The
GEOGRAPHICAL INTERPRETATION
of
INTERNATIONAL MIGRATION
a case study of
the Maghreb

by

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1 : INTRODUCTION

Large scale movement of population across political boundaries represents an important dimension of spatial mobility. Increasingly, problems of resource imbalance between countries are finding their solution at the international level and movement of population across international boundaries is an important component of these solutions. This study examines the problems and policy implications of the sustained growth of the Maghrebin community in the countries of Western Europe, and the more recent increase in labour emigration to Libya.

Geographical analysis of international migration is still embryonic by comparison with studies of internal movements of population. Often considered incorrectly to be of merely political importance, the study of international migration involves many aspects of intrinsically geographical interest. Whilst international agreements for labour transfer enable migrants to move between countries, they do not themselves stimulate movement nor do they account for the patterns of movement which emerge. Recent enthusiasm for the geographical analysis of return migration at the international level is welcome but premature in view of the relative paucity of studies of the forces moulding patterns of emigration. It appears to the authors that many of the geographical patterns and processes of international migration have yet to be analysed in a precise and rigorous manner. In the absence of detailed analysis of emigration flows, it is very difficult, as well as inappropriate, to attempt to assess the impact of return migration and the options available to return migrants. It is contended that geographical analysis of international migration, in the present case with reference to the Maghreb, is a prerequisite to the formulation of strategies by national governments concerning the problems and consequences of this movement, both at the time of departure and return.

Amongst geographers who have studied the international movement of population, few have ventured to apply geographical models and laws. Two fields of study may be identified. The

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first concerns the investigation of the feasibility of applying laws originally formulated in the context of internal migration to patterns of international migration. For example, the inverse relationship between distance and migration rates (1) has been examined by Courgeau (2). In a study of immigration to France he has demonstrated the significance of the role of distance in explaining patterns of international migration between contiguous countries. The process of step migration has also been identified at the international scale for the case of Turkish emigration by Abadan-Unat (3), while the concept of increasing permanency of migration proposed by Nelson (4) for rural-urban population movements has been reaffirmed by Amersfoot (5) in his study of international migration from northern Morocco. He notes that the characteristics of Moroccan emigration have changed from those of temporary or pendular movement to those of more permanent population transfer and that, consequently, the duration of migrant residence abroad has increased.

Secondly there have been attempts to study the interrelationships between mobility at difference scales. The regional patterns of international migration have been examined by a number of writers (6). Simon and Noin (7) have proposed a typology of source regions for emigration in the case of the Maghreb. Contrasting patterns of source regions for internal and international migration have been studied by Simon in Tunisia (8). In view of the diversity of emigration patterns and of migrant characteristics, there remain many aspects of the international migration process worthy of further detailed geographical investigation.

This monograph will attempt, by examining both spatial and temporal aspects of international migration in a rigorous manner, to identify a number of salient attributes of international migration not previously highlighted in the geographical literature. It is hoped that the findings of the paper will contribute to the body of geographical theory concerning international migration. The results of the analysis should also assist in predicting the consequences of changes in the regulations concerning international migration. This is clearly

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important given the precarious nature of the international labour market.

The paper will address itself to the study of a number of questions. Firstly, the patterns of migrant origins will be analysed at the regional level and their influence on subsequent flows evaluated (Chapters 2, 4 and 5). The extent to which flows to different destination countries are overlapping or discrete will also be assessed. Continuing on this theme, differentials in the socio-economic characteristics of migrants at the regional level will be identified. Evidence will be presented suggesting that Tunisian emigration to Libya has not provided a substitute for migration to France either in terms of the regional origins of migrants or in terms of the socio-economic characteristics of the migrants involved. An important part of the discussion will focus on the integral role of international migration in influencing movement patterns at other scales. It is hypothesised that changes in international migration flows may have significant repercussions for internal migration movements. The degree to which internal migration may be regarded as competitive or complementary to international movement is assessed. Chapter 5 will examine the basis for predicting the spatial evolution of migration patterns utilising data for Tunisian migration to Libya, while Chapter 7 will consider temporal changes in the character of migration movements and the implications of these changes at the regional level. The balance of costs and benefits of international migration have been considered by several authors (9). A model is presented which distinguishes between short-term and long-term migration suggesting that short-term migration accrues more benefits than long-term migration. The latter results in considerable economic and political dependence by labour-exporting countries on the unpredictable whims of foreign powers. Dependence of this sort is shown to have had detrimental effects at both national and regional levels for the Maghreb states.

An attempt has been made to include where possible comparable data for Morocco, Algeria and Tunisia. This was not feasible, however, for all aspects of the study. Two sections of

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the study will focus specifically on Tunisia, since more detailed data compiled by the *Office des Travailleurs Tunisiens à l'Etranger, de l'Emploi et de la Formation Professionelle* (OTTEEFP) were available for this country.

NOTES

1) HAGERSTRAND, 1957
2) COURGEAU, 1970
3) ABADAN-UNAT, 1974
4) NELSON, 1976
5) AMERSFOORT, 1978
6) KING, 1976; SALT and CLOUT, 1976; SIMON, 1977
7) SIMON, and NOIN, 1972
8) SIMON, 1974
9) BELGUENDOUZ, 1974; BOHNING, 1975

2 THE ESTABLISHMENT OF REGIONAL EMIGRATION PATTERNS

Intra-Maghreb migration patterns

Movement of workers between states of the Maghreb is a long-established process, while emigration of North Africans to Europe is of much more recent origin. The two patterns of movement vary considerably in character, not only because of the different geographical scale of the movements involved, but also because of the much greater cultural, economic and political differences that are involved in moving from North Africa to Europe than in moving within the Maghreb.

The migration of workers between the Maghreb countries to work in areas favourably integrated into the colonial economy in the late 19th and early 20th centuries resulted in the establishment of distinctive regional patterns of emigration. In some areas the experience of emigration within the Maghreb appears to have influenced the early pattern of labour emigration to Europe, but subsequently these regional patterns were superceded as other areas became aware of opportunities for employment on the northern side of the Mediterranean.

International migration from south-west Morocco is estimated to have commenced between 1900 and 1905 (1). Initially, movement was directed towards Algeria. Oran was one of the earliest destinations. Migrants soon penetrated to other parts of Algeria and also to Tunisia. Most of the migrants found employment in the colonial enterprises. Emigration from northern Morocco developed rather differently from emigration from the South. The movement of workers from northern Morocco only began to be significant in the 1920's and 1930's. Milliot (2) estimated that in 1930 30-35,000 men were involved in seasonal migration to Algeria. The most densely populated zones of the provinces of Al Hoceima and Nador were the main zones of out-migration. Many migrants worked on the colonial farms in the vicinity of Oran and Algiers. By 1950, migration from northern Morocco had changed. Workers from tribes such as the Bni Snassene, Branes, Tsoul and Metaba continued to migrate to Algeria on a seasonal basis.

However, in addition many were migrating to Algeria for longer periods. Like those from south-west Morocco, they found employment in the factories and mines of the French colonists. Diversification of destinations in Algeria for seasonal workers also occurred and included the market gardening area of the Mitidja and the Chélif valley. It is difficult to assess the economic importance of emigration at this time. It seems that agricultural wages were two or three times higher in Algeria than in Morocco (3). Income from migrant remittances probably constituted about a third of the household income of families living in the Rif. At this time, income from traditional occupations remained important and the migration flow retained its temporary nature. From 1955 onwards, with political unrest in Algeria increasing, emigration became more difficult. At this point the patterns of emigration developed in an interesting way. In tribes where income from migrant remittances was critical to the household, emigration persisted, particularly from northern Morocco (4). Migration to Algeria from south-west Morocco, on the other hand, declined, finally ceasing at the time of the Moroccan-Algerian border conflict in 1963.

Evidence concerning the nature of the movement of workers from Morocco to Algeria and Tunisia may be found in the 1966 Algerian and Tunisian censuses (5). By 1966 the Moroccan population in Algeria and Tunisia was only a residual population, but one which was nevertheless representative of the former spatial distribution of Moroccans in neighbouring Maghreb states during the colonial era. There existed a distinct inverse relationship between distance from the Moroccan frontier and the rate of immigration to Algeria. That is to say the ratio of immigrants to the total population resident in each *daira* (6) in 1966 declined with increasing distance from Morocco. The only significant exception to this was the conurbation of Algiers, where the immigration rate was considerably higher than those of other areas equidistant from the Moroccan frontier. The nature of the distance-decay function has been examined in greater detail elsewhere (7). Despite several significant deviations from the general pattern of declining immigration with increasing distance from Morocco, a strong log-linear relationship was

detected with 74 per cent of the variation in migration rates being 'explained' by the distance variable alone.

It was possible to examine the Tunisian population resident in Algeria in 1966 in a similar manner. Again, it can be said that, by 1966, only a fraction of the former Tunisian community remained in Algeria, but that this residual population was nonetheless representative of the geographical distribution of Tunisian migrants to Algeria during the colonial era. Tunisians were to be found mainly in eastern Algeria, and again an inverse relationship appeared to exist between distance from the Tunisian frontier and the level of immigration to Algeria. Once again the city of Algiers proved to be the only major exception to this trend. In 1966, 19.4 per cent of the Tunisian population in Algeria were living in Algiers. As in the Moroccan case, the distance-decay function has been analysed in detail elsewhere (8). In the Tunisian case a less strong log-linear inverse relationship between distance and immigration rates was detected, with only 57 per cent of the variation being explained. When the relationship was retested for the eastern part of Algeria, 80 per cent of the variation was found to be explained by the distance variable. The differential between this value and the lower level of explanation of the earlier correlation may in part be a consequence of the exclusion of Algiers in the latter analysis. By contrast with the city of Algiers, the towns of Constantine and Annaba did not diverge significantly from the predicted pattern and did not appear to have constituted intervening opportunities for migrants to some more distant destinations. This pattern contrasts with that of the Moroccan population in Algeria, where Oran appeared to have provided an alternative migrant destination to Algiers. During the colonial period, Oran was a particularly important colonial centre with a foreign population of approximately 212,000 in 1960 compared with only 44,000 in Annaba (Bône). The Oran region consequently provided more new employment opportunities, particularly within the agricultural sector of the colonial economy (9). Analysis of these two patterns has indicated that, in the case of international migration, distance may indeed be an important explanatory variable.

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The distribution of Moroccans in Tunisia has also been examined. As Tunisia is not contiguous with Morocco, no distance-decay function was expected. It was hypothesised, however, that increased distance from the country of origin would result in greater selectivity of workers. This hypothesis was to some extent substantiated by the example of the Moroccan population resident in Tunisia in 1966. There were only 2,500 Moroccans in Tunisia compared with 96,000 in Algeria. The highest immigration rates were recorded for the Tunisian gouvernorats (10) of Bizerte, Tunis and Gafsa. As in Algeria, Moroccans were concentrated in the former zones of colonial agriculture such as the rich hinterland area of Tunis, the Medjerda Valley and also in the area of olive plantations around Sfax. More interesting perhaps is the concentration of Moroccan workers in south-western Tunisia. Moroccan migrants mainly from Southern Morocco to the gouvernorat of Gafsa were employed as miners in the phosphate mines of the area (11). This migration flow was a more selective migration movement.

A comparison of the age-sex pyramids for the Moroccan migrants in Algeria and Tunisia indicates two rather different types of movement. The Moroccan population in Algeria appears to be a stable population with an equitable distribution between the sexes and a broad base to the pyramid. The age sex pyramid for the Moroccan population in Tunisia is on the other hand extremely asymmetric. It consists largely of a male population of over 40 years of age. This is the population found in the mining region of Gafsa. (12) Superimposed on this pattern is a second pattern resulting from a small amount of family migration to the cities and agricultural regions of Tunisia. Increasing distance from region of origin would appear therefore to have resulted in greater migrant selectivity.

By 1960 the Moroccan census recorded 95,000 Algerians resident in Morocco (13). Refugees from Algeria migrated to both Tunisia and Morocco during the Algerian war of independence. Algerians in Morocco were clustered around the frontier zone, particularly in the town of Oujda. The pattern of Algerian immigration to Tunisia reflects the importance of the distance

variable, immigration rates declining with distance from the Tunisian-Algerian frontier. The towns of Bizerte and Tunis, both important colonial centres, attracted a particularly large number of Algerians, the highest immigration rate being recorded for the gouvernorat of Bizerte. Kef and Béja gouvernorats in northern Tunisia also had high immigration rates. Comparing the patterns of Algerian and Moroccan immigration, a notable difference in the importance of Gafsa can be observed. Apparently opportunities for employment in the phosphate mines of Gafsa are of only secondary importance in the Algerian pattern of immigration. The age-sex pyramid for the Algerian immigrant population is also very different from that of the Moroccan one, immigration of Algerians consisting principally of family migration. The clustering of migrants in the age cohort 35-40 reflects the specific time when migrants left Algeria for Tunisia.

Early patterns of emigration to Europe

Algerian migration to France was initially predominantly from the rural areas of Greater Kabylia (14). By the 1950's, other areas had also become involved in the migratory process. These areas included Lesser Kabylia, the Constantine Plateau, Algiers, Aures, the Algerian-Tunisian frontier areas and a few of the Saharan oases. (15) The pattern of migrant origins was influenced by the nature of the contact system between the employer and particular villages in Algeria. Michel (16) notes that emigration from the various regions of Algeria was different in terms of migrant characteristics such as age, occupation and length of stay abroad. Family migration was, for example, more common in Lesser Kabylia than in Greater Kabylia despite the longer tradition of migration from this area. Migrants from Greater Kabylia generally found employment in France in the industrial sector, while those from the Constantine region were more frequently employed in construction firms. According to Michel, the majority of migrants (17) had previously been employed in the agricultural sector. During the 1950's, most migration was temporary in nature, usually lasting from two to four years. (18)

Migration from Morocco to France was initially stimulated by Algerian emigration to France. Moroccans migrated to France in a step-wise fashion, Oran providing the stepping-stone for departure to Paris, Lyons or Marseilles. This resulted in a reinforcement of the existing patterns of Moroccan emigration, the principal source areas for migration to France being located at first in the province of Agadir. For example in 1951, 80 per cent of Moroccan migrants to Europe came from the *cercle* (19) of Tiznit or Souss district of the province of Agadir (20). Agadir province continued to be the dominant source region for emigration until the 1960's when northern Morocco began to become involved in labour migration to Europe. The changing focus of Moroccan emigration is demonstrated in Table 2.1. By the 1960's, emigration to Europe from both northern and southern Morocco exceded migration to Tunisia and Algeria. In northern Morocco, many of those who had previously been migrants to Algeria left for France (21). In this initial period, patterns of migration to France reflected differences between those tribes previously accustomed to the concept of migration and those for whom it was a new venture.

In Tunisia, emigration to France prior to 1960 was very limited in volume as well as being spatially restricted to two areas. Emigration from southern Tunisia focussed on Foum Tatouine. Trader movements to northern Tunisia and Algeria, seasonal migration to Sfax and migration to Tunis had previously been important in this region. The Sousse area and the Medjerda Valley, both areas of colonial agriculture, also gradually became involved in emigration to France, although to a lesser extent.

The source regions for emigration to Europe from all the Maghrebin countries had a number of characteristics in common at this early stage in the development of migration. The agricultural resource base was strictly limited, the population density relative to available agricultural land was high and primarily rural, the areas already had experience of intra-Maghreb movement (22).

Traditions of intra-Maghreb movement established a regional

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TABLE 2.1: THE DEVELOPMENT OF MOROCCAN EMIGRATION 1950-1966

Region of origin	1955		1966	
	To France	To Algeria & Tunisia	To France	To Algeria & Tunisia
South-West Morocco				
Chtouka (Souss)	716	489	1850	3
Mountain tribes (Haut Atlas)	38	29	877	2
Region of Anezi (Anti-Atlas)	874	2178	1488	132
Eastern Morocco				
Figuig	241	807	973	55
Temsamane (Rif)	-	3400	3157	305
Kebdana (North-east)	-	1100	1597	63

Source: Noin, D. (1970) op.cit., 218.

pattern of migrant origins. Following the commencement of European-oriented migration, these patterns were further reinforced. Examination of these early patterns has indicated the importance of the distance variable in the case of international migration between contiguous countries. It has also demonstrated both the regionally specific nature of international migration and variations in the character and development of migration flows in different regions.

NOTES

1) NOIN, 1970, 226.
2) MILLIOT, 1933-4.
3) NOIN, 1970, 233.
4) NOIN, 1970, 233.
5) COMMISSARIAT NATIONAL AUX RECENSEMENTS ET ENQUETES STATISTIQUES, 1966;
   INSTITUT NATIONAL DE LA STATISTIQUE 1966
6) The administrative divisions of Algeria are (in descending order of size): *wilaya, daira, baladiya.*
7) FINDLAY, 1978, 9-10.
8) FINDLAY, 1978, 10-11.
9) SUTTON, 1972, 381.
10) The administrative divisions of Tunisia are: *Gouvernorat, Délégation, Secteur* (formerly *Chéikhat*), *Commune.*
11) BOUKOUS, 1977, 82
12) INSTITUT NATIONAL DE LA STATISTIQUE 1966, 255-6.
13) NOIN, 1970, 34.
14) TREBOUS, 1970, 58-9.
15) TREBOUS, 1970, 58-9.
16) MICHEL, 1957, 171.
17) ibid, 175.
18) TREBOUS, 1970, 59.
19) The administrative divisions of Morocco are: *Province, cercle, commune.*
20) BOUKOUS, 1977, 77.
21) BONNET, and BOSSARD, 1973, 15.
22) SIMON, and NOIN, 1972

3 : EMIGRATION TO EUROPE AND THE EMERGENCE OF INTERNATIONAL MIGRATION POLICIES

Prior to attempting an analysis of the pattern of Maghrebin emigration to Europe (Chapter 4), it is necessary to review briefly the overall trends in emigration, and to consider the influence of national migration policies in moulding the volume and character of migration. An overview of this kind demonstrates that as the volume of migration to Europe increased during the 1960's so also did the level of government intervention in both the sending and receiving countries.

The number of North Africans working in Europe in 1977 is indicated in Table 3.1. France, with over half a million North African workers, was host to by far the greatest proportion of migrants. When the total number of migrants (both workers and families) is considered, France assumes an even more dominant position (Table 3.2). In 1979 there were an estimated 82,000 Algerians in France, some 300,000 Moroccans and over 200,000 Tunisians. Moroccans were more widely scattered than either Tunisians or Algerians, with a community of 80,000 persons in Belgium and an estimated 50,000 persons in Spain.

The detailed history of the growth of Maghrebin emigration to Europe has been discussed elsewhere by the authors (1). Only a brief résumé of the most important migration trends is recounted below to illuminate the relationship between the total volume of migration and the changes which have occurred in international migration policies.

In the early 1960's, free circulation of migrant workers between France and Algeria was guaranteed by the Evian Accords, which set out in detail the nature of relations between France and the independent Algerian republic. Moroccan and Tunisian migration was of only modest proportions, while there was actually a negative balance in Algerian migration to France between 1958 and 1962. The increasing structural rigidity of North African labour markets in the mid and late 1960's, and the boom conditions of West European economies combined to promote a

TABLE 3.1: DISTRIBUTION OF NORTH AFRICAN MIGRANT WORKERS (1977)

	France	Belgium	Netherlands	Germany
Algerians	331,100	3,600	–	–
Moroccans	152,300	36,000	29,200	15,200
Tunisians	73,000	2,000	1,100	n.d.
TOTAL	556,400	41,600	30,300	15,200

Source: Martin, P. and Houston, M. (1979) "The future of international labour migration", Journal of International Affairs, 33, 316.

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pattern of migrant origins. Following the commencement of European-oriented migration, these patterns were further reinforced. Examination of these early patterns has indicated the importance of the distance variable in the case of international migration between contiguous countries. It has also demonstrated both the regionally specific nature of international migration and variations in the character and development of migration flows in different regions.

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15) TREBOUS, 1970, 58-9.
16) MICHEL, 1957, 171.
17) ibid, 175.
18) TREBOUS, 1970, 59.
19) The administrative divisions of Morocco are: *Province, cercle, commune.*
20) BOUKOUS, 1977, 77.
21) BONNET, and BOSSARD, 1973, 15.
22) SIMON, and NOIN, 1972.

TABLE 3.2: TOTAL NORTH AFRICAN MIGRANT POPULATION (1978/1979)

	France	Belgium	Spain	Germany	Other European countries
Algerians	820,000[2]	10,000[3]	-	-	-
Moroccans[4]	300,000	80,000	50,000	30,000	50,000
Tunisians[5]	203,000	5,000[3]	-	19,000	8,000

Source: Middle East Economic Digest (1978) Algeria : Country Survey, London: MEED, (Special Reports).

Gilissen, J. (1981) "L'émigration Marocaine en Belgique", Hommes et Migrations, Doc.1005, 14.

Belguendouz, A. (1979) "Travailleurs émigrés Marocains: Investisseurs au Maroc?", Hommes et Migrations, Doc. 975, 4.

Societe Tunisienne de Banque, (1980) "Les Tunisiens à l'étranger" Informations Economiques, 186, 24-25.

massive upsurge in emigration from Tunisia, Algeria and Morocco (Table 3.3). Bilateral treaties on labour movements were signed by the Maghreb states with many of the European nations to facilitate labour transfer. For example, Tunisia signed treaties with France and the Netherlands in 1963, with Germany in 1965 and with Belgium in 1969. Although several protocols were entertained by France and Algeria to regulate the rate of emigration in the late 1960's (2), little serious attempt was made to constrain the level of labour transfers. The national plans of North African states incorporated labour export as an element of their manpower strategies, and organizations such as the OTTEEFP (Tunisia) and the ONI (Morocco) promoted migration as being in the national interest. In Algeria, the government attempted to organize migration from its departmental labour offices by introducing a transfer work permit scheme (ONAMO permits). This gave the Algerians an opportunity to encourage emigration from the areas of greatest labour surpluses, while discouraging it in less needy areas. Similar strategies were later adopted by the Tunisian OTTEEFP.

As early as 1972, the situation in Europe was changing with the French and German governments becoming concerned over the high levels of immigration which had been occurring and the tendency for some sectors of their economies to become over-dependent on foreign labour reserves. The Marcellin-Fontanet circulars demanded that immigrants to France state on entering the country the intended length of their residence, the name of their employer and the nature of their profession. Migrants arriving without having previously arranged employment were not granted residence permits. The regulations were altered in 1973, and potential migrants had to obtain a work permit from the French *Office Nationale d'Immigration* on which was stated the details of their labour contract. Changes in the law also necessitated the regularisation of the status of many workers who had migrated secretly. The correction of their status explains in part the surge in numbers of 'migrants' recorded in 1973 (Table 3.3).

TABLE 3.3: YEARLY IMMIGRATION OF WORKERS TO FRANCE

	1964	1965	1966	1967	1968	1969	1970	1971	1972
Algerians[7]	n.d.	13,038	11,499	21,550	21,562	27,328	38,542	41,373	21,575
Moroccans[8]	17,502	15,494	14,331	13,525	13,339	19,335	24,077	20,681	17,328
Tunisians[8]	2,730	5,776	6,631	6,534	6,109	14,925	11,070	9,971	9,690

	1973	1974	1975	1976	1977	1978	1979
Algerians[7]	21,364	0	0	0	0	0	0
Moroccans[8]	26,748	14,072	2,905	1,802	1,300	251	200
Tunisians[8]	20,857	4,190	820	883	370	106	92

Source: The Algerian ONAMO contingent.
Office National d'Immigration (1979) Statistiques de l'Immigration (1979) ; Année 1979, ONI., 17.

The economic recession in western Europe, as well as mounting racial tensions between Maghreb immigrants and the native French population, led to further changes in the immigration policies of France in 1974 and 1975. While the French could do little to restrict the movements of workers from other member nations of the EEC (and most notably from Italy), arrivals of workers from all other origins were greatly reduced. Tunisian arrivals declined from 6.5 per cent of the total in the years 1969 to 1972, to a mere 3.2 per cent in 1975 and 3.3 per cent in 1976. The number of Moroccan workers entering France also dropped dramatically from 25,700 in 1973 to 1800 in 1976 and a mere 200 in 1979. Algerian-French relationships became severely strained in 1973 over a number of different issues and culminated in the Algerian government imposing a ban on all further worker emigration. By this political gesture Algeria deftly avoided the humiliation of having France impose very tight quota restrictions on further Algerian immigration.

The Seventh French National Plan, which commenced in 1975, stressed the government's desire for a greater reliance on national labour resources, though it also promised better conditions for those foreign workers who were already resident in the country. Circulars of 17th and 22nd January 1975 gave clandestine migrants a further opportunity to establish themselves, while a further law of 2nd May declared definitively the end of a decade when the French market had welcomed foreign labour, regardless of its origins or skill levels.

By the mid-1970's, France, Belgium, Germany and the Netherlands had not only chosen to halt all further immigration from non-EEC countries, but they were seeking, in the face of rising national unemployment, to persuade the established immigrant community to return home. In September 1977, the revised French immigration policy introduced grants to encourage migrant repatriation. In January 1978, it was announced that France desired to halve its resident labour force by 1985, and this was to be achieved by means of a million centime handshake given to any migrants willing to return home. This scheme met with little success, most Maghrebin migrants wishing to remain in

France, at least in the short term (3). This unwillingness to leave France was not specific to North Africans, but included guest workers from Spain, Portugal and Yugoslavia who were equally disinterested in the million centime incentive (4).

Following the decline in labour opportunities in France and Germany, and the increasing suspicion of discrimination against immigrant workers on the part of the host countries, it was surprising that only the Tunisian government appeared eager in the first instance to resettle migrants (5). Assistance was offered by a Tunisian law of 25th December, 1974 to aid migrants to return from France and to establish themselves as small merchants or businessmen. Absentees of over two years could receive tax relief for their businesses on condition that they supplied a list of materials for proposed investment and also were willing to promise to pursue their projects for a minimum of five years. In January 1977, Tunisia remained the only Maghreb country with an established programme for the orderly return of its workers.

The Moroccan government, rather than discouraging migration, continued to support a policy of labour export in their 1973-1977 national plan. In the subsequent three-year plan (1978-80), labour emigration was no longer included as an element in preparing national manpower projections, but no provision was made for return migration (6). Indeed, in June 1978, Morocco indicated its approval of the continuation of a major Moroccan presence in Europe by introducing preferential exchange rates for workers repatriating their earnings from France, in order to boost income from its workers living abroad. The aim of this measure, which was part of a package of austerity measures, was to encourage an influx of foreign exchange at a time when the country's balance of payments deficit was being increased by low phosphate prices and the escalating costs of the continuing Saharan war. Between 1977 and 1978, remittances rose from 2650 million to 3200 million dirhams (7). The increase in remittances between 1978 and 1979 was lower than in the previous year, remittances rising to 3690 million dirhams (8). This increase went only a small way to offsetting the increased cost of

servicing the foreign debt (9).

Not until 1977 did the Algerian government take a serious interest in migrant reinsertion in the economy. ONAMO established a 'service de reinsertion' in each wilaya, and fiscal incentives such as the duty-free import of migrants' cars (10) and belongings encouraged return migration. Despite these measures, the chief problem facing returning Algerians was to find suitable employment in a labour market which was already faced with massive labour surpluses. For the vast majority of Algerian migrants the possibility of reinsertion remained negligible (11).

By the end of the 1970's the European recession had deepened and hostility against migrant workers had grown, particularly in France where migrants were accused of taking up jobs which could have otherwise been made available for French jobseekers (12). Furthermore, the level of unemployment amongst the immigrant community was increasing, making them a greater burden on French welfare services. On 31st December 1979, France had 1,469,000 persons unemployed of whom 9.3 per cent were immigrants. Table 3.4 indicates that nearly all the unemployed foreigners were from non-EEC countries and that more than one third were Algerians.

