a city job would pay more.

Migrants, however, are aware of the difficulty of obtaining a job before they leave rural areas. Among nonmigrants who were intending to migrate only 15 percent with no education were certain they would obtain a job. Those with education were more confident with 40 percent certain they would obtain a job.

Job information is provided by relatives and friends in town for two-thirds of all migrants while visits to friends and relatives at home provide information to others. An effort was made to measure the quality

of this information by asking a comparable group of urban migrants and rural nonmigrants the earnings of four occupation groups--government clerk, policeman, medical doctor and driver. Results shown in table 17 show that there is no consistent evidence that rural potential migrants lack information about urban occupations. In fact, the difference between perceived incomes and the actual incomes of migrants in town with that occupation is negligible except for a government clerk which nonmigrants ranked much higher and which is the only one to show a statistically significant difference between rural and urban persons. It is apparent, however, that the variance of the estimates of rural persons was higher than urban migrants indicating that rural people as a whole do not have unduly high perceptions of urban earnings although there is wide variation in those perceptions.

Further evidence of rural perceptions is provided by an interview with young adult male nonmigrants in rural areas--the group with the highest propensity to migrate. Each person was asked to state his future migration intentions and to estimate his earnings if he were to move to town. The comparison of earnings for those intending to migrate and those not intending to migrate, with earnings of migrants already in town is shown in table 18. For both levels of education, intending migrants had higher perceptions of urban earnings than non-intending migrants with this difference being large for educated persons. Furthermore intending migrants in both cases had perceived earnings higher than migrants in town were receiving. There is therefore some evidence that migrants who leave home have somewhat higher perceptions of urban earnings than is realistic.

Table 17. Comparison of Incomes Estimated by Rural Nonmigrants
and Urban Migrants for Four Occupations and Actual
Incomes for Migrants with Those Occupations

| Occupation | Income Estimated for That Occupation[a] | | | | Actual Income of Migrants with That Occupation | |
| | Rural Nonmigrants | | Urban Migrants | | | |
	Mean [b] (Le./Mo.)	S.D.	Mean (Le./Mo.)	S.D.	Mean (Le./Mo.)	S.D.
Doctor	242	80	240	78	n.a.	n.a.
Clerk	85	62	51	20	44	13
Policeman	61	32	56	19	58	15
Driver	41	20	42	34	40	8

[a] Differences between rural nonmigrants and urban migrants are
not statistically significant at the 5 percent level except for
clerks.

[b] Le 1.00 = $1.10.

Note: n.a. = not available.

Table 18. Perceived Wage Rate of Rural Nonmigrants by Migration Intentions and Education[a]

Education	Percent Intending to Migrate	Perceived Wage Rates[b]		Actual Wage of Urban Migrants with Same Age and Education (Le./Month)
		Intending to Migrate (Le./Month)	Not Intending to Migrate (Le./Month)	
No Education	32	47	42	32
Educated	63	67	44	55
Mean	38	52	42	36

[a] Sample includes only adult males, 15 years to 30 years of age.

[b] Difference between perceived wage rates of intending and not intending migrants significant at 5 percent level for educated migrants.

Finally among young male rural residents who had no intention of migrating we found that most had some contacts in town, had in fact visited town and most believed that their earnings could be increased by migrating. We, therefore, asked these nonmigrants why they did not move to town. The most important reason given was the need to support parents and family, suggesting that while economic factors play a dominant role in the decision to migrate, non-economic factors are important in the decision not to migrate.

Moving to Town

As Sierra Leone is a small country most rural-urban migration covers a relatively short distance averaging only about one hundred miles. Because of this short distance and because over two-thirds move without dependents the average cost of moving to town is only Le 2.30 and the cost is nearly always less than Le 10.

There is considerable mobility of migrants after leaving home. The average migrant resided in two other locations for six months or more before arriving at his present destination, one of which was an urban location. Educated migrants exhibit more mobility so that by the age of twenty-five they have lived in, on an average, two other urban centers besides their present residence.

Settling in Town

Our survey showed that the prior presence of relatives and friends in town is almost essential to a migrant's successful adjustment to town life. Almost 90 percent of migrants were initially supported by relatives and friends in town. The remainder either obtained a job immediately

or had some initial savings for support. On the average a migrant was supported through food, lodgings and sometimes money for one and a half years on arriving in town. Nearly all of this support was provided by urban relatives, most of whom are themselves migrants of an earlier period. Only apprentices received significant support from other than relatives—in this case their instructor.

The importance of this support of new migrants underscores the substantial intra-urban income transfers among migrants. In an effort to learn who was giving and receiving support we asked each migrant to value the food, lodging and cash gifts he gave or received to or from an adult who was not a parent or spouse or child of the migrant.

The results reported in table 19 show a clear division between working migrants who are providing support and nonworking migrants including scholars and the unemployed, who are receiving support. Working migrants on an average "transfer" Le 9.50 or about 17 percent of their income to support relatives and friends in town. The amount transferred increases absolutely (but not proportionally) with the income of the migrant so that the top 5 percent in the income distribution support up to three persons at a value of Le 30 per month.

Those who received support are predominantly scholars, apprentices and the unemployed. Scholars receive support of about Le 16 per month which is higher than other groups because of the cost of education such as fees and books. Significantly migrants as a whole have a net intra-urban income transfer of almost zero indicating that migrants as a group do not depend on urban nonmigrants for support.

New migrants seeking a job require support during the period of job search. Migrants who are currently employed on an average reported a ten

Table 19.   Support in Town, Rural-Urban Remittances and Property Ownership for Working Migrants by Income Group and for Nonworking Migrants

	Working Income (Le./Month) [a]						Not Working					All Migrants
	<32	32-50	50-90	90-150	150+	All Income Groups	Unemployed	House-wives	Scholars	Appren-tices	Other	
Support in Town												
Value given (Le./month)	7.2	10.8	18.1	24.2	30.6	12.9	3.6	2.8	.7	.5	2.9	7.0
Value received (Le./month)	4.5	3.3	4.0	--	--	3.4	12.4	2.5	16.4	16.7	4.9	6.2
Net value given (Le./month)	2.7	7.5	12.1	24.2	30.6	9.5	-8.8	.3	-15.7	-16.2	-2.0	-.8
Percent giving	41	48	64	77	70	55	20	17	--	--	20	28
Percent receiving	29	21	16	--	--	20	55	18	80	82	30	37
Rural-Urban Remittances												
Value given (Le./month)	1.6	2.8	3.0	6.1	12.0	3.1	.5	.8	.2	.1	.8	1.5
Value received (Le./month)	.7	1.0	1.3	2.3	1.9	1.9	1.0	.9	1.4	.5	1.2	1.1
Net value given (Le./month)	.9	1.8	1.7	3.8	10.1	1.2	-.5	-.1	-1.2	-.4	-.4	.4
Percent giving	77	80	86	100	90	82	44	62	23	41	43	57
Percent receiving	56	69	63	--	50	66	63	63	73	41	52	64
Property at Home												
Percent males owning property	36	43	46	46	60	45	27	n.a.	23	29	39	30
Property income (Le./year)	5	16	45	37	400	--	7.0	.2	.2	14.1	54.0	35

a/ Migrants' incomes are distributed as follows: 25 percent less than 32 Le./month, 50 percent less than 50 Le./month, 90 percent less than 90 Le./month and 95 percent less than 150 Le./month.

month period to obtain their first job. However, many migrants, particularly those with low paying jobs, continue to receive some support for sometime after obtaining a job. Furthermore the importance of relatives and friends is again underscored by the fact that two-thirds of working migrants obtained their first job through a relative or friend.

Rural-Urban Remittances and Contacts

The remittances of income by urban migrants to rural areas has been widely noted (but rarely measured) in Africa. Our survey shows that remittances follow a similar pattern to intra-urban income transfers in the form of support (table 19). The working population remits about Le 3.10 (about 5 percent of their earnings) to rural areas each month. However this same group receives Le 1.90 per month so that the net transfer to rural areas is only Le 1.20 per month. Both gross and net urban-rural remittances increase with urban incomes. Urban-rural remittances are largely cash with some imported items such as clothing while rural-urban remittances are largely food.

Among the nonworking urban migrants, there is a net transfer from rural to urban areas. These transfers are largest for scholars and the unemployed where they could be considered a form of support by rural people of their relatives in town. However this form of support to scholars and the unemployed is almost negligible compared to support received from relatives in town.

