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Contemporary Research in Population Geography

A Comparison of the United Kingdom and The Netherlands

Edited by

John Stillwell

School of Geography, The University of Leeds, Leeds, United Kingdom

and

Henk J. Scholten

Ministry of Housing, Physical Planning & Environment, The Hague, The Netherlands

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To our families

Preface

Significant changes have occured in the structural composition and geographical distribution of the populations of North West European countries during the 1970's and 1980's. Whilst the subject matter of this volume reflects many of the important themes of research activity that have preoccupied British and Dutch spatial demographers and population geographers over the last decade, the structure of the book aims to facilitate comparison of those selected themes between the United Kingdom and the Netherlands.

The book has gradually taken shape over the period of time since the conference in Oxford, in 1986, when the contents were first presented. We are very grateful for the assistance that we have received during the production process from Marjie Salisbury, Tim Hadwin and John Dixon at the School of Geography, University of Leeds; from Annemieke Perquin at the National Physical Planning Agency in The Hague; and from Evert Meijer, Elmy Heuvelmans and Berry van Houten at GEODAN in Amsterdam.

We also wish to acknowledge the contributions to the field of population geography that have been made in recent years by John Coward, who died so tragically in the Kegworth air disaster earlier this year.

John Stillwell and Henk Scholten
Amsterdam
March, 1989

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LIST OF CONTRIBUTORS

Peter Boden
School of Geography
University of Leeds
Leeds
LS2 9JT

John Coward
Department of Environmental Studies
University of Ulster
Coleraine
Northern Ireland
BT52 1SA

Peter Doorn
Department of History
University of Leiden
Postbus 9515
2300 RA Leiden

Pieter Everaers
Central Bureau of Statistics
Department of Income and Consumption
Postbus 4481
6491 CZ Heerlen

Robin Flowerdew
Department of Geography
University of Lancaster
Lancaster
LA1 4YB

Elspeth Graham
Department of Geography
University of St. Andrews
St. Andrews
Fife
KY16 9AL

Emily Grundy
Age Concern Institute of Gerontology
Kings College London
Chelsea Campus
552 Kings Road
London
SW10 0UA

Chris Hamnett
Faculty of Social Studies
Open University
Walton Hall
Milton Keynes
MK7 6AA

Pieter Hooimeijer
Geografisch Instituut
Rijksuniversiteit Utrecht
Postbus 80115
3508 TC Utrecht

Peter Jackson
Department of Geography
University College London
26 Bedford Way
London
WC1H 0AP

Loek Kapoen
Verkeersacademie
Stappegoorweg 201
5022 DD Tilburg

Nico Keilman
Nederlands Interuniversitair Demografisch Instituut
Postbus 11650
2502 AR Den Haag

Marianne Linde
Geografisch Instituut
Rijksuniversiteit Utrecht
Postbus 80115
3508 TC Utrecht

Menno Maas
BV Amro Bank
Projectontwikkeling
Amsteldijk 166
1079 LH Amsterdam

Sako Musterd
Subfaculteit der Sociale Geografie
Universiteit van Amsterdam
Jodenbreestraat 23
1011 NH Amsterdam

Philip Rees
School of Geography
University of Leeds
Leeds
LS2 9JT

John Salt
Department of Geography
University College London
26 Bedford Way
London
WC1H 0AP

Henk Scholten
Rijksplanologische Dienst
Willem Witsenplein 6
2596 BK 's-Gravenhage

Geografisch Instituut
Rijksuniversiteit Utrecht
Postbus 80115
3508 TC Utrecht

John Stillwell
School of Geography
University of Leeds
Leeds
LS2 9JT

Rob van de Velde
Rijksplanologische Dienst
Willem Witsenplein 6
2596 BK 's-Gravenhage

Dick Vergoossen
Geografisch Instituut
Katholieke Universiteit Nijmegen
Thomas van Aquinostraat 5
6825 HP Nijmegen

Tony Warnes
Age Concern Institute of Gerontology
Kings College London
Chelsea Campus
552 Kings Road
London
SW10 0UA

Jan van Weesep
Geografisch Instituut
Rijksuniversiteit Utrecht
Postbus 80115
3508 TC Utrecht

Frans Willekens
Nederlands Interuniversitair Demografisch Instituut
Postbus 11650
2502 AR Den Haag

Geografisch Instituut
Rijksuniversiteit Utrecht
Postbus 80115
3508 TC Utrecht

Robert Woods
Department of Geography
University of Sheffield
Sheffield
S10 2TN

1. COMPARATIVE RESEARCH, SELECTED THEMES AND DATA CHARACTERISTICS

John Stillwell and Henk Scholten

1.1 Introduction

Whilst international comparison has been encouraged in recent years through the various activities of major supra-national organizations such as the World Bank, the United Nations and the European Community, international geographical bodies such as the International Geographical Union (IGU) and International Union for the Scientific Study of Population (IUSSP) have continued to arrange conferences for geography researchers from different countries, and research centres such as the International Institute of Applied Systems Analysis (IIASA) have provided a more permanent context for facilitating comparative studies in a range of disciplines (see Rogers and Willekens 1986).

It was not until 1983, however, that British and Dutch population geographers came together formally for the first time to discuss contemporary research on migration, to exchange ideas and suggestions about tackling particular research questions with alternative data sets and methodological tools, and to establish contacts and identify areas of potential collaboration. Selected papers from this initial symposium were edited into a publication by White and Van der Knaap (1985) in which Ashworth and Hoekveld (1985) drew particular attention to the absence of directly comparable work on specific topics. In the light of the experience of the conference at Soesterberg, a second Anglo-Dutch meeting was organized by the Population Geography Study Group of the Institute of British Geographers and the Urban and Population Study Group of the Royal Dutch Geographical Society. A set of topics of common interest on the population geography of the United Kingdom (UK) and the Netherlands was identified and individuals from both countries were assigned particular topics and asked to collaborate in conducting their research investigations and preparing papers. Topics were selected partly on the basis of known personal research interests and available expertise, but also partly according to the considered significance of particular demographic phenomena. The contents of this book, which are described in section 1.2, reflect much of the material presented at the conference which was held in Oxford. The structure of different chapters indicates that in some cases, research was undertaken in a truly collaborative fashion resulting in genuine co-authorship; whilst in other cases, research involved minimal collaboration but followed agreed guidelines and resulted in twin papers by the respective British and Dutch participants. Papers selected from the conference presentations have each been revised and rewritten as chapters in the light of comments, discussion and in some cases, further research input. The exercise as a whole exposed both the benefits and shortcomings inherent in international collaborative and comparative research, and consequently the contents of the book illustrate not only similarities and dissimilarities in the population geographies and spatial demographic characteristics of the UK and the Netherlands, but differences in the stimuli for research and its orientation; differences in the relationship between government, planning and academic research and in the occupational characteristics of the researchers concerned; and differences in the data

J. Stillwell and H.J. Scholten, Contemporary Research in Population Geography, 1–16.

available for research and its accessibility in the two countries concerned. One of the differences in the orientation of research undertaken by population geographers in the two countries is that, relatively-speaking, less directly policy-related or planning problem-based research activity has been undertaken in the UK, whereas in the Netherlands, research on topics such as the allocation of state housing and its effect on residential mobility and neighbourhood change has been much more commonplace. Another example is in the field of population projection where multi-regional models in the Netherlands have contained a housing supply element whilst national population forecasting in Britain has not been dependent on housing variables of this type and is not planning-based in this sense. Universities and government departments tend to have a closer association in the Netherlands than in the UK in terms of physical proximity but also in terms of interchange of personnel and communication of information. It is not untypical for example, to find researchers in the Netherlands with contracts of employment in both sectors and enjoying the benefits of easier access to primary data sources and extensive computer facilities. In contrast, the Office of Population Censuses and Surveys (OPCS) in London has maintained a much more independent role vis a vis university research until recently, providing data on request but at substantial cost. The nature of the data that is available is of course another very important influence on the type of research undertaken in the two countries where alternative systems of demographic information collection and monitoring are used (see section 1.3)

There are, therefore, a variety of reasons why certain research subjects receive different emphasis in each country and why alternative techniques may be more appropriate in one country rather than another. But there is a more fundamental complication in undertaking comparative spatial analysis: the significant contrast in the size, physiography and settlement structure of the two countries. In aggregate terms, the estimated population of the UK in 1985 was nearly four times that of the Netherlands, whilst the surface area of the UK was almost six times greater (Eurostat 1987). Within the UK, uplands are found in much of the North of England, Wales and Scotland providing a distinctive contrast with the rolling land of central and southern England. In contrast to this topographical diversity, the Dutch landscape is characterized by its consistent flatness (average altitude only 37 feet above sea level). The average population density in the Netherlands of 347 inhabitants per km^2 is therefore very high in comparison with the average for the 12 member states of the European Economic Community (EEC)(143 per km^2) and with the UK (231 per km^2), although the range of population densities in the UK is much wider (from 9 per km^2 in the Highlands and Islands of Scotland to 4279 per km^2 in Greater London). The regional pattern of densities reflects each nations settlement structure. In the UK, densities are highest in the South East and in the North West (containing Manchester and Liverpool), whilst the Dutch provinces of Noord-Holland, Zuid-Holland and Utrecht, containing the major cities of Amsterdam, Rotterdam, The Hague and Utrecht, have the highest recorded densities. The large UK cities of Birmingham, Glasgow and Leeds, as well as London, have populations above that of Amsterdam or Rotterdam. Sheffield and Liverpool also both have populations in excess of half a million, and Manchester, Edinburgh and Bradford each have populations around 450 thousand, approximately equivalent to that of The Hague. Furthermore, town and country planning in Britain has resulted in the development of a number of new and expanded towns, whereas the Dutch government have, since 1927, been involved in a major project of draining and reclaiming the IJsselmeer, formerly the Zuider Zee. Britain therefore has larger cities and more urban problems than the Netherlands. On the other hand, the Netherlands is

much more integrated, economically and socially, with neighbouring European states and the efficiency of communications and transport systems reinforces internal integration. The accessibility of most locations relative to one another, in comparison with the UK, results in labour market areas much less self contained in employment and commuting terms. These various constrasting features of the two countries concerned provide some background context in which national and regional demographic structures and population redistribution through migration or residential mobility in particular can be analysed and compared.

1.2 Themes and content

Population geographers have always been involved in identifying, describing, measuring and interpreting the spatial structure and dynamics of the distribution of population. The tradition of empirical analysis has been maintained in the 1980's with studies of trends, patterns and processes relating to recent and distant periods of time, in both the UK and the Netherlands. In addition, advances in population research methodology have occurred as computer hardware and software facilities have evolved, as geographic information systems have been created or have made data more accessible, and as cartographic methods have been improved. Furthermore, the strength and range of research studies by population geographers have contributed both directly and indirectly to the development of theory (ter Heide and Willekens 1984, Woods and Rees 1986, Rogers and Willekens 1986).

The contents of this book have been organized to reflect three important themes in population research in both countries. The first theme involves historical analysis of the main components of aggregate population change: births, deaths and internal migration and the way in which data on these components is assembled and utilized in the context of multi-regional population projection. The second theme is focused entirely on migration and comprises separate analyses of three distinctive subgroups of migrants: labour force migrants, immigrants and elderly migrants. The final theme is concerned with relationships between demographic evolution, household formation, residential mobility and housing supply. The contents of the book are now introduced in the context of each theme.

1.2.1 The components of population change

Empirical analysis of patterns and trends in national and subnational population change remains an important focus of research for population geographers in both the UK and the Netherlands (recent studies include Champion et al. 1987, and ter Heide and Willekens 1984). Changes in the size of national, regional or local populations are determined by fluctuations in the balance between births and deaths and the net effect of migration. Over the 10 years, 1975 to 1984, the population of the Netherlands grew consistently from 13.67 million to 14.42 million whereas the population of the UK fell from 56.22 million in 1975 to 56.17 million in 1978 before increasing to 56.49 million in 1984 (Eurostat 1987). Longer term trends in natural change and its components (Table 1.1) illustrate that since 1960-65 in the EEC as constituted in 1985, there has been a decline in levels of natural increase experienced by all member nations except Eire, due primarily to declining birth rates. Natural change has remained relatively high in the Netherlands because of very low death

Table 1.1 Trends in the components of natural change, 1961-65 to 1980-84

	1961-65			1971-75			1980-84		
	BR	DR	NIR	BR	DR	NIR	BR	DR	NIR
Belgium	17.0	12.1	4.9	13.4	12.1	1.3	12.1	11.2	0.9
Denmark	17.3	9.8	7.5	14.6	10.1	4.5	10.2	11.0	-0.8
France	18.0	11.2	6.8	16.0	10.7	5.3	14.2	10.1	4.1
Ireland	21.9	11.8	10.1	22.2	11.0	11.2	19.6	9.4	10.2
Netherlands	20.7	7.8	12.9	14.9	8.3	6.6	12.1	8.2	3.9
United Kingdom	18.4	11.8	6.6	14.1	11.8	2.3	12.9	11.6	1.3
West Germany	18.1	11.4	6.7	10.8	11.9	-1.1	9.8	11.6	-1.8
European (i) Community	18.4	10.8	7.6	14.3	10.9	3.4	12.1	10.6	1.5

Notes:
(i) European Community as constituted in 1985
(ii) Birth (BR), death (DR) and natural increase (NIR) rates are all per 1000 population
(iii) Source: OPCS (1985, Table 1)

rates. Life expectancy at birth in 1985 was therefore higher in the Netherlands (72 years for males compared with 70.2 years in the UK, 78 years for females compared with 76.2 years in the UK). Historical analyses of spatial variations in fertility and mortality have been undertaken to explain their complex relationships with economic, social and environmental variables during the demographic transition (Woods 1986) and studies of recent patterns of fertility and mortality are presented for the UK in Coward (1986) and Armitage (1987); for the Netherlands, in Kapoen (1986) and Central Bureau of Statistics (1981). In Chapter 3, John Coward confines his analysis of vital statistics in the UK to 1984 and identifies the dominant features of the patterns of crude and standardized rates across the country at different spatial scales. Loek Kapoen and Nico Keilman also examine spatial variability in crude and standardized fertility and mortality in the Netherlands at two different scales for 1984-5 but they also demonstrate how age-specific fertility and life expectancy have changed since the early 1970's and what these changes imply for Dutch regional populations at the end of the century.

Despite the close approach to zero population in the UK and the declining rate of population growth in the Netherlands, redistribution of the population by internal migration has been very substantial, and there is a wealth of studies of migration at different spatial scales in the literature (for example in the UK, see Rees 1979c, Brant 1984, Devis 1983; 1984, Ogilvy 1980; 1982, Stillwell 1985; and in the Netherlands, see Drewe 1980, Van Engen and Van der Knaap 1980, Van der Knaap and Sleegers 1982, Baydar 1983, Van der Erf 1984). The total

level of migration in the Netherlands has followed a pattern over time which is seen in most Western European countries. Willekens and Baydar (1986) have shown how the level of annual movement between municipalities in the Netherlands since the late 50s rose to a peak in 1973 but declined thereafter, reaching a low point in 1979. Data from population censuses and other sources suggests that migration activity in Britain similarly increased by about 10% between 1960-61 and 1973-74, before declining to a low point in 1981-82 (Rees and Stillwell 1988). In Chapter 4, John Stillwell and Peter Boden describe the age characteristics of national migration in the UK and identify trends in net migration, gross out- and in-movement, and movement between particular groups of metropolitan and non-metropolitan regions. In the second half of the chapter, Dutch internal migration is decomposed into its level, generation, attraction and distribution components by Henk Scholten and Rob van de Velde who examine patterns of temporal stability in time series data for big cities, growth centres, urban areas and areas of open space in the Netherlands.

Although Chapters 3 and 4 are intended to provide an empirical overview of fertility, mortality and migration patterns, they do contain several examples of the results of model-based analysis. In both the UK and the Netherlands, significant progress has been made in recent years in the development and use of a range of modelling methods. Techniques for modelling age-specific schedules of fertility, mortality and migration, developed at IIASA by Rogers et al, have been utilized by Drewe (1985) for example, in the Netherlands and by Bates and Bracken (1987) in England and Wales. The availability of good time series data in the Netherlands has facilitated time series analysis and log linear modelling has been used extensively in Dutch migration research (Willekens 1983, Baydar 1983, Scholten 1984, Scholten and Van Wissen, Willekens and Baydar 1986). In the UK, a method of fitting gravity models based on the Poisson distribution has been developed by Flowerdew and Aitken (1982) and tested on inter-urban migration (Flowerdew and Lovett 1986) and a variety of constrained spatial interaction models of migration have been calibrated and compared by Stillwell (1978; 1986) using inter-regional data.

At the forefront of modelling research progress in population geography has been the development of new models for multiregional population analysis and projection, including the improved estimation of unknown information for historical periods (Willekens et al 1981) Methodological developments associated with the explanation of existing geographic and demographic patterns have been paralleled by improvements in techniques for projecting individual population change components and in procedures for creating integrated population projection systems (Rees and Stillwell 1984). Single region cohort-survival models have been superceded by multi-region accounts based models (Rees 1981a; 1984; 1985) and an excellent review of this international and interdisciplinary research field can be found in Rees (1986a). The preparation of subnational (local or regional) population projections necessitates the assembly of large quantities of information on the components of change because accurate estimation requires comprehensive accounting of those involved in the processes of birth, death and migration. In Chapter 2, Philip Rees and Frans Willekens outline the requirements of population forecasting and the necessary ingredients for a multiregional population model. Structural characteristics and data requirements of models used by the Dutch and the English to generate subnational projections are explained, assessed and compared.

1.2.2 Specific migration streams

The level of resolution adopted by researchers of migration is extremely important in that significant changes occurring at one level can be entirely obscured if spatial, sectoral or temporal disaggregation is inappropriate. Broad trends in migration at the macro-region scale, for example, may mask very important changes occurring between and within local labour markets. Similarly, analysis based on aggregate flows will not enable age or sex-specific migration patterns to be identified and will prevent flows of migration motivated by different reasons from being isolated from one another.

In the second part of this book, attention is focussed on three selected migration streams, the first of which can be referred to in general terms as intra-national labour migration. Detailed data on labour migrants is not abundant in Britain or in the Netherlands. Consequently, a familiar approach is to obtain information on movement between administrative areas, disaggregated by age and sex characteristics and to make inferences about patterns of labour migration from the data on migrants aged 15 to 65. Alternatively, it is possible to utilize the limited data that is available on the socio-economic attributes of the migrants involved. In Britain, some published information on the composition of migration by economic position is available at the national level (OPCS 1983a), indicating that nearly 75% of males and just under 50% of females aged 16 and over who moved in the year prior to the 1981 Census were working at the time of the census. About 12% of males were seeking work (unemployed) compared with 6% of female migrants, whilst 35% of female migrants were classified as economically inactive (housewives). Information is also available on the proportions of migrants who were temporarily or permanently sick, retired or enumerated as students.

Chapter 5 is an attempt to bring together an empirical and theoretical study of interregional labour migration in Britain with research on the selective nature of labour force migration in the Netherlands. In the first half of the chapter, John Salt and Robin Flowerdew describe changes in interregional migration rates of different occupation groups between 1970-71 and 1980-81. They suggest that differing propensities reflect the operation of labour markets both internal and external to firms and that the transfer of personnel within organizations seems to have increased over the period. In the second part of the chapter, Dutch interregional migration data from the 1981 Labour Force Survey, differentiated into 8 socio-demographic and economic categories, is analysed by Peter Doorn, and variations in the role of interregional migration in contributing to population growth and decline are identified.

Whilst economic motivations are clearly important in explaining much of longer distance post-war migration within countries of Western Europe, this is also true of movement across national boundaries within Europe and across continental borders, although political factors are also of significance. The flow of immigrants into Britain and the Netherlands is the second of the migration streams chosen for inclusion. In Chapter 6, Peter Jackson provides a comparative review of the trends in immigration to both countries and of the Dutch and British governments' responses in terms of attitude and policy. Most of the immigration into both countries has been labour migration and Jackson argues that the connection between migrant labour and racism requires a full understanding of the racialization of different groups at different times.

In addressing the question 'why do people move?', it is possible to divide migrants into three broad groups on the basis of the stage in their life cycle. Each group is motivated by different factors. The first life course group includes members of the labour force without family responsibilities, whose migration results from the need to find a job or a place in further or higher education. This group as a whole has a high migration propensity as evident from the labour force peak of the well-known migration age schedule. Secondly, there are families with one or more parents in the labour force, whose migration is also likely to be motivated by labour market opportunities. Since their status is not changing as fast as those in the former category, and since family reponsibilities mean more permanent investment in a home or in child education, they tend to have lower migration rates. Finally, there is the movement of those whose ties to the job market have been broken and whose migration is motivated by residential, environmental or social factors. This group can be referred to as the elderly, whose peak of migration propensity tends to be around the age of retirement from full-time employment. It is this latter group that provides the third stream included in Part 2 of the book. Chapter 6 contains an integrated, comparative analysis of later-life migration by Dick Vergoossen and Tony Warnes who identify various similarities and discrepancies in the patterns occurring in the two countries concerned.

1.2.3 Population, households and housing

Demography is the scientific study of human populations, primarily with respect to their size, structure and development (United Nations 1958, p.3). Whilst the acquisition of knowledge about population size and structure has remained important, much debate in the 1970's was focussed on the question of population change in the future. It appears that in both the UK and the Netherlands, we are approaching a situation of stable or zero population growth as far as size is concerned.

Spatial demography is concerned with the spatial distribution of current and future populations, and it is important to identify whether policy measures can be utilized to influence the population distribution at any point in time. The common element in regional economic policies and spatial policies is that they aim at improving the balance between population, resources and amenities in terms of their distributions both within and between regions. Objectives are formulated which include, for example, equating supply with demand in the labour market and in the housing market; making better use of natural resources; combatting long distance commuting; improving pollution and other threats to the natural environment; and improving accessibility to social and cultural facilities. The realization of a balanced spatial distribution of population and activities can be achieved by the provision of facilities in regions where there is surplus demand, or by an attempt to influence the size, structure and especially the distribution of the population. In the latter case, this might involve the creation of employment in a certain region to which people are willing to migrate to live and work. At the heart of this approach is the desire to achieve equilibrium between regional demand and regional supply. The authorities cannot, however, always expect to achieve balance through migration. The demand for dwellings, for example, must be met, whilst at the same time, work and social contacts must be maintained within the region (residential mobility). Further elaboration of these approaches can be

found in Willekens (1984) and ter Heide and Scholten (1988).

The demand for employment, housing, and social and cultural facilities depends not only on the size of a population but also on its structure. In addition to age, sex and socio-economic status, household structure is particularly relevant. The number of households of various types determines the demand for dwellings and influences labour supply and the demand for certain facilities (such as schools). In spite of its clear political relevance, scientific knowledge of household demography is still limited. As opposed to the study of individuals, there is little agreement among researchers as to the approach best suited to study demographic aspects of households. In 1988, a study appeared in which, for the first time, various aspects of household demography were investigated by different authors (Keilman et al. 1988).

The following changes in household structure have taken place over the past 15 years in Britain and the Netherlands: the number of children per family has decreased; there has been a relative decline in the number of marriages; there has been a sharp increase in unmarried cohabitation; the number of divorces has increased; and young people are leaving their parental homes at an earlier age whilst old people are retaining their independence longer. The result of all these factors has been that the number of households in Britain and the Netherlands has increased sharply, and that the average size of households has decreased. In Chapter 8, Emily Grundy and Pieter Hooimeijer and Marianne Linde discuss these changes in household structure in England and Wales and the Netherlands respectively. In both studies, amenities which are very important to households (namely dwellings) are discussed. The household type is dependent on the availability of space. An increase in the size of the household often leads to demand for a larger dwelling. An improvement in the economic situation can also lead to a demand for a better dwelling or a better residential environment. The ageing of individuals making up a household is often coupled with a reduction in household size as, for example, when children leave to create homes of their own. The various life cycle stages in household formation and development are discussed in Chapter 8 and the relationship between household composition and housing needs is dealt with explicitly.

As already indicated, changes in household composition lead to a demand for other types of housing and residential environment, and therefore often motivate migration over relatively short distances. In Chapter 9, Elspeth Graham discusses the phenomenon of residential mobility in Scottish cities and considers in particular the relationship between mobility and tenure. Pieter Everaers and Sako Musterd explore this relationship in the Netherlands but they also consider the consequences of residential mobility for neighbourhood change and the role of policies in influencing these processes. Finally, in Chapter 10, the supply side of the housing market equation is considered. In a joint study, Chris Hamnett, Menno Maas and Jan van Weesep look at the role of the housing market as a source of urban demographic and social change in Greater London and in Dutch cities, and argue that changes in the supply of housing of various types does have a major influence on the demographic characteristics of the resident population.

1.3 Data sources and spatial systems

International comparative research in population geography and spatial demography is complicated by differences in the data which are available for analysis. Government authorities in different countries adopt different mechanisms and procedures for collecting statistical information and they select to measure the characteristics of their populations using variables defined in a variety of alternative ways (White and Findlay 1986). Differences also exist in the substance of published data, in the timing of publication as well as in access to unpublished information. In the following subsections, the primary sources of data in the Netherlands and the United Kingdom are introduced and the main subnational, administrative spatial units of both countries are outlined.

1.3.1 The Netherlands

The most important source of information on fertility, mortality, marriage and migration in the Netherlands is the population registration system. This system involves a continuous recording and linkage of selected information about each inhabitant. Population registers are compiled from an inventory of persons resident in each municipality, augmented by information about birth, death, adoption, legitimation, marriage, divorce, change of name and change of residence. A central file in each municipality is automatically notified of certain events which occur during the lifetime of each individual. Van den Brekel (1977) contains a more detailed discussion of the population register, and this section of the chapter draws on the review of Dutch mobility data by Keilman (1986).

The population registration system is designed to maintain information about all persons resident in the Netherlands. Persons are registered in the population register of the municipality in which they normally reside, and those without a fixed address are entered into a separate Central Register. Temporary visitors to the country are excluded, as are foreigners entitled to diplomatic immunity and foreign armed forces personnel stationed in the country. Each child registered as a live birth receives a personal card which accompanies the individual throughout his or her lifetime, and on which is entered any information concerning change in the individual's personal situation. When a person becomes the head of a family, the card will also contain information about members of the nuclear family. When the person dies, the card is removed from the register and stored at the Central Bureau of Genealogy.

It is the responsibility of the municipalities in the Netherlands to provide the Dutch Central Bureau of Statistics (CBS) with the information required to compile national and regional statistics. Thus, for example, when a person migrates from one municipality to another in the Netherlands, his or her card is forwarded to the new municipality from the old one and at the same time, a 'removal' card is used to transmit further information about date of move, sex, age, marital status, year of marriage and nationality. The removal cards of all persons are subsequently forwarded to the CBS for statistical processing and the population registers of the municipalities are brought up-to-date. The removal cards therefore provide the main source of information about intermunicipal migration. The CBS calculates the number of migrations which occurred during a particular month, disaggregated by various characteristics, and publishes tabulations of data at varying spatial scales once or twice a year.

Figure 1.1 Spatial units in the Netherlands

Although demographic data is available at the level of the municipality, the CBS publishes information for municipalities grouped according to population size or degree of urbanization. In Chapter 7, Vergoossen and Warnes utilize a seven-fold size classification to examine age-specific migration rates in 1973 and 1983, whereas in Chapter 4, Scholten and Van de Velde use urbanization as their criterion to distinguish between the four large cities (Amsterdam, Rotterdam, The Hague and Utrecht), the city regions, the growth centres and the remaining areas. The 12 Dutch provinces are more frequently adopted as appropriate spatial units for geographical analysis of the population and the boundaries of these administrative areas are illustrated in Figure 1.1. However, in Chapter 5, Doorn adopts a set of 5 macro-regions (Figure 1.1) to demonstrate the changing distribution of the employed population, disaggregated into SOcio-Demographic and EConomic (SODEC) categories. Furthermore, there exists at a more refined level a set of 40 functional regions in the Netherlands which have been delimited on the basis of spatial interactions with respect to dwelling, work, facilities and social relations. These COROP-regions, which respect provincial boundaries, are used by Keilman and Kapoen in Chapter 3 as the spatial units for describing regional variations in fertility rates. In principle, data for any set of regions can be assembled as long as they are amalgamations of current municipalities. There are problems, however, in compiling time series data sets by municipality because of the

problem of boundary change: in 1951, there were 1014 municipalities in the Netherlands, whereas in 1984, the total had shrunk to 749. The CBS have pursued different solutions to overcome this problem as far as migration data is concerned. Currently they adopt a method of calculating corrected migration figures which would have occurred in the theoretical situation where municipal borders already existed at some date prior to that of the actual change (Prins and Levering 1986, Keilman 1986).

Apart from the boundary change problem, the registration system produces accurate migration data which can be defined as counts of moves between regions rather than transition counts. Less use is made of the latter type of data in the Netherlands since the last census was undertaken in 1971. Three other sources of migration data are used, however, to complement the population registration system. The first of these is the survey of intra-municipal migration. When a person moves from an origin address to a new destination address within the same municipality, no removal card is completed. Therefore, the CBS sends out a questionnaire to each of the municipalities, asking them for information on the total number of persons who moved within the municipality during the year, disaggregated only by sex and certain family characteristics at time of move. Since 1977, the survey has been carried out anually and allows the CBS to produce overviews of total migration in the Netherlands.

The second source of migration data is the Labour Force Survey (LFS), which is co-ordinated within the framework of the European Community. In the Netherlands, the LFS is carried out on a biennial basis and provides data on the supply of labour, unemployment, job search behaviour and occupational structure. The survey is based on a sample of addresses at which all persons aged 16 and over are interviewed. In 1981, the sampling fraction was about 5% of addresses whilst in 1983 and 1985, the fraction dropped to roughly 3%. The most important feature of data from the LFS is that it provides information on the socio-demographic and socio-economic characteristics of the population and those individuals in the population who change their municipality of residence. The LFS question about migration is similar to that asked in the Census of Population and the survey therefore records transitions (individuals classified by origin municipality one year prior to the survey, and by destination municipality at survey date). Multiple movement is not recorded and intermediate locations of residence are unknown. LFS data is available on magnetic tape from the CBS, and Doorn bases his analysis of labour migration in Chapter 5 on the results of the 1981 LFS. Because of the sample nature of the survey, it is necessary to compute statistical significance and to define confidence levels where appropriate when using this data.

The third survey is the Housing Demand Survey (HDS). This enables the collection of information on the housing situation, on housing expenditures and on movements, and is used to evaluate and formulate housing policy. The most recent HDS's were organized in 1981 and 1985 and involved interviews with 85,000 and 60,000 persons respectively (sampling fraction of 0.6-0.7%). Migration data was collected in response to questions about past and intended moves, and the surveys are valuable because the motives which have led to actual change of residence are recorded. Extensive tabulations of data on mobility collected from these surveys have been published, but the survey only records whether or not a move has taken place within subsequent periods of six months during the three years prior to the interview.

In summary, the Netherlands has a rich resource of demographic and socio-economic data about its population. This has been extensively reviewed by Van der Erf (1984), Scheurwater (1984) and Gordijn et al. (1984). In the context of assembling data for multi-regional population projection modelling, one particular difficulty is that, although the CBS prepares migrations and births data files using the period-cohort age time plan, this is not the method adopted for regional mortality data. At the regional level, deaths are classified by age at death and year of death (period age time plan). The problem is one of coding, since the year of birth and date of death are recorded on the death certificate. At the national level, mortality data are available by year of birth, year of death and age at death.

From this skeletal review of data sources in the Netherlands, it is clear that a regional projection model must be based on the concept of movements rather than transitions. Alternative Dutch models using data from the registration system are outlined in Chapter 2.

1.3.2 The United Kingdom

Since there is no population registration system in the UK comparable to that used in the Netherlands, much emphasis is placed on the decennial population census for the provision of demographic information although data are also collected through sample surveys and registers such as that maintained by the National Health Service.

National censuses of the population have traditionally been undertaken in Britain in the first year of each decade, although a 10% sample census was conducted in 1966 and some local authorities arrange their own local or 'mini' censuses from time to time. Responsibility for the Census rests with the Office of Population Censuses and Surveys (OPCS) in England and Wales and the respective General Register Offices (GRO) in Scotland and Northern Ireland. Counts of the population are made by enumeration districts (in England, Wales and Northern Ireland) or by postcode areas (in Scotland) which together number around 130 thousand separate spatial units. Statistics on numbers, age, sex and marital status of the 'enumerated' population are therefore obtained and OPCS also produce estimates of 'usually resident' populations on the basis of the statement of usual residence that is included on the census return. The latter estimates are necessary since migration statistics are gathered on a place-of-usual-residence basis. Population estimates at each mid-year following the census are then made by OPCS at local authority and health district scale, along with population projections for the future. The information on demographic structure, household characteristics, education and migration which is provided by individual heads of households on census dates is coded, computer processed and published in the form of national summary statistics or in County Reports for England and Wales. The latter contain information for local authority areas within shire and metropolitan counties (Figure 1.2). The counties of England aggregate into regions which together with Wales, Scotland and Northern Ireland, comprise the set of 11 standard regions (Figure 1.2). Administrative counties and districts in the UK have been adopted as the basic spatial units for the analysis of fertility and mortality in Chapter 3 and of internal migration in Chapter 4. However, in both cases, it has been convenient to adopt groupings of administrative units. Coward, for example, distinguishes 11 categories of districts in England and Wales (inner London; outer London;

Figure 1.2 Spatial units in the United Kingdom

principal cities; other metropolitan; large cities; small cities; industrial districts; new towns; resort districts; other urban, urban-rural and accessible rural districts; and remoter rural districts) whereas Stillwell and Boden identify 5 area categories (Greater London; provincial metropolitan counties; their region remainders; other regions in England and Wales; and the remaining UK regions). The distinction between metropolitan counties, their region remainders and other regions in the UK is also used by Vergoossen and Warnes for examining patterns of elderly migration in the UK in Chapter 7. These spatial systems based on local government and administrative principles contrast with functionally-defined regions such as the 281 local labour market Areas of CURDS Functional Region system (Champion et al. 1987), which can also be grouped according to factors such as population size and location with respect to major metropolitan centres (Champion 1986).

OPCS provide further information for smaller areas within counties. The Small Area Statistics (SAS) associated with the 1981 Census have been produced for enumeration districts which can be aggregated to electoral wards, and SAS data, mounted on special disk packs at regional computing centres in the UK can be accessed using computer software packages (SASPAC and MATPAC). Problems arise in comparing small area statistics for 1981 with those for 1971 because enumeration district and ward boundaries changed substantially between the census dates.

Britain does maintain registration systems for vital events like birth, death, marriage and divorce. Births have to be recorded within a given time period, with date and place of birth plus details of parents. Deaths have to be certified within 5 days and relatives have to provide details of date and place of death, name, sex, age, occupation and cause of death. Births and deaths data are now published by OPCS in annual reports and can be obtained for wards within local authority areas. The mortality statistics are disaggregated by age (0, 1-4, and 10 year age groups to 85+).

Internal migration data in the UK comes primarily from two sources: the Census and the Central Register of National Health Service (NHSCR) patient transfers. Censuses in 1971 and 1981 both contained a question about place of usual residence one year previously and therefore migration data refers to migrant transitions occurring during 1970-71 and 1980-81 respectively. In Chapter 4, Stillwell and Boden have used this type of data to demonstrate changing rates of migration at regional, county and district scales in Britain, whilst similar data from the Census for Scotland is used by Graham in Chapter 9 to examine rates of residential mobility within the four Scottish city districts of Edinburgh, Glasgow, Aberdeen and Dundee. Conceptual and definitional differences between census transition data and data resulting from NHS patients moving and re-registering in new Family Practitioner Committee Areas (FPCA's), have been classified by Rees (1986b). The characteristics and limitations of NHSCR data have been described by Ogilvy (1980; 1982). The importance of this data is that it provides information about migration behaviour for the gaps between censuses and it is convenient that the FPC areas (Area Health Board areas in Scotland) coincide, for the most part, with local authority areas (shire counties and metropolitan districts in England and Wales) as currently constituted, although the 16 FPCA's in Greater London are formed by an amalgamation of existing boroughs.

Since 1975, OPCS has taken a 10% sample of patient re-registrations from the NHSCR.

Quarterly statistics were produced until 1980, but there after, tabulations have been produced for 12 month periods in order to remove seasonal fluctuations. Until 1984, the primary unit NHSCR data which consists of a series of records containing information about origin FPC, destination FPC, date of birth and sex, were aggregated by OPCS to provide 2 computer summaries for each 12 month period. The first summary contains numbers of moves into and out of each FPC area, disaggregated by age and sex. The second contains total numbers moving between each FPC and every other FPC in the UK. A summary of inter-regional NHSCR movements is presented by OPCS in the MN monitor series. No data are available on intra-FPC movement, which leads to difficulties when projections are required for finer areas than local authority districts, and estimation methods have been used to fill out the full region, age and sex disaggregated array (Stillwell 1986).

From April, 1984 onwards, OPCS has used a 100% count of NHS re-registrations, and has made the individual records available for users to create their own migration counts. Since wide variation exists, for various reason, in the period between a person moving and the subsequent re-registration, OPCS estimate that average lag between actual move and re-registration is 3 months. Consequently, analysis of moves between one mid-year and the next, as reported in Chapter 4, is undertaken using NHSCR data between 30 September of the first year and the second. NHSCR data is used in generating the net migration 'assumptions' which feed into the official OPCS model for projecting populations for subnational areas in England and Wales, and in Chapter 2, Rees and Willekens review the way it is used to update migration patterns for changes since the year prior to the 1981 Census.

The population register of the Netherlands and the Census and NHS Central Register in the UK provide data for the analysis of migration by age, sex, marital status and geographical area. In the Netherlands, a migration is defined as a residential move across a municipal boundary, whereas in Britain the census question records migrant transitions over a one year (or five year) period rather than migrations. Neither of these sources permits any detailed analysis of migration by income or motivation. Although Salt and Flowerdew present some figures from the 1971 and 1981 Censuses on inter-regional migrants disaggregated by socio-economic group in Chapter 5, most data on the socio-economic dimensions of migration have to be obtained from alternative sources including special purpose surveys, which in Britain include the General Household Survey (GHS), the National Dwelling and Housing Survey (NDHS) and the Labour Force Survey (LFS), which is also conducted in the Netherlands.The GHS has run continuously since 1971, is based on an annual sample of around 15,000 private households, and is designed to provide information on housing, health, employment and education. It contains, for example, a question about the motivation behind the decision to move. The NDHS, on the other hand, was an ad hoc survey of some 71,000 households, carried out in 1977-78 to provide information about the housing situation and containing questions about length of residence. Devis and Southworth (1984) have compared these two data sources with the LFS, which is a survey of 0.5% of all households, undertaken throughout the European Community on a biennial basis, and they specify the benefits and limitations of these alternative survey sources. In general terms, the sample size and nature of the surveys and their limited geographic coverage tends to restrict their use to the regional level and to permit little subregional analysis.

The International Passenger Survey (IPS) is one sample survey which is particularly useful in providing data on external migration despite the fact that it is designed mainly to obtain information about tourism. The IPS records the country of last residence for an immigrant and next residence for an emigrant, and among other questions, asks a sample of immigrants which town in the UK they intend to live in for the next 12 months, and ask a sample of emigrants which town they have been living in for the last 12 months. Answers to these questions provide the only regular data on migration to and from different parts of the country. Rather more reliable estimates of immigration for subnational areas are available from the Census, but only during the year prior to the census date.

Mention should be made, finally, in this brief review of data sources, of the OPCS Longitudinal Study (LS) (Brown and Fox 1984), data from which is used by Grundy for analysis at the national level described in Chapter 8. OPCS has been involved in the assembly of longitudinal data on a 1% sample of the population England and Wales who were born on each of 4 birth dates. The sample was initially selected from the 1971 Census and for each person in the sample, the vital events occurring in the period 1971 to 1981 have been incorporated into the data set. New births occurring on these dates each year together with new immigrants with these birth dates have been added to the sample and serve to cancel out losses from the sample due to death or emigration. A key feature of the LS has been the linking of information on individuals from both the 1971 and 1981 Censuses and the study therefore contains data on social, occupational, housing and residence change for approximately 400 thousand people in a variety of subgroups (see Brown and Fox 1984, Table 3) In addition, analysis can be undertaken of changes in the household structure that affect those individuals and those in the same households. Methods of access have now been formalized for users of the LS data, and there is potential for adding further vital information such as records of NHSCR transfers.

1.4 Conclusions

In making comparisons between the United Kingdom and the Netherlands, it is necessary to recognize that not only are there significant contrasts in the respective sizes and topographies of the two countries, but that differences exist in the nature of the data sources and the definitions of variables for which information is available. The essential difference is that Dutch research and planning relies primarily on data which is drawn from the continuous population register, whilst in the UK, the census is still the most comprehensive and reliable data source. The hierarchies of spatial system delimited for local administration and government differ between the two countries (and within the UK) and it is not possible to identify a level of spatial resolution which is common to both. Since the post-1974 districts of Great Britain are much more extensive than the Netherlands' municipalities, the most similar geographical units would appear to be the 64 British counties (with a mean area of 3,567km^2) and the 12 Dutch provinces (whose mean extent is 3015km^2).However, despite the contrasting geographies of settlement and development, similar processes of demographic 'restructuring' are occurring in both countries, and in the chapters which follow, the characteristics of change and the processes in operation are identified, illustrated and discussed in detail.

PART I

COMPONENTS OF POPULATION CHANGE

2. POPULATION PROJECTION: DUTCH AND ENGLISH MULTIREGIONAL METHODS

Philip Rees and Frans Willekens

2.1 Introduction

In both the Netherlands and the United Kingdom national government departments responsible for the production of population projections for both the nation and subnational units have recently sought to improve those projections through the development and implementation of new multiregional models. These are models which project the population of many regions simultaneously and which include the migration flows between them in the analysis. Researchers and consultants outside of central government were asked to prepare these models (Gordijn et al. 1983, Willekens and Drewe 1981; 1984, Martin and Voorhees Associates and Bates 1981). In this chapter these efforts are described and compared in order to assess what has been achieved to date and what improvements could be effected. The earlier sections of the chapter contain an assessment of the needs of users of subnational population projections and a review of the conceptual bases of multiregional models.

2.2 Forecasting requirements

Here we review the demands of users of population projections rather than the wishes of population modellers. The latter need to assess the requirements of the 'market' for their product carefully, and to invest rather more attention than hitherto in the presentation of model outputs. Because of the large number of variables used in multiregional population models, this issue must be the concern of the model designer/systems analyst, and not just a task relegated to a later stage in the development of a projection system.

2.2.1 Population numbers, age disaggregation and time intervals

Users of population projections, be they planners or academics, most usually require knowledge of population numbers for short intervals at varying dates in the future. The populations are broken down into detailed age groups, not for their own sake, but in order to yield good estimates of target client or service or market populations. Examples are the school populations in various grades, the numbers of potential students qualified to enter higher education, the labour force, or the retired population. The age classification of the population needed to estimate these target populations must be as fine as possible, preferably by single years of age. Full details of all single year age populations are rarely required but flexible aggregations of these ages are needed. For example, an assessment of the viability of alternative plans for school reorganization might require projections for the 5-8, 9-13, 14-18 age groups in one scheme, and the 5-10, 11-16, 17-18 age groups in another.

Very often, population numbers themselves are insufficient to define the target population. Further disaggregation may be needed. In the school planning case, an estimate is required

J. Stillwell and H.J. Scholten, Contemporary Research in Population Geography, 19–37.

of the proportions in any age group entering independent and state supported schools, and within the state sector the proportions or numbers likely to enter denominational or secular schools.

2.2.2 Detailed inputs and summary outputs

Most population projection models can be designed to yield not only fine detail on the population stocks at regular intervals but also fine detail on the demographic components that link successive population stocks. Users do not normally require, for example, detailed information on mortality or migration rates used in the projections by single years of age, but they probably wish to know what those rates mean in terms of summary measures such as the crude death rate, life expectancy, the crude migration rate or gross migra-production rate. To generalize this point, we can say that multiregional population projection models operate with variables at a level of disaggregation much finer than that required by most users and that any implementation of such models should aim to provide relevant summaries of the information generated.

To exemplify these points, we examine the practice adopted by the United Nations (UN) in their latest, very useful set of population estimates and projections as assessed in 1982 (UN 1985). In this volume two pages of results are devoted to each national projection. The second page shows the estimates and projections of the populations for each country at 5 year intervals from 1950 to 2025 for both sexes and for 5 year age groups to 80+ years in a one page format (compressing two pages of computer printout). The first page of each pair summarizes the population stock information by broad age groups and provides a set of indicators of the age and sex structure of the population in the first of three sub-tables. The second sub-table provides information on component rates in the 5 year time intervals and summarizes the fertility and mortality levels using nine indicators. The final sub-table gives a selection of the indicators for high fertility and low fertility variants. The same set of statistics is provided by the UN for country aggregations such as continental, sub-continental and more/less developed areas, so that comparisons across and between all scales are a simple matter. All the statistics are available to users on magnetic tape for further analyses.

A key feature of the UN projections is the emphasis on presenting statistics over time: time points or intervals are used as the column dimension in all tables. Time series analysis of the results is intended and made easy by such a presentation (e.g. Keyfitz and Vaupel 1986). The UN projections provide guidelines against which the presentation of subnational projection results can be assessed. What is less satisfactory about the UN projections, however, is the lack of detail provided about the models and programs used to generate the results. UN(1985 p.3) suggests that 5 year time and age intervals were used throughout to generate projections shown on the second page, but no details are provided on the methods used to produce the annual population figures and other age group numbers contained on the first page.

2.2.3 A specific or a general model?

Population projection models and their associated software may be specific to the particular

system being studied or they may be used more generally with a variety of systems of interest. Academic researchers incline to the latter kind of model because they wish to study many different systems; government researchers prefer the former, both because the model and associated software are easier to design and because their attention is focussed on the current set of subnational units.

This issue is far more serious if a multiregional modelling strategy is adopted. A single region cohort survival model with net migration rates or flows does not require alteration when used with more regions. The same model is simply used more times. However, in multiregional models, an expansion from N regions to 2N may require redesign of the software (because interaction variable dimensions increase in proportion to N squared) or redesign of the model (because with very many regions in relation to the size of the population, many of the cells in the migration matrix may contain small and unreliable numbers). The model used will vary with the size of the system being modelled. Although system specific models are easier to design and program, even in governmental use there will be problems occasioned by the frequent re-specification of subnational areas prompted by politicians either because the settlement system has changed or because electoral advantage may be thereby gained. It may be worthwhile, therefore, investing in a more general model for long term use designed to withstand severe 'spatial shock'.

2.2.4 Issues concerned with the spatial units adopted

The strategies for modelling the populations of a large number of regions have been reviewed in Rogers (1976) and Rees (1979a; 1981b) and may be summarized as follows.
(1) Fully multiregional. All regions in the system are modelled simultaneously in a multiregional model in full age and sex detail. Problems of small numbers or unreliable data are ignored.
(2) Partitioned. The system of regions may be partitioned into sub-systems, within which interregional migrations are modelled explicitly while migration between regions in different subsystems is modelled at the subsystem level.
(3) Aggregated. Some of the variables in the system are aggregated or pooled across the spatial or the age dimension of the model. For example, in the subnational projections for England (OPCS 1984a) migration between 108 subnational units is modelled for three aggregate age groups (see section 4 for more details). Another popular choice is to divide the migration process into a process of choosing to move and a process of selecting a destination (Frey 1984).
(4) Biregional. In this strategy the system is collapsed into N sets of 2 regions consisting of the area of interest and the rest of the nation (although flows to and from the rest of the world should also be incorporated in the model).

All the strategies listed above can be termed 'multiregional' because they retain at least some of the interactions and interdependency between regions. Solutions (1) and (4) lead to general and portable models. Solutions (2) and (3) result in models specific to the system being studied. Each solution will yield a different set of projections, and the subnational projections will not necessarily add to the figures obtained in projecting the national population. A decision has then to be made about whether to adjust the subnational

populations or to accept their sum as the national projection.

2.2.5 Summary of the user's requirements

To summarize, users of population projections for subnational units require:
(1) future populations classified by single years of age and sex;
(2) summary measures of the inputs to the projections for each interval;
(3) summary measures of the components of change in each future period;
(4) time oriented presentation of the projection results;
(5) standard presentation of the projection results at all scales;
(6) a model (or its software) general enough to cope with a redefinition of the spatial units of projection; and
(7) an effective strategy for projecting the population of a large number of units, either across the country or within a particular region.

2.3 Multiregional population modelling: the bare necessities

2.3.1 The case for multiregional population modelling

A strong case has been made for two decades now that the only proper way to project regional populations is to model explicitly the migration flows between them along with the mortality, fertility and external migration components involved (see Rogers 1985a; 1985b, Willekens 1985b, and Rees 1986a for recent surveys). Use of net migration rates or flows can lead in the long run to absurd results. By explicitly modelling interregional migration flows using interregional transition rates, the influence of one region's population dynamics on that of another is captured. The same case can be made for explicitly modelling international migration in a similar way but data difficulties usually mean that a net flow or rate term is used. However, external migration must be included in a regional population projection in order to close the population account (Rees 1986b).

2.3.2 Migration concepts and projection models

For nearly a decade now a clear link has been recognized between the form in which migration activity is recorded and the form which the multiregional population projection model should take (Rees 1977, Ledent 1978; 1979, Ledent and Rees 1980; 1986, Rees 1985). There are three principal sources of migration data: censuses, population registers and surveys. Survey data on migration are not as yet used much for projection purposes and they are not considered further here.

The national census frequently contains a retrospective question on the place of residence at some date in the past. The date can be fixed, for example, when the place of residence n years ago is recorded, or variable, for example, when the place of birth or place of residence at a given age is recorded. Alternatively, the census may contain a question on the previous

residence, without any information on the time of migration. Population registers typically contain information on each change of usual address.

Cross-classifications of regions of residence at two points in time are referred to as 'transition' data and migration data based on changes of residence are denoted as 'movement' data. Transition data are used to compute transition probabilities directly which are entered in a multiregional cohort survival model as rates of migration and survival or survivorship rates. Movement data are used to compute occurrence-exposure rates from which probabilities suitable for entry into multiregional cohort survival models can be estimated.

Fertility and mortality data are treated similarly in the two approaches. It is possible, however, to measure survivorship rates in the transition approach directly without recourse to mortality data. Usually, surviving stayers are estimated as a residual by subtracting internal out-migrants, emigrants and non-survivors from the initial population. The same calculations are carried out in the movement approach but the intra-region components are merely accounting residuals.

2.3.3 The role of population accounts

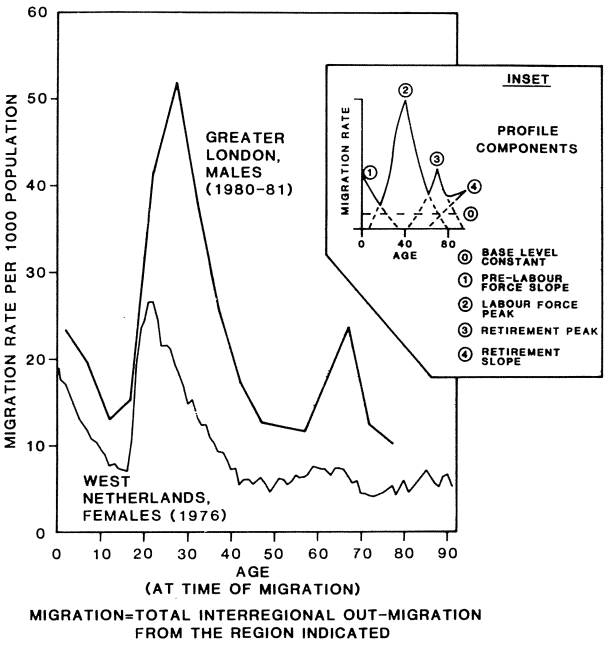
These computations are best organized in a population accounting framework. Population accounts are tables which display in a consistent fashion all the inputs from and outputs to a regional population. It is not appropriate here to give a full description (see Rees and Wilson 1977, and Rees 1981a for details of transition accounts and Rees 1984 for details of movement accounts), nor is it necessary to construct accounts before computing the rates that enter multiregional population models. But population accounts do provide yardsticks of the consistency with which population models have been put together, and later we use these yardsticks in the assessment of the projection models being reviewed.

2.3.4 Age matters

In constructing any population model care must be exercised in adopting the correct age-time plan (ATP) in which the data are observed or estimated. Four age-time plans may be distinguished (Willekens 1985a): the age-cohort plan, in which events are classified by the cohort to which a person belongs and the age at the time of the event; the age-period (or just period) plan, in which the age and the calendar period at the time of the event are recorded; the period-cohort plan, in which the cohort is recorded to which a person belongs and the calendar period in which the event occurs; and the age-period-cohort plan in which the age and the calendar period at the event together with the cohort are recorded. The period-cohort plan (see Rees and Woods 1986, Figure 12.2) is the appropriate one for projection purposes, and the implementation of any regional projection model is considerably simplified if all age classified data are assembled using this ATP or are converted to it through estimation prior to model specification.

A second age matter is the existence of regularities in the profiles of migration rates by age, thoroughly researched by Rogers and Castro (1986) and by many other authors. Figure 2.1

Figure 2.1 Examples of migration rate profiles for Greater London and West Netherlands



shows two examples from the Netherlands and the United Kingdom. These schedules can be summarized as being composed of three or more of the five components shown in the inset to Figure 2.1. For the Greater London profile we would use a model with a retirement peak. For the West Netherlands, only three components would be necessary. The large number of age specific migration rates (16 for Greater London, 92 for West Netherlands) can be reduced to 9, 11 or 13 model parameters. This proves to be of considerable utility in implementing single year of age multiregional population models.

2.3.5 Summary of the modelling requirements for a subnational population projection model

Work in the field of spatial population dynamics over the past decade suggests that the following guidelines be followed in designing a subnational projection model.

(1) It should incorporate multiregional features.

(2) Clear cognizance must be taken of the conceptual type of migration data available in designing the projection model. It has proved too easy in the past to muddle model design in this respect.

(3) Although it is not essential to construct population accounts prior to projection, all the components included in population accounts must be consciously incorporated in the projection, either implicitly or explicitly.

(4) It is preferable to prepare all input data for the base period and all rate or parameter changes in the projection periods using the period-cohort age-time observation plan. It has also proved very easy in the past to confuse this problem, which is one of estimation, with that of projection model design.
(5) One useful method for handling the problem of too many variables that occurs in multiregional modelling is to use model parameters rather than rate schedules to represent age-disaggregated migration components (Rogers 1986).

2.4 The projection models

We now examine what has been accomplished with the data bases available in each country. The Dutch PRIMOS and MUDEA models are reviewed together with the British model used to generate the internal migration component of the official subnational population projections for England and Wales.

2.4.1 The PRIMOS model: projection linked to housing construction

In the early 1980s a PRojection Information and MOnitoring System (PRIMOS) was developed at the Delft Centre for Planning Studies for the Directorate General for Housing. Details of the model are given in Gordijn et al. (1983) and an application that assesses the impact of dwelling construction plans in Brouwer et al. (1984). The primary intention of the model was to enable national government to evaluate the influence of new housing construction on both housing shortages and population change in municipalities. To make such an assessment possible, the PRIMOS model includes migration between municipalities in its structure, and hence can be treated as a multiregional model.

The model consists of four parts.
(1) Births, deaths and external migration for the 774 municipalities of the Netherlands are projected and then controlled to the corresponding quantities produced in the national projections of the Central Bureau of Statistics.
(2) Two sub-models are employed for the projection of internal migration. The first computes the component of migration that is a direct consequence of the building of new dwellings. The second computes the structural component of migration, involving the bulk of transfers between existing dwellings.
(3) Potential numbers of households are estimated using population outputs of the first two parts together with headship rates.
(4) The results of the projection are monitored (see Gordijn et al. 1984).
Attention is concentrated here on parts one and two, which involve the projection of the population, disaggregated by age and sex.

