5. Human reactions to spatial diversity: Mobility in regional labour markets

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It may be useful, particularly because the subject of this contribution is mobility in regional labour markets, to introduce briefly the concepts that will be used in the following sections.

The first important distinction to be made is that between geographical migration and geographical mobility. In quite a number of publications these two expressions are used for one and the same phenomenon, viz. the number of people (or the number of people expressed as a fraction of another number, like that of total population or working population) moving from one region to another. Following Klaassen and Drewe (1973), we understand mobility as the *propensity* to move; the combined impact of mobility and the reason, or impulse, to move is called migration.

This may be expressed as:

$$m = \mu i \tag{1}$$

where:
m : the size of the migration flow
μ : mobility
i : the size of the impulse.

Recalling the title of this contribution with these definitions in mind, we may say that spatial diversity is to be considered as the main factor behind the impulses, and mobility as the propensity to react to this spatial diversity.

Spatial diversity concerns such factors as population, employment positions, housing and living environment; in general, it refers to the differences between regions in social and physical structure. Mobility is associated with the preference structure of the population as far as a change in residence is concerned. The preferences are related among other

things to the social group to which people belong, their training level, and the experience gained with previous migration. In economic models the preferences are generally found back as parameters, with the above-mentioned impulses figuring as variables. That is understandable; a population's preference structure is pretty constant. From a policy point of view it is a one-sided approach, however, for it is possible for a government to affect the population's mobility as well as the above impulses by policy measures. In that case, one needs to understand both the migration model and the mobility model superposed on it.

The effectiveness of a combined impulse and mobility policy can be defined as:

$$\mathrm{d}m = \mu \mathrm{d}i + i \mathrm{d}\mu \tag{2}$$

The impulse policy ($\mathrm{d}i$) causes the migration to grow by $\mu \mathrm{d}i$. The effectiveness of the total impulse action is increased by $i\mathrm{d}\mu$, however, if mobility is increased by $\mathrm{d}\mu$. So, improving educational facilities could (in the long run) improve mobility and thus stimulate migration to regions where a policy of stimulation is conducted.

About the factors behind mobility, little is known as yet. In this contribution we shall confine ourselves for the moment to a discussion of the structure of mobility as it emerges from two studies, each dealing with a specific kind of migration flow. The first (Section 5.1) is concerned with flows on the intra-national level (interregional migration) within Great Britain, France, the Netherlands, and Sweden; the second (Section 5.2) analyses flows on the international level, in particular from Mediterranean countries to Western Europe. We shall compare the results of the two studies, and analyse the structure of mobility in each case. The factors that determine mobility will not be gone into here, though in the discussion of the results of the enquiry into international migration an attempt will be made to introduce into the analysis the concept of psychological distance. Special attention will be paid to the influence of kinship between the languages spoken in the countries of origin and destination (Section 5.3). Finally, some conclusions will be drawn in Section 5.4.

5.1 MIGRATION AND MOBILITY IN FOUR EUROPEAN COUNTRIES

As said above, an analysis was made of interregional migration flows within four European countries, viz. Great Britain, France, the Netherlands, and Sweden. The theoretical basis, empirical results, and political consequences of that analysis were published extensively by Klaassen and Drewe (1973), but it seems useful to recapitulate them briefly with a view of comparing them with those of the study on foreign workers.

One and the same equation was tested for all four countries. This equation was:

$$M_{ij} = \alpha_0 E_j^{\alpha_1} L_i^{\alpha_2} \exp(-\alpha_3 D_{ij})$$
(3)

where:

M_{ij} : total number of migrants from region i to region j; (during a given period — for the countries involved between 1960 through 1968);

E_j : total number of jobs in industries and services in region j in the base year of the period;

L_i : total number of people between 15 and 65 years of age in region i, also in the base year;

D_{ij} : distance between the centres of regions i and j in car kilometres.

E_j is the factor most frequently cited on the household and individual level as an impulse to undertake long-distance interregional migration. This factor represents an indicator of the prospects on the labour market of the region of destination. These prospects are a function of the number of job opportunities coming available through the creation of new positions and the vacancy of old ones. We will assume that these two components of change are more or less proportional with E_j. Naturally we should have preferred to differentiate between skill groups for this variable as well as for L_i, but lack of data prevented such detail.