When all working and nonworking migrants are considered together there is still a small net transfer of income to rural areas of about 40 cents per month or Le 5.00 per year. In our interviews with rural households we obtained a figure of net remittances received of Le 2.00

per year. The difference in these two figures suggests that migrants send money to more than one rural household.

Most cash remittances received by rural households were used for consumption purposes although about one-third was used for hiring labor and small amounts for equipment, school fees and medical expenses.

In addition to remittances, migrants also maintained contacts with their home area in other ways. Visits back home for vacation and special purposes were frequent and averaged about one visit per year among our sample. Significantly too, migrants tended to acquire property at home-- more so than in the town in which they lived. About half of all working migrants owned property in their village, such as land, tree crops and houses (table 19). They also received small incomes from ownership of that property. In addition over 90 percent of all migrants in town stated that they had access to land in their village so that acquiring land is not an obstacle to migrants returning home.

Return Migration

The importance of return migration was noted in the previous section. When we asked urban migrants about their intentions to return home about 65 percent stated they planned to return home although few were very definite about when they would do so. The intentions to return home were strongest among uneducated migrants and older migrants. For example, only 54 percent of youths 15 to 25 with secondary schooling planned to return while 86 percent of migrants above 45 without education planned to return.

Three primary reasons were given by urban migrants for planning to return. First, about one-third wished to retire in their home village.

Secondly, another third wished to return for economic reasons believing that farming was at least as profitable as their urban job. Finally about one-quarter felt that they may not receive support in town in the long run and would return. When return migrants were interviewed in rural areas over half gave reasons relating to problems in obtaining a job or support from urban realtives suggesting that economic hardship is more important than retirement as a motive for return migration. In fact, 25 percent of return migrants who sought jobs were unsuccessful and returned without working in town.

As noted earlier, return migrants are older and with lower education than those who leave for urban areas. On an average our return migrants had spent fourteen years in town and had typically left at the age of 18 years and returned at the age of 33 years.

Return migration is of potential significance to rural communities if they bring money or new ideas acquired in town to that community. However, our interviews with return migrants would indicate that this role is relatively minor. Only 20 percent of return migrants had made investments while in town compared to a third of migrants who were currently residing in town. On returning home most brought cash averaging about Le 32 for each return migrant of which about Le 8 was spent in farming and the remainder consumed. Some 13 percent of migrants had undergone an apprenticeship reflecting the fact that many of the skills for small rural industries--tailoring, carpentry and blacksmithing--are acquired in urban areas [Liedholm and Chuta, 1976]. Another 10 percent had acquired some education in town but as noted previously most educated persons

do not return to rural areas. Finally almost one-third of return migrants felt that they had not benefitted in any way from their stay in town.

Attitudinal Characteristics of Migrants

Throughout our interviews with various categories of migrants we tried to gain a perspective on attitudes toward rural and urban residences. Here we briefly note some of the attitudinal characteristics toward social amenities that may have a bearing on the migration decision. Both migrants and nonmigrants attached considerable importance to social amenities such as school, medical facilities and utilities in town. About 40 percent of the urban households but none of the rural households in our sample had electricity and piped water. Both rural and urban respondents cited these as important advantages. Likewise educational facilities in towns were considered advantages and both rural and urban respondents felt that rural schools even when available provided less opportunity for a good education.

When urban migrants were asked to list disadvantages of urban living the overwhelming response was the high cost of living in urban areas. Of course, this was to some extent expected since it was a period of rapid price inflation. However, among rural persons who were intending to migrate, 40 percent could not think of any disadvantages of urban living suggesting that their attitudes are changed by the experience of living in town.

Summary

In examining the process of rural-urban migration in this section, we have highlighted migration decision making, urban support and rural-urban contacts through remittances and return migration. Because most

migrants leave home at a very early age decision making by parents or other members of the rural household is more important than by the migrants themselves. This underscores the need to conduct rural-urban migration surveys in rural areas.

Through interviews with potential migrants in rural areas we obtained information on rural perceptions of urban opportunities--a deficiency of most earlier migration research in Africa. Rural nonmigrants do not appear to have unduly high perceptions of urban wages or job opportunities. However, perceptions do vary quite widely with individuals and it was shown that rural people intending to migrate have higher income expectations than nonintending migrants. These income expectations are also higher than is realized by urban migrants in town suggesting that high income expectations do play some role in the decision to migrate.

A particularly important part of the migration process is the support given by friends and relatives in town. It was shown that working migrants are transferring about 17 percent of their earnings to support nonworking scholars and the unemployed. This intra-urban transfer of income enables migrants to acquire an education or undergo an average of one year's job search. Significantly migrants as a group seem to be "self-sufficient" and do not depend on urban nonmigrants or rural households for support.

The importance of intra-urban income transfers is in contrast to the relatively small rural-urban remittances observed in our sample. Whereas Johnson and Whitelaw [1974] observe in Kenya that 20 percent of urban wages are remitted to rural areas the comparable figure for Sierra Leone is only 5 percent or Le 14 per year. Net urban-rural remittances are a good deal smaller--about Le 5 per year--since rural people also

send remittances to urban areas and in the case of nonworking scholars and the unemployed, these remittances exceed urban-rural remittances. The most likely explanation for this difference between Kenya and Sierra Leone is the practice in Kenya of maintaining a wife and family in rural areas. We conclude then that intra-urban income transfers are much more important than urban-rural income transfers in migration in Sierra Leone. This evidence does not support Lipton's [1976] thesis discussed earlier that migrants originate in higher income <u>rural</u> households who support their job search and who after the migrant is employed receive substantial remittances further increasing rural income inequalities.

Finally return migration is numerically important and also contributes some skills--particularly in small-scale industry to rural communities. However, migrants largely return for reasons of economic hardship and therefore contribute little capital to rural areas.

RURAL-URBAN MIGRATION, THE URBAN LABOR MARKET AND URBAN UNEMPLOYMENT

Method of Analysis

An important aspect of migration to urban areas is the participation and remuneration of migrants in the urban labor market. In this section adult migrants 15 years and older are analyzed with respect to (a) participation in the labor force (i.e., those working or seeking work), (b) employment structure, (c) earnings and (d) unemployment. In this analysis the effects of migrants' sex, age, town of residence, education and employer are considered. Because the sample is relatively small, various aggregations are used in this analysis. Two basic age groups are used-- those between 15 and 24 and those 25 years or older. Towns are aggregated into four size categories as in earlier sections. With respect to education, migrants were classified as educated if they had completed more than four years of formal education and the remainder were treated as uneducated.[1] Finally the migrant's employer was disaggregated by large and small-scale sectors where small-scale sectors consist of firms employing less than ten persons. Large-scale sectors are further disaggregated into the government sector, including public corporations and semi-government agencies, and large private industrial and commerical firms. Migrants employed in small-scale sectors are further disaggregated by wage earners and self-employed.

In interpreting the results, particular caution must be exercised for female migrants since the sample size is quite small as a result of

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[1] In fact the educated male migrants in our sample are overwhelmingly secondary school-leavers since in Sierra Leone a very high proportion of male scholars who complete primary school enter (but do not necessarily complete) secondary school.

(a) the dominance of males in rural-urban migration and (b) the low female participation in the urban labor force. However, because statistical techniques do point up significant sex differences some results are reported for female migrants.

Labor Force Participation

Labor force participation rates for eight age, sex and education cohorts are given in table 20. Seventy-five percent of adult male migrants are in the labor force. The remaining one-quarter are largely in the 15 to 25 year age category where 56 percent of educated migrants, 23 percent are still attending school or in the case of uneducated migrants are acquiring skills through apprenticeship.

Among female migrants, however, only a quarter are in the labor force. This proportion rises with both age and education but still remains substantially lower than for males. These low participation rates are in contrast to the important contribution of women in rural occupations, particularly farming [Spencer, 1976]. Moreover as a result of the substantial number of scholars and housewives not in the labor force overall labor force participation rates for urban households are lower than rural households and hence earnings for those who work will have to be higher to offset the reduced number of workers.

Structure of Employment

The government is the dominant employer of migrants in our sample, employing half of all migrants who currently hold a job (table 21). Self-employment in the small-scale sectors is also important. In contrast wage employment in both small and large private firms together accounts for only 20 percent of total employment.