Since the model is designed to project the populations of 774 municipalities, averaging 18.5 thousand inhabitants, a projection model that involves a considerable degree of aggregation of the underlying variables is a necessity. For fertility, mortality, immigration and emigration components this involves the following type of model:

age disaggregated component for municipality	=	age-specific population for municipality	x	national age-specific rate for the Netherlands	
	x	all age balancing factor for muncipality	x	age-specific balancing factor for the Netherlands	(2.1)

where the first balancing factor is designed to ensure that the age disaggregated estimates for the muncipality add up correctly to the observed all age total, and the second balancing factor ensures that the age disaggregated estimates for the municipality sum to the observed age disaggregated figures for the Netherlands as a whole. This method assumes that the national patterns of age-specific fertility rates, age-specific mortality rates and age-specific external migration rates apply uniformly across the country. Only the level of the component changes. As a first approximation this may be a reasonable way to handle the 'small number' problem, but there is no doubt that age-specific patterns will vary from municipality to municipality. For example, it is likely that age-specific fertility curves will differ among municipalities as a result of residential relocation: some municipalities will be favoured by families in the expansion phase and this will raise fertility rates for women in their twenties compared with other women. To capture this type of variation would, however, be very difficult at such a fine scale.

The second part of the PRIMOS model is concerned with internal migration. The structural component captures the historical pattern of migration flows while the housing construction component measures the migration flows resulting from the creation of new dwellings. For the model to work as a projection model, new housing construction plans need to be used a inputs. Presumably, the historical/structural component includes migrations resulting from past plans: there is no attempt to extract these from the structural component.

The housing construction component works by translating new housing supply in a municipality into demand in other municipalities, discounting this demand by a negative exponential function of travel time squared to that municipality. The supply of dwellings in a municipality is also affected by the supply in other areas. An iterative procedure is used to bring supply and demand into balance (Figure 14.1 in Brouwer et al. 1984). The structural migration component is computed by using three aggregations of the full origin by destination by age group array for the years 1972 to 1979 as inputs to an adjusted multiproportional fitting algorithm. The three aggregations are out-migrations from municipalities by age, in-migrations to municipalites by age and municipality to municipality migrations for all ages. The standard three-face technique is modified through aggregating the inter-municipal matrix to those cells containing the largest flows and using sets of remainder regions (rest of housing market, rest of province, rest of the Netherlands). This reduces the size of the intermunicipal matrix from 599,076 (774 x 774) cells to only 5,851. The estimation problem is also reduced by shrinking the number of age groups considered to only six: 0-14, 15-19, 20-24, 25-34, 35-59 and 60 and over.

Without detailed access to the computer program delivered to the Directorate-General of

Housing, it is not possible to say much in detail about the input requirements and standard outputs of the PRIMOS model beyond the description above. For example, published descriptions of the PRIMOS model do not make it clear how the broad age groups used in the structural migration component are linked to the single year age groups specified in the fertility, mortality and external migration parts of the model. In terms of the user's requirements for a subnational projection model listed earlier in section 2, the PRIMOS model scores well on point 7 (ability to deal with a large number of spatial units), but the aggregation decisions made make it a specific rather than a general and portable model.

In a second Dutch projection model, now considered, the multiregional content is much greater, though the scale of application is much coarser (province or region).

2.4.2 MUDEA: a multiregional model for the Netherlands

Between 1982 and 1984 a multiregional model for subnational population projection was developed at the Netherlands Interuniversity Demographic Institute (NIDI), under the direction of Frans Willekens of NIDI and Paul Drewe of Delft University of Technology under contract to the Physical Planning Agency (RPD) of the Netherlands. The project was overseen by and in response to an inter-ministry Committee for Regional Population Projections (CORBEP). The model structure is fully described in Willekens and Drewe (1984) and its intended application is briefly outlined in ter Heide (1984, p.346). Full details of the computer program and applications are available from NIDI. This model was developed
(1) for two sexes;
(2) for a variable number of regions (up to 40; the number is limited by computer memory);
(3) for flexible age groups (e.g. 1 year or 5 year) and a variable highest age (e.g. 80+ or 90+);
(4) for a projection interval equal to the age interval (generally 1 or 5 years); and
(5) for regional projections that are consistent with official national projections (optional).

The modelling strategy adopted was the fully multiregional model in which the complete array of migration variables (migration disaggregated by 2 sexes, N regions of origin, N regions of destination and NA ages) was used. The original intention (Willekens and Drewe 1981) was to base the projection model on earlier models developed at the International Institute for Applied Systems Analysis (IIASA) (Willekens and Rogers 1978; Willekens 1979; Ramchandran 1980). In the event, the MUDEA model incorporated substantial changes from the IIASA models.
(1) The model deals with two sexes using a female dominant fertility sub-model. That is, male births are a product of the proportion of births that are male multiplied by a set of fertility rates multiplied by a set of female populations at risk (Willekens and Drewe 1984, pp.329-330).
(2) The age-time plan for the input data was changed from ATP I (the period plan) to ATP II (period-cohort plan) because the focus of interest was projection rather than life table analysis. The original intention to report on multiregional life expectancies was dropped, although Ledent and Rees (1980; 1986) have shown that such expectancies, at birth, can be generated directly from the projection model's survivorship rates and Rees (1986a) has suggested that the whole life table could be estimated from ATP II data.

(3) The MUDEA model is clearly and unambiguously based on migration data of the movement type (as generated by the Dutch registration system), whereas the original IIASA models were ambiguous in their input requirements (because the issues involved were only resolved in the course of the associated project).
(4) The MUDEA model is clearly linked to an underlying set of population accounts of the movement variety, although the flow accounting equations are used rather the the full accounts based model.
(5) One consequence of this is that the MUDEA model fully and carefully incorporates international migration into its structure. Emigration flows are treated in the model in the same way as internal out-migration flows, namely as the product of migration rates transformed into period-cohort transition probabilities and the base population. Immigration flows are treated as exogeneous inputs (which are subjected to survival, fertility and migration rates appropriate to their sojourn after immigration).

Thus, the MUDEA model meets the first four modelling requirements set out in section 2.3.5. There was a clear intention in the original specification of the project (Willekens and Drewe 1981) that the fifth requirement, that the user be able to 'control' the projection by inputting a limited set of key parameters rather than a large body of age specific rates, be met, but this has yet to be accomplished. There is also the ambition (Willekens and Drewe 1981, ter Heide 1984) that the MUDEA model be linked with explanatory models of migration being developed under other RPD research contracts in a second phase. The goal has been partly achieved (Willekens 1986, Drewe 1986, Willekens and Drewe 1986).

How general is MUDEA (recalling the discussion in sections 2.2.4 and 2.2.4)? It is general in the sense that it can be used with any number of regions (up to 40) and any number of ages, and can be employed in other countries where the same input information is available or can be estimated. In principle, the number of regions could be expanded given sufficient computer memory for the resulting arrays, but the flow and rate estimates would rapidly become unreliable because of the small number problem. The MUDEA model could not be directly used at the local level in the Netherlands (as ter Heide 1984 recognizes). Another modelling strategy such as partitioning, aggregation, parameterization or biregional modelling would be required. Inputs required for the MUDEA model are:

(1) the start of base year and end of base year populations by sex and age (e.g. 0,1,2, ..., 89,90+) for each region;
(2) births in a year by age (of mother) by region;
(3) births in a year by sex of child;
(4) deaths in a year by age by region and sex;
(5) internal migrations by age by origin, sex and destination;
(6) emigrations by age by region and sex; and
(7) immigrations by age by region and sex.

All age classifications for flows are of the period-cohort type. The migration data are all published by the Central Bureau of Statistics on this basis, but data on childbearing and mortality are published according to age at time of the event (period data). They were converted to period cohort form before being entered in the MUDEA model.

Table 2.1 summarizes the considerable printed output that the MUDEA model produces for each period of analysis. Virtually all the model variables are printed out in full age detail (in most tables the row classification is by age). The outputs of the model are clearly voluminous. In a two region test run there were 169 pages of output for one period. The MUDEA program, however, contains parameters to control table printing. The presentation of the results of the multiregional model compares rather unfavourably with that of the UN. Time-oriented tables are essential for easy and fruitful use of projection outputs. Tables should be standard for each spatial unit across all spatial scales. The user should be able to suppress difficult to assimilate matrix style multiregional output (really needed only for error diagnosis) and concentrate on the essential results of the multiregional model.

Table 2.1 Summary of the output tables produced by MUDEA

TABLE	VARIABLES	FORM	MACRO-CLASS	ROW-CLASS	COLUMN-CLASS
1.	Population (initial)	Numbers, percentages	Sex	Age(1)	Region
2.	Population (initial)	Numbers, percentages	Sex	Age(5)	Region
3.	Person/years, births,deaths interregional migration, external migration	Numbers, percentages	Sex by region	Age(1)	Components (as under variables)
4.	Person years, births, deaths interregional migration, external migration	Numbers, percentages	Sex by region	Age (5)	Components (as under variables)
5.	Components as in 4 (except person years)	Age-specific rates per 1000	Sex by region	Age(1)	Components (as under variables)
6.	Components as in 5	Age-specific rates per 1000	Sex by region	Age(5)	Components (as under variables)
7.	Components (summarized)	Numbers, percentages years, rates per 1000 mid-year population		Sex by region	Components
8.	Birth rates	Age-specific rates	Sex by origin	Age(1)	Destination region
9.	Survivorship rates	Age-specific rates (decimal proportional)	Sex by origin region	Age(1)	Destination region

Table 2.1 (Continued) Summary of the output tables produced by MUDEA

TABLE	VARIABLES	FORM	MACRO-CLASS	ROW-CLASS	COLUMN-CLASS
10.	Internal migration	Numbers	Sex by origin region	Age (1)	Destination region
11.	Internal migration	Numbers	Sex by origin region	Age (5)	Destination region
12.	Internal migration	Percentages	Sex by origin region	Age (1)	Destination region
13.	Internal migration	Percentages	Sex by origin region	Age (5)	Destination region
14.	Internal migration	Rate per 1000 (out-migration)	Sex by origin region	Age (1)	Destination region
15.	Internal migration	Rate per 1000 (out-migration)	Sex by origin region	Age (5)	Destination region
16.	Internal migration (summarized)	Numbers, percentages, rates	Sex	Form by origin region	Destination region
17.	Population (final)	Numbers, percentages	Sex	Age (1)	Residence region
18.	Population (final)	Numbers, percentages	Sex	Age (5)	Residence region

Notes:
(i) Percentages - age-specific variable as % of all age total
(ii) Table 8: the column class in the MUDEA output is incorrectly labelled as 'birth region': it is the region of destination of the infant
(iii) Table 10 includes migration between localities within regions which do not figure in the MUDEA model as such
(iv) Age (1) - single years of age Age (5) - 5 year age groups

2.4.3 The OPCS/DOE subnational model for England

Between 1979 and 1981 a model was developed for the projection of the internal migration component of the official subnational population projections for England by Martin and Voorhees Associates and John Bates Services under contract to the Department of the Environment (DOE) of the United Kingdom in close liaison with the Regional Demography Unit of OPCS. Ian Bracken of the University of Wales Institute of Science and Technology

(Cardiff) acted as consultant to the project. The model is fully described in Martin and Voorhees Associates and John Bates Services (1981), in associated programmer's guide and user's manual, and in two journal papers, Bates and Bracken (1982) and Bracken and Bates (1983). Results of using this new model are reported in the fifth of the series of subnational population projections for England (OPCS 1984). A new set of projections incorporating data from the 1981 Census as well as NHSCR data from the post-1981 period have since been prepared.

The model is concerned only with internal migration and is designed to supply a pre-existing single region cohort survival model with net migration values by sex and single years of age, values which can be modified in consultation with local authorities. One ironic benefit of using net migration in the projection model is that it doesn't matter whether the net figures are derived from transition or movement data as long as all transition types have been accounted for (Rees 1985).

Since the project brief required that single year of age populations for males, females and persons be projected for 108 local authority areas in England, a fully multiregional strategy was rejected from the outset because of the small number problem. Rather, an approach was developed which used trended gross migration rates, model generated rates of out-migration and in-migration (a 'parameterized' strategy) and interregion allocation rates for three broad age groups only.

It is useful in exposing the structure of the model in full to present it in general equation form (which the authors do not) as this will reveal a number of interesting features. All the variables in the model are disaggregated by sex, but, since the two populations are treated in the same way in the migration model, no notation for the sex classification is introduced in the description below. The model comprises four stages:

(1) Estimation of the total number of out-migrations
The total number of out-migrations from an area i by age a for a future period t is projected by

$$M^{i\cdot}_{a}(t) = (gmr^{i}(t)\ om^{I}_{a}(s)\ P^{i}_{a}(t)), \qquad i \in I \tag{2.2}$$

where

$gmr^{i}(t)$ = the gross migraproduction rate (gmr) of out-migration from area i in period t, which is a linear extrapolation of the gmr of the area for a standard period in the past.

$om^{I}_{a}(s)$ = the proportion of the out-migration gmr accounted for by age group a. It is derived from model migration rates standardized to a gmr of 1 for area cluster I for standard period s; and

$P^{i}_{a}(t)$ = population of region i at age a in period t.

Migration data from the 1971 Census was used to calibrate model migration rate schedules for the 108 areas for males and females. A cluster analysis was then carried out to combine together similar profiles into 12 groups. New model schedules were then defined using the pooled data for the 12 groups.

(2) Assignment of out-migrations to destinations
The total of out-migrants from an area is distributed between available destinations by multiplication by an allocation proportion:

$$M^{ij}_{a}(t) = M^{i\cdot}_{A}(t)\, k^{ij}_{A}(s) \qquad (2.3)$$

where

$M^{ij}_{a}(t)$ = the number of moves from area i to area j in period t in broad age group A;

$M^{i\cdot}_{A}(t)$ = $\sum_{a \in A} M^{i\cdot}_{a}(t)$; and

$k^{ij}_{A}(s)$ = the proportion of origin i moves in broad age group A in standard period s that have destinations in area j.

In OPCS (1984) NHSCR data for mid-1977 to mid-1982, supplemented with 1971 census data where the spatial disaggregation of the NHSCR data was insufficient, were used. The broad age groups were
(i) ages 0-16 and 29-59 (family ages)
(ii) ages 17-28 (labour force ages)
(iii) ages 60 and over (retirement ages).
The broad age groups were determined by the similarity of their origin-destination patterns.

(3) Estimation of the total number of in-migrations
The inter-area migrations by broad age group are summed and then disaggregated to single years of age:

$$M^{\cdot j}_{a}(t) = \sum_{A} \sum_{j} M^{ij}_{A}(t)\, im^{J}_{a}(s) \qquad (2.4)$$

where

$M^{\cdot j}_{a}(t)$ = total number of in-migrations to area j in period t in age group a; and

$im^{J}_{a}(s)$ = the proportion of the in-migration GMR accounted for by age group a. The proportions are derived from model migration rates standardized to a GMR of 1 for area cluster J for standard period s.

(4) Generation of the net migration assumptions
Net migration estimates for each area j by single year of age are then derived as a residual:

$$N^{j}_{a}(t) = \quad M^{\cdot j}_{a}(t) - M^{j\cdot}_{a}(t) \qquad (2.5)$$

and fed into the single region cohort survival model. Methods were also developed to adjust the migration matrices resulting at stage (2) of the model to exogeneous in-migration totals.

The OPCS/DOE model represents an elegant and thoroughly tested solution to the problem of projecting the internal flows of a large number of subnational areal units, carried out by the consultants in a remarkably short period of 18 months. However, a number of further comments can be made based on this algebraic reformulation of the model.

Firstly, it is unfortunate that the migration model is decoupled from the population projection model. This means that the indicators of the components of change offered in the projection model output are very limited. Secondly, it would be very easy to carry out this integration and make the combined migration and projection model fully multiregional by merging equations (2.3) and (2.4):

$$M^{ij}_{a}(t) \quad = \quad gmr^{i}(t)\ om^{I}_{a}(s)\ k^{ij}_{A}(s)\ P^{i}_{a}(t) \quad , \qquad i \in I, a \in A \qquad (2.6)$$

or in other words the migration rate would be modelled as

$$m^{ij}_{a}(t) \quad = \quad gmr^{i}(t)\ om^{I}_{a}(s)\ k^{ij}_{A}(s) \qquad (2.7)$$

where s refers to the standard or base period (which may differ between variables). Stage (3) of the model is then unnecessary. Constraints on the number of interregional migrations in each period-cohort can easily be introduced using multiproportional fitting techniques, generalizations of the Furness method referred to by Martin and Voorhees Associates and John Bates Services (1981). When we examine the terms on the right hand side of equation (2.6), it can be seen that the only statistic that is projected forward in time is the gross migraproduction rate. There is no reason why the age factor and the allocation proportion could not also be projected forward given reliable time series, so a more general model would substitute period label t for the standard or base period label s in equations (2.5) and (2.7).

A third point to make about the OPCS/DOE model is that, in exposition, it suffers from a lack of clarity as to age-time plan of observation. The subscript a should refer to a period-cohort ATP throughout. However, the NHSCR data are published using the period ATP and Census migration data are collected using the period-cohort ATP. It is also unclear what populations at risk are being used in rate computation: initial, mid-point, average or final populations. A related fourth point refers to the migration concept being used. Both Census and NHSCR data are used (and have to be used) in the model but it is never made clear which conceptual type of migration (movements or transitions) is being estimated and projected. In the exposition above it is assumed that the model works with the movement concept. OPCS

(1984, p.viii) states that 'the level of migration activity' derives from NHSCR data, whereas in the project report (Martin & Voorhees Associates and John Bates Services 1981) the gross migraproduction rates reported are from census data. This conceptual ambiguity arises from the aim of the model being to generate age disaggregated net migration vectors for areas.

Fifthly, we need to consider the roles of aggregation and sub-model representation in the overall model. The interarea allocation terms, the k's, involve aggregation of actual migration data into three broad age groups. The alternative of using gravity models of such interarea migration was rejected after investigation because the predicted matrices were felt to be insufficiently accurate. The out-migration factors (om's), involve both aggregation over area cluster and model representation of rates. A great deal of detailed work is involved in the calibration of model migration schedules and their classification though it needs only to be carried out in the British context every ten years. In other situations the use of pooled, observed data to generate standard rates might provide a short cut since the key features of the out-migration rate schedules that vary from area to area (Bracken and Bates 1983, p.353), namely presence/absence of a retirement peak and/or slope, the age at which the labour force migration peak occurs and the extent to which migration activity is concentrated around the peak could be determined by simpler methods.

How general is the OPCS/DOE model (recalling again the discussion of sections 2.4 and 2.5)? It is clearly a very specific model in terms of its implementation and exposition, designed for one set of clients (DOE/OPCS) with particular requirements in terms of area populations to be projected. It is also specific in the sense that the aggregation decisions are peculiar to the system being studied. It is doubtful whether the underlying software would be portable, and the mixture of census and register sources of migration data characteristic of the United Kingdom seems to be repeated only in Japan (Nanjo et al. 1982). However, the methods employed to solve the problem of handling many regions simultaneously are of general utility and could be applied in other contexts.

Table 2.2 summarizes the readily available outputs from the subnational projections. Output tables 1 to 4 appear in OPCS (1984); tables 5 and 6 are the standard detailed projection tables provided on request. A good feature of these outputs is their time orientation, although the published tables are woefully inadequate in the number of future time points for which data are provided - only two! For any serious use of these projections the user needs to obtain the detailed single years of age and time outputs from the Regional Demography Unit. Fuller results of the subnational population projections are now available from the National Online Manpower Information System (NOMIS) at the Department of Geography of the University of Durham (O'Brien 1987). Output tables 3 and 4 provide some idea of the components in number form but not in rate form. Summary indicators such as gross migraproduction rates or total fertility rates or life expectancies are not provided.

As with the MUDEA model, the outputs of the OPCS/DOE model are not as well organized and accessible as the projections of the UN.

Table 2.2 Summary of the output tables produced by the OPCS/DOE model

TABLE	VARIABLES	MACRO-CLASS	ROW-CLASS	COLUMN-CLASS
1	Populations (mid-year projected)	England regions	Age (5), ages (summary)	Time by sex
2	Populations (mid-year projected)	Areas (see note iii)	Time by sex	Ages (summary)
3	Natural comp. (births, deaths, natural change)	-	Areas (see note iii)	Components (as variables), two summary time periods
4	Projected in-out and net migration	-	Areas (as in 3)	Migration components (as variables), two summary time periods
5	Populations (mid-year projected)	Areas (as in 3)	Age (1)	Time (years) by sex
6	Populations (mid-year projected)	Areas (as in 3)	Age (5)	Time (years) by sex

Notes:
(i) Tables 1 to 4 appear in OPCS (1984a) and report on population projections from 1981 to 2001
(ii) Tables 5 and 6 are examples of unpublished tabulations obtained from the Regional Demography Unit (Dept. ARV), Office of Population Censuses and Surveys, St. Catherines House, 10 Kingsway, London WC2B 6JP. Populations to 2011 are provided
(iii) Areas: Table 2: Inner London boroughs, Outer London boroughs, Metropolitan Counties and Districts, Non-Metropolitan Counties; Table 3: England, standard regions, and Table 2 areas

2.5 Conclusions

The purpose of this review has been to look critically at new applications of multiregional methods in order to learn from the experience. Here an attempt is made to summarize what has been learnt.

The theoretical base and mathematical specification of the Dutch MUDEA model are very sound. The projection model is carefully matched with the movement type of migration data used in a period-cohort age-time plan. The English OPCS/DOE model is not as well specified as a set of equations, and there is a lack of clarity concerning both the migration concept aimed at in the model and the age-time plans employed. However, it has the merit of making fruitful use of both census and register derived migration data, using the former to overcome deficiencies in the latter. The Dutch PRIMOS model is specified fairly fully as

a set of equations and solution procedures. However, there is a great deal missing from the published descriptions, which prevents a full evaluation of the methods employed. Occasionally, there appears to be a little confusion as to migration concept with the same variable being referred to as both 'migrations' and 'migrants'.

One essential difference between the two Dutch models is that PRIMOS in relating migration dwelling construcion, contains an explanatory element, whereas MUDEA has no mechanism for explanation and produces propositions which are trend-based. Plans to develop an explanatory capability in the latter are currently in hand. The PRIMOS model incorporates migration flows between municipalities into the projection process but with a great deal of aggregation across time, space and age, so perhaps it should be labelled a model with multiregional elements rather than a multiregional model. The Dutch MUDEA model, on the other hand, is a multiregional model that handles all migration flows in age-sex-origin-destination specificity with a considerable degree of flexibility. So, for example, projections of the 11 provinces or of 15 functional regions or 41 urbanization regions could be carried out. The English OPCS/DOE model involves modelling of pooled profiles of out- and in-migration at a detailed age scale and an age pooled method of assigning out-migration to destinations. It is designed to prepare the migration projections for 108 areas and is capable of handling the other subnational areas of the United Kingdom outside England as well either separately or together with those of England.

Whereas the Dutch MUDEA model is easily portable to other demographic systems for which the same kinds of data are available, it is difficult to envisage either the English model or the Dutch PRIMOS model being directly used because of some system specific features. In the English model these are the need to arrive at a classification of in- and out-migration profiles and a pooling of the age specific interarea migration matrices into broad age ranges with common interaction features. The classes and age ranges will vary from situation to situation. Nevertheless the ideas behind the English model could well be applied elsewhere because it provides a solution to the problem of using multiregional models with a large number of regions. The PRIMOS model also uses broad age ranges to incorporate inter-area migration but in a non-portable way, because it is dealing with a system that is almost an order of magnitude more disaggregated than that tackled by the OPCS/DOE model. It provides some useful methdological suggestions on how to tackle such a system.

In terms of user requirements it is possible to comment only on the MUDEA and OPCS/DOE models. They both provide the essential projections by single year of age and sex of the populations of subnational units, controlled by sets of time-varying assumptions as to levels of fertility, mortality and migration, and thus represent considerable advances on previous models and software. The organization and presentation of the results of both models, however, fall short of the ideal. The MUDEA model provides voluminous outputs on a single year of age basis for both inputs and results, and initially it was difficult for users to find the essential statistics amid the haystack of paper. Output tables were provided a year at a time, whereas most users find tabulations of statistics across time points or intervals much easier to contemplate and from which trends can be grasped more easily. However, improvements to the output are in hand. A time orientation is employed in the presentation of the results of the English area projections, but the published volume provides very little information at the level of detail on the key statistics input to each time interval. The outputs of both Dutch and

English models contrast unfavourably with the projection statistics published by the UN for countries of the world. Such a volume and associated tapes, with appropriate modifications, for the subnational areas of the Netherlands and the United Kingdom would be a very valuable planning and research resource.

These efforts in the application of multiregional methods to subnational population projection represent considerable pioneering achievements. There is ample room, however, for improvement in the 'packaging' of models and outputs. Developments in the UK (e.g. the NOMIS system - see O'Brien 1987) suggest that perhaps the most efficient way to provide projection outputs is via a database accessible from a communiciations network. To this might be added facilities for users to generate their own projections using a centrally maintained software version of the model.

3. THE COMPONENTS OF NATURAL CHANGE

3.1 Introduction

There have been significant changes in natural increase in most Western European countries in the last thirty years, mainly resulting from fluctuations in the birth rate. Since the early 1970s, most countries have experienced declining rates of natural increase (Table 3.1). The highest rates of natural increase are those occurring in the Irish Republic, where birth rates relative to death rates have remained high. In contrast, West Germany is at the bottom of the league table, with death rates exceeding birth rates in each of the periods and causing reductions in the natural component of population change. During this period the rate of natural change in the UK has remained well below that in the Netherlands.

Table 3.1 Crude natural growth rates for countries of Western Europe, 1970-74 to 1980-84

Country	1970-74	1975-79	1980-84
Eire	11.5	11.3	10.9
Portugal	9.0	8.5	5.5
Greece	7.5	7.1	5.1
France	6.0	3.7	4.3
Netherlands	7.8	4.6	4.1
Switzerland	5.6	2.7	2.3
Italy	6.9	3.9	1.4
United Kingdom	3.0	0.4	1.3
Austria	2.4	-1.0	1.1
Belgium	1.6	0.6	0.8
Luxembourg	-0.0	-0.6	0.4
Denmark	4.7	0.3	-0.6
West Germany	-0.3	-2.2	-1.7

Notes:
(i) Rates per 1000 population have been ranked on basis of 1980-84 figures
(ii) Source: CBS (1987/6)

In the early 1960s, prior to the rapid decline in the birth rate, natural growth in the UK averaged 6-7 per thousand population per annum; but by the mid 1970s, it had dropped to around zero. Over this period, the death rate had remained more or less static at around 11-12 per thousand, whereas the birth rate declined from 18 to 13 per thousand. There has been a slight recovery in natural increase in the UK since the mid 1970s, mainly due to a small rise in the birth rate, and since 1980, a slight reduction in the death rate. Over the last 25 years, therefore, natural increase in the UK has been relatively low by Western European standards. In contrast, the Netherlands has experienced relatively high natural increase (Table 3.1). It is the decline in the birth rate from 18.3 per thousand in 1970 to 12.6 in 1986 which has caused the reduction in natural growth, since the death rate has remained around 8.5 per thousand. Crude death rates in the Netherlands are therefore significantly lower than in the UK. Despite declining fertility, the population of the Netherlands is expected to continue to

J. Stillwell and H.J. Scholten, Contemporary Research in Population Geography, 39–52.

grow until the 2010 (CBS 1987). Numerous demographic and socio-economic factors have been responsible for the decline in birth rates in both countries, but factors of particular importance include the increasing participation of women in the labour force and the growth of women's earning capacities (Ermisch 1983).

There are also distinctive spatial patterns of natural change within both countries which reflect geographic differences in a broad range of demographic, social, economic and environmental variables that have important implications for spatial variations in population growth. In the first part of this chapter, John Coward focuses on these spatial variations at the county and district scales in the UK and examines both crude and age standardized indices of fertility and mortality in 1984 rather than assessing changing spatial patterns through time. In the second half of the chapter, Loek Kapoen and Nico Keilman describe recent patterns of fertility and mortality at national, provincial and 'COROP-region' level in the Netherlands, but they also examine changes in age-specific fertility and life expectancy at birth since the early 1970s. They conclude with some observations on regional patterns of natural change in the Netherlands at the end of the century.

3.I THE UNITED KINGDOM

John Coward

3.2 Spatial variability

It can be expected that there will be a general convergence of regional demographic patterns in the later stages of demographic transition (Spengler 1966, Jones 1982, Newell 1986). However, this does not necessarily mean that regional variations will cease to exist on anything but a trivial level, nor that there will not be fluctuations in the intensity of regional variation through time (Coward 1986a, Newell 1986, O'Connell 1981).

The relative degree of spatial variation in demographic patterns will be influenced by scale of study and the particular rate measure adopted. These influences are reflected in Table 3.2, where the relative degree of spatial variation in 1984 for crude and age standardized measures across three spatial scales is summarised by the coefficient of variation. Four main features can be noted. First, the degree of relative variation is particularly marked for natural change, reflecting a certain amount of variation around a mean close to zero. Second, crude rates generally display greater spatial variability than standardized measures - this would be expected given the tendency for age selective migration to produce locally distinctive age structures. Third, relative variation generally rises with increasing disaggregation, indicating the influence of local, often more extreme, variations in fertility, mortality and natural change. Finally, there is no overall clear cut pattern when comparing the relative degree of variation between birth and death rates.

Table 3.2 Coefficients of variation for crude and standardized rates, regions, counties and districts of UK, 1984

Areas (Number)	Coefficient of Variation					
	Crude Rates			Standardized Rates		
	Birth	Death	Natural Change	Birth	Death	Natural Change
Regions (11)	11.1	6.7	116.7	11.6	8.1	102.1
Counties (70)	10.8	12.5	250.5	8.1	8.5	89.8
Districts (483)	17.4	19.1	289.8	15.2	11.3	137.1

Notes:
(i)Coefficient of variation is the standard deviation expressed as a percentage of the mean
(ii)The 'counties' consist of the counties of England and Wales (with Inner and Outer London treated as separate units), the regions of Scotland (with Central Clydeside treated separately from Strathclyde) and Northern Ireland divided into two areas consisting of the Belfast urban area and the remainder of the province
(iii)The districts consist of the standard districts of England and Wales (excluding the City of London and the Isles of Scilly), Scotland and Northern Ireland

3.3 Crude rates at county and district level

Spatial variations in crude rates are of importance primarily because of their influence on overall population growth and change and are normally strongly influenced by population age structure. However, these patterns will also be influenced by the wide range of socio-economic, environmental, socio-psychological and lifestyle factors that determine levels of fertility and mortality.

At the county level, variations in the birth rate (Figure 3.1) in 1984 emphasise the high fertility of Northern Ireland and, to a lesser extent, inner London, the West Midlands, Bedfordshire, Cleveland and Mid Glamorgan. In contrast, relatively low rates occur in some of the English south coast counties in addition to Surrey and south east Scotland. High death rates are found in many of the English south coast counties, north and mid Wales, Tayside, southern Scotland and north-east England, while the lowest rates occur in a zone of five counties to the north and west of London and in rural Northern Ireland. In consequence, rates

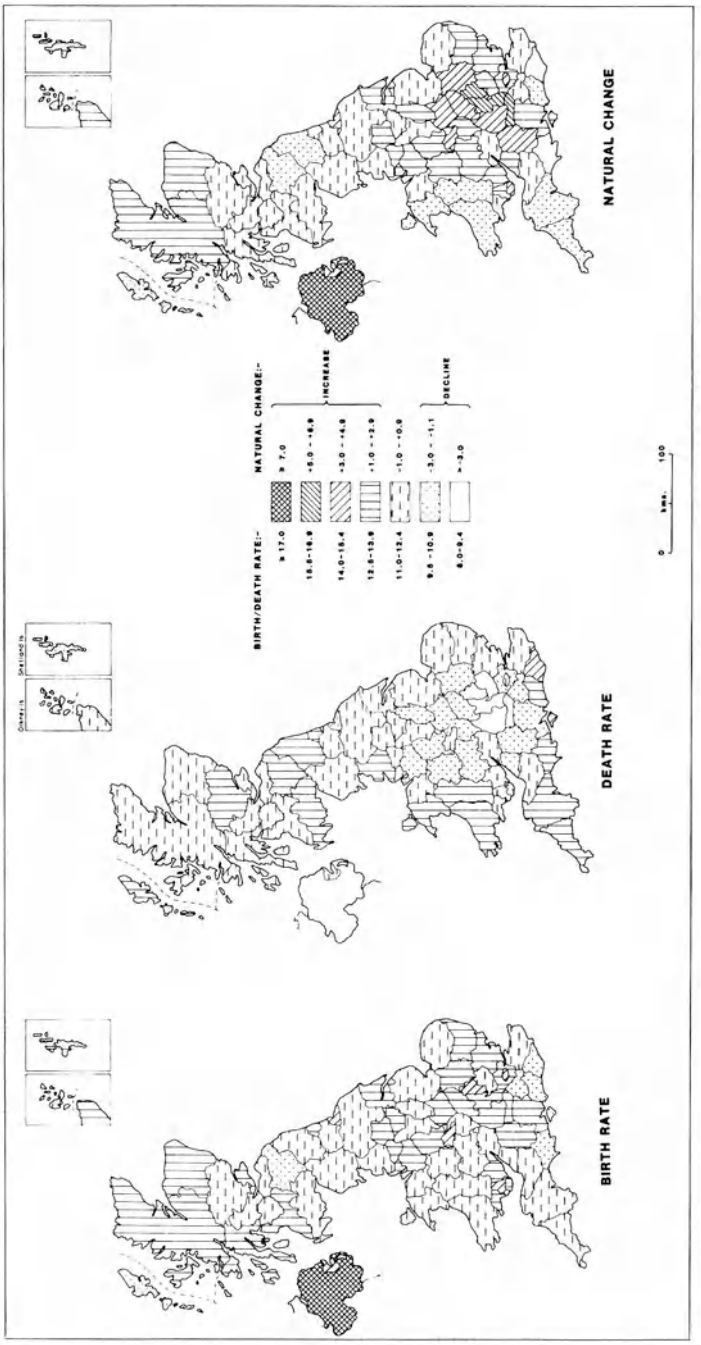


Figure 3.1 Spatial variation in crude rates, by county, 1984

of natural increase are particularly high in rural Northern Ireland and are, by British standards, quite high in inner London, Cleveland, south Glamorgan and a zone of counties extending eastwards from Wiltshire through to Leicestershire and Cambridge. Relatively low rates (and natural decline) occur in the south coast counties, north and mid Wales and counties astride the English-Scottish border.

Table 3.3 The components of natural change by category of district, UK, 1984

Category of District	Birth Rate	Death Rate	Natural Change Rate	1981 Age Structure	
				% population aged 15-44	% population pensionable ages
England and Wales					
Inner London	15.0	11.4	3.6	44.4	17.8
Outer London	13.0	10.7	2.3	41.1	18.1
Principal cities	13.4	12.6	0.8	39.6	18.7
Other metro. districts	13.3	11.7	1.6	40.2	16.4
Large cities	14.0	11.8	2.2	40.1	17.8
Small cities	12.5	11.7	0.8	40.7	18.9
Industrial	13.3	11.1	2.2	40.6	16.3
New towns	13.8	9.3	4.5	42.7	13.6
Resort and seaside retirement	10.4	15.3	-4.9	34.9	26.5
Other Urban	11.9	9.8	2.1	41.4	15.9
Remoter rural	11.1	12.2	-1.1	38.1	20.2
Scotland					
Glasgow	13.1	14.7	-1.6	39.3	18.7
Other large cities	11.8	12.7	-0.9	40.7	18.6
Other urban	12.8	10.9	1.9	41.5	14.9
Rural and island districts	12.1	12.9	-0.8	38.4	19.4
N. Ireland					
Belfast urban area	15.0	10.1	4.9	39.8	16.6
Rural remainder	18.3	9.5	8.8	40.6	13.3
Coefficient of variation (%)	13.1	13.8	191.9	-	-

Note: The figures are unweighted averages

Variations in natural change according to settlement category (Table 3.3) also provide a useful perspective on spatial patterns. In this case one of the OPCS classifications is utilised (Webber and Craig 1978) and this has been shown to portray considerable socio-economic and demographic variation between categories (Craig 1982, Haskey 1985). Thus, outside Northern Ireland, relatively high birth rates occur in inner London and the large cities. The

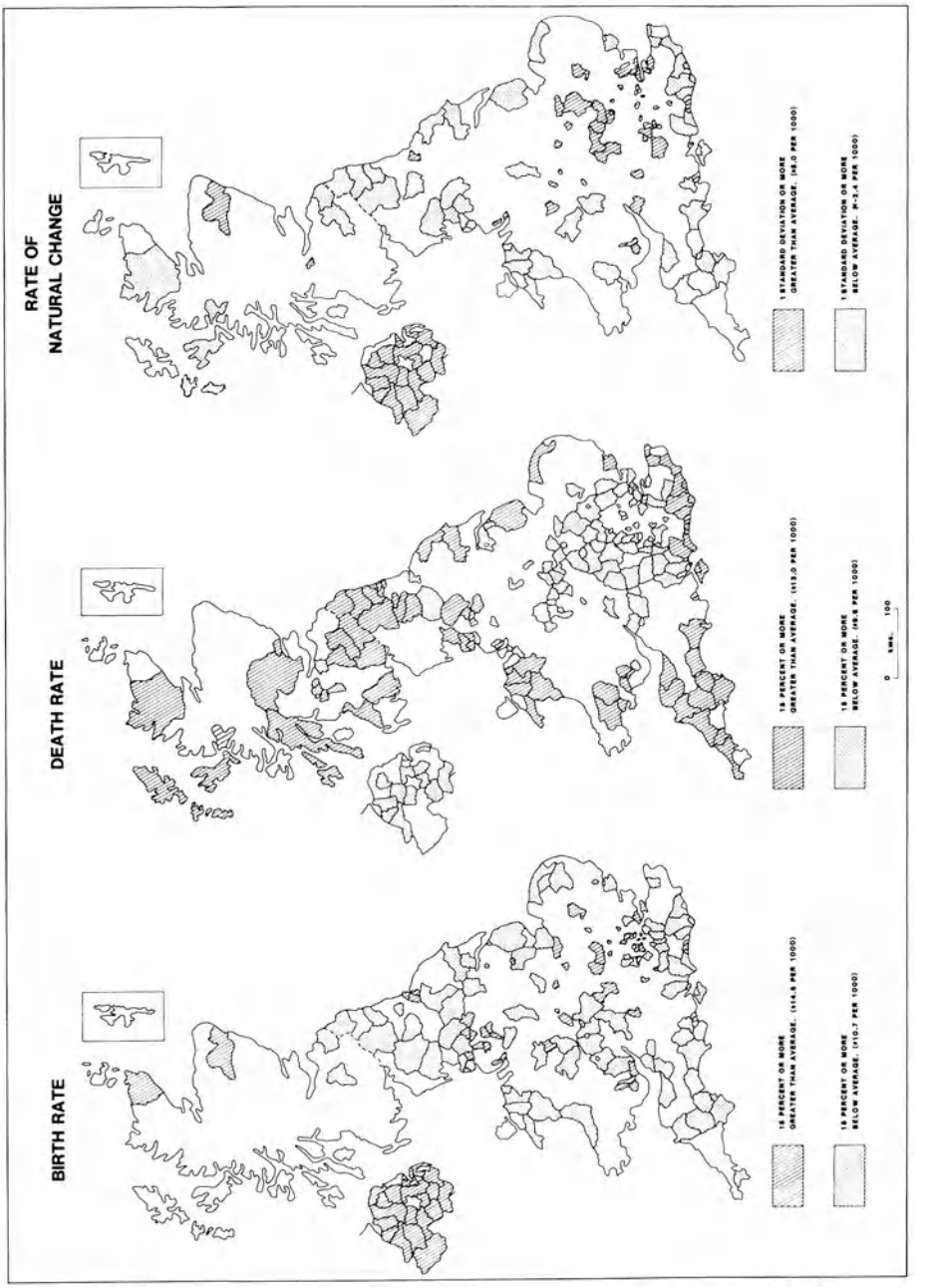


Figure 3.2 Spatial variation in crude rates, by district, 1984

low birth rates of the resort districts and the remoter rural areas of England and Wales appear to reflect the age structure of such areas. The highest crude death rates occur in resort areas and in Glasgow while much lower rates are associated with districts containing new towns, other urban areas of England and Wales and Northern Ireland. These broad trends are again generally consistent with age structure characteristics although Glasgow, with a relatively high death rate, does not have a particularly elderly age structure. The considerable relative variation in natural change across these settlement categories reflects, at one extreme, the substantial natural decline in resort areas and at the other extreme, the quite high natural increase in Northern Ireland and in districts in England and Wales within new towns. Five of the seventeen settlement categories displayed natural decline in 1984.

Variations in crude rates at the finer district level are depicted in Figure 3.2, in this case pinpointing those areas with particularly high or particularly low rates. There is no clear cut pattern in the birth rates, although it can be noted that relatively high rates occur in most parts of Northern Ireland whilst the lowest rates occur in many of the coastal districts of England (particularly southern England), the Welsh borderlands and in northern England. High death rates occur in many of the coastal districts of England and north Wales in addition to southern Scotland and northern England, while there is a clearly defined zone of low death rates in the districts radiating around the northern and western parts of Greater London and extending through to many of the districts of Leicestershire and Staffordshire. As a consequence of these patterns, high rates of natural increase are found in most of the districts of Northern Ireland (rising to as much as 1% per annum in some areas) and in two zones to the north and west of Outer London. Natural decline occurs in many of the coastal districts of England and Wales in addition to parts of north-east and north-west England (31% of districts registered natural decline in 1984).

3.4 Spatial variations in standardized rates

This section examines variations in age standardized rates where the standard population is that of England and Wales in 1984. These measures tend to produce differing spatial patterns than the crude rates. At the district level, for example, while there is a fairly close resemblance between crude and standardized fertility measures ($r = 0.75$), there is much less association between the measures of mortality ($r = 0.24$) or natural change ($r = 0.35$).

On a county basis, there is no clear cut pattern in age standardized fertility (Figure 3.3) apart from the particularly high rates in rural Northern Ireland. Areas with relatively high fertility include Bedfordshire, the West Midlands, Cleveland and Belfast, while relatively low fertility is scattered throughout England and eastern Scotland. For mortality, however, there is a more clearly defined spatial pattern at this level with low mortality almost exclusively occurring south of the Severn-Humber divide. Indeed, all areas in southern England with the exception of inner London and Kent have relatively low mortality. Relatively high mortality, on the other hand, occurs in the Central and Strathclyde regions of Scotland, Belfast and north-east England. As a consequence of these patterns of fertility and mortality, age standardized natural increase is particularly high in Northern Ireland (due to high fertility) and many counties of southern England (due to low mortality). Relatively low natural increase or natural decline occurs in most parts of Scotland and northern England, inner

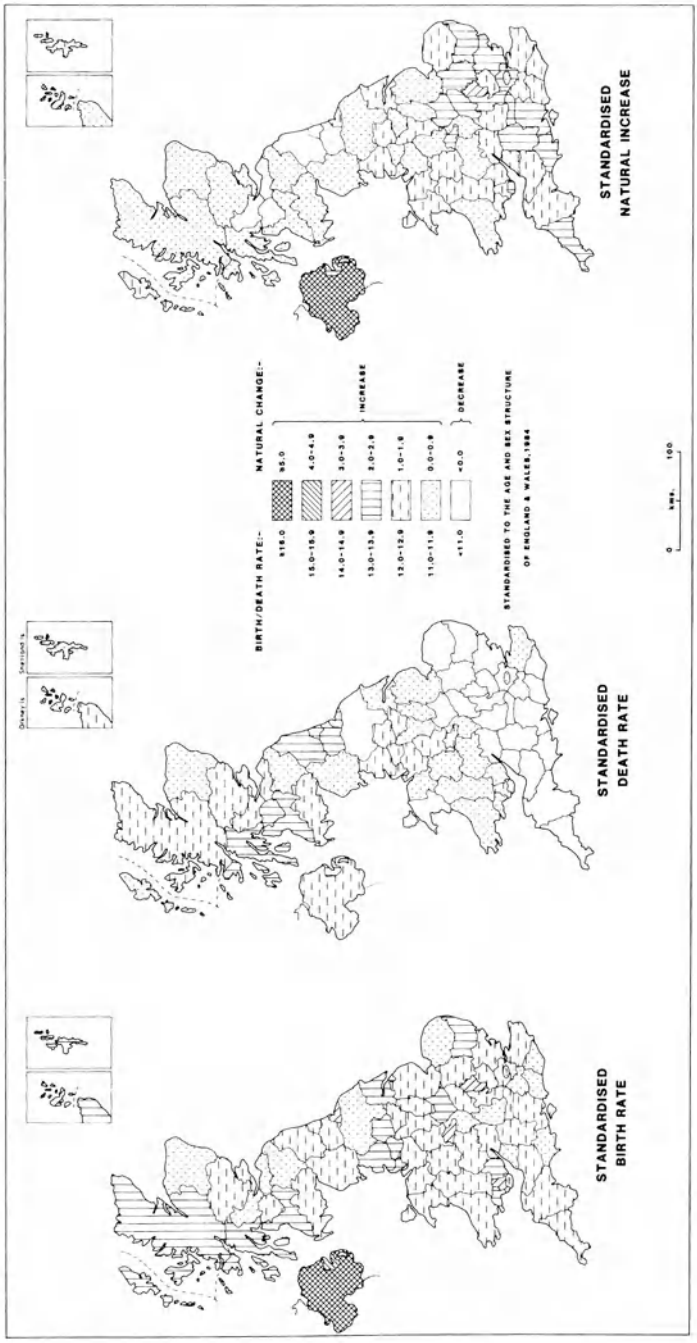


Figure 3.3 Spatial variation in standardized rates, by county, 1984

London and parts of the Midlands, in most cases reflecting the relatively high mortality of these areas.

Table 3.4 Standardized components of natural change, by category of district, UK, 1984

Category of District	Fertility		Mortality		Natural Change
	Birth Rate	England & Wales = 100	Death Rate	England & Wales = 100	Rate
England and Wales					
Inner London	13.0	102	11.5	101	1.5
Outer London	12.2	95	10.4	91	1.8
Principal cities	12.9	101	12.5	110	0.4
Other metro districts	13.4	105	12.6	111	0.8
Large cities	13.6	106	12.0	105	1.6
Small cities	11.8	92	11.3	99	0.5
Industrial	13.3	105	12.0	105	1.3
New towns	13.1	102	11.9	104	1.2
Resort and seaside	12.2	95	10.5	92	1.7
Other urban	12.0	94	10.6	93	1.4
Remoter rural	12.2	95	10.8	95	1.4
Scotland					
Glasgow	12.2	95	14.6	128	-2.4
Other large cities	10.8	84	12.4	109	-1.6
Other urban	12.5	98	13.0	114	-0.5
Rural	13.2	103	12.1	106	1.1
N. Ireland					
Belfast urban area	14.6	114	12.4	109	2.2
Rural remainder	18.9	148	12.4	109	6.5
Coefficient of Variation (%)	12.9		8.6		161.6

Notes:
(i) Standardised to age and sex structure of England and Wales, 1984
(ii) The figures are unweighted averages

Varying natural change according to settlement category (Table 3.4) again provides a useful perspective on the spatial patterns. Regarding fertility, there are no settlement categories outside Northern Ireland where fertility is considerably greater than average. Low fertility occurs in the large Scottish cities (excluding Glasgow) and, to a lesser extent, in small cities and other urban areas in England and Wales. Mortality is particularly high in Glasgow and quite high in the remainder of urban Scotland and the metropolitan cities and districts of England. Relatively low mortality occurs in outer London, resort districts and other urban districts in England and Wales. Generally, high mortality occurs in large urban conurbations,

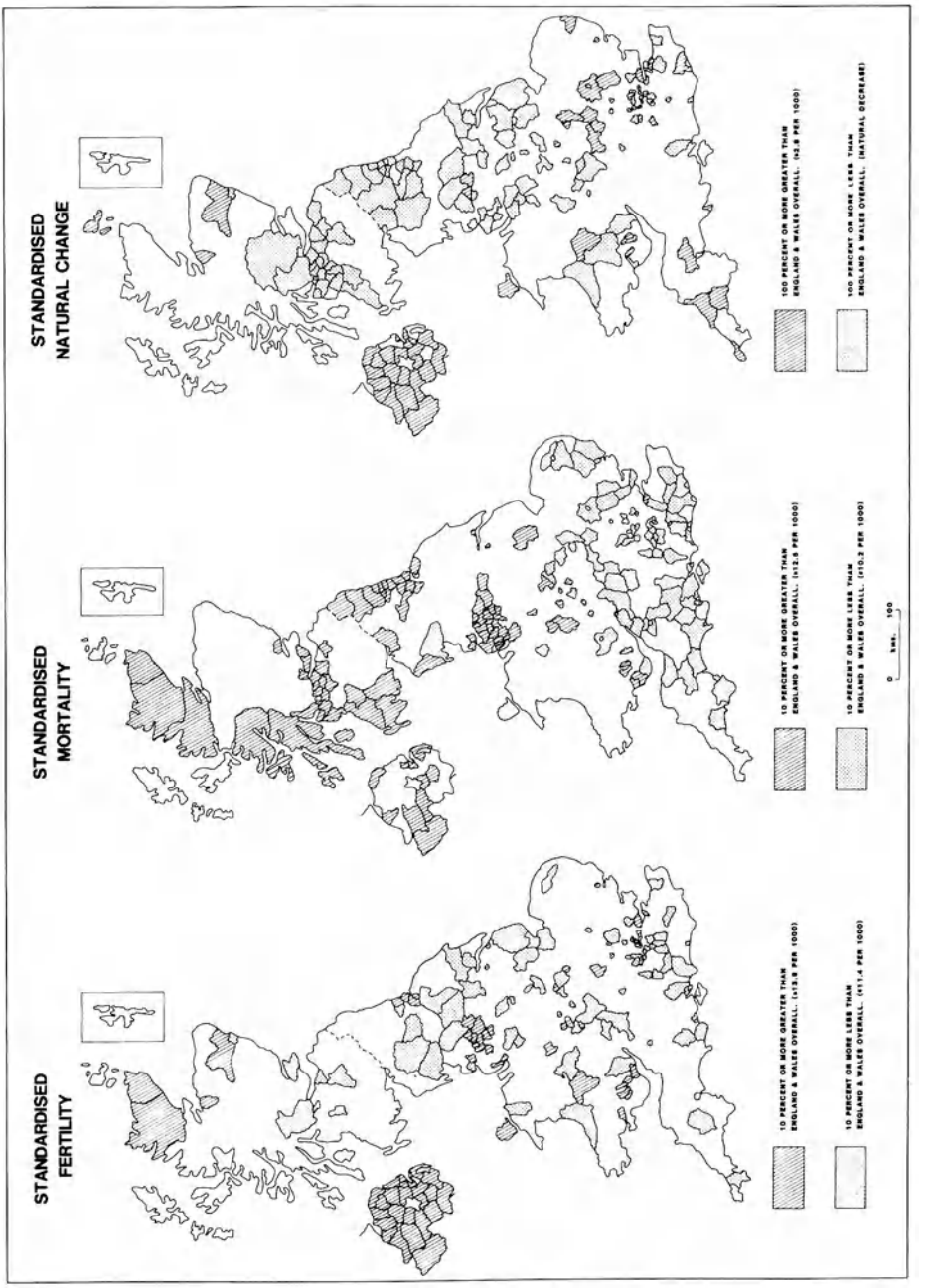


Figure 3.4 Spatial variation in standardized rates, by district, 1984

with the exception of London, while low mortality is associated with settlement types towards the other extreme of the settlement classification. It has been suggested that, on the evidence of mortality over the period 1964-73, relatively remote districts may have higher mortality than more accessible rural districts (Bentham 1984). In the case of England and Wales for 1984, however, this differential is very small and both categories record below average mortality. There is considerable variation in standardized natural change, reflecting the high rates in rural Northern Ireland (due to high fertility) and higher than average rates in outer London and resort areas (due primarily to low mortality), Belfast and the large cities of England and Wales (due to high fertility) in contrast to the natural decline of all of urban Scotland (due to relatively high mortality and below average fertility).

Variations at the district level are depicted in Figure 3.4, again pinpointing areas with rates markedly higher or lower than average. There is no clear cut pattern in age standardized fertility, although certain zones of high fertility can be identified, including most of Northern Ireland, the urban areas of Greater Manchester, parts of West Yorkshire and south Lancashire and, to a lesser extent, parts of the West Midlands and South Wales. Low fertility districts are widely scattered although certain zones can again be identified, such as the south-western districts of Outer London extending into Surrey and Hampshire as well as rural districts in North Yorkshire and Cumbria. In contrast, the spatial patterning of mortality is much more clear cut with three quite extensive zones of high mortality encompassing urban north-west England, north-east England and also central and west Scotland. In these areas the standardized mortality ratios were 17, 19 and 20% respectively above the norm for England and Wales. On the other hand, particularly low mortality is virtually confined to southern England, especially the outer ring beyond London and in Dorset and south Devon. Variations in standardized natural change again follow no clear cut pattern: relatively high natural increase occurs in much of Northern Ireland, parts of inner and outer London as well as a zone extending from south Northamptonshire to north Essex. Natural decline occurs in central Scotland, north-east England, much of the remainder of northern England and much of the East Midlands.

The extent to which certain socio-economic variables are linked to these variations can be assessed using 1981 Census and vital registration data where the spatial patterns for 1981 were very similar to those for 1984. Thus, just less than 40% of the variation in standardized fertility rates at the district level is accounted for by the five socio-economic and demographic factors of female unemployment, nuptiality, social class, female economic activity and immigrant populations (Table 3.5) employed in a stepwise regression analysis. Three socio-economic variables - male unemployment, social class and owner occupation - account for 53% of the variation in standardized mortality (Table 3.6). In this case it was not possible to include variables directly reflecting environmental or lifestyle factors, although many of the latter, such as smoking and diet are partly subsumed within measures of social class (Curson 1986). None of these socio-economic or demographic factors are strongly related to overall standardized natural increase, perhaps reflecting the varied effects of such variables on fertility and mortality.

Table 3.5 Stepwise regression results for standardized birth rates, UK districts, 1981

Step	Variable included	r	R	R^2 (%)	Variable excluded (after final step)	Partial correlation with standardised birth rate
1	Female unemployment (X1)	.44	.44	19	Owner occupation (X6)	.01
2	Nuptiality (X2)	.39	.58	34	Female education (X7)	.09
3	Social class (X3)	.43	.60	36		
4	Female econ. activity (X4)	-.28	.61	37		
5	Immigrant populations (X5)	-.14	.62	38		

Notes:
(i) Y = 62.5 + .12 X1 + .07 X2 + .06 X3 - .04 X4 + 4.7 X5
(ii) r : Zero order correlation with standardised birth rate
(iii) X1 : % of economically active women aged 16-59 out of employment;
X2 : % of females aged 15-29 who are married;
X3 : % of population living in households with head in social class IV or V;
X4 : % married women 16-59 who are economically active;
X5 : % population born in New Commonwealth, Pakistan and Ireland (log transformation);
X6 : % of households owner occupied;
X7 : % of females >16 with higher education qualifications

Table 3.6 Stepwise regression results for standardized death rates, UK districts, 1981

Step	Variable included	r	R	R^2 (%)	Variable excluded (after final step)	Partial correlation with standardised death rate
1	Male unemployment (X1)	.65	.65	42	Migration (X4)	-.03
2	Social class (X2)	.64	.70	49		
3	Owner occupation (X3)	-.55	.73	53		

Notes:
(i) Y = 87.5 + .11 X1 + .09 X2 - .02 X3
(ii) r : zero order correlation with standardised death rate
(iii) X1 : % males 16-64 who are unemployed;
X2 : % population living in households with head in social class IV or V;
X3 : % households owner occupied;
X4 : % net migration change 1971-81

3.5 Conclusion

Within the United Kingdom geographical variations in natural change are still quite pronounced, particularly at the district level. Moreover, due to the importance of varying population age structures on crude rates, two of the three measures show little association between crude and age standardized patterns. Age structure is clearly responsible for explaining much of the spatial variation in the crude rates. The socio-economic variables used here account for relatively low proportions of the variation in the standardized birth and death rates (38% and 53% respectively), showing that numerous other influencing factors are involved. For example, mortality is likely to be related to varying environmental influences, access to a provision of health facilities and lifestyle factors such as smoking and diet. Similarly, variations in fertility, reflecting the influences that govern child spacing as well as overall differences in completed family size, may well reflect life cycle influences connected with high mobility around marriage and during the early years of childbearing (Grundy and Fox 1984) and also the movement to areas of relatively cheap housing of those couples in the early stages of family formation (Lawton 1973, Compton 1982, Eversley 1982, Coward 1986b). Indeed, a separate analysis of the regression residuals indicates that fertility is higher than expected in some of the districts with new housing developments, particularly around London.