L_i represents the number of people in the active age groups in the region of origin. It is the least ambiguous definition that could be given, ensuring a high degree of comparability between countries. L_i then serves as an indicator of the group of potential migrants. We assume that this group is approximately proportional to L_i. Differentiation between the sexes would seem advisable, particularly because their participation rates differ greatly in the various countries, e.g. between Sweden and the Netherlands. However, such refinement would severely complicate the analysis, for it is households rather than individuals that account for the

bulk of the migration flows, and households tend to consist of both men and women. In fact, a different kind of analysis altogether would be required if sex differentiation were to be introduced. The variable chosen, then, was simply the number of people in the active age groups.

D_{ij} represents the distance between the regions i and j. It stands as a proxy for psychological distance rather than for the costs of bridging the physical distance. Assumedly, the financial costs of moving a household from one region to another are, for one thing, virtually insensitive to distance, and for another, are negligible compared to the net monetary advantages of the move, though it must be admitted that at short term the financing of a move may constitute a barrier. What really counts is the pain of leaving one's friends and relations for a completely different environment with a different social, sometimes also religious and cultural structure. That is the 'cost' that, as we assume, increases with physical distance.

But there are other migration impulses beside the factors mentioned. Important impulses may come from the housing facilities and the living environment; the income advantages to be expected may also play a role. Lack of data made it impossible to assess the impact of such impulses; the migration enquiries to be discussed here were, indeed, purely labour market-oriented.

Furthermore, we want to draw attention to the fact that the variables in the migration equation are expressed in absolute levels; in that way it is relatively easy to determine how a changed impulse, e.g. the creation of job opportunities, affects the number of migrants.

The results of the analysis are presented in Table 1. Looking at mobility in its relation to each regression coefficient, we think a distinction should be made between general mobility as represented by the value of the inter-cept, and specific mobility related to a specific impulse variable.

General mobility is highest in the Netherlands (— 3.36) and lowest in France and Great Britain (— 11.37 and — 10.43, respectively). Sweden occupies an intermediate position (— 6.81). The influence of distance is obviously highest in the Netherlands (— 0.009) and lowest in Sweden (— 0.0014), both France and Great Britain taking an intermediary position.

The coefficients of E_j (job opportunities in the immigration region) suggest a certain relation with the coefficients of L_i (potentially active persons in the emigration region). In both cases the Netherlands show a low mobility, France and Great Britain a high one, while Sweden takes an intermediary position.

ᴉᴏn statistics for France (F), Great Britain (GB), the Netherlands (NL)
ᵈᵉn (S).* Observations between 1960 and 1968.**

E_j	L_i	D_{ij}	Intercept ln α_0	R^2
1.00 (20.2)	1.06 (18.6)	−0.0023 (16.7)	−11.37	0.69
0.86 (8.8)	0.93 (8.4)	−0.0023 (5.3)	−10.43	0.76
0.59 (13.5)	0.61 (12.6)	−0.009 (21.5)	− 3.36	0.92
0.83 (17.0)	0.77 (13.7)	−0.0014 (15.5)	− 6.81	0.62

ᴦegions in France is 21, in Great Britain 8, in the Netherlands 11, in Sweden 23;
dictated by the structure of available data.
kets represent t-values.

f the analysis are summarized in Table 2 in qualitative terms.
ᴏr general mobility appears to mirror that of the push-and-

ᴉd Great Britain, while general mobility is low, push factors
f people present in a region) as well as pull factors (job op-

structure in France, Great Britain, the Netherlands and Sweden.

General mobility	Push-and-pull factors mobility	Spatial mobility
low	high	medium
high	low	low
medium	medium	high

ᴇwhere) have considerable influence, and we should take
atements as 'Le Français ne se deplace pas' and 'We British
th a grain of salt.
ᴉture that strikes us is that spatial mobility is considerably
en, where distances are very long, than in the Netherlands,
out on a much smaller scale. France and Great Britain,
s are more modest than in Sweden but still longer than in
ᴉs, score 'medium' on the spatial-mobility factor. All in all
seems justified that the perception of distance in a country

depends on that country's size: the smaller the country, the more distance seems to be a barrier to migration.