Table 20. Labor Force Participation of Adult Migrants by Sex, Education and Age

(Percent)

Labor Force	Males					Females				
	Uneducated		Educated		All Males	Uneducated		Educated		All Females
	15-24	25+	15-24	25+		15-24	25+	15-24	25+	
Wage employed	33	54	25	85	51	--	2	11	33	6
Self-employed	16	29	2	5	13	13	21	2	19	14
Unemployed	19	10	14	6	11	4	5	6	--	5
Total in the labor force	68	93	41	96	75	17	28	19	52	25
Housewives	--	--	--	--	--	78	65	35	33	59
Scholars	--	--	56	1	20	00	00	45	00	12
Apprentices	23	2	2	1	3	1	--	--	--	--
Others	9	5	--	2	2	4	6	1	14	4
Total not in the labor force	32	7	58	4	25	83	71	81	47	75
Total	100	100	100	100	100	100	100	100	100	100

Table 21. Percentage Employed in Large and Small-Scale Sectors by Sex and Education and by Urban Area

(Percent)

| | By Sex and Education | | | | | | By Urban Area | | | | All Employed Migrants |
| | Males | | | Females | | | | | | | |
	Uneducated	Educated	All Males	Uneducated	Educated	All Females	Freetown	Kono	Medium Towns	Small Towns	
Government sector a/	40	73	57	7	48	20	63	13	55	64	52
Large private firms	9	16	13	0	14	5	12	27	6	9	12
Total large-scale sector	49	89	70	7	62	25	75	40	61	73	63
Small-scale wage employed	14	4	9	0	10	3	7	10	9	0	8
Small-scale self-employed	37	7	21	93	29	72	18	51	30	27	28
Total small-scale sectors	51	11	30	93	39	75	25	60	39	27	36
Total	100	100	100	100	100	100	100	100	100	100	100

a/ Includes local government.

The division of employment between small and large-scale sectors differs significantly with education and sex. Over half of the employed male migrants without education are employed in small-scale sectors but almost all educated migrants are employed in large-scale sectors. Female migrants with and without education have a stronger tendency than males to be employed in small-scale sectors. This reflects to a large extent the dominance of women in food trading activities.

The structure of employment is quite uniform across urban centers with the exception of Kono where diamond mining increases the share of both large private firms, in this case the National Diamond Mining Company, and small-scale self-employment comprised of diamond diggers.

Structure of Urban Earnings

The structure of earnings of urban migrants is important in determining migration flows but at the same time serious problems occur in the estimation of earnings. Earnings in large-scale sectors are generally easiest to determine. However, fringe benefits such as housing and allowances can be quite important. In our survey these extra benefits were estimated and added to reported income. For migrants self-employed in small-scale sectors two methods were used to estimate incomes. First the migrant was asked to state his earnings in a normal month after subtracting all his business costs except his labor. Second, for the week prior to the interview migrants were asked to recall their transactions. For small-scale industries repondents were asked to recall all cash transactions for purchased inputs and sales. For traders we recorded wholesale purchases of commodities, the time to sell their stock and their buying and selling prices. An estimate of income for the previous week could

then be computed. In most cases, this second measure was used but where this was unsatisfactory because of missing information or because the previous week's activity was abnormal, the first measure (i.e., the stated income) was employed. Finally a high proportion of migrants in Kono were diamond diggers whose incomes are particularly difficult to measure--in part because of the illegal nature of much mining. Interpretation of their incomes must therefore be treated cautiously.

Analysis of variance procedures were used to analyze the effects of age, sex, education, employer, rural origin and urban centers on earnings of urban migrants.[1] Results of this analysis are shown in table 22 where the independent effects of sex, age, education, employer and location are reported relative to the average income of all migrants. This analysis demonstrates a wide gap between male and female incomes even when allowance is made for the different education and employment status of females. This parallels a similar observation that female wage rates are lower than males in rural areas [Spencer and Byerlee, 1976]. However when self-employed persons are excluded from this analysis sex is no longer statistically significant. This can be explained by the fact that many women are engaged in self-employed trading activities on a part-time basis and receive very low monthly earnings.

Age is also a significant determinant of urban earnings. This is expected as migrants acquire more skills and capital the longer they stay on the job. Education has generally the largest effect on urban earnings. A person with five or more years of education can expect to earn about 50 percent more than his uneducated counterpart.

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[1] In the case of self-employed traders and artisans, earnings include returns to capital.

Table 22.   Analysis of Variance of Effects of Sex, Age,
Education, Employer and Urban Area
on Earnings

Effect Due To:	Percentage Change from Mean Income*	Significance Level
1. Sex		
Male	9	{ .001
Female	−55	
2. Age		
15–24 Years	−30	{ .005
25 Years and Above	7	
3. Education		
Less Than 5 Years	−24	{ .001
Five Years and More	19	
4. Employer		
Government	−11	
Large Private Firms	21	{ .015
Small Private Firms	−31	
Self-Employed	32	
5. Urban Center		
Freetown	7.5	
Kono	8.6	{ .292
Medium	−13.8	
Towns	−15.1	

*Mean income of all migrants = Le 56.37.

Even after allowing for age, sex and education the type of employer has a significant effect on migrants' earnings. In particular for wage earners, large-scale private firms pay the highest wage--substantially higher than the government. At the same time small-scale sectors pay a wage significantly lower than the government. This is evidence of a dual labor market with small-scale sectors paying a competitive wage below the government and large-scale wage structure.

Self-employed workers in the small-scale sectors in our sample received earnings above other sectors for two reasons. First, their earnings include returns to capital as well as labor which in the case of traders and small-scale industries are an important component of earnings. Second this self-employed category includes diamond diggers in Kono who sometimes have high incomes. It should also be noted that earnings for the self-employed had the highest variance reflecting the heterogeneity of composition of this category.

The size of the urban center had some effect on the earnings of migrants with earnings in large towns being above earnings in small towns. However neither the magnitude or significance of this effect is as large as for other variables such as age and education. Only when the effect of employer is omitted from the analysis does urban location become significant. That is earnings differences between location are largely due to the differential structure of employment rather than wage differences per se.

The above analysis treating each effect separately is only relevant if higher order interactions are not important. For example, it

could be hypothesized that there is interaction between age and education with education having a larger effect with age. In fact all two way interactions were not statistically significant and the only interaction that was not negligible was between education and urban size.[1] This reflects the fact that educated migrants to Kono received a very small differential for education.

Rural-Urban Earnings Differentials

The difficulties of comparing rural and urban earnings are well recognized [Knight, 1972; Collier, 1976]. In comparing rural and urban incomes here we compare directly the actual wage rate per hour worked in rural and urban areas. Rural wage rates were derived from the daily wage observations from a farm management survey reported in Spencer and Byerlee [1976] where all payments in kind were converted to monetary values and the wage per hour computed from the observation of the number of hours worked. Urban wage rates were computed from the migration survey using the hours worked in the week preceding the interviews.

Comparison of these wage rates is given in table 23. Wage rates for uneducated migrants in urban sectors are on the average about Le 0.25 per hour or about three times higher than the wage rates of Le .08 per hour in rural areas. The lowest paying urban sector—the small-scale sector—has wages above the average rural wage rate but only slightly above the rural wage rate for the Scarcies region. In all cases, of course, educated migrants have a wage rate higher than uneducated migrants.

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[1] Significant only at the 27 percent level.

Table 23. Comparison of Rural and Urban Wage Rates

Rural Areas		Urban Areas		
Region	Wage (Le./Hr.)	Employer	No Education (Le./Hr.)	Educated (Le./Hr.)
1. Scarcies	.13	Government	.19	.35
2. Southern coast	.08	Private large-scale sector	.38	.37
3. Northern plains	.07	Small-scale sector	.15	.21
4. Riverain	.08	Average urban wage a/	.25	.35
5. Bolilands	.07			
6. Moa basin	.08	Expected wage of youth 15 to 24 given probability of unemployment b/	.11	.18
7. Northern plateau	.08			
8. Southern plains	.11			
Average rural wage	.08			

a/Average over all employers and all age cohorts.

b/Average wage for youths 15 to 24 years of age multiplied by probability of employment for that age and education group.

A more relevant measure of urban wages is the <u>expected</u> wage of young male migrants between 15 and 24 years taking into account the probability that they will be unemployed. That is, the expected wage is computed as $W_k^e = (1-U_k)W_k$ where U_k and W_k are the unemployment rate and average wage respectively for young male migrants. The wage rate was computed as the average for all migrants in both small and large-scale sectors while unemployment rates were derived from data presented in the next section. The expected wage for uneducated migrants is only marginally higher than the average rural wage rate and lower than or equal to the wage rate in two rural regions. Educated migrants still maintain a considerable wage differential over all rural regions.