The distinctive and, in some cases, considerable spatial variability in natural change ensures that it will continue to play an important role in influencing overall population change. Indeed, between 1971 and 1981 the natural increase component of population change was greater than that of the net migration component in 28% of the counties of Great Britain. Even at the finer distict level, 21% of the districts displayed a natural increase component greater than that of net migration. It has also been seen that there is a quite considerable degree of variation in natural change and its components when classified by settlement category, and therefore this classification can provide useful insights into the geographical aspects of demographic variability.

The other major feature to note is that within the United Kingdom there are still quite important spatial differences in age standardized fertility and mortality, particularly at the district level, and the considerable degree of regional convergence over the last half century has by no means eliminated such differences. Moreover, the standardization procedure utilised here will obviously obscure varying regional patterns by age and, in the case of mortality, by cause of death (McCracken 1981). As far as applied research is concerned, a major task lies in attempting to unravel the range of possible explanatory factors influencing the clear cut regional mortality patterns in the United Kingdom. Detailed studies of individual data derived through record linkage (Fox and Goldblatt 1982, Fox et al. 1985, Mohan and Rhind 1983) are beginning to tackle these issues and seem to offer the best way forward from the general patterns established through ecological analysis.

Similarly, the standardized fertility measure adopted here obscures varying regional patterns of fertility by age of mother (Rees 1979c, Compton 1982, Armitage 1987). Such differences may reflect variations in family formation patterns and social class structure as well as the nature of regional variations in the participation rates of married women. In the case of fertility it often seems that the main 'geographical' dimension can be attributed to spatial

variability in demographic and socio-economic structures, but, in addition, there may be more deep seated cultural influences that bring about differing regional attitudes to fertility and patterns of family formation (Coward 1987).

3.II THE NETHERLANDS

Loek Kapoen and Nico Keilman

3.6 Fertility at national level

Whilst crude birth and death rates per thousand population provide an idea of the components of population growth, they do not indicate the frequency of births and deaths at the household or individual level. Alternative measures such as the total (period) fertility rate and life expectancy at birth can be used. The total fertility rate, combined with the average age (and the variance around the average age) of the mother is a suitable measure for forecasting and comparative analysis. The total fertility rate is the sum of age-specific birth

Table 3.7 Total fertility rates for Western European countries, 1970-1985

Country	1970-75	1975-80	1980	1982	1983	1984	1985
Belgium	1.94	1.71	1.67	1.61	1.56	1.52	1.49
West Germany	1.63	1.44	1.44	1.41	1.33	1.29	1.27
Denmark	1.96	1.71	1.55	1.43	1.38	1.40	1.45
France	2.24	1.87	1.95	1.91	1.79	1.81	1.82
Greece	2.30	2.30	2.21	2.03	1.94	1.82	
Eire	3.80	3.46	3.23	2.96	2.75	2.58	2.49
Italy	2.28	1.92	1.69	1.57	1.52	1.50	1.42
Luxembourg	1.96	1.54	1.51	1.49	1.45	1.43	1.39
Netherlands	1.98	1.59	1.60	1.50	1.47	1.49	1.51
Austria	2.02	1.65	1.65	1.66	1.56	1.52	1.46
Portugal	2.73	2.40	2.13	2.07	1.95	1.87	1.70
Spain	2.87	2.61	2.16	1.87	1.71	1.65	
United Kingdom	2.05	1.73	1.92	1.77	1.77	1.77	1.79
Switzerland	1.82	1.52	1.55	1.55	1.51	1.52	1.51

Source: CBS (1987/8)

J. Stillwell and H.J. Scholten, Contemporary Research in Population Geography, 52–62.

rates. It may be interpreted as the total number of births a woman would have if her fertility in each year of her reproductive life exactly paralleled the current fertility of women in her own and other age groups. Total fertility rates for most Western European countries (Table 3.7), including the Netherlands, have declined over the last decade and in 1985, the only country with fertility above replacement level (2.1 children per woman) was Eire. The Netherlands experienced a reduction in its total fertility rate from 1.66 in 1975 to 1.51 in 1985, and Table 3.8 presents some further measures of fertility for the Netherlands which confirm the downward trend until 1985. In 1975, both gross and net reproduction rates were below 1.0, indicating that the population will decrease in due course, while the mean age at childbearing has increased from 26.9 in 1975 to 28.5 in 1986.

Table 3.8 Fertility measures, Netherlands, 1970-1986

	1970-74	1975	1980	1985	1986
Crude birth rate	16.0	13.0	12.0	12.3	12.6
General fertility rate (i)	67.1	53.6	50.5	46.6	47.7
Total fertility rate	2.15	1.66	1.60	1.51	1.55
Net reproduction rate	1.03	0.80	0.77	0.73	0.75
Mean age at childbearing	27.1	26.9	27.5	28.2	28.5

Notes:
(i) Total live births per 1,000 women aged 15-49 years.
(ii) Source: CBS (1987/6)

In the next section, spatial variations in fertility rates are described for the Dutch Provinces and 'COROP-regions'.

3.7 Fertility rates at provincial and COROP-region level

The Netherlands consists of 12 provinces which are divided into 44 COROP-regions. Spatial variations in fertility rates are examined firstly at the provincial level for 1984 and 1985, the two most recent years for which data are available, and secondly, at the COROP-region level for the period 1972 to 1984.

With exception of the the province of Groningen, the Northern (rather rural) provinces of Friesland and Drenthe and the Eastern province of Overijssel have higher than average general and total fertility rates (Table 3.9). These variations can partly be explained by higher marriage rates and lower divorce rates in these provinces. Relatively low total fertility rates occur in the provinces of Groningen (in the North), Noord-Holland (in the West) and Limburg (in the South), of which Noord-Holland is the most urbanised province. The high fertility levels in Flevoland (new land arising from parts of the former Zuiderzee) are explained by the fact that a substantial share of the immigration into these polders consists of young couples and young families who are in the expansion stage of their family life cycle.

Table 3.9 Provincial fertility rates in the Netherlands, 1984 and 1985

Province	Crude birth rate		General fertility rate		Total fertility rate	
	1984	1985	1984	1985	1984	1985
Groningen	11.3	11.7	45.8	47.0	1.37	1.41
Friesland	12.9	13.0	57.5	57.8	1.72	1.73
Drenthe	11.8	12.2	52.9	54.5	1.59	1.64
Overijssel	13.2	13.4	57.6	58.5	1.73	1.76
Gelderland	12.1	12.2	50.3	50.6	1.51	1.52
Utrecht	12.6	12.5	48.6	48.1	1.47	1.46
Noord-Holland	11.3	11.6	45.0	45.9	1.35	1.38
Zuid-Holland	12.3	12.3	55.7	56.0	1.51	1.53
Zeeland	12.3	12.3	55.7	56.0	1.67	1.68
Noord-Brabant	12.0	12.2	49.4	50.3	1.48	1.51
Limburg	11.1	11.3	45.6	46.4	1.37	1.39
Flevoland	19.2	19.3	60.5	61.7	1.86	1.90
Netherlands	12.1	12.3	49.7	50.3	1.49	1.51

Source: CBS (1986; 1987)

COROP-regions are regions where the functional relationships between one or more central locations and their surrounding regions are of key importance. Central locations are urbanised centres of employment and supporting functions which act as a node of human interaction. Each COROP-region consists of one or more municipalities. There are 40 standard COROP-regions together with the 4 municipalities of Amsterdam, Rotterdam, The Hague and Utrecht isolated from their respective (larger) regions, for which age-specific fertility rates since 1972 are available.

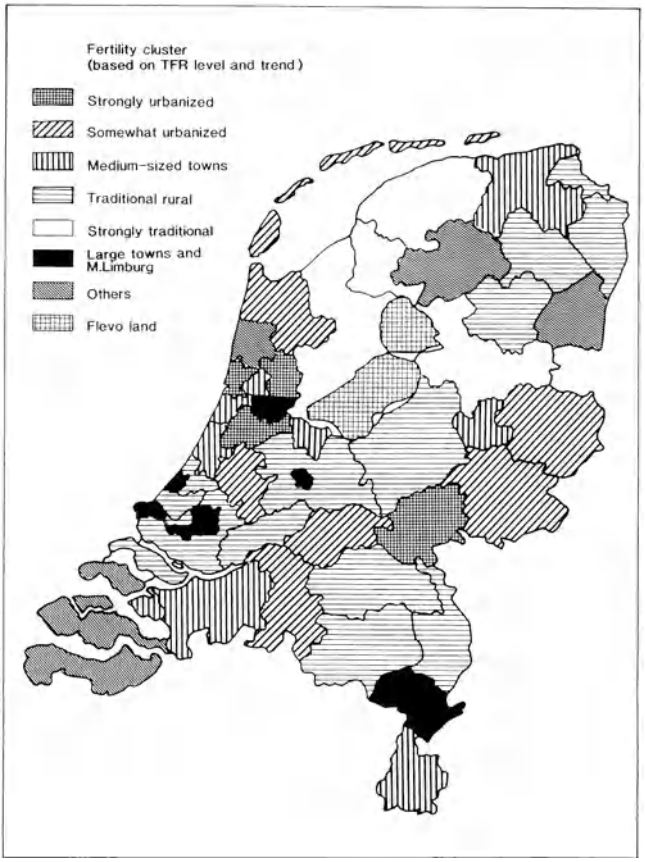
The value of the Gamma fertility curve in summarizing a series of age-specific fertility rates in a few parameters has been demonstrated at the national level by Duchene and Gillet-de Stefano (1974), Hoem et al. (1981), and Thompson et al. (1987), and at the regional level in the Netherlands by Eichperger (1981) and Janssen (1984). At the local and neighbourhood level, Everaers and Kapoen (1985) proved the usefulness of this function, although other functions (such as the Beta function) gave a better fit in some cases. The Gamma curve's original parameters can be transformed into four demographic indicators that have straightforward interpretations: the age at which childbearing starts, the mean age at childbearing, its standard deviation, and the total fertility rate. If the initial age of childbearing is fixed at 15 years, the remaining three parameters can be estimated with Ordinary Least Squares, details of which are provided in Keilman and Manting (1987). Observed age-specific births for each of the 44 COROP-regions are available for 5 year age groups of the mother only. In order to arrive at the proper population at risk to define 'period-cohort rates' (Willekens and Drewe 1984, p. 321), age-specific fertility rates were calculated for the (overlapping) five year periods 1972-1976, 1976-1980 and 1980-1984. Thus the Gamma function generated 44x3x3=396 parameter values, one for each combination of COROP-region, five year period and type of parameter.

Table 3.10 Trends in regional age-specific fertility patterns, 1972-84

Regional cluster	Period	Total fertility rate	Mean age at childbearing	Standard deviation in age at childbearing
		Children/woman	Years	Years
1. Strongly urbanised	1972-1976	1.84	25.0	5.0
	1976-1980	1.64	24.8	4.5
	1980-1984	1.51	25.0	4.6
2. Somewhat urbanised	1972-1976	2.19	25.2	5.5
	1976-1980	1.93	24.9	4.9
	1980-1984	1.78	25.1	4.9
3. Traditional rural	1972-1976	2.04	25.0	5.3
	1976-1980	1.80	24.8	4.9
	1980-1984	1.75	24.9	4.7
4. Strongly traditional	1972-1976	2.40	25.4	5.7
	1976-1980	2.07	25.1	5.2
	1980-1984	1.99	25.2	5.1
5. Medium sized towns	1972-1976	1.80	5.2	
	1976-1980	1.60	24.9	4.8
	1980-1984	1.53	25.1	4.8
6. Large towns and middle-Limburg	1972-1976	1.46	25.0	5.3
	1976-1980	1.34	25.1	5.3
	1980-1984	1.37	25.5	5.5
7. Flevoland	1972-1976	2.60	25.4	5.9
	1976-1980	2.30	24.8	5.1
	1980-1984	1.78	24.8	4.8
8. Rest group	1972-1976	2.07	25.0	5.5
	1976-1980	1.76	24.8	5.1
	1980-1984	1.78	24.8	4.8
Netherlands as a whole	1972-1976	1.91	25.1	5.3
	1976-1980	1.69	24.9	5.0
	1980-1984	1.61	25.2	5.0
Coefficients of variation for 8 regional clusters	1972-1976	17.5	0.8	5.3
	1976-1980	16.5	0.5	5.9
	1980-1984	16.5	0.9	6.0

The original 44 regions were grouped into 8 regional clusters (Table 3.10), based upon the 1980-1984 level of the total fertility rate (TFR), as well as its percentage change between 1976-1980 and 1980-1984. The 1980-1984 level of the TFR was expressed as a deviation from the national TFR, (up to 30% below national TFR, up to 20% above national TFR, 20

Figure 3.5 Variations in fertility by COROP-region



to 30% above national TFR, and more than 30% above national TFR). Its percentage increase or decrease was expressed in three classes: strong decrease (-12% to -6%), moderate decrease (-6% to 0%) and increase (0 to 4%). Combining the level and the trend resulted in eight regional clusters, in which each of the 44 COROP-regions was located. Unweighted averages of the corresponding parameter values of all COROP-regions within each cluster are given in Table 3.10. The names of the clusters suggest that the degree of urbanisation is an important factor influencing regional fertility patterns (Figure 3.5). Amsterdam, Rotterdam, the Hague and Utrecht (together with Middle-Limburg) show low fertility during the whole period. In these urban areas there is a relatively high proportion of women with higher education qualifications, there is much employment in the service sector leading to a high rate of female labour force participation, church attendance is low and few women vote for Christian political parties. All these factors lead to later childbearing and fewer children. In rural areas the situation is generally the reverse of that in urban regions. The importance of these factors was confirmed by a global analysis of the impact of socio-economic and cultural factors on fertility patterns (Keilman and Manting 1987). In the early 1980s, roughly

three out of every four of the 44 COROP-regions showed a low share of female employment (relative to the share of the Netherlands as a whole), together with a high TFR (relative to the national TFR); almost two out of every three COROP-regions showed both a relatively high rate of female labour force participation and a low TFR in that period; roughly half of the 44 regions had a high TFR and, at the same time, a high share of female unemployment; the same proportion of regions had a high share of voters for the Christian Democratic Party in 1982 as well as a high fertility level in 1980-1984; and about 75% of the 44 regions experienced a high population density together with low fertility.

One factor that does not agree with these general tendencies is the presence of women with non-Dutch nationality in large cities, who show higher childbearing propensities than women of Dutch nationality. Family reunion of foreign workers, mainly stemming from Turkey and Morocco, started in the late seventies. This process explains, at least partially, the reversal of the decline of fertility levels in large cities since the early seventies. At the same time it may account for the relatively high standard deviation, caused by pronounced childbearing both at low and at high ages of women with Turkish or Moroccan nationality. The high level of fertility in Flevoland has already been explained. Even when correcting for age distribution (as is done in computing TFR), fertility is high in this region. This can be explained at least partially by timing effects, but whether the high cohort fertility is genuine remains to be seen. The last three rows of Table 3.10 indicate that most regional variation is absorbed by the TFR. The mean age at childbearing is essentially the same across regions. Since 1972, the level of fertility (as expressed by TFR) shows a slight tendency towards regional convergence, whereas the range of child bearing ages (as expressed by the standard deviation) has tended to diverge.

3.8 National life expectancy and mortality

A comparison of life expectancy at birth in Western European countries (Table 3.11) illustrates that the Netherlands together with Switzerland register the highest life expectancies. In 1983-84, life expectancy in the Netherlands was 73.0 years for males and 79.5 years for females, and in almost all countries, including the Netherlands and the UK, life expectancies have increased since 1970. The national mortality rate in the Netherlands has declined between 1975-79 and 1980-84 in all age groups, the decrease being strongest for the younger age groups (Table 3.12). Mortality rates are higher for males than for females, and according to the life-tables, males in the age groups 16-23 and 53-72 have twice the mortality risk of females. Mortality rates are lowest for males aged 9 and for females aged 10.

Table 3.11 Life expectancy at birth by sex, Western European countries since 1970-75

	1970-75		1975-80		Most recent values		Period
	M	F	M	F	M	F	
Belgium	68.2	74.7	69.1	75.7	70.0	76.8	79/82
West Germany	67.6	73.7	69.0	75.8	70.5	77.1	81/83
Denmark	70.9	76.4	71.3	77.3	71.5	77.5	83/84
France	68.6	76.2	69.8	78.0	71.2	79.3	84
Greece	70.9	74.5	71.3	75.0	72.2	76.3	80
Italy	69.2	75.2	70.4	76.9	70.6	77.4	80
Luxembourg	67.0	73.5	67.5	73.8	70.0	76.7	80/82
Netherlands	71.1	77.0	72.1	78.6	73.0	79.5	83/84
Austria	67.0	74.3	68.5	75.6	70.1	77.3	84
Portugal	64.9	71.3	66.7	73.8	68.9	76.6	81
Spain	70.1	75.6	70.6	76.5	72.6	78.6	80/81
United Kingdom	69.0	75.2	69.7	76.0	71.6	77.6	82/84
Switzerland	70.8	77.0	72.0	78.6	73.1	79.7	83/84

Source: CBS (1987/8)

Table 3.12 Expectation of life for males and females by age group, 1975-79, 1980-84 and 1985

	Age Group													
	0		0-5		10-15		20-25		50-55		65-70		80-85	
Life table period	M	F	M	F	M	F	M	F	M	F	M	F	M	F
1975-1979	71.9	78.3	72.1	78.4	62.5	68.8	52.9	58.9	24.7	30.2	13.4	17.4	6.2	7.4
1980-1984	72.8	79.4	72.8	79.4	63.2	69.7	53.5	59.9	25.2	31.1	13.7	18.2	6.3	7.9
1985	73.1	79.7	73.1	79.6	63.4	69.9	53.7	60.0	25.3	31.2	13.7	18.2	6.2	7.9

Source: CBS (1986/7)

3.9 Mortality at provincial and COROP-region level

Table 3.13 shows death rates at provincial level for the years 1984 and 1985. The differences compared with the national rates are small. Limburg, the most southern province has the highest standardized death rates for males and females, and Zeeland (South-Western part), which is a very rural area, has the lowest standardized rates for both sexes.

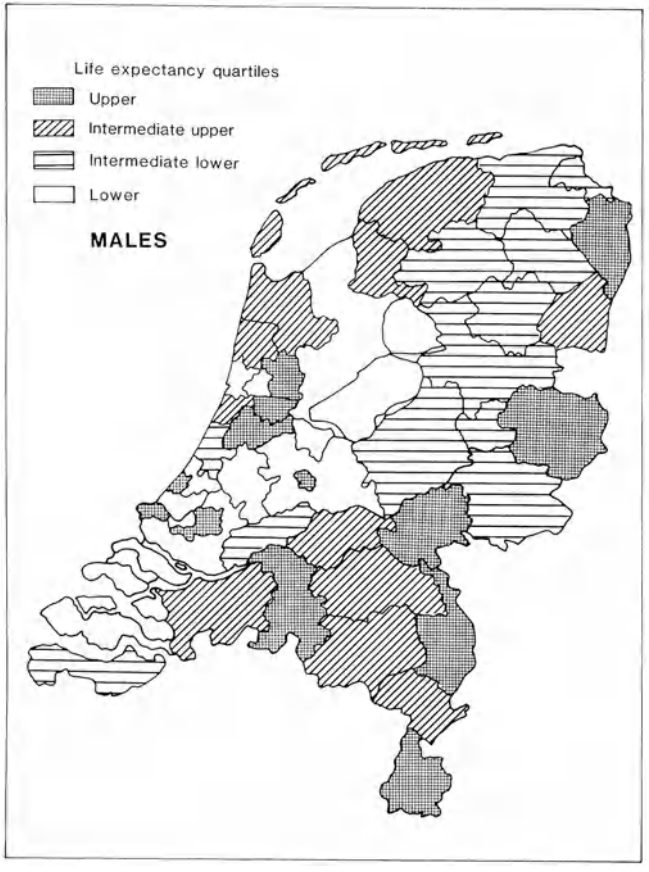
Table 3.13 Crude and standardized death rates for provinces of the Netherlands, males and females, 1984-5

Province	Crude rate		Standardized rate	
	M	F	M	F
Groningen	10.7	8.7	9.4	7.8
Friesland	9.9	8.2	8.7	7.5
Drenthe	10.2	7.5	9.1	7.7
Overijssel	9.4	7.6	9.5	8.1
Gelderland	9.1	7.6	9.2	8.0
Utrecht	8.4	7.4	9.0	7.4
Nrd-Holland	9.6	8.5	9.2	7.6
Zd-Holland	9.7	8.3	9.2	7.5
Zeeland	9.9	8.7	7.7	7.3
Nrd-Brabant	7.8	6.5	9.2	8.2
Limburg	9.0	7.3	10.0	8.5
ZIJP	4.6	3.1	8.9	8.1
Netherlands	9.2	7.8	9.2	7.8

Source: CBS (1986/2)

An analysis of age-specific mortality patterns for the 44 COROP-regions for 1972-84 was recently undertaken by Van Poppel (1987), and the following discussion draws heavily on his research. Regional life tables for males and females were computed for each of the 44 COROP-regions for the periods 1972-1976, 1976-1980 and 1980-1984. Life expectancy at birth is a measure which summarizes, to a large extent, such a life table. It expresses the number of years to be lived by an individual who experiences, during the whole of his or her life, the age-specific mortality rates that appear in the life table. The Netherlands as a whole showed a steady increase of life expectancy over the three five-year periods: from 70.4 to 71.4 to 72.1 years of age for males, and for females from 76.8 to 78.3 to 79.2 years of age. At the same time, all COROP-regions showed an increase in life expectancy. The male minimum value was 68.7 years in 1972-1976 and 70.7 years in 1980-84. The female minimum rose from 75.4 to 78.9 years. Also, the maximum value rose between 1972-1976 and 1980-1984 from 72.0 to 73.9 years for males and from 78.5 to 81.3 for females. Some regions showed a sharper increase (up to 3.5 years) than the national increase of 1.7 years for males and the 2.3 years for females. This is the case for regions in the Northern part of the country for males and in the Northern as well as the Eastern part for females. Urbanized areas in the West, in particular around Amsterdam, the Hague, Utrecht and Haarlem, together with the North-Eastern part of Groningen, experienced a relatively slow increase: between 0.3 and 1.2 years for males and around 1.6 years for females. Although regional differences are somewhat unstable through the period under consideration, computed rank-order correlation coefficients of between 0.7 and 0.9 indicate that observations over the

.6 Variation in life expectancy at birth, males and females, 1972 - 85, by COROP-region



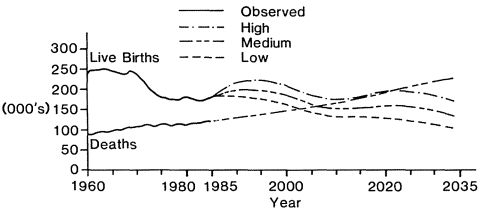
period may quite well be taken as a whole. Van Poppel divided the 44 regions into four groups constituting the lower, the upper and the intermediate quartiles for the collection of the 3x44 = 132 regional life expectancies for the whole period 1972-1984 (Figure 3.6).

The Southern part of the Netherlands is characterized by low life expectancies, especially for women. These regions show relatively high mortality due to ischaemic, cerebrovascular and other coronary heart diseases, as well as lung cancer and chronic diseases of the respiratory system. It may be suggested that the structure of the labour market, tobacco consumption, health facilities, the reception of health campaigns, and housing conditions are all factors relevant for the atypical pattern in South-Netherlands. Isolated areas with high mortality (and thus low life expectancies) are found in the Eastern and North-Eastern parts of the country, and areas in or around the large towns. Low mortality is encountered in Flevoland and in the Western and South-Western parts of the country.

3.10 Conclusion

There has been a significant decline in natural growth in the Netherlands since 1970, due to a sharp fall in live births. Shortly after the year 2000, the number of deaths will be higher than the number of births according to the medium variant of the latest population forecast (1986) computed by the CBS (CBS, 1987/2) (Figure 3.7). This is a result of the decreasing number of women in the fertile age range. Despite the expected decrease in mortality rates in nearly all age groups until 1995, the number of deaths will increase steadily because of the steady growth in the number of elderly people. The number of marriages influences the number of births and has also declined substantially since 1970.

Figure 3.7 Observed live births and deaths, 1960 - 1985, and projections to 2035



The regional patterns for fertility and mortality which were discussed in previous sections can be extrapolated until the end of the century. The purpose of extrapolation is to generate the inputs for a regional population projection at the COROP-level. As an external condition, it was assumed that future regional fertility and mortality trends would exhibit approximately the same shape as the national trends (but at a higher or lower level, of course). Therefore, the extrapolations were carried out using a constant difference between the regional parameters and the national parameters (which had been extrapolated earlier by the Central Bureau of Statistics within the framework of the national population forecasts). A

visual inspection of the mechanical extrapolations revealed unrealistic trends for some parameters in some regions, considering their development since 1972 and the interpretations that were given to these historical trends. For these parameters a manual correction of the extrapolations was carried out (Keilman and Manting 1987, chapter 6; Van Poppel 1987, chapter 2). Since only natural growth is discussed in this chapter no references will be made to migration extrapolations and the interested reader is referred to Drewe and Rosenboom (1987) for details of internal migration extrapolation and to Schakenraad (1987) for details of external migration projection.

Results of the regional projections presented in Willekens (1987), indicate that by the end of the century, the natural growth of the four major cities (Amsterdam, Rotterdam, The Hague and Utrecht) will be slightly negative (between -0.2 and 0% per year). At present, Amsterdam and Utrecht experience a small natural growth (0.3 and 0.6% per year, respectively). In Rotterdam and in The Hague there is an almost perfect balance between numbers of live births and numbers of deaths. The region around Haarlem is the only other area showing negative natural growth by the end of the century of -0.2% per year, which is about twice as much as the present rate of decline. The excess of deaths over births for Rotterdam, The Hague and Haarlem is caused by two factors: a gross mortality rate of 1.2% which is higher than the forecasted national mortality rate (0.9% around the year 2000); and a gross birth rate of 0.9 - 1.0% which is somewhat lower than the national birth rate of 1.2%. In Amsterdam and Utrecht, the forecasted birth rates and the forecasted death rates all lie between 0.9 and 1.0% per year. Regions with high natural growth (around 0.7% annually) near the end of the century are the northern part of Overijssel, the northern part of Noord-Holland, the Alkmaar region and the eastern part of Zuid-Holland. Except for the latter region, this is mainly due to their relatively high birth rates (1.4 - 1.5%), rather than their death rates (around 0.8%), which are only slightly below the national level. But in Eastern Zuid-Holland, which has a relatively high life expectancy, the low death rate (0.7%) strongly influences the relatively high natural growth. These extrapolations underline the fact that the components of natural change do have an important influence on the future population geography of the Netherlands.

4. INTERNAL MIGRATION

4.1 Introduction

It has been established that, in recent decades, redistribution of the population through internal migration has become by far the most significant component of population change in the majority of subnational areas of Western European countries. However, international comparative research on levels and rates of internal movement is complicated not least by differences in the size of spatial units across whose boundaries migration has been measured. In a comparative study of migration in 17 countries throughout the world, Rogers and Castro (1986) have used the gross migraproduction rate (GMR), the sum of all age-specific outmigration rates, as a convenient measure of the propensity to migrate between regions defined at a relatively coarse spatial scale. The national GMR for migration between 5 macro regions of the Netherlands in 1975 (GMR=1.1) is of similar magnitude to the GMR for migration between the regions of the UK (GMR=1.2), and both these rates are well above comparable rates for France and Italy (Rogers and Castro 1986, Table 5.3), although in the latter countries, regional differentials are more apparent.

The importance of migration as a component of population change varies according to the size of the spatial unit under consideration. In the Netherlands, therefore, changes of residence which involve migration across municipal boundaries are responsible in total for approximately 60% of municipality population change, whereas inter-provincial migration is considerably lower but still accounts for almost 38% of population change at this level (Brouwer et al. 1984). The proportion of the population experiencing migration will be reduced as the spatial scale becomes more refined. In Britain during 1980-81, migration flows between local authority districts involved 35% of the population whereas only 12% were involved in movement between regions (Stillwell and Boden 1986).

In this chapter, two pairs of authors outline certain demographic and geographic characteristics of internal migration in the two countries. Since research in Britain does not benefit to the same extent as that in the Netherlands from the availability of data on migration, John Stillwell and Peter Boden confine the first part of their analysis to an examination of changes in the level and age-sex structure of national migration in the UK based on census 'transition' and NHSCR 'movement' data. This analysis is followed by a review of the spatial pattern of net migration for a set of metropolitan and non-metropolitan regions and a summary of the temporal stability of gross in- and out-migration components of net migration for an aggregated system of five categories of region.

In the second part of the chapter, Henk Scholten and Rob van de Velde adopt the framework of spatial interaction modelling for a more explicit definition of the level, generation, attraction and distribution components of migration flows between municipalities in the Netherlands. They contend that net migration balances in recent years conform with what is regarded as desirable in national policy terms and pose the question of the extent to which net migration balances are influenced in the desired direction by policy. Research into migration patterns has always been important in Dutch spatial planning. The deconsolida-

J. Stillwell and H.J. Scholten, Contemporary Research in Population Geography, 63–75.

tion of migration into its constituent parts and their subsequent analysis provides the opportunity to establish which components are sensitive to government policy, and thus to suggest adjustments to policy instruments in order to influence the behaviour of future groups of migrants.

4.I THE UNITED KINGDOM

John Stillwell and Peter Boden

4.2 Migration data: transitions and moves

In the absence of a population registration system, primary sources of data on migration within the UK are the Census of Population and the patient re-registration statistics available from the National Health Service Central Register (NHSCR). The characteristics and limitations of census 'migrant' or 'transition' data and NHSCR 'transfer' or 'movement' data have been reported by several researchers (Rees 1986b, Ogilvy 1980, Devis 1984). Detailed comparisons have been undertaken by Devis and Mills (1986) and by Boden et al (1987) who indicate that, although NHSCR moves exceed census transitions by between 13 and 33% depending on spatial scale, there is close agreement between the sources as to the pattern of migration.

Data from both sources are used in the analysis which follows. Census migrants refer to those persons who were in existence one year prior to the census, who migrated at least once during the 12 month period to a different place of usual residence, and who survived the period there. Comparison of migration in 1970-71 and 1980-81 is facilitated by the existence of special tabulations for 1971 Census data for regions of Great Britain as constituted following local government reorganisation in 1974 in England and Wales, and in 1975 in Scotland (OPCS 1978).

The NHSCR is a register of patient transfers between Family Practitioner Committee Areas (FPCAs) in England and Wales and Area Health Boards (AHB's) in Scotland. The FPCA system for England and Wales consists of 16 boroughs or amalgamated boroughs in London, 35 districts making up the pre-abolition provincial metropolitan counties, and 47 non-metropolitan counties. A transfer is recorded when a patient registers with a new doctor in a different FPCA. The Office of Population Censuses and Surveys (OPCS) obtained a 10% sample of re-registrations on a quarterly basis from 1975 to 1984, and produced two computer summaries of transfers taking place during the previous 12 months. One summary contains total numbers of transfers between each FPCA and all other FPCAs in England and Wales, together with transfers between these FPCAs and Scotland, Northern Ireland and the Isle of Man. The five FPCAs which comprise the former county of Middlesex are combined in the summary, to provide a matrix of moves between 97 areas in the UK. The other computer summary contains the numbers of moves into and out of each of the 97 zones, in the UK, disaggregated by sex (person, male, female, not-stated) and by age group (0-4, ... 70-74, 75+, not-stated). OPCS estimate an average time lag of about three months between movement and re-registration, and it is therefore assumed that transfers recorded between one September and the next are appropriate for mid-year to mid-year analysis. Most NHSCR

data used here have been obtained from computer summaries for the mid-year to mid-year periods, commencing in 1975-76 and ending in 1982-83.

4.3 The level of migration

4.3.1 Trends in national migration over time

It is difficult to establish precisely how the level of migration occurring within this country has changed over the last 25 years. The inconsistency of administrative boundary definition over time at regional, county and district level, has meant that time series comparison without adjustment can only be undertaken at the national level. However, the significant feature which does emerge from comparing national migration in Britain between the four censuses taken between 1961 and 1981 is the dramatic shift from an increase in the level and rate of migration during the 1960s to a substantial decline over the following decade.

Table 4.1 Migrants within England, Wales and Scotland in the one year prior to each census, 1961-1981

Period preceding census	Census migrants within England		Wales		Scotland	
	Total (000s)	Rate	Total (000s)	Rate	Total (000s)	Rate
1960-61	4256.9	97.8	187.3	70.9	479.5	92.8
1965-66	4477.9	99.3	193.0	72.7	487.5	93.1
1970-71	4933.3	107.2	204.4	75.0	546.0	104.5
1980-81	3990.4	86.0	175.9	63.2	436.1	84.8
Change 1960-61/ 1970-71	+676.5	+9.4	+17.0	+4.1	+66.5	+11.7
(%)	(+15.9)	(+9.6)	(+9.1)	(+5.8)	(+13.9)	(12.6)
Change 1970-71/ 1980-81	-942.9	-21.2	-28.5	-11.8	-109.9	-19.7
(%)	(-19.1)	(-19.8)	(-13.9)	(-15.7)	(-20.1)	(-18.9)

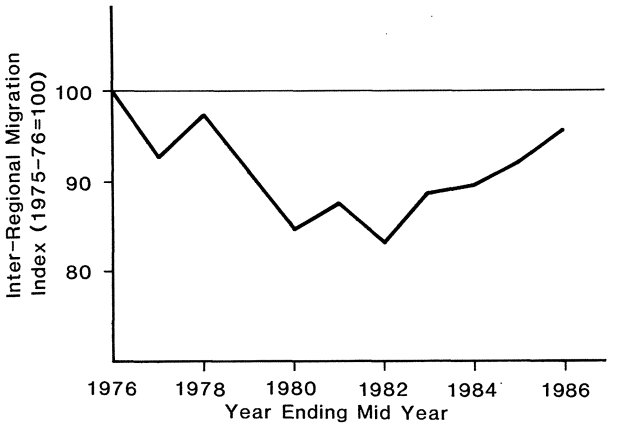
Notes:
(i) Figures exclude migrants whose origin was not stated
(ii)1965-66 figures multiplied by an underenumeration factor of 1.0142143 (Rees and Wilson 1977)
(iii) Rate defined as the number of migrants in one year prior to the census per 1000 inhabitants at census
(iv) Sources: GRO (1966, 1968); GRO, Edinburgh (1966, 1968, 1974); OPCS, London and GRO, Edinburgh (1974); OPCS (1974); OPCS, RGS (1983a, 1983b)

The number of migrants with known origin area of residence who moved within England increased by 16% between 1961 and 1971 (Table 4.1). The migration rate increased by 9.6% from 97.8 migrants per thousand in 1960-61 to 107.2 in 1970-71. In Wales, the rate of migration was significantly lower and increased by only 5.8% between these two periods, whereas the rate for Scotland, despite being slightly lower than the rate for England, increased by 12.6% from its 1960-61 level.

The levels and rates presented in Table 4.1 for 1965-66 obtained from the 1966 10% Sample Census and adjusted for underenumeration, suggest that mobility increased more significantly in the second half of the decade than in the first half. However, this increase appears to have been relatively short-lived because migration levels for 1980-81, in contrast to those for 1970-71, show substantial declines of 19.1%, 13.9% and 20.1% in England, Wales and Scotland respectively, with rates of migration falling by 21.2, 11.8 and 19.7 persons per thousand in each case.

The gross migraproduction rate (GMR) gives a more refined overall measure of migration activity than the crude migration rate. It is calculated as the sum of the age-specific migration rates and usually represents the number of moves that people make during the course of their lifetime. Between 1970-71 and 1980-81, GMR's decreased from nearly 8.0 to just under 6.5 transitions for males and females between ages 1 and 74 inclusive. In 1970-71, 4.5 of these transitions occurred between regions. The decrease in GMR by 1980-81 was least at the most local scale and greatest at the inter-district, intra-county scale.

Figure 4.1 Time series index of UK inter-regional NHSCR movement, mid-year to mid-year, 1975 - 86



Using a two year moving average of transfers in order to counter annual periodicity in the NHSCR data and to reduce uncertainty created by local government reorganisation, Ogilvy (1979) has demonstrated that the reversal in the trend is likely to have occurred in 1973, and that the decline continued throughout the decade. Data from the NHSCR summaries indicates that transfers between counties in England and Wales fell by 13.4% from over

1,673 thousand in 1975-76 to nearly 1,449 thousand in 1982-83 and the level of inter-regional movement in Britain dropped by 11.2% from 921 thousand to almost 818 thousand during this period. In seeking explanation for the decline in the national level of mobility in this country, Ogilvy dismissed change in population structure and government policy, and argued that reduced mobility was likely to be due to the effects of recession on employment opportunities, incomes and housing.

Rates of movement as distinct from numbers of moves confirm that the decline during 1970's was not simply accounted for by changes in the population at risk. Moreover, there is evidence that the level of migration activity has revived since the early 1980's. Figure 4.1 displays the trend in inter-regional migration between 1975 and 1986. The volume declined, with fluctuations, to 84% of its 1975-76 level by 1981-82, but then increased to within 4% of its 1975-76 level by 1985-86.

4.3.2 National age-specific rates

Migration researchers in different countries are unanimous in their emphasis on age as a selective influence on migration behaviour. Important theoretical developments have been made in the field of migration rate schedule modelling by Rogers et al (1978) and Rogers and Castro (1981), whose methodology has been adopted in more recent research both in Britain (Bates and Bracken 1982, Bracken and Bates 1983) and in the Netherlands (Drewe 1985). In this approach, the functional relationship between migration and age is described by a series of four components, the first of which involves a decline in the rate of migration of children up to their mid-teens. The second component is characterised by an increase in migration following school-leaving age, reaching a peak in the early twenties and declining steadily thereafter. The third component is associated with higher migration rates for those in the post-labour force ages and is usually attributable to retirement migration. Finally, there is the constant component which reflects the underlying propensity to migrate at all ages.

In Britain, comparable data is available at the national level on male and female migration within and between districts, counties and regions in the years prior to the censuses in 1971 and 1981 (OPCS 1978, 1983a). The data is disaggregated by single years of age from age 1 to age 74, and there is an additional age group of those aged 75 and over. In the absence of published estimates of national age-specific populations one year before each census, end-of-period usually-resident populations have been used to calculate admission rates for migrants aged x on census night. The schedules depicted in Figure 4.2 are the observed age-specific rates of total migration in Britain and indicate how the decline in migration between the two periods has been apparent at all ages.

The most noticeable difference between male and female schedules of observed age-specific rates in 1980-81 (Stillwell and Boden 1986) is the existence of a pronounced retirement component for males, peaking at age 65. Female schedules do not exhibit this characteristic to the same extent although there is a slight suggestion of a peak at age 60. Rates of migration within districts, counties and regions involving women in the post-labour force ages in 1980-81 rise marginally with increasing age, and this characteristic is strengthened by the values of rates for the 75+ age group which are significantly higher than the rates of women who

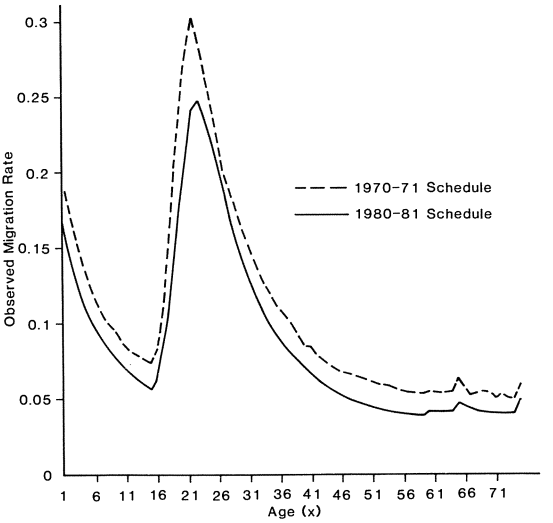


Figure 4.2 Observed rates of total internal migration, Great Britain, 1970 - 71 and 1980 - 81

migrate in their 50s, 60s and early 70s. However, the general absence of a discernible post-labour force component in the rate schedules of females suggests that a reduced, seven parameter model is more suitable for females than the 'full' 11 parameter model defined by Rogers and Castro (1981) as:

$$M(x) = a_1 \exp(-a_1 x) + a_2 \exp\{-a_2(x-m_2) - \exp[-l_2(x-m_2)]\}$$
$$+ a_3 \exp\{-a_3(x-m_3) - \exp\{-l_3(x-m_3)\}\} + c \qquad (4.1)$$

where x is an age group label, where a,m and l are parameters defining the profile of the schedule, and where a_1, a_2, a_3 and c are parameters defining the level of the schedule.

Model migration schedules smooth out the irregularities apparent in the observed data and the calibrated parameters enable more precise comparisons between schedules to be undertaken. Model schedules have been fitted to sets of male and female standardized rates for both periods using a version of the package developed by Rogers and Planck (1983) which is described in Stillwell et al (1987). The 1980-81 profiles for inter-zonal migration indicate that the onset of the labour force component tends to be later for females than males, yet the labour force peak is earlier and considerably higher for females. Rates of ascent and descent of this component are therefore steeper for females than males and this is confirmed by the a_2 and m_2 parameters (Table 4.2). However, the mean age of the labour force component, m_2, turns out to be lower by almost a year for men than women at the regional scale, and higher for males at the other two scales. The rate of descent of the pre-labour force curve, a_1, is marginally steeper for females than males and the constant component, c, is higher for females at each spatial scale.

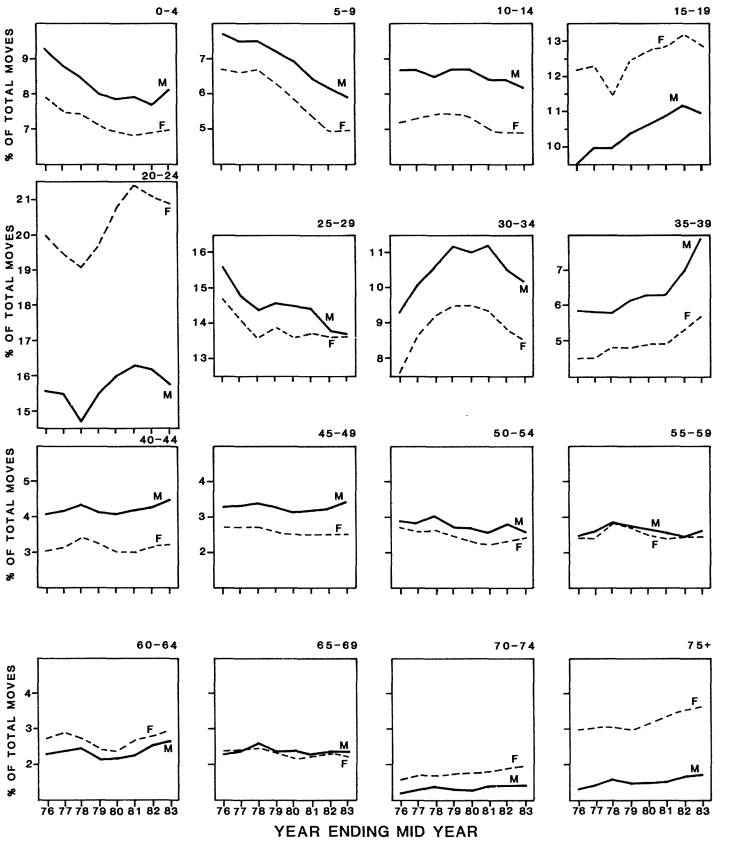
Table 4.2 Parameters defining model schedules for national inter-zonal migration, 1980-81, males and females

	1980-81 Model schedules					
Model parameter	Inter-region		Inter-county		Inter-district	
	Male	Female	Male	Female	Male	Female
a_1	0.0216	0.0214	0.0203	0.0206	0.0198	0.0204
a_1	0.1063	0.1324	0.1148	0.1489	0.1211	0.1493
a_2	0.0592	0.0662	0.0665	0.0755	0.0705	0.0747
m_2	19.3232	20.2042	20.8256	20.5343	21.4047	20.2181
a_2	0.0962	0.1395	0.1091	0.1518	0.1176	0.1435
l_2	0.3223	0.4367	0.2770	0.4040	0.2853	0.4318
a_3	0.0001	—	0.0001	—	0.0001	—
m_3	81.1234	—	81.7765	—	80.2840	—
a_3	0.6106	—	0.5910	—	0.5808	—
l_3	0.1107	—	0.1061	—	0.1114	—
c	0.0032	0.0059	0.0036	0.0059	0.0042	0.0056
Parameter ratio						
$d_{12}=a_1/a_2$	0.3644	0.3237	0.3050	0.2734	0.2806	0.2727
$b_{12}=a_1/a_2$	1.1054	0.9487	1.0524	0.9809	1.0293	1.0408
$o_2=l_2/a_2$	3.3513	3.1302	2.5380	2.6619	2.4257	3.0098

Have the model migration schedules changed over time? Unfortunately the lack of annual single year of age migration data in Great Britain prohibits us from undertaking an analysis of temporal stability similar to that conducted by Drewe (1985) which was based on annual migration rates between Dutch communes. However, whilst small differences between the schedules can be detected for males and females at each spatial scale (Stillwell and Boden 1986) the feature which is common to most pairs of schedules is that the labour force peak in 1980-81 is higher and later than it was in 1970-71. This is confirmed by changes in selected parameter values between the two periods. The mean age of labour force migration, m_2, increases in all cases apart from males moving between regions and the rate of descent of the labour force curve, a_2, steepens, whilst the rate of ascent, l_2, declines, producing a more symmetric labour force component.

Age-specific NHSCR transfer data can be used to identify certain national trends in annual movement between 1975 and 1983. In this case, national movement refers to total transfers between the 97 UK zones defined previously. Movements at this scale are dominated by those persons in the broad age group 15-29. However, the most significant decline in relative terms is that of 27% experienced by the 0-14 age group. Total movements of those aged 45-64 declined by 19%, while movements of those aged 15-29 and 65+ dropped by 14% and 8% respectively over the period. Least decline in migration was experienced by both men and women in broad age group, 30-44.

Figure 4.3 % shares of male and female movement by five year age group for single years from mid - 1975 to mid - 1983



More detailed analysis of shares of movement can be undertaken using five year age group movement totals. The graphs in Figure 4.3 illustrate how the percentage shares of total male and female transfers made by people in different age groups have changed over the period. NHSCR transfers involving persons whose sex category was 'not-stated' have been allocated

between males and females in proportion to 'stated' totals. The graphs show a variety of trends. In each of the first three age groups where the proportion of male moves was higher than females moves, the shares of total movement declined. The decline was most significant in the 5-9 age group and least significant in the 10-14 age group. The proportion of very young movers, aged 0-4, only declined until 1980-81. In marked contrast to the 0-14 age group trends, the shares of male and female moves in the next two age groups have grown. Female shares are about 3% greater than male shares in the 15-19 age group and about 5% in the 20-24 age group. Although there is an upward trend in the statistics for both age groups, increases in shares only occurred in the middle years of the period. The pattern of change for those aged 25-29 reverts back to that of decline. This is not entirely unexpected since the age group is likely to contain many of the parents of children in the first two age groups. The proportions of moves involving men or women aged 30-34 increased until 1978-79 but dropped in parallel over the second half of the period, whereas the 35-39 age group increased its shares of both male and female migration throughout the period. The numbers of moves made by people in five year age groups over the age of 40 are lower and changes in the age group proportions are less significant. The male proportion is higher than the female proportion in the age groups up to 55-59, about the same in the 65-69 age group, and lower in the 60-64, 70-74 and 75+ groups. Women over the age of 75 constitute a considerably higher share of total movement than do men of similar age, and since 1978-79, the trend has been for this share to increase.

4.4 Spatial characteristics of migration

4.4.1 Net balances

One of the most prominent features of the redistribution of the population through migration within the country has been the pattern of net losses sustained in metropolitan areas and net gains incurred by nonmetropolitan areas. The phenomenon described in the literature as counter-urbanisation (Fielding 1982) is reflected in the migration statistics obtained from both the census and the NHSCR.

It is convenient to summarise trends in the spatial pattern of net migration in the UK by adopting a system of metropolitan counties, their region remainders and regions without metropolitan counties. Net migration totals based on transfer data from mid-year 1975-76 to mid-year 1982-83 are presented in Table 4.3. Apart from a net gain of about 500 persons by South Yorkshire in 1979-80, all the metropolitan counties in England have registered net losses thoughout the period. In 1975-76 the pattern of loss was dominated by Greater London whose net out-movement was in excess of 80,000 persons. However, by the end of the period, losses from the capital had declined by 60% to 31,000 in 1982-83. A much less dramatic decline also occurred in the West Midlands but in the other metropolitan counties there has been annual fluctuation around a fairly level trend. In the non-metropolitan regions in England and Wales, only the North, Remainder from 1977-78 and the North West, Remainder in 1982-83 have not experienced net migration gains. The most substantial growth by migration is absolute terms has taken place in the South East, Remainder, the South West and East Anglia, all of which had increasing gains between 1976-77 and 1978-79, followed by decreasing gains over the next two to four years. Northern Ireland and

Scotland on the other hand have net migration series akin to the group of metropolitan counties in that they have negative balances in almost all years. These spatial patterns emphasise the metropolitan versus non-metropolitan and North versus South distinctions in UK migration which are described more fully in Rees and Stillwell (1984; 1988).

Table 4.3 Net transfers for metropolitan counties and non-metro-politan regions, 1975-76 to 1982-83

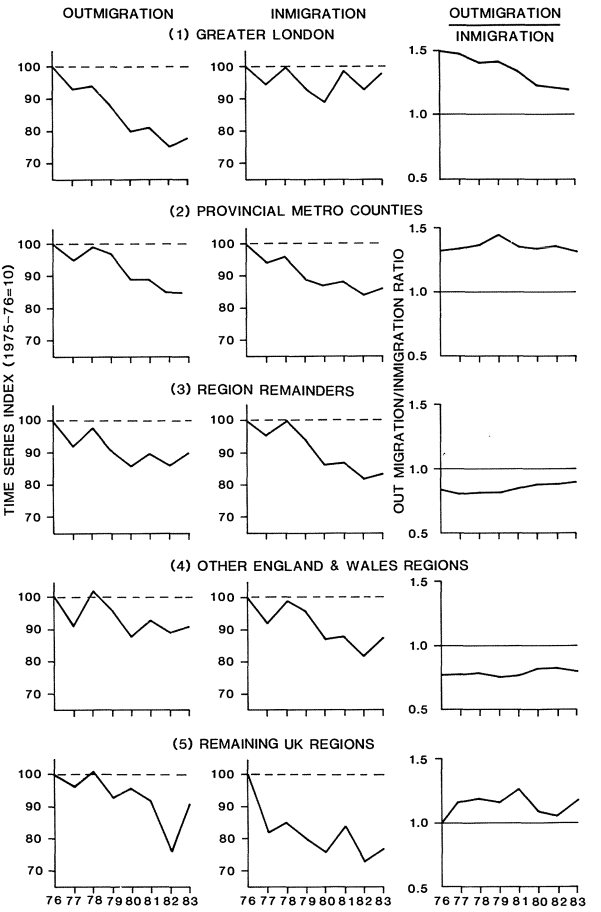
Spatial unit	Net transfers mid-year to mid-year (000s)							
	1975-6	76-77	77-78	78-79	79-80	80-81	81-82	82-83
Metropolitan counties								
Tyne and Wear	-3.4	-4.2	-6.2	-6.1	-4.2	-4.9	-3.9	-3.2
South Yorkshire	-0.3	-1.5	-2.0	-3.4	0.5	-0.5	-2.9	-3.3
West Yorkshire	-6.9	-4.1	-5.0	-7.8	-6.5	-5.7	-5.1	-5.0
Greater London	-80.9	-72.1	-66.6	-64.5	-50.9	-37.6	-32.5	-31.2
West Midlands	-26.7	-24.7	-22.7	-25.2	-19.9	-16.4	-13.5	-16.7
Greater Manchester	-10.8	-11.1	-11.8	-14.1	-11.4	-12.8	-13.3	-10.1
Merseyside	-6.9	-8.4	-12.4	-11.9	-11.2	-10.5	-10.6	-8.1
Non-metropolitan regions								
North, Rem.	5.0	1.6	-0.9	-0.6	-0.4	-5.3	-1.7	-1.2
Yorks & Hum, Rem.	4.5	5.9	5.2	5.3	1.1	0.8	2.8	2.9
East Midlands	7.3	7.7	6.5	9.5	10.0	7.5	1.7	4.8
East Anglia	18.5	16.2	18.4	19.9	15.5	11.6	12.7	15.7
South East, Rem.	48.8	51.7	56.0	58.0	45.2	44.4	41.2	34.5
South West	31.2	27.2	28.3	29.6	27.7	24.9	21.4	27.6
West Midlands, Rem.	8.8	14.0	13.3	11.5	9.5	4.8	0.5	2.5
North West, Rem.	4.3	7.7	6.3	3.8	4.5	4.0	2.5	-1.8
Wales	8.8	5.1	5.3	5.5	5.1	1.6	3.4	1.9
N. Ireland	-5.3	-4.0	-4.1	-3.4	-3.5	-3.0	-2.5	-2.6
Scotland	4.3	-6.8	-7.8	-6.3	-11.1	-2.8	-0.3	-6.9

4.4.2 Gross flows

To what extent are changes in the net migration balances a function of changes in the levels of inward and outward movement? Temporal stability in the level of gross migration in the UK from 1975-76 to 1982-83 is summarized in Figure 4.4, which illustrates inter-FPCA data aggregated into moves to and from 5 types of area. Greater London; the provincial metropolitan counties; the region remainders; other standard regions in England and Wales (East Anglia, East Midlands, South West and Wales); and the remaining regions of the UK (Scotland, Northern Ireland and Isle of Man). The graphs in the first two columns show the total outmigration and inmigration respectively from each type of area expressed as a percentage of the 1975-76 figure, whereas the final column of graphs illustrates the ratio of outmigration to inmigration in each year in each area set. Significant decline in net loss from Greater London over the period is accounted for by a reduction in the level of outmigration rather than an increase in inmigration which, despite fluctuation, was only 2% below its 1975-76 level in 1982-83. Outmigration decline was paralleled by inmigration decline in the provincial metropolitan counties, resulting in a pattern of net loss which peaked in 1978-79 and declined slowly thereafter. In constrast, the region remainders and the other regions in

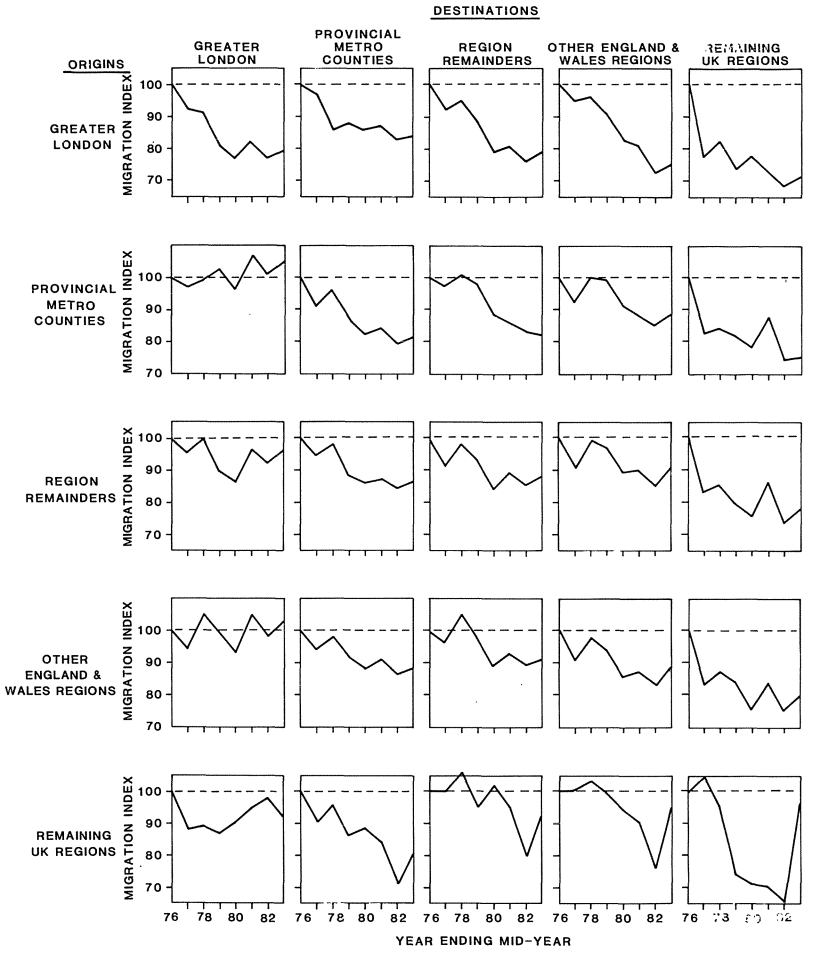
England and Wales experienced slightly greater declines in the level of inmigration than outmigration, with the gross migration ratio slowly approaching 1 in the case of the region remainders. The remaining regions of the UK experienced overall net losses throughout the period and reductions in the gross flows involved were particularly significant for inmigration which was only 77% of its 1975-76 level in 1982-83. Whereas the major decline in the level of inmigration appeared to occur in 1976-77 but continued to decline further in following years, the volume of outmigration kept to within 10% of its 1975-76 level throughout the period apart from in 1981-82, when it dropped substantially.