It was in this context that the French government decided to modify severely its attitude to the migrant community. From pursuing persuasive policies to encourage return migration, the French switched to a more authoritarian approach. The 400,000 residence permits for Algerian workers, which were due for renewal in 1979, were reissued for only one year rather than the ten-year period formerly granted to the migrants. This destabilizing measure was followed in September 1980 by a more aggressive policy on return migration in which France undertook to spend 700 million French Francs over three years to repatriate an average of 35,000, Algerian workers per year (13). This scheme was linked to an Algerian initiative to give low-interest loans to returning workers wishing to invest in small businesses (14). Similar repatriation schemes are likely to be introduced for the Tunisian and Moroccan communities.

TABLE 3.4: UNEMPLOYMENT IN FRANCE, 31.12.79.

	Number	%
French nationals	1,332,208	90.7
EEC immigrants	14,433	1.0
Algerians	46,697	3.1
Moroccans	14,455	1.0
Tunisians	8,115	0.6
Portuguese	16,399	1.1
Spaniards	9,753	0.7
Others	26,812	1.8
TOTAL	1,468,872	100.0

Source: Grimaud, N. (1980) "France-Algérie: à la recherche d'un accord",
Maghreb Machrek, 88, 30.

The French policy dec.. ons of 1979 and 1980 are symptomatic of the tightening noose on migrant liberties. The enlargement of the European community to include Greece from January 1981 and the likely acceptance of Spain and Portugal cannot but bode ill for the Maghreb. Although the free movement of labour remains a contentious issue in the acceptance of Europe's southerly neighbours, it is likely only to be a matter of time before south European workers have preference over those from the Maghreb.

Maghrebin workers have attempted to look for new labour markets, particularly in the Arab world. Tunisians have been more successful than Algerians or Moroccans in finding employment in Libya. Again, this labour market has proved exceedingly volatile in nature with all Tunisian workers being sent home from Libya in 1976. Improved political relationships led to a reopening of the Tunisian-Libyan frontier in 1977 and to the development of a new migration surge. By the end of 1978 the Tunisian community in Libya had grown once more to an estimated 81,000 persons (15).

Moroccan workers have looked for employment in the Arabian Peninsula and Iraq. An agreement between Saudi Arabia and Morocco was signed in 1976. In 1978, 777 Moroccan workers obtained employment in Saudi Arabia (16), but in 1979 only 395 Moroccans left for that country. An agreement for the transfer of Moroccans to work on agricultural projects in Iraq was agreed and some Moroccans have departed to take up these jobs (17). In 1977, 7,000 Moroccans also left for Libya (18) but this remains a relatively insignificant number, when compared with the magnitude of other labour flows to Libya. Politically and physically marginal to the Arab world, it seems improbable that close liaison is likely to occur in the near future between the labour surpluses of Morocco and the labour demands of the Arab east.

The labour market of the Arab world is fiercely competitive. Maghrebin workers will have to compete for employment in the labour markets of Saudi Arabia and Libya with workers from other labour surplus countries such as Egypt, Sudan, Yemen and Pakistan. Left with the lingering problems associated with the

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emigration waves of the 1960's and early 1970's, and faced with the possibility of massive return migration from Europe, it becomes particularly pertinent to analyse the migration patterns of the past and to make recommendations on this basis for future migration strategies.

NOTES

1)   FINDLAY, FINDLAY, and LAWLESS, 1979a, 1979b, 1979c

2)   TREBOUS, 1970

3)   SIMON, 1978. 1979

4)   POINARD, 1979

5)   FINDLAY, FINDLAY, and LAWLESS, 1979d

6)   WERTH, and YALCINTAS, 1978

7)   GREENHALGH, 1978a, 1978b

8)   BANK OF MOROCCO 1979, 53

9)   ibid., 51.

10) Applicable only to migrants returning permanently after at least three years residence abroad.

11) LAWLESS, 1978

12) An official survey showed that this view was of dubious validity since most migrants occupied jobs which Europeans would have been unwilling to accept. It has been estimated that, for every 150,000 migrants leaving France, only 13,000 jobs would be occupied by Frenchmen.

13) GRIMAUD, 1980

14) The new Franco-Algerian Accord has been discussed in more detail in LAWLESS, FINDLAY, & FINDLAY, 1981

15) SOCIETE TUNISIENNE DE BANQUE, 1980, 25

16) BANK OF MOROCCO, 1979, 44

17) MIDDLE EAST ECONOMIC DIGEST 1981

18) BANK OF MOROCCO, 1979, 44

Distinctive spatial structures can be associated with the evolution of most migration flows. Two forces contribute to fluctuations in out-migration at the regional level. Firstly national trends in emigration, shaped as has already been demonstrated by the vagaries of international politics as well as by cycles of labour demand and supply on the domestic labour market (Chapter 3), influence the magnitude of regional departures. Secondly temporal variations occur in the importance of emigration as an element of each regional labour economy. These variations are a consequence of the interaction of social and economic forces operating within each region. Emigration rates (number of migrants per 1000 inhabitants) may be calculated to show regional variations in emigration. Regional trends in migration were identified by use of migration quotients where a quotient for each region was calculated by dividing the emigration rate for each region by the national emigration rate for any given year. By standardising levels of national migration through time, migration quotients permit attention to be directed towards changes in the regional component of migration. This chapter seeks to identify and compare patterns of emigration at the regional level. Each country will be considered in turn and then a comparison will be made between source regions in the three countries.

Algeria

Emigration from Algeria has been more strictly controlled by the government than in either of the other two countries. Control and manipulation of migration is important not only with respect to the size of the Algerian migrant contingent but also with respect to the selectivity of migrants by origin asnd by qualifications (1). The Algerian strategy of controlling the outflow of migrants by region of origin will be contrasted with the patterns which developed in Morocco and Tunisia. Following independence and more particularly the installation of Boumedienne as president, the Algerian government sought to have a greater say in determining the size of migrant quotas and other

aspects of migrant agreements with France. The Algerians devised a migration policy consistent with the need for labour export demanded by Algeria's high technology low labour intensive national development programme. In 1968 an accord was signed with France increasing the size of the migrant contingent permitted to depart for France from 12,000 to 35,000. *The Office National Algérien de Main d'Oeuvre* (ONAMO) was assigned the task of selecting the candidates for migration. The choice of candidate by age, qualification and skill level thus continued to be made by Algeria permitting Algeria to use migration to meet its requirements. One of the first aims of the Algerian authorities was to diversify the source regions for emigration. Allegedly this policy would assure a more equitable distribution of the so-called 'benefits' of emigration. Other factors also favoured a policy of regional diversification of migrant origins. The development strategy adopted by the Algerian government after 1967 required a considerable input of skilled manpower and the existence of a large number of qualified Algerians abroad led the authorities to consider the reintegration of qualified workers. Evidence suggested that return migrants usually wished to return to their villages of origin rather than to other parts of Algeria. It was thus felt that diversification of migrant origins would ensure the return of at least some of the skilled workers to areas where they would be of value to the Algerian economy. New criteria were stipulated for the selection of the migrant contingent by wilaya. This system weighted wilayas according to the size of their population and the number of migrants already abroad. Those wilayas with the highest populations received a high score. As migration had not traditionally taken place from the wilayas with the highest populations these areas were disfavoured. (2) In spite of this policy to diversify migrant origins, migrants continued to leave mainly from the rural areas. A new wave of young migrants from urban areas formed a subsidiary flow.

Fig.4.I maps the migration rates recorded for each wilaya by the 1966 Algerian census, prior to the introduction of the policy of diversification of migrant origins. The concentration of emigration in certain regions is immediately apparent. The

Figure 4.1   Emigration from Algeria to France, 1966.

RATE PER 1000 INHABITANTS

0·0 — 5·0
5·1 — 10·0
10·1 — 15·0
15·1 — 20·0
20·1 — 25·0
25·1 — 30·0
30·1 +

0   300 km
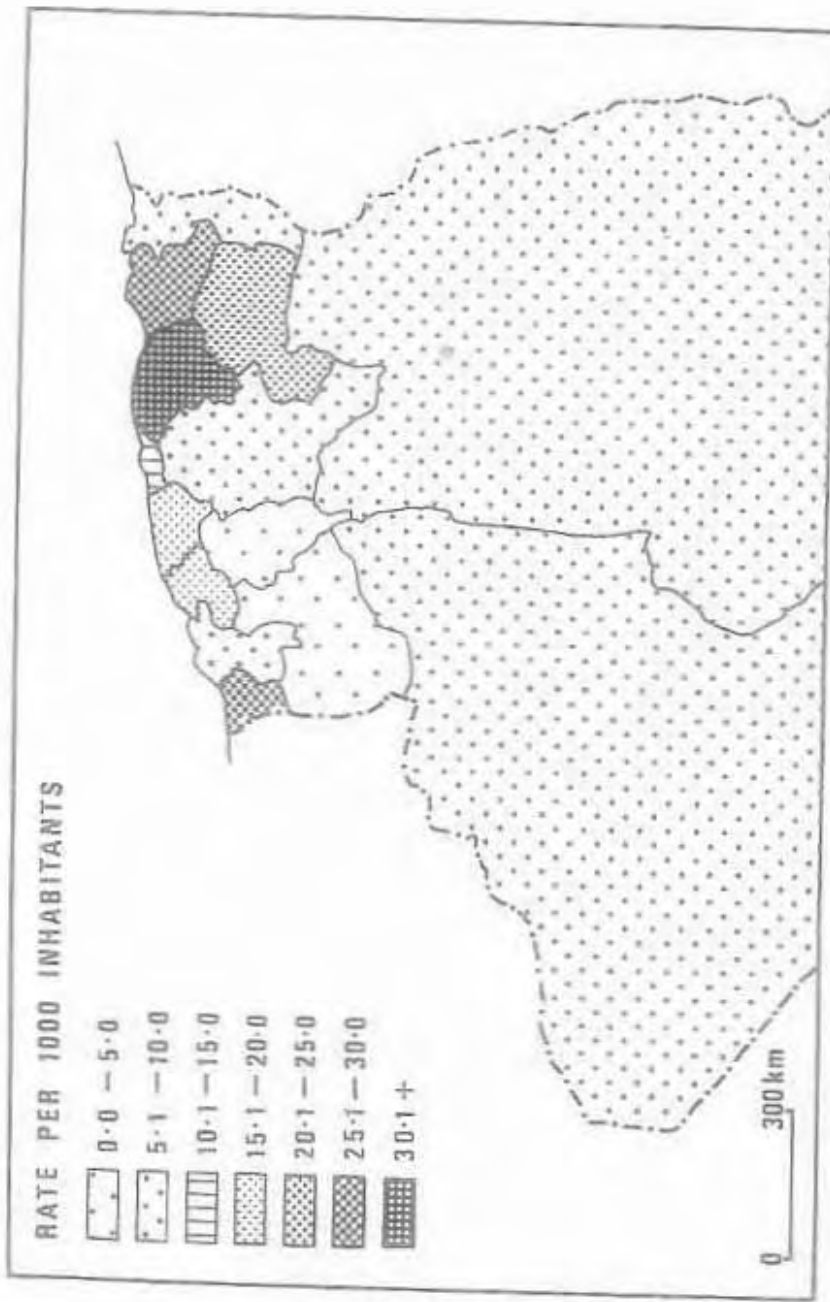
pattern shows continuity of the tradition of emigration from Kabylia established during the colonial period. The highest emigration rates recorded in the wilayas of Sétif and Tizi Ouzou. Constantine, Batna, El Asnam and Mostaganem also had relatively high emigration rates. By contrast much lower rates were recorded for the wilayas of Oran, Annaba and Algiers. The margins of the Sahara also remained unaffected by emigration. Examining the map of migration quotients for 1966 (Fig 4.2a) the highly localised nature of the pattern is further emphasised. If emigration was evenly distributed among the wilayas the migration quotient values would cluster around 1.0, each wilaya having a migration rate similar to the national migration rate. In 1966 this clearly as not the case. Only the wilayas of Aurès and Tlemcen had quotient values approaching 1.0. Other quotient values ranged from 2.9 in Tizi Ouzou, 2.5 in Sétif and 0.2 in Tiaret (Table 4.1).

To assess the impact of the new measures for diversification of migrant origins it is possible to compare the 1966 pattern with those for the years 1969-1973 following the implementation of the new legislation (Fig 4.2a & b). As the policy of migrant selection favoured diversification of origins, disfavouring areas of previously high out-migration it would be expected that quotient values would approach 1.0 and that areas of traditionally high out-migration might have quotient values less than 1.0. Examining Fig 4.2 it is clear that following 1968 a diversification of migrant origins did occur. The wilaya of Tizi Ouzou continued to send a higher than average proportion of migrants in 1969 and to a lesser extent in the following years. By contrast emigration from the wilaya of Sétif was reduced markedly in 1969. A quotient value of only 0.5 was recorded for 1969 compared with the 1966 value of 2.5. Despite a rise in the value in 1970, 1971 and 1972 it remained only slightly above 1.0. The wilayas of the south continued to contribute a disproportionately low number of migrants. On the other hand the quotient values for the urban zones of Algeria rose considerably, affirming the success of the policy in reorganising the zones of migrant origins. The authorities intended to increase migrant departures from these areas as they could later be reinserted in

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TABLE 4.1: EMIGRATION FROM ALGERIA TO FRANCE, 1966-1973.

Wilaya	1966		1969	1970	1971	1972	1973
	(1)	(2)	(2)	(2)	(2)	(2)	(2)
Alger	11.54	0.51	1.08	0.98	0.91	0.90	1.13
Annaba	9.95	0.44	1.41	1.13	0.97	0.96	1.22
Aurès	21.80	0.96	0.84	1.20	0.89	0.95	1.01
Constantine	30.03	1.32	0.97	1.10	0.93	1.13	1.20
El Asnam	16.09	0.71	0.78	0.86	0.78	1.05	1.05
Medea	7.00	0.30	0.94	0.66	0.83	0.85	1.00
Mostaganem	15.56	0.68	0.96	1.06	0.75	1.04	0.43
Oasis	6.50	0.29	0.57	0.38	0.83	0.31	0.10
Oran	9.68	0.43	1.03	1.09	1.01	1.02	1.10
Saida	3.50	0.15	0.30	0.45	0.65	0.55	0.00
Saoura	6.20	0.27	0.47	0.41	0.59	0.29	0.18
Sétif	57.06	2.51	0.50	1.18	1.43	1.22	1.27
Tiaret	3.98	0.18	0.53	0.50	0.46	0.60	0.23
Tizi Ouzou	65.97	2.90	2.14	1.55	1.98	1.39	1.80
Tlemcen	26.22	1.15	0.92	0.76	0.92	1.40	0.46

(1) Migration rate per 1000 inhabitants
(2) Migration quotient : regional migration rate
                         national migration rate

Authors' calculations. Data source: Adler, S. (1977) International
Migration and Dependence, Westmead : Saxon House, 164.

Figure 4.2a Migration quotients for emigration from
            Algeria 1966, 1969.
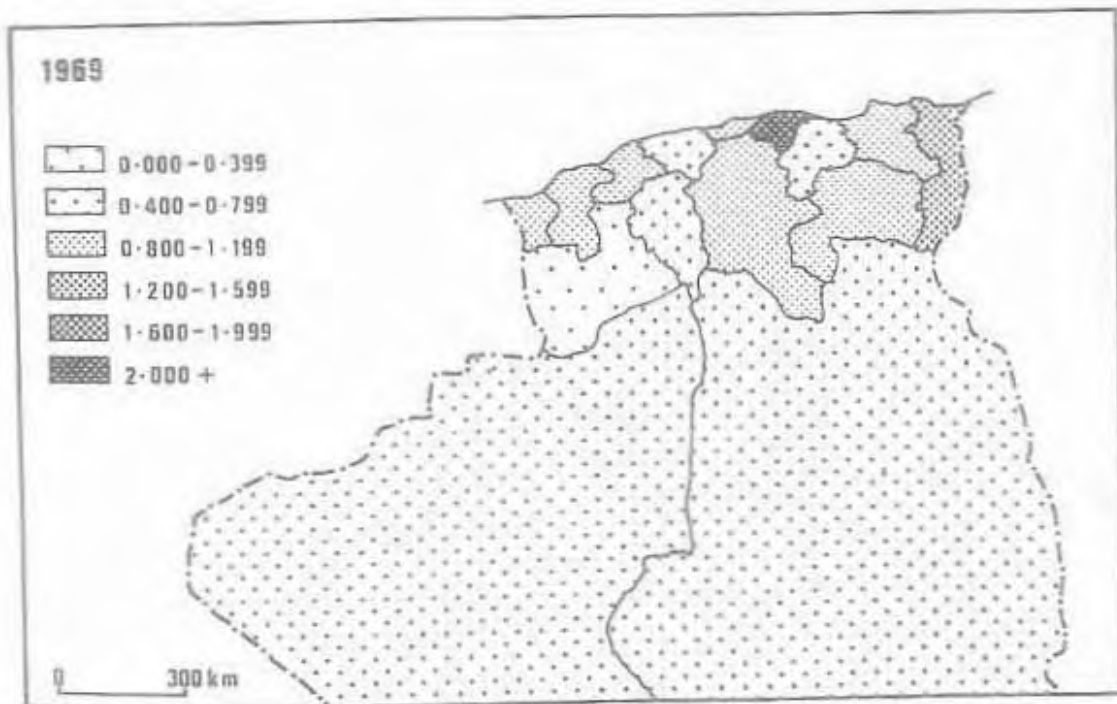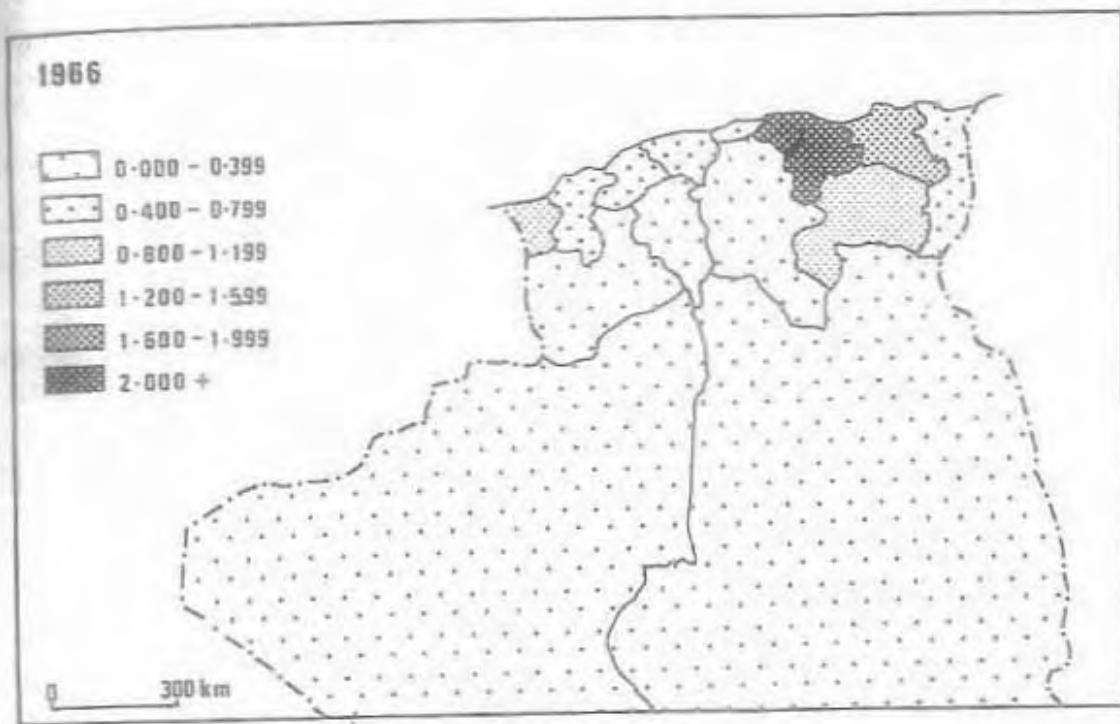
1966

- ☐ 0·000 – 0·399
- ⋯ 0·400 – 0·799
- ▦ 0·800 – 1·199
- ▦ 1·200 – 1·599
- ▦ 1·600 – 1·999
- ▦ 2·000 +

0 ___ 300 km

1969

- ☐ 0·000 – 0·399
- ⋯ 0·400 – 0·799
- ▦ 0·800 – 1·199
- ▦ 1·200 – 1·599
- ▦ 1·600 – 1·999
- ▦ 2·000 +

0 ___ 300 km

Migration Quotient= Provincial Migration Rate
                    ──────────────────────────
                    National Migration Rate

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Figure 4.2b Migration quotients for emigration from
Algeria 1971, 1973.

1971

0·000 – 0·399	
0·400 – 0·799	
0·800 – 1·199	
1·200 – 1·599	
1·600 – 1·999	

0   300 km

1973

0·000 – 0·399	
0·400 – 0·799	
0·800 – 1·199	
1·200 – 1·599	
1·600 – 1·999	

0   300 km
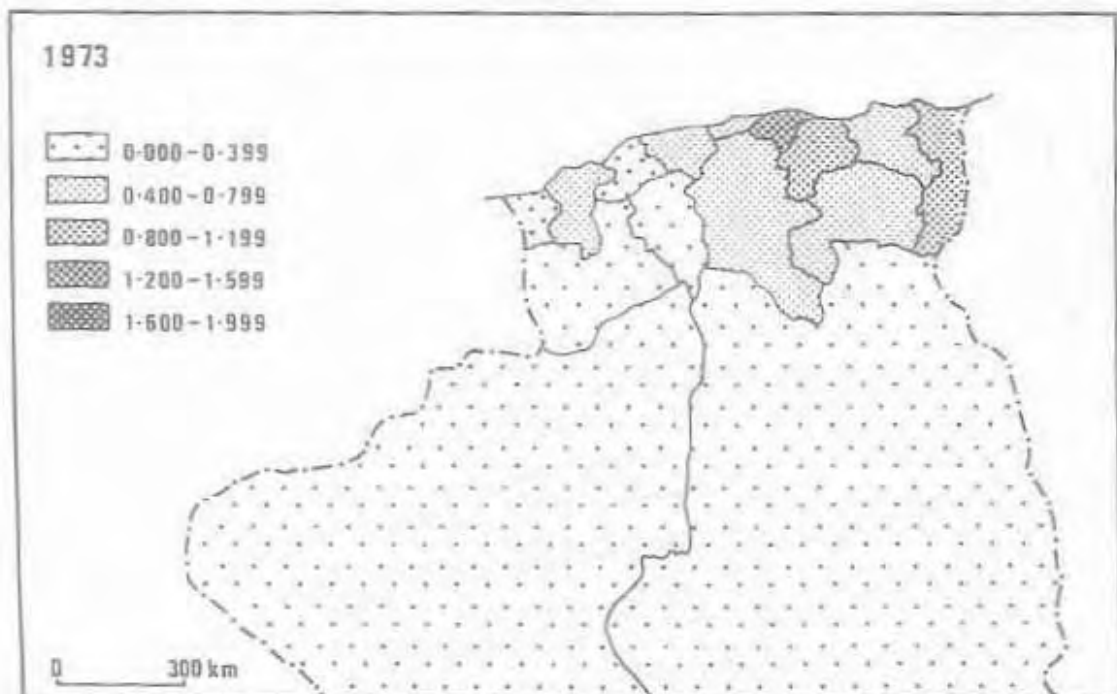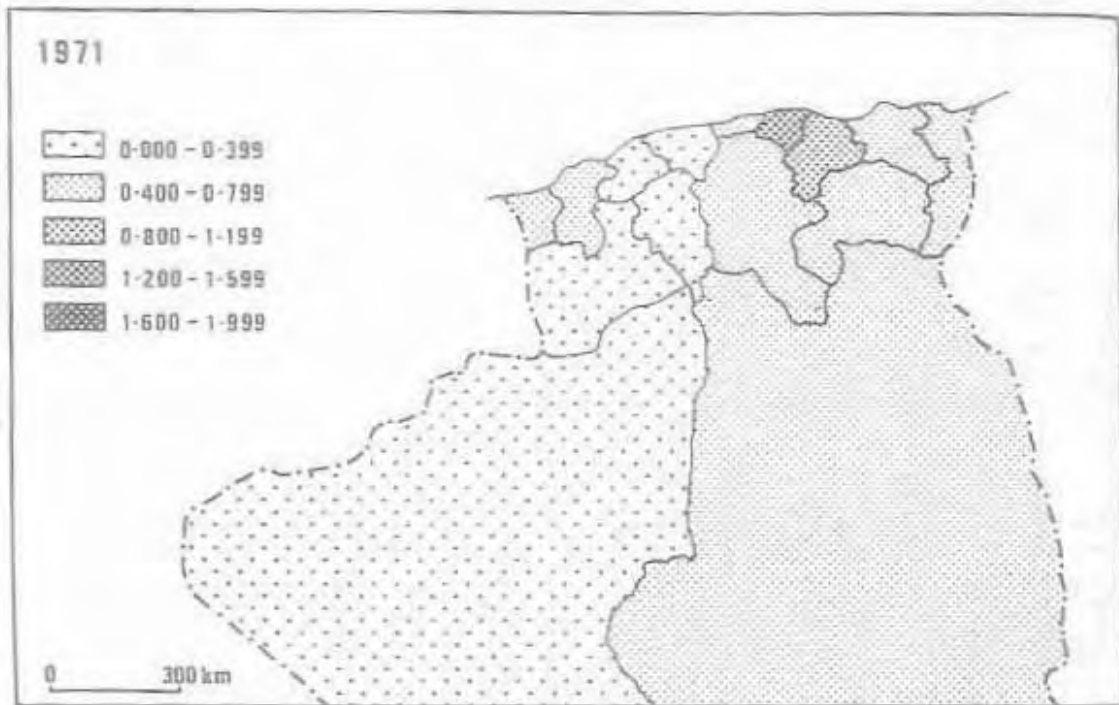
Migration Quotient – Provincial Migration Rate
                      National Migration Rate

these areas into productive sectors. Over the period the quotient values for Algiers, Annaba, Oran and Tlemcen are all close to 1.0. Unfortunately no information concerning internal movement was available for this period. This prevents any evaluation of the extent to which the diversification of migrant origins is more apparent than real, reflecting only temporary step migration to wilayas with more places for migrants.

In conclusion the Algerian policy may be observed to have taken effect and ostensibly migrant origins were altered in line with the needs of the national development policy. The longer-term results of the policy with respect to the pattern of return migration cannot yet be assessed. Although the policy was apparently linked closely with the needs of the development strategy its effect on the traditional zones of origin seemed to receive little consideration.