The most important feature emerging for the Netherlands is the high sensitivity of the working population to distances. Job creation, not a very powerful migration stimulus at all times, is made even more ineffective by the people's resistance to moving over any sizeable distance. Klaassen and Drewe (1973) examined the effectiveness of job creation in regions of destination at various distances. They found that the creation of jobs at a short distance (say 100 kilometers) was most successful in inducing migration in the Netherlands, with Sweden coming second. In France and Great Britain such job creation was a great deal less effective. The impact of job creation rapidly diminishes in the Netherlands as distances increase; at 300 kilometers it is very nearly as low as in France and Great Britain. The effectiveness of job creation at long distances turns out to be considerably higher in Sweden than in the other countries studied.

On the grounds of the foregoing it may be assumed that attempts undertaken in the Netherlands to stimulate migration over a large distance (e.g. from the west to the north), by creating job opportunities in the area of destination, will not be successful unless mobility is stimulated as well by suitable policy measures. By the same token, the planned removal of government agencies from the western to the northern part of the country may be strongly opposed because of the relatively large distance involved.

5.2 MIGRATION AND MOBILITY OF FOREIGN WORKERS

A second study that seems relevant in the context of this contribution is one by Heijke (forthcoming) on the migration of foreign workers. In this study two groups of countries are considered, viz:
1. the immigration countries: Austria (A), France (F), West Germany (D), Switzerland (CH), Belgium (B), the Netherlands (NL) and Sweden (S);
2. the relevant emigration countries (the Mediterranean countries): Greece (GR), Italy (I), Portugal (P), Spain (E), Yugoslavia (YU), Turkey (TR), Algeria (DZ), Morocco (MA) and Tunisia (TU).

The data on which the analysis is based are presented in the table in Appendix A. It appears from this table that the data base, if not so homogeneous as one would wish, is still sufficiently complete for the analysis. The figures relate to the year 1969.

Three remarks should be made before the results of the analysis are

presented. The first is that only migration *from* Mediterranean countries to Western European countries was taken into consideration; as the migration flows in the opposite direction are negligible, their inclusion did not seem opportune.

The second is that, because incomes in Mediterranean countries and the Western European countries differ considerably, an income-difference factor (ΔW_{ji}) was added to the variables used in the analysis of migration and mobility in the four European countries. The other variables have been defined similarly to those in the latter analysis.

The third remark refers to the possible effects of institutional factors as regards the migration from Mediterranean to Western European countries. While in the case of interregional migration individuals are free to move, international migration, by contrast, is governed by strict rules. These rules concern primarily the question of whether migration is permitted or not. There is no sense in studying migration other than to and from countries between which it is permitted, which is the case for most of the countries studied in this investigation. Only a few cells of the migration matrix involved are empty; these have not been included in the analysis. The second important question is: has migration, as far as it *is* allowed, been influenced by the rules imposed on it, and to what extent? It is difficult to answer that question, among other reasons, because institutions, and the use or abuse made of them, tend to follow developments instead of controlling or even checking them. Because institutions, once migration is allowed, presumably are not an independent variable, and moreover are difficult to operationalize, they have for the moment been omitted from the analysis.

Two equations were tested. In the first the influence of distance was expressed, as in the European analysis, as an *e*-function; in the second as a power function, which means that in the statistical test applied to the natural logarithm of the number of migrants, the explaining factor in the first test was D_{ij}, in the second $\ln D_{ij}$.

The results were:

$$\ln M_{ij} = 0.68 \ln \Delta W_{ji} + 1.46 \ln E_j + 1.22 \ln L_i - 0.002 D_{ij} - 5.61$$
$$\quad\quad (3.57)\quad\quad\quad (6.10)\quad\quad (4.44)\quad\quad (4.71)\quad\quad (3.11)$$

$$R_c^2 = 0.648 \tag{4}$$

and

$$\ln M_{ij} = 0.72 \ln \Delta W_{ji} + 1.59 \ln E_j + 1.17 \ln L_i - 2.69 \ln D_{ij} + 11.07$$

$$\quad\quad\quad (3.76) \quad\quad\quad (6.69) \quad\quad (4.31) \quad\quad (5.00) \quad\quad (2.80)$$

$$R_c^2 = 0.661 \quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad (5)$$

The results do not differ much for the two approaches. Neither the regression coefficients nor the t-values or correlation coefficients differ significantly. The results of the second approach, which are slightly better than those of the first, are presented graphically as a Tinbergen-diagram in Figure 1.