Figure 4.4 Trends in gross out- and inmovement, mid-year to mid-year, 1975 - 76 to 1982 - 83



The representation of gross migration departure and arrival by region set in this summary is one method of investigating the production and attraction components of migration. This approach can be extended to examine the distribution component using the same area classification, but including an inter-area element which refers to moves between FPCAs

Figure 4.5 Trends in migration distribution, mid-year to mid-year, 1975 - 76 to 1982 - 83



either within or between the regions grouped in the same category. Figure 4.5 illustrates how trends in migration differ depending upon origin and destination. The decline in the level of migration from greater London is lowest when the destinations are other metropolitan counties and highest to the most peripheral regions of the UK. Whereas movement between FPCAs in Greater London showed significant decline, particularly in the first half of the period, movements to FPCAs in London from provincial metropolitan districts appeared to increase so that by 1982-83, the volume of movement was 5% above its 1975-76 level. Migration between FPCAs within the provincial metropolitan counties declined fairly consistently throughout the period, whereas migration from these FPCAs to the shire counties appeared to decline more significantly after 1978-79, and like Greater London, the most substantial reduction in relative terms occurred from migration to the remaining UK

regions. Similar time series schedules are also evident for movements from the region remainders and from the other England and Wales regions to the remaining UK regions. The level of migration from the region remainders to Greater London declined to 86% of its initial volume by 1979-80, but picked up again in the last three years of the period, whereas movement to the capital from the other regions in England and Wales fluctuated around the 1975-76 level. The bottom row of graphs in Figure 4.5 represents migration originating in Scotland, N. Ireland and the Isle of Man. In this case, the intra- moves, which show a steep decline between 1976-77 and 1981-82, refer only to moves between these particular regions since no data is included on moves within their respective boundaries. Whilst migration into Greater London increased after an initial decline, movement to the other metropolitan counties declined to 70% of its 1975-76 level by 1981-82. Moves to the shire counties remained high in the first half of the period but also experienced a steep decline in 1981-82 before returning to previous levels in the final year for which data has been assembled.

4.5 Conclusion

One of the research areas which has not yet been fully explored in the UK primarily for data reasons, is the systematic analysis of temporal stability in migration flows along the lines of work done in the Netherlands and reported by Baydar (1983) and Willekens and Baydar (1986) in which the migration flows occurring in a system of interest are broken down into separate level, generation and distribution components, and the time dependence of individual components is examined using log linear modelling techniques. Given the importance of migration in regional population change, analysis of the dynamics or inertia of migration components is fundamental in the development of models to assist future migration forecasting. This part of the chapter has reported some initial exploratory research of compositional and spatial change using census transition and NHSCR movement data. Temporal fluctuations in the aggregate level of migration activity have been identified, changes in the age structure of internal migration have been examined, and trends in the spatial pattern of gross migration have been summarized. The analysis suggests that a more detailed and systematic analysis of the level, generation, attraction and distribution components of internal migration in the UK involving more disaggregated sets of spatial units and the application of generalized linear models is now required.

4.II THE NETHERLANDS

Henk Scholten and Rob van de Velde

At the national level in the Netherlands, various goals and objectives associated with the relationship between gross in- and out-migration are specified in national memoranda. The influence of national policy on migration patterns can be investigated by examining policy objectives and migration patterns over the last 15 years. It is appropriate to establish whether migration patterns are similar for different age groups since a categorization by age does not underlie the policy objectives in the national memoranda. It would also be interesting to analyse migration patterns by household, by stage in family life cycle as well as by individual household member. Such an analysis is desirable for policy reasons because it relates to both

J. Stillwell and H.J. Scholten, Contemporary Research in Population Geography, 75–86.

the demand for certain facilities and the supply of employees and consumers of facilities. It is also desirable for theoretical reasons because the household is the scale at which migration decisions are made and is therefore the most relevant research unit. Current statistics do not however enable migration to be analysed by household. A categorization into age groups has therefore to be sufficient. In the analysis which follows, information recently available from the Central Bureau of Statistics (CBS) on migration flows between municipalities in the Netherlands over the last 15 years are used, disaggregated into three five year age categories. However, before the characteristics of the migration components are outlined, the theoretical framework of spatial interaction modelling is introduced.

4.6 Spatial interaction modelling

In order to describe and predict the number of moves between two areas, the so-called gravity model is commonly utilized. In its modern form, this interaction model has shed the mechanical, naturalistic properties which characterized its early formulations, and has been derived using entropy-maximizing and information theoretic techniques. The model describes the interaction between two zones, i and j, in terms of the following functions: the function W_i, which is designated as the 'production factor' and which is a measure of the number of people leaving area i; the function W_j, the 'attraction factor' which is an indicator of the number of people settling in area j; and the interaction betwen areas which is summarized by the distribution function $f(d_{ij})$, where dij indicates the distance (or the cost of travel) between the areas i and j. The model can be written as:

$$M_{ij} = k\, W_i\, W_j\, f(d_{ij}) \tag{4.2}$$

where:

M_{ij} = the number of moves from area i to area j; and
k = a constant of proportionality which guarantees that the sum of the calculated migrations equals the total observed migrations, M_{**}, or

$$\sum_i \sum_j M_{ij} = M_{**} \tag{4.3}$$

By substituting equation (4.2) into equation (4.3), k can be deduced. The model also allows constraints to be introduced. The number of persons leaving each area may be fixed (a production constrained model), the number of persons arriving at each destination may be fixed (an attraction constrained model), or both these entities may be restricted. In the last case, the model assumes the form of the doubly constrained gravity model, the mathematical expression of which is:

$$M_{ij} = A_i B_j O_i D_j f(d_{ij}) \tag{4.4}$$

where:
O_i = the number of persons leaving area i;
D_j = the number of persons arriving in area j; and
$f(d_{ij})$ = the distribution function.

A_i and B_j are balancing factors related to the Lagrange multipliers associated with the constraints:

$$O_i = \sum_j M_{ij} \tag{4.5}$$

and

$$D_j = \sum_i M_{ij} \tag{4.6}$$

As A_i and B_j are not independent of each other, their values have to be computed in an iterative manner. The assignment procedure is equivalent to estimating a complete matrix of flows, given the row and column totals. The assignment among the cells of the matrix is based on the notion that, given a distribution function $f(d_{ij})$, certain migration flows are more likely than others. If the distribution function were to result in the same values between all pairs of municipalities (and thus could be ignored), the cell values would be determined by multiplying the respective row and column totals and dividing this product by the overall total of migration in the matrix. Thus, the correct determination of the distance function is of foremost importance.

4.7 A descriptive model of internal migration

A structure-descriptive model has been used, in which internal migration in the 70's and early 80's is divided into four components. Firstly, there is a level component which is the total number of internal migrations (or the number of moves per 1,000 population). Secondly, an attraction component is defined as each region's share of the national total of inmigrations. Thirdly, a production or generation component is defined as each region's share of total outmigration, and finally, a region-preference or interaction component is defined which is the relationship between the preference of inhabitants in region i and the average preference for region j.

Migration components have been used in numerous studies. Van der Knaap and Sleegers (1982) and Baydar (1983) have employed three components (level, generation and distribution) to examine Dutch migration. In explanatory models also, generation and distribution components have been used (Op't Veld et al. 1983, Speare et al. 1975). Brown and Moore (1970) have already pointed out two phases in the individual decision-making process in the case of residential mobility: the decision to migrate and the choice of destination. On a macro level, these phases are reflected in the generation and distribution components. For a migration matrix, M(a,s,t), of age a, sex s and calendar year t, the notation of the four model components is as follows:

(1) The level component:

$$N = M_{**}(a,s,t) = \sum_i \sum_j M_{ij}(a,s,t) \tag{4.7}$$

where the asterisk represents summation over all zones.

(2) The attraction component:

$$V_j = M_{*j}(a,s,t) / M_{**}(a,s,t) \quad (4.8)$$

(3) The generation component:

$$W_i = M_{i*}(a,s,t) / M_{**}(a,s,t) \quad (4.9)$$

(4) The region-preference component:

$$t_{ij} = M_{ij}(a,s,t) / (M_{i*}(a,s,t) / V_j(a,s,t)) \quad (4.10)$$

This component can also be written as:

$$t_{ij} = M_{ij}(a,s,t) / (W_i(a,s,t)V_j(a,s,t)/N) \quad (4.11)$$

The number of people who moved house from region i to region j of age a and sex s in year t can therefore be written as:

$$M_{ij} = N\, V_j W_i t_{ij} \quad (4.12)$$

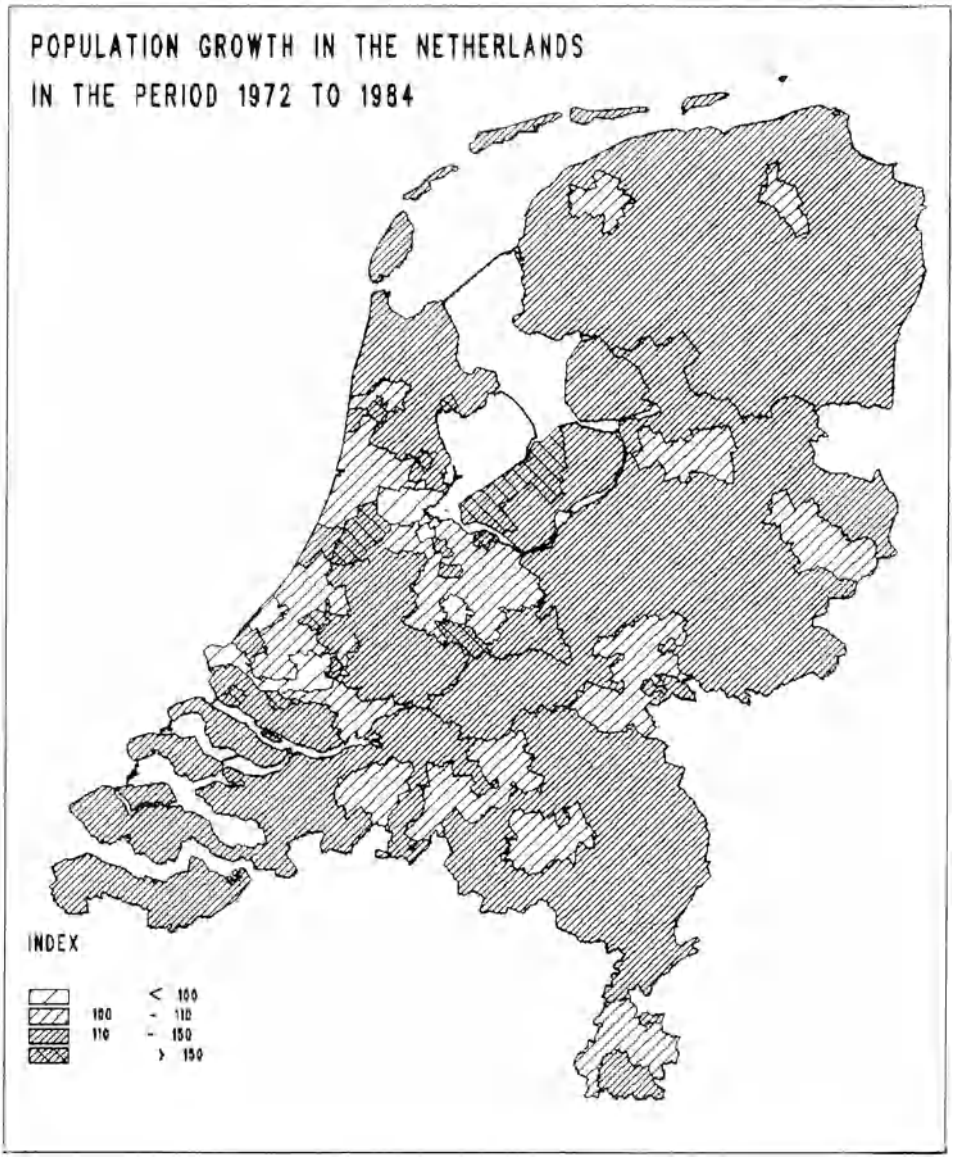
This model shows strong similarity with the gravity model derived in equation 4.4. This is especially so if t_{ij} is derived from equation 4.11 (see Scholten and Van Wissen 1985, for an application of a log-linear model as a spatial interaction model).

4.8 The components of migration

In this section, the age-specific migration flows in the period 1972-1985, are analysed on the basis of a division of the Netherlands into 15 regions. These regions are the 4 large cities, each taken separately; the city regions; the growth centres; and the remaining areas of the West, North, East, Central Area, and the South respectively. In addition to this division, the provincial boundaries are used. Figure 4.6 outlines the development of the population over the period from 1972 up to and including 1984 for the areas used, and Figure 4.7 shows the relative migration balances in 1972 and 1984. The special position of the large cities is evident. All areas except the 4 large cities are characterized by population growth. The cause is a strong flow of migrants away from the large cities. In Amsterdam, the population during this period declined due to migration by 131,000 persons, and in Rotterdam, net loss was 114,000. The large flow of people away from the 4 large cities has since come to a halt. In 1972, the city regions had a negative balance with the exception of the north wing of the Randstad. Growth of population took place primarily in the growth centres and in the areas outside the city regions. In 1984, the migration balances in the city regions were considerably less negative; migrants from the city regions were almost entirely absorbed by the growth centres. The growth centres in the northern part of the Randstad (Almere in particular) are currently growing fast. The general picture for the period 1972-1984 coincided closely with the objectives of national spatial policy, but this picture gives insufficient insight into the

mechanisms behind the migration flows. Deconsolidating the flows into different components and age groups provides that insight and simultaneously gives indications about policy in the future.

Figure 4.6 Population growth in the Netherlands, 1972 to 1984



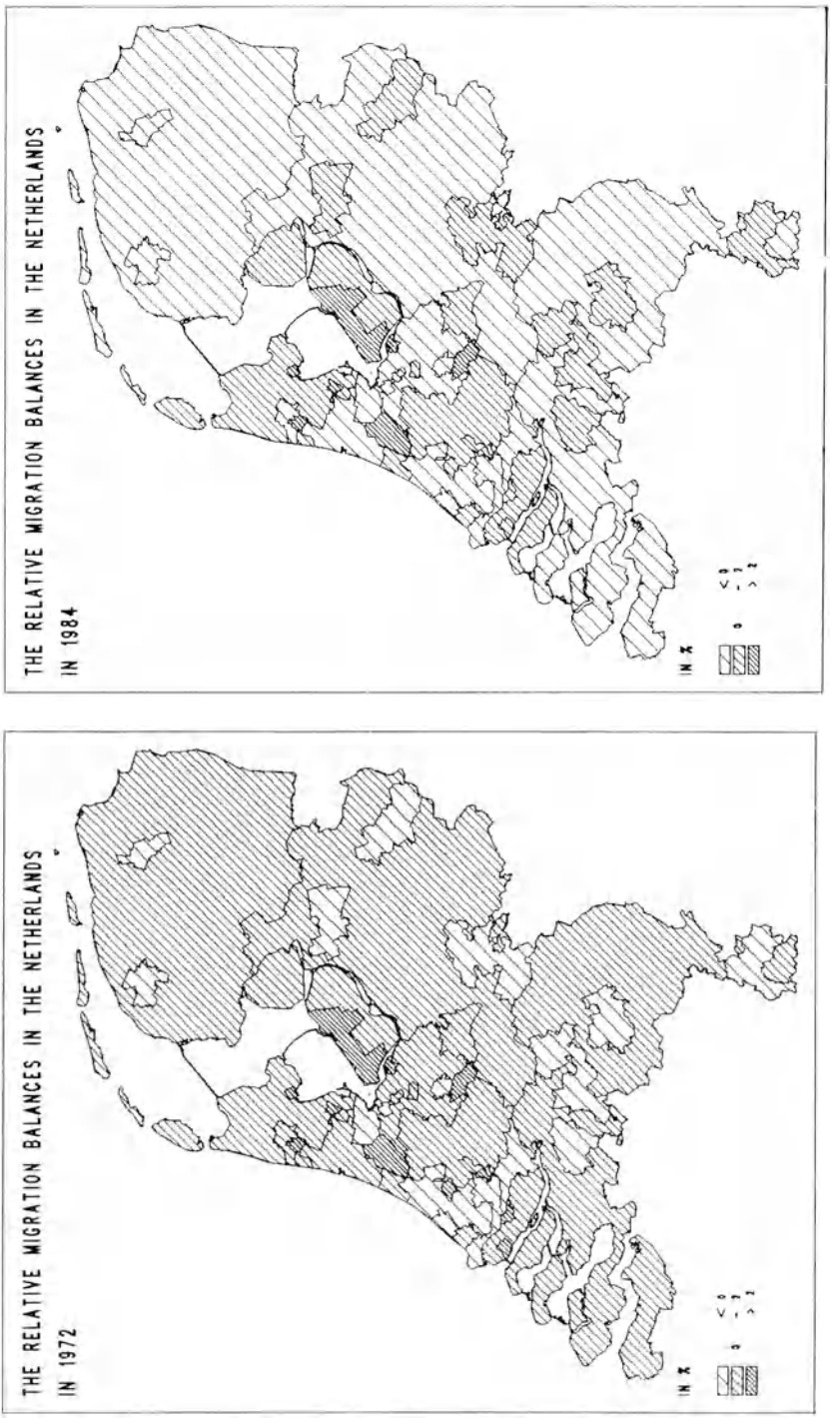
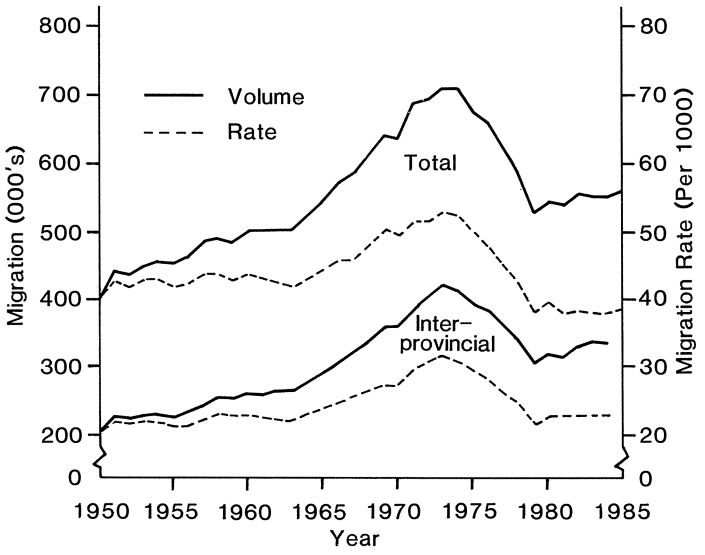


Figure 4.7 Relative migration balances, 1972 and 1984

4.8.1 The level component

The level of migration in the Netherlands in recent years is illustrated in Figure 4.8. It is clear that there was a steady growth in the number of migrants up to 1973, a sharp decrease to 1979, followed by a gradual revival. The total migration rate in 1979 fell below that in 1950. At the beginning of the 1950's, approximately 50% of migration took place within the provincial boundaries. In 1973, this figure was 60% and, thereafter, despite the general decline in migration, remained more or less the same. The conclusion is that growth up to 1973 can be attributed to increased short distance migration whilst the decrease after 1973 seems to have equally affected both short and long distance migration. This is supported by research on intra-city region movement, from which it is apparent that extreme short distance migration increased slightly between 1973 and 1979 (Van der Erf 1984). Large variations at different scales over the period 1950-1985 can probably not be explained by specific locational factors such as new building, attractiveness of the residential environment or characteristics of the employment market. The explanation for the overall level of migration is more likely to be found in macroeconomic and demographic changes.

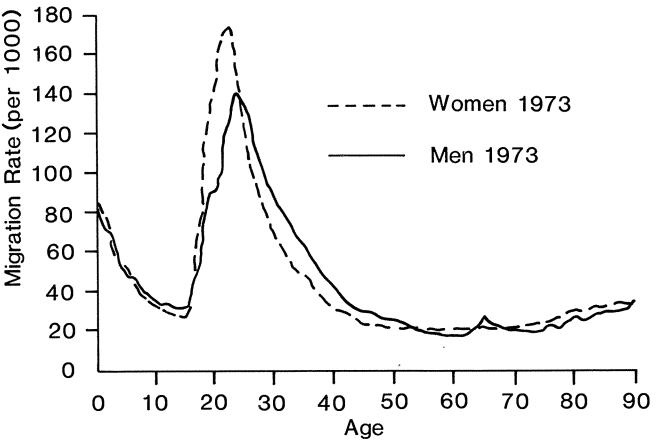
Figure 4.8 The level of migration in the Netherlands, 1950 to 1985



On the basis of demographic changes, an increase in migration after 1973 might have been expected. The post-war baby boom generated the extremely mobile 20-30 age group of the 1970's. However, the oil crisis and the heavy economic recession after 1973 seem to have exerted an influence on the level of migration. It may be assumed that income and employment expectations during economic recession have a restrictive effect upon the number of moves. When the proportions of different age groups experiencing migration are examined (Figure 4.9), it is apparent that up to the age of 17, a decrease in the number of

migrants per 1,000 inhabitants by age group takes place. The reason for this is that younger families are more mobile than older ones. Then comes the age at which children leave home and become independent. A rapid increase in the migration rate occurs up to age 23-24. Girls leave home earlier than boys or enter marriage at a younger age. From the early 20's up to age 55, a decrease is apparent after which an increase is observed which has been described as 'pension migration'. Above the age of 70, 'old people's home migration' can be observed, involving another small change. Women live on average longer than men, which means that, following the death of a partner, relatively more females live alone. A proportion of this group move to smaller dwellings close to family or to old people's homes (Drewe 1980). A comparison of the age schedules in 1973 and 1984 shows that only very marginal changes have occurred, despite the decline in the total number of migrations taking place.

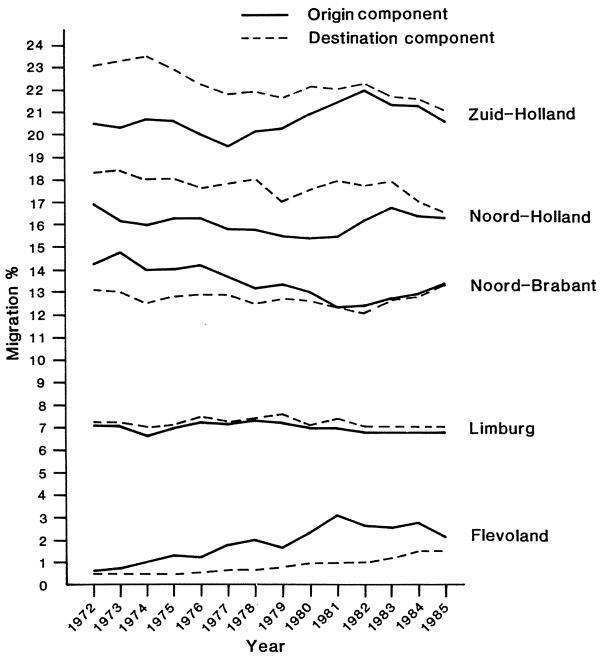
Figure 4.9 The level of migration in 1973, by age and sex



4.8.2 The origin and destination components

The origin and destination components show what percentage of the total number of migrants in the Netherlands, categorized into age and sex groups, enter and leave each region. The difference between these two components indicates which regions have migration deficits or surpluses. It is apparent from the level component that large changes have taken place during the last 10 years. To what extent does this decline apply to these components? In general, the provincial migration balances have become more even. This is particularly true for the provinces of South-Holland and North-Brabant (Figure 4.10), where both components have moved closer to each other and the balances have become much smaller. Utrecht and Limburg differ from this pattern somewhat and Flevoland shows an entirely different pattern; many people are moving in whilst few are leaving. In addition, it is apparent that both components are fairly stable in relation to the level component. Small changes in either component can, however, lead to considerable differences in the balance between them (Table 4.4). The large differences in the balance on the absolute statistics also reflect the influence of the level component on migration. In 1972, a difference of 1%

Figure 4.10 The origin and destination components by province



between origin and destination components was responsible for a difference of 7,000 persons; in 1984, the difference was 5,500 persons. The measurement of an inmigration or an outmigration surplus in absolute figures as an indicator of the success or failure of policy is, therefore, unreliable. In any case, if the total number of migrants decreases, the chance is greater that the migration balances decrease in absolute terms.

Table 4.4 The difference between origin and destination components for three selected provinces, 1972 and 1984

Province	1972 %	1972 Balance	1984 %	1984 Balance
Gelderland	+1.10	7700	+0.40	2000
South-Holland	-2.60	-180000	-0.25	-1500
North-Brabant	+1.25	8400	+0.08	400

It is clear from analysis of the origin and destination components at the local level (Amsterdam in this case), that the number of inhabitants also has an influence upon the interpretation of the outmigration statistics. The negative balance of 3% in 1972 involved 21,000 persons and that of 2% in 1984 involved 11,000 persons. A correction based on the number of inhabitants of Amsterdam indicates that in 1972, 53 out of each 1,000 persons left the city. If the population had remained the same, this would have been 35 in 1984, but because of the decrease in population, it was actually 42. Finally, if the decrease in the population is 'removed', then 47 out of every 1,000 inhabitants of the city have left. The difference in the number of inhabitants between 1972 and 1984 in relation to the difference in the level of migration in those years makes it clear that the flow out of Amsterdam has dropped less drastically than is often supposed (by 47 rather than 53 persons per 1,000 inhabitants).

Age-specific origin and destination components can also be examined. The distributions reveal different patterns of in- and outmigration from the total distribution. In the interest of brevity, the statistics are not presented here and a qualitative description will suffice. In the analysis period, the large cities appear to become increasingly attractive to young people of 20 to 25 years of age. Migration to the cities for this age group is significantly above average and outmigration is below average. Exceptional flows occur to Utrecht and especially to Amsterdam, where there are inmigration surpluses. In contrast, in the growth centres and the rest of the Randstad, there is a small outmigration surplus for this age group. The 35-55 age group is underrepresented in both the in- and outmigration statistics in the large cities. In the growth centres, there is an overrepresentation of this age group both in terms of in- and outmigration. The statistics with regard to the elderly reveal a completely different pattern. This group, which is coming more and more into the political spotlight because of its numerical growth, is clearly overrepresented in the inmigrant flows to large cities. Amsterdam is again an exception since the percentage of elderly persons leaving is twice the average.

4.8.3 The interaction components

In addition to the level, origin and destination components, there is a further set of components in which physical and psychological distance between areas plays a role. The value of the interaction component is determined pragmatically. Its value can lie between 0 and infinity. Where the value is smaller than 1, the distance between areas is relatively large. When the value is greater than 1, then the distance is relatively small. The majority of the largest values lie between 0.5 and 1.5. interaction components have been computed for Amsterdam, Rotterdam and the growth centres, indicating the relationship between these locations and the remaining large cities, the city regions and the rest of the Randstad. The most significant relationship is that between the large cities and the growth centres. The average values of 5.3 for Amsterdam (5.9 in 1983) and 5.6 for Rotterdam (10.0 in 1983) indicate that the outmigrants from these cities are oriented increasingly to their associated growth centres. This has a lot to do with the closed character of the housing markets in the Randstad. An inhabitant of one of these cities can only with great difficulty move to a surrounding municipality since he or she cannot easily obtain a dwelling. Only in the private sector, where house prices and rents are above a certain level, can dwellings be obtained. The

nature of the housing market helps to explain the strong links between the large cities and the growth centres, and these interaction components are higher than almost all others. It is possible that another factor is important. Large numbers of former large city dwellers have moved to the growth centres. The idea of pioneer migration to these centres with all the associated inconveniences now belongs to the past, and increasingly more positive impressions about living in the growth centres are reaching the inhabitants of the donor cities. The 'distance' to the growth centres is, therefore, constantly being reduced. However, the fact that negative impressions of the growth centres also exist can be deduced from the counterstream to the donor city from the growth centres. These findings are in agreement with the results of a research report published by the Provincial Planning Agency of North-Holland (P.P.D. 1986). A survey of migrants to Amsterdam showed that a proportion had regrets and moved back to Amsterdam from the growth centres. More recent statistics for 1984 and 1985 show that the relationship between the growth centres and the large cities is becoming stronger.

The strength of the relationship between Amsterdam/Rotterdam and the Central Open Area of the Randstad has declined over the years. At the beginning of the 1970's, the value was around 1.8; since then, it has declined to 1.0, probably as a result of the restrictive policy adopted in the Central Open Area.

The relationships discussed here show an evolution over time. This is not surprising bearing in mind the development of the growth centres. The majority of the 15,000 interaction parameters reveal a stable trend over time. Although the period 1972-1985 is rather short for any definite conclusions, the regional preferences do not appear to be changing in any major way. This conclusion is in agreement with the results of earlier research (Baydar 1983, Van der Knaap and Sleegers 1984). The breakdown by age indicates less variation of patterns with respect to the interaction components than was the case with the origin and destination components.

4.9 A view of the future

Some indications have been given of the migration flows within the Netherlands during the last 10 to 15 years. The patterns conform with what is regarded as desirable in terms of national spatial policy. For most of the provinces this means that a correct balance has been achieved between in- and outmigration. The migration flow out of the large cities has come to a halt and the city regions have achieved positive migration balances. The inmigration surpluses in the open spaces are clearly decreasing. It is apparent from the analysis of the migration flows that these developments are not the result of policies alone. House-building as a policy instrument influences migration flows only partially, although when a related housing market regulation is introduced, the instrument becomes more effective. In the years ahead, a small increase in the demand for houses is to be expected because of an increase, albeit small, in the population and the number of households. The problem of the volume of the housing stock will, however, be less crucial than the problem of its type. In other words, the demand for different types of dwellings will increasingly differ from supply. The unavoidable conclusion is that the effectiveness of housing policies on migration will be further reduced by the low growth in the housing stock. If it is possible or necessary to influence migration patterns, additional policy instruments such as improved management,

further modification of existing housing stock, more replacement new housing, and new ways of regulating the housing market, must be adopted.

What kind of population redistribution patterns can be expected in the coming 20-30 years? The decline and the ageing of the population in the four large cities will come to a halt; there might even be a slight increase in the number of inhabitants due to natural growth. In the city regions and the growth centres, population growth will stagnate and ageing will begin. Extrapolation of the present migration patterns and the natural ageing of the population means that a growth in the economically active population (those aged 15-60) up to 2000 is to be expected in the provinces of Friesland, Overijssel and Gelderland (except for the Arnhem-Nijmegen region), the tip of North Holland, East Brabant and North Limburg. On the basis of expectations about the location of economic activity in the future, a discrepancy between housing and employment can be expected. That would mean a growth in long distance commuting or a change in the pattern of migration. For spatial planning, this would mean the necessity to regulate long distance commuting or to regulate interregional migration. In the light of the previous discussion, it is especially important to take the second alternative into full consideration.

What changes in the components are to be expected as a result of the possible discrepancy between housing and employment? It may be expected that the discrepancy will not increase the value of the level component. In any case, this component is more closely related to macroeconomic changes than to differences between locations. The origin and destination components have been seen to be relatively stable in the various regions but small changes can lead to large flows. The correction at the general level and the breakdown of components by age group enables insights to be obtained into the migration behaviour of different groups and the size of these groups. Analysis of these components can be used as the basis for formulating improved policies for influencing future migration. A large measure of stability in the interaction components has been indicated. Analysis of these components enables insights into the mutual relationships between the regions to be gained. Moreover, the question arises as to whether changes take place in these components as a result of developments which will possibly effect the influence of 'distance' (eg. meetings by telephone, part-time working).

The model for the analysis of migration flows which has been presented here offers the basis for developing a better understanding of the relationship between 'problems' and 'policies'. The model provides insights into the relationships between observed net migration balances and the underlying gross migration flows, disaggregated by age group. The next research question is whether further analysis would reveal the necessity for different policy instruments than the ones used currently, such as house building, provision of an attractive residential environment close to employment or regulation of the housing market.

PART II

SPECIFIC MIGRATION STREAMS

5. LABOUR MIGRATION

5.1 Introduction

The decision to migrate and the choice of migration destination can both be regarded as the outcomes of a variety of influences and motives, amongst which employment opportunities are of major importance, particularly on those in early post-educational age groups. The concept of labour migration is not entirely straightforward since it refers not only to those changing place of usual residence who are members of the employed labour force, but also those who are part of the economically active population but who are unemployed. Although a change of residence is often associated with a change of job, significant proportions of migration involve those taking up jobs for the first time or after a period without work, and those unemployed who move in order to find work. In this context, Silvers (1977) has drawn the distinction between 'contracted' and 'speculative' migration. It is also important to recognize that labour migration is distinct from labour mobility (Vissers 1979) which refers to mobility on the labour market without change of residence.

Since labour migration is influenced by factors operating in both labour and housing markets, and by individual considerations of commuting distance, it is assumed to occur over distances longer than those involving migrations where no job change takes place. Previous research by Robin Flowerdew and John Salt (1979) for example, has concentrated on migration flows between labour market areas (SMLA's) in Britain. In Part 1 of this chapter, Flowerdew and Salt describe the variations in longer distance inter-regional migration rates in Great Britain by socio-economic group using data from the 1971 and 1981 Censuses. They discuss the economic and sociological ideas advanced to account for the observed variation, and they develop an explanatory framework based on the characteristics of employing organizations, which stresses the significance for labour mobility of internal labour market organizations, information flows in both internal and external labour markets and procedures for vacancy filling. They suggest that the operation of internal as well as external labour markets may exert different influces on different types of people within them. The effects on some groups will be an increased migration propensity, whereas the effect on others will be a diminution of migration activity. Finally, two case studies of migration in internal labour markets are presented showing occupational variations in movement rates. It appears that institutional structures in labour markets play a major role in explaining how and why the individual migrant is placed in a job.

The regional scale is also adopted by Peter Doorn in the second part of the chapter, in which he identifies the main patterns of interregional migration in the Netherlands since the Second World War, and argues that the neoclassical view of labour migration being induced by a regional mismatch of supply and demand for labour is unsuitable as an explanation for migration at this scale in the Netherlands. It is too simple to regard labour as a homogenous factor (Corpeleyn 1980, Bartels and Liaw 1983). Both labour and housing markets are segmented in various ways (Heinen and Maas 1984) and the economically active, differentiated on the basis of socio-economic and demographic characteristics, are commited to specific partial markets which are often geographically separated (De Smidt 1975). He

J. Stillwell and H.J. Scholten, Contemporary Research in Population Geography, 89–102.

therefore outlines the selective migration of those in different SOcio-Demographic and EConomic groups (SODEC's) in the labour force and demonstrates the way in which home-work relations for different groups are affected by migration. Whereas Flowerdew and Salt emphasize the demand side of the labour migration equation, Doorn is primarily concerned with the supply side and with the socio-economic characteristics of those involved. It has been shown elsewhere (Doorn and Kempers-Warmerdam 1985, Vos 1980) that the demand for less skilled employees is strictly local in character in the Netherlands, that the circulation of information about jobs for less qualified personnel takes place through regional papers, verbal messages and through mediation by regionally organized labour bureaus, and that employers recruit on a national scale only for those with specialized skills.

5.I SOCIO-ECONOMIC SELECTIVITY IN LABOUR MIGRATION IN GREAT BRITAIN

John Salt and Robin Flowerdew

5.2 Patterns of occupational migration

According to the 1981 Census, 4,980,866 people in Great Britain changed their address during the previous year (9.6% of the total population). About three quarters moved less than 20 kilometres and over half moved less than 5 kilometres; about 13.5% of movers travelled over 80 kilometres. It can be assumed that those moving short distances did so for housing or other reasons not related to work, although it does not follow that all long distance moves

Table 5.1 Migration by industry group, GB males, 1980-81

Industry group	% ofmigrants moving >20 km	Migration rate >20 km
Agriculture etc	26.8	1.6
Energy/water	14.2	1.1
Extraction	14.0	1.1
Engineering manufacturing	18.6	1.3
Other manufacturing	14.3	1.3
Construction	13.2	1.1
Distribution/hotels/catering	23.7	2.5
Transport	15.5	1.4
Insurance/banking/finance	30.9	3.9
Other services (including national and local gov't, eduction and health)	37.8	5.0
Total	23.6	2.3

Source: 1981 Census(10% Sample)

necessarily resulted from changes in employment.
Economically active people were more likely to be movers than those economically inactive; 7.6% of the latter changed address, in contrast to 9.1% of the self-employed, 9.8% of the employed, and 16.2% of those out of work. Distances moved by these groups were broadly similar although the inactive appeared slightly more mobile over longer distances. This may be because the inactive group includes students, who were more likely than the population as a whole to move long distances, nearly a third moving over 20 kilometres and a fifth over 80 kilometres. Among UK Standard Regions, the South West was the major net recipient of all migrants, but the South East had more economically active inmigrants (18,721 compared to 9,076 in the South West). The North West and West Midlands were the main net exporters of economically active population, with Scotland and Wales being minor net exporters. The decline in migration experienced during the 1970s appears to have affected the economically active less than the inactive (Saunders 1986).

The propensity to move long distances varies by industry (Table 5.1). Mobility is high for males in distribution, hotels and catering, insurance, banking and finance, and other services, and low in construction, extraction, energy and water, engineering manufacturing, other

Table 5.2 Migration rate by socio-economic group, GB males,1980-81

SEG	Migrants:all distances		Migrants >20 km		Migrants >80 km	
	No.	Rate	No.	Rate	No.	Rate
1-4	33,828	11.1	11,400	3.7	6,456	2.1
5-6	30,855	11.8	8,405	3.2	4,551	1.7
8-11	67,171	8.8	7,580	1.0	4,072	0.5
Others	26,936	12.2	9,826	4.5	6,943	3.2
Unemployed	23,307	13.2	5,250	3.0	3,358	1.9
Total	158,790	10.2	37,211	2.4	22,022	1.4

Notes:
(i) Rates are the percentage of the economically active who are migrants. SEG categories refer to economic activity after migration (see Table 5.3 for SEG key)
(ii) Source: 1981 Census (10% Sample)

manufacturing and transport. The diverse nature of some of these categories makes interpretation difficult. Mobility is greatest in the other services group, which includes national and local government, education and health, sectors which are predominantly white-collar and have high mobility rates. The same is true of the insurance, banking and finance sector.
The propensity of different socio-economic groups (SEGs) to migrate is shown in Table 5.2 which compares the number of male migrants with the total economically active population for males over 16. Over all distances moved, the unemployed were the most likely to migrate (13.2%) in 1980-81. Junior and intermediate non-manual workers have a slightly higher propensity to migrate (11.8%) than professional and managerial people (11.1%), with manual workers trailing at 8.8%. Junior and intermediate non-manual workers and the

unemployed also have high propensities to move short distances. Over 20 and over 80 kilometres, professional and managerial workers have higher mobility rates than junior and

Table 5.3 Interregional migrants, GB males, 1970-71 and 1980-81

SEG	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	1558	2.37	5.59	1487	1.73	6.88	0.80
2	2735	1.90	9.82	2298	1.68	10.63	0.97
3	304	1.96	1.09	198	1.38	0.91	0.77
4	2910	4.12	10.45	2339	3.33	10.82	0.88
5.1	2836	3.36	10.18	2327	2.29	10.77	0.74
5.2	162	1.32	0.58	112	0.89	0.51	0.74
6	3063	1.42	11.00	2047	1.39	9.47	1.07
7	557	3.20	2.00	558	3.13	2.58	1.07
8	391	0.61	1.40	235	0.42	1.08	0.75
9	3895	0.74	13.98	2100	0.51	9.72	0.75
10	1865	0.81	6.69	1258	0.60	5.82	0.81
11	1196	0.83	4.29	635	0.70	2.93	0.92
12	805	1.04	2.89	717	0.86	3.31	0.90
13	93	0.59	0.33	76	0.72	0.35	1.34
14	58	0.37	0.20	37	0.36	0.17	1.07
15	352	1.24	1.26	267	1.38	1.23	1.22
16	4558	17.94	16.36	4094	16.85	18.95	1.03
17	531	0.81	1.90	816	1.49	3.77	2.02
Total	27869	1.54	100.00	21601	1.39	100.00	1.00

Notes:
(i) Column definitions:
(1) Interregional migrants, 1970-71
(2) Interregional migrants as % of economically active, 1970-71
(3) % of total interregional migrants, 1970-71
(4) Interregional migrants, 1980-81
(5) Interregional migrants as % of economically active, 1980-81
(6) % of total interregional migrants, 1980-81
(7) Increase in migration selectivity, 1971-81 (see text)

(ii) SEGs:
1 Employers and managers (large establishments)
2 Employers and managers (small establishments)
3 Professional - self-employed
4 Professional - employees
5.1 Ancillary workers and artists
5.2 Foremen - non-manual
6 Junior non-manual
7 Personal services
8 Skilled manual
10 Semi-skilled
11 Unskilled manual
12 Own account workers
13 Farmers (employers)
14 Farmers (own account)
15 Agricultural workers
16 Inadequately described

(iii) Sources: 1971 and 1981 Censuses (10% Samples)

intermediate non-manual and manual workers. A third of the former group moved over 20 kilometres. Among the 'other SEG' category, the high proportion moving over 20 kilometres is accounted for by inclusion of the military population. The propensity of the unemployed to move over 20 kilometres and over 80 kilometres is higher than average - nearly four times as high as manual workers, for example, for moves of over 80 kilometres.
A more detailed comparison of trends between 1970-71 and 1980-81 is presented in Table 5.3. Columns 3 and 6 show that higher-status SEGs (1-6, except 3 and 5.2) increased their

share of all inter-regional migrants during the decade. Conversely, most lower-status SEGs decreased their share. This suggests that the migration experience may have become more socially polarised during recession. However, an attempt to standardise migration rates by SEG for the overall reduction between 1971 and 1981 gives a different picture (column 7). For each SEG, change in the percentage of the economically active who were inter-regional migrants is related to the national figure. For SEG 1, for example, it is caclulated as 1.73/2.37 divided by 1.54/1.39. A value of 1 indicates that the level of inter-regional migration change for the SEG is equal to change at the national level; a value of less than 1 indicates a greater proportional reduction in inter-regional migration than the national one; a value greater than 1 indicates a lower reduction. The results show that for higher-status SEGs, and for manual workers, the rate of inter-regional migration has slowed at a time when the percentage of total inter-regional migration accounted for by these groups has increased. This indicates that a rise in the numbers of economically active in these SEGS has more than offset a decline in their migration rate. Thus, during 1971-81, migration rates for most occupation groups fell but the effects were hidden by a secular rise in the numbers of economically active in higher-status SEGs. Clearly then, explanation for socio-economic selectivity in migration must take account of the wider context in which individual occupations exist.

5.3 Explanations of socio-economic migration differentials

Socio-economic differences in migration propensity in Great Britain reflect the segmentation of the labour market between socio-economic groups, and hence explanations of these differences require consideration of labour force heterogeneity. In this section, some standard approaches to this topic are reviewed before a new approach based on labour market operation is outlined.

The classical economic approach to inter-regional migration (Lind 1969) stresses its role in the adjustment of supply and demand for labour. If supply exceeds demand in one region, wages there will fall or unemployment will rise; where demand exceeds supply, full employment will ensue and wages will rise. One effect of this may be to encourage entrepreneurs to locate in the former region, where labour is available and cheap. The other effect is to induce migration; unemployed workers can improve their chances of employment by migration to a region of labour demand, and employed workers can benefit from migration by moving to a region of high wages.

This argument can be extended to take account of occupational specialisation. Migration is induced by a regional mismatch of supply and demand in a particular occupation. If each occupation has a totally separate labour market, independent migration streams will be generated to produce separate regional equilibria for each occupation. It would therefore be quite possible for a large stream of migrants in one occupation to move from one region to another while migrants in a different occupation moved in the reverse direction. In practice, occupational labour markets are not totally discrete, and workers in one region may be able to find jobs or better wages by changing occupation rather than by inter-regional migration. Gleave and Palmer (1980) have shown how occupational and geographical mobility vary in importance between occupations.

The implications of these arguments are that migration should in general be from regions of low wages and high unemployment to regions of high wages and low unemployment, and that it should be highest in those occupations where regional differentials are greatest. The latter are likely to be those occupations whose regional pattern is changing rapidly. In addition, the ease of entry to a particular occupation may affect migration patterns; if it is hard for workers to move into a particular occupation, perhaps because of training or qualifications deemed necessary, regional imbalances must be filled primarily through migration, while vacancies in an occupation requiring little training can be filled through occupational rather than geographical mobility. Generally therefore, inter-regional migration rates might be expected to be lower for unskilled than for skilled or professional workers.

A further economic factor related to occupational migration is the cost of movement, now estimated at £7000 - £10000 for an owner-occupier (Salt 1986). Migration is expensive, not only because of transport costs, but primarily because of the transaction costs involved, especially where a house must be sold and another bought. Regardless of tenure, there may be a need for a migrant to maintain two houses for a period or to use temporary accommodation at a high price. The expenses of migration vary according to distance and to the migrant's life-cycle stage, a single person finding it far easier to migrate than a member of a large household. The occupational implications of migration costs are that members of higher-paid occupations will be better able to bear them. It is also the case that employers are more likely to assist some migrants than others with their expenses. This assistance is in general higher for occupations where more training is required, although such people are more likely to be able to bear the costs themselves (Salt 1984).

There are also sociological arguments which suggest that occupational differences in migration rates might be expected. These are concerned with the relative importance of employment and other factors, especially attachment to family and community, and how it varies between classes and occupations. Migration will break a wide range of personal and environmental ties, perhaps involving family, friends, schools, and social activities. The importance of these ties may depend on previous migration experience and on the perceived ability to maintain them despite physical distance, both of which are likely to be related to social class and hence to occupation.

In addition to traditional economic and sociological explanations for migration, behavioural theories have been developed emphasising the nature of search processes (for alternative localities, jobs and homes) and decision-making. The assumptions made in behavioural theories have emphasised the nature of search processes (for alternative localities, jobs and homes) and decision-making. These assumptions are more realistic in many respects than those in most economic models but, in general, they have concentrated on the migrant as the main decision-maker. Largely left out of account is the employer who makes decisions about skill and experience requirements, recruitment procedures and so on. Indeed, perhaps the fundamental weakness of research on labour migration is to study it as a supply-side phenomenon, from the point of view of the migrant.

It is our contention that occupational selectivity in migration has to be viewed both in the

light of the specific tasks to be performed in any occupation and in the role of the occupation in the employer's allocation of tasks. Furthermore, occupations must be viewed in career terms, where 'career' involves the incremental accumulation of skill and experience as the individual performs the range of tasks and occupations allocated within the employing organisation. Thus we need to study not only those characteristics of occupations that make them more or less mobile, but also how the organisation of work affects geographical mobility.

From this perspective, the concepts of internal labour market (ILM) and organisational career become central. An individual in employment is, by definition, in an ILM, working according to its rules and corporate practices, his/her career guided or determined by how the employer chooses to organise the tasks needing to be performed. An individual recruited externally, moving from one employer to another, is moving between ILMs, through 'ports of entry' defined in terms of ILM organisation. Ports of entry may be at any level in the company hierarchy but their degree of openness will usually be established in accordance with perceived recruitment needs and consequent vacancy-filling procedures and with the company's philosophy on training and staff replacement. The concept of organisational career is also relevant to the phenomenon of immobility. Short career ladders in some occupations provide few opportunities for advancement and hence few occasions when migration can bring career benefits; the labour markets in such occupations are usually spatially restricted.

Several recent studies have emphasised the importance of geographical transfers of workers within an organisation's ILM, (McKay and Whitelaw 1977, Johnson and Salt 1980, Sell 1983). Labour Force Survey data for Great Britain for 1980-81 suggests that 58.4% of employed inter-regional migrants worked for the same organisation before and after moving (Salt 1985a). Traditional explanations for labour migration are inadequate for explaining this phenomenon and this emphasises the need for a framework linking migration and the organisation of work. In so far as employers, wishing to recruit into ILMs, use external labour markets (ELMs), it is necessary to take into account the nature of information flows between employer and potential employee. The following sections consider how the nature of ELM information flows and ILM organisation affect patterns of movement and give rise to socio-economic differences in these patterns.

5.4 Vacancy filling and migration

5.4.1 The external labour market

Most labour migration theory has assumed that the migrant travels looking for work. However, Silvers (1977) drew a distinction between speculative and contracted migration. Speculative migrants move without having a job already fixed up, in hope of finding one after the move, whereas contracted migrants move only after they have found work. Traditional migration theory is largely based on speculative migration, but studies suggest that an increasingly large proportion of migration in developed countries is of the contracted type (Lansing and Mueller 1967).

One direct influence on labour mobility is information about jobs, and it has been argued (Saunders 1985b) that the way in which employers notify the existence of vacancies may have a major influence on who is appointed to fill the vacancies and whether filling them involves migration or not. In Britain, there are several possible information channels which can be used for notifying vacancies, including informal methods, such as word of mouth, the use of employment agencies, especially the official Job Centres, and advertising in newspapers or magazines. Jobs advertised informally, through the local Job Centre or in the local newspaper, are unlikely to be known about outside the local area. Jobs advertised in nationally circulated media, such as the national newspapers and trade and professional journals, may attract a national field of applicants.

The choice of vacancy notification media for employers is likely to depend on the perceived ease of finding suitable candidates. A post requiring unusual qualifications will need to be advertised in such a way that the few suitable candidates will hear about it, while a post requiring few qualifications can get a large field of applicants if advertised locally only. If the local labour market has full employment, it may be worthwhile for an employer to advertise a vacancy of the latter type nationally, or perhaps in a high unemployment labour market. Generally though, there are likely to be strong occupational differences in job advertising policy, which will lead to differences in occupational migration rates, for posts advertised only locally will seldom be filled by migrants.

Given the importance of contracted migration, the way in which jobs are pre-arranged is clearly influential in determining migration patterns, and this varies considerably between occupations. Granovetter (1974) emphasised the importance of informal channels of communication in filling jobs in higher-status areas of suburban Boston, but formal channels appear to be more important in England and Wales, according to the General Household Survey (OPCS 1979). These formal channels include the use of employment exchanges (Job Centres in contemporary Britain) and advertising in newspapers and journals.

Employers have a choice of how they advertise vacancies. The choice of advertising outlet can affect who finds out about the existence of job vacancies and hence who applies for and who gets the jobs. Some evidence is available about how this choice is made from Saunders (1985a), who studied employers' advertising policies in local government, where there is a large set of councils all employing people in a wide range of different occupations. He asked council personnel departments about their recruitment policies, and found that posts for manual workers, whether skilled or unskilled, are notified almost without exception, through local circulation channels, mainly the Job Centre and local newspapers.

In contrast, a greater range of information channels is used for non-manual posts, especially for those where professional qualifications are required. For non-manual posts not requiring professional qualifications, local media are almost invariably used, with 36% of councils using national media too, especially journals relating to local government. Most councils advertise posts requiring professional qualifications in national media, including local government publications such as 'Opportunities' and 'Municipal Journal' and appropriate professional journals such as 'The Planner'. Although individual councils differ in how they would advertise similar vacancies, differences which seem to be related to labour market conditions locally, the study shows major systematic differences between occupations in

how vacancies are advertised. In a further study, Saunders (1985b) shows how the form of vacancy advertizing can account for much of the observed difference between migration rates for different occupations.

5.4.2 The internal labour market

A recent empirical study (Salt 1985b) of multilocational organisations in the United Kingdom has identified several aspects of organisational structure which affect how the internal labour market works, and hence the extent to which it generates migration to and between the locations at which the organisation operates. Typically such an organisation consists of a group of partially independent companies or divisions, which may themselves be multilocational. The divisions of the group may be regional or may be defined according to the products or services they contribute. Group structure, and hence its implications for the internal labour market, is dynamic, evolving with the organisation as a whole.

The first critical aspect of organisational structure is the locus of responsibility for vacancy filling. A vacancy occurring in a particular division at a particular location may be the responsibility of the person to whom the employee will report, or of a higher-level executive within the division or at group head-quarters. It may be the responsibility of a personnel department, located locally or centrally. This decision-maker may have various goals in filling the vacancy. One goal, perhaps the only one, may be to select the best person available to do the job. Alternatively, filling the vacancy may be seen as part of a management development system, where some employees (usually seen as potential senior managers) are moved around as part of a consistent attempt to develop their skills and experience. Filling one vacancy internally will probably create another, and so consideration of a whole chain of appointments may be necessary. The decision-maker may have information about varying numbers of potential candidates. If there is a relevant management development system, it will have information about many potential candidates for a vacancy. A system centralised at the group level will be able to match eligible people with vacancies occurring in any division and at any geographical location within the organisation. If the system operates at divisional level only, the decision-maker is likely to have a more restricted field to consider. Even where a management development system does not exist or does not apply to a particular vacancy, organisational structure may still affect information availability.