These results suggest that over the long term a migrant in an urban job can earn a considerably higher wage rate in urban areas compared to rural areas. However in the short term given the lower wage rates and the high unemployment rates, young uneducated migrants stand to gain little.

These results must be qualified by at least two factors. First there is a cost of living differential between rural and urban areas partly because the basic consumption item is food which includes a marketing margin in urban areas. Secondly, the wage rate is not necessarily the best measure for comparison since urban persons work a larger number of hours per year than rural persons due to the agricultural slack season. Thus Spencer and Byerlee [1976] find that men work about 1,500 hours per year compared to urban migrants in our sample who worked over 2,000 hours per year. Migrants may move to urban areas not only for a higher wage but also to have the opportunity to work longer hours than is possible in rural areas.

Urban Unemployment

The relationship between unemployment and migration is important both because unemployment is a central variable of the well-known Todaro model of migration and its derivatives and also since urban unemployment is aggravated by the influx of new migrants. In this section we briefly examine urban unemployment rates, draw a profile of the unemployed and his job search and examine his attitudes and expectations with respect to obtaining a job.

The Rate of Urban Unemployment. The overall rate of male unemployment of migrants in our sample was 14.7 percent (see table 24) which is slightly higher, but very comparable to the 13.9 percent figure for all urban residents which can be derived from the household survey of the Central Statistics Office [1967-1971].[1] However, when migrants are disaggregated by age and education in table 24 it is found that this unemployment rate rises to 33 percent for young migrants in the 15 to 24 year age group. In fact, the marked difference between age groups is common to both educated and uneducated migrants. For the young age group the educated migrants have a higher unemployment rate but not significantly so.

The Central Statistics Office surveys provide only a breakdown by age and by education separately but even these estimates shown in table 24 are surprisingly consistent with our survey--despite our relatively small sample size. One implication of this consistency is that the

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[1] Our sample shows the rate of female unemployment is 20 percent--somewhat higher than males. However, the number of females in the labor force is too small to make a further disaggregation of female unemployment.

Table 24. Rates of Urban Unemployment by Age and Education
for Male Migrants Compared to Unemployment
Amongst All Urban Residents

	Age (Years)		Average: Migrants	Average: All Urban Persons a/
	15–24	25+		
Education	(Percent Unemployed)			
Uneducated	28	11	13.0	13.0
Educated	34	6	16.0	18.0
Average: Migrants	33	9	14.7	--
Average: All urban persons a/	30	9	--	13.9

a/ Source: Central Office of Statistics [1967–1971].

unemployment rates of migrants is similar to the urban population as a whole although there may be some initial adjustments. Thus for Freetown the Central Statistics survey computed a rate of unemployment of migrants in the first year of residence in Freetown of 19.6 percent compared to 17.3 percent for our survey of migrants (of whom a third are new migrants) and 15.5 percent for all urban residents.

The unemployment rate also varies substantially with urban areas. The largest urban areas tend to have the largest unemployment rate as shown in table 25. In absolute numbers half of all unemployed persons are resident in Freetown.

Profile of the Urban Unemployed. Although the rate of unemployment in our sample differs more with age than with education, since most young urban migrants are also educated, the dominant group numerically in our sample are young, educated males who make up 44 percent of the unemployed. Older male adults with no education constitute another 29 percent of the unemployed. In Freetown a special interview was conducted with each unemployed migrant to determine his length of unemployment, job search activities, etc., as well as his attitudes and expectations. Although this sample is quite small (forty) some important attributes of these unemployed migrants emerge. These are reported in table 26 disaggregated by education.

Contrary to the image that unemployed migrants are new arrivals in town, only one-third of our unemployment sample were new migrants in town. However, among educated migrants 83 percent were seeking their first job--that is they were "school-leavers". Over half of these school-leavers had attended school in Freetown and therefore were not

Table 25. Unemployment by Urban Center

	Population				
	275,000	110,000	20,000-100,000	2,000-20,000	All Towns
	Freetown	Kono	Medium Towns	Small Towns	
Percent unemployed-- migrants a/	17.3	16.8	12.3	10.3	14.7
Percent unemployed-- all residents b/	15.5	11.6	12.2	n.a.	13.9

a/ Source: Migration survey.

b/ Source: Central Office of Statistics [1967-1970].

n.a. = Not available.

Table 26. Profile of Urban Unemployed in Freetown by Education

	Education of Unemployed		All Unemployed
	Uneducated	Educated	
Employment and Job Search			
Percent new migrants	29	36	32
Percent seeking first job	36	83	62
Years unemployed	1.0	1.1	1.1
Percent registered employment exchange	13	50	38
Percent seeking casual work	18	19	19
Number of job applications per month	.6	1.6	1.2
Job search expenses per week (Leone)	.92	1.14	1.04
Income[a]			
Current household income (Leone per month)	25	62	45
Attitudes and Expectations			
Expected wage (Leone per month)	39	49	--
(Actual wage for employed migrants comparable age and education)	38	44	--
Minimum acceptable wage (Leone per month)	35	39	--
Percent more than half certain of job	55	85	71
Percent risk takers[b]	21	44	36
Years unemployed--risk takers	.3	.5	.4
Years unemployed--risk neutral	.5	--	.5
Years unemployed--risk averters	1.3	1.6	1.5

[a] Total income of all working household members.

[b] Risk attitudes measured by choice between secure job and uncertain job with same _expected_ earnings.

new migrants. Thus the most important group of unemployed are the young school-leavers who had not worked before.

The unemployed migrants had on the average been unemployed for about one year for both educated and uneducated. This compares with 0.9 years for the average time period for an employed migrant to obtain a job. A few migrants, however, reported being unemployed for up to five years.

The survey of unemployed migrants revealed that they were in general quite active in searching for a job. Most reported undertaking job search activities, such as inquiry, request through relatives, applications, etc., several times per week. In all, the costs of this activity in transport, influence, etc., are not insignificant amounting to about one Leone per week. Very few unemployed migrants reported to be seeking or doing casual work. Most felt that their chances of obtaining casual labor on a daily basis were too small. Significantly less than half our sample--particularly uneducated migrants--were currently registered with the employment exchange. This suggests that the use of registered unemployed figures from the employment exchange to measure unemployment is quite unreliable. The correspondence obtained by Levi [1973] between the number registered as unemployed and the number derived from surveys is possibly in part due to employed persons seeking to change jobs through the exchange.

Finally there is a very pronounced difference between the educated and uneducated with respect to the income of the households in which the unemployed reside. Given that the average household income in Freetown

is about Le 50 per month[1] [Central Statistics Office, 1967], the estimates from our survey show that the educated migrants reside in households with above average incomes of Le 62 per month. The uneducated on the other hand live in quite poor households of Le 25 per month.[2] This difference is due to in large part to the fact that the educated unemployed are supported in households by other educated migrants working at a relatively high pay.

Attitudes and Expectations of the Unemployed Migrants. The unemployed migrants were asked various questions about their expectations concerning a job. The expected wage of the job they were seeking was slightly higher than the average wage of working migrants in Freetown in a comparable age and education category (table 26). However, all migrants were willing to accept a job with an income below that average. Thus, the unemployed would seem to be quite well informed about the urban labor market. Educated migrants seemed more confident that they could obtain a job with 85 percent reporting that they were certain or fairly certain of obtaining the job they were seeking.

An experimental question was asked of all unemployed migrants to measure their risk attitudes. The hypothetical question was posed whereby a migrant had to choose between (a) a job paying his minimum acceptable salary and (b) a job paying twice that salary but with a training period after which he must take an exam with only half a chance of passing. The expected wage in both cases is the same but the second job risky as

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[1] Average household income of Le 45 in 1967 adjusted for 11 percent wage increases.

[2] Households in which the head is unemployed and which receive no income are included in this average.

opposed to the secure first job. On the basis of their response migrants were classified as risk takers, risk averters and risk neutral. Educated migrants were more likely to be risk takers possibly reflecting the fact that they live in higher income households. The most interesting finding is that risk takers had been unemployed less than six months while risk averters had been unemployed for one and one-half years. It would appear that migrants generally begin their job search with higher aspirations holding out for a good job but as the period of unemployment lengthens they are willing to revise these aspirations downward.

Summary

An analysis of the employment and earnings of migrants provides useful insights into the urban labor market in which migrants participate. Female labor force participation in our sample is quite low (30 percent) compared to rural areas. Moreover, females of both education levels tend to participate largely in the small-scale sectors. Males on the other hand particularly those with education are employed in large-scale sectors where the government is the dominant employer.