Morocco

Detailed analysis of international migration flows from Morocco at the regional level has been reported by the author in an earlier publication (3), and only a brief résume of the main points will be repeated here. The regional impact of migration in Morocco is significant due to the very high concentration of emigration in only a few parts of the country. As in the Algerian case migration quotients were calculated for each of the provinces, and these quotients compared over time (Fig 4.3b). This map illustrated the persistence of higher than average values for some provinces, the emergence of new migrant source regions and the decline of others. In 1969 emigration was particularly important from two regions, the Rif in north-eastern Morocco and the Souss area in south-western Morocco. Both regions were characterised by a tradition of emigration to Algeria during the colonial period (Chapter 2). In 1970 and 1971 particularly high quotient values were recorded in the provinces of Nador and Al Hoceima Table 4.2 Between 1969 and 1971 the province of Meknès emerged as a significant source region. By 1972 it can be seen that the south-west region had declined relative to other areas with a quotient value of only 0.73. The

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TABLE 4.2 EMIGRATION FROM MOROCCO TO ALL OTHER COUNTRIES, 1969-1974

Province	1969		1970		1971		1972		1974	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Agadir	2773	2.7	2879	2.8	2431	2.1	1527	1.3	1729	1.4
Al Hoceima	453	1.9	1100	4.5	1708	6.9	1382	5.5	2131	8.0
Beni Mellal	374	0.6	454	0.7	438	0.6	383	0.6	791	0.5
Casablanca	4100	3.0	4279	2.9	3096	1.8	3479	2.0	2014	1.0
El Jadida	171	0.3	268	0.4	213	0.4	385	0.6	696	1.0
Fès	822	0.8	1580	1.5	1830	1.7	1442	1.3	2516	2.0
Kénitra	1364	0.9	2127	1.6	1672	1.2	2016	1.5	2417	2.2
Khouribga	705	2.1	9	0.0	201	0.6	458	1.4	172	0.5
Ksar es Souk	234	0.4	327	0.7	504	1.1	724	1.6	696	2.2
Marrakech	973	0.6	2552	1.5	1717	1.1	1248	0.8	1418	0.9
Meknès	1616	2.1	2988	3.8	2964	4.0	2951	4.2	5206	4.9
Nador	2103	4.6	2725	5.9	5928	12.2	3552	7.2	1625	3.1
Ouarzazate	598	1.1	1314	2.5	644	1.2	820	1.5	455	0.8
Oujda	2467	3.9	2680	4.2	2637	4.2	2027	3.1	1643	2.2
Rabat	1010	2.4	1254	2.3	847	1.3	1023	1.5	932	1.3
Safi	177	0.3	396	0.4	163	0.2	384	0.4	11	0.4
Settat	249	0.3	400	0.5	255	0.4	272	0.4	76	0.1
Tanger	725	3.7	624	3.2	305	1.5	236	1.1	388	1.2
Taza	1579	3.8	1741	3.0	2547	4.4	2544	4.3	102	0.2
Tétouan	934	0.8	1326	1.6	644	0.8	807	1.0	4618	5.4
Total	25190	1.7	31023	2.0	30764	2.0	27660	1.8	31843	1.9

(1) Total number of migrants (2) Migration rate per 1000 inhabitants

Figure 4.3a Emigration from Morocco, 1969–1974.

Migrants per 1000 population

0·00   0·75   1·50   3·00   6·00

0   400 km
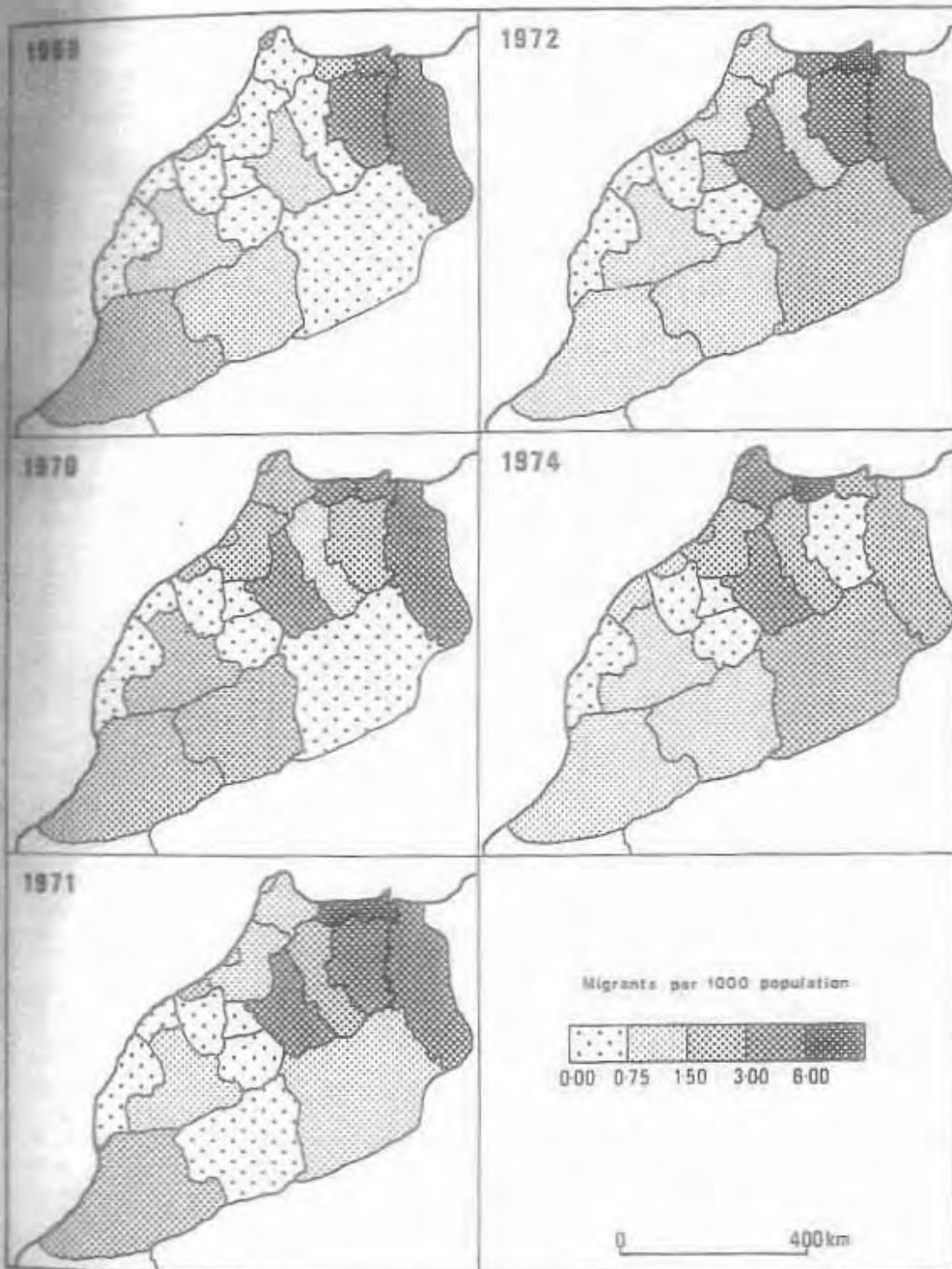
Figure 4.3b Migration quotients for emigration from
Morocco, 1969–1974.

Migration Quotient = Regional Migration Rate / National Migration Rate

0·0   0·4   0·8   1·2   1·6   2·0

0   400km
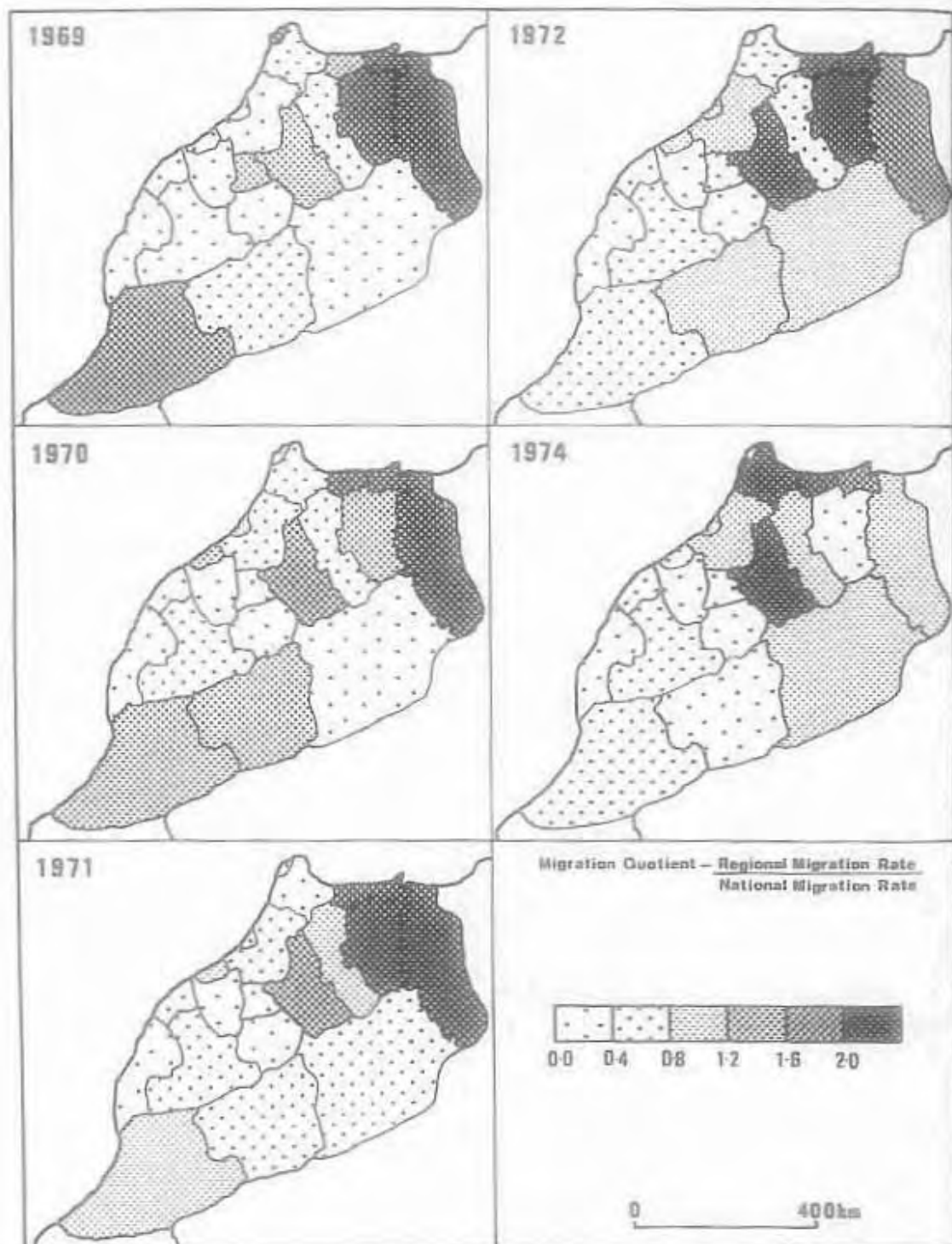
dichotomy between the two traditional regions of origin had become clearer by 1974, the importance of the south-west declining and emigration becoming consolidated in the north of the country. By 1974 the north-west of Morocco had emerged as a significant zone of origin. Al Hoceima retained its high quotient value but the provinces of Nador and Oudjda had lower values than formerly. In summary a number of trends may be observed. Firstly emigration became increasingly concentrated in northern rather than southern Morocco. Secondly within the north itself there appeared to be a shift from the east to the west of the area. Thirdly the persistence of high quotient values in the province of Al Hoceima is evidence of the intense concentration of Moroccan emigration from this area. Bossard's (4) study of emigration from the province of Nador, initially a region of high levels of emigration, traced the spread on international migration through the province between 1966 and 1974. Initially the highest migration rates, 101-140 migrants per 1,000 inhabitants, were recorded in the communes of Bni Oulichek and Tlet Jbal. Adjacent communes such as Temsamane and Midar gradually became involved. In the west of the province migration rates were also rising in areas such as Tazarhine, Der Kebdani and Tlet Louta. By 1974 migration rates in the communes of Khemis Temsamane and Tiztoutine had risen to over 140 migrants per 1,000 inhabitants. Migration rates in the surrounding communes also continued to rise and new communes were still becoming involved particularly in the east of the province. The pattern of spread of emigration through the province suggests that spatial contiguity of communes was an important variable in the diffusion of the decision to migrate. Further analysis of the spread of the decision to migrate is undertaken for the case of Tunisian migration to Libya (Chapter 6). Reference to this micro-study carried out by Bossard highlights both the pattern of diffusion of emigration and also the intense localisation of emigration even within a single province. In two communes over 14% of the population were found to be working abroad.

Emigration although directed predominantly towards France (Table 4.3) has also been oriented towards several other destinations. Migration streams to different destination

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TABLE 4.3: EMIGRATION FROM MOROCCO TO FRANCE

Province	1967		1968		1969		1970	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Agadir	2781	2.9	2685	2.7	2503	2.5	2593	2.5
Al Hoceima	131	0.6	310	1.3	514	2.2	659	2.7
Beni Mellal	174	0.3	184	0.3	441	0.7	487	0.8
El Jadida	-	0.0	425	0.7	238	0.4	305	0.5
Fès	416	0.4	389	0.4	681	0.6	991	1.0
Kénitra	192	0.1	340	0.3	793	0.5	1147	0.6
Khouribga	-	0.0	32	0.1	683	2.0	331	1.0
Ksar es Souk	235	0.5	221	0.5	210	0.4	336	0.7
Marrakech	685	0.5	733	0.5	683	0.4	1386	0.8
Meknès	544	0.8	710	1.0	1293	1.7	2186	2.7
Nador	1926	4.5	1784	4.0	1818	4.0	2294	4.9
Ouarzazate	546	1.0	769	1.5	2394	4.6	1817	3.4
Oujda	1909	3.4	1596	2.7	1861	3.0	2449	3.8
Safi	132	0.1	165	0.2	183	0.2	173	0.2
Settat	-	0.0	30	0.0	190	0.2	460	0.6
Tanger	134	0.7	134	0.7	161	0.8	201	1.0
Tarfaya	11	0.4	12	0.5	7	0.3	9	0.3
Taza	391	0.7	851	1.5	1353	2.4	1291	2.2
Tétouan	87	0.1	94	0.1	334	0.4	157	0.2
Casablanca	1925	1.5	1393	1.0	2419	1.7	3682	2.4
Rabat	429	1.0	472	1.0	576	1.2	1113	2.0
Total	12648	0.9	13339	0.9	19335	1.3	24077	1.6

(1) Total number of migrants   (2) Migration rate per 1000 inhabitants

Source: Allaya, M. (1974), 359.

countries have developed quite different regional patterns. For example, emigration to Gibraltar which occurred following the closure of the Spanish-Gibraltarian frontier is characterised by a distinctive regional pattern. Some 2,000 Moroccans were recorded by the 1970 Gibraltarian census (5). Migrant origins were highly concentrated in the provinces of Tangier and Tétouan and declined with distance towards the provinces further south such as Meknès (6). The initiation of emigration from the province of Tétouan to Gibraltar appeared to act as a stimulus to emigration from Tétouan to France. By 1974 this province, which had not previously been a migrant source region, had emerged as a significant region for emigration to France. This example reflects several of the characterisitics of migration behaviour already identified in the earlier patterns of Moroccan migration to Algeria where the role of distance was shown to be important and where one migration movement stimulated other new flows.

Comparison of patterns of emigration to France and Germany (7) reveals that the migrant origins for these two flows are only coincident - emigration to Germany has been predominantly from the provinces of Nador and Oujda. The range of quotient values for emigration to Germany indicates that this migration flow is intensely concentrated, issuing almost entirely from these two north-easterly regions. Emigration to France was also important from the province of Nador, particularly in 1970. Interestingly, Bossard (8) has also investigated the diversity of migrant destinations and origins at the micro-scale for the province of Nador. From his analysis it is clear that there was a spatial dimension to emigration patterns, although few 'cercles' sent all their emigrants to a single destination. In general in the more westerly cercles France was the main destination. Cercles becoming involved in emigration later in the migration wave showed a greater diversification of migrant destinations. In the east of the province, Germany featured as the dominant destination country. For the Bassin de Boudinar in the west of Nador province, Bossard (9) examined the hypothesis that there was an association between migration to a particular destination and previous experience of migration to Algeria. The area (Zaouia Sidi Yaha) with the highest level of emigration to

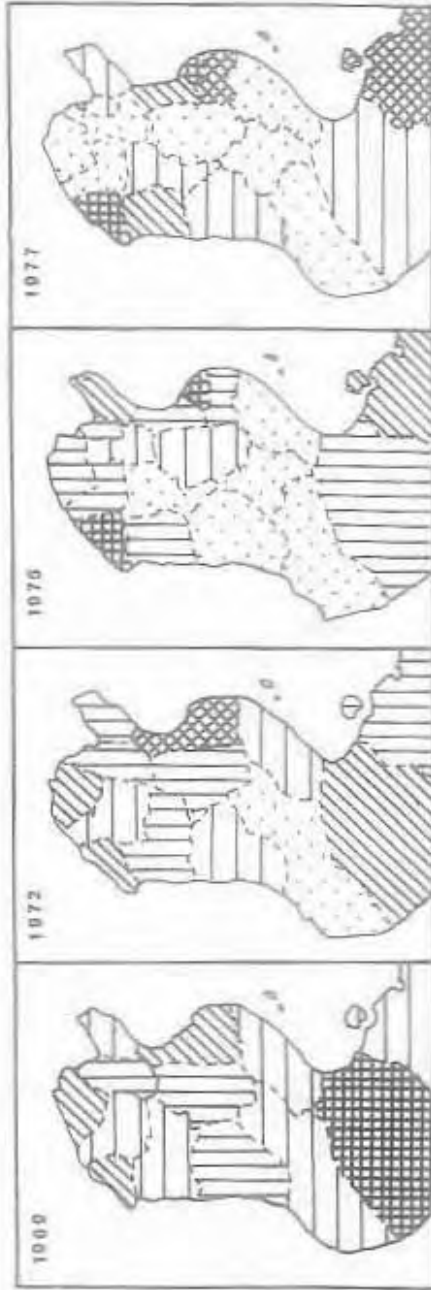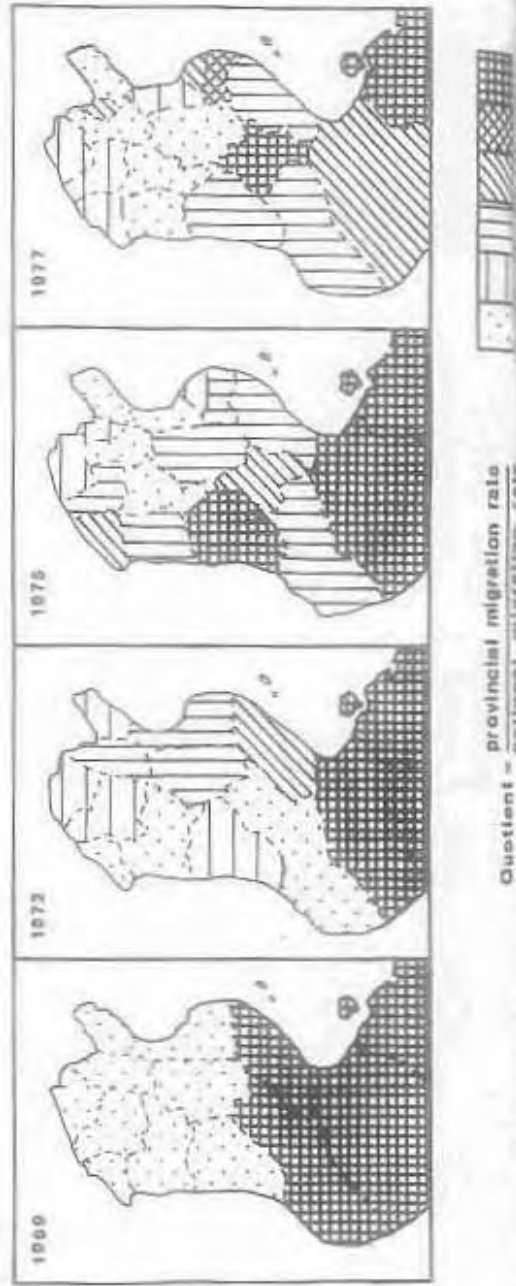Figure 4.4a Tunisian–French migration quotient.

Figure 4.4b Tunisian–Libyan migration quotient.

Quotient = provincial migration rate
national migration rate

Germany in fact had the lowest level of previous migration to Algeria. Similarly there was no positive association between levels of migration to the Netherlands and earlier migration to Algeria. There was, however, a direct association between migration experience in Algeria and the level of worker migration to France. This was particularly true during the initial period of migration to France.

The acute localisation of Moroccan emigration in certain parts of the country underlines the regional as opposed to national significance of emigration. The importance of the interplay between migration flows has been stressed and in part accounts for changes in the patterns of migration. The increasing and persistent concentration of emigration from northern Morocco, however, reflected the existence of fundamental spatial disequilibrium.

Tunisia

Patterns of international migration reflect an intrinsic regional imbalance within Tunisia itself. Fig 4.4 illustrates the regional patterns of emigration to France and Libya using migration quotients. In the case of Tunisian-French migration it can be seen that in 1969 there were three hearth regions – northern Tunisia, Sousse and Gabès. Comparing migration quotients for the years 1972, 1975 and 1977, a decline in the importance of emigration from northeastern Tunisia, and in particular Tunis may be observed. As overall migrant numbers have declined so has the relative importance of emigration from the capital. Similarly, emigration from Bizerte has declined. From examination of the four maps it would appear that a concentration of migrant origins occurred with the persistence of a disproportionate number of migrants leaving from Jendouba, Sousse and Medenine.

In 1969, in the early period of emigration to Libya, the majority of departures (93,1 per cent) came from the three southern gouvernorats of Medenine, Gabès and Sfax, resulting in a marked dichotomy between the north and south of Tunisia. (See

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Table 4.4b.) By 1972 there were still large areas of the interior and north-western Tunisia that were unaffected by emigration to Libya, but the east coast gouvernorats and the capital Tunis had increased in significance as sources of emigration, while there was a reduction in the contribution from the southern gouvernorats (now only 40 per cent of the total number of migrants. By 1975 the pattern had entirely changed. No longer was it the urbanized east-coast gouvernorats that dominated the pattern. Now it was in the more rural interior gouvernorats that migration rates were above the national average. However, even in 1975 one or two traditional rural areas such as Siliana and Zaghouan had not become significantly involved in the migration system (Fig 4.4)

Comparing the regional patterns of emigration to France and to Libya, it may be observed that in the case of France migrant origins have become more concentrated while in the case of Libya they have become more diffuse. The regional pattern of the diffusion of Tunisian migration to Libya is discussed in more detail in Chapter 5. The pattern of Libyan-oriented migration is not a replica of the pattern of migration to France. In southern Tunisia, high emigration rates have been recorded for both migration to France and migration to Libya. The involvement of the gouvernorats of the interior has no precedent in patterns of migration to France. On the other hand, emigration from Jendouba to Libya remains very limited despite the tradition of labour migration abroad from this region. The spatial patterns of the two flows differ and show only partial coincidence. Further analysis of migrant characteristics validates the finding that Libyan-oriented migration is not a direct substitute for migration to France (Chapter 7).

Simon and Noin (10) have proposed a typology of migration source regions for Maghrebin migration to France. The typology is useful as it identifies some of the features of emigration patterns common to the three Maghreb countries. Three types of region are identified and a diffusion of emigration from the first type of region to the third is suggested:-

1) Rural areas of traditional out-migration
2) Rural areas with no previous tradition of emigration
3) 'Modern' urban areas

Analysis of regional patterns of emigration confirms certain aspects of this typology.

In all three countries migration to France originated in areas of traditional out-migration – e.g. Southern Tunisia, Kabylia and the Souss area of Morocco. When absolute numbers of migrants are considered, the typology appears to be an accurate representative of the pattern of emigration for the 1960's. However, when migration quotients are used a number of other areas appear as important migrant origins. Most noticeable perhaps is the example of the Tunisian Tell, which has consistently contributed a disproportionate share of migrants relative to the size of its population. Similarly in Morocco the province of Ouarzazate contributed a higher-than-average proportion of migrants during the early phases of migration. Further, the typology does not distinguish between northern and southern Morocco. In both areas emigration was very important but higher quotient values were recorded in Nador than in Agadir, although emigration had been established for longer in Agadir than in Nador.

Simon and Noin's typology identified a trend towards increased emigration from the 'modern' urban centres. This is confirmed in the case of Algeria, but is largely a result of government policy to increase the urban bias of migrant origins. Traditional urban centres such as Marrakech in Morocco have remained comparatively uninvolved in emigration as expected in the classification. Simon and Noin's (11) assertion that 'La contribution croissante des villes aux départs vers l'Europe est l'un des aspects essentiels de l'évolution qui connait la migration maghrébine actuelle' is not confirmed by evidence from Tunisia and Morocco. Following 1970, the 'modern' urban centres have contributed a disproportionately small share of migrants relative to the size of their populations although sometimes accounting for a high percentage of the absolute number of

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TABLE 4.4a: TUNISIAN EMIGRATION RATES TO FRANCE AND LIBYA (per million population)

Year	1969	1970	1971	1972	1973	1974	1975	1976	1977
France	818	1556	1575	1682	751	596	241	274	250
Libya	270	113	587	1153	2061	895	522	88	1679

TABLE 4.4b: MIGRATION RATES (per million population) TO LIBYA FROM EACH GOUVERNORAT

Year Gouvernorat	1969	1970	1971	1972	1973	1974	1975	1976	1977
Tunis	26	41	226	1124	1819	1115	286	4	1938
Bizerte	3	19	176	661	1472	459	274	75	800
Béja	84	0	220	465	1214	565	483	37	1160
Jendouba	4	7	283	360	1839	1304	803	169	571
Kef	6	-	303	192	950	446	397	148	296
Kasserine	-	-	702	670	1495	679	1221	51	1755
Gafsa	-	-	344	424	565	237	737	33	3315
Medenine	1404	924	1935	3874	11291	4751	1352	321	4082
Gabès	2915	149	349	3459	5621	2483	2413	467	2472
Sfax	649	364	1070	1483	3512	978	641	13	1868
Kairouan	6	19	111	970	1494	894	578	30	193
Sousse	12	35	271	1349	1433	249	325	34	2126
Nabeul	96	195	534	876	1342	381	229	27	177

Rates for 1969-1972 were calculated using the 1971 population estimate of 5,081,590 per 1973-1977 rates were calculated using the 1975 census records. Extrapolation of the 1977 was based on the OTTEEFP statistics for the first ten months of the year. Emigration rates been calculated for the last place of migrant residence.

Source: OTTEEFP, 1975, 54-56.

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migrants (Table 4.3). The trend towards increased emigration from these centres observed by Simon and Noin may be regarded as a temporary fluctuation in migration patterns.

In an attempt to compare the trends observed in the three countries, a concentration index was calculated for the patterns of emigration (Table 4.5). The index represents extreme polarization as values approach one, while an equal spread of events is represented by an index of zero.

The index suggests that in the case of Tunisian migration to France migrant origins became more concentrated through time. Interestingly, the pattern of Tunisian emigration to Libya during the same period followed almost the inverse trend between 1969 and 1975 when the pattern became more diffuse. There was a slight reconcentration of migration in the southern gouvernorats of Tunisia in 1977 due to the specific circumstances associated with the reopening of the Tunisian-Libyan frontier in that year. From evidence in the Tunisian case it may be tentatively hypothesised that patterns of migrant origins become more diffuse as a migration wave approaches its peak level, and then become more concentrated again with the ebb of the migration wave.

Such a hypothesis would be substantiated by the Moroccan case, where index values display a spread of migration between 1976 and 1970 as the migration approached its peak level and then an increase in concentration in 1974 when migration was declining. The index values show a more regionally concentrated pattern for migration to France than those of Tunisisa and Algeria. The low index values recorded in Algeria for the period 1969 to 1972 are a direct result of the government policy to diversify migrant's origins. However, with the decline of migration in 1973 there was a slight increase in the level of concentration.

Similarities in the types of regions involved in the migration process in each of the three countries have been observed, particularly for the period up until 1970, to coincide with Simon and Noin's typology. Furthermore, examination of

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b) Morocco

Year Country	1967	1968	1969	1970	1974
France	0.620	0.545	0.463	0.466	0.512

c) Algeria

Year Country	1966	1969	1970	1971	1972	1973
France	0.580	0.411	0.400	0.388	0.370	0.469

The index is calculated as follows:

   i. The percentage contributions of each area to national migration are arranged i order for each year.

   ii. The cumulative percentages are then calculated (as for a Lorenz curve).

   iii. Cumulative totals are summed for observed data (o), for the minimum concentration (of an even distribution) (E).

   iv. The index is calculated from the formula: $\dfrac{O-E}{Ma-E}$

Source: Hammond, R. and McCullagh, P.S. (1974), 58-60.

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10) SIMON, and NOIN, 1972
11) ibid., 256.