A second important aspect is the nature of contact within the organisation, especially as regards personnel. If responsibility is integrated throughout the group rather than subdivided into divisional units, there are implications for how jobs are filled. In some organisations contact is generally informal; in these cases information on potential ILM recruits and on job vacancies will be more spasmodic resulting in a generally lower likelihood of migration, or migration between those parts of the group where personal contacts between personnel managers are good. Where more formal contacts are maintained, in accordance with group policy, information flows will be more even and more comprehensive. Responsibility for recruitment will also vary. In some organisations this is controlled from the centre (as is most graduate recruitment) which may have access to appraisal and career records of all staff in the group. Here migration is more likely than where recruitment is, by and large, decentralised. Where decentralisation is to regional divisions, migration can be circumscribed by

corporate administrative boundaries; where it is to individual divisions and/or companies then the opportunities for ILM migration are likely to be limited to the locations of units within those divisions or companies.

The role of personnel departments in determining the volume and pattern of migration is affected by the relationship of the personnel function and management development unit to overall organisational control. In some organisations personnel departments have the power to appoint, in others simply to advise local general managers. In the latter case, advice on potential recruits thrown up by the management development system from geographically distant parts of the group may be over-ridden by an executive who prefers to appoint a local candidate. Important too is whether divisional or company personnel managers report to group personnel directors or to divisional managing directors. Strong links within the personnel function give it greater strength in making appointments, especially if there is a centralised management development system.

An important feature of a management development system is the method of staff appraisal adopted and, especially, what happens to the results of the appraisal. The nature of the appraisal may vary from a systematic assessment of competence for the next promotion to an informal review of performance in the recent past. The appraisal system may thus provide full information on each person, including performance to date, skills acquired, experience still needed and potential for further development. Particularly relevant for migration propensity is whether the results of the assessment are retained locally or automatically transferred to some central information system.

The existence of 'medieval barons' within the group can also play a significant role within the ILM. The 'baron' is a divisional or company chief executive who operates his part of the group in an autonomous manner, often relying largely on 'growing his own timber' without recourse to group resources, or using the external labour market directly as he sees fit. 'Medieval barons' can cause balkanisation of ILMs and can thus preclude mobility into and out of their tutelage.

Finally the employees must be considered. Is the employee given a choice when a move is proposed? Most organisations are willing to accept some resistance, perhaps for reasons of children's education, but most also make it clear that some mobility is ultimately essential if career development is to be maintained. The role of Trade Unions can also be significant. Trade Unions or staff associations may negotiate formal relocation assistance packages applicable to both individual recurrent and unit relocations. Such assistance can make a long-distance move significantly easier.

5.5 Internal labour markets and occupational mobility: two case studies

These general points can be clarified by examination of how they apply in specific contexts. Two examples are taken from studies of nearly 100 large employing organisations in the UK. They are both engaged in engineering manufacturing, although they operate in different sectors. They have been selected because they demonstrate both similarities and differences, and emphasise the need for generalisation to be tempered with knowledge of how individual

organisations operate.

The first example is that of an electronics manufacturing group with over 12,000 employees in 54 units. During a two-year period, 41 relocations occurred, representing 0.2% of the total workforce and 0.9% of that part of the labour force where career mobility is likely. The organization is divided into four divisions each containing several distinct companies, most of which have a few hundred employees. Moves involved 17 different origins and 15

Table 5.4 Occupations of ILM migrants in two case studies

Occupation category	Electronics firm		Engineering firm	
Directors and managers	5		30	(34%)
Branch managers	-		11	
Professionals	3		6	
Engineers	17	(41%)	14	
Other white-collar	14	(34%)	15	
Foremen	-		6	
Manual	-		6	
Trainees	1		1	
Secretaries	1		-	
Total	41		89	

destinations; 42% of movers were under 30 and 81% under 40; 44% of moves were promotions. One third of moves occurred within companies; the rest between companies. Promotions were more likely to occur for the latter type. Most of those involved were highly skilled; all were white-collar and only three were women. Engineers and 'other white collar' workers formed the vast majority of movers (Table 5.4). This pattern of movement is a response to the ILM operation of the firm, and particularly to the structure of the group, which was emphasised in interview as being basic to career patterns and opportunities because there are so many small companies, each with its own managing director, board, senior, middle and junior managers, supervisors and monthly and weekly paid; hence there are multiple opportunities for career advancement. The philosophy of the group towards company autonomy is also important. It is policy to promote within the individual companies if possible rather than moving 'high fliers' from elsewhere, since company morale and ethos require the commitment of employees to their particular company. In this light, it is interesting that the majority of moves and promotions were between companies, suggesting that migration occurs when an individual company is unable to fill all its own vacancies and consequently turns to the group resource of staff elsewhere.

Migration must thus be viewed in terms of vacancy filling procedures and information flows at both company and group levels. How then does recruitment occur? At management level, about 80% is from the ILM, the principal intake from outside being the approximately 200 graduates recruited annually. Non-graduate recruitment is done on a local basis and staff up to first supervisory level are largely non-mobile. The exceptions are a few senior technicians and supervisors who move when new production satellites are created.

Mobile staff are, therefore, highly educated and skilled and, generally, recruited at the bottom. After recruitment, graduates come under the aegis of a group Graduate Development Manager who is responsible for overseeing progress over the first five years. He is expected to be aware of the aspirations and development of each, to match them with appropriate vacancies and ensure proper training facilities are provided. Movement depends on function: those going into laboratory work tend to be less mobile in the early career stages, those into finance and personnel more so.

Despite the emphasis on individual companies within the group there is a centralised appraisal system for all monthly staff which was started in the 1970s to assist in making promotions and filling vacancies. There are now three vacancy filling procedures for positions below director level. Firstly, internal company candiates are considered and if one is suitable, he/she is appointed. Failing that, a central check is made on group talent. Finally, external advertising and/or a limited amount of internal advertising is used, although the latter is employed more for vacancies overseas than in the UK.

In general, up to the early 1980s, career development has been tied in with group development and the spawning and expansion of new companies. The pattern has been for a new product to be developed in a laboratory and a tiny nucleus of people to be established in a different location to develop, produce and market it. In part this explains the emphasis on moves of engineers in Table 5.4. More significant for explaining migration, however, is that the system of appraisal, central records and career development means that, despite the emphasis on company autonomy, trained labour is being developed and used as a group resource.

The second case study example is that of a more traditional metals and engineering group with about 20,000 employees and 60 companies divided into 11 divisions. During a two-year period, 89 transfers occurred representing 0.2% of the total workforce and 3.6% of that part of the labour force where career mobility is likely. Of the movers, 54% were under 30, 79% were under 40, and 56% were promoted. As in the first case study promotions were twice as likely to occur for moves between companies within the group than within individual companies.

Although a few more movers were blue-collar than in the first case study, most were white-collar. As Table 5.4 indicates, directors and senior managers were the most numerous movers, accounting for a third of all transferees. They were particularly significant among those who moved between firms. The blue-collar workers, who all moved within their own company, were mainly repair men and foremen working for a company specialising in customer services. They, like the mobile branch managers, worked for companies with a large number of locations - more akin to a retail than a manufacturing activity. More significantly, their movement followed a rationalisation involving some sites closing.

Within the ILM of the group as a whole there is a clear distinction between the top 350 employees who are employed directly by the group PLC, and the locally administered staff below these whose conditions of employment are set and administered by the individual companies. ELM recruitment into the top 350 is negligible and relatively unimportant among the rest of the management/professional category.

The principal external intake is at the graduate level. Recruitment is centrally organised in response to requirements specified by individual companies. However, in contrast to the first case study, no central control over graduates' careers is exercised once they have joined the companies. Vacancies in the top 350 are not advertised but selections are made on the basis of lists of candidates supplied to the executive directors by the central personnel unit concerned with management development. If a position below the top 350 level falls vacant, the managing director of the company concerned is responsible for filling it. There is thus a considerable degree of autonomy and hence variability in vacancy filling. Central personnel has to be notified of all vacancies, and from appraisal records they will know who is suitable and available for transfer. They can exert pressure for a particular appointment but the individual managing director will make the final choice. There may thus be conflict between company and corporate interest, with mobility between some parts of the organisation more likely than others. At sub-managerial, monthly, and weekly paid staff levels, jobs which are advertised externally must also be circulated internally to group locations within the catchment area of the site. However, movement of the low paid from one company to another is extremely rare except when there is a structural change.

These two case studies have been presented to show the effects of differences in management development policy in relatively similar organisations. Both are divided into about the same number of fairly autonomous companies; both are in manufacturing; both have central graduate recruitment, appraisal and a group personnel department; both emphasise ILM recruitment for higher-level staff; both recruit weekly and lower-paid monthly staff locally; and in both, transferees are mainly white-collar and highly trained. But there are differences in ILM attitudes and operation which lead to differences in the occupations of those transferred. Directors and more senior managers form a higher proportion of movers in the second case study because there they are regarded as a group resource, whereas those below them are less so. In the first case study the strength of the group personnel unit, especially in graduate career development, is greater. Hence, despite company autonomy, labour is looked upon more as a corporate than a company resource. Finally, differences in the market place cannot be ignored. Higher upper-level mobility rates in the second case study have resulted in part from greater exposure of the more traditional engineering sector to structural change resulting from recession than in the more successful electronics sector.

5.6 Conclusion

The existence of major differentials between occupations in their migration rates is not unrelated to the economic theory of the labour market, but the operation of the labour market is affected by the institutional structure of the market, both internally and externally to the firm. In both cases, employers have the executive power to create these differentials, by their policies on personnel development and transfer, and by their decisions on how vacancies should be advertised. These decisions are guided, but not determined, by the facts of labour supply and demand for particular occupations. Workers, too, make decisions about their mobility, but their information is not complete and will vary greatly between occupation groups. The incentive to move for career advancement will also vary according to the norms for particular occupations, as may the relative strength of family and community ties.

Migration in Britain has declined through the 1970s and 1980s (Ogilvy 1982, Salt 1985a). However, whilst the role of transfers within organisations seems to have increased over this period, the high levels of unemployment, even in more prosperous areas of Britain, have meant that there has been less need for employers to encourage migration of people without specific qualifications.

Acknowledgements

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5.II SELECTIVE MIGRATION IN THE DUTCH LABOUR FORCE

Peter Doorn

5.7 Scale and distance in regional migration

About one and a half million of the over fourteen million inhabitants of the Netherlands moved to another address in 1984. Around half a million people (35% of all moves) crossed a municipal border and were therefore classified as migrants according to Dutch definitions. In that same year, about 220 thousand people moved to another province (40% of all migrants or 15% of all moves). If the twelve provinces are grouped into six macro-regions, only 150 thousand people or somewhat more than a quarter of all migrants (or one tenth of all moves) settled in another part of the country according to CBS migration statistics.

In the early 1980s, the total migration rates in Great Britain and the Netherlands were nearly the same (both circa 10%). The distance decay effect in migration was also comparable in both countries. Of the inter-municipal migrants within Holland, about 15% of moves occurred over 60 kilometres, and about two-thirds of moves took place over a distance of less than 30 kilometres, half of which involved distances over 5 kilometres (CBS labour force sample surveys).

The observed processes of spatial mobility are strongly influenced by the scale at which we study them. Fewer people migrate over long distances than over short distances, and likewise, fewer people cross regional boundaries than local boundaries. However, inter-regional migration does not necessarily take place over long distances and intra-regional migration is not always restricted to short distances. Long-distance intra-regional migration has been labelled crypto-migration and short-range moves just across a regional boundary are sometimes called pseudo-migrations. It is impossible to rule out these phenomena when studying the flows and directions of regional migration.

The motives for or influences on migration vary with increasing distance or spatial scale. Moves over short distances are generally connected with the family situation and housing

J. Stillwell and H.J. Scholten, Contemporary Research in Population Geography, 102–115.

conditions, whereas factors related to employment prevail in long-distance migration. Improvement of the residential situation and changes in the marital status form the main motives for migration up to distances of around 30 kilometres. In migration over larger distances, change of workplace and long commuting distances are predominant (Verster and Mulder 1984). For this reason, intra-provincial migration is for the large part undertaken in order to improve the housing conditions of the household and labour considerations play a secondary role. In inter-provincial migration, the situation is reversed and labour-related factors play a dominant role.

5.8 Internal migration and the changing distribution of the population

The changing distribution of the Dutch population between five large regions of the country since 1945 is illustrated in Figure 5.1. It is not surprising that differential natural growth and net migration have resulted in only moderate changes in the regional distribution over time. Throughout the whole period, somewhat less than half of the total population has been living

Figure 5.1 Net interregional migration, 1970-1984 (persons per 1000)

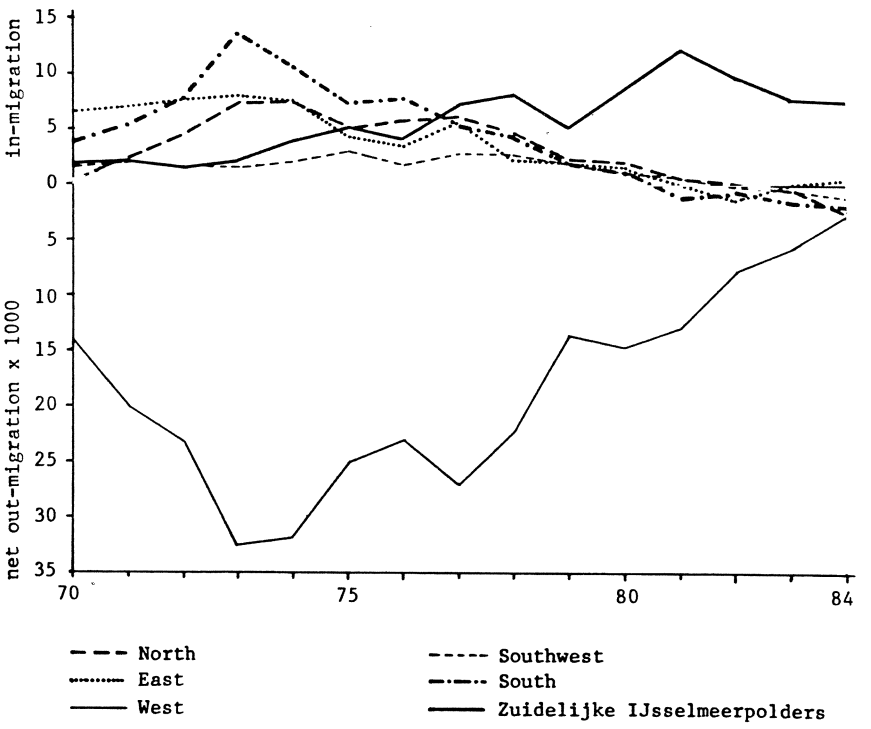
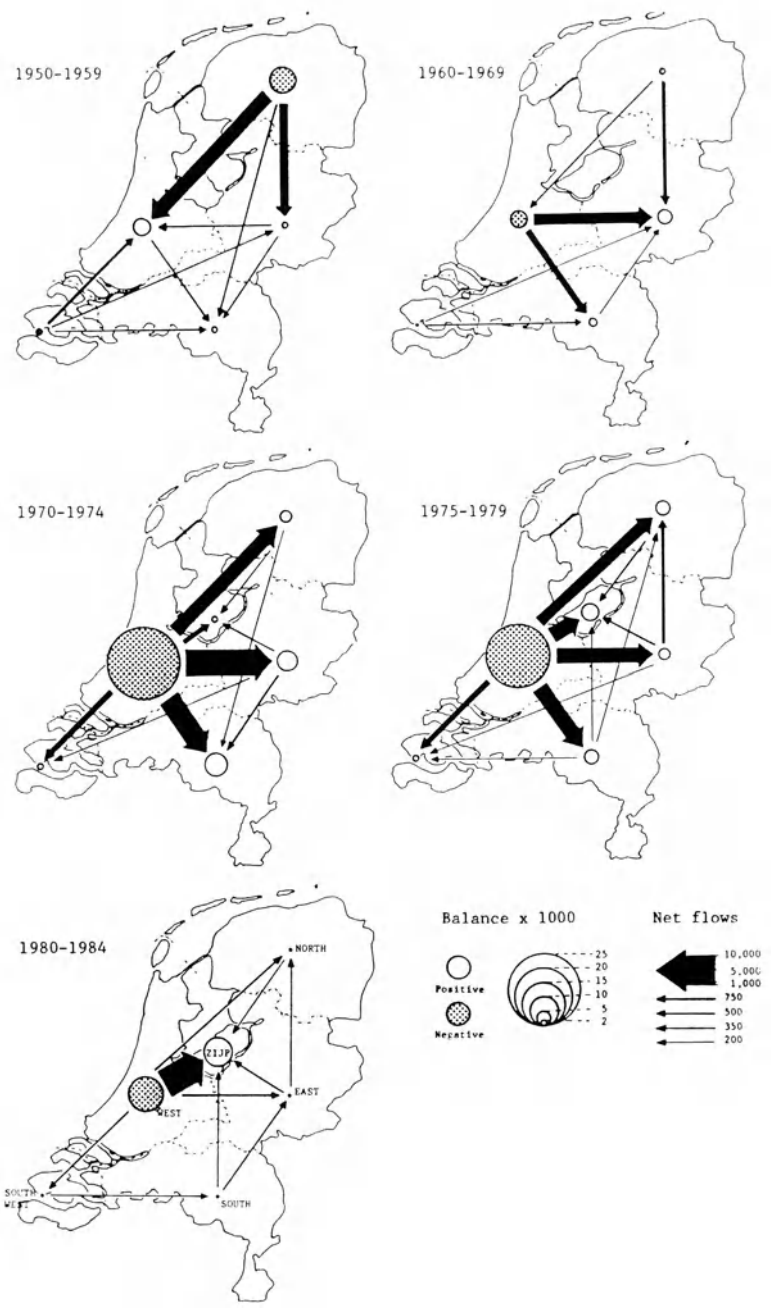


Figure 5.2 Interregional net migration 1950 - 1984 (yearly averages)

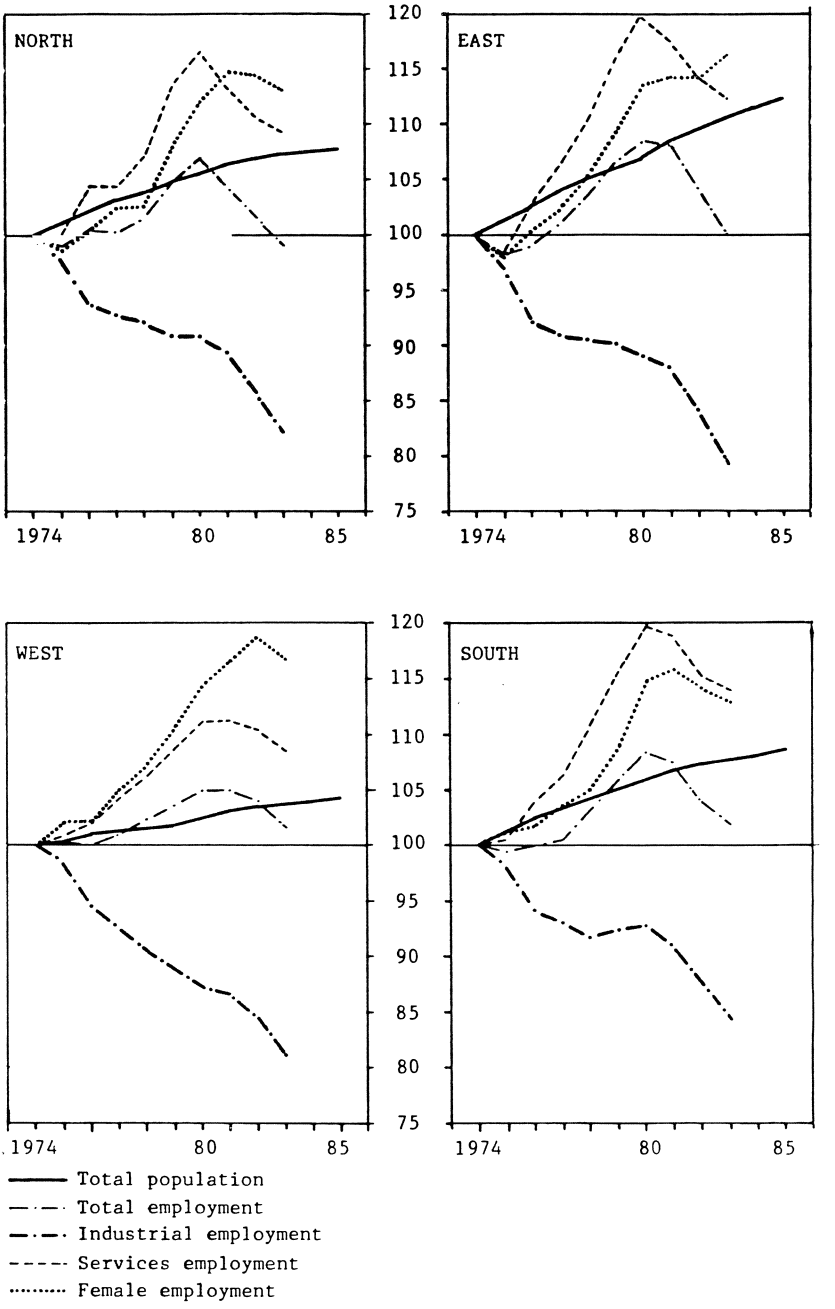


in the urban West of the country. In the years of reconstruction after the Second World War, this concentration of population slightly increased, mainly at the cost of the North, but since the second half of the 1950s, the predominance of the West gradually declined. Meanwhile, the proportion of the population in the East and South has slowly increased. The relative increase in the East is partly caused by the creation of a number of new polders in the former Zuiderzee (now IJsselmeer), which attracted many new settlers.

Total migration in the Netherlands increased during the post-war period up to 1973 and then began to decline. In 1979 a low point was reached and since then the internal migration rate has not altered much. The net effect of internal migration on the changing distribution of the population is represented in Figure 5.2. In the 1950s the inter-regional net migration flows were dominated by the outflow from the North to the West and (to a lesser extent) to the East. In the 1960s the tide turned and people started to leave the West, a reflection of the suburbanization and deconcentration of the population. In that period, the predominant regional planning policy became directed at obtaining a more equal distribution of population and employment. In the early 1970's the net migration out of the West reached its climax. The attraction of the Zuidelijke IJsselmeer Polders (ZIJP) increased, while in the second half of the seventies the other net flows began to decrease. Since 1980, the inter-regional migration balance of the North, East, Southwest and South has become very small. The only remaining considerable net-flow is that between the West and the ZIJP. After 1981, however, also that flow has decreased. In sum, the total migration rate is presently very low, and the regional effect of population exchange between the various parts of the country is almost zero. The situation in the West of the country has been the main source of variation in the inter-regional migration flows. Over the past 25 years, the West has experienced a net outflow of 350 thousand people. This number is rather small in comparison to the amount of urban-suburban and urban-rural migration, which totalled up to well over one million people in this period (Doorn 1986). Labour migration plays a crucial role in neo-classical and (post-) Keynesian macro-economic theories (Van der Laan 1985). According to these models labour tends to move from regions with low wages (or high unemployment) to areas with high wages (or low unemployment). Migration is seen as the mechanism through which spatial variations in wages and employment are balanced. These theories are often criticized for their unrealistic presuppositions which include complete information about vacancies and wages, homogeneous labour and absence of migration costs (Van Dijk 1986). Of course, information about jobs is incomplete, the labour market is segmented in several ways, and migration is expensive. Moreover, non-economic factors play a role in labour migration.

It is therefore not surprising that empirical support for the neo-classical and post-Keynesian theory is lacking. Macro-regional shifts of the population appear to be largely unrelated to changes in the balance between the demand and supply of labour. The differential growth of employment in the various parts of the country does not seem to have affected the overall pattern of migration in the last decade. This is illustrated in Figure 5.3 where the evolution of the population in the four macro-regions is compared to the growth of employment. In all four regions, population growth has been positive, although differences in growth rates have been substantial. The population growth was slowest in the West and fastest in the East. The growth of total employment in the four regions did not keep pace with the population change. Although between 1975-76 and 1979-80 employment growth was generally faster than the population growth, the influence of the second oil crisis in 1979 was felt in all parts of the

Figure 5.3 Total population and employment change by macro-region, 1974 - 1985 (index numbers, 1974 = 100)



country. The drop in employment was however smaller in the West, the economic centre, than in the periphery, especially in the North and East.

In Table 5.5 the growth of employment and of population are compared using a concentration index. Negative indices indicate a comparatively small share of total employment in

Table 5.5 Concentration indices of employment

Year	North	East	West	South
1974	-13.9	-8.1	3.7	4.5
1975	-14.9	-9.9	4.8	3.8
1976	-13.7	-9.6	4.6	3.9
1977	-15.0	-9.1	5.5	3.7
1978	-15.3	-8.8	5.3	4.1
1979	-14.4	-8.2	4.7	4.6
1980	-14.3	-8.5	4.5	5.2
1981	-15.8	-9.5	5.3	5.1
1982	-16.0	-11.0	6.7	3.7
1983	-16.3	-12.2	7.1	4.1

relation to the share of the total population in a region. In the West, despite the fact that it has been the main exporter of (economically active) population, the employment balance has become more positive. In the North and East, which were recipient areas of migrants, existing negative indices have become even larger. In the North in particular, an increase of the migration surplus went hand in hand with a comparable growth of unemployment. In the South, which also attracted migrants, the balance was positive, but this hardly changed over the ten-year period.
Sectoral disaggregation does not present a fundamentally different image. Employment in the secondary sector has declined over the observed period, whilst the tertiary sector grew much faster than total employment up to 1979. This was especially the case outside the West, where the services sector at the outset was much larger than elsewhere. Furthermore, the increasing participation of women in the economically active population, which has been one of the major changes in the labour market since the 1960s (female participation rates grew from 22.6% in 1960 to 32.7% in 1981) was most marked in the West.

5.9 Selective mobility based on socio-demographic and economic disaggregation

These national patterns and trends form the background for research into selectivity in regional mibility processes of the employed population. The main source of data is the Labour Force Sample Survey (Arbeidskrachten-telling - AKT), conducted every two years by the Netherlands Central Bureau of Statistics (CBS). The data tape of 1981 used here was

analyzed as part of a research commissioned by the Physical Planning Agency (Rijks Planologische Dienst - RPD). Despite the huge sample size of the AKT 1981 (the sample fraction was 5%), problems of statistical significance arise when studying selective migration. It is practically impossible to indicate the statistical significance of deviations from the mean migration rates and of migration surpluses for each group in every region but confidence limits have been calculated and all differences mentioned in the text are statistically significant at the 95% level.

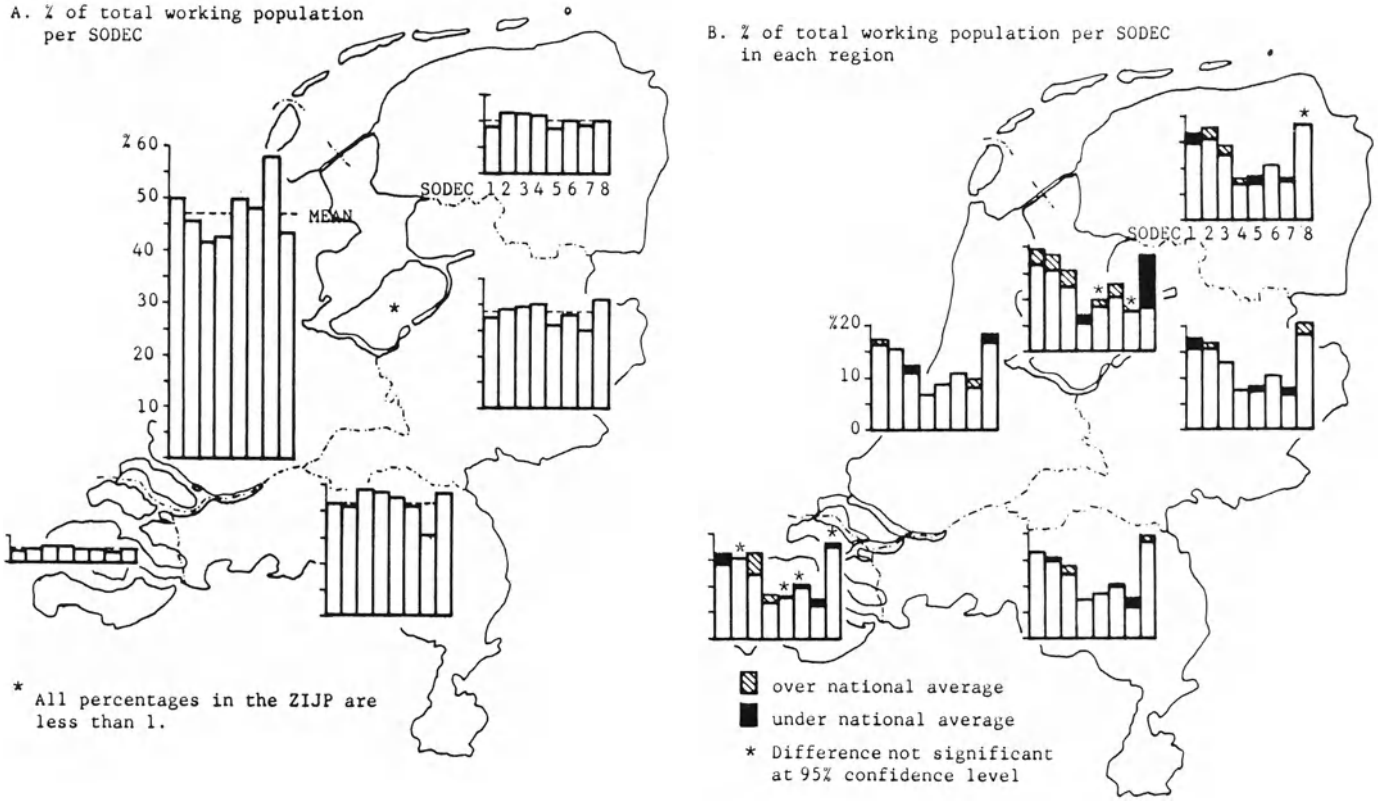
5.9.1 Classification of the employed population by SODEC

In the approach adopted here, the employed population was grouped into eight SOcio-Demographic and EConomic (SODEC) categories. The variables on which the categories are based reflect the demographic and household situation and the socio-economic 'status' of the occupation (for more details on the procedure followed see Doorn 1985). Distinction can be drawn between four groups of (predominantly male) heads of households, two groups of (predominantly female) working wives/partners, a group of single-living persons and a group of children living with their parents. The characteristics of the eight SODECs are summarized as follows (% of total employed population in brackets; 2.9% not classified):

SODEC 1- Head of household: higher staff and trained executives (including scientific occupations and professions; 16.7%);
SODEC 2- Head of household: lower employees and self-employed (including farmers; 15.7%);
SODEC 3- Head of household: skilled workers (having received at least secondary education; 12.6%);
SODEC 4- Head of household: unskilled labourers (having no more than primary education; 7.1%);
SODEC 5- Wife/partner: without children (on average relatively young and generally full-time employed; 8.3%);
SODEC 6- Wife/partner: with children (predominantly older and part-time working; 10.5%);
SODEC 7- Unattached persons (relatively young and well-educated; 7.9%);
SODEC 8- Children living at home with their parents (generally just having started their working career; 18.3%).

The spatial distribution of the SODECs over the various parts of the country is illustrated in Figure 5.4 and some of the more significant over-and underrepresentations can be identified. In the West, SODEC 7 (unattached persons) is most strongly represented. This group is especially found in the cities. SODEC 1 is also overrepresented, but executives tend to live largely in the suburban and rural settlements. Industrial labour (SODECs 3 and 4) and working youths (SODEC 8) are underrepresented in this macro-region. In the ZIJP, most groups are overrepresented, except for SODEC 4 (unskilled labour) and SODEC 8. In most other regions, SODEC 1 and 7 are underrepresented, while the share of industrial labour is above average. In the North and East, SODEC 5 (women without children) is poorly represented, and the percentage of working youth is relatively high in the East and South.

Figure 5.4 Regional distribution of SODEC categories of employed population, 1981



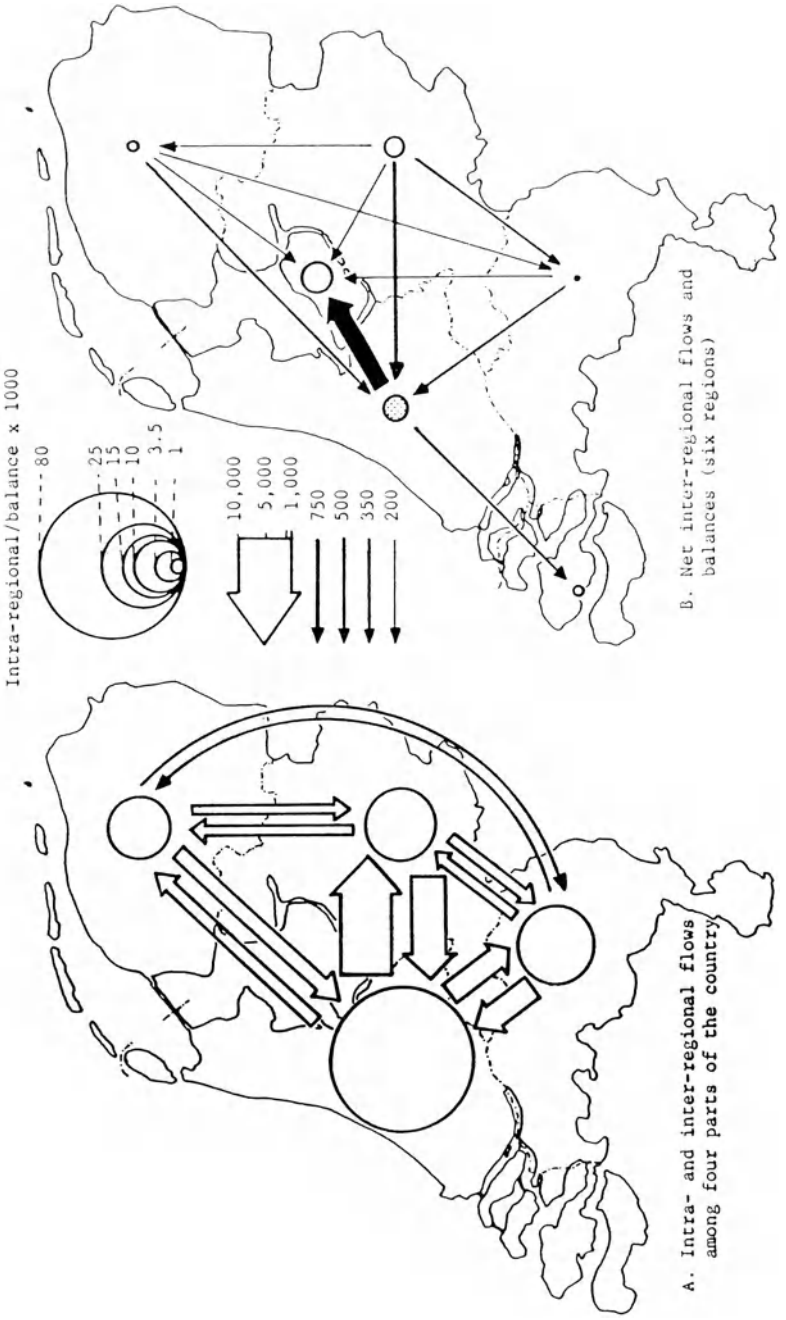
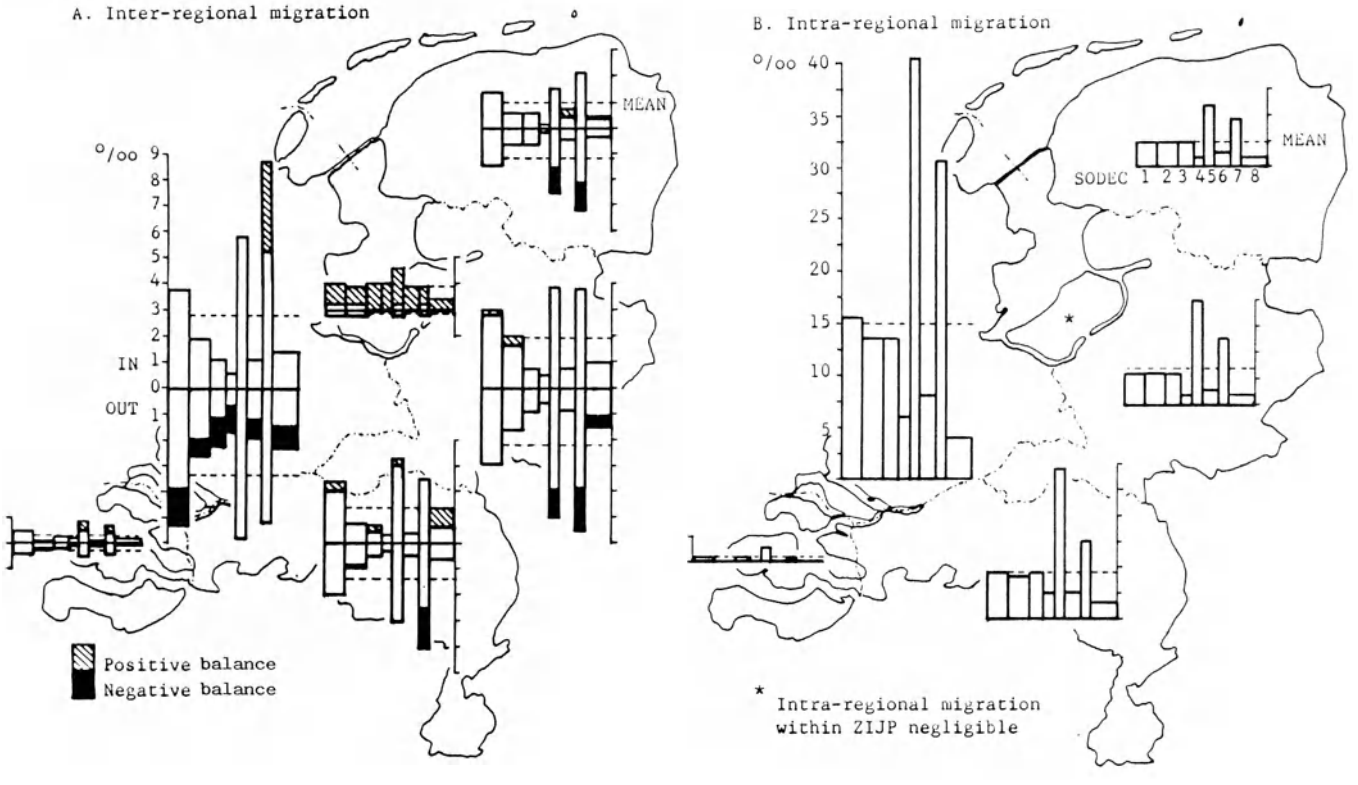


Figure 5.5 Internal migration of the employed population, 1980 - 81

Figure 5.6 Internal regional migration by SODEC (per 1000 working population by SODEC)



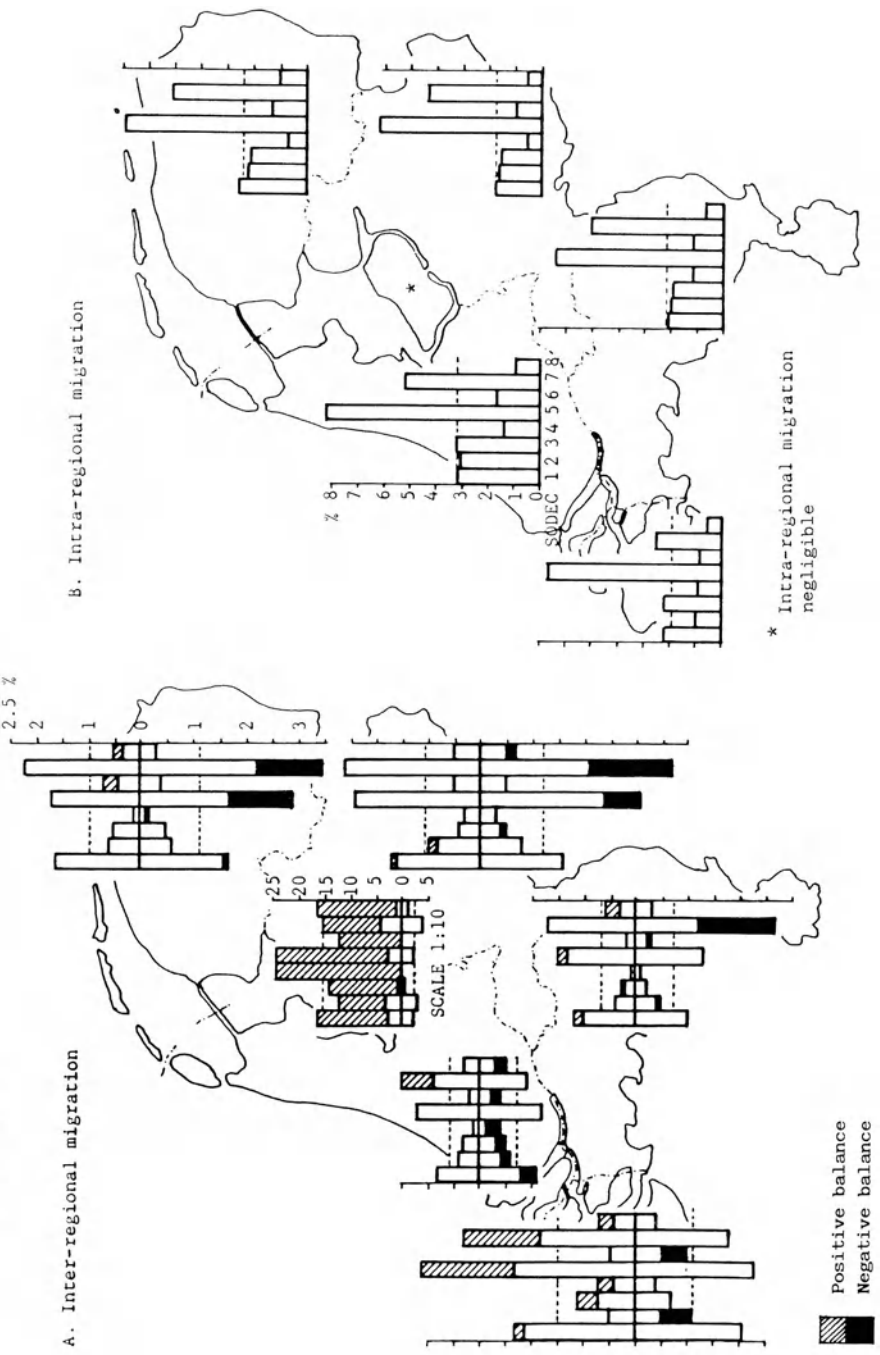


Figure 5.7 Internal regional migration by SODEC (% of working population by SODEC region)

5.9.2 Inter- and intraregional migration

Gross internal migration flows and net interregional migration by the employed population are illustrated in Figure 5.5. In 1981, about 175 thousand of the 5.1 million employed persons in the Netherlands migrated (3.4%). Three quarters of this migration was intraregional. The inter-regional balances made up only a small fraction of the working population migrating between regions. Whilst approximately 42 thousand working people migrated between regions, only 10% contributed to a net gain or loss. the other 90% was exchange-migration, in which the flows between the West and East of the country were predominant.

If regional migration is disaggregated according to SODEC categories, a much clearer picture is obtained. Both within and among regions, migration appears to be highly selective for the categories distinguished. In Figure 5.6, proportions are calculated of the total working population per SODEC who migrate, thus reflecting the influence of the size of the total labour force in each region. As the width of the bars is proportional to the size of each SODEC, an outline is obtained of the absolute size of migration for each group in each part of the country. Figure 5.7 illustrates migration percentages calculated on the basis of the working population in each SODEC in each region. The histograms represent SODEC-specific regional variations in migration rates, standardized by group and region size. The inter- and intraregional migration rates are highest for SODECs 5 and 7 (women without children and unattached persons). This holds true for all regions. The inter-regional migration rate is also higher than average for SODEC 1 (executives) in all parts of the country. Very low regional migration rates prevail with SODECs 4, 6 and 7 (unskilled labour, women with children and working youths living with their parents).

It is remarkable that while the West takes a prominent position in interregional migration where the absolute size plays a role, the rates are much less impressive if the size of the employed population is kept constant (compare Figures 5.6 and 5.7). In general, in the other parts of the country interregional migration is more important. This holds true especially for the ZIJP, where 15% of the working population in 1981 consisted of inmigrants. Regarding intraregional migration, it is notable that the pattern of rates by SODEC in each region is very similar (Figure 5.7B). Only in the ZIJP is intraregional migration virtually negligible. Differences between SODECs with regard to the net effects of gross in- and outmigrations are considerable. In the West, the balance is negative for all groups except SODECs 5 and 7, for which the balances are zero and strongly positive respectively. In the North and East, net outmigration of these same groups is substantial. The South appears only to export unattached persons in considerable quantities and here a moderate gain of women without children is found. In the Southwest, there is a relatively large gain of migrants in SODECs 5 and 7 although the absolute number involved is small. The ZIJP is attracting all groups and is clearly a zone of almost exclusive inmigration. Very few people are leaving the new polders to settle somewhere else.

5.9.3 Interregional commuting flows

Although the effects of interregional migration on the spatial redistribution of the population were only small in 1981, the effects of migration on commuting tend to accumulate over

time. As mentioned before, the net migration loss from the West in the past 25 years has been about 350 thousand persons. While the proportion of the population (and labour force) living in the West of the country has slowly declined, there have been no signs of spatial deconcentration of employment at this spatial scale. The percentage of the population of the West in total employment has been fluctuating around 50% since the 1970s. As a result, the difference between both fractions has increased (1974: 1.8%; 1983: 3.3%), and so has the commuting balance. Overall, 35% of the employed population was working outside its residential municipality in 1981. Since most commuters travel to work over short distances and not many of them are willing to commute for more than three quarters of an hour, it is not surprising that only 7.5% of all commuting was interregional and involved around 135 thousand persons. Most interregional commuting is 'cross-commuting', so the net flows and regional balances are rather small. The most important interregional flows are those between the West and the East and between the West and the South. The net inflow of commuters into the West comes largely from the South and East. The ZIJP also contributes substantially to the positive balance of commuters to the West. The West gains commuters in all SODECs whereas other parts of the country are characterized by negative balances in nearly all groups. The differences in the commuting patterns are largely caused by differences in commuting rates by SODEC. Interregional commuting rates are highest for SODEC 1 (executives) in all regions. The lowest commuting rates are experienced by SODEC 6 (women with children). The commuting rates for SODECs 2 (lower employees and self-employed) and 7 (unattached persons) are also generally low. One curious exception to the general trend is the net inflow of unskilled labour (SODEC 4) and working youths (SODEC 8) into the ZIJP.

5.10 Conclusion

Internal migration has decreased since the early 1970s in the Netherlands to reach a minimum in 1979. Since then, however, the migration rate has remained more or less stable. The amount of interregional migration by the labour force in 1981 was very small and reflects the situation at the nadir of the economic depression. This situation is comparable to that in the UK. Due to the generally long distances involved, interregional migration has been less important in a quantitative sense than intraregional movement involving suburbanization. Moreover, interregional migration has consisted of exchange-migration, with limited consequences for the regional redistribution of the aggregate population. The only net flow of importance in the last few years has been that from the West to the IJsselmeer Polders, but this was most clearly residential rather than employment-based and most former migrants to the ZIJP now commute to the West.

Despite the relative unimportance of net migration for the aggregate and employed population as a whole, interregional migration is substantially selective in terms of the socio-demographic and economic categories discerned in the labour force, with regard to both the level and direction of movement. SODECs 5 (women without children) and 7 (unattached persons) display high rates. The latter group is particularly attracted to the West, where employment for this category is concentrated. On the other hand, SODECs 4 (unskilled labour), 6 (women with children) and 8 (children living with parents) are characterized by very low interregional rates.

When controlling for the differences of population size per region, interesting variations in the role of interregional migration are observed. Interregional migration has had a relatively insignificant effect on the West, whereas inmigrants from other regions contributed substantially to the growth of population in the ZIJP. Conversely, intraregional migration is much more important in the West and hardly exists in the new province. The internal migration pattern by SODEC is, however, very similar in each region. Net migration losses from the West have amounted to about 350 thousand people over the last 25 years. There are no signs, however, of a spatial redistribution of employment at this scale. This has brought an increasing imbalance in the proportions living and working in the West in contrast to the rest of the country, and consequently to massive increases in commuter traffic to and from workplaces in the Randstad. There do exist important differences in the effects of employment shifts for the distinct SODECs. The resultant regional disequilibrium of residential and labour location has been much larger for SODEC 1 (staff and executives) than for SODEC 7 (unattached persons). The West continues to attract commuters in different SODECs from almost all areas although with differing intensity. The differences between these subgroups of the population in terms of their interregional migration patterns, their employment opportunities and their commuting characteristics are clearly connected to their position in the labour market.

6. RACISM AND INTERNATIONAL MIGRATION

Peter Jackson

6.1 Introduction

Castles and Kosack (1973) made a decisive break with the race relations paradigm that had, up to that time, dominated research in the field of labour migration. While most previous authors had adopted an immigrant-host society perspective, couched in terms of ethnic minority adaptation, integration and eventual assimilation, Castles and Kosack sketched out an alternative political economy approach that focussed on the place of labour migration within the changing international division of labour, successfully establishing a radical alternative to the broadly liberal consensus of the day. Some of the implications of their work can usefully be addressed in the context of an Anglo-Dutch comparison.

By their insistence on locating migrant labour within the class structure of the receiving society however, Castles and Kosack tended to downplay the effect of racism in structuring the opportunities available to particular migrant groups. They argued specifically that: '... the problems experienced by all immigrants to Europe and their impact upon society are very similar to those of coloured immigrants to Britain. If that is the case, race and racialism cannot be regarded as the determinants of immigrants' social position. Instead, we shall argue, the basic determinant is the function which immigrants have in the socio-economic structure' (p.2). Class was consistently prioritised over race in their analysis which argued that racial discrimination was functional to capital. The term 'race', as employed throughout this chapter, is defined as a social construction rather than a biological classification of the human population. Racism is the ideological process whereby certain groups are 'racialized' or regarded as biologically distinct and socially inferior. Moreover, in arguing that discrimination was a defensive mechanism employed by sections of the (white) working class to ward off the threat of competition, Castles and Kosack fell into the trap of assuming that racism is a peculiarly working class phenomenon. They failed to see that working class racism is just one variety of the racism that pervaded all sections of western society, taking different forms in different places and at different times.

More sustained attention to the question of racism is given in Castles (1984), although he still tends to treat race as a cipher for class, linking the growth of racism rather too directly and mechanistically to deepening economic crisis throughout Western Europe: 'In the boom period, immigrant workers were seen mainly in their economic role as providers of extra labour power; now the ideological role of a useful scapegoat for the crisis is becoming predominant' (pp.5-6). Only belatedly does he admit that the causes of increasing racism cannot be reduced to simple fears of unemployment. Racism is more subtle than that, as Sivanandan (1983) reminds us: 'Racism does not stay still; it changes shape, size, contours, purpose, function .. with changes in the economy, the social structure, the system and, above all, the challenges, the resistances to that system' (p. 2). Making the connection between racism and migrant labour requires an understanding of the racialization of different groups, in different countries, at different times. For, as Miles (1982) argues, 'racial categorization

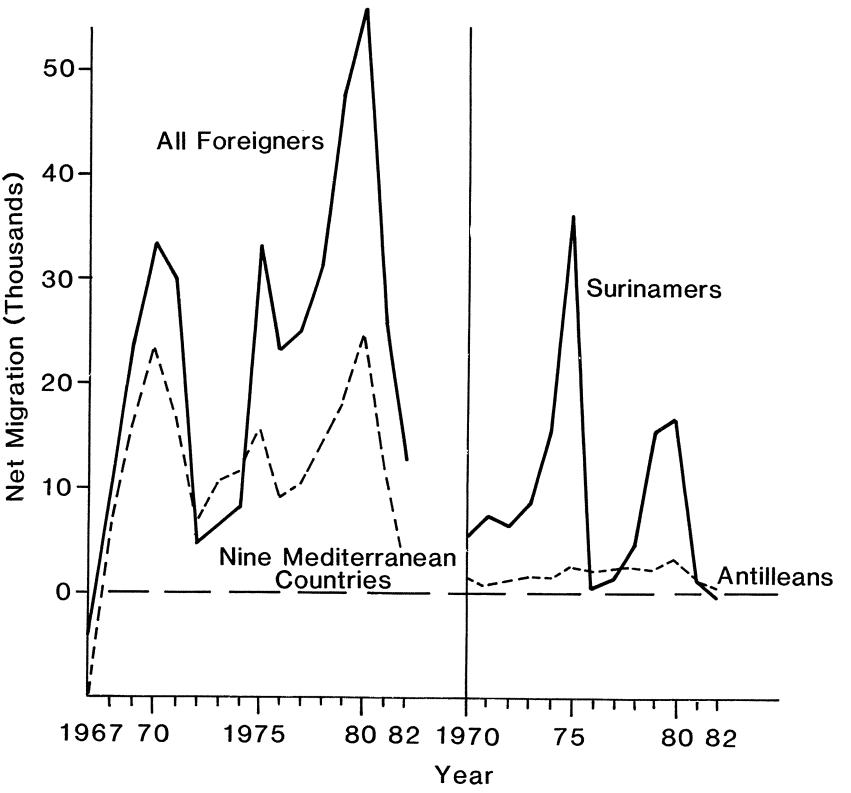
J. Stillwell and H.J. Scholten, Contemporary Research in Population Geography, 117–127.

has become a significant feature of not only political and ideological relations, but also economic relations' (p.94). It is this argument that the present chapter aims to illustrate and develop with comparative evidence first from the Netherlands and then from Britain (see also Cross and Entzinger, 1988).

6.2 Immigration to the Netherlands

The Netherlands has always maintained the official line that it is not a country of immigration despite the fact that foreigners now comprise some 4% of the total population (Van Amersfoort 1985). The majority of migrants are from former Dutch colonies in Indonesia, Surinam and the Netherlands Antilles in the Caribbean but there is also substantial labour migration from Europe (Figure 6.1). The most comprehensive study comparing the social position of the different immigrant groups within Dutch society is provided by Van Amersfoort (1982).

Figure 6.1 Annual net migration to the Netherlands, 1967 - 82



6.2.1 Immigration from Dutch colonies

The colonial migration includes some 250,000 repatriates from Indonesia who came to the Netherlands after 1949 following the creation of an independent Republic of Indonesia. They were immediately regarded as permanent settlers, given preferential treatment in the allocation of public housing and, as a result, integrated rapidly into Dutch society. The Netherlands' reputation as a plural society (Bagley 1973) derives in large measure from this time which was characterised economically by an expanding labour market.

The Surinamese population in the Netherlands, which now numbers around 200,000, is socially much more diverse, reflecting the ethnic diversity of the Surinamese themselves and their various phases of migration to The Netherlands. Recent research by Boissevain and Grotenbreg (1986) has shown how this cultural diversity is reflected in different styles of ethnic enterprise among the Surinamese in Amsterdam. The Surinamese migration began with the children of the colonial elite coming to the Netherlands for education. During the 1960s, the migration remained largely middle class until 1968 when working class migration from the capital, Paramaribo, reached levels of around 10,000 per year. Another strand was added to the migration at the time of Surinamese independence in 1975 when large numbers of the East Indian and Javanese population fled Surinam fearing the prospect of Creole-domination. Their arrival coincided with a period of economic recession and Surinamese unemployment in the Netherlands rose to 20%. Although the Surinamese migration together with that from the Dutch Antilles was stimulated to some extent by the recruitment campaigns of Dutch entrepreneurs, the migration was not closely linked to economic demand in the Netherlands. 'The very tragedy of the Surinamese migration .. is that it is not at all related to developments in the Dutch labour market' (Van Amersfoort 1985, p. 146). In the absence of adequate legal alternatives, an informal 'hustling' economy developed and the whole group became criminalized in the eyes of the Dutch. The Surinamese, for their part, now fiercely oppose the governments's policies of cultural assimilation and forced dispersal (Bovenkerk 1979).