Using the first equation (4) as a basis for comparison with the results of the interregional migration analysis for the four Western European countries, we find some significant facts:

1. Income differences between Mediterranean countries and Western European countries do play a role but their contribution to the explanation of the variance in migration is modest (compare Figure 1).

2. The influence of push-and-pull factors is considerably greater for people from Mediterranean countries than for migrants from any of the European countries. In other words, Mediterranean people are much more sensitive to the pressure of the population at home and the pull of jobs available elsewhere.

3. The restrictive influence of distance for Mediterranean migrants is comparable to those from Great Britain and France. This influence is stronger than that in Sweden, but quite a bit weaker than that in the Netherlands.

4. General mobility in Mediterranean countries as expressed by the logarithm of the constant in the equation is at -5.61 lower than that in the Netherlands. It is considerably higher than the figure for Great Britain and France and comes actually close to that for Sweden ($- 6.81$).

However, it seems that our including income differences in (4) but not in (3) is now causing us trouble. Because these differences play but a modest role in the explanation of the migration variance, dropping them from (4) will probably increase the intercept. In view of the average contribution of the income differences we suspect that in leaving out the income differences from (4), thus making (4) identical in form to (3), we shall cause the intercept to rise to almost zero. The conclusion may be that the general mobility in Mediterranean countries probably surpasses that in European countries, in the sense that there is hardly any general migration-restricting factor as far as migration from Mediterranean to Western European countries is concerned.
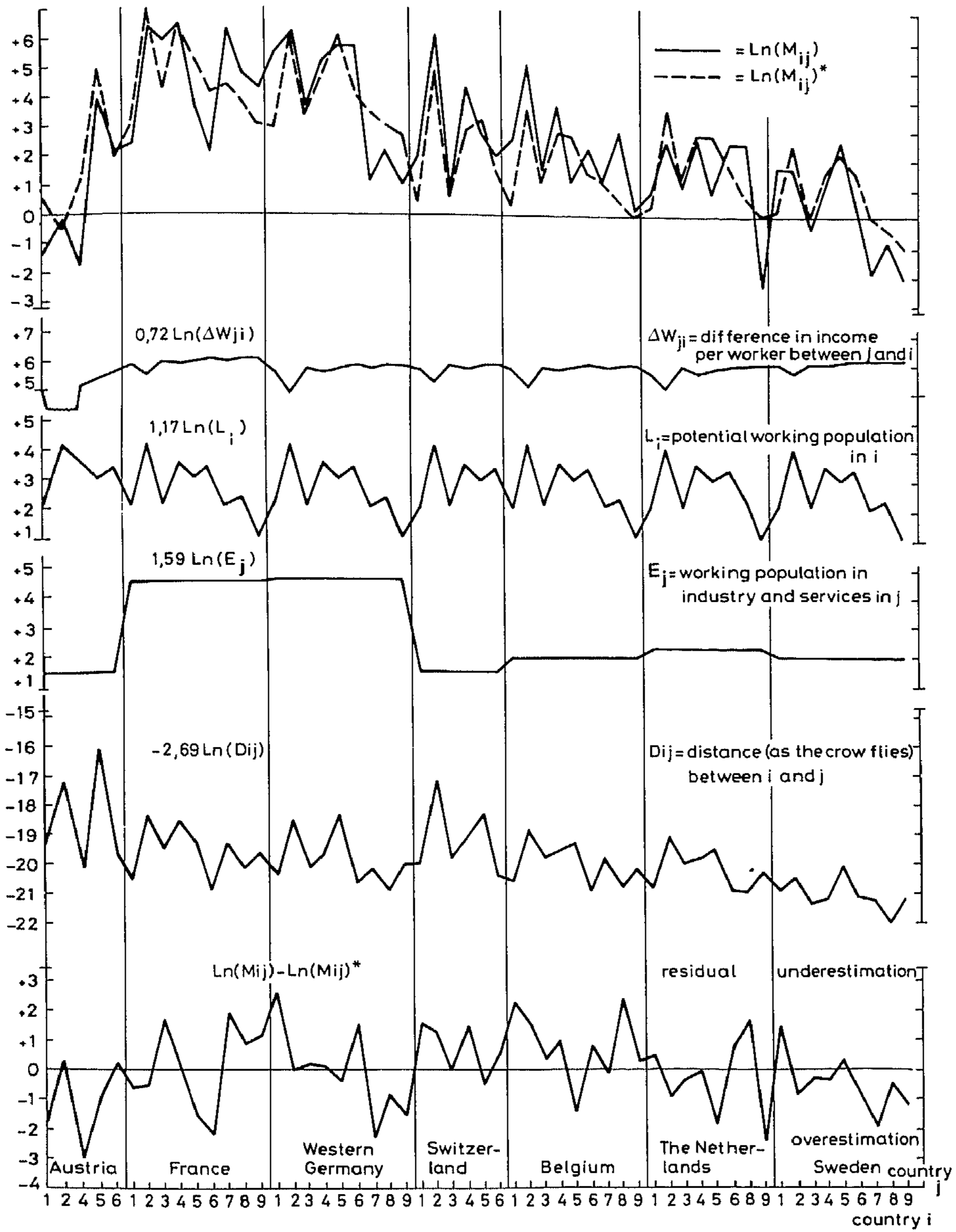
Figure 1. Migrants from Mediterranean countries.