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5 : TUNISIAN EMIGRATION TO LIBYA : SOME HYPOTHESES

Migration rates, distance and urbanization

Having established the sequence in which Tunisian migration to Libya appears to have evolved (Fig 4.4), it becomes pertinent to demand some form of explanation for these trends. It has been suggested that distance from the Libyan border has to some extent affected the availability of migration opportunities. It is apparent from Figure 4.4 that the importance of distance decreased considerably between 1969 and 1977. Similarly, some correlation has been implied between the regional level of urbanization and the migration rate. 'Urbanization' in this context is considered as a surrogate variable representing the forces for modernization and change not experienced in the rural environment. It is clearly somewhat unsatisfactory to use 'urbanization' as a surrogate for 'modernity', since there are some relatively modern sectors as well as 'traditional' ones within the rural environment. Offsetting this disadvantage is the ease of application of the surrogate. Urban populations are those defined by the *Institut National de la Statistique* as lying within 'communes' or boroughs.

In 1972 it appears that 'urbanization' favours migration whereas in 1975 the converse is the case. These two hypotheses have been tested for each year between 1971 and 1977. The hypotheses could not be tested using parametric statistics for 1969 and 1970 due to the anormal distribution (bimodal) of the values of migration rates. It was considered that deviation from normality was too great to apply the Pearson product moment to the data sets for these two years. Of various power exponents applied to distance measurements it was found that transformations of the data with $e = 0.5$ gave the highest correlations of distance against migration rates for the years 1971 to 1977.

If the qualitative descriptions of Figure 4.4 are accurate, the tests should indicate that distance is of declining importance in explaining migration patterns through time. The

results of Table 5.1 substantiate this generalization at the gouvernorat level of analysis.

As distance becomes less important in constraining opportunities, one expects other variables to become more important in influencing pattern formation. The results reported in Table 5.2 indicate, that when both level of urbanization and distance are analysed in a multiple-step regression, high correlation coefficients are achieved, most notably in 1972 Fluctuations in the migration rates through space suggest that their relationship to distance from Tripoli and to the level of urbanization is extremely unlikely to be a chance association.

In some studies (1) migration numbers are regressed on population size at place of origin. This seems to offer little explanatory power to the analysis since it is obvious that large populations are likely to send larger numbers of migrants than small populations. This step is therefore omitted in the Tunisian-Libyan analysis, and population sizes are standardized by taking migration rates rather than migrant numbers as the dependent variable.

An alternative formulation, in which migration rates were correlated with a single index of urbanization and distance, achieved even higher levels of explanation for 1971, 1972 and 1973 (Table 5.2). The index was calculated as U/d^e,

> where: U is the level of urbanization in a délégation
> d is the distance from Tripoli
> e is a power function, empirically derived.

In this regression, e = 3.0 gave the best fit. Unfortunately, the index is harder to interpret than the simple variables considered in the multiple regression. In 1972, 91 per cent of the spatial variation in gouvernorat migration rates could be 'explained' in terms of the U/d^e index.

Both the multiple regression and the simple regression of migration rates on U/d^e achieved lower levels of 'explanation' in

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TABLE 5.1: CORRELATION COEFFICIENTS FOR THE INVERSE ASSOCIATION BETWEEN DISTANCE FRO
        TRIPOLI AND MIGRATION RATES

	1971	1972	1973	1974	1975	1976	1977
r^2	0.513	0.726	0.639	0.548	0.545	0.395	0.426
Level of Significance (D.f.=11)	0.01	0.001	0.001	0.01	0.01	0.05	0.05

Source: Authors' calculations.

TABLE 5.2 CORRELATION OF MIGRATION RATES WITH DISTANCE AND URBANIZATION, 1971–1977

	1971	1972	1973	1974	1975	1976	1977
Multiple step regression r^2	0.526	0.740	0.645	0.567	0.611	0.464	0.427
Level of Significance (D.f.=9)	0.05	0.005	0.01	0.05	0.01	0.05	0.1
Simple regression r^2 M. on U/d^e	0.519	0.910	0.843	0.757	0.252	0.497	0.271

Source: Authors' calculations

1976 and 1977, indicating the increasing importance of other variables (not considered in the statistical analysis) in explaining migration patterns. Having established that a statistical association exists between emigration, distance from Tripoli and the level of urbanization, it is now worth investigating the theoretical basis for this relationship and the reasons why it has changed through time.

Information constraints on migration

One possible hypothesis which can be evoked to explain the time-space series of Figure 4.4 lies in the field of information diffusion theory (2). According to Hagerstrand's theory of diffusion, spatial inequalities in the availability of information concerning new ideas account for the temporal lags in the adoption sequence of innovations. The theory as applied in the migration context would suggest that information concerning migration opportunities, because it is diffused by inter-personal communication, is highly constrained by distance. Places and populations near to an information source have therefore the opportunity to adopt an idea before places and populations at a greater distance from the source. In the context of emigration to Libya, one would therefore hypothesize that the populations of southern Tunisia, because they live in physical proximity to the Libyan labour market, would be first to become aware of opportunities of employment in Libya and consequently the first to adopt the decision to emigrate.

On first examination, this intuitively attractive explanatory model apparently matches the Tunisian experience rather well. The populations of Medenine, Gabès and Sfax were indeed the first to be involved in emigration to Libya. The logical extension of the theory suggests that an outward diffusion of the decision to migrate should occur from the source point to the periphery. One might therefore expect central Tunisia and then northern Tunisia to become involved in emigration to Libya.

As has been shown, the number of gouvernorats involved in emigration did continue to rise, but the pattern of departures by

1972 had become biased towards the east coast regions. Why should the information field be biased towards the towns of the eastern littoral and not be spread evenly across the country? In terms of information diffusion theory one might suggest that the spatial bias is a consequence of inequality in the structure of communications channels. More intense patterns of inter-personal contact are indeed possible in the urban zones of the east coast than in the rural environments of the interior of Tunisia. Irrespective of the mode of spatial interaction chosen (telephone, bus, rail, etc.), the Tunisian network of communication channels may be shown to favour the eastern littoral (3). Each contact pattern is arranged in nodal regions centring on the urban areas of the country and more specifically on the towns of the Sahel of Sousse and of north-eastern Tunisia. In summary, there is evidence to suggest that there is an unevenness in contact structures which is coincident with the unevenness observed above in the development of patterns of emigration. Whether this is a causal factor influencing migration patterns, or merely a coincident pattern resulting from an independent process is hard to determine.

It seems improbable that diffusion of the awareness of migration opportunities would take several years. Information diffusion in the order of weeks or months seems more likely. The theory seems to be most applicable in the opening phases of the migration wave, but other hypotheses need to be sought to offer a more credible explanation for the subsequent development of the pattern.

Social and economic constraints on migration

Since migrant flows of Tunisians to Libya consist predominantly of persons seeking better employment, it seems logical to search for a relationship between areas with restricted employment opportunities and areas with high levels of emigration. The OTTEEFP will not offer a work contract abroad unless an applicant has previously been registered over a period of two months as 'unemployed'. The concept of 'unemployment' is difficult to operationalize in view of the high level of hidden

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substantiates the results of Table 5.5 by establishing that the south has significantly better employment opportunities than the interior and the north-west of Tunisia. He also suggests that there is little labour surplus on the southern employment market.

The distribution of underemployment has changed little over the last decade, and therefore cannot offer any ready explanation for the changing emphasis of migration patterns through time. The distribution of underemployment relates more closely to the rates of Libyan migration in 1975 and 1976 than to the earlier pattern. Underemployment may well be an important influence on migration, once a flow has developed, but it is not a force encouraging search behaviour in the innovative period. It is concluded that this particular 'non-information' factor does not assist in explaining the sequential pattern of development of Libyan migration. A variety of other economic variables were also considered by the author, but they too failed to account for trends in migration behaviour.

An alternative explanation of the variation in migration rates might be sought in anthropological terms. There are extremely strong cultural and ethnic links between some of the tribes of Tunisia and the Libyan population of Tripolitania. Clarke (6) has discussed in detail the distribution of the Trabelsi (Tripolitanian) tribes in Tunisia and the complex history which underlies their dual status as Tunisian nationals of Libyan origin and descent. It is unquestionably true that Libyan workers in Tunisia who had not adopted Tunisian nationality were the first persons to leave for Libya following the beginning of oil production in 1961 with its subsequent

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TABLE 5.4: THE LIBYAN COMMUNITY IN TUNISIA, 1956-1975

	1956	1960	1965	1970	1975
Number resident	18,900	14,500	9,800	5,500	1,700

expansion of the labour market. Table 5.4 shows the decline in the numbers of Libyans in Tunisia between 1960 and 1975. Presently the Libyan community in Tunisia is extremely small.

The majority of persons belonging to the 57 Tripolitanian tribes identified in Tunisia, by a study at the turn of the century (7), are considered by the authorities as Tunisian nationals and are therefore not counted in Table 5.4. It is difficult to establish whether this sub-population has responded to the increased demand for labour in Libya in a similar manner to the expatriate Libyan community. There would be grounds to support the theory that ethnic links encourage emigration if emigration rates were higher in those areas where the Trabelsi tribes settled. North of the Chott el Djerid, the Trabelsi are found predominantly in the north-east of the country and in the lower Tell. This indeed is an area which contributed a large number of migrants in the earlier stages of the migration wave. Many other variables could have been equally important in prompting early migration from this area (such as higher literacy rates, the higher levels of urbanization, etc.). If the tribal affinity of the northern Trabelsi was a significant factor in stimulating migration, this would be rather surprising since

"most of these particular Trabelsi have lost contact
with their former homelands and have been more or
less absorbed by the peoples of Tunisia" (8).

The links between the tribes of southern Tunisia and Tripolitania appear to be stronger. A general disregard for national authority concerning frontier control is reflected in the statistics for clandestine migration, which show that very large numbers of illegal migrants originate in the south of Tunisia. It seems likely that cultural affinity between this area and Tripolitania may account in part for the large number of clandestine migrants departing from the south.

Tenuous as such a relationship (between tribal distributions and patterns of migration) may be, it is worth considering whether its existence would negate Hagerstrand's theory. It

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would suggest that the characteristics of a population, which affect information awareness (namely location relative to information sources) were less important than factors affecting information evaluation (such as kinship ties).

Information evaluation

If cultural affinity is temporarily accepted as an element assisting in the evaluation procedures of potential migrants in southern Tunisia, and encouraging the earlier and more widespread departure of persons to Libya from this area, what forces can be invoked to explain the patterns of emigration observed in the rest of Tunisia?

It is likely that decision makers in the urban environment receive information more frequently, a factor stressed by Hagerstrand as important in the decision-making process. Furthermore, it might be argued that, with higher literacy rates than in rural areas, they are better able to evaluate the prospects of migration rapidly. Substituting literacy for levels of urbanization in the multiple regression of Table 5.4 yielded largely similar levels of explanation. A second and more important factor in the evaluation procedure is the relationship between perceived risks and returns from adopting a decision. With regard to migration to Libya, the financial benefits of migration seem clear. M'tar (9) reports that Tunisians trained in the building trade could, in 1973, earn three times their monthly Tunisian wage (42 T. Dinars) by migrating to Libya (average migrant builder's monthly salary: 120 T. Dinars). Painters could earn 100 T. Dinars in Libya compared with only 33 T. Dinars at home, while welders could gain more than four times their Tunisian salary (24 T. Dinars against 112 T. Dinars in Libya).

The risks of emigration are harder to quantify. It seems logical that town dwellers, with their looser kinship ties and their lack of commitment to an agricultural economy, are more willing to migrate on an experimental basis. If migration should

prove unsuccessful, their re-integration into their city of origin involves the restructuring of fewer social and economic relationships. Persons in rural areas, particularly those living in the more traditional societies of the low and high steppe of Tunisia, have closer kinship ties, as well as more immobile assets. Emigration may involve the forfeiture of the right to cultivate the land and the transfer of responsibility for the land to another member of the family. Hay (10) has shown that in the district of Testour only persons with little or no land were willing to emigrate.

Even if return were easy, few rural migrants, once accustomed to the higher standards of living and greater individual freedom which accompany employment in the modern sector of the economy, wish to step back into the old lifestyles. This is where international migration involves a greater risk than internal movement, for the assurance of continued employment in a foreign labour market is extremely low, and the urban migrant has a better chance of returning to modern sector employment after his spell abroad than has a rural migrant. It is not surprising that information evaluation concerning migration opportunities is initially a more lengthy process in the rural environment, even if the availability of perfect information was ubiquitous.

Once a destination has been proved a reliable employment market, the situation changes and migration becomes more desirable to rural than to urban persons. With the passage of time, the benefits of migration become increasingly apparent to persons in the rural community.

The return of migrant remittances to both urban- and rural-bred families undoubtedly results in an improvement of their standards of living. The impact is subdued in the urban environment since social inequalities in the standard of living, and particularly in purchasing power, already exist in the city. By contrast, remittances from migration often initiate inconsistencies in social status in the rural environment. The availability of cash from migrant remittances distinguishes a

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rural family from their surrounding milieu, and the expenditure of the surplus cash on improved housing and on consumer goods such as radios, televisions, bicycles and sewing machines creates a visible duality within village society. By 1975 it therefore appears that emigration to Libya had become the accepted norm for many men from the rural environments of western Tunisia, and levels of emigration from this region had grown to outweigh in significance worker emigration from the coastal gouvernorats. From the preceding discussion it appears quite logical that the populations of the rural areas of western Tunisia should be more conservative in their behaviour and that they should lag behind populations of the more 'modern' regions of the eastern littoral in their response to migration opportunities. This hypothesis seems to fit the experience of Tunisian emigration. The indices of migration presented in Tables 4.4b and 4.5a might therefore be interpreted as follows. In the early years of high labour demand in Libya, emigration occurred first from southern Tunisia where awareness of migration opportunities was greatest (and where the local population was well accustomed to the concept of short-term labour migration). The eastern littoral became the second source of migrants, contributing increasingly large numbers as the demand for foreign workers rose. This phase may be associated with the initiation of Libya's three-year plan (1973-1975). The less innovative populations from the more traditional societies of western and north-western Tunisia were the last to embark on the emigration wave but, on recognition of the benefits of migration, came to participate in the Libyan labour market as vigorously as any other region of Tunisia.

Explanation of Regional Migration Rates

A number of hypotheses have been stated which suggest that the more urbanized areas of eastern Tunisia are more innovative in adopting migration opportunities than the more traditional rural areas of western and north-western Tunisia. It is necessary now to seek corroborative evidence, firstly so that this hypothesis may be accepted or rejected, and secondly in order to improve the predictive capacity of the model with regard to rates of Tunisian emigration to Libya. Three tests are

Figure 5.1   Model migration waves.

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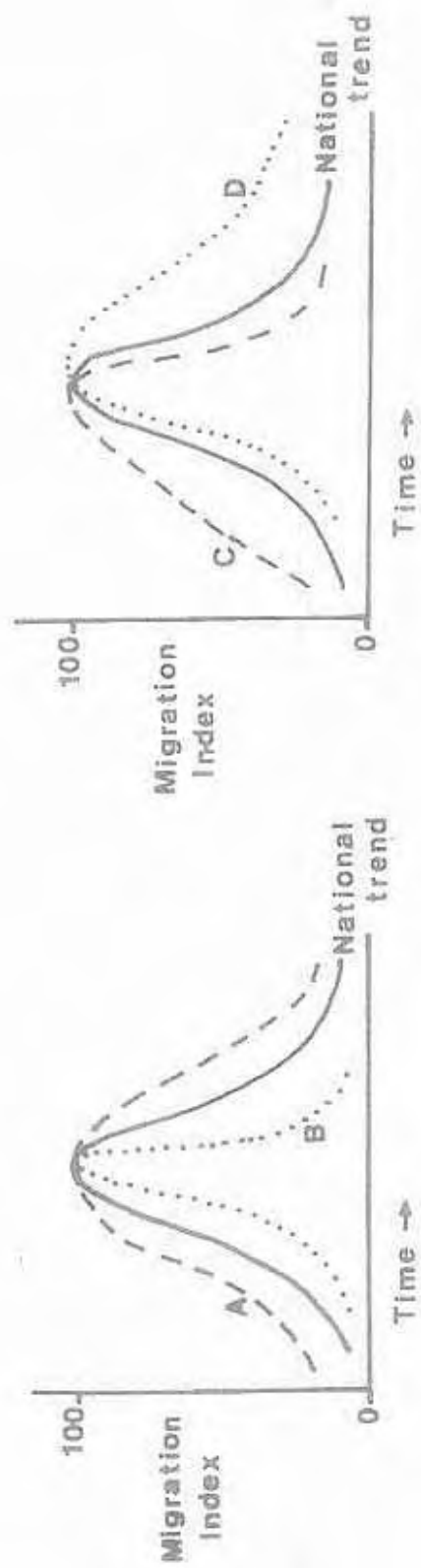
possible, which enable more detailed analysis and prediction of regional migration rates.

Firstly, the general hypothesis will be examined independently of the absolute migration rates observed. The synchronism of adoption curves of migration opportunities will be studied.

Secondly, taking 'urban' and 'rural' populations as surrogates for 'innovative' and 'conservative' populations, the hypothesis will be tested afresh at the more detailed scale of the Tunisian délégations.

Thirdly, the theory must be tested against the most recent patterns of Tunisian emigration (i.e. those which developed during 1977 following the re-opening of the Tunisian-Libyan frontier).

Leads and lags: a preliminary discussion

One method of verifying the existence of the lead and lag areas, implied by the above hypothesis, is to consider the relative rather than the absolute variations in the size of gouvernorat emigration flows. These standardized flows may be compared with the national trend. In migration quotient analysis (Figure 4.4), national trends were removed by dividing regional migration rates by national rates. Now the difference between regions is removed by assigning the value 100 to the emigration flow departing from each gouvernorat in the year of peak out-movement. Indices of migration for other years were then calculated as a percentage of emigration in the peak year. For all 13 Tunisian gouvernorats migration rates peaked in 1973. Table 5.5 presents the migration indices for the period 1970 to 1975. Four conditions may be identified in comparing trends of individual gouvernorats with that of the nation as a whole. These are represented diagramatically in Figure 5.1.

Conditions A and B represent, respectively, extreme stability and extreme peaking of migration rates. Bizerte and

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TABLE 5.5: MIGRATION INDICES FOR TUNISIAN EMIGRATION TO LIBYA

Gouvernorat	1970	1971	1972	1973	1974	1975	1976
National trend	5.5	28.5	55.9	100.0	43.4	25.3	4.3
Tunis	2.3	12.4	_51.8_	100.0	25.2	15.7	0.2
Bizerte	1.3	12.0	44.9	100.0	31.2	18.6	0.5
Béja	0.0	18.1	38.3	100.0	_46.5_	_39.8_	3.0
Jendouba	0.4	15.4	20.7	100.0	_70.9_	_43.7_	_9.2_
Kef	0.0	_31.9_	20.2	100.0	_46.9_	_41.8_	_15.6_
Kasserine	0.0	_47.0_	44.8	100.0	_45.4_	_81.7_	3.4
Gafsa	0.0	_60.9_	_75.0_	100.0	41.9	_130.4_	_5.8_
Medenine	_8.2_	17.1	34.3	100.0	42.1	12.0	2.8
Gabès	_16.4_	_34.4_	_61.5_	100.0	_44.2_	_42.9_	_8.3_
Sfax	_10.4_	_30.5_	42.2	100.0	27.8	18.2	3.7
Kairouan	1.3	7.0	_64.9_	100.0	_59.8_	_38.7_	2.0
Sousse	2.4	18.9	_94.1_	100.0	17.4	22.6	2.3
Nabeul	_14.5_	_39.8_	_65.3_	100.0	28.4	17.1	2.0

Indices above the national trend are underlined.
Source: Authors' calculations.

Medenine are examples of the latter situation, indicating a tendency towards extremely high migration in the peak year relative to all other years. Gabès exemplifies condition A, in which migration is only a little higher in the peak year than in other years. This reflects a higher level of continuity in the volume of migration.

Conditions C and D are of greater interest, since they suggest that some gouvernorats consistently lead or lag in relation to the mean trend. In case C, a gouvernorat reacts more slowly than the nation as a whole before and after the peak adoption period. It might therefore be considered to be a lag area. Case D represents an innovative population which is quicker to accept migration opportunities before the peak and is quicker to abandon them thereafter. Such an area would be termed a 'lead' area. Gouvernorats with below-average indices in two of the three years before 1973 and above-average indices in both of the following years were defined as lag areas, while those displaying above-average adoption in one of the two years prior to the peak and below-average behaviour in the two years after were defined as lead communities. By these definitions, Tunis, Nabeul, Sousse and Sfax are 'lead' areas and Béja, Jendouba, Kef, Kasserine and Kairouan 'lag' districts. Only Gafsa gouvernorat is anomalous in failing to belong to any of the four classes A, B, C or D. Differential levels of clandestine migration may be the causal factor resulting in this deviant behaviour.

The 'lead-lag' definitions given above split the country most markedly between the innovative urbanized coastal zone and the conservative and almost exclusively rural interior of Tunisia (Table 5.6).

The existence of these 'lead-lag' relationships appears to substantiate partially the hypothesis that the evolution of migration patterns is intimately linked with the societal values prevailing in zones of emigration. If 'lead-lag' relationships could be proved to be consistent through time, then this form of analysis would prove extremely valuable for planning purposes.

TABLE 5.6: LEVELS OF URBANIZATION (1975) IN LEAD AND LAG AREAS

% of population living in urban areas, 1975

Lead areas		Lag areas		Undefined	
Tunis	81	Béja	27	Bizerte	58
Sousse	62	Kef	25	Gabès	36
Sfax	58	Kairouan	23	Gafsa	34
Naboul	49	Kasserine	22	Medenine	23
		Jendouba	16		
Average	74	Average	22		

Source: Authors' calculations

TABLE 5.7: MIGRATION FLOWS AND LEVEL OF URBANIZATION, 1971

Size of Migration Flows

		500+	100-499	50-99	25-49	5-24	0-4	Total
Percentage of	80-100	1	1	2	1	4	0	9
Population living in urban	60-79	0	0	1	2	3	2	8
areas	40-59	0	1	2	1	4	2	10
	20-39	0	2	1	3	9	6	21
	0-19	0	0	2	2	13	14	31
	Total	1	4	8	9	33	24	79

This table compiled using statistics from the Direction l'Amenagement du Territoire (1973), op.cit.,and from Simon, G. (1974), op.cit. No data was presented by Simon for some delegations. These have been omitted from the analysis.

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Migration analysis at the levels of the délégations

Unfortunately, it is not possible to study emigration from each délégation in each year. Statistics are only available for 1971, 1976 and 1977. Statistics for 1971 were derived from a detailed map constructed by Simon (11). The nature of this data source precluded the possibility of rigorous statistical analysis for emigration in 1971. For this year a simple classification was devised relating the size of migration flows to the level of urbanization (Table 5.7). It should be recalled that in 1971 the main surge of migration to Libya had still to occur, and that in the same year the migration field was still relatively concentrated in southern Tunisia (Table 4.4b). Compared with 1972 (Figure 4.4), the urbanized north-east was still not fully involved and had migration rates that were much lower than the southern gouvernorats. Table 5.7 confirms that there is a tendency for délégations with low levels of urbanization to send few migrants, but the inverse relationship is less clear. The larger migration flows are often related to higher levels of urbanization but, as the variance of the results about this trend increases, no simple linear relationship can be verified. Some of the deviation from the general trend is accounted for by three of the mining délégations of Gafsa gouvernorat which, despite urbanization rates of over 80 per cent, sent only very small migration flows to Libya (5-24 persons category). Conversely, high migration rates were experienced in délégations such as Ben Gardane and Medenine because of their proximity to the Libyan frontier, despite low levels of urbanization.

It is unfortunate that data are not available at the délégation level for 1972 and 1975, the years which have been mapped in Figure 4.4 and which typify urban and rural migration respectively. It is impossible to establish whether in 1975 migrants were truly rural in origin, or whether they were merely coming from the urban délégations of the rural gouvernorats. The distinction is an important one.

In 1977 national migration rates to Libya were much higher than in 1971 (Table 5.8), and the migration field was more

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Table 5.8: MIGRATION FLOWS AND LEVEL OF URBANIZATION, 1977

		Size of Migration Flows						
		500+	100-499	50-99	25-49	5-24	0-4	Total
Percentage of	80-100	1	3	2	3	3	0	12
Population living in	60-79	0	4	2	2	2	1	11
urban areas	40-59	0	2	2	1	8	3	16
	20-39	0	8	2	7	7	6	30
	0-19	0	2	12	8	15	17	54
	Total	1	19	20	21	35	27	123

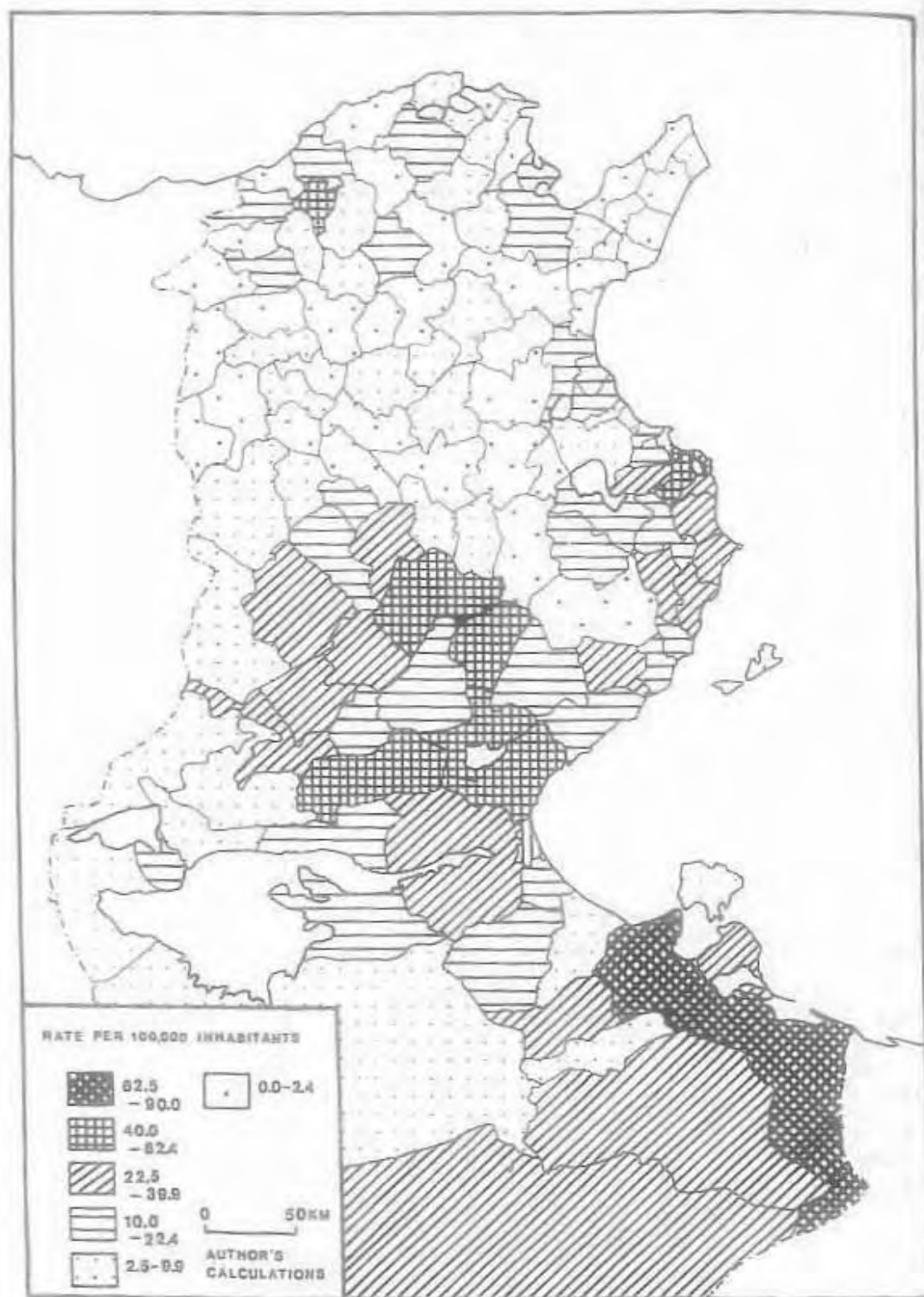Calculated from authors' survey of OTTEEFP records.