The Moluccan migration has been even more problematic for the Dutch authorities. The migrants comprise a group of 12,500 soldiers and their families who were demobilized from the Royal Dutch colonial army in 1951. On arrival they were segregated into provincial barracks, isolated from Dutch society, and regarded as only temporary migrants pending their return to an independent Republic of the South Moluccas. As these political aspirations have been frustrated, the migrants and their children have reacted against their marginal economic and political status leading some of the Moluccans to undertake a series of terrorist acts throughout the Netherlands during the 1970s including occupations, political kidnapping and hijacks.

6.2.2 European immigrant labour

The Netherlands also has its own variation of the 'gastarbeiter' system with Mediterranean workers (particularly Turks and Moroccans) now forming some 3% of the total Dutch labour force. The Netherlands has signed bi-lateral agreements with an unusually large number of countries (Table 6.1). The system was intended to be responsive to labour demand with one-

Table 6.1 Mediterranean workers in the Netherlands in 1984, by nationality, sex and year of agreement

	Year of agreement	Male	Female	Total
Italy	1960	13,410	7,487	20,897
Spain	1961	12,755	8,838	21,593
Portugal	1963	4,415	3,432	7,847
Turkey	1964	85,910	69,370	155,280
Greece	1966	2,508	1,536	4,044
Morocco	1969	62,604	43,831	106,435
Yugoslavia	1970	6,969	5,700	12,669
Tunisia	1970	1,858	909	2,767
TOTAL		190,429	141,103	331,532

Sources: Bovenkerk (1979); VanAmersfoort (1985)

year contracts not renewed in periods of recession. However, as early as 1967 when unemployment first rose above 2%, employers continued to renew contracts even if immigration slowed down temporarily. It has since become clear that foreign workers fulfil a vital role in the Dutch economy doing jobs that native workers are unwilling to do even in times of high unemployment. They have become a structural necessity. While economic crisis may lead to a slowing down of the whole migration process, however, it does not seem to lead to a greater proportion of migrants going home (Van Amersfoort et al. 1984). Furthermore, while labour migration as such has been severely curtailed, the migration of dependants has continued.

6.3 Government response

The Dutch government has maintained a luke-warm attitude towards foreign labour. No coherent policy was formulated at the national level until 1979, most responsibility for their welfare being devolved to the municipal level, to private foundations and to the churches (see Bagley 1973). The government clung tenaciously to its 'no immigration' stance, debating the possibility of a 5,000-guilder repatriation premium. Their laissez-faire attitude provided an opportunity for the growth of fascist parties like the Nederlandse Volksunie who wish to rid the country of its 'foreign scum' (Bovenkerk 1979, p. 131). The extreme right-wing Centrum Partij has also made its opposition to immigration clearly known and their policies are gaining in popularity: '... even in more moderate circles political pressure is growing to support policies that encourage immigrants to go home. Ironically, this political pressure is mounting precisely at the time when the state's capacity to influence the migration process is almost exhausted' (Van Amersfoort et al. 1984, p. 265).

Following Frank Bovenkerk's work on racial discrimination in the Netherlands (Bovenkerk 1978), the myth of Dutch tolerance has been much harder to sustain. There is also evidence of discrimination against Moroccan workers (Shadid 1981). The Dutch authorities have therefore been forced to confront the reality of a growing, permanently settled immigrant population. Rather belatedly, the government commissioned a survey of the country's ethnic minorities (Penninx 1979). This report showed that there were some 387,000 foreigners in the Netherlands (including 130,000 Surinamese, 25,000 Antilleans, 32,000 Moluccans and 200,000 Mediterranean workers), plus a further 115,000 migrants from elsewhere in the European Community. More significantly, the report admitted that there was a growing gap between the government's assumptions about the temporary nature of the migration and the facts of permanent settlement. Foreign workers were distributed throughout virtually all branches of industry and in all regions of the Netherlands; the rate of return in successive cohorts was becoming progressively lower; they had become indispensable to the Dutch economy. The report also showed that these migrants were concentrated in the four largest cities (Rotterdam, Amsterdam, Utrecht and The Hague) and in the older residential districts within those cities. The pattern of residential segregation in Rotterdam has been described in detail by Drewe et al. (1975) and by Mik (1983). As in Britain, there seems to be some connection between segregation and the incidence of race-related civil unrest although the relationship is not clear-cut. In August 1972, for example, there were clashes between Dutch and Turkish workers in Rotterdam's Afrikaanderwijk which is an area of intense competition for jobs and housing but not the most segregated district in the city. Street riots have also occurred in Schiedam, Leiden and The Hague.

The rights of the different migrant groups vary with their legal status (Entzinger 1985). About half of the Moluccans, for example, are registered as statelesss persons and cannot therefore vote in Dutch elections or be conscripted into the Dutch armed forces. Several hundred are still living in temporary camps. The Surinamese, on the other hand, are afforded the full benefits of Dutch citizenship. The position of foreign workers from the Mediterranean is much more tenuous. According to the Aliens Act (1965): 'The foreign worker is not a citizen enjoying equal rights but an alien' (Penninx 1979, p. 131). Changes to the Work Permit Act in 1969 ruled out further spontaneous migration; family reunification is restricted by the migrants' need to prove a year's guaranteed employment, adequate housing approved by the municipality and a clean criminal record. Major changes may be expected in the next few years now that the Dutch government has accepted that many of its temporary migrants are 'here for good' (Castles 1984). But the economic situation does now bode well for a rapid liberalization of government policy towards migrant labour. The British case provides a useful comparison in this respect not least because the state intervened at an earlier stage than in the Netherlands, reflecting the earlier emergence in Britain of the current economic crisis (Miles 1986).

6.4 Immigration to Britain

Britain has a long history of immigration but it is the post-1945 migration from the former colonies of the New Commonwealth that has become the most politicised in recent years (Fryer 1984). In the public imagination, 'immigrant' is virtually synonymous with 'black', even though it is the Irish who are by far the largest overseas-born group in the U.K. (Table 6.2). The black population in Britain, including those of South Asian and Afro-Caribbean descent, is currently estimated to be about 2.2 million or less than 4% of the total population (Ballard 1983, Brown 1984). It is an estimate because the Census does not ask a direct question about race, ethnicity or colour. It restricts its questions to the more objective measure of those born abroad and includes a further question concerning persons usually resident in private households by birthplace of head of household, which is designed to include the second and third generation descendants of those born abroad (Table 6.3, which also shows how far the process of family reunification has already progressed).

Table 6.2 Country of birth of the overseas-born population in Great Britain and selected cities, 1981

	Great Britain		Greater London		West Midlands	
	No.	%	No.	%	No.	%
Caribbean	295,179	0.6	167,598	2.5	37,728	1.4
India	391,874	0.7	139,140	2.1	63,090	2.4
Pakistan	188,198	0.4	35,616	0.5	33,793	1.3
Bangladesh	48,517	0.1	22,102	0.3	5,915	0.2
Irish Republic	606,851	1.1	—	—	—	—

Source: 1981 Census

While Britain has tended to see itself as somewhat set apart from the system of labour migration that has been established elsewhere in Western Europe because Commonwealth citizenship gave immigrants the right of permanent residence in Britain, there are clear parallels that deserve wider recognition than they have so far received. The comparison with the Netherlands is particularly close as many Dutch immigrants also came from former colonies, and while Britain does not have bi-lateral agreements with labour-exporting countries as does the Netherlands, recent changes in British legislation have affected the rights of immigrants in such a way as to increase the similarities between their status and the current prospects of temporary migrant workers elsewhere in Western Europe. Castles (1984) identifies the following trends as characteristic of labour migration throughout Western Europe: (i) the phase of mass labour migration is over; (ii) the phase of family reunification is well under way; (iii) temporary migrants are becoming permanent settlers leading to the development of new ethnic minorities. Other common features throughout Western Europe include the growing militancy of migrant labour, the imposition of

Table 6.3 Population living in households with New Commonwealth and Pakistan-born head of household in Great Britain by place of birth and sex ratio, 1981

Birthplace of head of household	Population (in '000s)	% born in the UK	Females per 1,000 males
India	674	38.8	978
Pakistan	295	40.0	832
Bangladesh	65	26.2	614
West Indies	546	50.1	1,058
East Africa	181	26.9	972
Mediterranean	170	46.6	979
Far East	120	33.1	894
Other	156	37.0	948
TOTAL	2,207	40.6	956

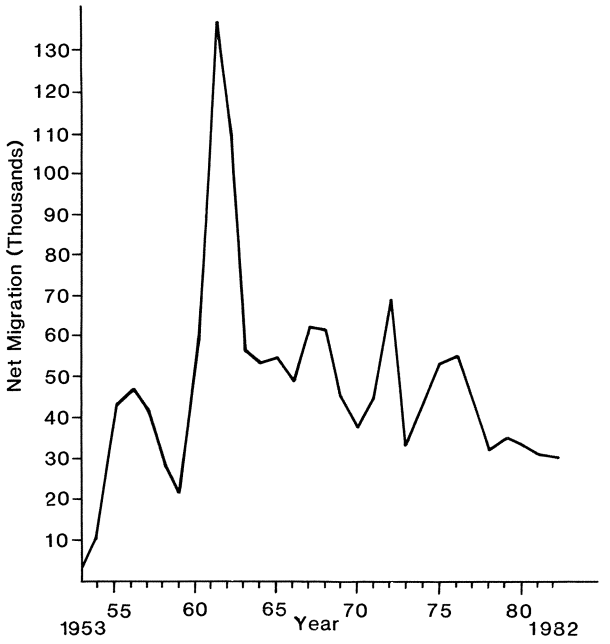
Source: 1981 Census and reproduced in Castles (1984, Table 4.14)

increasingly strict immigration controls, increased demands for the repatriation of foreign workers, and a growth of direct recruitment from Third World countries to replace migration from Southern Europe. Accompanying these changes, Castles also notes that racism is on the upsurge in all countries of immigration.

6.5 Immigration, government control and labour demand

Primary immigration from the New Commonwealth to Britain was at its most intense for a relatively brief period from 1945 until the 1962 when the first Commonwealth Immigrants Act came into force, severely limiting the number of entrants (Figure 6.2) by means of a three-tier employment voucher system. In 1965, the number was further restricted and Commonwealth immigration was reduced to just 8,500 per year including 1,000 places that were reserved for Maltese migrants. In 1968, another Act was rushed through Parliament, aimed at restricting the immigration of East African Asians, first from Kenya but later also from Uganda and Tanzania, despite their possession of UK citizenship. The 1971 Commonwealth Immigrant Act then introduced the concept of patriality (further refined in the British Nationality Act of 1981) which put New Commonwealth citizens on the same footing as workers from other overseas countries, limiting the right of abode in Britain to those with British passports born in the UK or whose parents had been born there. The concept of patriality also incidentally promotes the sexist assumption that the abode of the husband in marriage should normally be viewed as the natural place of residence of the family, thereby restricting the rights of husbands and male fiances to join their female partners in Britain. Under the new Nationality Act citizenship is no longer automatically gained by birth and residence in the UK.

Figure 6.2 Annual net migration from the new Commonwealth to Britain, 1953 - 82



Even before immigration restrictions were introduced, however, the level of immigration corresponded closely to the demands of the UK economy. As Peach (1968) has argued, the movement from the West Indies was very sensitively attuned to economic fluctuations in the rate of demand for labour in Britain. Subsequent analyses have shown that the relationship continues to hold up to the present and that a similar argument can also be made in respect of migration from the Asian sub-continent (Peach 1979, Robinson 1980). The close correlation of migration and economic demand operates in spatial as well as in temporal terms. Peach (1968), in fact, describes the West Indian population as a replacement population in areas that were unable to recruit sufficient domestic labour for the unskilled and semi-skilled jobs that remained vacant as the economy expanded in the post-war years. The settlement pattern of Afro-Caribbean (West Indian) and Asian groups has been described at length, revealing major concentrations at the regional and intra-urban level (Jones 1978, Peach 1982, Robinson 1986). Statistically, black people are over-represented in Greater London and the West Midlands (where 50% of black households are found compared with 20% of white households); and in the larger textile towns of Lancashire and Yorkshire. They are relatively under-represented in the coalfields and in the heavy industrial areas of Scotland, Wales, the North and North-West England. The black population is also an overwhelmingly urban one, with only 3% living in rural enumeration districts. Within the cities, the black population is concentrated in the poorest areas: 43% of Afro-Caribbeans and 23% of Asians live in inner city areas of London, Birmingham and Manchester, compared to 6% of the white population (Smith 1987).

In both temporal and spatial terms, therefore, Commonwealth immigration to Britain can be shown to have been an economically motivated migration. While there were no bi-lateral agreements between Britain and other nations as there were in the Netherlands, there was direct recruitment of labour from the countries of origin, both in the case of the National Health Service and London Transport who recruited in Barbados from the mid-1950s until October 1970 (Brooks 1975). Two further parallels merit attention: the first concerns the racialization of migrant labour in Britain; the second concerns the politicization of race and the growing pressure for some form of repatriation.

6.6 The racialization of migrant labour and the politicization of race

Following Miles (1982), we begin by recognising that neither the Jewish nor the Irish migrations of the nineteenth century (nor, more recently, the arrival of Vietnamese refugees) were defined as giving rise to a race relations problem in the same way as happened with the arrival of New Commonwealth migrants after 1945. This is not to say that these other groups were not racialized to some degree but to suggest that the racialization of New Commonwealth migrants was both more extensive and more overtly negative. This process of racialization cannot be understood simply in terms of skin colour as the Irish, for example, were also defined by phenotypical differences that were thought to be immutable. What needs to be explained, therefore, is why certain migrant groups' phenotypical features were accorded political and ideological significance when others were not (at least to the same extent). Of course, the New Commonwealth migrants did not arrive in a political and ideological vacuum. They were defined in legal terms as British citizens while simultaneously being defined in the context of three centuries of colonial exploitation. A reservoir of racist imagery already existed as part of the legacy of empire that was re-mobilised in the context of domestic politics. The racialization of labour served to obscure the role of New Commonwealth migrants within the capitalist mode of production by defining them as members of distinct races.

There is a growing literature on the politicization of race in Britain (Ben-Tovim and Gabriel 1979, Reeves 1983, Layton-Henry 1984, Miles and Phizacklea 1984). Collectively this work debunks the myth that Britain is a tolerant and fair-minded society that has always been welcoming to immigrants. In the words of one recent commentator: 'every major immigrant group since 1850 has been the target of some hostility and all sections of the receiving society have at times expressed opposition towards some immigrant group' (Holmes 1982, p. 13). The myth of racial tolerance has, however, been regularly mobilised by politicians of both major parties to justify a policy of 'firm but fair' immigration controls. The situation is little different elsewhere in Western Europe where individual governments are mounting an ideological and legal offensive against ethnic minority labour as part of their strategies of political crisis management (Castles 1984). While in Britain, social scientists were debating the possibility of segregation and the fear of ghettoization, right-wing politicians (like Enoch Powell) were remarking on the inevitability of conflict and the natural antipathies between different races. Powell's speeches led to his expulsion from the Tory party although he can now be seen to have articulated the unspoken fears of a significant number of people. His words had the effect of changing the quality of political debate about immigration, making racism respectable. He established a rhetoric that continues to resonate within contemporary

political discourse. Its tone can even be heard in the words of the Prime Minister herself: 'The British character has done so much for democracy, for law, and done so much throughout the world, that if there is a fear that it might be swamped, people are going to react and be rather hostile to those coming in' (quoted in Miles and Phizacklea 1984, p. 5). The implication of a flood of immigrants swamping British character is hardly justified by the facts which show that immigration from the New Commonwealth is now, with few exceptions, limited to family reunification. Margaret Thatcher's comments gloss over Britain's colonial history and legitimate the hostility of racist reaction. The situation is similar throughout Western Europe where labour-importing countries no longer need the services of their immigrant workers in a period of recession. The same sentiments, drawing on the same imagery, were expressed by Alfred Dregger in West Germany in 1982, warning of the consequences of Turkey's proposed Treaty of Association with the European Community 'If this wave breaks over us, then our welfare state, which is in any case seriously endangered through financial exhaustion, will also break .... the German Federal Republic must not become a country of immigration. Anyone who disregards this natural and justified feeling of our fellow citizens is preparing the way for the extreme right ... The question of a reasonable and humane rotation must be considered' (quoted in Castles 1984, pp. 207-8). As Dregger's reference to rotation suggests, it is but a short step to induced or enforced repatriation, already debated in Britain not just by extremist parties such as the National Front but also by groups such as the Tory Party's right-wing Monday Club. In these circles, it has been suggested, a new racism has been created from a sinister blending of nationalist politics and the pseudo-science of sociobiology (Barker 1981).

To understand these ideological shifts requires that we identify the material conditions in which they have emerged. The Centre for Contemporary Cultural Studies (1982) prefaced their study of race and racism in Britain in the 1970s with a discussion of the organic crisis of British capitalism. Whether or not one agrees with their analysis, it is not difficult to see how the racialization of migrant labour gathers momentum at times of economic crisis. Three specific examples are provided to substantiate this point. First, Robert Miles has shown how the Notting Hill and Nottingham riots of 1958 were formative events in the ideological construction of race relations as a political issue in Britain (Miles 1984). Following the economic boom of 1955-6 when migrants found jobs within days or weeks of arrival, the recession of 1957-8 led to much higher levels of unemployment among both blacks and whites. At the time, however, the riots were interpreted as a direct consequence of New Commonwealth migration rather than as a response to changing economic conditions. A second instance is provided by the mugging scare which occurred during the early 1970s. According to Hall et al. (1978), mugging was constructed as a specifically black crime by the self-appointed guardians of public morality, scapegoating black people for the problems that accompanied the onset of economic recession. Similar moral panics have occurred throughout British history as people expressed their respectable fears about successive outbreaks of hooliganism and popular protest (Pearson 1983). The most recent instance of this phenomenon (the urban riots of 1981 and 1985) provide our third example. Once again the racialization of politics involved the criminalization of black people. The Brixton riots, for example, were interpreted by Peregrine Worsthorne as evidence of a 'crisis of ethnic criminality that is not Britain's fault' (Sunday Telegraph November 25, 1985). Margaret Thatcher, for her part, rejected Lord Scarman's suggestion that the condition of the inner cities had created a 'predisposition towards violent protest' (Scarman 1981). In her

view, the riots were simply 'a spree of naked greed'(Daily Mirror July 10, 1981). Ideologically these events all served to weaken the position of black people in Britain and to legitimate racist attitudes and practices. While repatriation may seem an unlikely prospect even in the current recession there are many commentators who do not share this optimism. Hall (1981), for example, argues that what has been taking place in recent British politics amounts to a retrospective enforcement of migrant status on a settled black population, while Sivanandan (1978) describes the same period in terms of a shift from immigration controls to induced repatriation. He likens British immigration policy after the 1971 Act to a system of contract labour on the lines of the European gastarbeiter. Indeed it may be suggested that policies of surveillance, 'fishing raids' by immigration officers, the selective operation of the 'sus' law and police reluctance to protect black people from racist attacks differ little in practice from a policy of induced repatriation.

6.7 Conclusion

Writing less than ten years ago, Piore (1979) reflected on the expectations of both sending and receiving countries that labour migration in Europe was purely a temporary phenomenon. Piore dwelt on the false assumptions that derived from such a perspective: ' In the sending country the migration was supposed to relieve population pressure and overcome rural unemployment, to generate scarce foreign exchange, and to develop the skills requisite for an industrial labor force. In the receiving country, migrants were supposed to complement native labor, taking jobs that the latter did not want and in this way overcome critical labor shortages. Over time, however, the migration process has been the source of an increasing number of problems and a focal point of clashes between native and foreign populations' (Piore 1979, p.1). This chapter has to argue that the incidence of such clashes is not random or capricious but that the pattern is explicable in terms of a theory that recognises the links between racism and migrant labour. The starting point for such an analysis of the political and ideological conflicts over race should be a political economy of labour migration. Adopting the distinction employed by Miles (1986), one might hypothesize that contract labour will be closely tied to the cyclical demands of capitalist production while colonial migration will continue in the absence of a close correlation between supply and demand. However, as the British and Dutch cases suggest, the role of the state is crucial in defining and redefining the legal position of migrant workers and in deciding to what extent it is prepared to continue supporting the costs of reproducing a section of the labour force that is no longer serving a useful productive purpose. Racism can thus be seen as an ideology that serves to legitimate the adverse treatment of certain racialized sections of migrant labour. This is not to suggest that the political and ideological dimensions of this process can simply be read off from the economic. It is worth recalling Sivanandan's dictum (1982), in conclusion, therefore, that while racism is determined economically it is defined (and experienced) culturally.

7. MIGRATION OF THE ELDERLY

Dick Vergoossen and Tony Warnes

7.1 Introduction

All countries in the western world are experiencing the long-term ageing of their populations. Several social changes arise from interactions between these age-structure adjustments and diverse socio-economic trends, such as rising affluence, rising material wealth and 'life-style' expectations, and a longer and better-resourced period of retirement. Each western nation presents distinctive demographic and sociological trends related to their own population histories and cultural traditions. It is particulary interesting to compare the United Kingdom and the Netherlands, because although in some respects the similarities are striking, as with their political systems and constitutions, social welfare legislation and levels of economic development, in other ways strong differences have affected the social forms associated with ageing. With reference to the migration patterns of late middle-aged and elderly people, not least important are the different sizes, physiographies and settlement geographies of the two countries. Britain has larger cities and probably a greater range and intensity of urban problems and characteristics, such as high property prices, which tend to repel the affluent retiree. It also has greater diversity in its rural and coastal landscapes, some of which have become preferred regions for retirement. On the other hand, the Netherlands is more closely integrated economically and socially with its neighbouring European nations. Although data on international mobility is scarce, it does seem likely that Dutch elderly people are more likely to undertake international migrations than their British counterparts. Cultural differences are also important. Since the Second World War, the Netherlands has shared with the Republic of Ireland exceptionally high fertility for northern Europe. This has delayed the progress of demographic ageing, in comparison to Britain, and increased the demographic and sociopolitical impact of the recent strong decline in fertility and the resulting acceleration of ageing.

In Great Britain during the second half of the nineteenth century, the proportion of the population of pensionable age (60+ for males and 65+ for females) remained around 6.1% even though the absolute number was increasing by 11 to 14% each decade. After the first decade of the twentieth century, the growth of the absolute and the relative pensionable population increased and reached their highest rates during 1921 to 1951. The annual rate of increase of the pensionable population was 2.5% during the 1920s and it remained at an average value of 2.2% until 1951. The pensionable population increased by 2.4 million from 1931 to 1951, and by 1951, 13.6% of the population was of pensionable age. Since then, the growth in the absolute share has slowed although, until the 1970s, the absolute annual increase was substantial. During the 1980s, the ageing of the population has paused, although there will be a resurgence during the first decades of the next century, when the high birth cohorts of the 1945-70 period reach retirement. Only if there are further substantial falls in fertility and late age mortality will the share of the population that is elderly increase substantially (Craig 1983, Warnes 1988). In the Netherlands, those aged 60 or more years achieved 15% of the total population for the first time in 1980, and, according to the most

J. Stillwell and H.J. Scholten, Contemporary Research in Population Geography, 129–143.

recent forecasts, this share will increase to 19% in the year 2000 and to almost one quarter of the total population by 2010.

This chapter is an attempt to compare various features of migration by persons of late-working and retirement ages in Great Britain and the Netherlands. The principal sources for the Netherlands have been the migration data from the Central Bureau of Statistics and a number of reports of both census and survey data analyses (Gores and Vergoossen 1986, Vergoossen 1983a; 1983b, Vergoossen and Willekens 1988). Several sources of comparable information for migration in Britain are available, including the decennial censuses and the Office of Population Censuses and Surveys' Longitudinal Study, which has been extensively analysed by Grundy (1987a; 1987b). From these and from recent conference papers, a straightforward but selective sequence of topics for comparisons has been chosen (Rees 1987, Rees and Warnes 1986, Warnes 1986; 1987, Warnes and Law 1985).

7.2 Migration rates by age

Studies of the migration of retired or elderly people have proliferated in Europe, North America and Australia during the 1980s (for reviews and bibliographies see Cribier 1984, Golant 1984, Rowles 1986). The most analytical demographic approaches have been fostered within an international collaborative project coordinated by Andrei Rogers: several papers presented at its meetings during 1986 in Nijmegen and Colorado are cited here (Rogers and Serow 1988). Direct behavioural studies of the motivations and social consequences of these migrations have been more diverse but of great value in moving towards a well-founded typology of late-age migration (Davies and Davies 1983, Kych 1986, Law and Warnes 1980, Vergoossen 1983a).

As has been confirmed by recent studies from Belgium, Great Britain and the United States, the late age profile of the propensity to migrate has commonly the following features (Bartiaux 1986; 1988, Grundy 1987b, Rogers and Castro 1981). There is a peak of migration propensity around the modal age of retirement from full-time gainful employment. This is particularly characteristic of middle and upper income groups (or of owner-occupiers in Britain), of large-city populations, and of relatively long-distance migrations to environmentally attractive and well-serviced semi-rural regions. The peak age of migration has been 65 years or slightly earlier for men in both Britain and North America. For women a less pronounced peak around 60 to 62 years has been evident. This retirement peak of migration is not evident among relatively poor groups, as among blacks in the United States, nor is it a strong feature of very short distance, housing adjustment moves. In countries where the patterns of migration are dominated by these local moves and where there are few favoured destinations specifically for retirement, as in the Netherlands or Belgium, the retirement peak is relatively weak.

The propensity to migrate (and even more the number of migrations in any period) declines with age beyond the mid-sixties. Recent research is providing increasingly strong evidence however of a final rise in the migration propensity in extreme old age, say from the mid-seventies years of age (Drewe and Roosenboom 1983, Poulain 1986). This may be tentatively associated with the high incidence and prevalence of widowhood among women

of these ages, and with the strong correlation that exists among very elderly people between their age and frailty, mental and physical disorders and the need for instrumental support. It is believed that those who survive into their seventies and beyond are increasingly likely to move in order to live either near or with friends and relatives or into specialised or institutional accommodation. Continuous registration data from the Netherlands, Belgium and the OPCS Longitudinal Study (which is linking census and death registration records) shows that for at least some institutional destinations, the expectation of life after the migration is very short indeed. The majority of these migrations would therefore rarely be traced by a census. Nonetheless, the rising propensities to move in extreme old age are a feature of several of the census data sets which are reported here.

There are both intrinsic and applied points of interest in late-age migration behaviour and patterns. They are a large category of the moves not primarily associated with employment motivations. They have distinctive spatial redistributive effects and important practical implications for health and social service planning. As redundancy, employment disability from sickness and individual preferences are all leading towards earlier retirement, and therefore to an earlier age at which the residential adjustments for retirement are made, it is unhelpful to define inflexibly the elderly population as those aged more than 60 or 65 years. Because these are approximately the modal ages for one of the distinctive categories of migration in later life, and to allow for the future spread of earlier and more flexible retirment, if a division is made at all, it is sensible to study the migrations of all those aged 50 years or more.

7.3 Levels and trends in later age migration

Comparisons are first made between all inter-municipal migrations in the Netherlands during the calendar years 1973 and 1983 and all migrations in Great Britain during the one-year intervals before the 1971 and 1981 censuses. In the Netherlands, little over 2% of the population aged 50 or more years migrated in 1973 and ten years later the propensity to migrate had fallen by approximately a quarter. A small part of this decrease must be attributed to the reduction in the number of municipalities from 865 in 1973 to 774 in 1983, for some moves which would previously have crossed a municipal boundary would have occurred within a single authority in 1983. However, other factors have been important, such as the economic recession which has caused a slump in house building and a physical planning policy which has attempted to slow down migration away from urban areas. In Great Britain during 1970-71, the measured rate of migration among the same age group was roughly 5.5% and ten years later it also had fallen by approximately one quarter (Table 7.1). The age profiles changed markedly in the Netherlands from a U shaped profile after age 50 years for both males and females in 1973 to an inverse U for males in 1983. Features common to the British and the Dutch data are the higher migration propensity of males than females aged 65-69 years, and the higher female migration propensity among older persons. The positive differential in the female migration rate among the oldest age group is a pronounced feature.

Turning to inter-provincial migrations in the Netherlands and to inter-county migrations in Great Britain (inter-regional migrations in Scotland), many points of similarity are found,

Table 7.1 Migration rates per 10,000 population by age and sex, the Netherlands, 1973 and 1983; and Great Britain, 1970-71 and 1980-81

	The Netherlands				Great Britain			
Age	1973		1983		1970-71		1980-81	
	m	fm	m	fm	m	fm	m	fm
50-54	218	209	164	153	620	588	442	414
55-59	189	190	159	157	530	542	389	401
60-64	184	198	177	167	499	570	394	439
65-69	224	213	173	157	580	548	438	425
70+	237	266	166	187	513	572	425	479

Sources: Netherlands Central Bureau of Statistics as presented by Vergoossen and Willekens (1988); OPCS (1975; 1983a)

particularly among persons aged 60 or more years (Table 7.2). Approximately 40% of all recorded migrations in the Netherlands are inter-provincial, compared to little more than one-fifth of census-recorded British migrations being between counties. The relative prevalence of the longer distance migrations has slightly increased over the decade in the Netherlands but altered little in Great Britain. By the early 1980s, approximately 1% of the elderly population of Great Britain moved between counties in the year, while in the Netherlands the inter-provincial rate of migration was approximately 0.7%. In contrast to all or to shorter distance migrations in both countries, the peak propensities and shares for inter-county or province migration were among people in their sixties.

Table 7.2 Migration rates per 10,000 population by age: inter-provincial moves in the Netherlands, 1973 and 1983; inter-county moves in Great Britain, 1970-71 and 1980-81

Age Group	Inter-province		Within province	Inter-county		Within county
	rate	%(i)		rate	%(i)	
The Netherlands		1973			1983	
50-59	69	34.2	134	61	38.5	97
60-69	90	44.0	115	75	44.6	93
70+	88	34.8	166	60	33.3	119
Great Britain		1970-71			1980-81	
50-59	134	23.6	435	96	23.3	315
60-69	141	25.8	407	108	25.4	316
70+	119	21.6	433	90	19.6	370

Notes:
(i) Inter province/county migrations as a percentage of total
(ii) Sources: As for Table 7.1

These data confirm widely established features of elderly migration. While the mobility of the older population is considerably less than that of young adults, their moves represent a substantial proportion of all migration. In Great Britain in 1970-71, the 933,660 migrations by persons aged 50+ years formed 15.9% of all moves undertaken by persons aged one year or more in 1974 and 21.4% of those undertaken by people aged 17 or more years. The 222,130 inter-county migrations by persons aged 50+ years formed 14.4% of all inter-county migrations and 19.0% of those by people aged 17+ years. In the Netherlands, the 72,938 migrations during 1973 by those aged 50 or more years represented 10.2% of the total, and the 20,409 inter-provincial migrations formed 10.9% of those made by the all-age population. As has been found in several other western nations, there is a peak of relatively long distance moves in early retirement. In the United States, where a greater range of migration distances are consistently recorded, the longer the distance of migrations the more prominent is the retirement-age peak (Warnes 1983). On the other hand, the rate, if not the absolute number of short-distance migrations, increases in extreme old age although the data reported here cannot confirm that for people in their eighties it exceeds the rate of moves by young elderly people.

7.4 Marital status and migration rates

Further insights into both the controls upon migration in later life and their consequences can be gained from an analysis of migration rates by the marital status and household situation of the older population. In both countries, single, widowed and divorced (SWD) persons have higher migration propensities than married persons. Widowed elderly people are more likely to migrate than married or single persons and divorced individuals have even higher rates. In Great Britain in 1981, 58% of the 60+ years population were married and 31% widowed (the comparable figure for the Netherlands in 1983 being 60% and 28%) (Table 7.3). A surprising 10% (8.4% in 1983) were single, although this proportion has fallen in the previous decade, in the Netherlands from 9.5%. In 1971 in Great Britain only about 1% of the population aged 50 or more years were divorced, but this marital status has rapidly become more prevalent, and by 1981, 4% of those aged 50-59 and 2% of older people were divorced. The number of divorced persons aged 60+ years increased during the decade by 137% to 223,991 with males increasing more rapidly (154%) than females (128%). Strikingly similar trends have been evident in the Netherlands: in 1973 about 2% of the population aged 50+ were divorced but by 1983 the figures were 4.7% of those aged 50-59 years and 3.2% of those aged 60+ years: the number of divorced persons aged 60+ increased by 107% during the decade with males increasing faster (129.7%) than females (96.1%).

The marital status distribution of the elderly population changes sharply from the young to the oldest elderly age groups. Among the Great Britain population aged 60-64 years in 1981, three-quarters were married and 13.6% widowed (in the Netherlands in 1983, 77% were married and 12.5% widowed). These proportions are almost reversed by the early nineties, with three-quarters of the age group widowed and 9.8% married (70% of the 85% years population widowed and 18% married). Widows predominate among people from the age of 70 years in Britain and from the late seventies in the Netherlands. These swings reflect the higher life expectancy of females, the tendency for men to marry women who on average are

two to three years younger, the declining rate of non-marriage through the early decades of this century and, possibly, the higher late age-specific death rates of widowed and divorced persons.

Table 7.3 The elderly population by marital status, Great Britain 1971 and 1981; and the Netherlands, 1973 and 1983

Ages	Population(m)		% Single		% Married		% Widowed		% Divorced	
Great Britain										
Age group	1971	1981	1971	1981	1971	1981	1971	1981	1971	1981
50-54	3.193	3.075	8.8	8.1	84.2	82.9	5.2	4.6	1.8	4.4
55-59	3.282	3.167	9.3	8.3	80.2	79.9	9.0	8.2	1.6	3.6
60-64	3.134	2.784	10.2	8.3	73.9	75.2	14.5	13.6	1.3	3.1
65-69	2.647	2.667	11.3	9.0	64.8	67.2	22.9	28.3	1.1	2.5
70-74	1.957	2.265	11.7	10.1	52.3	38.7	25.1	31.4	0.7	1.9
75-79	1.301	1.601	12.5	11.6	39.4	43.0	47.7	44.1	0.5	1.3
80-84	0.772	0.900	13.2	12.3	26.6	28.1	59.9	58.7	0.3	0.9
85-89	0.342	0.393	13.8	13.5	16.1	16.8	69.9	69.2	0.2	0.6
90-94	0.100	0.129	14.8	14.2	9.6	9.8	75.5	75.6	0.1	0.5
95+	0.020	0.031	16.0	16.3	8.3	7.4	75.6	75.6	0.2	0.7
75+	2.536	3.053	13.0	12.2	30.9	33.5	55.7	53.3	0.4	1.0
The Netherlands										
	1973	1983	1973	1983	1973	1983	1973	1983	1973	1983
50-54	0.698	0.751	7.2	7.0	86.0	84.0	4.5	4.1	2.2	4.9
55-59	0.629	0.707	7.9	7.0	82.1	81.2	7.7	7.4	2.3	4.4
60-64	0.580	0.641	8.8	6.9	76.4	76.9	12.6	12.3	2.2	3.9
65-69	0.499	0.544	9.5	7.7	69.0	69.3	19.5	19.4	2.0	3.6
70-74	0.386	0.458	9.7	8.8	59.2	59.1	29.3	29.0	1.8	3.1
75-79	0.270	0.341	9.6	9.7	47.0	46.8	41.8	40.9	1.6	2.6
80-84	0.153	0.209	10.2	10.0	33.6	33.1	55.0	54.6	1.2	2.2
85+	0.087	0.136	11.1	10.1	17.1	18.1	71.5	69.8	0.3	2.0

Sources: OPCS(1974, Table 9; 1983b, Table 1); CBS data

The marital status and age-specific migration rates for the two countries reflect the contrasts which have already been noted in the overall reported rates for the roughly equivalent years (Table 7.4). It is of interest however to note the relatively high migration rates for divorced persons, reaching 11.9% for those aged 50-54 years in 1970-71 in Great Britain. Among widowed persons in the Netherlands, there is a higher rate of overall migration in the most elderly (70+) age category than in the younger age group, and the phenomenon is reflected in Great Britain among those older than 75 years. The ratios of the various marital status-specific rates of migration to the overall rates are remarkably similar in the Netherlands and in Great Britain (Table 7.5). Divorced persons are more than twice as likely to migrate as married persons, who are consistently the least mobile marital status group. The differential

Table 7.4 Migration rates (%) by marital status and age, the Netherlands, 1973 and 1983; and Great Britain, 1970-71 and 1980-81

Age Group	The Netherlands				Great Britain			
	Single	Mrrd	Wdwd	Dvrd	Single	Mrrd	Wdwd	Dvrd
			1973				1970-71	
50-54	3.20	1.93	2.58	5.42	6.73	5.77	7.36	11.91
55-59	2.86	1.69	2.33	4.44	5.86	5.03	7.12	9.34
60-64	2.64	1.72	2.15	4.13	5.75	4.92	7.02	9.58
65-69	2.99	1.91	2.48	4.42	5.52	5.21	6.69	8.70
70-74					5.10	4.23	6.19	8.13
70+/75+	2.85	1.99	3.05	4.65	4.71	3.86	6.19	5.73
			1983				1980-81	
50-54	1.96	1.28	2.46	5.07	4.95	3.87	5.49	9.67
55-59	1.91	1.34	2.08	4.40	4.57	3.56	5.20	8.25
60-64	2.04	1.55	1.92	3.67	4.57	3.77	5.38	7.68
65-69	2.22	1.43	1.81	3.66	4.26	3.97	5.11	6.69
70-74					3.93	3.37	4.91	6.09
70+/75+	2.07	1.42	2.06	2.91	4.96	3.36	5.87	5.92

Table 7.5 Migration rates (%) by marital status and age as a ratio of rates for the general population, the Netherlands and Great Britain

Age Group	The Netherlands				Great Britain			
	Single	Mrrd	Wdwd	Dvrd	Single	Mrrd	Wdwd	Dvrd
			1973				1970-71	
50-54	1.50	0.91	1.21	2.54	1.12	0.96	1.22	1.97
55-59	1.25	0.89	1.23	2.34	1.09	0.94	1.33	1.74
60-64	1.38	0.90	1.13	2.96	1.07	0.92	1.31	1.78
65-69	1.37	0.88	1.13	2.02	0.98	0.93	1.19	1.55
70-74					1.01	0.84	1.23	1.61
70+/75+	1.12	0.78	1.20	1.83	0.80	0.66	1.17	0.97
			1983				1980-81	
50-54	1.26	0.81	1.56	3.21	1.16	0.90	1.28	2.26
55-59	1.21	0.85	1.32	2.78	1.16	0.90	1.32	2.09
60-64	1.19	0.90	1.12	2.13	1.10	0.90	1.29	1.84
64-69	1.35	0.87	1.10	2.23	0.99	0.92	1.19	1.55
70-74					0.99	0.85	1.24	1.54
70+/75+	1.16	0.79	1.15	1.62	1.01	0.68	1.19	1.20

for divorced persons is highest for those in their early fifties and declines towards the oldest age group. Widowed persons are approximately 20% more migratory than the total population in the Netherlands and 25% more migratory in Great Britain but, a point of difference, while they are more likely to move than single persons in Great Britain, the opposite is true in the Netherlands. Among the oldest (70+) age group, there is a noticeable increase in both countries in the migration rate of widows relative to married persons. In the Netherlands the marital status-specific migration rates reflect the falling level of mobility from 1973 to 1983, but widowed and particularly divorced persons in their fifties showed very modest falls against the general trend.

Table 7.6 Intra-county district and intra-county migration rates (%) by age and marital status, Great Britain, 1970-71 and 1980-81

	Inter-County Migrations				Intra-County District Migrations			
Age group	Rates 1970-1	1980-1	Ratio to married rate		Rates 1970-1	1980-1	Ratio to married rate	
Single persons								
50-54	1.46	1.03	1.04	1.11	4.01	3.26	1.15	1.33
55-59	1.20	0.95	1.00	1.07	3.74	3.09	1.11	1.37
60-64	1.40	1.04	1.06	0.97	3.49	3.05	1.16	1.31
65-69	1.17	0.84	0.76	0.76	3.57	3.00	1.15	1.21
70-74	1.06	0.66	1.02	0.87	3.35	2.88	1.21	1.26
75+	0.82	0.78	0.96	1.13	3.17	3.54	1.23	1.52
Married persons								
50-54	1.41	0.93	(0.98)	(0.95)	3.48	2.46	(0.95)	(0.89)
55-59	1.20	0.89	(0.97)	(0.96)	3.13	2.26	(0.93)	(0.88)
60-64	1.32	1.07	(0.97)	(0.98)	3.00	2.32	(0.90)	(0.87)
65-69	1.54	1.10	(1.05)	(1.03)	3.10	2.48	(0.89)	(0.88)
70-74	1.04	0.76	(0.91)	(0.93)	2.74	2.29	(0.82)	(0.82)
75+	0.85	0.69	(0.69)	(0.74)	2.58	2.34	(0.68)	(0.69)
Widowed persons								
50-54	1.41	1.05	1.00	1.13	4.94	3.87	1.42	1.57
55-59	1.42	1.04	1.18	1.17	4.77	3.62	1.52	1.60
60-64	1.49	1.12	1.13	1.05	4.61	3.73	1.54	1.61
65-69	1.41	1.03	0.92	0.94	4.44	3.60	1.43	1.45
70-74	1.31	0.95	1.26	1.25	4.17	3.47	1.52	1.52
75+	1.48	1.11	1.74	1.61	4.42	4.03	1.71	1.72
Divorced persons								
50-54	2.58	1.81	1.83	2.66	7.43	6.54	2.14	2.66
55-59	2.11	1.56	1.76	1.75	6.01	5.68	1.92	2.51
60-64	2.21	1.54	1.67	1.44	6.04	5.24	2.01	2.26
65-63	2.12	1.35	1.38	1.23	5.32	4.73	1.72	1.91
70-74	1.77	1.32	1.70	1.74	4.95	4.16	1.81	1.82
75+	1.08	1.24	1.27	1.80	3.89	4.02	1.51	1.72

Note: Figures in parentheses are the ratios of the married persons' rate to the rate for the total population (elsewhere the ratio is to married persons' rate)

This analysis can be extended in Great Britain to examine different distance-types of migration: intra-county district, inter-county (Table 7.6) and inter-region. Among married persons migrating relatively long distances, for those in their early sixties, the female rate is higher than that of males, but married males in their mid-sixties, have a higher rate than married females. Among married persons, the peak late-age migration rates are in the early sixties for females and the late sixties for males (Warnes and Rees 1986, Table 3). This pattern is pronounced for the inter-county migrations and there is a sharp falling away of the rate for both males and females after the age of 70 years. It is clear that among the very old population, married persons do not share in the rising propensity to migrate and are unusually immobile for their age. Among SWD persons moving relatively short distances, the principal gender difference is the higher mobility of males after age 75 years (Rees and Warnes 1986, Table 5). Widows tend to be more migratory than widowers up to the age of 65 years, but less migratory thereafter, although both sexes have their peak elderly migration rate in the 75+ years category.

Table 7.7 Net inter-municipal migration rates (%) by age and population size categoryof municipalities, the Netherlands,1973 and 1983

Age group	Population size (thousands) of municipalities						
	<5	5-9.9	10-19.9	20-49.9	50-99.9	100-199.9	>200
	1973						
50-54	1.18	1.08	0.93	0.82	-0.27	-0.74	-2.00
55-59	0.78	0.89	0.89	0.93	-0.22	-0.53	-1.76
60-64	0.40	0.88	0.92	1.16	-0.06	-0.47	-1.86
65-69	-0.05	0.61	0.94	1.58	-0.11	-0.36	-1.91
70-74	-0.62	0.43	1.12	1.72	-0.10	-0.60	-1.67
75-79	-0.82	0.86	1.00	2.00	0.21	-0.89	-1.92
80+	-1.61	1.01	1.02	2.01	0.73	-0.78	-2.24
	1983						
50-54	0.84	-0.03	0.22	0.11	0.30	-0.08	-1.10
55-59	0.96	0.19	0.29	0.25	0.53	-0.37	-1.44
60-64	0.74	0.20	0.40	0.53	0.65	-0.26	-1.91
65-69	0.10	0.07	0.22	0.59	0.83	-0.15	-1.61
70-74	-0.05	-0.07	0.16	0.62	0.60	-0.04	-1.27
75-79	-0.36	0.28	0.12	0.65	0.59	-0.10	-1.21
80+	-0.94	0.50	0.42	0.81	0.53	0.10	-1.64

7.5 Net migration and settlement size and type

For the Netherlands it has been possible to analyse net inter-municipal migration rates by a seven-fold classification of the municipalities' population size. The most populous group consists of the four largest cities of Amsterdam, Rotterdam, The Hague and Utrecht. This shows among those aged 50-54 years a monotonic gradient from high net gains to the smallest municipalities to high net losses from the four largest cities (Table 7.7). With older

age groups, however, the smallest municipalities which are largely comprised of the least-well serviced rural areas lose attractiveness and sustain net losses of population by migration. The largest cities do not gain in attractiveness among the older age groups: it is the municipalities with from 20,000 to 49,999 people that become markedly more attractive. Those municipalities in adjacent size categories share in this effect. The gross patterns are preserved from 1973 to 1983 although the general decrease in mobility, which is associated with a decline in new housing opportunities in suburban growth areas and with a reduction in urban decentralisation, has resulted in a reduction in the rate of elderly population redistribution. This is most clearly seen among the municipalities with between 50 and 100 thousand people, where the predominant net losses in 1973 were converted by 1983 to net gains among all age groups. The figures vividly demonstrate the different evaluations which are made by different age groups of elderly people of the 'remote' rural areas: their attractiveness among people in their fifties, doubtless dominated by married couples, converts into repulsion for people in their seventies and older, who are inevitably dominated by widowed persons.

Table 7.8 Ratio of in-migration to out-migration flows by age group, United Kingdom, 1980-81, females

Region	Net inflows	Age group 50-54	55-59	60-64	65-69	70-74	75+
Non-metropolitan regions							
East Anglia	17	202	227	301	209	175	154
Outer South East	14	154	204	231	186	140	118
South West	17	199	229	230	174	134	141
Wales	17	160	182	205	137	110	90
Scotland Remainder	13	138	153	198	151	137	131
East Midlands	11	124	146	144	152	143	145
West Midlands Remdr	10	129	133	144	165	159	160
North Remainder	13	116	135	141	122	105	111
Yorks & Humb Remdr	11	130	154	128	136	85	104
North West Remainder	9	126	140	125	112	120	108
Metropolitan regions							
Outer Metropol Area	5	91	79	78	99	129	139
South Yorkshire	8	82	58	77	83	68	59
West Yorkshire	8	65	66	75	75	91	83
Tyne & Wear	7	63	61	68	82	98	60
Merseyside	4	51	51	53	60	63	69
Grt Manchester	4	52	41	52	58	59	72
Northern Ireland	0	89	51	44	44	74	47
W Midlands Core	3	38	36	35	41	62	61
Central Clydeside	3	48	41	31	41	50	56
Greater London	2	42	25	17	24	32	41

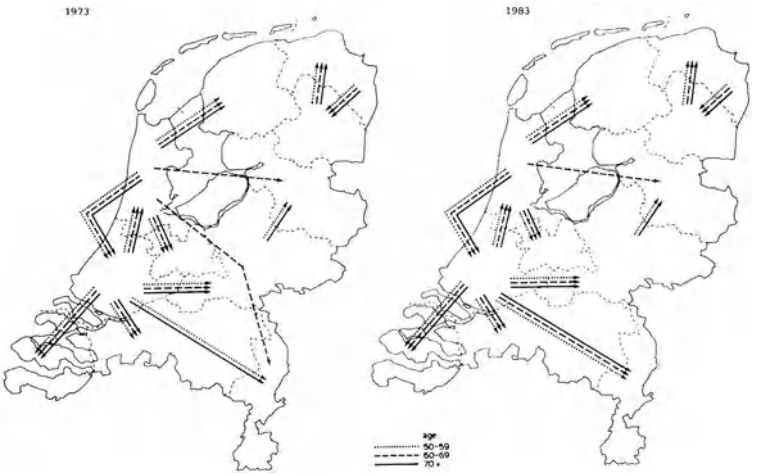
Notes:
(i) Net inflows = internal and external inflows (hundreds) in 60-64 age group
(ii) The regions have been defined to be approximately equal in population; they are here ranked by the ratio for the 60-64 years age group and therefore by an index of their attractiveness for retirement-peak age migrations
(iii) Source: Rees and Warnes (1986, Tables 12 and 13)

A comparable analysis is not to hand for Great Britain but Philip Rees had calculated net in- and out-migration rates for twenty regions of the United Kingdom which can be arranged in a non-metropolitan - metropolitan region typology (Rees and Warnes 1986). Greater London has by far the most substantial absolute and relative net losses among all elderly age groups with a massive peak among males in their late sixties and females in their early sixties (Table 7.8). Central Clydeside (=Glasgow) and the West Midlands Metropolitan Core (=Birmingham and neighbouring industrial towns) also have exceptional net losses, but all defined metropolitan regions with one exception exhibit the same phenomenon. The exception is the Outer Metropolitan Area, which comprises an annulus of growing suburbs and 'Home Counties' towns approximately 15 to 40 km around London. This ring has net losses of population by migration in the younger elderly age groups and peak losses around the retirement ages, but has strong net inflows of people aged 70 years or more. Some of the non-metropolitan regions show converse features, particularly Wales with strong retirement-age inflows but net losses of persons aged 75 or more years, and the South West and East Anglia, where exceptional net gains occur among persons in their sixties.

7.6 The geography of late age migration

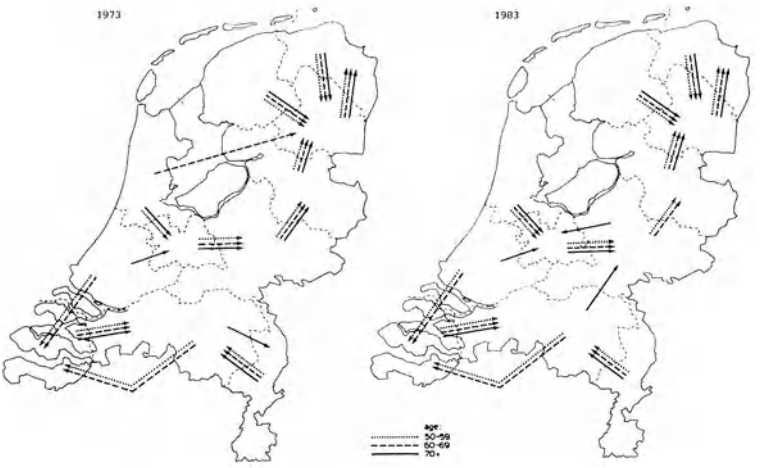
Many similarities have been shown in the aspatial characteristics of late age migrations in the two countries, particularly with respect to the age, sex and marital status distributions of migration propensities. In this section, the geographical patterns of the flows are examined and, apart from the shared phenomenon of the dominant and repellant influence of major urban areas, few common features are found. Inter-provincial flows in the Netherlands during both 1973 and 1983 have been analysed by three age-groups; 50-59, 60-69 and 70+ years. To clarify the patterns, the first ranking in-flow and out-flow has been mapped for each province (Figures 7.1 and 7.2).

Figure 7.1 Interprovincial impact of the first order outmigration flows on destination provinces for three age groups, 1973 and 1983



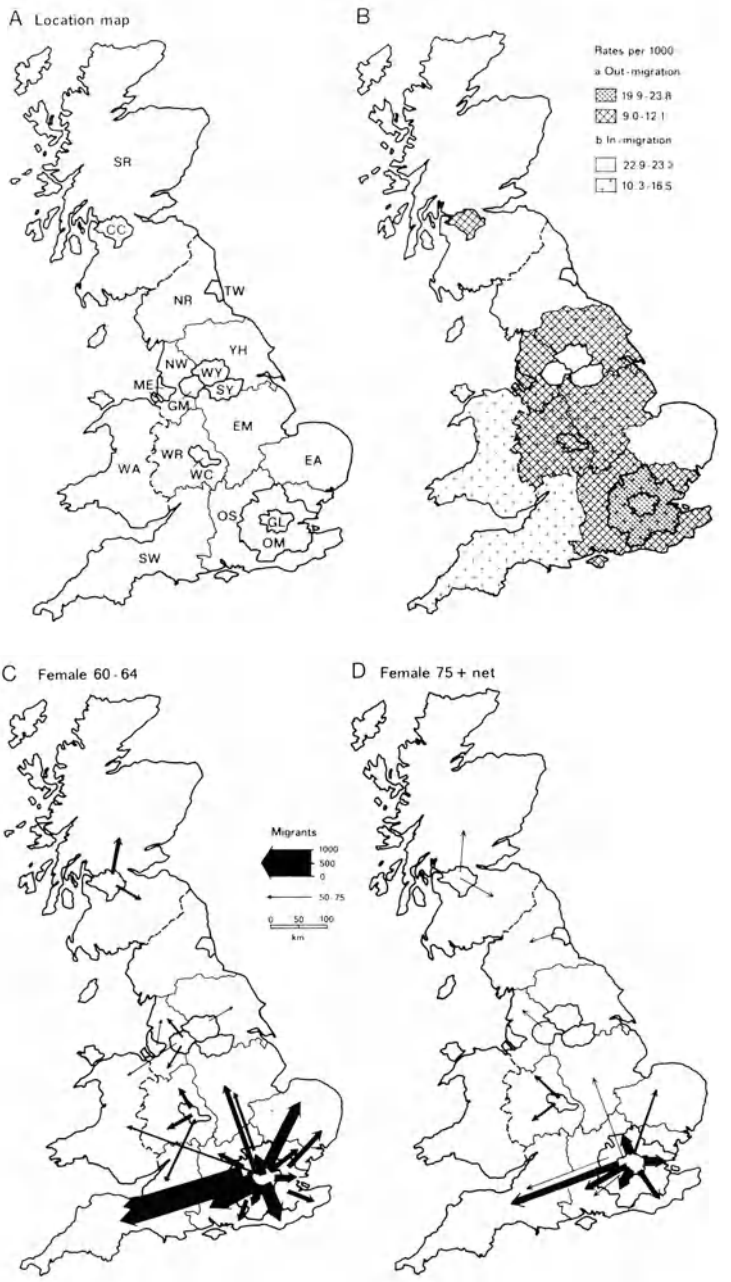
The interpretation of the maps is hampered by the variable size and shape of the provinces, but some general features are evident. The decrease in migrations between 1973 and 1983 has not altered the basic spatial distribution. The principal out-flows demonstrate the strong dispersal of elderly people from the high-density and populous urban provinces on the western North Sea coast towards the southern and central areas of the country (Figure 7.1). Only one group of first rank out-flows is westwards, from the southern province of Noord Brabant to the adjacent, deltaic islands province of Zeeland. The impression that these flows evince of a small coastal region preferred for retirement is reinforced by the fact that they are the largest flows only among the two younger age groups: those aged 70+ years are more likely to migrate from Noord Brabant to other, inland provinces.

Figure 7.2 Interprovincial impact of first-order inmigration flows on destination provinces for three age groups, 1973 and 1983



The dominant in-flows reinforce the impression of a migration system dominated by urban deconcentration (Figure 7.2). The two most urbanised provinces in the west, Noord and Zuid Holland, generate the principal in-flows to all other provinces with the exceptions of Groningen and Drenthe in the far north west, which exchange first-ranking flows, and of Overijssel in the central west, which receives its highest in-flows in the 50-59 and 70+ years age groups from adjacent Gelderland. Overijssel's little less numerous second and third ranking in-flows for these age groups are however from North and South Holland, and the principal in-flows for the age group passing through the retirement transition, 60-69 years, are also from these provinces. That migrations around the age of retirement occur over longer distances and emphasise the redistribution from the major urban areas is shown by the fact that out movements from North and South Holland account for 47.6% of all inter-provincial moves among the 60-69 years age group, but only 45.0% for the 50-59 years age group and 42.7% for the 70+.