* The countries 'i' are numbered according to the appendix.

5.3 PSYCHOLOGICAL DISTANCES

The residuals presented at the bottom of Figure 1 suggest systematic factors at work to help direct the flows between the two groups of countries. One hypothesis is that religion plays a role, so that, for instance, migrants from Spain, Portugal and Italy would preferably go to the Roman Catholic countries: Austria, France and Belgium. The hypothesis was tested, and the outcome was negative. The hypothesis that language differences might be significant was the next one to be tested, with much more promising results.

For the language test, the immigration countries were divided into three groups, viz.:

1. France as a French-speaking country, and Belgium, where French is one of the main languages, spoken widely even in its Flemish provinces;
2. Switzerland as a multi-lingual country;
3. Austria, Germany, the Netherlands, and Sweden, where Germanic languages are spoken.

The emigration countries were also divided into three groups, viz.:

1. Algeria, Morocco, and Tunisia, as countries with French as important second language;
2. Spain, Italy, and Portugal, as countries where other Romance languages are spoken;
3. Greece, Turkey, and Yugoslavia, as countries where neither Germanic nor Romance languages are spoken.

The residuals per country group are presented in Table 3.

Table 3. Residuals per country group.

Origin Destination	DZ MA TU	E I P	GR TR YU	Total
F, B	+ 6.7	+ 3.9	− 2.7	+ 7.9
CH	−	+ 2.8	+ 1.6	+ 4.4
A, D, NL, S	− 8.8	− 5.0	+ 1.5	− 12.3
Total	− 2.1	+ 1.7	+ 0.4	0

The first conclusion that may be drawn from the table is that the *sum* of the residuals for each group of emigration countries is relatively small compared to the residuals for each group of immigration countries

separately. That means that there are hardly any significant differences between groups of Mediterranean countries as far as their total emigration is concerned.

A second conclusion is that there seems to be a strong preference for France and Belgium as immigration countries and a negative preference for the Germanic countries, with Switzerland taking an intermediary position. An explanation for this preference could be the distribution of language-groups among immigration and emigration countries. The countries with French as important second language (DZ, MA and TU) show considerable positive preference for migration to France and Belgium and a strong negative preference for the Germanic countries. The same, but to a lesser extent, holds for the other Romance-languages-speaking countries (E, I and P), where we find positive preference for France, Belgium and Switzerland (possibly also due to the fact that in Switzerland Italian is also spoken) and a negative preference for the Germanic countries. The remaining group of countries, whose languages have no direct kinship with either Romance or Germanic tongues and who therefore can be considered to have a free choice, show a slight preference for the Germanic countries.

The results confirm the expectation that language barriers are an important element of psychological distance, and affect migration behaviour significantly. Indeed, further analysis in that direction might well prove fruitful. On the whole it seems that in migration analyses, more attention should be given to social and cultural factors, and in particular to language differences, than has been given so far.

5.4 FINAL REMARKS

The analysis of migration and mobility behaviour is an essential element of regional science; that kind of analysis tries to find out why people move from one region to another. Behaviour patterns tend to change over time; to study the changes properly it would be necessary to carry out investigations like those presented in this chapter regularly for a number of consecutive years. We could then study how coefficients gradually change over time, finding perhaps general mobility increasing and distance becoming less and less of a barrier to migration. Unfortunately, given the lack of appropriate data, it is unlikely that results of such studies will become available for quite a few years.