As expected education is one of the most important determinants of urban earnings. We also found evidence of dual urban labor market where large-scale sectors--private and government--pay a wage considerably above the wage in small-scale sectors. In fact, wage differences between urban areas could largely be explained by the difference in composition of employment between urban areas.

Migrants who obtain a job receive in the long run a wage substantially above rural wages although this difference is not large if the migrant is employed in small-scale sectors. In the short run, however,

given the probability of unemployment, the expected wage of an <u>unedu-cated</u> migrant is very little higher than rural wages. This implies that for uneducated labor the rural and urban labor markets are quite com-petitive although there is clearly a differential in favor of urban areas for educated persons. This helps explain the back and forth mobility between rural and urban areas noted earlier for uneducated migrants.

Unemployment rates for migrants are particularly high averaging 33 percent for young, educated males but comparable to the rate for all urban residents. Numerically the most important group of unemployed are school-leavers who have not previously worked and who are concentrated in Freetown.

Although unemployment and poverty are widely equated, our survey indicates that this applies only for unemployed persons without education. The educated unemployed are largely supported by relatives with well paying jobs.

The unemployed in our sample had been without work for an average of one year. However, evidence was obtained that migrants, particularly school-leavers, are initially risk takers willing to wait for a job con-sistent with their above average expectations of earnings rather than take the first job available. These results lead us to conclude that urban unemployment is not a critical problem partly because many unemployed are not suffering from poverty and partly because an element of voluntary unemployment is present as migrants wait for the "right" job.

ECONOMETRIC ANALYSIS OF RATES OF MIGRATION

Introduction

From a policy perspective it is not only necessary to know who migrates but to understand factors determining the rate of migration. The elasticity of migration rates to such variables such as rural and urban wage rates clearly is an important consideration in formulating migration policy.

Econometric analysis of migration is now a standard part of research on migration. However, several problems are inherent in past analyses of this type in developing countries. First migration is often estimated from birthplace information in census data (e.g., Beals, Levy and Moses [1967], Sahota [1968], Adams [1969] and Greenwood [1969]). The use of these data is questionable since migration which has occurred over a long period of time is related to present economic variables which in themselves are a function of past migration flows. Second, most analyses of migration have focused on interregional migration which includes both rural-rural and rural-urban migration (e.g., Beals, Levy and Moses [1967], Sahota [1965]). Although a few studies have separated rural-urban migration for separate analysis we are not aware of any analysis which examines both rural-urban and rural-rural migration and examines possible different structural characteristics. Furthermore we have noted that migration rates depend markedly on education. Although this has been observed in other studies the education variable has been very superficially included--usually by using average levels of education for the origin and destination regions. As a result studies in Egypt by Greenwood [1969, 1971], in Ghana by Beals, Levy and Moses [1967], in Brazil

by Sahota [1965] and in Columbia by Schultz [1971] reach quite inconsistent conclusions regarding the effects of education in origin and destination areas on migration. Two recent studies by Levy and Wadycki [1974] and Barnum and Sabot [1975] have disaggregated the population by education and found structural differences in migration rates by educational level which cannot be accounted for by differential levels in earnings by education. Finally measurement of rural incomes is a universal difficulty of almost all analyses of migration. Often proxy variables are included such as regional per capital income (e.g., Sabot [1975]) or even per capita food production [Levi, 1972].

In the following analysis we overcome these deficiencies in earlier analyses, largely through the use of data from a survey collected specifically for this purpose. This survey data was used to compute education specific rates of migration for the last five years as discussed earlier in this report. Migration rates were analyzed for both rural-urban and rural-rural migration. Rural-urban migration rates are analyzed by two educational subgroups using education specific urban wage and unemployment rates. Finally rural wages are obtained from a sample of 25,000 wage observations obtained in a farm management survey.

The Model

The objective of the analysis is to quantify the effects of various variables on migration from specific rural destinations to specific rural and urban destinations. The model builds upon our earlier theoretical framework in which costs and benefits of migration are the major

determining factor of migration. The variables of the <u>rural-urban migra-</u>

<u>tion</u> model are given by:

$$M_{ijk} = f\ (W_i,\ W_{jk},\ U_{jk},\ P_j,\ D_{ij},\ e)$$

where M_{ijk} = the cohort specific gross rate of adult migration for the kth educational cohort from rural origin i to urban destination j

W_i = average daily agricultural wage of adult males for farmers in rural region i (see section, "Rural-Urban Migration, the Urban Labor Market and Urban Unemployment"

$W_{jk},$
U_{jk} } = average monthly income and percentage unemployed respectively for the kth educational cohort of male migrants in the jth urban center

P_j = population size of the jth urban area

D_{ij} = the road distance in miles between the main center of rural region i to urban center j

e = random error

and i = 1, 2,...8, corresponding to the eight rural resource regions of figure 1

j = 1, 2,...5, corresponding to the five urban centers above 20,000 population--Freetown, Kono, Bo, Kenema and Makeni

k = 1, 2, representing two educational cohorts--less than five years education and greater than five years education.

Some comments on the specification of the variables and the hypo-

thesized relationships are in order. The measure of rural income used

here is wage rate rather than household income. This measure of rural

incomes was chosen because (a) it was shown that an active and competi-

tive rural labor market exists [Byerlee and Spencer, 1976] and (b) given

this competitive market and dominance of household rather than individual

decision making this wage rate should be a close approximation of the

VMP of labor [Knight, 1972].[1/] Furthermore since females have a low participation rate in the urban labor market, male wage rates were used. However, the same rural wage rate was used for both educational cohorts on the assumption that educated persons receive the same wage rate in traditional farming activities as those without education.

The inclusion of urban unemployment as an explanatory variable, of course, follows the Todaro [1969] model of migration where it is hypothesized that high unemployment rates tend to reduce migration.

The size of the urban area is included to represent a number of factors such as a larger labor market with possibly more perceived opportunities and also urban amenities (i.e., "bright lights"). Distance is also a proxy variable for a number of costs associated with moving including (a) the economic cost of moving and (b) social costs of leaving home which become greater the longer the move and the more cultural or ethnic differences between home and town. Also distance is likely to be a factor in determining available information.

The model for rural-rural migration is essentially similar. However since education is considerably less significant in rural-rural migration we did not disaggregate by education. Also unemployment is not conceptually meaningful in rural areas and hence is not included in the analysis. Finally an ethnic dummy variable was used to test the hypothesis that rural-rural migrants will move to areas with the same ethnic group to facilitate social adjustment and access to land.

[1/] In the case of individual decision making the relevant income is the value of the average product if income is shared among household members.

Data and Estimation Procedures

All data with the exception of urban unemployment and urban size were obtained from our survey information. Although urban unemployment data are available from our sample, the sample was too small to estimate education specific unemployment rates for the medium size towns of Bo, Makeni and Kenema. Unemployment data were derived from the urban household survey of the Central Office of Statistics [1967-1971] which we have previously shown to be highly consistent with our own unemployment data on a national basis. Also our sample size prevented us from estimating reliable income data for the small towns (less than 20,000) and hence they were excluded from the analysis.

Migration rates can be both gross and net as discussed in the section, "Characteristics of Migrants and Rates of Migration." From a policy perspective both flows are important. Net flows are an indicator of overall rates of urbanization. However it has been previously established that return migration is dominated by older persons and hence gross flows are a better indicator of those entering the urban labor force—particularly the young who constitute the bulk of the unemployed. For this reason and because net rates are more unreliable since they include residual errors in estimating rural-urban and urban-rural migration rates, we use gross flows.

The estimation procedure employed was ordinary least squares regression. Both linear and log-log functions were tried but linear functions consistently improved the estimation ability and hence are reported here.

To test if any significant difference exists between the behavior of educated and uneducated migrants, data for both were pooled and the

following linear relationship was fitted:

$$R_{ijk} = b_0 + b_1E + b_2W_i + b_3EW_i + b_4W_{ijk} + b_5EW_{ijk} + b_6U_{jk}$$

$$+ b_7EU_{jk} + b_8P_j + b_9EP_j + b_{10}D_{ij} + b_{11}ED_{ij} + e,$$

where all variables except E are as defined previously. Following Barnum

and Sabot [1975], E is a dummy variable for education such that E = 0

for an observation on uneducated migration and E = 1 for educated migration.

The coefficient on these interaction terms indicates whether migration

response differs significantly for educated and uneducated migration

streams.