Figure 7.3 Gross migration rates and principal net migration flows for metropolitan and non-metropolitan regions of Britain, 1980 - 81



For Great Britain the regional rates of gross in- and out-migration have been mapped, and further analysis conducted on the principal inter-regional net migration flows during 1980-81 for two female age groups, 60-64 years and 75+ years (Figure 7.3). These have been selected because of the numerical superiority of females over males in the elderly age groups, their particular importance and distinctive marital status distribution among the 75+ years age group, and the sex-specific variations in the age profile of late age mobility: females are more likely than males to show contrasting geographical patterns between early and late old-age.

The greater extent of Great Britain compared to the Netherlands and its more complex settlement and physiography produce more intricate patterns but with two dominant features. The first is the greater 'energy' of mobility, or rates of in- and out-migration, in the south east of Great Britain and particularly around the London Metropolitan Region. Exceptionally high rates of out-flows occur from Greater London and its surrounding Outer Metropolitan Region, and exceptionally high in-movement rates to the immediately adjacent regions of the Outer South East and East Anglia. The second feature is a minor reflection of such urban deconcentration around the provincial conurbations of the West Midlands (Coventry-Birmingham-Wolverhampton), Merseyside, Greater Manchester and West Yorkshire (Liverpool-Manchester-Bradford-Leeds), and Greater Glasgow. There is more evidence of long distance net flows, for example to Wales and the South West Region, among the younger elderly. Among the 75+ years population, the tendency to leave provincial cities remains a clear feature for the West Midlands and Glasgow, is much reduced for the Lancashire and Yorkshire conurbations, but is asserted more strongly for Tyneside (Newcastle-Sunderland).

7.7 Conclusion

Despite the marked differences in the extent, distribution of settlement and physiography of the two nations; despite the higher fertility of the Netherlands; and despite the differences in data sources and the two countries' definitions of migration, this comparative study has revealed more similarities than differences in the patterns and profiles of elderly mobility. The main discrepancy is in the greater importance of relatively long distance migrations around the age of retirement, particularly by married persons, in Great Britain. This may be attributed partly to the existence in Britain of distinctively attractive, rural, undulating and coastal retirement areas: only small tracts of the estuarine province of Zeeland appear comparable in Holland. Another reason is the existence of a much larger capital-city region in Britain with its attendent highly-inflated property prices, densities of development, perceptions of urban malaise, and over-representations of the professional and high income groups. Detailed investigation of the reasons for the greater incidence of innovatory, total displacement retirement age migrations in Britain would require an evaluation of the importance of owner-occupation as a form of savings and investment in Britain and a comparative study of the localisation, membership and density of family networks in the two countries. Finally, a small part of this contrast may arise from differences in the propensity to engage in international migrations in later-life; while no reason exists to suspect substantial differences in the emerging trend for a small minority of northern Europeans to retire to Spain or other Mediterranean regions, the permanent migration and seasonal

relocation flows from the Netherlands to adjacent (and culturally similar) regions of Belgium and Denmark or to intermediate destinations in France may be much more substantial.

The marked decrease in the propensities and the absolute number of migrations over the last recorded decade in the two countries has been a striking feature. It should not be assumed that this is entirely an ephemeral phenomenon related to the economic recession for there are many probable influences on the mobility of the older population: often they indicate contradictory shifts. The trend in mobility rates since the First World War has been slowly downwards in the United States and in Great Britain but this may not apply to the older age groups. The growth of home owning is likely to be a moderating influence on mobility except where, as in southern Britain, there are steep urban-rural gradients in house prices. On the other hand, the increasing life expectancy of the population and the earlier age at which the last child is born may be increasing the proportion of people who are married at retirement age while simultaneously decreasing the proportion with dependent children; married couples without child-raising responsibilities are unusually likely to move at retirement. The next decades will witness considerable changes in the marital status patterns of elderly people, with histories of divorce rising from their present rarity. Another strongly growing trend will be the relative frequency of retiring households with two independent full occupational pensions, as the surge in the female economic activity rate of recent years projects into retirement. Among the older, widowed population, we may see individuals moving more frequently to adjust to their physical capacities; they will have more resources to do this than earlier cohorts, and in most countries a range of public policies are eroding the notion of irreversible moves into homes and hospitals following illness, accidents or personal crises. While there is no doubt that in the Netherlands the remaining years of this century will see continued strong growth of the elderly population, and that this will generate increases in the absolute number of late age migrations it is by no means clear how the diverse sociodemographic changes will translate into the underlying and enduring mobility patterns of the elderly.

PART III

POPULATION, HOUSEHOLDS AND HOUSING

8. DEMOGRAPHIC CHANGE, HOUSEHOLD EVOLUTION AND HOUSING NEEDS

8.1 Introduction

Demographic processes have a far-reaching impact on society in general and on the provision of public services in particular. The consumption of goods and the use of amenities are highly dependent on the age of the consumer and therefore the quantities consumed will fluctuate over time if successive cohorts differ in size. Both the public and the policymakers are very much aware of these problems, which not only makes them familiar topics with the popular press but also the subject of numerous academic studies. Although population growth is diminishing in the Netherlands (the population will grow from slightly over 14.5 million in 1987 to 15.6 million in 2000), the age composition will change dramatically, due to the drop in fertility over the last decades. The number of births per 1000 women dropped from 3.2 in 1960 to 1.6 in 1980 in the Netherlands, and from 2.7 in 1960 to 1.8 in 1980 in the United Kingdom.

The need for various goods and services is not only dependent on the age of the individual, but is also determined to a large extent by the composition of the household to which the individual belongs. In many instances the household rather than the individual forms the decision-making unit. This is particularly the case when housing is concerned. The process of household evolution is therefore crucial to the operation of the housing market both in a quantitative as well as in a qualitative sense. For the period 1971-1981 it has been estimated that only 30% of the growth of the housing stock in the Netherlands can be explained by the growth of the population (Sociaal Cultureel Planbureau 1984). Another 25% of this growth is due to the changing age composition of the population (estimated by applying standardised, that is age-specific, headship-rates). As only 2.2% could be attributed to an increase in vacancies, the remainder (43%) is due to an increase in the number of households as a result of changing patterns of living with parents or others, living on house-boats or in bedsitters, living alone instead of marrying and living independently instead of moving into an institution. These and other processes of household evolution have not only led to a growing number of dwellings needed but also to shifts in demand for certain kinds of housing.

In the first part of this chapter, Emily Grundy describes the effect of demographic trends on household formation and housing demand in Britain. Two groups are discussed in more detail; the young and the elderly. These groups are of particular interest because they constitute the two main groups either entering the housing market for the first time through household formation, or leaving it altogether through household dissolution. Other trends, such as household fission, will also continue to influence housing demand. In the second part of the chapter, Pieter Hooimeijer and Marianne Linde concentrate on household evolution over the period 1960-1981 in the Netherlands and on the housing market behaviour of the different types of households which have come into existence as a result of this evolution. Before turning to these issues they provide some insight into the data available for the analyses. They conclude by making a tentative speculation about the future and stating some policy implications.

J. Stillwell and H.J. Scholten, Contemporary Research in Population Geography, 147–158.

8.I ENGLAND AND WALES

Emily Grundy

8.2 Life cycle stages in household formation and development

The most obvious demographic factor influencing housing demand is the age structure of the population. People's housing needs vary according to stage of the family life cycle and this is closely related to age. In England and Wales the principle that the formation of a new family, through marriage or cohabitation, should also involve the establishment of a new household has a long history and probably dates back to the Middle Ages (Smith 1979). Stages in the formation and development of families coincide in many cases with stages in the establishment, expansion, contraction and dissolution of households. The concept of a housing career is itself closely related to the concept of a family life cycle. Conventionally, the family life cycle has been divided into six phases from commencement (from marriage to the first birth) through expansion and contraction phases to the final stage of dissolution (from the death of the first spouse to the death of the second) (Bongaarts 1985). Rises in non-marital childbearing, divorce and remarriage, however, mean that there are now increasingly large proportions of the population whose life courses do not fit the standard model (Murphy 1983). Simple life cycle typologies also fail to account for all the types of household change experienced by some elderly people.

Table 8.1 Schematic representation of stages of household development

Household stage		Associated events		
FORMATION	First marriage/ cohabitation	Young single person leaving parental home	Single parent-hood & departure from parental home	Marital breakdown & departure from marital home
EXPANSION/ REFORMATION	Childbearing	Remarriage	First marriage/ cohabitation of single person in independent household	Elderly relative joins house-hold
CONTRACTION	Children leave home	Death/ departure of spouse/ elderly relative		
DISSOLUTION	Move in with relatives/to institution	Death		

In this chapter a simple typology of household stage has for these reasons been used in preference to the standard family life cycle model. This typology is shown schematically in Table 8.1. An individual whose life course followed the conventional normative path from marriage through childbearing, rearing and 'launching' to widowhood and death would move successively through the household stages shown in Table 8.1. However this progression is not assumed and the aim of this very simple model is to provide a structure which shows how different demographic processes may influence the demand for different types of housing, rather than to establish a framework for examining life course transitions. Individuals and families at very different stages of their life may have similar housing needs. Thus a single person leaving home, a young childless couple, a divorced man or an elderly widow may all be competing for low cost, one bedroom accommodation. Housing needs and the demand for housing are not of course synonymous. Those who can will often choose to pay for accommodation which might be considered to exceed their needs, while others are unable to secure the type of accommodation they both need and want. McLeod and Ellis (1982) found that in Western Australia, wealth and income were more important than family life cycle stage in explaining housing consumption. Perceived housing needs are themselves influenced by income and wealth.

Table 8.2 Changes in the population in private households, the number of private households and mean household size, Britain, 1951-1981

Household variable		1951	1961	1971	1981
Population in privatehouseholds	No. (000s)	46,710	50,011	52,848	52,760
	%	100	107	113	113
Number of households	No. (000s)	14,554	16,189	18,317	19,493
	%	100	111	126	134
Mean household size	No.	3.2	3.1	2.9	2.7
	%	100	96	91	84

Notes: (i) 1951 = 100% (ii) Source: Data from census reports

8.3 Secular changes in housing consumption

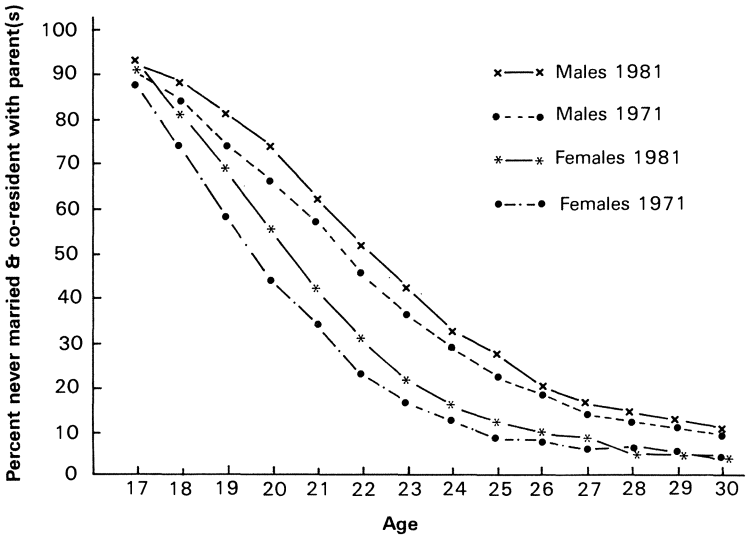
In the last thirty years the growth in the number of households has exceeded the growth in the size of the population with the obvious result that mean household size has fallen (Table 8.2). This growth in the number of households can only partly be accounted for by age structure changes (Ermisch 1985). The post-war period in England and Wales, other North West European countries and North America has been marked by a trend towards separate living, involving an increase in the number of one person households, particularly elderly

one person households, and a fall in the proportion of households containing members outside the central nuclear family (Burch 1985). It is likely that rising real incomes, increases in the availability of housing in the 1960's and increases in perceived space need, possibly reflecting changing and more homogenous age and sex roles, have all contributed towards this trend (Burch 1985, Ermisch 1985).

8.4 Household formation by the young

Moves out of the parental home do not involve the release of previously occupied dwellings (although in some cases parents may subsequently move to smaller accommodation), so the establishment of new households by the young has a particularly strong impact on the housing market.

Figure 8.1 Young people (%) never married and co-resident with their parent(s) by age and sex, 1971 and 1981



During the 1960's, age at leaving home closely corresponded with age at first marriage which at that time was low. In the period 1961-65, mean age at first marriage was 22.9 for women and 25.4 for men; by the second half of the decade these mean ages had fallen to 22.5 and 24.6 for women and men respectively. Since 1970, mean ages at first marriage have risen, reaching 23.1 for women and 25.4 for men in 1981 (Kiernan and Eldridge 1985). This change has been reflected in an increase in the age at leaving home. Figure 8.1 shows the proportions of young men and women still living in the parental home by single years of age in 1971 and 1981. In 1981, 50% of 22 year old men were still co-resident with their parent(s) compared with 45% of those of the same age ten years earlier. Among women in 1971, only 45% were in the parental home at the age of 20 compared with 55% of 20 year old women in 1981. Conversely, the proportion of young women living in married couple type

households in which their husbands were classified as household head fell sharply. In 1971, for example, 23% of 19 year old and 59% of 22 year old women lived in this kind of household, compared with 12% and 43% respectively in 1981. This fall, however, undoubtedly also reflects increases in cohabitation rather than marriage in the 1970s. The increase in the age at leaving home, and in age at first marriage, may, for some, be a matter of necessity rather than choice. The continued decline in the privately rented sector, a traditional 'temporary' staging post for the young, and the more recent contraction of council housing, have made it harder for the young to find independent accommodation. In countries such as Denmark, with more plentiful supplies of cheap housing to rent, the age at leaving home is younger (Kiernan 1985). Another factor that is obviously important is the current very high rate of youth unemployment.

8.5 Demographic trends in housing demand

8.5.1 The young

The numbers of people in their twenties are currently high, reflecting the second post-war 'baby boom' of 1956-64. Table 8.3 shows that in the 1990s, the number of young people in their early twenties will fall as the small birth cohorts of the 1970s attain adulthood. However, other demographic factors may tend to offset the reduction in demand for small accommodation for the young implied by this fall in their numbers.

Table 8.3 Changes in the population aged 20-24, England and Wales, 1951-2001

Year	Males		Females		Persons	
	No. (000s)	%	No. (000s)	%	No. (000s)	%
1951	1417	100	1487	100	2904	100
1961	1433	101	1448	97	2881	99
1971	1871	132	1850	124	3721	128
1981	1896	134	1847	124	3743	129
1991	1986	140	1895	127	3881	134
2001	1531	108	1463	98	2994	103

Notes:
(i) 1951 = 100%
(ii) Sources: Data from census reports and OPCS population projections

In 1983, the mean age of women having their first legitimate child was 25.6, a value higher than in any other year since 1949 (OPCS 1984b). The increase in the age at which childbearing starts is not just a reflection of a later age at marriage. The interval between marriage and the birth of the first child has become progressively longer. Among women married in 1964, for example, 60% had a child within the first two years of marriage compared with only 40% of women married in 1974 (OPCS 1978b). Changes in the housing market and the need for young owner occupiers to have two incomes to meet mortgate payments have probably contributed to this trend (Madge and Brown 1981, Sullivan and Murphy 1984). The housing implication is a continuing high demand for small flats and 'starter' homes from young couples, despite the fall in their numbers, and an increase in the proportion moving between marriage or cohabitation and the start of childbearing. Among recently married childless women aged 20-24 in 1971 and living in independent (unshared) accommodation who had their first child in 1973, 35% moved in the intervening period (Grundy 1986) and the rate of post-marriage pre-childbearing mobility may be even higher in more recent marriage cohorts.

Table 8.4 Movers (%) between 1971 and 1981 among women in continuous first marriages with one child in 1971 by age, tenure and number of rooms in 1971 and number of children in 1981

Age Group	At 1971 Census Tenure	Rooms	Number of children in 1981 1	2	3+
20-24	Owneroccupier	3-4	74.1	75.0	87.0
	L.A. tenant		86.5	94.6	94.2
	All(*)		78.4	83.7	92.8
	Owneroccupier	5-6	69.8	62.3	71.1
	L.A. tenant		74.1	70.9	63.6
	All(*)		74.1	67.6	70.2
25-29	Owneroccupier	3-4	61.4	68.3	80.0
	L.A. tenant		73.7	81.3	76.9
	All(*)		70.1	75.8	82.7
	Owneroccupier	5-6	51.0	57.8	61.1
	L.A. tenant		55.1	59.6	70.6
	All(*)		54.7	60.8	62.8

Notes
(i) * = including those in privately rented accommodation
(ii) Source: Data from the OPCS Longitudinal Study, adapted from Grundy (1986)

8.5.2 Expanding households

Demand for housing suitable for slightly older families will increase in the next decade as the large birth cohorts of the late 1950s and early 1960s reach their thirties and forties. Table 8.4 shows the proportion of movers between 1971 and 1981 among married women aged 20-29 in 1971 (and in their thirties in 1981) with one child in 1971 by tenure and number of

rooms in 1971, and family size in 1981. Among women in 3-4 roomed accommodation in 1971, those whose family size had increased were more likely to have moved than those who still had only one child. Those in more spacious accommodation in 1971 had lower rates of moving but an association between family expansion and moving is still apparent. There has been a decrease in third or higher order births in recent decades, but the increase in the number of people in early middle age during the rest of this century implies an increased demand for family housing. Better off couples currently in two bedroomed accommodation will presumably be able to buy larger dwellings as their families expand and their children become older and need more space. For the less well off in the local authority sector, the demand for larger accommodation may remain unmet if current tenure policies continue, as the availability of three and four bedroomed council accommodation is contracting.

8.5.3 Household fission

Divorce rates rose particularly dramatically during the early 1970s; since 1977 the rise in the divorce rate has been less steep but even so it has been estimated that about a third of marriages currently entered into will end in divorce (Haskey 1982). A large proportion of those who divorce remarry (although remarriage rates among the divorced have fallen), so divorce does not mean the replacement of one household by two. Ermisch (1985) has estimated that for every 5 households split by divorce only 7 new households are established. It has been estimated that the rise in divorce rates 1961-81 accounted for an extra 200,000 households in Britain (Murphy 1986).

Table 8.5 1981 tenure distribution (%) of women who in 1971 had been married owner-occupiers, by age in 1971 and marital status in 1981

1971 Married Owner-Occupier Age group	Tenure	1981 Married (1st)	Widowed	Divorced
	Owner-occupier	94.0	91.4	64.5
	L.A. tenant	3.3	6.3	24.1
20-29	Private renter	2.4	2.5	11.1
	Owner-occupier	95.8	88.7	74.2
	L.A. tenant	2.0	7.3	16.3
30-39	Private renter	2.0	3.3	8.6
	Owner-occupier	96.3	93.1	79.4
	L.A. tenant	1.5	4.3	10.9
40-49	Private renter	1.7	1.9	9.2
	Owner-occupier	95.2	90.1	74.2
	L.A. tenant	2.5	5.1	9.4
	Private renter	1.9	3.5	12.6

The effect of divorce on housing demand is considerable, not just because in some cases one party needs accommodation of his/her own, but also because a divorced woman with children is often left in very reduced financial circumstances. The effect of this is to increase demand for a particular type of housing, namely low cost family accommodation which in England and Wales means council housing. Table 8.5 shows, for women who were married owner occupiers in 1971, their marital status and tenure distribution in 1981. Among women who were still married, the proportion who had ceased to be owner occupiers was very small while quite large proportions of those who were divorcees in 1981 had become council tenants. High divorce rates suggest a need for more accommodation suitable for lone parents, as well as an overall higher demand for housing resulting from the fission of households.

8.5.4 The elderly

The size of the elderly population aged 65 and over has grown rapidly, both in absolute and relative terms, throughout the century. However, the next decade will see a slight fall in the number of people aged 65 and over as the small birth cohorts of the 1930s attain old age. The elderly population itself is rapidly ageing, and age groups over 75 will continue to grow substantially; the number of people aged 85 and over, for example, is projected to increase by 70% in the next fifteen years (OPCS 1986c). As the prevalence of physical frailty rises steeply with age, the ageing of the elderly population implies a continuing high demand for small specialist units for the elderly, including sheltered housing. Repair and maintenance schemes designed to help the elderly owner occupier will also be needed. Elderly owner occupiers often have difficulty in maintaining their properites (DoE 1983); future generations of elderly owner occupiers will be more socially diverse and include larger proportions with restricted resources, so this problem may become more serious.

The household situation of the elderly varies strongly with age, as shown in Table 8.6. The proportion living alone increases until the age of 85 for women and 89 for men, reflecting the impact of widowhood, and then falls slightly as larger proportions of the very old (over 85) live either in institutions or with younger relatives. The dissolution of an elderly person's household may thus involve the expansion of a relative's household. Changes in domestic circumstances over time are shown in Table 8.7 which gives, for those over 65 in 1971, their domestic situation in 1971 and in 1981. The group discribed as living 'with others' consists of those who were not part of a nuclear family but who lived with other people, generally relatives. Among women, those living alone in 1971 were the most likely to be in the same type of household ten years later. Among men, continuity of household type was also high among those in married couples in 1971 but large proportions of women in married couples in 1971 were living alone ten years later. While the transition from living as part of a couple to living alone is an important one with implications for the provision of health and welfare services, moves from living alone into an institution or into the household of a relative have a greater impact on housing supply. This type of support move implies on the one hand, the 'release' of accommodation previously occupied by the elderly person and on the other, a possible need for more space in the household joined. For the elderly person, such a move may also involve a change in tenure. This is partly because historical changes in the tenure distribution of the population make it more likely that a tenant will have a child who is an

owner occupier than vice versa; owner occupiers may also be in a better position to accommodate elderly relatives than tenants. In 1981, for example, nearly 80% of women aged 85 or more, living in a son or daughter's household, were in owner occupied accommodation compared with 40% of women of the same age living alone (Grundy 1988a).

Table 8.6 Percentage of men and women aged 65 and over by family/household type and mean household size, England and Wales, 1981

Age Group	Sex	Family/household type: Married couple	Lone parent	Solitary	Not in family with others	Non private household	Mean household size
65-69	M	77	2	12	7	2	2.2
	F	54	5	30	9	2	1.9
70-74	M	72	2	16	7	3	2.1
	F	41	5	39	12	3	1.8
75-79	M	65	2	19	9	4	2.0
	F	26	6	48	15	6	1.7
80-84	M	50	4	26	12	8	2.0
	F	15	7	49	19	11	1.7
85-89	M	40	4	28	17	11	2.0
	F	7	7	44	25	17	1.8
90+	M	22	6	27	25	21	2.1
	F	2	9	32	26	31	1.1

Source: Data from the OPCS Longitudinal Study reported in Grundy (1987) and Grundy (1988b)

Tenure also has an impact on the probability of entering an institution in old age, as shown in Figure 8.2 which gives 1981 age and marital status standardised institutionalisation ratios by tenure in 1971. Owner occupiers were the least likely to be in an institution in 1981, and also had the lowest mortality rates 1971-81 (Grundy 1988b); their low institutionalisation ratio probably reflects to a large extent their better health status. The high institutionalisation ratio among private tenants suggests that the poor standard of much privately rented accommodation may play a part in promoting admission to an institution.

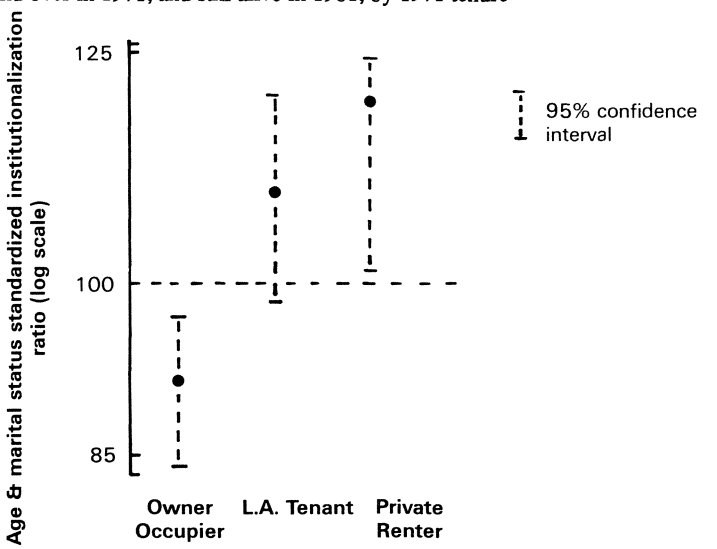
Table 8.7 Family/household type in 1971 by family/household type in 1981:men and women aged 65 and over in 1971

Sex and family/household type in 1971(i)	Age in 1971, family/householdtype in 1981											
	65-74						75+					
	Mrrd cple	Lone pmt	Sol.	With othrs	Non-private hshld	N (=100%)	Mrrd cple	Lone pmt	Sol.	With othrs	Non-private hshld	N (=100)
MEN												
Mrrd cple	74.1	2.1	15.9	4.6	3.2	6030	53.8	3.7	23.5	9.8	9.9	713
Lone pmt	9.2	49.2	21.7	16.7	3.3	120	4.3	59.6	4.3	10.6	21.3	47
Solitary	8.0	0.3	73.2	10.0	8.3	721	4.6	0.5	66.7	12.8	15.4	195
With oths	21.6	1.9	17.0	52.2	7.4	690	4.0	0.0	10.7	63.8	18.8	149
Non-priv	17.1	0.0	6.1	3.7	73.2	82	-	-	-	-	-	14
All (ii)	61.3	2.7	21.5	9.7	4.9	7845	36.0	4.8	27.7	18.2	12.9	1154
WOMEN												
Mrrd cple	45.7	4.8	37.5	7.3	4.5	6689	25.4	4.9	37.4	14.9	17.3	792
Lone pmt	0.2	65.8	20.6	8.8	4.2	804	0.0	72.9	6.7	12.1	8.3	314
Solitary	1.0	0.5	81.3	8.3	8.7	4605	0.1	0.4	65.4	12.6	21.5	1512
With othrs	3.7	1.5	28.2	58.4	7.7	2199	1.1	1.3	19.1	62.0	16.1	855
Non-priv.	2.1	0.0	12.0	6.3	79.6	142	0.0	0.0	1.2	5.9	92.9	85
All	21.8	6.2	49.0	15.7	7.1	14986	6.0	7.8	41.3	24.9	19.9	3741

Notes:
(i) Excluding visitors
(ii) Including not stated / unclassified
(iii) Source: Data from the OPCS Longitudinal Study reported in Grundy

Demographic changes, notably the ageing of the elderly population, and the continuing trend towards residential independence among the elderly (see for example, Wall 1984) mean that even though the size of the elderly population as a whole is soon to fall slightly, the housing needs of the elderly will continue to affect overall housing demand. Much also still needs to be done to improve housing standards among the elderly.

Figure 8.2 Age and marital status standarized institutionalization rates, 1971 - 81, among women aged 65 and over in 1971, and still alive in 1981, by 1971 tenure



Notes: (i) Standard rates from all women in private households in 1971 and still alive in 1981
(ii) Source: data from the OPCS longitudinal study

8.6 Conclusions

A summary of the housing implications of some of the changes outlined is shown in Table 8.8. This table represents an extreme simplification of the interaction between demographic change and housing demand, as the vast majority of people want to live in a particular location for work, social and environmental reasons. This means that the national housing market is an agglomeration of smaller more localised housing markets, and currently there is a substantial geographic mismatch between the demand for housing and the availability of accommodation.

In the next decade there will be fewer young people in the age groups where household formation rates are highest but the intervals between marriage and the start of childbearing are lengthening (and would appear to be extending even more if measured from the start of cohabitation rather than from legal marriage) which suggests a continuing high demand for small flats and 'starter' homes. Young people in 1981 seem to have been leaving the parental home at older ages than was the case ten years earlier; it is probable that for many this may reflect necessity rather than choice.

The number of older families will grow in the next decade, suggesting increased demand for the traditional three bedroomed house. However this type of accommodation tends to be concentrated in the owner occupied sector, and so may be unsuitable or unattainable for older lone parent families and other groups with low incomes. Some older families will need space for elderly relatives as well as growing children. Most elderly people, however, do not live

Table 8.8 Housing implications of broad demographic trends until the end of the century

Group	Late 1980s	1990s	Housing need
Young people forming new households	Increasing	Decreasing but possibly staying longer in small households	Small cheap accommodation 'starter' homes
Older expanding households	Steady	Increasing	3+ bedroomed family accommodation
Contracting elderly households	Increasing	Decreasing but more aged 75+	Small units; specialist housing repair and maintenance schemes
Lone parent households	Increasing	Steady?	Cheap family housing

with relatives and the post-war period has been characterised by a trend towards residential independence among the elderly. The numbers of 'young' elderly will fall between now and the end of the century, but the increasing numbers of 'old' elderly suggest a greater demand for specialist housing for the frail elderly and for house repair and maintenance schemes.

Overall, the Department of the Environment's 1981 based household projections assume an increase of about 1660 thousand households in England and Wales between 1986 and the start of the next century. In addition to catering for the needs of these additional households, there is currently a shortfall of fit dwellings of some 600,000 (Ermisch 1985). Some signs of housing stress have increased in recent years, for example the number of families accepted as homeless by local authorities in England and Wales increased from 75,000 to 88,000 between 1981 and 1984 (Murphy 1986). Further restrictions on the provision of low cost rented accommodation will undoubtedly exacerbate this stress.

Acknowledgement
The author would like to thank all OPCS staff concerned with the Longitudinal Study.

8.II THE NETHERLANDS, 1960-1981

Pieter Hooimeijer and Marianne Linde

8.7 The data set

The analysis of demographic change is most appropriately studied using a longitudinal data set. Unfortunately data as contained in the OPCS Longitudinal Study in England and Wales are lacking in the Netherlands. Our empirical analysis of the relationship between demographic developments and housing needs is based mainly on the National Housing Needs Survey

J. Stillwell and H.J. Scholten, Contemporary Research in Population Geography, 158–171.

(WBO) of 1981. This data set has been collected by the Dutch Census Bureau, authorized by the Ministry of Housing. The survey is a 1% stratified sample of the Dutch population of 18 years and older. The questionnaire includes items on the present household characteristics, on the present housing situation, and on the changes in this situation over the preceding four years. Also some questions are incorporated about changes in household composition. People who live in institutions at the time of the survey were not interviewed and this means that moves into homes for elderly persons cannot be analysed.

Although the sample is based on individuals, it is also possible to get information about household characteristics. This is done by a weighting procedure. A household is defined as any group of two or more persons who cohabit in a homelike manner and who share the housekeeping. A single person household is defined as a special type of household which consists of one person. After adjustment, the data set consists of 4.9 million households. Other data sources used are the population accounts and published material from the 1960 and 1971 Censuses.

8.8 Household evolution and the housing market

Over the last two decades, a growing number of households have emerged that do not fit in the classical succession of stages which make up the well known family life cycle model. Increasing divorce has resulted in an increase of single-headed households for example. More couples have taken the decision to have no children. In the literature several possibilities have been proposed to overcome the conceptual shortcomings of the family-life cycle shown in Table 8.1. The expanded family life cycle (Kuysten 1986, Spanier and Glick 1980, Ploegmakers and Van Leeuwen 1986, Nock 1979) incorporates other events that have traditionally been neglected, like childlessness, cohabitation, divorce and remarriage. In this way the multidimensional life cycle concept still seems useful as an organizing tool for analyzing the relationship between demographic events within households and their impact on housing demand. However these changes in human behaviour must not be overestimated. At present, some 85% of all Dutch females marry and over 90% of all married women give birth to at least one child. The extended life cycle can be used as a frame of reference to elucidate the housing consumption of both the households which fit in the classical typology and, by contrast, of the ones which deviate from this sequence.

A wealth of literature exists on the relationship between the life cycle and housing consumption (see Quigley and Weinberg 1977, or Clark and Onaka 1983). The most fruitful approach to clarifying this relationship is by looking at changes in housing consumption as steps in the advancement along a housing career (Kendig 1984). In order to distinguish direction in a housing career it is necessary to order dwellings in a hierarchy of submarkets, based upon a general agreement among consumers as to the relative desirability of the housing units contained in these various submarkets (Sweeny 1974). In building the typology we have limited ourselves to the bundle of housing attributes which are directly related to the demographic characteristics of households: number of rooms, type of structure and tenure. Using the results of earlier research (Scholten and Hooimeijer 1985), an ordered typology of dwellings has been constructed (Table 8.9) which reflects filtering in the expanding phase of the housing career (Kendig 1984). Comparison with the situation in the

United Kingdom is hampered by the fact that housing market conditions differ. Owner-occupation for instance, has risen from 29% in 1950 to about 60% in 1980 in Britain. In the Netherlands the percentage of home-owners was about the same in 1950, but has risen to only 40% in 1980. The ongoing selling-off of council housing in Britain has no parallel in Holland (Boelhouwer and Van Weesep 1986). The housing associations, which own most of the social rented housing in the Netherlands, are very reluctant to sell their property, although this might change in the future.

Table 8.9 The housing typology in 1981

Type of dwelling	No.	(000s)	%
1. Rented,multi-family,	3 rooms or less	776.7	15.8
2. Rented,multi-family,	4 rooms or more	602.5	12.2
3. Rented,single-family	3 rooms or less	247.0	5.0
4. Rented,single-family,	4 rooms	710.1	14.4
5. Rented,single-family,	5 rooms or more	527.0	10.7
6. Owner-occupied,	3 rooms or less	273.4	5.5
7. Owner-occupied,	4 rooms	735.5	14.9
8. Owner-occupied,	5 rooms or more	1053.9	21.3
	Total	4926.2	100.0

Source: WBO81

8.9 Household changes during the life cycle

8.9.1 Household formation

Three demographic changes are mainly responsible for the growth in households exceeding that of population over the last two decades. Firstly, young people have left their parents home on average at a younger age. Secondly, the time of first marriage has been postponed and this combination has resulted in a growing number of young single person households. The third change concerns the increasing number of divorces.

Most young adults leave their parental home during their late teens or their early twenties to establish a new household. This occurs somewhat later for men than for women. During the sixties and the first part of the seventies the number of children leaving their parents home grew significantly (Table 8.10). The increase was a result of relatively large birth cohorts in this stage and partly because the average age of children leaving the parental home dropped to 23 for women and 24 for men (Figure 8.3). The substantial increase in participation in higher education, especially among women, and the concentration of these services in some

large cities, stimulated this development. Also, economic growth in these years offered young people more opportunities to leave their parents at a younger age. The individualization process has also stimulated young adults to seek independent housing. In the second part of the seventies the growth of the Dutch economy slowed down and the costs of housing increased. The average age of initial household formation stabilized and the number of children leaving the parental home decreased.

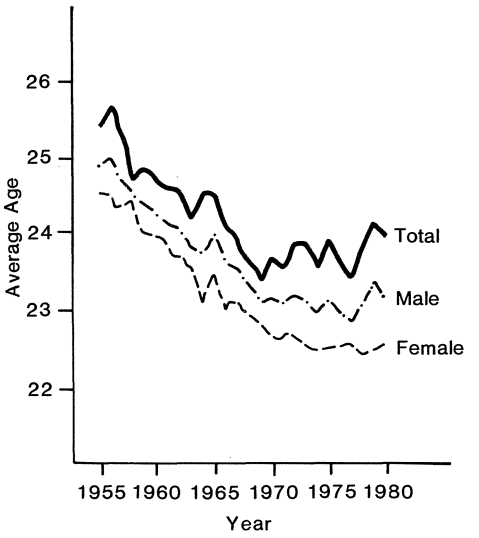


Figure 8.3 Average age at time of 'nestleaving',1955 - 81

Table 8.10 Number of persons leaving the parental home, 1960-1981

Time period	No.	Index
1960 - 1964	923,583	100
1965 - 1969	1,152,948	125
1970 - 1974	1,254,775	136
1975 - 1979	1,168,660	127
1980 - 1981	389,514	105

Source: WBO81

Another change in the household formation process concerns the mean age at first marriage. Since the early seventies the number of married persons, especially among the young, has dropped. On 1 January 1985, only 10.2% of women in the birth cohort of 1965 were or had been married. The percentage had been 29.3%, at the age of twenty, for the 1955 birth cohort. Postponement of the first marriage is related to changing norms within society during the late sixties, when cohabitation without being married became a more generally accepted feature, as was living alone.

A third process that has caused an increase in the number of households is divorce. A divorce results in household formation as well as in household contraction. The person(s) leaving will form a new household which will be in need of housing. The person(s) staying behind may also experience a change in housing needs, e.g. for financial reasons. Since the early seventies, the number of divorces has increased remarkably. This development peaks in 1971 as a consequence of an amendment of the civil code in that year. After this, the trend persists as indicated in Figure 8.4. The increase in divorce rates has been most pronounced among younger people. Not only do more marriages end in a divorce, but the duration of marriage has become shorter. The rise in the proportion of marriages ending in divorce has influenced the distribution of individuals between households in a number of ways. The increase in the number of one parent households is shown in Table 8.11. There has also been a decline in the proportion of marriages ending in widowhood. A third consequence is the steady rise of the number of marriages per person because the probability that a divorced person will remarry is quite high, especially for men. The effects of divorce on the housing consumption are often overestimated because many divorced people find a new partner within a couple of years.

Figure 8.4 Divorce rates by broad age group, 1960 - 81

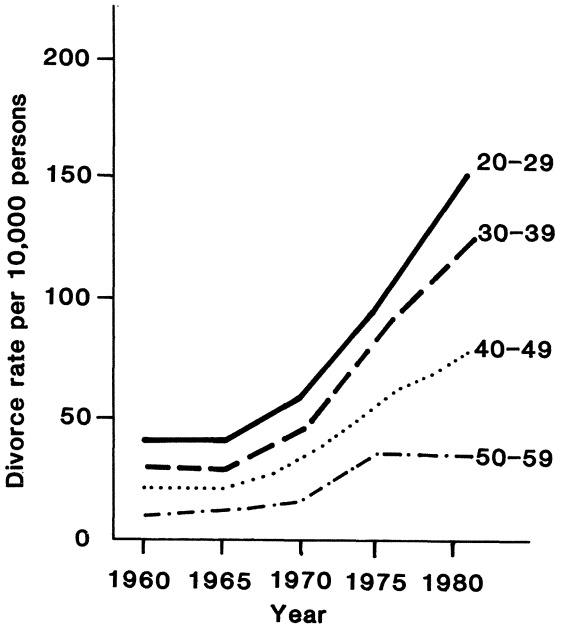
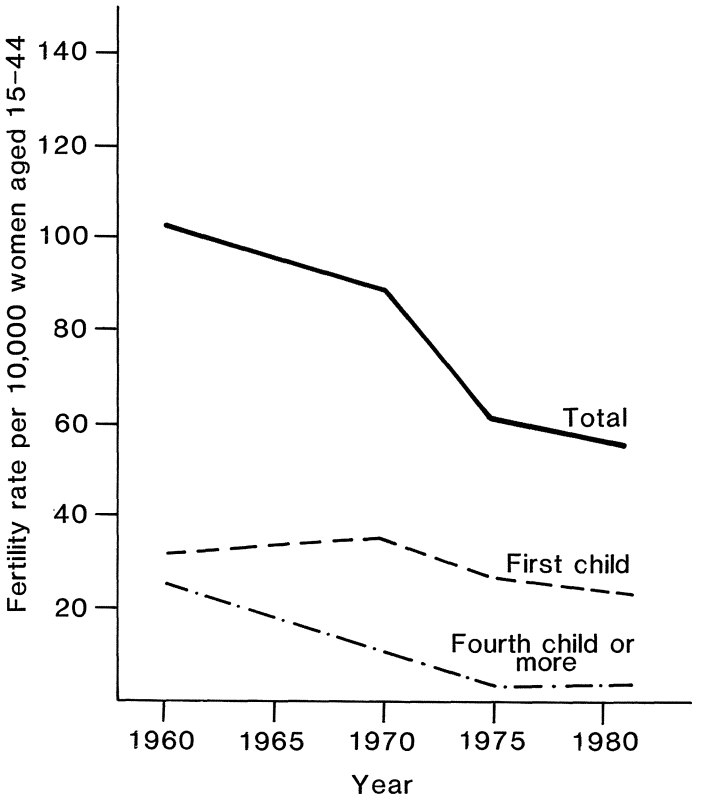


Table 8.11 The distribution of households (head 45 years or younger) between household types, 1971 and 1981

Household type	Year 1971 No. (000s)	%	1981 No. (000s)	%
1. One-person households	247.3	13.0	433.7	18.1
2. Married couples	296.0	16.1	391.0	16.3
3. Family households	1217.0	66.2	1246.2	53.2
4. One-parent households	58.8	3.3	118.9	5.0
5. Non-family households	18.3	1.0	179.5	7.5

Source: WBO81

Figure 8.5 Fertility rates for women aged 15 - 44, by number of children, 1960 - 81



8.9.2 Household expansion

Household expansion refers to the birth of children. In the Netherlands, as in all other Western European countries, nuptiality has dropped. In 1960, fertility in the Netherlands was still high, but thereafter, the total fertility dropped steadily. Up to 1970, this decrease was concentrated in the age categories between thirty and forty; after 1970, the fertility of the younger groups also declined. The reason for this trend becomes clear from an inspection of Figure 8.5.

Up to 1970, the drop in fertility was mainly caused by the fact that less children of birth order four or higher were born. Of the total of 179,000 live born children in 1980, 6.1% were of birth order four or higher, while in 1960 25.0% were born into a family with three children or more. After 1970, the number of first born children per 1000 women in the age 15-45 also decreased. The trend has changed from 'people having less children' to 'less people having children'. Furthermore, the average duration of marriage at the time of the first birth has increased. Thus not only do less people enter the expansion stage, but those who do will enter this stage at a later age. Although the expansion stage has lost importance, it remains dominant: 40% of all households in 1981 were classified as two-person households with children and almost 80% of all households enter this stage.

8.9.3 Household contraction

The moment at which a household enters the contraction stage of the life-cycle (the child-launching and the 'empty-nest' stage) is determined by the age at which the first and the last child respectively were born; and age at which these children leave the parental home. In 1960, the mother was (on average) 51.4 years old when her first child left home, where as in 1975, the age had decreased to 48.1. The difference can only be partially explained by the decreasing age at which women had their first child. The cohort born in 1905-1909 had their first child at the age of 27.6, while the cohort of 1925-1929 showed a mean age of 26.9 (Corver et al. 1979). It is obvious that the decreasing age at which children leave the parental home is largely responsible for the fact that households enter the child-launching stage much earlier. The age at which they enter the empty-nest stage has decreased even further (from 57.1 in 1960 to 51.8 in 1975). This is a result of decreasing family size, which set in well before 1960.

Table 8.12 Older families (45+ years), with or without children, 1971 and 1981

Year	Children No.(000s)	%	Childless No.(000s)	%	Total No.(000s)	%
1971	1043.1	62.4	628.3	37.6	1671.4	100.0
1981	1064.5	57.7	777.9	42.2	1842.4	100.0

Source: Van Leeuwen (1985)

The combined result of these developments is that although the child-launching stage starts earlier, its duration has become shorter and therefore the number of childless older families must have increased (Table 8.12). The share of the childless families in the total group of families in which the female is 45 years or older has increased from 37.6% to 42.2%. An even more dramatic increase may be expected in the future. The growing number of families that remain childless and the decreasing family size will cause the duration of the child-launching stage to shrink in the 1990s. From a preliminary simulation of household size up to the year 2000, it is estimated that the percentage of childless couples among older families will increase by 15% (Hooimeijer and Dieleman 1986).

8.9.4 Household dissolution

The death of one of the spouses is still the most important cause of household dissolution. Although the number of dissolutions through divorce has risen considerably over the two decades, it only amounts to half the number through deaths. The absolute number of widowed persons increased from 631,129 in 1971 to 777,553 in 1981. However the number of widowers did not increase by more than 2,600. The proportion of all widowed persons who are female is growing (80% in 1981), due to the more favourable development of female life-expectancy (Table 8.13).

Table 8.13 Life expectancy at birth by sex, 1956-60 to 1976-80

Period of birth	Males	Females
1956-1960	71.4	74.8
1961-1965	71.1	75.9
1966-1970	71.0	76.4
1971-1975	71.2	77.2
1976-1980	72.1	78.6

Source: CBS

While most developments in household evolution have resulted in growing complexity and heterogeneity of household type, rendering the traditional life-cycle concept less valuable, changes in the last stage of the life-cycle have shown a convergence over time to one household type, single persons in private households. The percentage of widowed persons living in with others has decreased enormously, even among the very old (Table 8.14). Also the number of persons having others living in with them has slackened. As a result, almost 80% of widowers and 90% of widows live alone or with their unmarried child(ren). The figures in Table 8.14 exclude people living in institutions. Despite the growing share of the total population aged 65 or over, the percentage of people enumerated in institutions dropped from 20% to 14% from 1960 to 1981 (even among the very old, it dropped from 35% to 28%), and it is bound to become lower in the future since an explicit policy-goal of the

national government is to further reduce the number of people in homes for aged persons. The process of individualisation mentioned previously is also in effect among the elderly and the consequences to the housing market are obvious. Not only are more housing units needed, but these units will have to be adjusted to the specific housing needs of the elderly.

Table 8.14 Position in household of widowed persons by age and sex, 1971 and 1981

Position	45-64 years		65-74 years		75 or over	
	1971	1981	1971	1981	1971	1981
MALES						
Head one-parent family	47.2	43.6	18.3	15.4	14.6	7.3
Living single	31.7	36.0	48.2	63.5	41.6	59.4
Having others living in	11.5	14.7	12.2	13.1	8.7	8.0
Living in with others	9.6	5.7	21.2	8.0	34.2	14.0
FEMALES						
Head one-parent family	46.0	42.9	14.6	13.9	14.6	8.9
Living single	39.2	46.9	65.4	77.7	52.5	66.9
Having others living in	8.2	6.3	8.4	4.1	5.8	3.9
Living in with others	5.8	5.1	11.6	4.2	23.4	6.8

Source: Van Leeuwen (1985)

Household evolution over the period 1960-1981 has not only produced significant changes in the distribution of age-groups over the various stages of the traditional life cycle, but has also resulted in an increase in the number of households which do not fit into the classification. The groups which deviate, such as young never married single persons, young one-parent families, older one-parent families and older never married single persons, make up only a limited portion of the total population but in absolute numbers, they represent hundreds of thousands of households and, as we have shown, their numbers are increasing. This changing household composition of the population leads to a different structure of housing demand that will have to be satisfied within a housing stock which was built for more traditional demand categories and is very fixed in nature. In the next section we explore these changing patterns of demand, by analyzing the housing needs of the household types described.

Table 8.15 Percentage of persons in households of all persons aged 65 or over, 1971 and 1981

Age of head		1971 In households head or ptner	1971 Total number of persons	1981 In households head or ptner	1981 Total number of persons
65-69	No.(000s)	441.0	484.6	530.1	546.6
	%	91	100	97	100
70-74	No.(000s)	314.2	369.7	416.0	451.1
	%	85	100	92	100
75+	No.(000s)	313.0	485.4	482.7	670.5
	%	65	100	72	100
Total	No.(000s)	1068.8	1339.7	1428.8	1668.2
	%	80	100	86	100

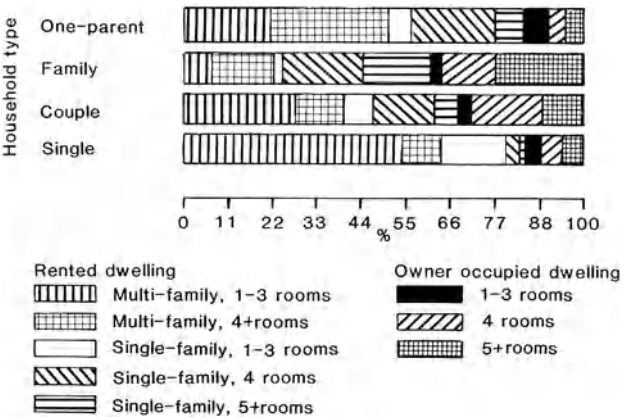
Source: Rongen (1984)

8.10 Household composition and housing needs

8.10.1 New entrants in the Dutch housing market

New entrants in to the housing market are a very heterogeneous group according to their previous housing-situation. We distinguish three types of entrants:
(1) direct entrants: young adults who leave their parents home and move to a private dwelling immediately;
(2) indirect entrants: people who formed a private household but lived on house-boats, in furnished rooms etc. before moving to a private dwelling; and
(3) semi-entrants: households that came into existence through separation from a partner.
These three types of household enter the independent housing market in different ways. The process is obvious for the semi-entrants, but there are also differences between the direct and the indirect entrants. Furnished rooms, houseboats etc., are the antechamber to the independent housing market for many young households. The average time spent in this form of accommodation is 3.2 years at present and this interval is larger in those areas where a shortage in the supply of dwellings exists. By the time this group enters the independent housing market they will have progressed further through the life-cycle than the direct entrants. Analyses show that 22% of the indirect entrants have children compared with only 15% of the direct entrants. It is important to note that the household characteristics described are those recorded in 1981 when household composition might have been different. Those who start their housing career living alone have a higher chance than couples of being indirect entrants.
When we controlled for the differences in age and household composition, the variation in housing consumption between direct and indirect entrants turned out to be small and could be attributed to regional differences in the Dutch housing market (Deurloo et al. 1986). We will therefore only discuss the differences in housing consumption between direct entrants and semi-entrants. Within the first group we differentiated between young single persons, young couples (aged 24 or under), families (most of them are over 24), older couples and

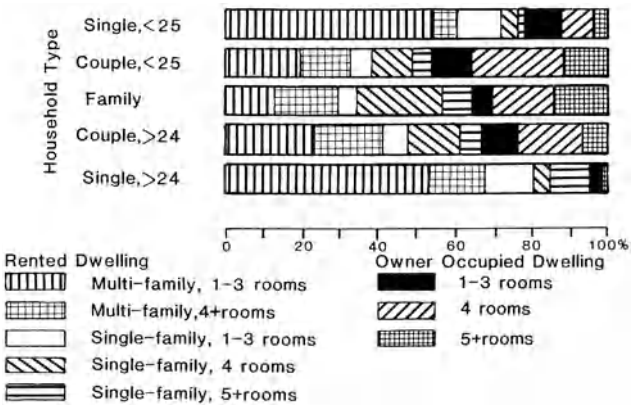
Figure 8.6 Direct entrants to the housing market, by household type and type of accommodation



older single persons. Figure 8.6 indicates that younger single persons are heavily concentrated in small rented apartments. This observation also holds for the single persons aged 24 or over but they are more likely to be first time buyers and are less represented in large rented dwellings. Among two-person households, age seems less important, although older couples are more prominent in the owner-occupied sector. Compared to older couples, the households which have children are over-represented in rented accommodation.

The household composition of the direct entrants has a more pervasive effect on their housing consumption than has age. The evolution in household formation described before has had a decisive impact on the functioning of the housing market. The early age at which people leave their parents home and the tendency to live alone, at least for a while, has caused a continuation of the housing shortage in the Netherlands over the last decade. Competition for small rented apartments remains fierce, even despite changes in the building program during the late seventies and early eighties, enacted to provide extra accommodation in this category.

Figure 8.7 Semi-entrants to the housing-market, by household type and type of accommodation



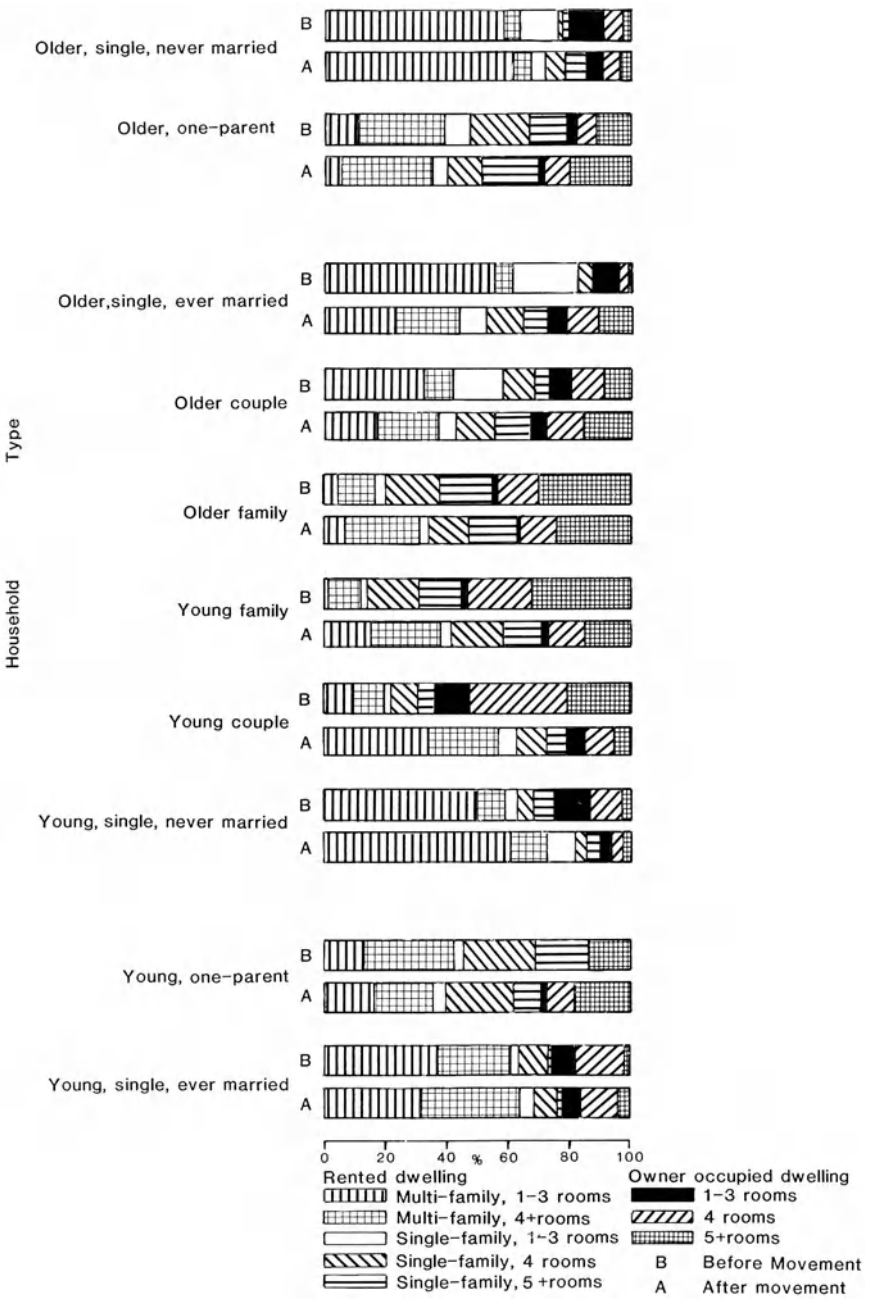
Semi-entrants also show large differences in their housing situation, depending on their household composition. Those who live with another partner appear to be better housed than the ones that live alone or with their children (Figure 8.7). One-person households are rarely found in the owner-occupier sector. Their housing distribution resembles that of single direct and indirect entrants, although the semi-starters are on average much older. Obviously they have to restart their housing career from the bottom of the housing hierarchy. The situation is somewhat different for the one-parent households. They tend to live in more spacious housing and this is not too surprising as housing allocation rules in the Netherlands link dwelling size to household size and one-parent families have the same requirements as full-families. One parent families are concentrated in multi-family structures, and less than 20% own their home. Couples are less concentrated in multi-family accommodation, especially if they are having children and more in the owner-occupier sector. If the housing situation of these households is compared with the housing situation of those with the same demographic characteristics who didn't experience a break in their lifecycle, then it appears that the latter are more likely to own their homes.