At any rate, as distance is becoming less important in migration, we shall have to be careful how to define regions for the purpose of the analysis. It is doubtful already that data based on the administrative division of the Netherlands into provinces are still adequate for migration analysis. Among the migrants could be those who change their residence, crossing a provincial border in the process, while keeping their old jobs. So, a proper analysis would have to consider at least two different types of migrants: those who change their job location, and because the distance from their home to their new place of work is too great, also move house, and those who change their residence simply because they prefer living somewhere else, but keep their old job. Consequently, particularly in a small country like the Netherlands, commuting and migration tend to become objects of one set of decisions.

Another factor to be mentioned in relation to distance mobility is the density of population and socioeconomic activities. Greater density means many and manifold opportunities for living and working within easy reach; it makes for shorter migration distances and may even make migration altogether unnecessary. That is indeed in concordance with the low distance mobility found in the densely populated Netherlands and the high distance mobility prevailing in a sparsely populated country like Sweden. The clusters of population and socioeconomic activities are unequal in size and unevenly spread across space; our regional division is probably inadequate to allow a satisfactory representation of these inequalities. An attempt to include the density aspect in the analysis will make high demands upon the statistics available and their spatial division. Which is not to say that the problem does not merit closer attention; on the contrary.

APPENDIX. *Foreigners working or staying in a number of Western European countries (by country of origin, 1969)*

Countries of destination / Countries of origin	Austria (only workers) on August 1, 1969 a	France on January 1, 1969 a	Western Germany on September 30, 1969 b	Switzerland on January 1, 1969 a	Belgium on October 1, 1969 a	Netherlands on July 1, 1968 c	Sweden (only workers) on January 1, 1969 a
Greece	275	10,885	271,300	8,000	13,760	2,300	5,940
Italy	860	632,080	514,600	522,600	176,250	14,500$_d$	5,325
Portugal	—	367,425	37,500	2,200	4,435	3,100^d	680
Spain	170	667,610	206,900	87,700	47,745	18,300	3,185
Yugoslavia	48,105	43,340	331,600	16,100	3,415	2,400	14,015
Turkey	8,060	7,160	322,400	7,800	11,335	13,500	1,785
Algeria	—	562,000	3,300	—	3,460	—	155
Morocco	—	119,520	9,100	—	20,980	12,800$_d$	470
Tunisia	—	73,260	3,100	—	1,290	100^d	135
Subtotal Mediterranean area	57,470	2,483,250	1,699,800	644,465	282,670	67,000	31,690
Other countries of origin	10,310	516,750^e	681,300	288,675	172,935^f	137,000^g	107,000^h
Total immigrants	67,780	3,000,000^i	2,381,100	933,140^j	455,605	204,000	138,690
Population countries of destination (in millions)	7.4	50.3	60.8	6.2	9.6	12.7	8.0
Immigrants from Mediterranean area as a percentage of the population	0.8	4.9	2.8	10.5	2.9	0.5	0.4
Total number of immigrants as a percentage of the population	0.9	6.0	3.9	15.2	4.7	1.6^k	1.7

a Source: *Migration today*, nr. 14, Geneva 1970.
b Source: *Wirtschaft und Statistik*, August 1972.
c Source: *Statistisch Zakboek*, CBS, 1969.
d NEI's own calculations based on CBS data end of 1967 and end of 1972 concerning the number of foreigners present and migration balances in intermediate years.
e Among whom approximately 131,000 Poles, appr. 250,000 Africans (including 60,000 from Senegal, Mali and Mauretania), 35,000 North and South Americans and West Indians.
f Among whom 3,175 Congolese (Kinshasha).
g Exclusive of Surinamese, Antillians (35,000) and Moluccans (25,000).
h Among whom 19,000 Danes, 75,000 Finns, and 13,000 Norwegians.

i   Exclusive of 129,858 seasonal workers (including 119,301 Spaniards, 3,110 Portuguese, 2,408
    Italians and 2,079 Moroccans).
j   Exclusive of seasonal workers (114,081 in August 1968 and 14,233 in December 1968) and
    frontier workers (63,062).
k   Inclusive of Surinamese, Antillians, and Moluccans this percentage becomes 2.1.

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