Empirical Application of the Model

Table 27 contains the estimated relationships for rural-urban migra-

tion by educational subgroups. The first figure below each coefficient

is the "t" statistic while the second figure is the elasticity calcu-

lated at the mean value of the variables. Up to three equations

are reported for each group. First there is the standard linear form

on all variables in the model. In the case of educated migration, how-

ever, strong multicollinearity exists between urban size, P_j, and urban

wages, W_{jk}. Therefore, a second run was made in which urban size was

dropped. Finally the unemployed variable and wage variable were incor-

porated into an expected wage variable, W_{jk}^e, as discussed in our

earlier analysis of unemployment.[1]

All variables of the model have the predicted sign with the excep-

tion of unemployment in some runs and which in any event was not signi-

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[1] $W_{jk}^e = (1 - U_{jk}) W_{jk}$.

Table 27. Gross Rural to Urban Migration of Adults in Sierra Leone: Ordinary Linear Function
(Coefficients, t Statistics and Elasticities)

Type of Migration Stream	Reg.	Intercept	$WAGE_I$	$WAGE_J$	$UNEMP_J$	EXP $WAGE_J$	POP_J	$DIST_{IJ}$	$WAGE_I$ E
Uneducated	Standard	-.3910 (0.264)	-.10406 (0.610) -0.395	.00666* (4.240) 2.345	-.00199 (0.225) -0.146		.00119* (3.565) 0.809	-.00166* (3.956) -1.352	
	Expected Wage	-.05369 (0.379)	-.10413 (0.591) -0.396			.00718* (3.760) 2.232	.00127* (4.676) 0.863	-.00164* (3.818) -1.336	
Educated	Standard	3.2695 (1.229)	-.13638 (0.102) -0.065		-.10052 (0.747) -1.534		.00981* (4.900) 0.838	-.00986* (3.017) -1.009	
	Urban Size Dropped	-5.6964 (1.502)	-.14372 (0.102) -0.069	.08919* (4.240) 4.752	.13370 (0.837) 2.040			-.00875* (2.565) -0.896	
	Expected Wage	-1.8343 (0.834)	-.13606 (0.105) -0.065			.07501* (1.682) 3.211	.00512 (1.404) 0.437	-.01004* (3.199) -1.028	
Pooled	Standard	.04461	-.12036	.00659			.00114	-.00164	
	Urban Size Dropped	-.11995	-.12489	.00546	.01827			-.00120	
	Expected Wage	-.04473	-.1201			.00718	.00127	-.00164	

*Significant t ratio at .05 level.

(Continued on Next Page)

Table 27 - Continued

Gross Rural to Urban Migration of Adults in Sierra Leone: Ordinary Linear Function

(Coefficients, t Statistics and Elasticities)

Type of Migration Stream	Reg.	$WAGE_J E$	$UNEM_I E$	$EXP WAGE_J E$	$POP_J E$	$DIST_{IJ} E$	E	R^2
Uneducated	Standard							.539
	Expected Wage							.494
Educated	Standard							.449
	Urban Size Dropped							.386
	Expected Wage							.478
Pooled	Standard	-.00568 (0.160)	-.09801 (0.721)		.00858* (2.286)	-.00821* (2.499)	3.2105 (0.787)	.571
	Urban Size Dropped	.08372* (4.813)	.11539 (0.963)			-.00754* (2.247)	-5.5857* (2.053)	.521
	Expected Wage			.06783* (1.936)	.00385 (1.307)	-.0084* (2.660)	-1.7987 (1.154)	.592

*Significant t ratio at .05 level.

ficant. In most cases the explanatory power of the equations is quite high as measured by the R^2 value compared to most cross-sectional analyses of migration.

Distance is consistently a significant deterrent to migration. This deterrent effect as measured by the elasticity is less for educated migrants than uneducated migrants. Furthermore this difference is significant as measured by the negative interaction effect of education and distance in the pooled estimate. This difference can be explained in terms of both economic costs of moving over long distances which are relatively less compared to returns for educated migrants and social costs of adjusting to an alien social and cultural setting which could be less for educated migrants. Educated migrants may also have access to better information and since their migration is more permanent it is more feasible to invest in long distance migration.

Likewise in all regression runs, the size of the urban area is positive and significant. The interaction between education and urban size suggest that this effect is more for educated migrants. This is in accordance with the hypothesis that educated migrants particularly those with specialized training will move to a larger market area.

The rural wage rate in this analysis consistently has a negative but not statistically significant impact on migration. Moreover for educated migrants the computed elasticity of migration with respect to the rural wage is negligible at .06 while this same elasticity for uneducated migrants is .39. Although these figures are low it is expected that educated migrants whose returns to migration are much higher will be less responsive to rural incomes.

In contrast, the urban wage rate has a significant and large impact on rural-urban migration. A 1 percent increase in urban wages results in a 2.34 percent and 4.75 percent increase in the migration of uneducated and educated migrants respectively. Further evidence that the educated are more responsive is given by the pooled estimate where the interaction between education and urban wages is significant and positive.

Although unemployment rates in the urban centers of our sample varied from 7 percent to 18 percent it does not have a significant impact on migration in our equation although it is generally in the predicted direction. When combined with the wage rate to give an expected wage, the coefficient of the expected wage variable is significant and positive. However, in most cases it appears that the urban wage rate alone is a better predictor of migration than expected wages.

The estimated equation for rural-rural migration is

$$M_{ij} = .1015 - .1900W_i + .1652W_j + .0002P_j$$
$$\quad\quad (1.1532) \quad (1.6714) \quad\quad (2.1947) \quad\quad (1.8211)$$

$$- .0007*D_{ij} + .0325T_{ij}.$$
$$\quad (2.4169) \quad\quad (.9207)$$

$$R^2 = .569.$$

where M_{ij}, W_i, W_j, P_j, D_{ij} are migration rate, origin wage rate, destination wage rate, destination population and distance respectively and are defined as before. T_{ij} is a dummy variable which has a value of one if regions i and j have the same dominant ethnic group and zero if the dominant ethnic groups are different. The "t" statistics for each

coefficient are in parentheses under the equation.[1]

All variables of the equation have the expected sign and coefficients for the destination wage and distance are significant at the .05 percent level. The ethnic dummy variable although not significant does indicate that rural-rural migration is increased when two regions have the same ethnic groups.

The elasticities of migration for origin wage and destination wage are -2.7 and 2.5 respectively indicating that rural-rural migration is quite elastic with respect to changes in rural wage rates.

One implication of this analysis is that an increase in wage rates in a given rural region has a larger effect on rural-rural migration than rural-urban migration. This is in part due to the fact that rural-rural migration involves little change in life styles and occupations and is usually over only a short distance so that rural-rural migration is more likely to respond to changes in income differentials.

Implications of the Analysis

The econometric analysis of migration rates was quite successful in predicting the urban destination of migrants in terms of urban wages, distance and urban size. However, the model is not a good predictor of the rural origin of migrants. This we believe is not so much a reflection of the model or the data but rather the aggregate nature of the approach employed. Whereas we have five urban centers each with particular loca-tional, industrial and labor market characteristics and which are there-

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[1] The data for rural-rural migration allows a number of independent estimates of gross migration rates since out-migrants of one region are in-migrants of another region. The results reported here are derived from out-migration rates.

fore relatively homogenenous units, we have rural regions which although
stratified by agricultural systems nonetheless include great heterogeneity
with respect to such factors as (a) household income, (b) village size,
(c) ease of communication, (d) ethnic groups and (e) amenities such as
schools. It is hypothesized that a micro-economic model of the decision
to migrate including some of these variables will be a better predictor
of the rural origin of migrants.

Within these limitations of an aggregate model some general implica-
tions are apparent. In particular it is clear that there are differences
in the behavior of migrants with different levels of education. Educated
migrants are less influenced by rural wages and distance and more influ-
enced by urban wages and urban size. But in both cases migration rates
are relatively less sensitive to rural wages than urban wages--a finding
that could have significant policy implications as discussed in the next
section.

Finally an important finding of the analysis is that urban unemploy-
ment has relatively little effect on the rate of migration as measured
by both the low statistical significance of the coefficient on the
unemployment variable and the elasticity of migration with respect to urban
unemployment. This finding is contrary to the central importance of
urban unemployment in the Todaro theory of migration [Todaro, 1969].
One possible explanation for this finding is that econometric analysis
of cross sectional data is limited in isolating the effect of unemploy-
ment which is correlated with other variables particularly urban size and
urban wages. However a more plausible explanation involves the method
of computing expected wages in the Todaro theory where it is assumed
that unemployment results in zero income. But we have earlier shown

that the urban unemployed receive considerable support while searching for a job and that educated migrants in particular live in households with above average incomes. Migrants, therefore, may not regard unemployment as a severe hardship and if so will not be responsive to unemployment rates. A fuller understanding of this phenomenom clearly requires more analysis of the motives for the extensive intra-urban income transfers between working and nonworking migrants that we observed in urban areas.