Table 5.9: MULTIPLE REGRESSION OF THE RATE OF EMIGRATION (A) TO LIBYA ON DISTANCE, POPULATION GROWTH AND NON-AGRICULTURAL EMPLOYMENT

Variable	Multiple R	R Square	R Square Change	Simple R
Distance[B]	0.589	0.347	0.347	-0.589
Population Growth[C]	0.602	0.363	0.016	0.250
Non-Agricultural Employment[D]	0.612	0.374	0.011	-0.011

Notes:

A) A square root transformation was found to yield the highest level of correlation.

B) A square root transformation was employed.

C) Average annual rate of population growth, 1965-1975.

D) Percentage of all male employment in non-agricultural activities in 1977.

Figure 5.2   Rates of emigration to Libya, 1977.

RATE PER 100,000 INHABITANTS

62.5 – 90.0
0.0 – 2.4
40.0 – 62.4
22.5 – 39.9
10.0 – 22.4
2.5 – 9.9

0   50KM

AUTHOR'S CALCULATIONS

diffuse. In 1971, 38 per cent of délégations sent less than five migrants to Libya but by 1977 the percentage had dropped to only 22 per cent. In the same year, 32 per cent of délégations sent over 50 persons. For the sake of comparison with Table 5.7, migration flows and urbanization rates were also cross-classified for 1977 (Table 5.8).

In 1977 there is once more a tendency for small migrant flows to be associated with the délégations of little or no urban settlement. Larger flows came not only from the more urbanized délégations, but also from those délégations which in absolute terms had large numbers of town dwellers living in one or two large settlements. While predominantly rural areas sent only small flows, highly-urbanized areas were more variable in their behaviour. Once more the mining settlements of Gafsa sent very few migrants to Libya.

It should be noted that the marginal totals of Table 5.8, which represent the frequency distribution of migration flows and of levels of urbanization, are once more positively skewed, but the skew is less strong than in Table 5.7.

Transformations of these distributions approach normality and permit application of parametric statistical tests in analysing these data sets.

Libyan migration in the first ten months of 1977

The ordered distribution of délégations with high migration rates (Figure 5.2) suggests that distance effects were important in 1977. Dichotomizing the country for convenience into northern and southern areas along a line from Monastir to Kasserine establishes a northern region in which only one délégation experienced a migration rate of over 225 persons (calculated for the first ten months of 1977). To the north there are also a large number of délégations with little or no migration; 32 délégations fall into the lowest classes (rates less than 24 per million) compared with only three such délégations south of the line. In the north, the majority of délégations with higher

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Figure 5.3   Residuals about regression of migration rate
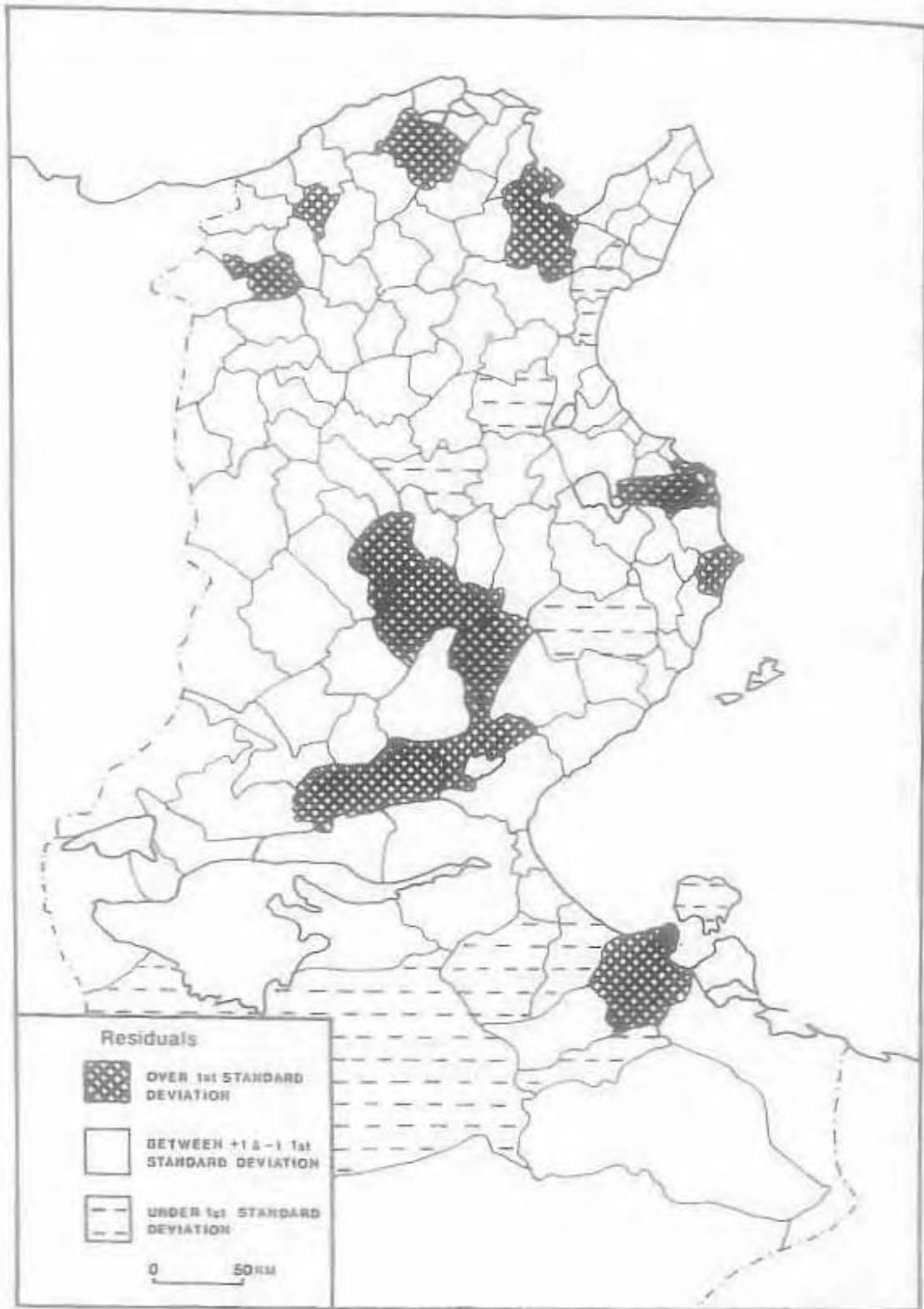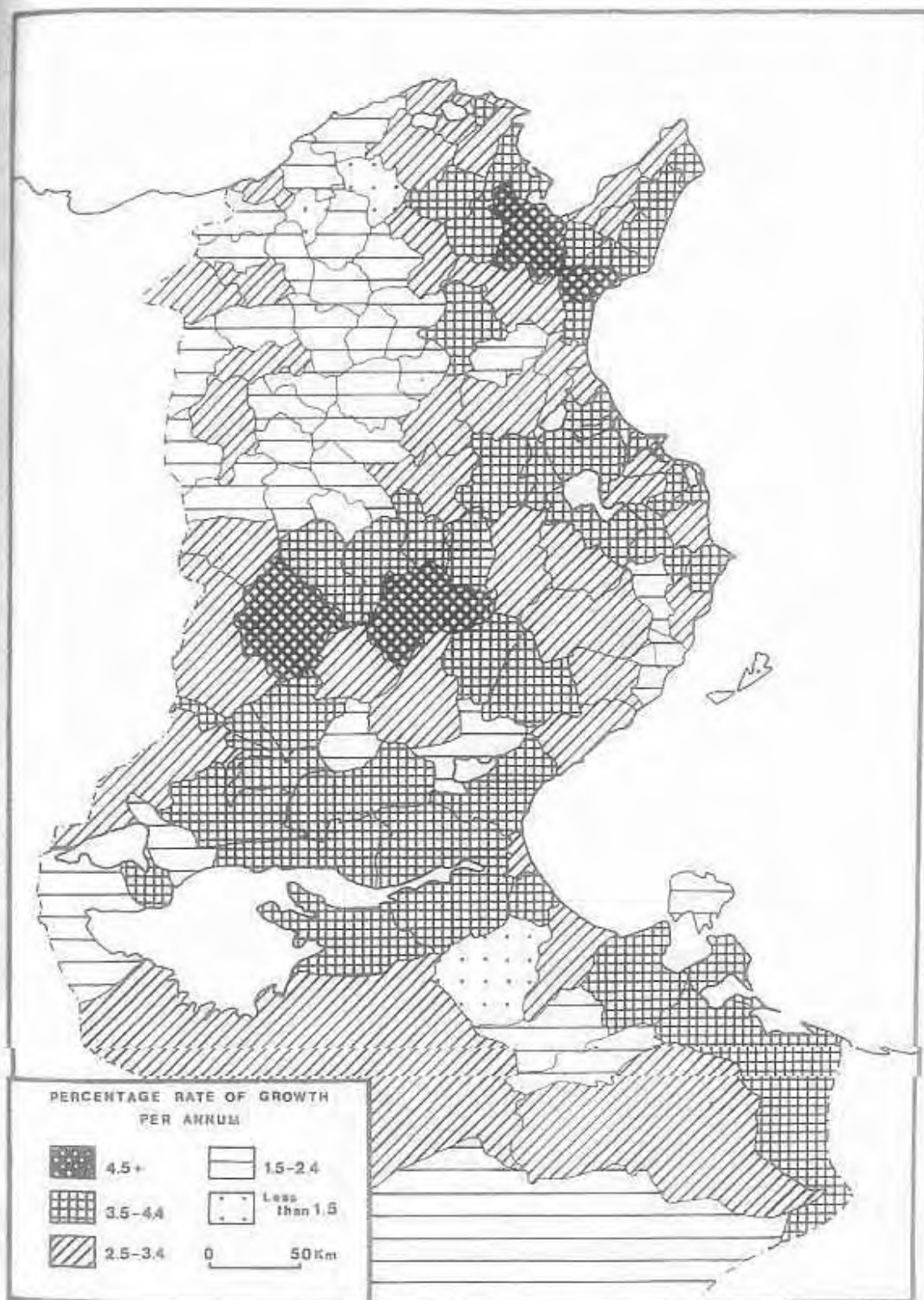on distance from Tripoli.

Residuals

OVER 1st STANDARD
DEVIATION

BETWEEN +1 & -1 1st
STANDARD DEVIATION

UNDER 1st STANDARD
DEVIATION

0   50 KM

Figure 5.4   Annual rate of population growth, 1965–75.

PERCENTAGE RATE OF GROWTH
PER ANNUM

4.5+		1.5–2.4	
3.5–4.4		Less than 1.5	
2.5–3.4	0	50 Km	

migration rates (in the 25-224 range) cluster around urban areas such as Bizerte, Tunis, Sousse and Menzel Bourgiba, or in délégations which contain administrative capitals, such as Jendouba, Le Kef and Siliana. To generalize, it can be said that in the north migration occurs predominantly from urban areas. Even in gouvernorats where the population is largely rural, it is the urban or administrative centres which are the chief migrant sources. Recalling that 1977 marked the initiation of a totally new migration wave, it can be said that, once more, urban populations appear to be more innovative than rural populations.

In the south, interpretation is more complex since distance effects are stronger. Furthermore, the gradient seems to decline from the coast to the interior, and within this pattern there are other major regional deviations such as the exceptionally high migration rates from Sidi Bou Zid and Regueb. The efficacy of predicting migration from levels of urbanization in this area is extremely low. Regression analysis was once more employed to identify the importance of various predictor variables for migration.

As at the gouvernorat level, so also at the level of the 123 délégations, the migration rate was regressed against road distance to Tripoli. A square root transformation of migration rates was calculated to normalize the frequency distribution. The square root was also taken of all distance measurements. A correlation coefficient of -0.59 and a coefficient of determination of 0.35 were achieved, confirming the findings of the correlation analysis at the gouvernorat level.

From the regression of migration rates on road distance through Tripoli, it was possible to examine the pattern of residuals emerging around the stated relationship. Residuals with standard deviation scores greater than 1.0 on either side of the predicted relationship were plotted on a map (Figure 5.3). Examination of the pattern of residuals reveals that high deviations from the predicted relationship seem to fall in spatial clusters, suggesting that some common regional variations about the general trend may exist. It was discovered that four

of the regions of high positive residuals (Tunis, Mahdia-Moknine, Sidi Bou Zid-Regueb and Medenine) could be related to areas of rapid population growth (over 2.5 per cent per annum between 1966 and 1975). By contrast, three of the high negative residual zones (Matmata-Ghoumrassem, Jerba and Mateur) lay in areas with low rates of population growth (less than 2.0 per cent per annum). Comparing Figures 5.2 and 5.4, it can be seen that the correlation extends to other délégations. Statistical analysis indicated that the hypothesized relationship between population pressure (as measured by the rate of population growth) and the level of emigration was justified. Although a correlation coefficient of only +0.26 was achieved, the relationship was nevertheless significant in statistical terms at the 0.01 significance level.

Several other variables were introduced in an attempt to increase the level of explanation, but none led to any major change in the value of the coefficient of determination. Unfortunately, data constraints made it impossible to test whether a relationship existed at the délégation level between emigration rates, and levels of employment expansion in non-agricultural activities. This latter measure might have proved a more appropriate predictor of migration.

The multiple regression of Table 5.9 managed to 'explain' only 37.4 per cent of the statistical variation in emigration rates (r = 0.612). While it is clear that only a partial understanding of the spatial variations in emigration has been achieved by the analysis, the result remains highly significant in statistical terms (significant at the 0.001 level). It should also be recalled that variations in migration due to regional differences in population density have already been standardized, and that it is this variable which in many regression analyses is shown to account for a high percentage of the spatial variation in the volume of migration.

Summary of the Analysis of the Evolution of Tunisian Emigration

Different tools and data sources have been investigated to

describe and explain the nature of Tunisian emigration to Libya over the last decade. Rather than denying the importance of information evaluation procedures in the decision to migrate, analysis of the changing patterns of migration emphasizes the need for a dynamic explanatory model and seems to demonstrate the inadequacy of invoking any single monolithic variable as the explanation of all patterns in space and time. It is concluded that factors influencing information evaluation rather than information awareness are critical in moulding migration rates during the initial diffusion of opportunities to move to a new destination. The subsequent development of patterns of migration is conditioned by alternative opportunities available to the population of potential migrants and by the wide range of physical, economic and social constraints which impinge on migration behaviour.

NOTES

1) For example: THOMAS, 1968.
2) HAGERSTRAND, 1952; 1967.
3) SIGNOLES, 1973; MIOSSEC and SIGNOLES, 1976.
4) DIRECTION DE L'AMENAGEMENT DU TERRITOIRE, 1973
5) SEKLANI, 1976
6) CLARKE, 1958
7) Cited by CLARKE, op. cit., 90.
8) ibid.
9) M'TAR, 1978.
10) HAY, 1974.
11) SIMON, 1974.

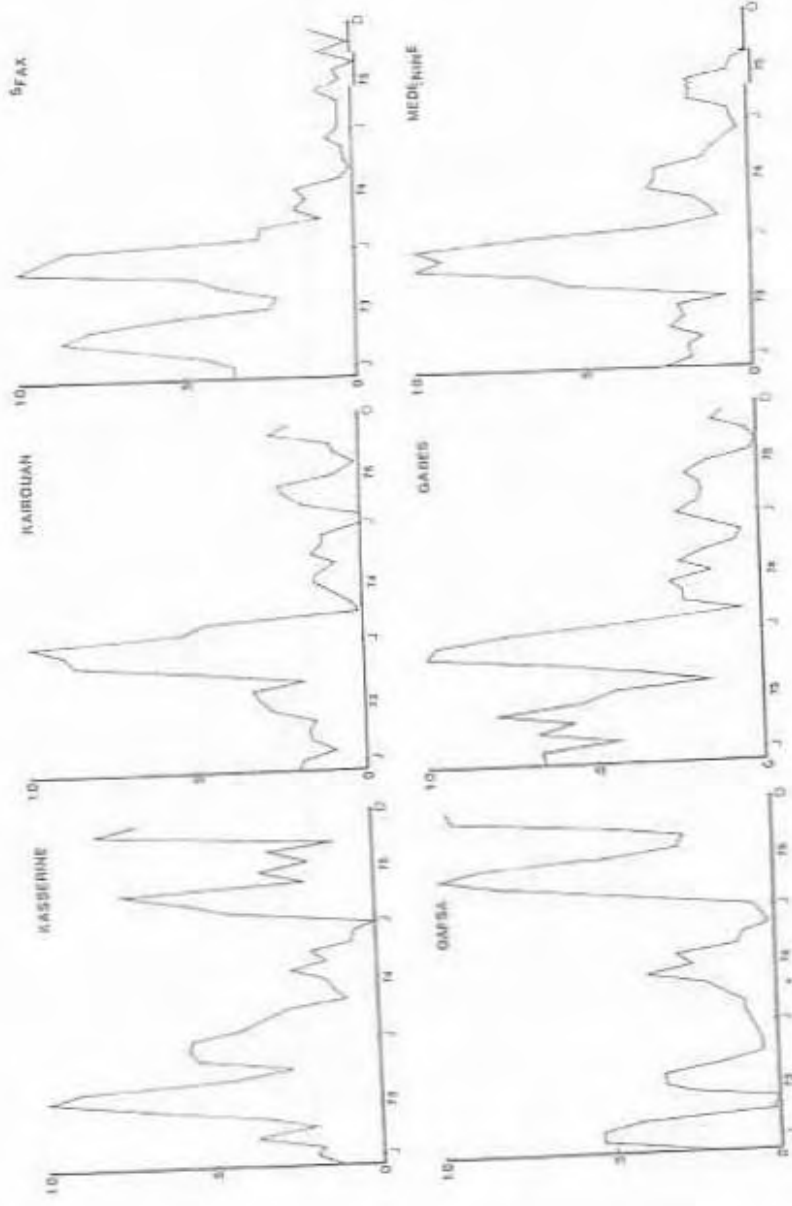Figure 6.1   Tunisian emigration to Libya, 1972-77.
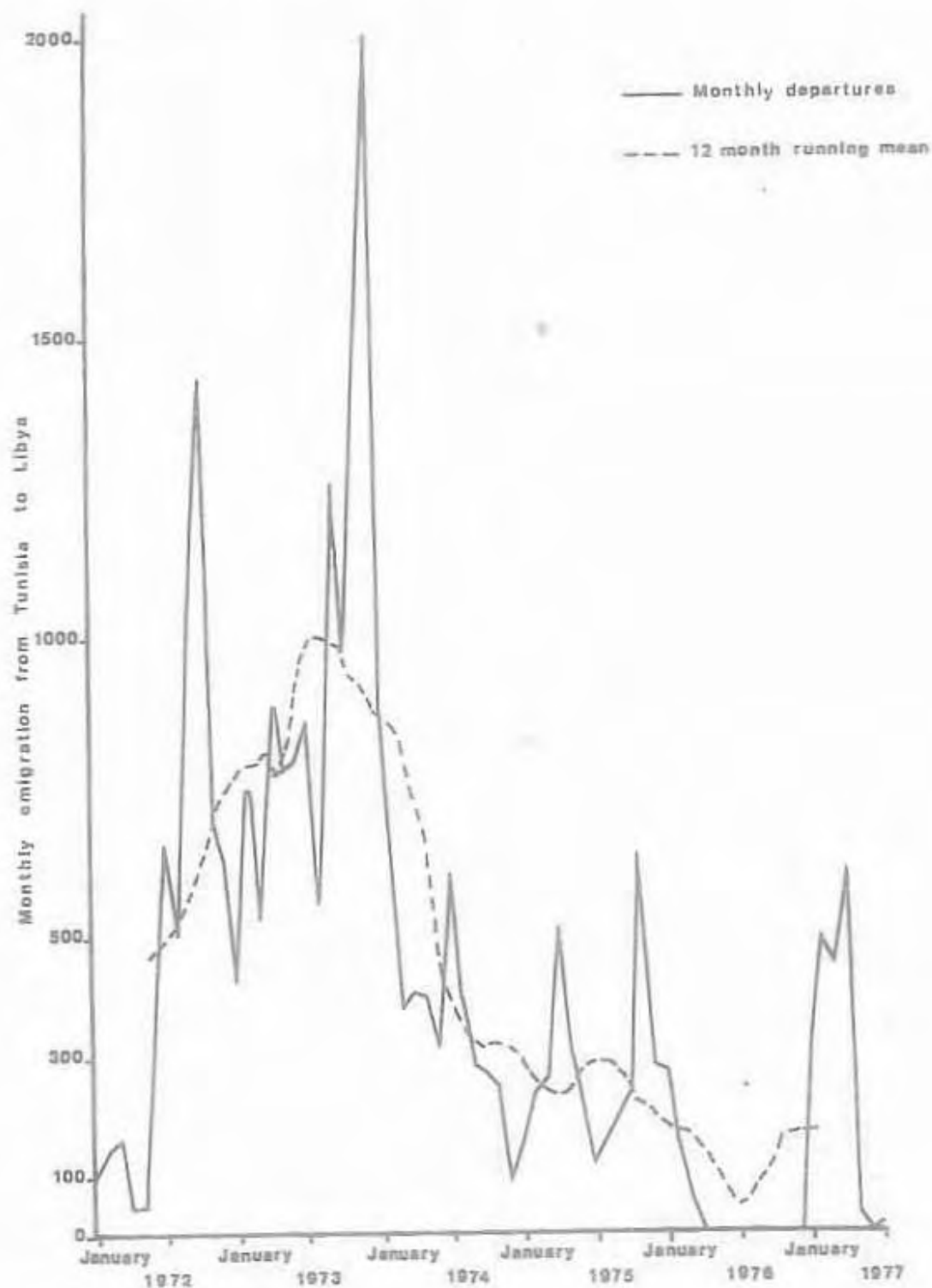
Figure 6.2   Migration indices for Tunisian gouvernorats, 1973–75.

SFAX

KAIROUAN

KASSERINE

MEDENINE

GABES

GAFSA
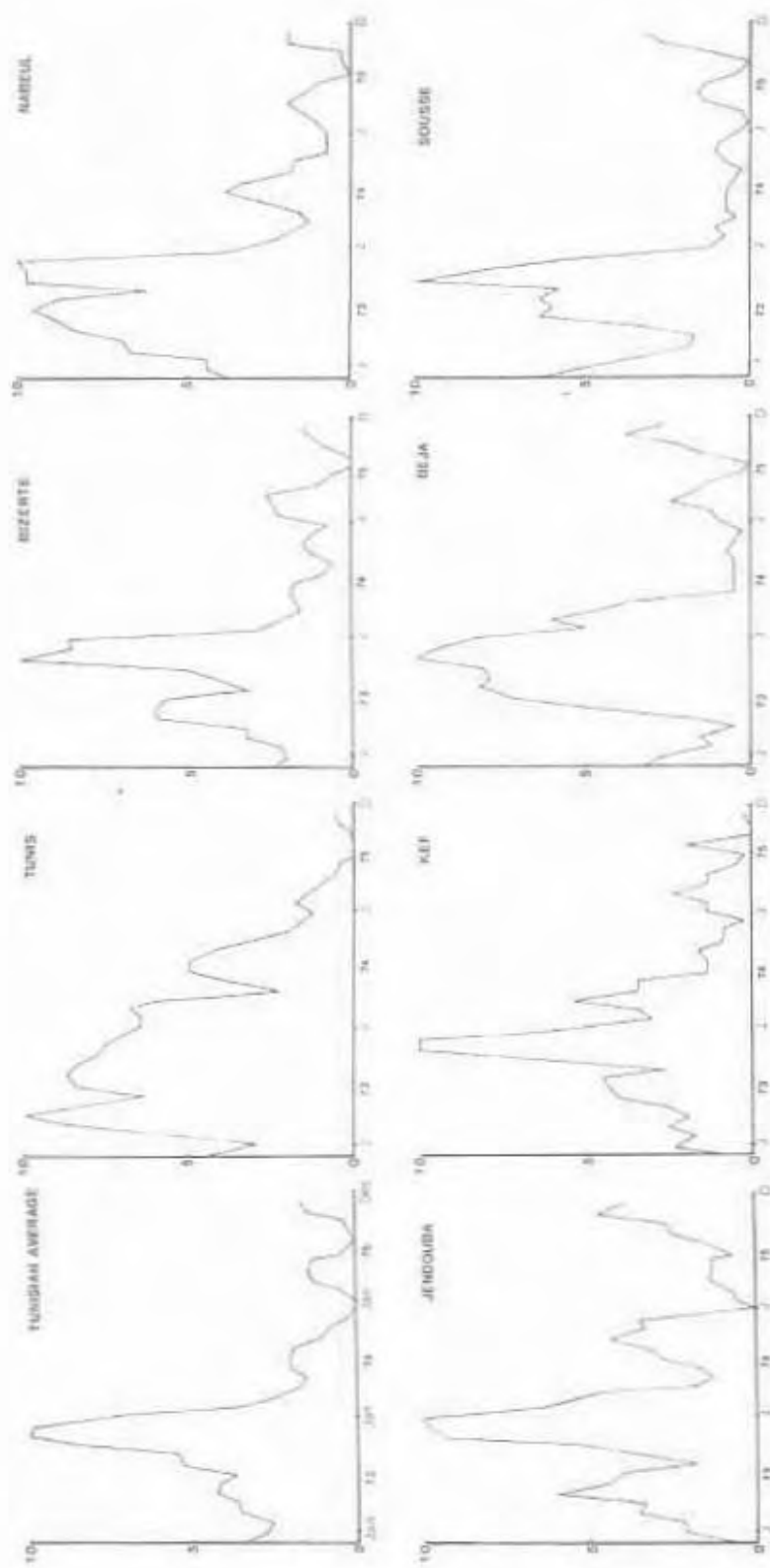
6 : AN INVESTIGATION OF LEADS AND LAGS IN INTERNATIONAL MIGRATION

The concept of leads and lags in migration has already been introduced in chapter 5. Techniques for predicting migration and explaining the interdependence of migration in space and time will now be explored in greater depth.

Variations in the number of migrants departing from Tunisia to Libya between January 1972 and July 1977 are shown in Figure 6.1. Three elements may be identified from this graph. Firstly there appears to be a long-term decline in the number of migrants between 1972 and 1977. This trend is represented most clearly by the curve for a 12-month unweighted running mean. The 12-month interval was chosen to eliminate from Figure 6.1 any seasonal fluctuations in emigration, which form the second element of the sequence. In most years, migration peaks twice: first in the period April to June and again during the months October to December. Troughs in emigration occur during the hot summer months and also during the first quarter of the year. Thirdly, there are apparently random fluctuations in migration. For example, between September and November 1973 the seasonal upswing in migration was interrupted by a temporary and unpredictable drop in numbers during the month of October.

It was decided that seasonal and longer-term trends might be more readily identified if short-term fluctuations in migration were smoothed out. Consequently, a three-month unweighted running mean was calculated. The migration series was further transformed to give migration indices in order to permit comparison between gouvernorats on a standardized scale (as in Table 5.5). The peak departure month was set to the value 1.0 and the month of lowest emigration to 0.0, and indices for all other months calculated relative to their position between the minimum and maximum months of emigration. Figure 6.2 offers a quick visual impression of the amplitude, phase and frequency of emigration waves for the 13 Tunisian gouvernorats between 1973 and 1975. The majority of gouvernorats had one major peak (index of 0.8 or over) in 1973 and a number of smaller peaks in 1974 and 1975. Four gouvernorats (Tunis, Nabeul, Sfax and Gabès), all

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defined as "lead" areas in Table 5.6, had two major peaks in 1973, while Kasserine and Gafsa were atypical in displaying major peaks in 1975, a year in which emigration was minimal from other gouvernorats.