SUMMARY AND POLICY IMPLICATIONS

The comprehensive survey of migration in Sierra Leone on which this study is based was initiated to achieve several objectives--that is (a) to increase the understanding of rural-urban migration processes in Africa and in Sierra Leone in particular, (b) to develop and test a theoretical schema and survey methodology for migration research and (c) to evaluate the effects of policies on migration. We now turn to a summary of our most important findings with a view toward identifying gaps in migration theory and methodology and formulating policies toward migration.

Summary of Major Empirical Findings in Sierra Leone

In Sierra Leone, the major rural-urban migration streams are to the diamond mining areas of Kono and to the capital city of Freetown. About 1.4 percent of the rural population depart for urban areas each year although because of return migration the net flow is only .5 percent of the rural population. Rural-urban migration results in urban growth rates as high as 9 percent per annum in the Kono area--the second largest urban complex.

The young and educated are dominant in rural-urban migration. However, there are marked regional differences in Sierra Leone with most educated migrants originating in the southern regions and uneducated in northern regions. Significantly these distinctions correspond to a large extent to high and low wage areas thus identifying uneducated migration as originating in poorer rural regions.

Education plays a major role in migration behavior. Because the rural-urban income differential is larger for educated migrants their

migration is relatively unresponsive to rural incomes. At the same time they are highly responsive to changes in urban wages.

Rural household heads and parents of migrants are important in migration decision making as a result of the young age of migrants. Although rural people who migrate to seek work are numerically only about one-quarter of the total number of migrants, these working migrants provide the economic means for other groups such as scholars and housewives who have a low labor force participation to move to town. Rural people have quite good perceptions of urban employment and wages although these perceptions are subject to wide variation. There is also some evidence that those who migrate have higher expectations than is realistic. These high expectations are maintained in town as migrants search for a job with the help of urban relatives who support them over their period of unemployment and even for some time after they obtain a job. One-third of young migrants between 15 and 24 years of age are unemployed but this figure probably overstates the problem since there is evidence that many unemployed reside in higher income households and are at least partially, voluntarily unemployed until they find a job of their choice or revise their aspirations accordingly.

The labor market in which urban migrants participate exhibits dual characteristics with large-scale sectors paying government wage scales above the competitively determined wages in small-scale sectors.

Migrants often maintain close contacts with their home through visits and remittances. The value of remittances is, however, relatively small and unlikely to contribute much to urban-rural resource transfers. Migrants do, however, acquire property in rural areas and also have little difficulty in maintaining rights to land in their home area. This case

of access to land undoubtedly contributes to the substantial return migration from urban to rural areas. Return migrants are older, poorly educated and have resided in smaller urban areas a short distance away where retirement and economic hardship are major reasons for returning home.

Summary of Theoretical and Methodological Findings

Our analysis of rural-urban migration in Sierra Leone is based on a modified cost/returns model of the decision to migrate. The results confirm that economic variables--particularly rural and urban wages are important in determining migration although effects of these variables depend importantly on the level of a migrant's education. A significant finding of this analysis is that the level of urban unemployment does not appear to have much influence on migration in Sierra Leone. We have hypothesized that because unemployment does not necessarily impose economic hardship on migrants who are supported by relatives in their job search, the potential impact of unemployment on migration is considerably dampened. This hypothesis does point toward the need for more understanding of the motives and obligations inherent in the urban support system in order to analyze the role of unemployment in migration.

Our analysis of determinants of rural-urban migration was based on the wage rates for males in rural and urban areas although women were shown to be almost half of all rural-urban migrants. Implicit in this analysis is that women are mostly dependents of male migrants. In further work we plan to examine women's migration in more detail and particularly the role that economic factors such as rural-urban differentials in household income and female labor force participation play in the decision of women to migrate.

The importance of return migration suggests that our theoretical framework needs to be broadened to include this aspect of migration. Economic factors relating to the difficulty of obtaining an urban job and urban support were shown to be important. Further understanding of the urban support system would help to explain why some migrants return while others remain even after periods of prolonged unemployment.

Attitudes and perceptions of migrants have been shown to be important both in the decision to migrate and in job search. For example, it was shown that unemployed migrants in their early stages of job search are risk takers. A similar method could be used to measure the risk attitudes of potential migrants in rural areas. Further work is also needed to understand what factors determining the attitudes and perceptions that we observed among migrants.

The integrated methodology used in this study demonstrates the need for basing migration surveys in rural areas in order to analyze migration decision making and accurately measure rural incomes. The tracing of migrants into town was also a unique aspect of the methodology employed here. This method provided more comparability between rural and urban areas. However, in the econometric analysis of migration rates we aggregated our results into eight rural regions losing much of the richness contained in the micro data and contributing we believe to the relatively poor explanatory power of our model in rural areas. In ongoing work we are constructing a model of the decision to migrate which will be tested using micro data on rural household incomes, individual's education and village characteristics such as its ease of communication with towns.

Policy Implications

Variables of the migration decision such as rural and urban incomes are affected by almost every policy decision. In fact, migration is more often influenced intentionally by policy decisions on rural investment, urban wages, etc., than by policies designed and evaluated for their effect on migration. There are also some elements of the decision to migrate that are relatively insensitive to policy--for example, the cost of migration.

The most important policy variables and the elements of the migration decision they influence are identified in figure 1 (page 6). We discuss each of these with respect to the three aspects of the migration problem: (1) the rate, (2) the concentration and (3) the composition of rural-urban migration.

Policies to Raise Rural Incomes. Raising rural incomes is the most widely expounded method for reducing rural-urban migration. However, through disaggregation of migration streams by educational level we have shown that compared to uneducated migrants (a) educated migrants originate in higher income regions of the country, (b) the rural-urban earnings differential for educated migrants is large and (c) the rate of migration with respect to rural incomes is much more inelastic for educated migrants. Hence our analysis indicates that raising rural incomes by 1 percent will reduce migration of the uneducated by 0.4 percent compared to a negligible 0.065 percent decline in the number of educated migrants. Raising rural incomes is therefore only useful as a policy instrument for uneducated migrants.

Within these qualifications, government policies do affect both the level of and distribution of rural incomes. Governments promote or retard

rural development according to their allocation of investment to rural sectors. For example, in Sierra Leone in the 1960s, public investment in the agricultural sector was only about 5 percent of total public investment. However, in recent years with increasing food imports this figure has risen and is now about 25 percent of total investment in the new plan for 1974-1978. This drastic jump is expected to increase the growth rate of the agricultural sector from 1.6 percent to 4.6 percent and hence raise rural incomes.

Perhaps more important than public investment allocation is the pricing strategy adopted by the government. In Sierra Leone an important device for extracting the agricultural surplus is marketing board taxation of export crops. During 1969-1973 prices paid to farmers for ginger, coffee and cocoa were less than half of world market prices. Pricing margins of this magnitude can significantly retard growth of rural output and income and it is notable that recent export pricing policy has been revised in favor of the farmer.

Finally rural incomes are adversely affected by various tariff policies which force the rural sectors to bear the costs of domestic large-scale industry through higher prices for agricultural and rural small-scale industry inputs. Inputs for urban large-scale industries are nearly always duty free while small-scale industries which are mostly located in rural areas often have to pay duties on almost all their inputs such as tools, cloth, dyes, etc.

Raising average rural incomes is not a sufficient condition for reducing out-migration from agriculture, since we have shown that unskilled migrants originate in poorer regions. That is, a policy of raising rural incomes must ensure that income distribution is also improved. In Sierra

Leone as in many African countries one of the major reasons for interregional disparities in rural incomes is the suitability of the region for export crops (e.g., coffee and cocoa in the Moa Basin). Thus raising the prices paid to farmers by marketing boards for export crops would be unlikely to significantly reduce out-migration since incomes are already higher in these regions and out-migration of unskilled labor relatively low.

Choice of technology, too, clearly plays a role in shaping income distribution. Capital intensive technologies promoted by many fiscal and wage policies are likely to be much more beneficial to larger farmers with the resources to adopt these technologies. Even labor intensive technologies employing improved seeds and fertilizer may not benefit low income rural households unless appropriate institutions such as credit sources are provided for this group of the rural population.[1]

Policies Affecting Urban Incomes. Our analysis consistently demonstrates that one of the most important factors determining the rate of migration is the urban wage rate. Moreover the elasticity of migration with respect to urban wages is particularly high for educated migrants-- a 1 percent increase in urban wages increases rural-urban migration of the educated by more than 4 percent, compared to a 2.3 percent increase in migration of the uneducated. Furthermore the government wage policies are critical in determining urban wages.

Government minimum wage policies have often been criticized for artificially increasing urban incomes for reasons of social justice

[1] Specific policy measures for increasing rural incomes and changing income distribution are discussed in a forthcoming report by Spencer and Byerlee [1976].

(e.g., Eicher, et [1970] and Todaro [1970]). In Sierra Leone govern-
ment wages increased much faster than rural incomes in the 1960s follow-
ing independence [Saylor, 1966]. However, urban wage increases have
been less in recent years as a result of inflation and of the fact that
the government is beginning to take account of existing wide rural-urban
income disparities in setting government wage scales. In Sierra Leone
minimum wages rose 30 percent from 1967-1973 but the consumer price index
for this income bracket increased 50 percent, a substantial drop in real
wages. Nonetheless we have shown that a considerable wage gap still exists
between large-scale and small-scale sectors in urban areas and between
rural and urban areas which should be considered in setting future govern-
ment wage scales.

Employment in large-scale sectors at these relatively higher wages
is a major attractive force of urban sectors. Policy makers and planners
influence employment in this sector through the allocation of investment
resources between large-scale and small-scale sectors particularly in
manufacturing. Large-scale modern manufacturing for import substitution
is widely believed to be the driving force in development and hence re-
ceives a large share of investment. In Sierra Leone small-scale indus-
tries account for over 90 percent of industrial employment, yet invest-
ment in these sectors is only one-sixth of total industrial investment
in the new plan.

A second important aspect of the large-scale sectors is location
which influences the concentration of migration. Two-thirds of large-
scale sectors (including government) employment in Sierra Leone is located
in the largest urban area, Freetown, where infrastructure is best develop-
ed. Only mining, which is determined by location of mineral resources is the

exception. In contrast small-scale industry which is less dependent on infrastructure is more evenly distributed with the majority of employment being in rural areas [Chuta and Liedholm, 1975].

Although it is unrealistic to locate large-scale industry in rural areas to reduce the rate of migration, the concentration of migration can be influenced through decentralization to middle size urban areas throughout the country. The vehicle for achieving this is through provision of adequate infrastructure such as industrial parks and electricity. Furthermore a shift in emphasis away from import substituting industries using imported raw materials to agro-based industries clearly aids in such a decentralization policy since industry can be located near the source of raw materials.

Finally the government itself is the major employer in the large-scale sector. Again except for local government, two-thirds of government employment is in the largest urban area--Freetown. To a large extent, this reflects centralization of administration, but higher per capital government services such as utilities, education, etc., in urban areas are also a factor. Thus government efforts to decentralize administration and provide more equitable distribution of services are one way to lower migration, particularly of educated migrants to the largest urban areas.

Food Pricing Policies. Perhaps the strongest weapon for changing the balance between rural and urban incomes is food prices. On the one hand prices of domestically produced foods are a major determinant of rural incomes. On the other hand, food is the main commodity purchased by urban consumers. Thus a policy of raising food prices has the double effect of raising rural incomes and lowering urban real incomes ceteris

paribus. Of course to the extent that urban wages are tied to a cost of living index, this decrease in urban incomes can be negated but even here there is likely to be a considerable delay in raising urban wages.

Sierra Leone rice import and pricing policy provides an interesting example of food pricing policy. In 1973 the government subsidized urban rice prices to the extent of twelve million dollars per year thus simultaneously keeping farm incomes low and preventing a loss of purchasing power by urban consumers in a period of substantial increases in world rice prices. However, as a result of the heavy drain on the government budget and the lack of incentive to rice producers the government completely reversed itself and doubled rice prices in 1974. Since rice production appears to have increased substantially and at the same time urban wages have not changed we can expect a substantial reduction in migration although we have no data as yet to support it.

The major drawback to raising food prices is its impact on lower income urban consumers because food is a large proportion of their expenditures. Hence, unskilled migrants with low incomes experience a larger drop in real income than educated migrants who may not be much affected by this policy. The policy also requires a government to have considerable rural political support for its implementation.

Educational Policies Affecting Migration. Throughout this paper we have noted that investment in education in rural areas and the rate of migration are positively related. Hence policies which influence the amount of investment in education in rural areas will also affect migration of school-leavers. We can conveniently subdivide educational policies into those that affect (a) the returns to education, (b) the costs

of education and (c) the location and quality of educational institutions.

The comparison of urban wages by education level indicated substantial returns to educational investment. Part of the reason for this stems from a salary structure inherited from the colonial period. Also the private returns to education are increased by the tendency to use education qualifications as a criteria for employment even for unskilled jobs [Sabot, 1971]. Although it may be possible to reduce migration through changes in salary structures and hiring practices to reduce rural investment in education, education is seen as a desirable goal in itself and it will not be palatable to discourage educational investment for reasons of reducing migration.

A more accpetable approach is to change the relative returns to education in rural and urban areas. One such policy would be to increase returns to education in rural areas by reorientating curriculums toward rural vocations such as agriculture and through rural development programs that require educated manpower. Interivews with urban migrants indicated that rural areas could be attractive to school-leavers when these conditions prevailed and earnings are equivalent to urban jobs. In addition, since educated migrants tend to gravitate to large towns a decentralization policy for large-scale industry and government administration could divert educated migrants to smaller urban areas. While not reducing the rate of migration this change in direction would reduce the problem in the largest cities.

Costs of education consist of (a) cash costs of school fees, books, uniforms, etc., and (b) opportunity costs of labor removed from agricultural production. The former is a variable clearly influenced by policy decisions. For example, reduction in school fees has tended to increase

total private investment in education although we have no measure of the degree of responsiveness to this change. Likewise labor saving innovations, such as mechanical cultivation reduce the opportunity cost of a scholar's labor. Again, however, there is a trade-off between reducing rural-urban migration and increasing education and it is unlikely that a government will actively employ policies to increase the costs of education.

As noted earlier 25 percent of rural-urban migrants are scholars. About half of all secondary schools in Sierra Leone are located in the largest towns, although this proportion is decreasing as more secondary schools are built. Both the location and quality of schools are variables amenable to policy. Government policies to establish more and better quality secondary schools in rural areas therefore have potential for reducing rural-urban migration.

Distribution of Social Amenities. Our survey reveals that migrants in urban areas regard availability of social amenities such as schools, hospitals and water supply as significant benefits of migration. As with the concentration of manufacturing and government services in large urban centers, there is also a heavy concentration of social amenities in urban areas particularly Freetown. For example, in the new plan, 80 percent of increased electricity generation will be in Freetown. A policy of decentralizing social amenities would also be important in encouraging industry to locate outside the capital city.

Policies Affecting Urban Living Costs. Migrants moving to urban areas have to take account of higher urban costs of living. At times governments have implemented policies to alleviate the higher cost of living. In particular low-cost housing schemes have been set up in

Freetown to try to improve housing standards and lower rents. However, in a variant of the Todaro model, these schemes may be frustrated since they raise real incomes, induce more migration and create still more housing problems. It is significant too that low-cost housing schemes are rarely implemented in small towns and rural areas.

Policies Affecting Information Flows. There is some evidence from our survey that migrants come to urban areas with unrealistic expectations of economic opportunities. In most cases information is provided by relatives and friends or by prior visits of the migrant to the urban area and as such, information flows are outside the policy arena. However, employment registration and the media do play a role in disseminating employment opportunities. For example, a policy could be adopted, providing free advertisements for job openings outside of the large cities.

Policies Directly Controlling Migration. Beyond the above policies, it is possible to influence rural-urban migration through direct control of the movement of people into urban areas. In Sierra Leone and several other countries a special permit is needed to enter the diamond mining towns. However, it is doubtful that this has had much effect on migration because of the difficulty of policing the system. On a nationwide scale such a system would be even more unworkable.

The above analysis of policies affecting rural-urban migration considers only the micro-economic impact of policies on the decision to migrate. Clearly policies to raise rural incomes or change food prices have broader macro-economic impacts on all sectors of the economy and which have implications for migration. This analysis of migration in a broader macro-economic framework is the subject of a forthcoming report.

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