In order to compare more precisely the rise and fall of migration, a concise description of a "peak month" was adopted. A "peak month" in the migration series was defined as "any month in which the level of migration was greater than in the two preceding and two following months". By this definition most gouvernorats experienced either four or five peaks. The timing of these peaks is indicated in Table 6.1. Comparison of the peaks permits identification of specific emigration waves. These can be seen to have affected different gouvernorats at slightly different times. Kasserine and Gafsa proved extremely difficult to classify, since the timing of the peaks in their migration series did not readily relate to the national sequence of peaks and troughs. In a number of instances it was difficult to decide whether to allocate a gouvernorat peak to a national wave which had already passed or to one which was still approaching. Distinction between the third and fourth waves was particularly difficult.

The peaks of emigration from Tunis appear to be cyclical in occurrence. The time lapses between the five peaks are four months, seven months, four months and seven months consecutively. In other gouvernorats lapses are less regular. For example, in Medenine the peaks occur after seven, seven and nine months successively; in Béja lapses of three, eleven and five months occur between peaks.

Emigration from Sfax and Medenine peaked initially in the same month as Tunis (April 1973), but thereafter they appear to fall progressively behind. After two years they both lag behind Tunis by approximately three months. One might have expected the lags of other gouvernorats behind Tunis to be large initially and subsequently to decrease. The inverse trend observed above is unexpected and brings into question the efficacy of the classification. There is a need to compare all stages in wave

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TABLE 5.1: PEAKS IN TUNISIAN EMIGRATION, 1973–1976

Gouvernorat	Date of Migration Peaks	1st	2nd	2b/3a?	3rd	4th	5h
	Gouvernorat defined as lead zones in Table 5.6						
Tunis	Yes	Apr '73	Aug '73	Mar '74	Jul '74	–	Feb
Medenine	–	Apr '73	Oct '73	–	Jul '74	–	May
Sfax	Yes	Apr '73	Nov '73	–	–	Dec '74	May
Gabès	Yes	May '73	Nov '73	–	Jun '74	Jan '75	May
Bizerte	–	May '73	Nov '73	–	Jun '74	Nov '74	Apr
Sousse	Yes	Jul '73	Oct '73	–	Jun '74	Nov '74	May
Nabeul	Yes	Jul '73	Dec '73	–	Jul '74	–	Apr
Jendouba	No	May '73	Jan '74	–	Sep '74	–	Mar
Béja	No	Aug '73	Nov '73	–	?Oct '74	–	Mar
Kef	No	–	Nov '73	Apr '74	Sep '74	–	Mar
Kairouan	No	–	Jan '74	–	Jul '74	Oct '74	Ma
Kasserine[1]	No	Jul '73	Dec '73	–	Aug '74	–	Apr
Gafsa[2]	–	Jul '73	–	Jun '74	–	–	Apr
National Total	–	May '73	Nov '73	–	Jun/ Jul '74	–	Apr

[1] Kasserine also experienced a peak in March '73.
[2] Gafsa also experienced a peak in February '73.

Source: derived from Figure 5.2

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development and not merely the peaks and troughs.

From the subjective classification of Table 6.1, it appears that Tunis leads other regions of Tunisia in rising to the peaks of successive migration waves. The next zones to adopt migration opportunities after Tunis are those lying in the south and south-east. Somewhat slower are the gouvernorats of the north-west and north-east, which lag two to three months behind the rest of the country in their migration behaviour.

In order to be able to make more definitive statements concerning the relationships between migration patterns in one gouvernorat and those in another, it was decided to calculate the serial correlation (autocorrelation) functions of each migration sequence, and then to seek for cross-correlations between the migration series of different gouvernorats.

Autocorrelation of Time Series

The migration indices discussed above were unsuitable as a data-base for testing for autocorrelation because of temporal interdependence introduced by the calculation of three-month running means. The unaltered monthly migration statistics as presented by the OTTEEFP were therefore taken as the basis for studying autocorrelation effects. Before the data could usefully be tested, they had to be 'detrended' by least squares regression to remove the general trend towards decline in migration numbers between 1973 and 1976. Where a linear relationship of statistical significance was detected, the trend was removed and subsequent analysis was applied to the distribution of residual terms about the general trend.

Autocorrelation compares a data-sequence with itself at successive space or time lags. It helps identify points of maximum correspondence between the segments of the sequence. The efficiency of different statistics measuring spatial auto-correlation has been analysed by Cliff and Ord (1). The measure of autocorrelation applied to the Tunisian data-set is one of a number of statistics suitable for describing interdependency in

time series. It is defined and described by Davis (2) as:

$$r_L = \frac{\left[\, (n - L)\cdot(\Sigma Y_i Y_{i+L}) - \Sigma Y_i \Sigma Y_{i+L} \,\right] \,/\, (n - L)(n - L - 1)}{\left[\, n_i \sum_{i=1}^{n} Y_i^2 - (_i \sum_{i=1}^{n} Y_i)^2 \,\right] \,/\, n(n - 1)}$$

where r_L is the autocorrelation coefficient for a series of n elements (Y_i) at lag L. As with the ordinary correlation coefficient, the covariance of paired variables is divided by the total variance of the data series. Since the correlation of lagged observations rather than independent variables is being measured it is called an autocorrelation coefficient. The coefficient was calculated using Tunisian migration data for the 40 months between January 1973 (labelled month one) and March 1976 (month 40). The changing values of r_L were plotted for increasing lag values, L. A number of analysts suggest that no great significance should be attached to values of r_L calculated for lags greater than n/4. (3) The n/4 recommendation has been waived however by Haggett, Cliff and Frey (4). In their study of the interdependence in time of the occurrence of measles epidemics they make statistical inferences from a minimum sample size of ten paired observations.

Autocorrelation coefficients for the detrended Tunisian emigration statistics were calculated for each of the Tunisian gouvernorats for lags between 0 and 33 months and the results plotted in the form of correlograms. A correlogram indicates the distribution of r_L values against lag values. In the analysis which follows, attention will be focussed on the portion of the correlograms plotting autocorrelation values for lags of between zero and ten months (i.e. that portion where lags are less than n/4). Figure 6.3a shows the distribution of r_L values for the summation of all Tunisian emigration to Libya. It can be seen that, for short lags of between one and three months, positive though rapidly declining autocorrelation coefficients are achieved, suggesting that migration levels are more similar in successive months and over short time lags than over longer time lags. Between four and eight months coefficients are low, revealing no obvious temporal interdependence, and thereafter

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Figure 6.3   Correlogram:

a Tunisian emigration to Libya.
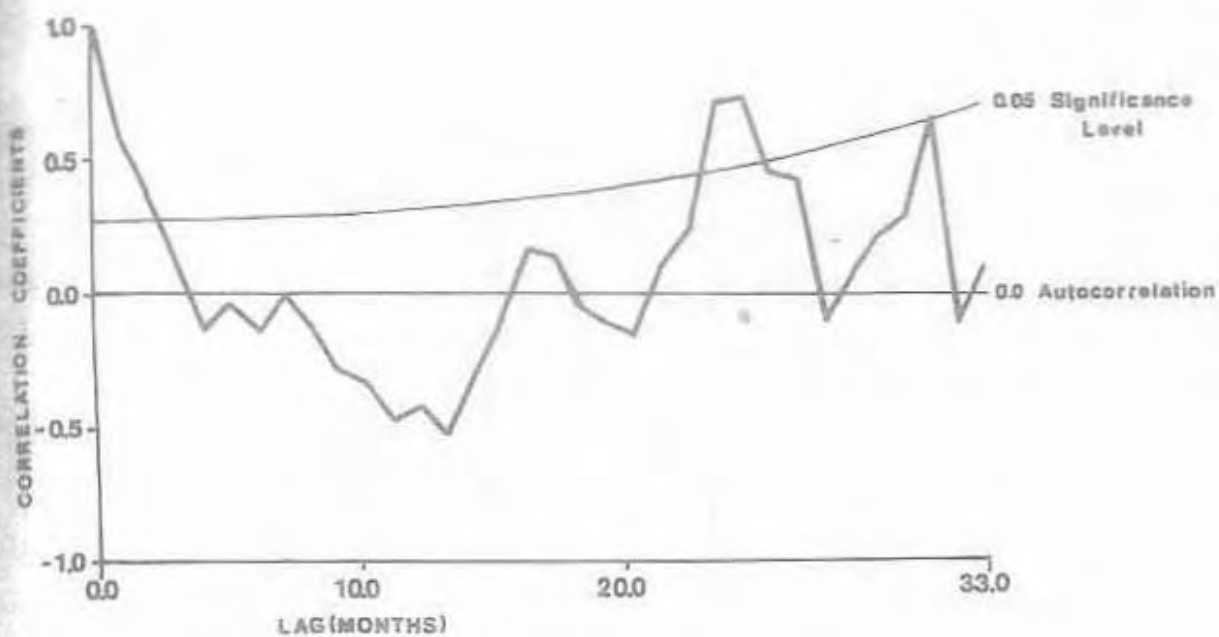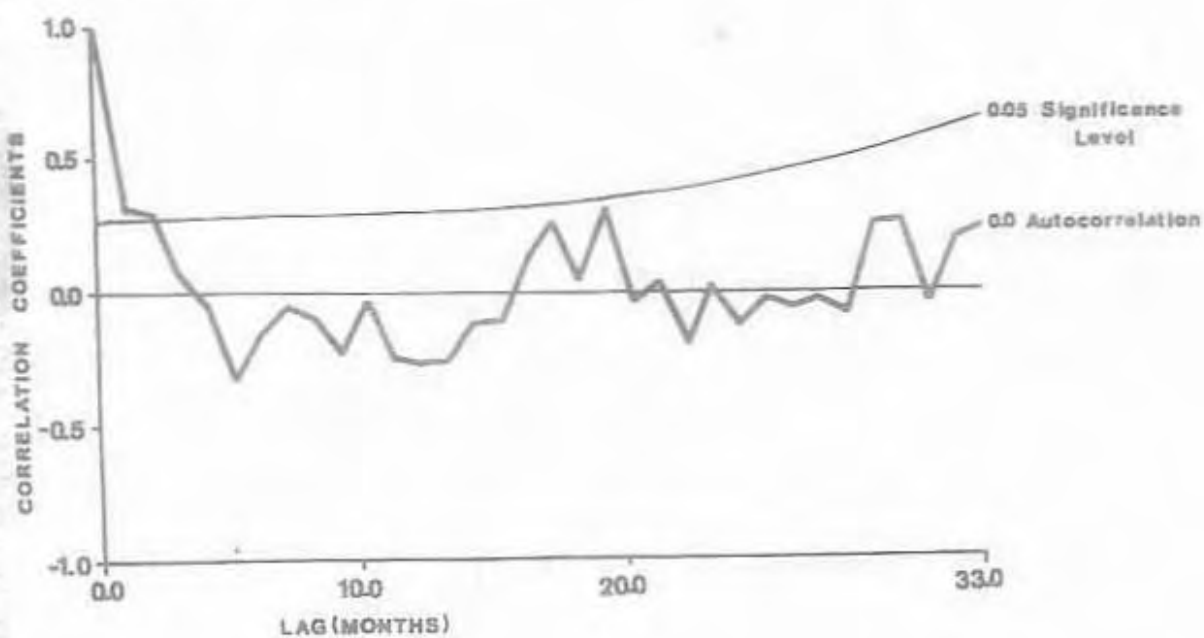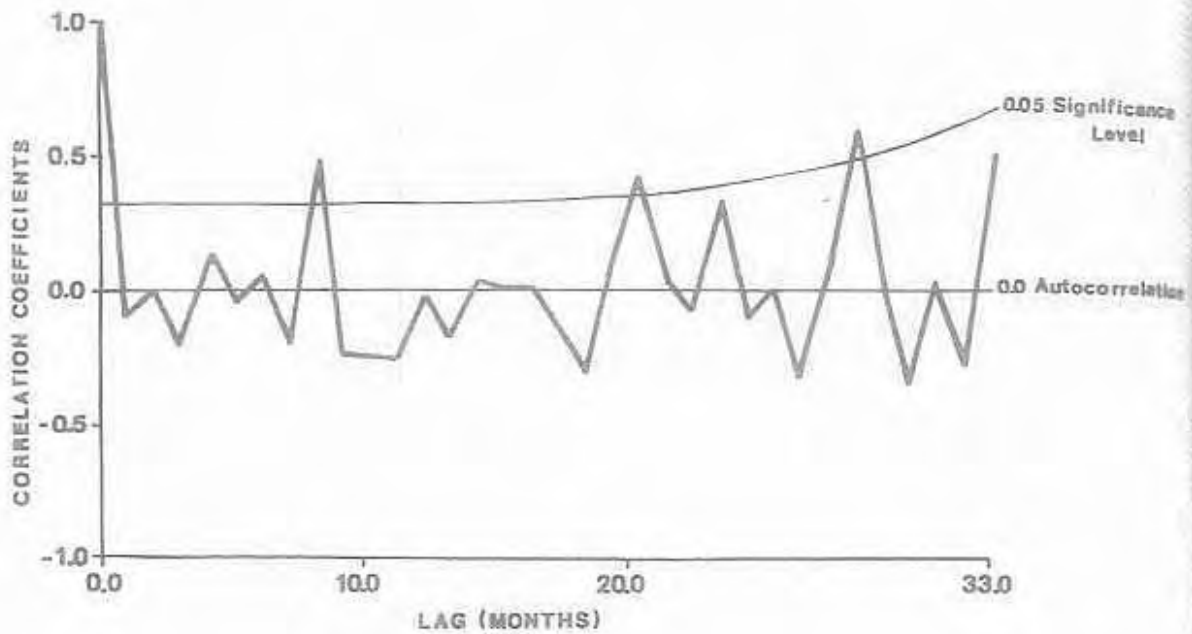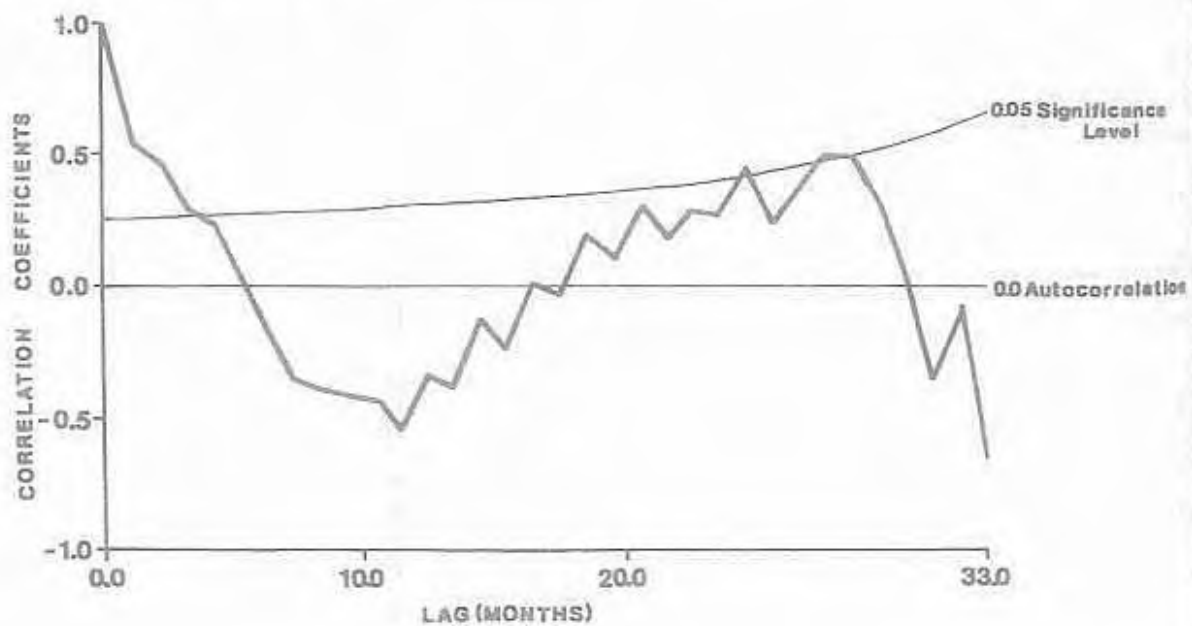

b Emigration to Medenine.

Figure 6.4   Correlogram:

a Emigration from Kasserine.

b Emigration from Beja.

coefficients suggest rising negative correlations up to a lag of 13 months. Applying Davis' recommended test of significance at the 0.05 probability level indicates that only three of the first ten values vary significantly from zero. (5)   The autocorrelation function suggests that in the short term an autoregressive structure may exist but that successive migration waves at lags of six to nine months are insufficiently regular to generate significant positive autocorrelation coefficients.

Interpretation of the correlograms for each individual gouvernorat was based on Chatfield's description (6) of the properties of autocorrelation functions. The majority of Tunisian correlograms displayed no significant positive autocorrelation (1 < L < 11), but rather they tended towards weak negative autocorrelation at lags greater than three months. Davis (7) suggests that autocorrelation coefficients seldom are significant in a statistical sense, even where true cyclicity exists in data series, in the earth or social sciences. Usually there is at least one segment of a sequence which is stretched relative to another.   This appeared to be the case with the Tunisian migration waves. It was seldom possible to move all equivalent parts of a series into correspondence at the same lag. For example, there were four distinct peaks in emigration from Medenine at months six, ten, 20 and 29 of the series, but since the peaks were irregular in occurrence, variable in amplitude and short in duration, they did not generate any significant autocorrelation coefficients as demonstrated by the correlogram of Figure 6.3b.   An exceptional case was that of Kasserine (Figure 6.4a) where a lag of eight months displaced troughs and peaks in the series to corresponding troughs and peaks at a later point in the sequence. At a lag of eight months the trough of month two was correlated with that of month ten, the peak of month eight with the minor peak of month sixteen, the trough at month ten was paired with the trough at month eighteen, and so on. The most notable correspondence occurred between the two peaks of months 29 and 37 which became paired at an eight month lag. The resultant r_L value of +0.48 was significant at the 0.01 level.

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The Tunisian correlograms reveal that over the short term significant negative autocorrelation is more usual than positive autocorrelation. In Medenine significant negative autocorrelation occurs at a lag of five months, and in Béja lags of seven to eleven months all generate significant negative autocorrelation. Béja is an especially interesting case (Figure 6.4b), since the correlogram shows highly significant autocorrelation over short lags of one and two months, declining but still positive coefficients up to five months' lag and progressively higher negative autocorrelation coefficients between lags of six and eleven months. The correlogram suggests that regular cyclical variation in migration occurs and the form of the correlogram approximates to the model plot of autocorrelation coefficients generated by a sine function as described by Davis (8). With six of the first ten lag coefficients (both positive and negative) significant at the 0.05 level, the trend of the migration series certainly differs from a random pattern. Although little significance can be attached to the correlogram beyond lag ten, it should be noted that the autocorrelation coefficients do increase again to peak with positive values at lags of 24 and 27 months. Examination of the original migration series shows that migration waves do recur at approximately two-yearly intervals. The correlograms of other gouvernorats also suggested the presence of regular cyclical elements in their migration series, but these effects are insufficiently strong to be significant in a statistical sense. For example, Gabès displayed progressive decline to a high negative autocorrelation at a lag of five months, and then returned to a notable positive autocorrelation at a lag of six months. Likewise Sfax generated a positive coefficient at a lag of seven months which just failed to reach the 0.05 significance level. With Tunis, negative autocorrelation troughed at lags of ten, fifteen and 20 months.

The rate of decay of autocorrelation with increasing time lags varied considerably between gouvernorats. In most gouvernorats autocorrelation remained marginally positive for lags of three to four months, but the contiguous gouvernorats of Nabeul, Béja and Tunis showed more powerful interdependence of

data over short lags and displayed positive autocorrelation for lags of four, five and six months respectively. In these gouvernorats the magnitude of migration flows in one month was more likely to resemble that in the preceding and following months than was the case for the migration series of the other gouvernorats.

Kasserine exemplifies the case of an alternating autoregressive series. There is negative autocorrelation, even at a lag of one month, a zero coefficient at lag two, a negative coefficient at lag three, a positive coefficient at lag four, a negative coefficient at lag five, and so on up to lag ten. This alternating series underscores the aforementioned difference between Kasserine and the other gouvernorats. Rapid fluctuation in the migration series may result from unofficial aggregation of information for every second month by the original recording office. This is likely in the case of the gouvernorats of the high steppe which record only small numbers of departures by controlled migration. Data collection and publication for these gouvernorats may well give an inaccurate view of the true levels of emigration.

Disagreements between the Tunisian and Libyan governments led to a total disruption of migration flows in 1976. This prevented extension of the data series. In nearly every gouvernorat, high positive autocorrelation coefficients were achieved for lags of 22 to 27 months, but in the absence of a longer time series it is impossible to infer more than that there is some close similarity between fluctuations in the migration patterns in 1973 and those experienced two years later.

In summary, the tests for autocorrelation suggest that interdependence does exist in the migration series over short time lags. The extremely short time-span of peak migration flows interspersed by the longer periods of little or no migration reduce the likelihood of achieving significant positive autocorrelation coefficients over the longer term. This facet of the statistical series emphasizes the tendency for migration waves to develop and dissipate themselves with great rapidity.

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The apparent temporal irregularity of occurrence of migration waves increases the difficulty of making accurate predictions of their timing when only time series data is being taken into consideration.

Cross-correlation of Migration Series

Several econometricians, such as Malmquist (9), have recently succeeded in relating migration trends to time series data for a variety of other variables such as wage levels. It is logical to expect also some degree of interdependence between the migration trends of different regions. 'Lag' areas in a nation may follow a similar migration trend to 'lead' areas, but may simply be two or three months behind. Discovery of a cross-correlation between migration trends in 'lead' and 'lag' areas would provide an interesting tool for predicting migration patterns from those areas of Tunisia already established in Table 5.6 to be conservative in adopting migration opportunities.

Cross-correlation, between migration trends were sought for the period January 1973 until December 1974, by calculating the Pearson product moment correlation coefficients for paired series of observations of gouvernorat emigration rates. Lags of zero, one, two, three and four months were investigated.

The emigration rates for the two gouvernorats of Bizerte and Nabeul were calculated jointly. It was found that trends in migration in these gouvernorats of north-eastern Tunisia were closely associated with those in the capital city of Tunis. With no lag, a coefficient of determination of 0.600 ($r = 0.775$) was achieved. This highly significant association (significant at the 0.001 level) between emigration from Tunis and emigration from its neighbouring gouvernorats is not surprising in view of the very close economic and social links which exist between Tunis and its immediate hinterland. Interestingly, the unlagged correlation between emigration from Tunis and emigration from Sousse was low ($r = 0.232$) and statistically insignificant. Lagging Sousse by three months on Tunis yielded a higher correlation ($r = 0.589$), a value which just failed to be

significant at the 0.01 level. With sixteen degrees of freedom (d.f.) the critical value of r at the 0.01 significance level is 0.590.

An attempt was made to correlate the migration trends of the region identified in Table 5.6 by the 'lag' areas with the migration trends of other regions. Emigration rates were calculated for the 'lag' area defined by the gouvernorats of Jendouba, Béja, Kef, Kairouan and Kasserine. A statistically significant correlation at the 0.05 level was achieved between the emigration rates from this area when lagged by three months on emigration from Tunis. A higher correlation was achieved when emigration from these same gouvernorats of the interior and north-west were lagged by only two months on the emigration from Gabès and Medenine. This time a coefficient of determination of 0.399 was achieved (r = 0.632 d.f. = 18; significant at the 0.01 level). A slightly higher correlation was uncovered between the emigration rates of the two steppeland gouvernorats of Kairouan and Kasserine and the two southern gouvernorats of Gabès and Medenine. With a lag of two months, a coefficient of determination of 0.418 was achieved (r = 0.647; d.f. = 18; significant at the 0.01 level).

The analysis of leads and lags in migration trends which has been reported above indicates that a certain level of predictability exists within the emigration data set, because of the existence of spatial interdependence between the migration trends of different regions. Several statistically significant correlations have been discovered, which substantiate the hypotheses proposed earlier in the chapter concerning the evolution of migration patterns, and which in turn might justify further study in the form of regression analysis. It should be noted that the level of statistical 'explanation' achieved, as reflected in the coefficients of determination, has not been very high. Further research might hope to increase the predictive power of this kind of analysis by attempting more advanced forms of data manipulation (for example, assessment of alternative data transformations) prior to seeking to establish cross-correlations between the migration trends of different regions.

In concluding, it is worth making the observation that the spatial interdependence of Tunisian emigration data has proven in many instances to be stronger than the temporal interdependence of the data. It is difficult to determine definitively whether this observation is only a function of the specific statistical procedures which have been performed, or whether it offers substantive proof of the orderly character of migration in space.

Clearly there is need to refine and improve the predictive techniques discussed in this chapter. In particular the durability of the relationships which have been identified needs to be tested. That even low levels of predictability have been achieved from examination of Tunisian time and space migration series is surprising in view of the dearth of previous research in the field of migration prediction. Some analysts may shudder at the very thought of attempting to predict as complex a phenomenon as migration, but as Popper (10) has said:

"Bold ideas, unjustified anticipations and speculative
thoughts are our only means of interpreting nature _
Those among us who are unwilling to expose their ideas
to refutation do not take part in the scientific game."

Notes

1) CLIFF, and ORD, 1973, 131-153.
2) DAVIS, 1973, 232.
3) BOX, and JENKINS, 1970; CHATFIELD, 1975, 25-26.
   DAVIS, 1973, 236.
4) HAGGETT, CLIFF, and FREY, 1977, 368.
5) DAVIS, 1973, 236.
6) CHATFIELD, 1975, 26-30.
7) DAVIS, 1973, 239.
8) Ibid., 235.
9) MALMQUIST, 1978
10) POPPER, 1959, 280.

7 : THE SPATIO-TEMPORAL SELECTIVITY OF MIGRANT CHARACTERISTICS

This chapter examines the subtle interdependence which exists between different aspects of the migration process. Firstly, the relationships between internal and international migration will be explored. This will be followed by an assessment of the selectivity of the migration process and an evaluation of the extent to which Tunisian migration to Libya may be regarded as a substitute for migration to France from Tunisia. The chapter will conclude with a brief discussion of the changes in migration flows through time and the implications of these trends for migration policies.

International migration forms an integral component of the national migration system. Regions of exodus for internal and international migration frequently coincide (1). It is important to consider whether the two types of movement are complementary or competitive. Is international migration an alternative to internal movement, or does it involve a different migrant group motivated by different factors? Evidence concerning patterns of international migration and its relationship with internal migration is available, and is particularly instructive, for Morocco and Tunisia. It is suggested that any change in international migration flows may have significant repercussions on internal migration patterns and this is substantiated by evidence from Morocco and Tunisia.

In the case of Algeria it is not possible, given the data available, to assess the precise impact of changes in international migration on internal population movement. It is of interest, however, to highlight the close coincidence between regions of high net outmovement to other parts of Algeria recorded by the 1966 census and zones sustaining high levels of international emigration (Fig 4.1) (2). The highest rate of net out-migration was recorded in Tizi Ouzou wilaya, where the rate was 70.3 migrants per 1,000 inhabitants. Other wilayas with significantly high internal migration rates, such as Tlemcen and Sétif, also had high international migration rates. The correlation does not hold for all areas. For example, Medea and

Saida had high rates of internal migration but low rates of emigration. Internal in-migration of population focussed on Algiers and Oran, with particularly large streams linking Tizi Ouzou to Algiers and Tlemcen to Oran. Unfortunately, no details concerning step migration are available for Algeria so that it is impossible to ascertain whether internal migration is a first step in preparing migrants for departure to Europe. It is important to stress that, in the Algerian case, for most areas a direct association existed between the volume of internal and international migration.

The Moroccan case is rather different from that of Algeria. It is hypothesised that in Morocco the interrelationships between internal and international movement have been critical to the development of regional patterns of emigration. The studies of internal migration as recorded by the 1971 and 1960 censuses carried out by Escallier (3) and by Noin (4) respectively show that patterns of internal migration in northern Morocco differ dramatically from those of the south. Migration to Casablanca displays a distinct migration field extending to the south-west of Morocco encompassing Settat, Safi, and the Atlas mountains and the Souss area (5). Few migrants came from northern Morocco to the metropolis of Casablanca. Migrants in northern Morocco moved mainly to the smaller urban centres of the north, such as Meknès, Tétouan, Tangier and Fès. In southern Morocco, there appeared to be a relationship between distance from Casablanca and internal migration, more migrants coming from the places nearer to Casablanca and fewer from the more distant areas. Conversely, emigration rates were higher in the areas further from Casablanca (6). Distance from Casablanca seems to act as an important variable, influencing the individual's choice of whether to migrate within Morocco or to emigrate. The strength of the relationship is greatest in the area to the south of Casablanca, where the greater the distance from Casablanca the greater the likelihood of potential migrants emigrating rather than going to Casablanca.
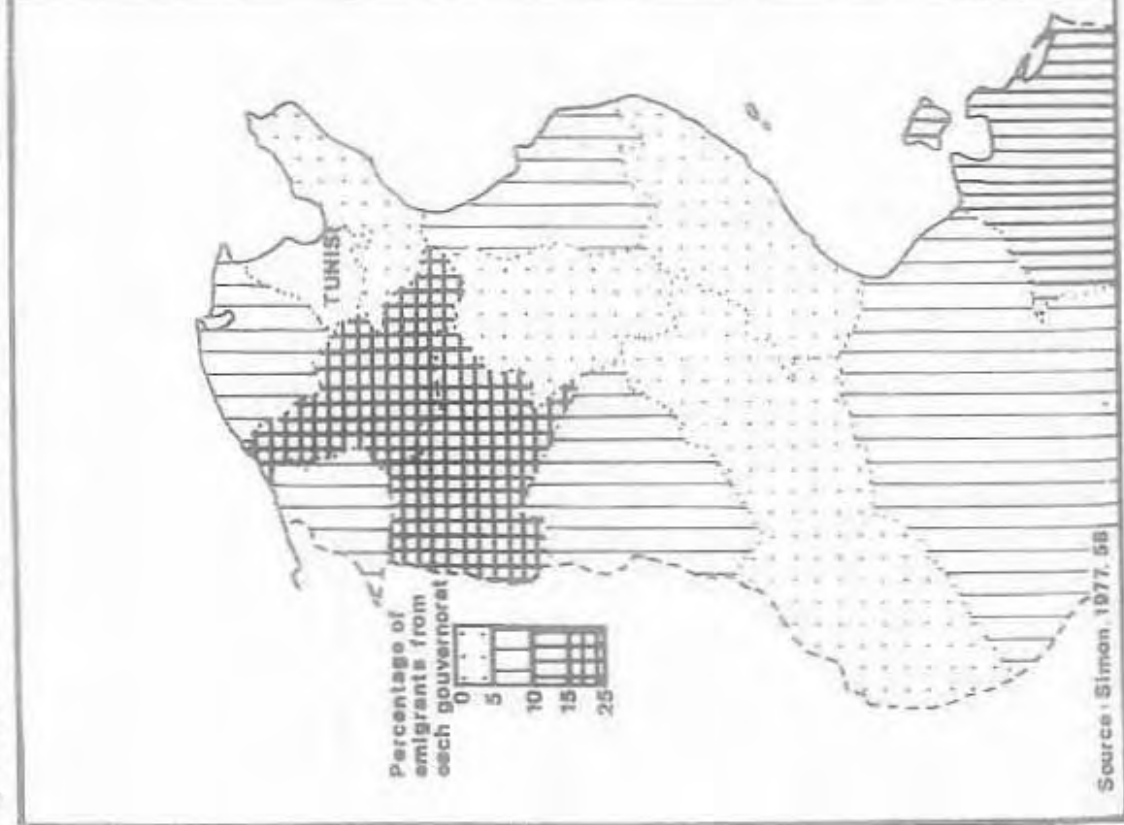
In the north, no such relationship exists. Internal migration to the smaller urban centres has acted as a vital

outlet, reducing population pressure on the limited resources of the Rif area and offering an alternative to migration abroad. Amersfoort (7) has estimated that without the present levels of internal migration the Rif population would be 16 per cent higher. The high urban unemployment rates in towns such as Meknès may be a result of in-migration from the Rif. Through time there has been an increase in emigration from the centres of northern Morocco (8). Bonnet and Bossard (9) identified internal migration within the north as the first stage in international migration, indicating that rising emigration from urban areas reflects a process of step migration as well as direct demand for emigration opportunities by town dwellers.
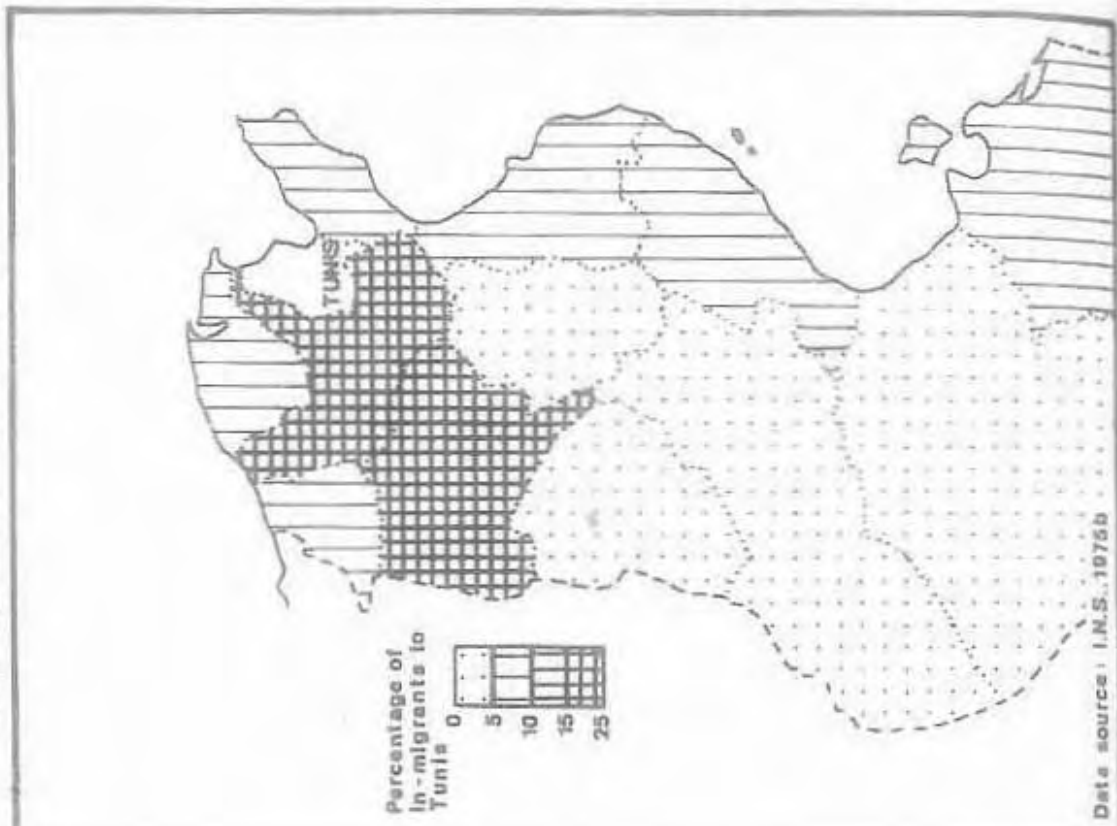
The fact that northern Morocco has not become integrated into the national migration system, perhaps due to the colonial influence of the Spanish zone, further emphasises its dependence on international migration. By contrast with southern Morocco, international migration is much more important as the alternative destinations within the area are less attractive. Consequently, the decline in migration opportunities abroad will have serious repercussions on northern Morocco and may result in increased internal movement to the centres of the north. There is no guarantee that new migration flows to countries such as Iraq will provide a substitute for present flows, either in terms of migrant origins or migrant characteristics.

Figure 7.1a, reproduced from Simon's work (10), shows the distribution by birthplace of migrants who left from Tunis in 1972, but who were not native to that city. These movements bear considerable resemblance to the patterns of internal migration to Tunis recorded by the 1975 census (Fig. 7.1b). The region of the Tell exemplifies this coincidence of patterns, for it is an important region of out-migration both to Tunis and to Europe. Seklani (11) has discussed one cause which might explain the existence of a close correlation between patterns of internal and international migration. He suggests that pressures on the urban employment market increased considerably in the 1960s. Tunis was no longer able to cope with the massive demand for employment created by the influx of migrants. Consequently, a large part of

Figure 7.1a   Birthplace of emigrants from Tunis, 1972.   b In-migration to Tunis, 1969–75.

Percentage of
in-migrants to
Tunis

0
5
10
15
25

Percentage of
emigrants from
each gouvernorat

0
5
10
15
25

TUNIS

TUNIS

Source: Simon 1977. 58

Data source: I.N.S. 1975b

the migrant community who had, in the immediate post-war years, sought jobs in Tunis and its conurbation went instead, in the years after 1964, to France. He therefore infers that internal and international migration to a certain extent became alternative options open to mobile job seekers.

The records of the *Office des Travailleurs Tunisiens à l'Etranger, de l'Emploi et de la Formation Professionnelle* (OTTEEFP), cross-classify emigrants by place of birth and also by place of residence at the time of departure. The two definitions result in very different distributions of migrant origins, as shown in Fig. 7.2. For example, there were 222 persons born in the gouvernorat of Le Kef who migrated to France in 1974, but in the same year only 162 persons resident in the gouvernorat departed directly to France. By inference there were at least 60 persons born in Le Kef who had been residing in other gouvernorats prior to emigration.

Conversely, Tunis experienced 616 departures to France but only 321 of these migrants were native Tunisois. The balance of 295 persons must have consisted of individuals who had previously migrated to the capital from other parts of Tunisia. The existence of these internal migrant flows prior to international migration explains in part the correlation between rates of internal and international migration.

Distinguishing flows both by destination and origin, it becomes apparent that international migration to Libya is a very different process from labour transfer to Europe. The patterns as plotted for migration to France substantiate Simon's (12) claim that

> "les migrants gagnent l'étranger, sans travailler
> préalablement dans une ville tunisienne. Mais
> parfois, l'itinéraire se déroule en deux étapes
> en passant par un relais urbain qui est générale-
> ment Tunis."
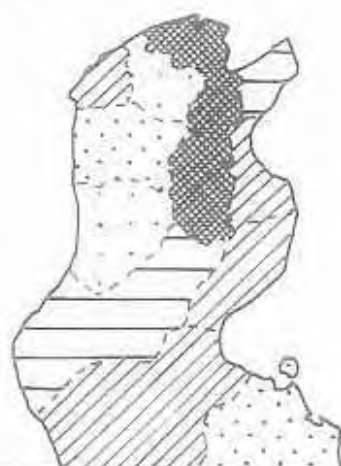
Concerning emigration to Libya, it appears that step

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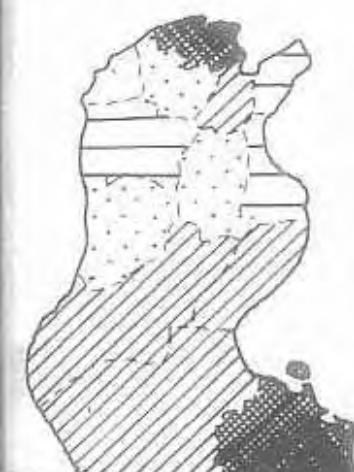Qualification of emigrants to Libya and France.
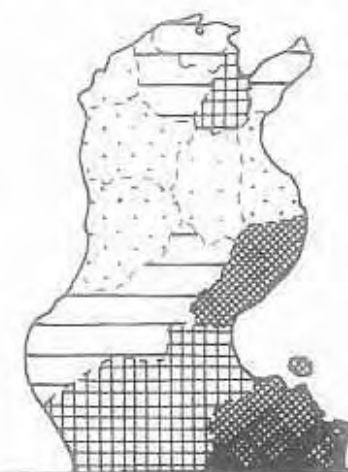

To Libya

1973   1974   1975

To France

1973   1974   1975

Percentage of qualified workers amongst emigrants (by gouvernorat)

0 - 9   10-19   20-29   30-39   40-49   50+

Age characteristics of Tunisian emigrants also show a pattern of spatial selectivity. There is, for example, a contrast between the age pyramids for migrants from the gouvernorats of the south and those of the north (Figure 7.4a). The gouvernorats of Tunis Sud, Tunis Nord, Bizerte, Nabeul, Béja and Jendouba have a much higher percentage of migrants in the age cohort 20-25 years, while the gouvernorats of Medenine and Gabès, Mahdia, Monastir, Sousse and, to a certain extent, Sfax send a higher percentage of migrants who are 35 years of age or older. Again there would appear to be a relationship between distance and migrant selectivity. Migrants from further away tend to be younger than migrants from the gouvernorats closer to Libya. Figure 7.4b also illustrates that the age characteristics of migrants to France and Libya during the early 1970s were somewhat different in their composition, migrants to Libya being on average older than migrants to France.

Fig. 7.5 shows the occupational structure of Tunisian workers in France and Libya and the relationship between the occupational structure among Tunisian workers and other migrant groups. The occupational structure of Tunisian migrants in Libya in 1975 showed a concentration in three categories: agriculture, construction work and other services. Compared with the entire foreign population in Libya, Tunisians were under-represented in the construction sector and over-represented in the agriculture sector. This is not surprising, since the agricultural environment and the types of agricultural system operating in the two countries are quite similar. In the case of the small number of Tunisians to migrate to France in 1976, a high percentage found employment in the agricultural sector, Tunisians being over-represented in this category compared with other migrant workers. On the other hand, Tunisians were under-represented in construction work. The hotel industry employed 28 per cent of Tunisians entering France, a percentage which closely resembles that for all foreign workers. Comparing Tunisian migrants in Libya with those in France, it becomes clear that the occupational structures of the two migrant groups are quite dissimilar. In both cases a large proportion of migrants were

Figure 7.4a   Age pyramids of emigrants to Libya, 1975.
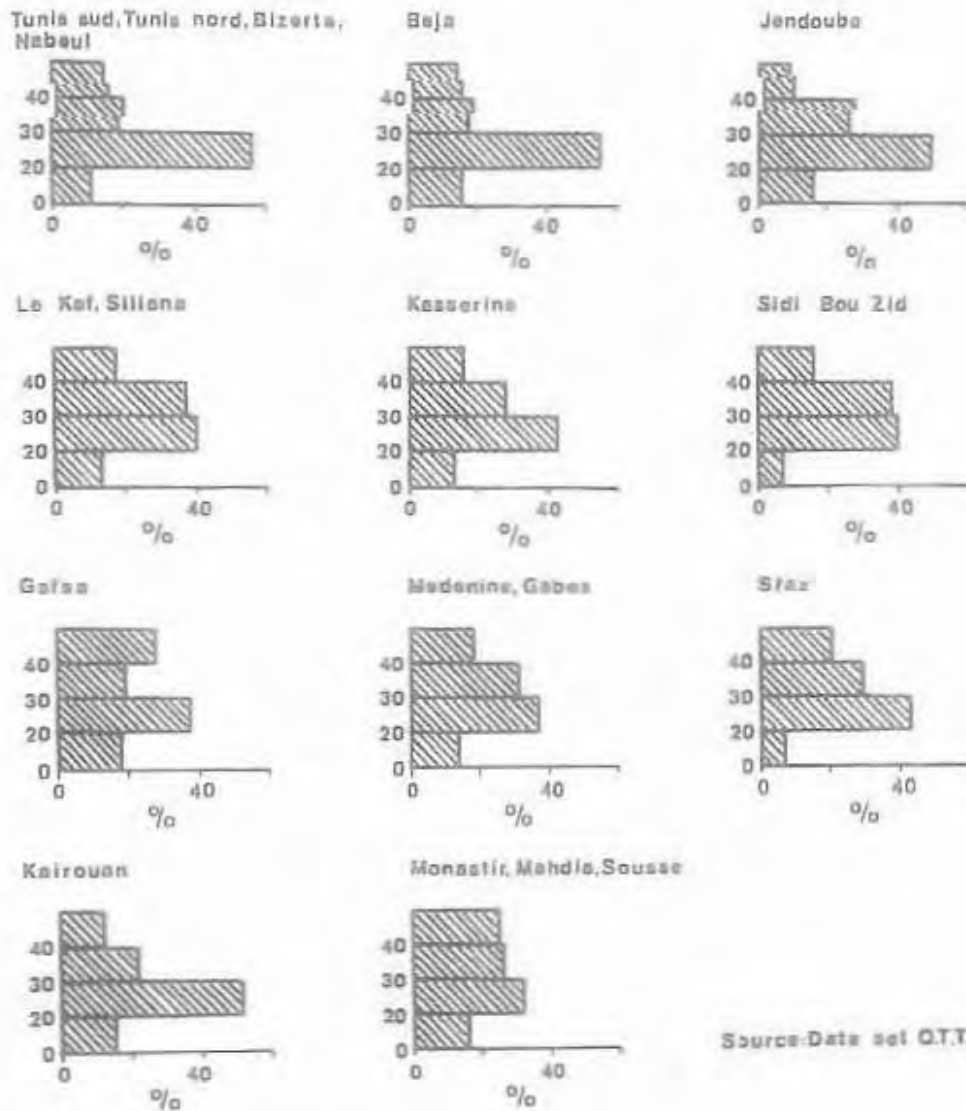
Source:Data set O.T.T.E.E.F.P,1975b

b Age pyramids of emigrants to France and
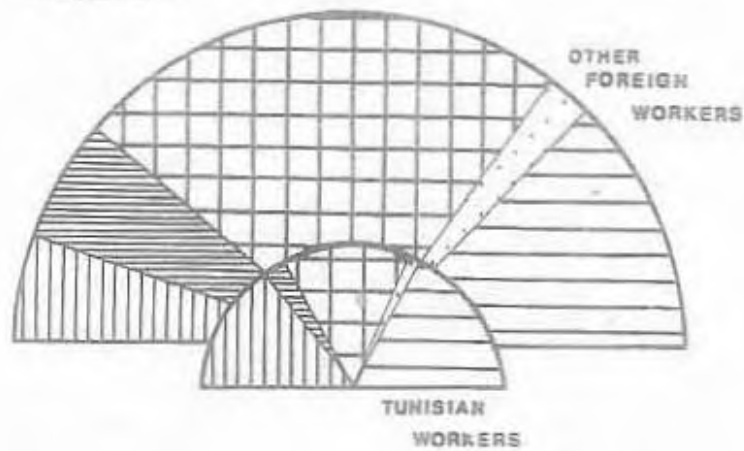   Libya, 1971-4.
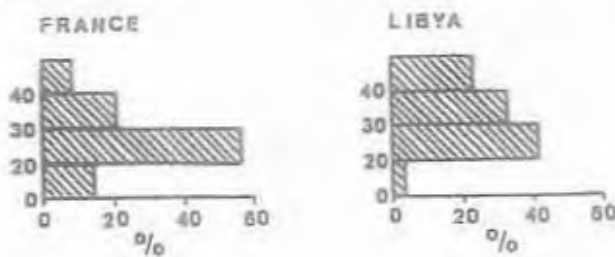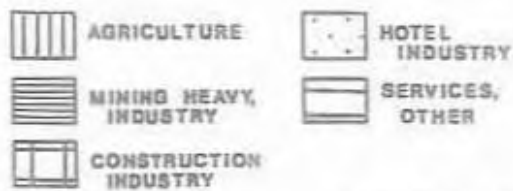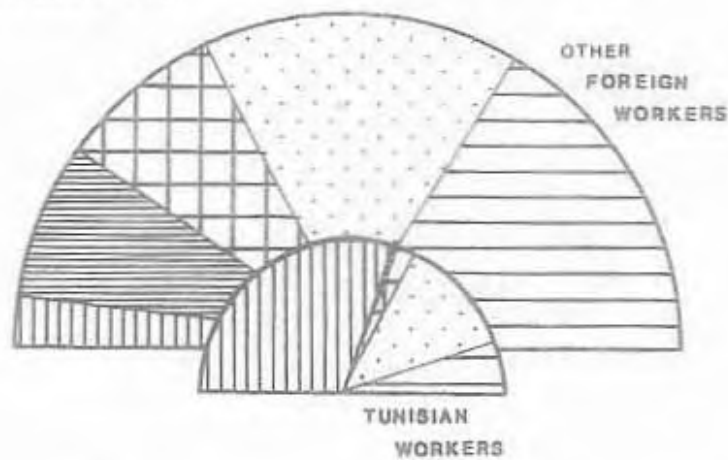

Source:Data set O.T.T.E.E.F.P,1975a

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Figure 7.5   Migrant employment structure.

Libya(1975)

France(1976)

AGRICULTURE

MINING HEAVY, INDUSTRY

CONSTRUCTION INDUSTRY

HOTEL INDUSTRY

SERVICES, OTHER

employed in the agricultural sector in relation to other foreign workers, but a much higher proportion of migrants to France than migrants to Libya found employment in this sector. By contrast, the construction industry absorbed a much higher proportion of Tunisian migrants going to Libya than going to France. The hotel industry was of minor significance in the case of migration to Libya, although it was a major employer in France. In terms of occupational structure, it may therefore be concluded that migration to Libya was far from an exact replacement for migration to France. This is also reflected in the occupational structure of the migrant flows to the two destinations at the gouvernorat level (Table 7.3).

In the gouvernorats dominated by migration to France, such as Sousse (71 per cent of all migrants left for France in 1974), agricultural employment absorbed a high percentage of migrants: in Sousse 61 per cent and in Nabeul 63 per cent of migrants found agricultural employment in France. Many fewer people went to Libya, but 55 per cent of those migrants from Nabeul who did leave for Libya also took up agricultural employment – a higher percentage than from any other gouvernorat. By contrast, in the provinces of Jendouba and Kairouan, where more than 70 per cent of migrants to France were employed in agriculture, most migrants to Libya found employment in the construction industry. In gouvernorats where migration to both Libya and France occurred in approximately equal proportions, it was found that each flow involved quite different occupational groupings. For example, of all migrants from Medenine 89.1 per cent left for Libya in 1974, but of these 36 per cent were employed in construction and 41 per cent in agriculture, while of the workers migrating from Medenine to France only 9.5 per cent were employed in agriculture but 59 per cent found employment in hotels. Migrants to Libya from the gouvernorats of Sousse, Sfax and Gabès were concentrated in the service sector. Relating the patterns of age selectivity discussed earlier to the occupational structure of migration from the gouvernorats, it is possible to isolate the regionally specific nature of emigration to Libya and France. For example, from Sousse there appear to have been two rather different migrant flows, younger people seeking work in France, and the

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TABLE 73: TUNISIAN MIGRANT OCCUPATIONAL STRUCTURE 1974

	Gouvernorat	Construction	Metallurgy	Agriculture	Hotel	Other
To Libya	Tunis	49.5	18.4	6.1	3.0	22.7
	Bizerte	37.7	14.6	18.2	3.4	25.8
	Béja	27.2	0.5	40.8	–	31.3
	Jendouba	43.6	4.5	20.9	–	30.9
	Le Kef	52.7	6.9	16.6	–	23.6
	Kasserine	32.2	0.6	8.7	1.3	57.0
	Gafsa	36.2	6.0	15.0	–	43.8
	Medenine	36.1	3.1	41.2	0.2	19.2
	Gabès	33.5	3.4	8.6	2.2	52.2
	Sfax	20.9	12.1	20.3	0.6	46.0
	Kairouan	53.9	11.7	5.3	0.4	28.7
	Sousse	28.4	9.3	13.9	3.3	45.0
	Nabaul	27.6	4.7	55.2	4.7	7.8
To France	Tunis	28.7	12.0	28.5	5.7	25.0
	Bizerte	24.8	32.5	27.9	2.0	12.7
	Béja	19.4	6.8	62.1	–	11.6
	Jendouba	5.8	6.5	79.6	0.7	7.2
	Le Kef	15.6	6.8	54.6	–	6.1
	Kasserine	22.3	4.5	61.2	1.4	10.4
	Gafsa	39.4	27.2	12.1	–	21.2
	Medenine	10.4	3.8	9.5	59.0	25.7
	Gabès	22.5	4.5	18.9	31.5	22.5
	Sfax	39.2	19.0	22.8	5.1	13.9
	Kairouan	15.6	6.7	70.1	0.7	6.7
	Sousse	15.9	5.9	61.5	3.7	12.7
	Nabaul	15.2	2.8	63.2	5.3	13.4

Source: OTTEEFP (1975), 122

older generation seeking work in Libya. While, in 1974, 71 per cent of workers from Sousse migrated to France, mainly to work in the agricultural sector, hardly any of the migrants from Sousse to Libya found employment in this sector. The majority found work either in the construction industry or in service employment.

In conclusion, it may be suggested that, in gouvernorats dominated in 1974 by migration either to France or Libya, the occupational structure of the two migrant groups was rather different, the construction industry assuming greater importance in the case of Libya and agriculture in the case of France. In these gouvernorats, subsidiary flows to either Libya or France differed in their occupational structure from the dominant flows. These patterns again underline the complementary rather than competitive nature of migration to France and Libya.

Emigration to Libya, although seemingly a fortuitous and timely alternative to migration to France, has not provided a new source of employment for those regions formerly sending many workers to Europe. The Libyan labour market has captured a few echelons of traditional out-migration to Tunis, particularly in southern Tunisia in the gouvernorats of Gabès and Medenine. It has not, however, attracted migrants from the Tell, perhaps the region of Tunisia where communities had come to depend to the greatest extent on emigration to Europe as a source of income and outlet for surplus labour. In the form in which it had developed by 1976, migration to Libya was also a rather different process from migration to France. Migrants to the two countries have had rather different relationships with their communities of origin and have perceived emigration from contrasting perspectives. Consequently, it is not surprising that the characteristics of migrants to these two destinations have differed. Finally, it may be restated that migration to Libya has not emerged as a direct substitute for migration to France. The two foreign labour markets have not been in direct competition because they draw on Tunisian workers with quite different socio-economic characteristics and encourage emigration from entirely different regions of the country.

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Morocco

Data concerning Moroccan migrant characteristics were not available at a detailed scale. Evidence from a survey by Heinemeijer et al (20) in 1975 contrasts migrant characteristics in northern and southern Morocco (in the Rif and Souss areas respectively). Table 7:4 illustrates an interesting contrast which reinforces the conclusions stated above concerning the differences between internal and international migration in the two areas. In the southern region, a much higher proportion of the adult men had migrated internally than in the northern area. It should be noted that, while in the south 30 per cent of those aged 20-29 are internal migrants, in the north 33 per cent of this age group have migrated abroad. Migrants leaving to go abroad appear to leave at an older age in the southern regions than those of the north. There is also a significant differential between the two regions in the average length of stay abroad. In the north, 37 per cent of those who had left since 1960 remained abroad, while in the south only 13 per cent were still abroad (21). In general, migrants from the north had little or no education with almost two thirds of the migrants having no education compared with only one third from the southern area (22). Comparing the importance of remittances to household income of migrant families, Heinemeijer's survey reveals that 31 per cent of migrant families in the Rif relied solely on income from remittances, compared with only 17.5 per cent in the south (23).

Differentials in migrant remittances and the use of remittances further emphasise these contrasts in attitude to migration. A survey of migrant remittances was carried out by the Banque Centrale Populaire, the Moroccan bank responsible for the majority of migrant remittance transfers. It is noticeable that in the south (only four regions were identified in the survey) a higher proportion of the migrant's income was sent home (Table 7:5). Even more striking is the contrast in the use of migrant remittances (Table 7.6). The south is marked out as the only area where investment in housing is not the dominant

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TABLE 7.4: MALE MOROCCANS BY PLACE OF RESIDENCE, MIGRATION EXPERIENCE AND AGE (%)

	Northern Morocco			South Coast			Southern Morocco		
	20-29	30-49	50+	20-29	30-49	50+	20-29	30-49	50+
Non-migrant	61	51	81	85	45	64	61	61	80
Migrant abroad	33	38	13	16	48	7	7	20	4
Internal migrant	3	7	1	1	3	0	30	13	8
Return migrant	3	4	5	0	4	29	2	6	7
Total	100	100	100	100	100	100	100	100	100

Source: Heinemeijer,W.F., Amersfoort,J.M., Ettema,W., De Mas,P., and Van der Wusten,H.H. (1977), 36.

TABLE 7.5: PROPORTION OF MIGRANT INCOMES REMITTED TO DIFFERENT REGIONS OF MOROCCO. (%)

	Less than 30%	30-50%	50-70%	70-80%	80%
North	27	27	27	15	4
East	11	18	47	20	4
Centre	17	30	34	14	5
South	7	10	55	22	6

Source: Banque Centrale Populaire (1977), 49.

TABLE 7.6: INVESTMENT OF MOROCCAN MIGRANT REMITTANCES (%)

	North	East	Centre	South
Projects carried out by sector				
Agriculture	16	10	3	23
Commerce	7	6	3	16
Housing	74	78	90	45
Transport	2	5	3	12
Other	1	1	1	4
Total	100	100	100	100
Proposed projects				
Agriculture	14	12	5	17
Commerce	20	34	21	42
Housing	56	37	58	26
Transport	6	11	7	12
Other	4	6	9	3
Total	100	100	100	100

Source: Banque Centrale Populaire (1977), 20.

investment sector. In the south, a higher proportion of remittances was invested in agricultural and commercial activities rather than being spent on non-productive fixed assets or squandered on consumer durables.

Temporal changes in migrant characteristics

The contrasts which exist between the north and south of Morocco in terms of migrant characteristics reflect two different attitudes to migration, one principally short-term and one long-term. Migrant characteristics vary not only through space but also through time. Nelson (24), with reference to internal migration, and Amersfoort (25), with reference to international migration, have noted a progressive change in the characteristics of migrants with the passage of time. They have suggested that, initially, migration will be 'short-term' or 'temporary' but that, given certain conditions and constraints, it will tend to become 'long-term' in nature. Table 7.7 summarises the changes in migrant characteristics which take place. Amersfoort (26) formulated his hypothesis with reference to Morocco. He showed that, in the case of the Rif, emigration was tending to become long-term in character. He observed that migrants were departing at progressively younger ages, more were leaving before getting married and a larger number of families were joining migrant workers already in Europe. Remittances were also gradually becoming the major source of income for many families (27). It is suggested that the nature of the transition from short-term to long-term migration varies from region to region because of variations in the significance of migration itself and because of differences in the access of local populations to alternative employment opportunities. The contrasts identified above between northern and southern Morocco substantiate this hypothesis.

A re-examination of the contrasting characteristics of Tunisian emigrants to France and Libya illustrates the differences between short- and long-term migration. The average age of migrants to France decreased between 1968 and 1976 (Table 7.8) with the percentage of young migrants (less than 25 years of age) rising from 34 per cent of all migrants in 1968 to 51 per

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TABLE 7.7: TEMPORAL CHANGES IN MIGRATION CHARACTERISTICS

Short-term Migration	Long-term Migration
1. Income from remittances supplement traditional sources of income. Existing agriculture is maintained.	1. Income from remittances become a main source of household income. Agricultural productivity declines.
2. Foreign employment is easy to obtain.	2. Foreign employment becomes more restricted.
3. Migrants remain abroad over short periods of time and return frequently.	3. Migrants remain abroad for longer periods and return only for vacations.
4. Migrants depart from the economically most productive age cohorts.	4. Migrants leave, not only from the economically most productive cohorts, but also at younger ages, and are often unmarried.
5. Migrant families remain in the country of origin.	5. Families migrate to join workers.
6. Step-migration often precedes direct migration abroad.	6. More workers depart directly from regions of origin.

TABLE 7.8: AGE STRUCTURE OF TUNISIAN MIGRANTS TO FRANCE (%)

	1968-70	1971-73	1974-76
Less than 25 years	33.7	49.7	50.9
25-39 years	43.4	41.3	39.2
40 years and older	12.9	9.0	9.9
Total	100.0	100.0	100.0

Source: Office National d'Immigration (1977), 99.

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cent in 1976. The marital status of migrants has also changed. The number of unmarried workers migrating to France increased from 51 per cent in 1967 to 72 per cent in 1975. These trends coincide with those expected for a well-established migration flow which has been gradually changing from a flow consisting of migrants who perceived their move as of short-term significance to a flow of persons with longer-term aspirations. The more recent migration flow to Libya might reasonably be expected to be still in an early stage of development. Indeed, Figure 7.4 shows that most migrants to Libya are older than those to France and that their marital status resembled that of migrants to France a decade earlier. The ratio of married to unmarried migrants to Libya was 1.63 in 1972 compared with 0.41 for migrants to France. By 1974, the ratio had changed to 1.48 and 0.60 for Libya and France respectively (28), confirming that the migration stream to Libya included a much higher proportion of married men. By the early 1970s, there were more unmarried migrants seeking permanent employment in France than ever before.

In the case of migration to France, since 1964 there has been a significant rise in the proportion of family members joining migrant workers (Table 7.9); although controls on the entry of migrant workers have been tightened, family migration has escalated, reaching 82.5 per cent of all immigration in 1975. Migrant remittances have come to represent a high proportion of family income, reducing the importance of subsistence agricultural holdings to the livelihood of households in the regions of heavy emigration. Simon (29) has estimated that, in the mid-1970s, the average Tunisian family required 40/50 dinars per month for living expenses. He has also shown that 51 per cent of migrant workers regularly transferred this amount of money per month, indicating that in many instances remittances may have represented a large proportion of a family's income. Comparison of wage levels for Libya and France suggests that the average migrant monthly income in France in 1975 was 200 dinars, whereas in Libya it was approximately 150 dinars (30). Income from remittances from migrant workers in Libya had not at this date superseded other sources of household income.

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TABLE 7.9: FAMILY MIGRATION AS A PERCENTAGE OF TOTAL TUNISIAN MIGRATION

Year	Family Members	Migrant Workers	Family members % of total migrants
1966	1737	6631	20.7
1967	2012	6534	23.5
1968	2665	6109	30.3
1969	2944	14925	19.7
1970	3731	11070	25.2
1971	3962	9971	28.4
1972	4223	9890	29.9
1973	4763	20857	18.5
1974	4347	4190	50.9
1975	3871	820	82.5
1976	4194	883	82.6
1977	4101	370	91.7

Source: Office National d'Immigration (1976), 119,136 and Office National d'Immigration (1977), 138, 141.

It would appear that, since the mid-1960s, migration to France on a short-term basis has developed to become a more permanent movement, employment in France representing a first choice for job seekers rather than a last resort and the income therefrom becoming the mainstay of the household rather than a supplement.

One of the few micro-studies investigating the effects of emigration to Libya (31) has suggested that the movement of workers to Libya is still primarily on a short-term basis. Many migrants leave for Libya on tourist visas, staying there for an average of three months or less. Very few remain for a year or more in Libya. Traders seem to migrate to Libya on an even more temporary basis, often for periods of less than a month (32). This study has also highlighted a further contrast between the length of stay and the age of the migrant. Younger migrants stayed for longer periods than the older men who were supplementing their family incomes by short-term employment abroad (33). Many of those migrating to Libya were actively employed prior to their departure. Temporary migration for brief periods of time thus appeared to be the norm. Again, this contrasts with the much more restricted job opportunities now available in France, which have forced migrants to seek more permanent forms of employment in order to be permitted to continue to work in France.

Analysis has shown that, in the case of Tunisian migration to France, a transition has taken place in migrant characteristics of the form predicted in Table 7.6 and that migration has become a long-term phenomenon. Similar changes have been observed at the national level for Algeria and Morocco. In the case of Tunisian emigration to Libya, this transition had not occurred by the time when the Tunisian-Libyan frontier was closed in 1976.

A review of the literature suggests that there may be some benefits to be experienced from the export of labour in the short term, but that in the longer term emigration may have detrimental effects on the exporting country (34). In the short term a

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TABLE 7.10 IMPACT OF SHORT AND LONG-TERM MIGRATION

SHORT-TERM MIGRATION

COUNTRY OF IMMIGRATION

Advantages
1. Expansion of production
2. Immediate supply of labour
3. Minimal costs in getting labour
4. Labour imported on a temporary basis
5. Labour for socially undesirable jobs
6. Control over supply of labour.

Disadvantages
1. Adjustment and training costs of workers.
2. Problems of providing appropriate facilities for a temporary and highly mobile workforce.

MIGRATION CHARACTERISTICS (as in Table 7.9)

1. Income from remittances supplements existing sources of income. Existing agricultural systems maintained.
2. Foreign employment easy to obtain.
3. Migrants remained abroad over short periods of time and return frequently.
4. Migrants depart from the economically most active age cohorts.
5. Migrant families remain in the country of origin.

COUNTRY OF EMIGRATION

Advantages
1. Income from remittances
2. Temporary absorption of labour surpluses.
3. Increased standard of living.
4. Acquisition of skills and experience of modern sector equipment.

Disadvantages
1. Rising level of inflation.
2. Unreliable and unpredictable source of income dependent on foreign decision making.
3. Labour shortages.
4. Standard of living artificially high.

SHORT-TERM MIGRATION POLICY
optimising advantages and returns from migration

LONG-TERM MIGRATION

Advantages
1. Continued supply of cheap labour
2. Labour for socially un-desirable jobs.

Disadvantages
1. Lower activity rates amongst migrants than at first.
2. Need for increased housing provision due to increasing number of migrant families.
3. Natural increase of migrant group rising.
4. Increased educational and medical costs.
5. Racial problems linked to migrant segregation.

1. Income from remittances replaces other sources of income. Agricultural productivity declines.
2. Foreign employment more restricted.
3. Migrants remain abroad for longer periods of time and return only for vacation.
4. Migrants depart at increasingly younger ages and are often uninterested.
5. Families migrate to join workers.

Advantages
1. Income from remittances.
2. Outlet for unemployed persons.
3. Increased standard of living.

Disadvantages
1. Increased dependence on foreign economies.
2. Loss of skilled workers.
3. Increasing discrepancy between labour importing and exporting countries.
4. Neglect of local agri-cultural systems.
5. Problems of return migrants.

LONG-TERM MANPOWER STRATEGIES
minimising labour export

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country or region may gain through its labour exports because of the temporary relief which this offers to the domestic labour market, because of the income derived from migrant remittances and because of the possibility that migrants may acquire useful skills during their stay abroad. In the longer term the departure of labour involves the loss of a factor of production, and may result in increasing political and economic dependence on foreign labour markets. Certain of the characteristics of migration which change through time have been analysed. This has shown a trend towards an increase in the permanence of installation of migrants abroad, ultimately resulting in migrants returning a lower level of remittances to their country of origin. Some of the probable advantages and disadvantages of short- and long-term migration are summarised in Table 7.10. It can be seen that a dual transition occurs. Firstly, longer-term migration results in fewer benefits for the exporting countries and a greater dependence on foreign employment opportunities as a source of revenue. Secondly, host nations find that the more permanent settlement of migrants adds to the cost of housing, servicing and educating the migrant population. Both labour-exporting and importing countries should therefore discourage migration from becoming a long-term process.

Notes

1) ABADAN-UNAT, 1974, 397.
2) VAIDYANATHAN and FARES, 1973.
3) ESCALLIER, 1978.
4) NOIN, 1970
5) ESCALLIER, 1980
6) FINDLAY, 1978, 77.
7) AMERSFOORT, 1978
8) FINDLAY, 1978, 79.
9) BONNET, and BOSSARD, 1973.
10) SIMON, 1977, 58.
11) SEKLANI, et al 1970.
12) SIMON, 1974, 78.
13) ZIPF, 1949.
14) HANNING, 1973.

15) FAKHFAKH, 1974, 5.

16) ibid, 3.

17) COURGEAU, 1970; DE LANNOY, 1975; JONES, 1970; ROSENBERG, 1974

18) GRIFFIN, 1976.

19) DIRECTION DES STATISTIQUES, 1970.

20) HEINEMEIJER, AMERSFOORT, ETTEMA, DE MAS, and VAN DER WUSTEN, 1977

21) ibid., 95.

22) ibid., 78.

23) ibid., 61.

24) NELSON, 1976.

25) AMERSFOORT, 1978, 20.

26) ibid., 22-24.

27) ibid., 23.

28) OFFICE DES TRAVAILLEURS TUNISIENS A L'ETRANGER ET A LA FORMATION PROFESSIONELLE (OTTEEFP), 1975.

29) SIMON, 1977, 110.

30) FINDLAY, 1978.

31) DE GRAAFE, 1976.

32) ibid., 6.

33) ibid., 13.

34) AMERSFOORT, 1978; BAROUDI, 1978; BAUCIC, 1974; BOHNING, 1978; SASSEN-KOOB, 1978; WILSON, 1976.

While the more developed industrialized countries have evolved highly complex immigration policies, labour exporting countries have been slow to formulate migration strategies [1]. In the Maghrebin case, emigration was originally regarded as no more than a convenient means of reducing labour surpluses without either the cost or effort of devising regional development policies to absorb labour capacity in the poorer areas of the Maghreb. Each country sought, during the 1960s, to maximize the number of migrants leaving to work abroad. Emigration was viewed as a method of disposing of surplus labour rather than being evaluated as a short-term form of human resource deployment.

Initial attempts by Maghrebin governments at intervention in migrant trends failed to comprehend that migration strategies must involve much more than a simple restriction on the volume of migration. The first Algerian controls on emigration tried to limit population movements without planning for alternative sources of employment for those persons deprived of the opportunity to migrate. Restrictive migration strategies, which are not integrated with national and regional development plans, lead only to massive clandestine migration unless they are enforced by an extremely severe regime.

The authors have previously outlined a number of measures which would aid the Maghreb states to maximize gains from short-term migration [2]. These include policies promoting the cartelisation of labour supplies, schemes for the payment of compensation to labour exporters by migrant-receiving countries, and methods of organising workers into labour teams and work units prior to departure with the aim of earning for the labour exporter a higher proportion of the value added on the production process. As the Maghreb states seek in the 1980s to develop new migration opportunities in the Arab east, the introduction of such measures will be a vital prerequisite to safeguarding the interests of their workers as well as maximizing the benefits from emigration.

Strategies for the longer term are harder to devise, largely because of the impossibility of evaluating the future benefits and problems of international migration independently from assessing the long-term trends in the national and local labour markets of the Maghreb states. Policy measures must seek to overcome the fundamental structural disequilibrium in the economies of the Maghreb states. It is this disequilibrium which is the root cause for population redistribution in many developing countries, and which has necessitated worker emigration from the Maghreb to Europe, rather than permitting the more fruitful deployment of North African labour resources within Tunisia, Algeria and Morocco (3).

Geographical analysis of international migration has demonstrated that one of the spatial manifestations of structural disequilibrium in the economy has been the regional concentration of labour surpluses, and consequently of the propensity to migrate (Chapter 4). Examination of Maghrebin emigration patterns has also indicated that the degree of localisation of migrant origins has changed through time from highly polarized to relatively diffuse patterns. A variety of forces operating at both the national and regional scales have been investigated to explain these interesting, and in some respects orderly, changes in emigration (Chapter 5 and 6). One particular factor which emerges as important in influencing the spatial character of Maghrebin migration is the distribution of major urban nodes within the domestic space economy. These nodes take the form of large agglomerations accreted around the colonial administrative core cities such as Tunis and Casablanca. They operate to some extent as intervening opportunities for emigrants from surrounding regions, diverting them to local and regional employment opportunities and dissuading them, temporarily at least, from emigration. Since these large urban areas are themselves as much a consequence of the structural imbalance of the Maghreb economy as the impoverished regions from which most of the migrants come, their association with significant spatial variations in emigration patterns emphasizes once more the need for long-term migration policies to be related to plans for the fundamental spatial reorganization of the national economies of

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Tunisia, Algeria and Morocco (4).

The complex relationships which exist between emigration patterns and the geographical characteristics of different regions of the Maghreb help to emphasize the need for migration strategies to be closely linked to time- and place-specific regional development policies. For labour-exporting countries, the only long-term measures which can hope to make an enduring impact on patterns of emigration, without the imposition of authoritarian restrictions on personal mobility, are those which involve the reorganization of the national space economy. A more equitable spatial distribution of wealth must accompany rather than follow national economic growth. The dominant spatial concentrations of migrant origins evident in patterns of Maghrebin emigration confirm that regional development plans must be considered an integral component in any national manpower strategy which wishes to prevent the permanent loss of human resources through emigration.

Notes

1) HOPFNER, and HUBER, 1978.
2) FINDLAY, FINDLAY, and LAWLESS, 1979.
3) TAPINOS, et al, 1978.
4) The need to integrate internal migration strategies with national settlement planning has been reviewed for the Tunisian case in : FINDLAY, 1980.

BIBLIOGRAPHY

ABADAN-UNAT, N. (1974) "Turkish external migration and social mobility" in P. Benedict, E. Tümertekin and F. Mansur (eds), Turkey : Geographic and Social Perspectives, Leiden : Brill.

ADLER, S. (1977) International Migration and Dependence, Westmead: Saxon House.

ALLAYA, M. (1974) Les Migrations Internationales des Travailleurs du Bassin Méditeranéen et la Croissance Economique, Montpellier; Institut Agronomique Méditeranéen.

AMERSFOORT, J.M. (1978) "Migrant workers, circular migration and development", Tijdschrift voor Economische en Sociale Geografie, 69, (1-2), 17-27.

BANK OF MOROCCO (1979) Annual Report 1979, Mohammedia: Banque du Maroc.

BANQUE CENTRALE POPULAIRE (1977) Enquête sur les Travailleurs Marocains à l'Etranger : Etude des Résultats, Casablanca.

BAROUDI, A. (1978) Maroc : Impérialisme et Emigration, Paris, Sycamore.

BAUCIC, I. (1974) "Migration temporaire ou définitive : le dilemme des migrants et des politiques de migration," Studi Emigrazione, 3 (33) 121-134.

BELGUENDOUZ, A. (1974) "Quelques réflexions sur l'émigration marocaine au regard du développement" in Seminar on International Migration in Relation to Policies of Agricultural & Industrial Development, Vienna 1974, Paris: Organisation for Economic Cooperation & Development.

BELGUENDOUZ, A. (1979) "Travailleurs émigrés marocains : investisseurs au Maroc?" Hommes et Migrations, Doc.975, 4.

BIRKS, J.S. & SINCLAIR, C.A. (1978) The Libyan Arab Jamahiriya: Country Case Study, Durham: University of Durham, International Migration Project Working Paper.

BOHNING, W.R. (1975) "Some thoughts on emigration from the Mediterranean Basin," International Labour Review, 111 (3), 251-77.

BOHNING, W.R. (1978) Elements of a Theory of International Migration and Compensation, Geneva, ILO, World Employment Programme Working Paper no.34.

BONNET, J. and BOSSARD, R. (1973) "Aspects géographiques du l'émigration marocaine vers l'Europe"Revue Géographique de Maroc, 23/24, 5-50.

BOSSARD, R. (1978) Mouvements Migratoires dans le Rif Oriental : le Travail en Europe, Aspect Contemporain Majeur des Migrations dans la Province de Nador, Unpublished thesis (3e cycle), Université Paul Valéry, Montpellier.

BOUKOUS, A. (1977) "L'émigration des Soussis," Bulletin Economique et Social du Maroc, 135, 63-72

BOX, G. and JENKINS, G. (1970) Time Series Analysis, Forecasting and Control, San Francisco: Holden-Day.

CHATFIELD, C. (1975) The Analysis of Time Series : Theory and Practice, London: Chapman & Hall.

CLARKE, J. (1958) "Some observations on Libyans in Tunisia" Cahiers de Tunisie, 21/2, 89-100.

CLIFF, A.D. and ORD, J.K. (1973) Spatial Autocorrelation, London Pion.

CLIFF, A. see HAGGETT.

CLOUT, H.D. see SALT.

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COMMISSARIAT NATIONAL AUX RECENSEMENTS ET ENQUETES STATISTIQUES, (1966) Recensement Général de la Population 1966 Series A Volume 8: Population non-Algérienne, Algiers: Direction des Statistiques.

COURGEAU, D. (1970) "Les champs migratoires en France" Institut National d'Etudes Démographiques, Travaux et Documents.

DAVIS, J. (1973) Statistics and Data Analysis in Geology, New York: Wiley.

DE GRAAFE, F. (1976) L'émigration saisonnière à partir de la Délégation Sidi Bou Zid, Tunis, REMPLOD, Remplod Project Working Paper.

DE LANNOY, W. (1975) "Residential segregation of foreigners in Brussels" Bulletin de la Société Belge de Géographie, 44(2), 215-238.

DE MAS, P. see HEINEMEIJER.

DIRECTION DE L'AMENAGEMENT DU TERRITOIRE (1973) Villes et Développement, Tunis, DAT.

DIRECTION DES STATISTIQUES (1970) Recensement Général de la Population et de l'Habitat, 1966 Algiers: Republique Algérienne.

ESCALLIER, R. (1978) La Population Urbaine du Maroc, Etude Géographique, (4 vols) Unpublished thesis, University of Nice, Nice.

ESCALLIER, R. (1960) "Espace urbain et flux migratoires : le case de la métropole économique marocaine Casablanca" Méditerranée, 38(1), 3-14.

ETTEMA, W. see HEINEMEIJER.

FAKHFAKH, F. (1974) L'Emigration à Partir de Tunis-Sud et le Retour des Emigrés dans la Region, Tunis: CERES (Roneo).

FARES, M.L. see VAIDYANATHAN.

FINDLAY, A.M. (1975) Tunisia : Country Case Study, University of Durham, International Migration Project Working Paper 28.

FINDLAY, A.M. (1978) Geographical Patterns of Moroccan Emigration, unpublished M.A. Thesis, University of Durham, Durham.

FINDLAY, A. M. and FINDLAY, A. M., (1980) Migration Studies in Tunisia and Morocco, Glasgow, University of Glasgow, Department of Geography, Occasional Papers Series No.3.

FINDLAY, A.M., FINDLAY, A.M., and LAWLESS, R.I. (1979a) "New directions in Tunisian migration : windfall or pitfall?" Maghreb Review, 4(3), 78-81.

FINDLAY, A.M., FINDLAY, A.M., and LAWLESS, R.I. (1979b) "Algeria : emigration from a centrally planned economy", Maghreb Review, 4(3), 82-85.

FINDLAY, A.M., FINDLAY, A.M., and LAWLESS, R.I. (1979c) "Moroccan emigration : a national and regional problem", Maghreb Review, 4(3), 86-89.

FINDLAY, A.M., FINDLAY, A.M., and LAWLESS, R.I. (1979d) "Crisis in Maghreb emigration : policy alternatives", Maghreb Review, 4(3), 90-94.

FREY, A. see HAGGETT.

GILISSEN, J. (1981) "L'émigration marocaine en Belgique" Hommes et Migrations, Doc.1005.

GOVERNMENT SECRETARIAT, (GIBRALTAR 1970), Report on the Census of Gibraltar 1970, Gibraltar: Government Secretariat.

GREENHALGH, M. (1978a) "Austerity measures will help to relieve trade deficit" Middle East Economic Digest, Vol.22,(24) June 1978, 13-14.

GREENHALGH, M. (1978b) "Foreign loans will sustain development impetus" Middle East Economic Digest, Vol.22,(47), Nov.1978, 5.

GRIFFIN, K. (1976) "On the emigration of the peasantry", World Development, 4(5), 353-61.

GRIMAUD, N. (1980) "France – Algérie: à la recherche d'un accord", Maghreb Machrek, 88, 29-50.

HAGERSTRAND, T. (1952) "The propagation of innovation waves", Lund Studies in Geography (B),

HAGERSTRAND, T. (1957) "Migration and area; survey of a sample of Swedish migration fields and hypothetical considerations on their genesis", Lund Studies in Geography (B) 13, 27-158.

HAGERSTRAND, T. (1967) Innovation Diffusion as a Spatial Process, Chicago: University of Chicago Press.

HAGGETT, P., CLIFF, A., and FREY, A. (1977) Locational Methods, London: Arnold.

HAMMOND, R., and McCULLAGH, P.S. (1974) Quantative Techniques in Geography, Oxford: Clarendon Press.

HANNING, E. (1973) "L'émigration de Medjez el Bab vers Tunis et vers L'Europe", in Groupe d'études Tunis, Medjez el Bab et sa région, Tunis.

HAY, M.J. (1974) An Economic Analysis of Rural-Urban Migration in Tunisia, Unpublished Ph.D thesis, University of Minnesota.

HEINEMEIJER, W.F., AMERSFOORT, J.M., ETTEMA, W., DE MAS, P., and DER WUSTEN, H.H. (1977) Partir pour Rester : une Enquête sur les Incidences de l'Emigration Ouvrière à la Campagne marocaine, Amsterdam, IMWOO/NUFFIC, Project Remplod No.2

HOFNER, K., and HUBER, M. (1978) Regulating International Migration in the Interest of the Developing Countries : with particular reference to Mediterranean Countries, Geneva: ILO, World Employment Programme Working Paper No.21.

HOUSTON, M. see MARTIN.

INSTITUT NATIONAL DE LA STATISTIQUE (1966) Recensement Général de la Population 1966, Tunis: INS.

INSTITUT NATIONAL DE LA STATISTIQUE (1975) Recensement Général de la Population et des Logements, 8 mai 1975, Tunis: INS

JENKINS, G. see BOX.

JONES, P. (1970) "Some aspects of the changing distribution of coloured immigrants in Birmingham, "Transactions of the Institute of British Geographers, 50, 199-219.

KING, R. (1976) "The evolution of international labour migration movements concerning the EEC". Tijdschrift voor Economische en Sociale Geografie, 67(2), 66-82

LAWLESS, R.I. (1978) Algeria : Country Case Study, Durham: University of Durham, International Migration Project.

LAWLESS, R.I., FINDLAY, A.M., and FINDLAY, A.M. (1981) Return Migration to the Maghreb : People and Policies, Arab Research Paper, London: Arab Research Centre.

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MARCOUX, A. (1971) "Quelques éléments de la situation démographique en Tunisie" Revue Tunisienne des Sciences Sociales 25, 225-234.

MALMQUIST, D. (1978) Lagged Adjustment Model of Foreign Worker Migration to the Federal Republic of Germany, New York: University of New York Press.

MARTIN, P., and HOUSTON, M. (1979) "The future of international migration" Journal of International Affairs, 33, 311-334.

MICHEL, A. (1957) Les Travailleurs Algériens en France, Paris: CNRS.

MIDDLE EAST ECONOMIC DIGEST (1978) Algeria : Country Survey, London: MEED (Special Reports).

MIDDLE EAST ECONOMIC DIGEST (1981) "News Digest", 25(7), Feb.81, 23.

MILLIOT, L. (1933-4) "L'exode rurale seisonnier des Rifains vers L'Algérie", Bulletin Economique et Social du Maroc, 397-402.

MINISTERE DU TRAVAIL, Annuaire Statistique du Travail, 1969, 1970, 1971, 1972, 1974, Rabat.

MIOSSEC, J.M., and SIGNOLES, P. (1976) "Les réseaux de transport en Tunisie" Cahiers d'Outre-Mer, 114, 151-194.

NELSON, J. (1976) "Sojourners versus new urbanites" Economic Developement and Cultural Change, 24(4), 721-758.

NOIN, D. (1970) La Population Rurale du Maroc, (2 vols) Paris: Presses Universitaires de France.

NOIN, D. see SIMON, (1972).