8.10.2 Filtering and housing needs

The filtering process of households gives a clear indication of their housing needs, because people will tend to move out of dwellings which are not adjusted to their housing needs and will try to occupy dwellings which are. In Figure 8.8, two bars are depicted for the movers of every household type; the lower bar represents the housing distribution before the move, the upper one, after the move. Advancement along the housing career is clearly displayed for those young households which fit the traditional life cycle model. Among young single persons the advancement is only slight. 36% of all movement is from one small rented apartment to another. The growing tendency to remain solitary or to start cohabiting later in life not only means that more people start their housing career in small apartments, but also that they will be staying in that submarket for a longer period. As a result, less opportunities will arise in this submarket for new entrants. Young couples tend to move into owner-occupied dwellings upon entering the housing market. If their first private dwelling was in the rented sector, they are more likely to become home-owners a few years later. If they started their housing career in a multi-family structure, the subsequent mobility is high (57% of all moves originated from this sector). Young families prefer large single-family dwellings, but they have a lower propensity to move into owner-occupation than couples without children. The increase in the interval between marriage/cohabitation and the birth of the first child, will enable more households to leave the rented sector. On the whole the dominant direction in the filtering process for these groups is from small to large, from multi- to single family and from rented to owner-occupied dwellings.

Younger households which deviate from the traditional life cycle show a pattern that is completely different. Among the young one parent families, the dominant direction is from owner-occupied to rented and from single-family to multi-family structures. Their housing distribution after the move resembles the housing consumption of the one parent semi-entrants.

Figure 8.8 Accommodation characteristics of households before and after movement, by household type



During the later stages of the life cycle a sharp contrast exists between the older families and the older couples without children. In the case of families, the housing distributions before and after the move are almost identical. Older couples, however, show a clear tendency to leave large dwellings in favour of small ones. This tendency is even stronger with older single persons (74% moved to a dwelling with 3 rooms or less), whereas older, one-parent families preferred to have an extra room. 44% of all moves of older single persons who have never married are from one small apartment to another. Changes in household evolution during the stages of contraction and dissolution give rise to an increase in demand for small dwellings. Demand is also directed to small apartments, and small single family housing turns out to be very popular as well. The tendency to remain living in private households longer leads to a decreasing supply in these submarkets, while the demand rises because households reach the 'empty-nest' stage at an earlier point in their lifetime.

The trends in the household evolution described here, combined with the ongoing ageing of the Dutch population, will lead to a significant shift in the aggregate demand for housing in the last two decades of the century. The diminishing size of younger cohorts will not lead to a proportional reduction in the number of young households due to the growing tendency to live alone. Divorce rates are expected to stabilise, but the present high level accentuates the demand for small households. The demand for family housing will decrease. Elderly cohorts will become larger, but the number of elderly families will actually diminish. The number of small dwellings vacated by people moving into institutions, or moving in with their children will decrease, while the number of households exerting demand for this kind of dwelling will increase sharply.

8.11 Conclusions

The principle aim of housing policy in the Netherlands is to enable households to satisfy their housing needs within a reasonable time span. Changes in the distribution of the population over the stages of the life cycle indicate a future mismatch between housing demand and supply. Since housing supply is relatively fixed over time (only 2% is added to the housing stock every year), mismatches between supply and demand will have to be reduced by a redistribution of the population over the existing stock. The extent to which various groups leave (certain types of) dwellings behind, while adjusting their housing situation to their changing needs, can be crucial to the opportunities offered to other groups.

The planning of new housing is done on a five year basis and is very responsive to shortages in supply which exist at the moment the plans are made, rather than looking ahead at future changes in the structure of demand. As a result, the present building programmes are still very much directed towards family housing, which increases the mismatch between supply and demand since waiting lists are getting longer for small households from every age group. This mismatch will be aggravated if the present building policy persists. The building of small, cheap apartments for rent for very young one- and two-person households, which has been subsidised in the late seventies and early eighties, only offers a partial solution. These dwellings are not suited to the needs of eldery households which will comprise a growing share of small households in the future.

9. RESIDENTIAL MOBILITY

9.1. Introduction

Britain and the Netherlands in the 1980s are experiencing low rates of population increase and thus migration has become well established as the major source of regional and local population change. The largest absolute number of moves have been short distance changes of residence in and around the larger urban areas. Residential mobility is clearly an important process in British and Dutch cities where the aggregate effects of thousands of individual decisions to move house are associated with complex social, economic and environmental changes. In many cities, the government has deliberately sought to bring about change, promoting inner city rehabilitation schemes and the sale of council (public rented) houses to sitting tenants. Yet it is also evident that the implications of such policies for the rest of the urban area are not fully understood.

Despite some early work by Herbert (1973), Robson (1975) and Pritchard (1976), our empirical knowledge of the process of residential or intra-urban migration remains limited to a scattering of case studies of individual cities. In Chapter 9, an attempt is made to go beyond the single-city case study by presenting two overviews of intra-urban migration. In the first part of this chapter, Elspeth Graham analyses intra-urban migration in one substantial part of the United Kingdom: Scotland. The first aim of her study is to investigate the extent of similarities and differences in the characteristics of residential mobility in the four major Scottish cities. A prominent theme in the wider literature is the search for a general model of intra-urban migration. As a theoretical goal such a model must deal with some important conceptual problems (Graham 1985) and, if it is to be operational yet sensitive, must start from the micro-behavioural level (Porell 1982). The theme of communality and difference is thus directed towards an assessment of the potential for a general model which recognises the change of residence as a meaningful human action. Graham's second aim is to examine the influence of tenure on intra-urban migration. An important controversy in the literature is that surrounding the relative importance of choice and constraint (Gordon and Vickerman 1982). Variation according to the circumstances of each residential change may be expected, but it has been assumed that the highly controlled public housing sector in Britain operates to restrict individual choice and limit mobility. Scotland provides an interesting area in which to test this assumption.

One of the results of residential mobility is neighbourhood change. Initially, processes of neighbourhood change were explained by theoretical models that described the development of neighbourhoods through various stages from newly-built to demolition. Such cycle and phase theories still receive a lot of attention. In the 1950's and 1960's, Hoover and Vernon (1959) and Birch (1961) constructed models of neighbourhood change that also remain in use, providing a theoretical starting point for describing urban dynamics. More recently, the mobility process itself has been stressed. Intra-urban mobility is often considered the motor which drives the processes of change in urban areas. Explanations for mobility processes in European cities were mainly sought in the demographic and social-economic spheres. However, during the seventies it became clear, firstly in Great Britain, that other factors of

J. Stillwell and H.J. Scholten, Contemporary Research in Population Geography, 173–174.

significant importance were being overlooked, especially factors which had to do with the strong regulation of West-European housing markets. The original explanatory models were therefore expanded to include variables indicating the influence of policy (e.g. Popp 1975). It was gradually realised that the dynamics of urban structure were not only influenced by the individual characteristics of dwellings and residents but also by the context in which these existed (Moore and Clark 1980, Moore 1981, Clark and Everaers 1981). Because of the structure of the housing stock and the various groups of house owners in Europe, there has always been more interest in the possible ways in which urban dynamics can be influenced and guided (Murie et al. 1975). At a municipal level for example, housing distribution policy clearly influences intra-urban mobility (Everaers and Clark 1984). The influence of local government policy at the neighbourhood level on such processes of change has, as yet, not been studied empirically. Also, very little is known about the effects of differences in residential environments on processes of neighbourhood change.

Another somewhat forgotten category of variables that has recently received renewed attention is the residential environment. As the interest in ecological studies declined, so did the desire to incorporate variables indicative of the residential environment. According to some research, movement to certain areas should be interpreted as an expression of the relationship between the household and the dwelling rather than an exponent of the relationship between the household and the residential environment (e.g. Speare et al. 1975, Morgan 1976). Other studies, however, indicate that the residential environment is an essential explanatory variable (see Robson 1975, Little 1976, Leven 1976, Maas 1984, Van Engelsdorp Gastelaars 1985). This is partly the result of a renewed interest in the time-space approach to behaviour (Berry 1965), but also because research has shown that the various household categories differ quite considerably in their choice of residential location. Young households with children are likely to prefer suburban residential areas because of their relatively safe play locations; young people living alone may prefer the inner city area that offers a very wide range of activities. Thus residential areas, neighbourhoods and districts experience certain processes, not only because of the characteristics of their residents and dwellings, but also because of their residential character. In the second part of this chapter, Pieter Everaers and Sako Musterd analyse neighbourhood changes in the Netherlands. They give descriptions of neighbourhood population change resulting from residential mobility as investigated in various research projects. In these studies, various possible explanations of neighbourhood change are examined, and their empirical analyses, in which the housing market context, municipal policy and the residential environment play an important role, involve data from medium-sized municipalities. In order to gain more depth of understanding, data from one city, Tilburg, is used to evaluate the various influences presumed to be important.

9.I RESIDENTIAL MOBILITY AND TENURE IN SCOTTISH CITIES

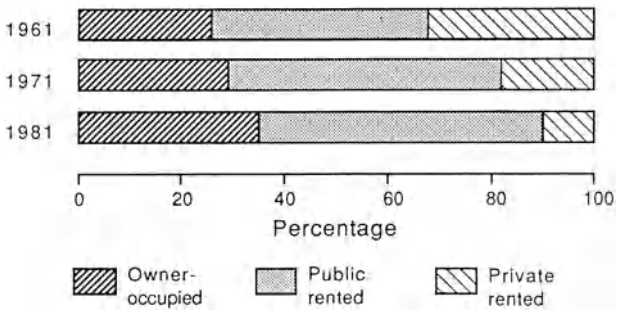
Elspeth Graham

9.2 The Scottish context

The composition of the housing stock and the operation of the property market in Scotland differ from their counterparts in England. Whilst Scotland experienced an increase in home ownership in the decade 1974 to 1984 of around 7%, the owner-occupied sector still accounts for less than 50% of the housing stock and is not the largest tenure type. In Scotland, home ownership has traditionally been in the minority and remains so, uniquely in Britain. Not only does this underline the importance of local authority or public rented housing, but it may mark a real difference in attitudes to such housing in different parts of the British Isles.

In the private sector in Scotland, property transactions are usually effected by advertising a property for sale and collecting secret bids or offers. This introduces an element of uncertainty into the property market but also allows sellers to make substantial capital gains when demand is buoyant. Large capital gains encourage residential change rather than adjustment in situ, especially during the child-bearing and child-rearing stages of the family life-cycle. A survey of 1,178 private households in three regions of Scotland who purchased houses in 1981 (McQueen 1983) found that 14% of former owners had made sufficient financial gains (an average gain of 21,980 pounds) on the sale of their previous house to enable them to buy their present home outright, paying an average price of 24,430 pounds. In such circumstances residential shifts are not only a way of adjusting the size of accommodation to the size of the household, but also the most obvious way of increasing the quality of the housing unit or minimising housing costs. Furthermore, since demand plays this key role in the Scottish housing market, its spatial variations and temporal fluctuations will combine to produce many localised housing markets which may exhibit quite different characteristics at any one time.

Figure 9.1 Tenure of the Scottish housing stock, 1961 - 81



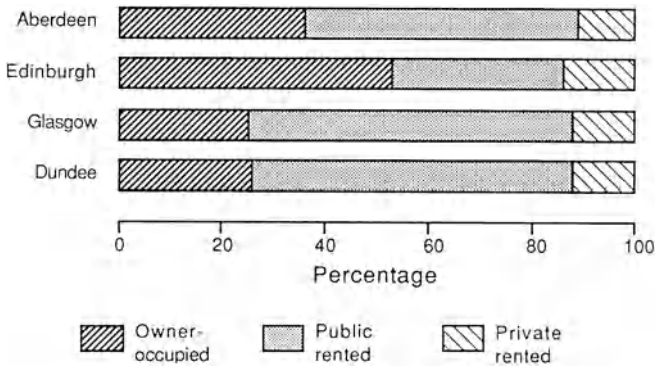
Source: Census 1981 Scotland

It is possible, however, to detect a general temporal trend in the changing tenure composition of the Scottish housing stock over the past 20 years (Figure 9.1). The private rented sector has diminished under a barrage of central government legislation designed to protect the

J. Stillwell and H.J. Scholten, Contemporary Research in Population Geography, 175–186.

rights of tenants against the more extreme activities of landlords. It now accounts for less than 10% of the total stock. Both the public rented and the owner-occupied sectors have increased their relative importance over the two decades. The owner-occupied stock is growing not only through new building but also by the addition of public sector sales which added over 10,000 houses in 1981. At the same time the number of public sector new-builds dramatically declined during the 1970s and in 1978 fell below the number of private sector new-builds where it has remained. Thus, despite the recorded increase in owner-occupation in Scotland, the sale of a substantial number of houses to sitting tenants will not have generated the number of residential shifts that could be expected from similar levels of new building. The gap between Scotland and England in terms of tenure composition has actually increased.

Figure 9.2 Tenure of housing stock in city districts, 1981



Source: Census 1981 Scotland

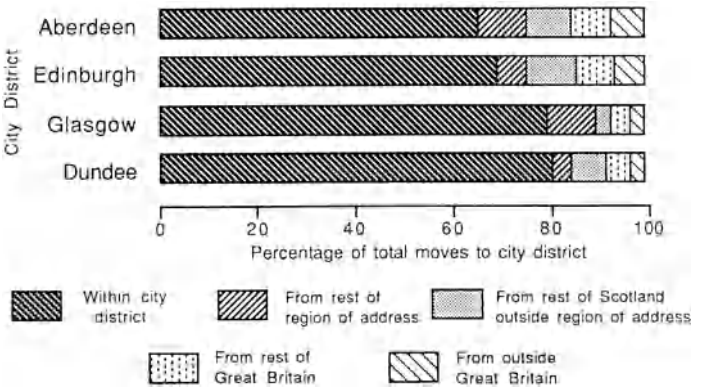
The national trend has been shared by all four large Scottish cities but to different degrees and with different results. Figure 9.2 illustrates the composition of their housing stocks in 1981. Edinburgh's prestige and function as the Scottish capital is reflected in the relatively higher shares of both privately-rented accommodation and owner-occpation in its housing stock. In contrast, Glasgow and Dundee, though very different in size and located on opposite coasts, have an almost identically high proportion of public sector housing at over 60%. Aberdeen falls in between, although its public sector matches the owner-occupation of Edinburgh in relative importance. If housing tenure is a major influence on mobility, then we would expect, a priori, the levels and characteristics of intra-urban migration in these four cities to differ accordingly.

Crude migration rates for the four Scottish cities have been computed from the 1981 Census tables for the number of migrants amongst the usually resident population aged 1 or over. The rates vary from 84.3 migrants per thousand population in Edinburgh to 69.7 per thousand in Glasgow, while Dundee (82.8) and Aberdeen (75.4) are closer to the mean of 78 per thousand. White (1985) suggests a comparable mean of 69.1 for twenty cities in the United Kingdom (including Edinburgh, Glasgow and Aberdeen). Scottish cities therefore

experience rates of residential mobility significantly higher than those in England and Wales, but only slightly higher than those in the Dutch medium-sized municipalities. Edinburgh stands out as the city with the highest levels of intra-urban migration.

Thus even a brief glance at tenure and mobility in Scottish cities must challenge the assumption made by White when he claims that, 'Where publicly-rented accommodation is a significant element in the housing market it might be expected that the relative inflexibility of this sector ... would keep intra-urban moves down' (White 1985, p. 167). Scotland is unique in Britain in maintaining the public rented sector as the majority tenure yet its cities have some of the highest rates of residential mobility in Britain. Any broad association of high mobility with a high level of public sector stock is not sustained, however, when the tenure (Figure 9.2) and migration rates of individual cities are compared. But nor is White's assumption justified for, though Glasgow with its large local authority housing stock also has the lowest level of intra-urban migration, Dundee, which mirrors it so closely in tenure, has a rate 13 per 1,000 higher. Thus if there is a relationship between tenure and rates of residential relocation within cities, it is not a simple or a uniform one. Indeed in Scotland, as in the Netherlands, levels of residential mobility show marked variation both between cities and between neighbourhoods within cities.

Figure 9.3 Type of move of migrants as a percentage of total moves within or to the city district, 1980 - 81

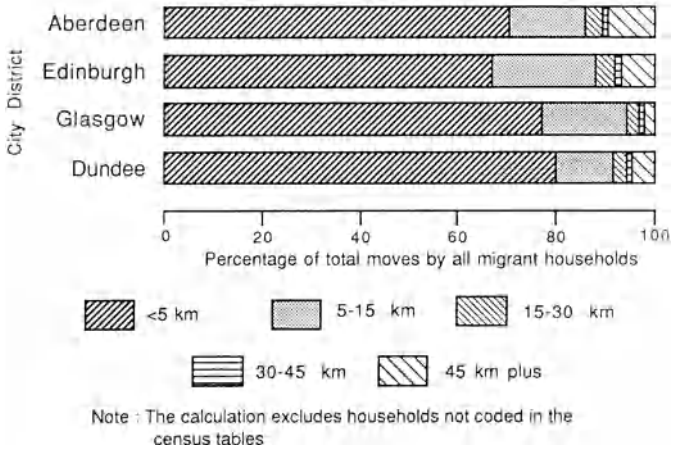


Note : The calculation includes the 1.4%-1.6% of migrants from 'area unknown' but these are omitted from the figure

9.3 Characteristics of moves and migrants

Of all migrants resident in any one of Scotland's city districts at the Census in 1981, over 60% were previous residents of that city and over 70% had moved within a local government region (Figure 9.3). The parochial nature of these migrations results in the creation of four localised and largely discrete migration systems. Figure 9.4 shows that, in each city, over 85% of the resident migrant households moved a distance of less than 15 kilometres. Since this locates migrants within commuting distance of their previous places of residence, it suggests that, whether or not a city district boundary was crossed in such a move, the move

Figure 9.4 Distance of move of migrant households as a percentage of total moves by all migrant households, 1980 - 81



Source : Census 1981 Scotland : Migration Vol.1 (100%)

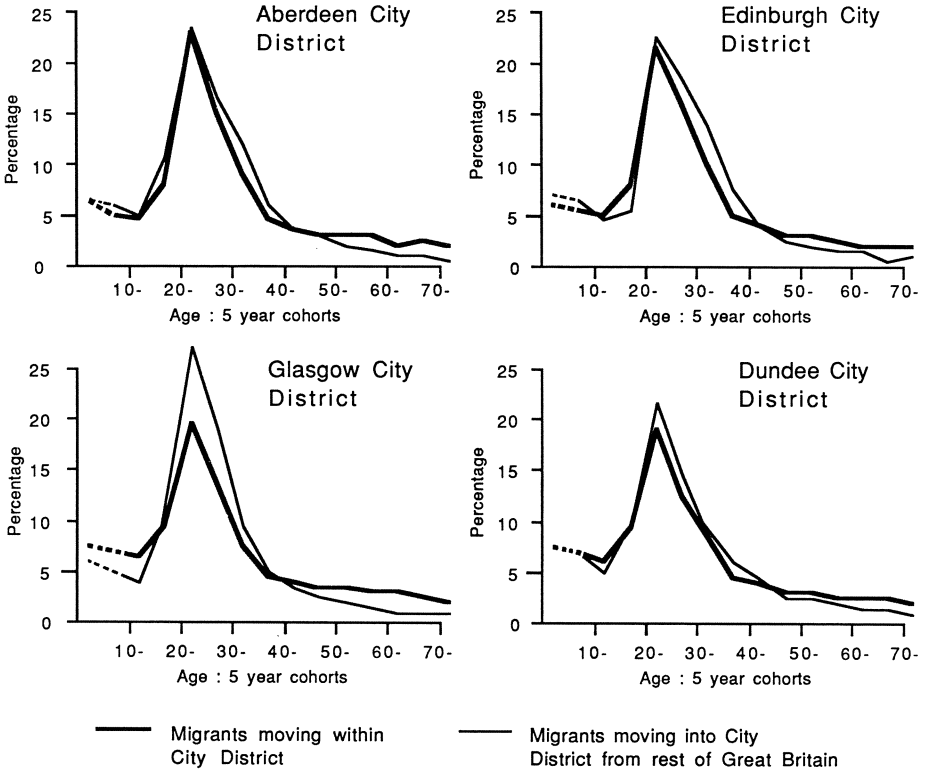
is likely to have been undertaken with a reasonable level of knowledge of local conditions and housing stock. Thus, the localised nature of the migration interchange will serve to reinforce any local market demand conditions that may prevail and encourage the continuance of geographically distinct regional sub-markets which may respond differently to national scale influences.

The most striking common correlate of migration in all the Scottish cities is the typical age of the migrant. The four Scottish cities provide classic age profiles of migrants (Figure 9.5) and do nothing to discredit one of the most secure generalisations drawn from past research, namely that young adults between the ages of 20 and 34 are the most mobile section of any large population. As Figure 9.5 illustrates for all four cities and for both intra-urban and in-migrants, the modal five year age cohort is 20 to 24 years with around 20% of all resident migrants in this age group. Yet there is also a noticeable difference between the age profiles of migrants moving into and those moving within city districts, a difference which is consistent across all four cities. Intra-urban migrants are generally older than in-migrants, being more strongly represented in the age groups over 45 years. A similar age difference has been found in other research (Forbes et al. 1979).

If we conceive of the household as an active decision-making unit operating within a particular housing sub-system (defined both by tenure and by geographical location), then we can see that any general tendency in age selectivity must arise from the interaction of the characteristics of control in the sub-system and a common set of influences on the decision-making of the household. For example, the way in which mortgage finance is made available acts as a control in the owner-occupied sector and the characteristics of that control will often depend more upon national rules and national trends than on local circumstances. In contrast any tendency for individuals to be less mobile with advancing years will influence migration

at the micro-level of household decision making. Explanation must rely upon the elaboration of such common controls and influences, two examples of which will be discussed here.

Figure 9.5 Age profiles of migrants into and within city districts, 1980 - 81



Note : Infants aged 0 at last birthday are not enumerated as migrants
The first cohort is,therefore,ages 1-4 only
Source : Census 1981 Scotland : Migration Vol.2 (100%)

9.3.1 The owner-occupied sector

The first concerns the decision-making of households in the owner-occupied sector. As Figure 9.5 demonstrates clearly, the major influences on and controls over migration both within and to Scottish cities encourage the movement of young adults and discourage the movement of older groups. At the same time other influences and controls are leading to a higher proportion of older migrants amongst the intra-urban movers. The significance of the latter should not be underestimated for, as a combined group in the four Scottish cities, intra-urban migrants aged 45 years and over exceed in-migrants aged 20 to 34 years in absolute number. My contention is that there are features of the owner-occupied sector and of the personal circumstances of households that have a general tendency to either maintain or

increase migration with age, that these are normally outweighed by contrary influences but that they operate more strongly in short distance than longer distance moves. Most first time buyers in the housing market can be classified as young migrants. A 1981 Scottish Development Department survey of housebuyers, for example, found that almost 50% of first time buyers were under 26 years old (McQueen 1983). Thus the older the buyer, the more likely they are to be a second or subsequent time buyer and to have built up a capital gain from the sale of previous houses, giving them a greater ability to improve their housing position still further and a financial incentive (additional capital gain) to do so. It is impossible to adduce evidence from the census to support this thesis but it is nevertheless appealing for it suggests a way in which the level of capital gains and the incentives to move might interact to favour local residential relocations. Briefly, within the child-rearing and child-launching stages of the life-cycle, the older the owner-occupier, the more likely it is that their housing needs (in terms of house size and general location) have been met and that various refinements of preference (rather than need) are important in the motivation of the move. Since, for most, perceived need is a more efficient catalyst to migration than the pursuit of the ideal residence, it is not surprising that the majority find good reason for not relocating. However, those who do continue the strategy of moving towards what Coupe and Morgan (1981) call 'an ultimate housing goal' will find important advantages in relocating locally. Not only will a knowledge of the local housing market allow financial judgements to be made about when best to sell and what price to bid, but knowledge of the local housing stock will also facilitate the whole search process. Thus, as a general tendency, the circumstances of these older movers conspire to favour local moves.

This strategy of improving housing quality by a series of intermediate steps may also be part of the explanation for high mobility amongst younger households in the owner-occupied sector. Being in the early stages of the life-cycle, they can be expected to move more frequently in order to satisfy basic needs and adjust the size of the housing unit to accommodate an expanding household. The distance over which they migrate must to some extent depend upon the geographical distribution of opportunities. They might be expected to move greater distances than older migrants and not only because of a lack of local ties. They are more likely to choose a major change of house type (to accommodate a growing family, for example) which in Scottish cities would most often entail a move from tenement to villa type housing. Since tenement housing tends to be concentrated in the inner city and the inner suburbs, younger expanding households will often move outwards away from the city centre. McQueen (1983) found that the size of the deposit required and the level of income of a household were major determinants of the price paid by first time buyers, who typically bought three rooms or less in a pre-1919 tenement flat and spent under #18,000. Those who had already sold at least one property, however, were typically still under 36 years old, had spent 4.5 years in their former homes and paid over #10,000 more than first time buyers for their 1981 purchase, ploughing back the capital gain on the most recent sale in its entirety. This allowed former owners to increase the size of their housing units from an average of 2.7 rooms to 4.6 rooms, suggesting a move either to more spacious flatted dwellings or suburban villas. Further, around 50% of this category of buyer declared that they expected to move again within ten years, with 85% of these expecting to move upmarket in price. For this substantial group, then, the strategy of using intermediate capital gains to improve the household's position in the housing market appears to be overt and at least partially planned.

Over the past decade, house prices in Scotland have more than kept up with the rate of inflation. During the 1970s, financial incentives were offered to owners to modernise their properties and in some areas older housing was rapidly upgraded and house values increased accordingly. In this way moves between certain types of property have been particularly advantageous. As circumstances have changed, so has the advantage shifted with the relative prices of newer and older housing, for example, fluctuating significantly. With the qualifications that first time and younger buyers may be subject to more geographical restrictions on choice and fewer local ties, the encouragements to buy locally noted in the case of older buyers will also be present for them. Thus the hypothesis of a long term housing goal achieved through a series of moves within an urban area implies a localised pattern of movement, the precise nature of which is strongly influenced by the distribution of housing and neighbourhood types and the characteristics of the city's property market. A sample survey of 219 households in two small owner-occupied neighbourhoods on the southern fringes of Edinburgh City District conducted by the author does lend some support to the idea of localised patterns of residential movement. The single kilometre grid square containing the highest number of household origins was also the one containing the largest proportion of each study area. Over 86% of households in both areas said they had changed neither places of employment nor places of education when they moved. Such evidence is indirect but it does not contradict the contention that intra-urban mobility in the owner-occupied housing sector in Scotland responds to opportunities for capital gain which themselves can be expected to vary acording to particular combinations of circumstances.

9.3.2 The public rented sector

Movement within or into the public rented sector is more explicitly controlled than that in the private sector. Prior residence within a local authority area is normally a pre-condition of application for public sector housing and serves to curtail drastically the number of urban in-migrants moving to this tenure type. The effect is evident in Table 9.1. In Aberdeen, Glasgow and Dundee, migrants in public rented accommodation account for over 50% of all intra-city movers whereas they account for only 27% of in-migrants to Dundee and even lower percentages in the case of the other two cities. The lower figures for Edinburgh are a reflection of the smaller proportion of public rented housing in the capital's stock. Each city district has its own housing authority which allocates and reallocates housing units along broadly similar lines according to a points system. In theory, housing is allocated on the basis of household needs. However, a recent study of public sector housing in Aberdeen (Williams et al. 1986) presents evidence of a clear link between tenant preferences and income, with lower income tenants occupying the poorer parts of the stock. Since Scottish cities do have large stocks of public housing, the scope for differentiation within them is considerable. Several studies have noted clear tenant preferences for different areas and types of house (Scottish Development Department 1976, Garner 1979, Clapham and Kintrea 1984) and a corresponding income-sorted distribution of tenants reminiscent of that found amongst owner-occupiers in the private sector but produced without the aid of an obvious income-sorting mechanism (Williams et al. 1986). To explain this, Williams et al. suggest the existence of a vicious circle in which the presence of a large number of low income tenants in an area may itself decrease the popularity of the area and strengthen the correlation

Table 9.1 Migrant households in publicly rented accommodation by type of move, 1980-81

City District	Intra-urban moves		Moves into the city district	
	No.	% total (all tenures)	No.	% total (all tenures)
Aberdeen	2,125	50.9	198	15.6
Edinburgh	2,843	30.4	254	10.3
Glasgow	7,321	51.8	395	18.0
Dundee	2,414	58.3	165	27.0

between tenant preferences and income. Additionally they find evidence that tenant preferences are more likely to be satisfied if tenants can afford to wait on their preferred choice. It is not just, as Williams et al. claim, that low income households will tend to have more urgent housing problems and therefore be less able to wait, but that higher income households are also more likely to be older, to have satisfied their primary housing needs (and thus be willing to wait) and, being older, to have actuallly waited longer. Since waiting time can mean extra points for a household, points that can then be used to secure a preferred house type or a place on a more popular estate, it would not be surprising to find those who have waited longer being offered the better allocations. If they are already local authority tenants, their position is likely to be further strengthened.

Empirical support for this thesis is limited both because of the non-availability of suitable data and because so many other factors complicate the allocation of public housing. A study of residential mobility in Edinburgh's local authority housing sector between 1963 and 1973 (Garner 1979) does, however, provide some confirmation. Transfer tenants (ie. those moving from one local authority tenure to another) were found to be more likely to be over 30 years old and to fulfil their first choice than new tenants. A strong positive correlation between the number of transfer tenants in an estate and the number of cottage-type dwellings, the most popular house type, was identified. This, together with the fact that twice as many transfer tenants as new tanants failed to achieve any of their choices, suggests that tenants applying for transfer have already satisfied certain housing needs and are not going to move until some of their further preferences (for example, for house type or exact location) can be satisfied.

There is one further feature of the public rented sector which parallels patterns found in the owner-occupied sector. Garner (1979) demonstrated the 'local' nature of residential change in Edinburgh's local authority housing, identifying three areas of intense interaction in the west, north and south-east of the city with only limited cross-city movement. It is clear from the analysis of Glasgow's public sector (Forbes et al. 1979) that at least some local authority tenants do choose to relocate within the immediate area and make use of local knowledge to improve the quality of their housing. Some documented moves in Glasgow involved no

horizontal distance at all, being to a different flat in the same building. Thus, although the constraints are different, it may well be that the public sector residents follow the same general life-time strategy as those in the owner-occupied sector and that we can expect a range of mobility levels in both.

In all Scottish cities the public rented sector, like the owner-occupied sector, forms a localised sub-system with a higher volume of intra- than extra-system mobility. The private rented sector, though small, tends to be concentrated in central areas of the four cities and can be expected to show a different pattern of interchange with other city areas since it feeds both the other two major tenures. There is also evidence that a significant number of moves to owner-occupied suburbs have originated in public sector housing (Forbes et al. 1979). Although the sale of council houses to sitting tenants does not, in itself, increase residential relocation it may well be encouraging increased cross-tenure moves as the better parts of the public stock are privatised and some tenants, seeing a reduction in opportunities for furthering their housing aspirations, decide to invest in the private sector. The interconnections between tenures are therefore important even in circumstances where the majority of moves are within the two major sub-systems of private and public housing.

9.4 Tenure and mobility

The inflexible nature of the public rented sector is cited by White (1985) as a reason for expecting lower levels of intra-urban migration in this sector. There are other reasons for expecting the opposite. As renters, public sector tenants will have lower moving costs with no legal fees and the centralised allocation procedure will simplify the organisation of a move as tenants are not required to search for vacancies. Renters, unlike owner-occupiers, will not have invested substantial sums of capital in their houses, although they will also lack the incentive of capital gain to relocate. Since local authority housing is the majority tenure in Scotland, it is important to note that it does not, at present, preclude choice or deny tenants the opportunity to improve their housing conditions. It is thus unwise to form any a priori expectation of the relative levels of mobility in public and private housing, although higher mobility in the private rented sector could reasonably be expected.

Table 9.2 summarises the census information on intra-urban mobility by tenure for the Scottish city districts. Over the four cities and all three tenure types, there is a high positive correlation between the number of migrant households resident in a particular tenure and the size of the housing stock in that tenure ($rs = +0.951$, significant at the 0.01 level). When the intra-urban migration rates of each city district are broken down by tenure, however, the higher mobility of the private rented sector is clearly revealed. In both Aberdeen and Edinburgh, the owner-occupied and council sectors have very similar migration rates despite the different composition of the housing stock in those cities. If the public sector is the more inflexible of the two, this does not reveal itself in the crude mobility rates. The two rates do show a much greater divergence in both Glasgow and Dundee, but in the opposite direction. The rate of residential change in Glasgow's public rented sector is substantially below that of the owner-occupied sector. It would be tempting to blame this on the size and inflexibility of the former were it not for the evidence from Dundee. Dundee stands out amongst the four Scotttish cities as being the only one with higher mobility in public rented that owner-

occupied tenures. In all four cases the mobility index (Table 9.2) shows that moves in the private rented sector are over-represented in relation to the size of the stock in that tenure. In both Edinburgh and Dundee, however, intra-urban moves in the public rented sector are relatively less under-represented in relation to the size of the stock than those in the owner-occupied sectors. Thus no general pattern of mobility and tenure emerges at this aggregate level and, if generalisations are to be found, they must be sought at a more detailed level.

Table 9.2 Tenure of households moving within city districts, 1980-81

Tenure Type	Total No.	Moving %	Migration Rate (i) per 1,000	Mobility Index (ii) %
Aberdeen				
Owner-occupied	1,501	35.9	55.0	-0.6
Public rented	2,125	50.9	53.7	-2.0
Private rented	,550	13.2	69.5	+2.6
Total	4,176	100.0		
Edinburgh				
Owner-occupied	4,653	49.8	53.6	-3.0
Public rented	2,843	30.4	52.3	-2.6
Private rented	1,848	19.8	79.1	+5.6
Total	9,344	100.0		
Glasgow				
Owner-occupied	3,850	27.3	56.5	+2.3
Public rented	7,321	51.8	42.5	-11.2
Private rented	2,959	20.9	89.6	+8.9
Total	14,130	100.0		
Dundee				
Owner-occupied	,931	22.5	52.0	-4.1
Public rented	2,414	58.3	58.1	-3.3
Private rented	,793	19.2	100.3	+7.4
Total	4,138	100.0		

Notes:
(i) The number of intra-urban migrant households in each tenure type per 1,000 private households in permanent tenures of that type, as recorded at the 1981 Census
(ii) The difference between the actual number of intra-urban migrant households recorded in each tenure type and the number of households that would be expected if all tenure types contained the same proportion if intra-urban migrant to permanent private households, expressed as a percentage of the total number of intra-urban migrant households in the city district
(iii) Source: Census of Scotland, 1981

Dundee was selected for investigation because of its uncommonly high level of intra-urban migration in the public rented sector. The anlaysis covers all enumeration districts containing private households within the city district and the three major tenure types. The Small Area Statistics include a count of the number of resident migrant households in each area but give no information on origins. Thus it is impossible to distinguish within-city movers from newcomers to the city and the migration rates therefore relate all resident migrant households to all permanent private households.

Table 9.3 Enumeration districts by tenure category and level of mobility, Dundee, 1981

Dominant Tenure	%	Mobility Level (migrant per 100 permanent households) Very low 0 - <5	Low 5 - <10	Moderate 10 - <20	High >20
Owner-occupied	>75	23 (25.3%)	41 (45.1%)	22 (24.2%)	5 (5.5%)
	>45 - 75	8 (15.7%)	20 (39.2%)	18 (35.3%)	5 (9.8%)
Public rented	>75	73 (27.3%)	117 (43.8%)	61 (22.8%)	16 (6.0%)
	>45 - 75	16 (28.6%)	21 (37.5%)	15 (26.8%)	4 (7.1%)
Private rented	>75	3 (12.5%)	3 (12.5%)	6 (25.0%)	12 (50.0%)
	>45 - 75	3 (5.8%)	6 (11.5%)	22 (42.3%)	21 (40.4%)
Mixed	No tenure >45	1 (10.0%)	1 (10.0%)	4 (40.0%)	4 (40.0%)

Source:Census of Scotland, 1981 SASPAC data

By dividing the 551 enumeration districts into seven tenure categories according to the tenure composition of each area and relating these to four levels of mobility, several features of the relationship between the tenure compostion of an area and the level of mobility in its housing stock can be noted (Table 9.3). First, the largest percentage (around 45%) of those enumeration districts with over 75% of either owner-occupied or public rented tenures falls in the low mobility category of 5 to under 10 per 100 with very low percentages (around 6%) in the high mobility class and the rest divided more or less evenly between very low mobility and moderate mobility. Since this accounts for 358 or 65% of the enumeration districts in the city, it can be concluded that for the majority of areas in Dundee there is no significant difference between migration in the owner-occupied and public rented sectors ($R^2 = 0.202$, degrees of freedom = 3). Where one tenure is dominant, both tenure types typically

experience low levels of in-migration. Secondly, those areas which have mixed tenures but in which either owner-occupied or public rented housing predominates (over 45%, but equal to or under 75%, of all tenures) also typically experience low levels of mobility, although a slight shift towards the moderate mobility category can be detected. Nevertheless there is no statistically significant difference in mobility either between owner-ccupied and public rented areas or between areas with higher and lower percentages of the dominant tenure. Thirdly, the private rented sector is marked off from the others by its high levels of population turnover. Of the areas in which this tenure is particularly concentrated, 50% fall in the highest mobility category where values up to 65 per 100 are recorded. And lastly, the few truly mixed areas in which no tenure type accounts for over 45% of the stock fall mainly into the two highest mobility categories, probably reflecting the influence of the private rented component. Thus an examination of the small area data for Dundee provides no evidence of significantly lower levels of mobility in areas of public rented housing even when extra-urban migration is taken into account.

9.5 Conclusion

The comparison of levels of intra-urban migration and their relationships to tenure in the four Scottish cities has demonstrated the need for caution in the search for generalisations. There are similarities between the cities, even broad statistical ones such as the modal age cohort of migrants. The predominantly local nature of migration at several scales is another recurrent theme, but with less secure empirical foundations. At both the city-wide scale and at the scale of the enumeration district, public housing administration policies show no general tendency to depress residential mobility in that tenure relative to the owner-occupied sector. Of course, it should not be inferred that tenure has no influence on intra-urban mobility for we have not been able to control for a range of variables that must also be important in the explanation of levels of residential mobility. The superior data sets for Dutch municipalities allow Everaers and Musterd to assess the explanatory strength of some of these variables in the second section of this chapter. Until such detailed information becomes available for British cities, it must remain wholly unwarranted to generalise about the effects of tenure on residential mobility, even within Scotland. For the model builder it is not so much a matter of grasping the possibilities for generalisation as knowing where to look for them.

9.II INTRA-URBAN MIGRATION IN THE NETHERLANDS AND PROCESSES OF NEIGHBOURHOOD CHANGE

Pieter Everaers and Sako Musterd

9.6 Intra-urban migration: the present situation and expected developments in the housing market and neighbourhood change

9.6.1 Mobility and neighbourhood change in the Netherlands

Residential mobility and migration, rather than natural demographic change, are the factors that tend to alter the character of residential neighbourhoods, sometimes over a very short period of time. Inter-municipal migration rates calculated from statistics provided by the Central Bureau of Statistics have remained at 5% for both in- and out-migrants for several years now. A large share of migration however, occurs within municipalities. Clark and Everaers (1981) established that in the Dutch medium-sized cities (those with over 50,000 inhabitants), on average 7.5% of the population moved within a municipality. In all Dutch municipalities the rate was 7%. Municipalities with populations between 100,000 and 300,000 had an average intra-urban mobility rate of 9%. These figures are influenced by supply as well as demand variables. The influences on the supply side are likely to be slight. Few changes have occurred in existing housing institutions, and in the availability of housing and housing areas, although the housing stock increases annually by about 2% as a result of newly built dwellings (VROM 1983). The proportion of total migration which occurs between medium-sized municipalities is about 12%, compared with a national figure of 12.4%. This means that more than 80% of migration is residential mobility taking place within the existing housing stock and within existing residential areas. However, new dwellings must also be considered and different types of new housing encourage different types of households to move. It has been shown, in various cities in the Netherlands, that a higher percentage of rented dwellings in the newly built stock causes other types of housing to become available, due to the process of filtering (see for example VROM 1982, and Neuerburg and Van Fulpen 1979).

More important changes take place in the demand for housing, where various demographic and household developments such as the increasing category of people over 40 years old (from 37% in 1980 to 47% in 2000), and the considerable decrease in the number of young people (under 25) (Dieleman and Schouw 1984, Van Fulpen 1985), have occurred. These changes have significant consequences for migration because it is the young people who are especially mobile when compared to other groups. In addition, a continued increase in the number of small households can be expected due, in part, to the increase in the number of divorces. In 1971 there were 121,000 divorced men and women in the Netherlands, and by 1982 the total had increased to 377,000 (3.4% of the population) (Houben and Van de Lindt 1984, Van Fulpen 1985). This development increases the total migration level as divorced households are relatively mobile (Konter and Van den Booren 1981, Musterd 1986). The number of unmarried couples living together has also increased, but has been offset by the decline in the number of married couples, and so, at least with respect to legislation, this development does not have an enormous effect on the housing market, though there are some evident exceptions, like young urban professionals and potential gentrifiers. In summary, the

J. Stillwell and H.J. Scholten, Contemporary Research in Population Geography, 187–196.

demand side effects exerted by demographic developments, and divorce in particular, tend to be stronger than the supply side effects of changes in the provision of dwellings.

9.6.2 Mobility and neighbourhood change in medium-sized Dutch municipalities

Studies of the mobility patterns of households in various household categories in nine medium-sized Dutch municipalities show that there are considerable differences in mobility levels between neighbourhoods within a certain municipality that are not dissimilar in location, demographic composition, housing stock and social-economic characteristics. (Everaers 1983, Everaers and Maas 1985, Everaers and Musterd 1984). The neighbourhoods can be seen as being representative of more or less homogeneous residential environments. The specific character of the neighbourhood as expressed by the residential environment and the government policy at the neighbourhood level, could be responsible for the differences in mobility and type of change process. The figures in Table 9.4 show that there are considerable differences in mobility between cities as well as between neighbourhoods. Thus, the speed of neighbourhood change as a result of mobility will vary a great deal between neighbourhoods. Some residential environments change quickly while other neighbourhoods are stable over longer periods of time.

Table 9.4 Mobility rates for nine medium-sized Dutch cities

City	Years	City as a whole (1980)	Neighbourhood level Average total population	Average population in families	Average population single
Groningen		16.4	14.979	8.052	35.370
	79,80,81		(6.867)	(3.891)	(29.754)
Hilversum		10.1	10.260	7.050	24.400
	78,79,80		(4.200)	(1.950)	(6.450)
Almelo		13.3	13.272	8.185	35.736
	80,81,82		(6.162)	(5.126)	(27.589)
Nijmegen		16.1	16.095	6.905	20.076
	80,81,82		(5.625)	(3.565)	(4.236)
Deventer		14.2	13.970	10.940	26.853
	77,78,79		(5.900)	(5.300)	(9.010)
Tilburg		12.5	13.464	7.429	40.060
	77,78,79,80		(4.817)	(2.229)	(14.353)
Eindhoven		16.1	16.101	(i)	(i)
	79.80.81		(7.105)		
Den Bosch		13.5	13.360	(i)	(i)
	78,79,80		(5.768)		
Gouda		12.2	10.683	(i)	(i)
	79,80,81		(4.266)		

Notes:
(i) Nofigures available
(ii) Figures in parentheses are standard deviations

Table 9.5 Typology of changes in neighbourhoods in medium-sized Dutch cities

Building age of neighbourhoods	Mobility category of all movers	Mobility categories for solitary movers and families	Type of function of the neighbourhood in mobility pattern	Type of process of change of population structure
(1)	(2)	(3)	(4)	(5)
After 1970	Average	Especially high for solitary movers	Local and regional catchment; solitary movers going elsewhere	Rejuvenation as a result of growing young population
1960–1970	Extremely low	Both categories very low	Solitary movers going elsewhere; (older) families coming from other neighbourhoods	Natural ageing accelerated by leaving of young people
1940–1960	Low	Both categories low	Families going to other areas; young (starting) families coming from elsewhere	Rejuvenation by replacement of older by younger families
1918–1940	Low	Both categories low	Strong outmovement of families to other neighbourhoods and to elsewhere slightly compensated by inmovement of solitary movers	Population decrease and slight rejuvenation as a result of migration
1906–1918	Average	Average for families; low mobility for solitary movers	Solitary movers going to other neighbourhoods; many families moving within neighbourhood	Population decrease
1870–1906	Above average	Both categories above average	Inmovement of solitary movers from other neighbourhoods and elsewhere; families going to other neighbourhoods	Slight rejuvenation by leaving of older and coming of younger (one and two person) households
Before 1870	Extremely high	Both categories extremely high	Inmovement of families and solitary movers from other municipalities; families going to other neighbourhoods and to other municipalities	Slow rate of ageing as a result of influx of older families (also rise in status)

Table 9.6 Typology of neighbourhoods in Tilburg (150,000 inhabitants) based on certain housing, environmental and mobility characteristics

Neigh-bourhood cluster	Neigh-bourhood type	Housing structure	Social structure	Physical structure	Population change by intra-urban mobility	Static/ dynamic	Over representation of influx of .... regarding the available housing stock
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Centre	Many old owner-occupier and private rental housing	Many young people, average status	Mixed residential and working area; below average building quality	Loss of families; gain of young solitary movers	Dynamic	Young solitary movers and joint movers
2	Centre-Edge	Same	Many young people and older young people; low status	Mixed residential & working area; bad physical quality	Loss of families and older young people; gain young solitary	Dynamic	Young and older solitary movers and Mediterraneans
3	Rest Old City	Many old, small dwellings (owner occupied and municipal)	Many older young and elderly people; low status	Homogeneous residential area; average/bad quality	Loss of families; gain of all solitary movers	Dynamic just above average	Older and old solitary movers, single-parent families, joint-movers Mediterraneans and divorced
4	Verge Old-New City	Building society & owner occupied (esp. old) housing	Average	Homogeneous residential	Loss of families and young solitary movers	Static	Young solitary movers & single-parent families (both only lightly)
5	New City	Good building society and post-war owner occupied housing	Many people 40+; high status	Homogeneous residential; high quality	Gain of families; loss of all solitary movers	Static	Old solitary movers, families with and families without children
6	Newly Built City	Small building society/rental & post-war owner occupied housing	Many people 0-15, many people 35+; high status	New homogeneous residential area of high quality	Large gain of families & older and old solitary movers	Dynamic	Families with and without children

It is possible to propose a model framework based on the empirical analysis of mobility between neighbourhoods in medium-sized Dutch municipalities. A summary of research findings on mobility patterns in Dutch municipalities is presented in Table 9.5 In the second column we have categorized the mobility of the entire population. The third column classifies mobility levels for those moving alone or those moving with their families. Column 4 shows the functions that these neighbourhoods perform in the migration process, which depend on whether the migration streams are mainly directed into or away from the neighbourhood. Finally, in column 5, the general processes of population restructuring are summarized. Migration may occur between neighbourhoods and areas outside the city as well as between neighbourhoods within the same city. Depending on the type of neighbourhood, (i.e. its residential environment, dwelling, demographic and social-economic characteristics), certain population groups are attracted to certain residential environments. The figures, based on research in Tilburg, show the over or under representation of the in-movement of various categories of movers into six neighbourhood type clusters (Table 9.6). Examination of the type of housing stock in the clusters and the type of relationship between mobile households and dwellings in the entire municipality, enables an under or over representation of the flows of households to be identified. Neighbourhood clusters range from those containing areas that are centrally located (cluster 1) to those containing areas on the periphery of the city (cluster 6). Columns 6-8 in Table 9.6 show respectively what type of population changes have occurred, whether this process has been static or dynamic and whether the influence of certain population categories has been larger or smaller than could be expected on the basis of the existing housing stock. Certain structural characteristics are indicated in columns 3-5. It is clear that areas into which the influx of young solitary movers and two person households has been higher than expected are also the areas which are functionally very mixed (Centre, Centre-Edge). 'Deprived' or 'weak' population categories (e.g. single-parent families, divorced persons, those of Mediterranean origin) have increased their share in the Old City where old homogeneous residential areas have been left by family households. The latter have moved mainly to the newer areas in numbers greater than could be expected on the basis of the housing stock changes. In the next section, two influences on neighbourhood population change which have been somewhat forgotten until recently are discussed in more detail, and the regression analysis wich has been carried out is explained thereafter.

9.7 The influence of local government policy and residential environment on residential mobility

The decision to move and the type and location of the dwelling that is chosen depends primarily on the characteristics of existing housing and household demand (Clark and Onaka 1984). Some migration is 'forced' through urban renewal or demolition resulting from governmental intervention. However, in the majority of households, the decision to move is a result of the stress that exists between type of household and the type of dwelling. The direction of the move will, to a large extent, depend on the characteristics of the local housing market. The first influence we consider is that of government policy. Government can influence the housing market indirectly by adopting a policy of building houses. Local government can also directly influence residential movements of the 'weaker' household categories in the housing market, such as those dependent on non-commercial housing,

through its allocation policy. Local government regulations that inmigrating households have to comply with tend to have a limiting effect on the number of households migrating in and out each municipality (Everaers and Clark 1984). For 'more deprived' or 'weaker' categories of household, the decision to move will be more strongly determined by their knowledge of the housing market and in particular of the housing allocation system. For certain categories, government policy therefore plays a more important role compared to household and dwelling characteristics. The limiting or stimulating effect of policy on mobility is only partly measured, however, by the gross mobility rates. In the analysis which follows, the influence of government is that exerted through three types of policy: that of allocating particular categories of household to particular areas through the housing allocation system; that of stimulating or limiting new social, cultural or retail services; and that of realizing urban renewal projects, involving the creation of temporary housing, the construction of new housing and the reorganization of infrastructure.

A second major influence on mobility is that of the residential environment. Research on the motives for movement indicates that the residential environment has less influence on the decision to move than it does on the direction in which the move is made. The influence of the residential environment on the decision to move and on the direction of movement tends to be most obvious for the categories that are most sensitive to it i.e. young solitary movers, young families with children, older wealthier households, divorced persons and Mediterranean households.

9.7.1 The data sets

Figures from 352 neighbourhoods in nine medium-sized municipalities and from 169 sub-neighbourhoods in Tilburg have been used to measure the effect of policy and residential environment on neighbourhood change. The first data set includes figures about residential mobility of 'all residents', families and solitary movers as well as information on a number of aggregated demographic and housing stock variables. A classification of neighbourhoods according to socio-economic status has been added to this data set, which includes local policy variables gathered by officials in a local survey. The mobility figures have been split into five types: those within the neighbourhood, those from the neighbourhood to a different neighbourhood in the same municipality, those from a different neighbourhood to the neighbourhood in question, those from the neighbourhood to somewhere outside the municipality, and finally, those from outside the municipality to the neighbourhood concerned. In Table 9.7, the average proportions of these types of migration have been presented for a number of Dutch municipalities.

Data are also available on policies at neighbourhood level and on residential environment characteristics in Tilburg. If a policy involved at least 20% of the population or housing of a neighbourhood, it was awarded the score 1, otherwise its score was 0. The residential environment characteristics include social and demographic indicators: the percentage of residents of Mediterranean origin, the percentage of residents on welfare, the percentage of residents in the age categories 15-25, 25-30 and 65+ years old. Indicators of the physical environment are: the percentage of private rented dwellings, the percentage of dwellings lacking two or more elementary amenities, an indicator of the functional character of the

environment (either mixed residential and working area or a homogeneous residential area) and the location of the neighbourhood in relation to the centre. The Tilburg figures on mobile households and dwelling characteristics are available at the individual level. Residential environment and policy variables can be added to the analysis as context variables.

Table 9.7 Relative proportions in different migration streams in medium-sized Dutch cities

City	Within neigh. (a)	Intra-urban To other neigh. (b1)	From other neigh. (b2)	Inter urban To other municip. (c1)	From other municip. (c2)
Almelo	4.65	29.89	30.37	17.04	13.41
Den Bosch	6.44	24.99	27.23	16.51	18.39
Deventer	5.34	25.93	24.93	21.01	18.44
Eindhoven	4.15	28.34	28.69	16.56	18.10
Gouda	4.52	25.44	25.04	21.00	19.47
Groningen	5.88	26.32	28.75	15.32	17.85
Hilversum	3.52	21.19	21.06	27.30	23.41
Nijmegen	6.16	26.66	26.64	17.97	16.41
Tilburg	6.48	28.75	28.68	15.84	13.75

Note: a +a + b1 + b2 + c1 + c2 = 100

9.7.2 The research method

The analysis consisted of two parallel exercises based on stepwise multiple regression. Firstly we have examined the extent to which population change can be explained by mobility for the 352 neighbourhoods in nine medium-sized municipalities, by using a multiple regression equation which includes a residential environment variable (the socio-economic status of a neighbourhood as perceived by municipal employees). The mobility rate was used as the dependent variable, and for Tilburg, the residuals were then crosstabulated with the policy variables.

Secondly, a similar analysis has been carried out for the neighbourhoods in Tilburg to determine the extent to which population change can be explained by mobility. Because of the type of data involved, location quotients have been used as the dependent variable to indicate how much higher the in-migration of a certain household category into a neighbourhood is than could be expected on the basis of the movement of that category in the entire municipality and on the basis of the housing stock in each neighbourhood. These quotients

were determined for each household category and for each dwelling type (nine dwelling types were distinguished according to tenure, type, age and size). The patterns of overrepresentation appeared to be consistent for most neighbourhoods i.e. if there was overrepresentation in a certain dwelling type there was generally also overrepresentation in (almost) all other dwelling types. This was the reason for using location quotients that were not differentiated by dwelling type in the rest of the analysis. These location quotients were considered as a function of the residential environment indicators mentioned previously. Finally the residuals were crosstabulated seperately with the policy variables.

9.7.3 Explanatory models of residential mobility at neighbourhood level

Based on the correlation and regression analyses, a number of explanatory equations for mobility rates were calibrated. The order in which the explanatory variables were added was kept constant and Table 9.8 shows the coefficients of determination and their percentage change as new variables are added in the stepwise method. This set of variables explains 40% of the variation in mobility rate for all people. The explanatory strength of these variables is a lot less for families and solitary movers. When the four different types of migration are analysed, rates of mobility to other neighbourhoods in the municipality and to other municipalities can be explained fairly well. The characteristics of the dwelling appear to be more important for families than single persons and as expected, demographic characteristics play a more important role for solitary movers.

Table 9.8 R^2 change for different categories of population and migration streams based on demographic, housing and socio-economic variables for 352 neighbourhoods in medium-sized Dutch cities

Independent variable	All people	Pop. in families	Single persons	Within neigh.	To othr neigh.	From othr neigh.	To othr municip.	From othr municip.
Demographic								
%15-24	.17	.09	.10	.06	.07	.06	.01	.08
% >65	.25	.10	.17	.06	.10	.09	.02	.09
% foreign.	.25	.11	.17	.06	.13	.10	.02	.10
	(25%)	(11%)	(17%)	(6%)	(13%)	(10%)	(2%)	(10%)
Housing								
%one family	.32	.15	.18	.12	.27	.15	.20	.10
% rent	.37	.19	.18	.17	.35	.18	.24	.11
% built 1940 -1970	.39	.19	.18	.17	.36	.19	.26	.11
%built after 1970	.39	.19	.18	.18	.36	.19	.26	.11
	(14%)	(8%)	(1%)	(12%)	(23%)	(9%)	(24%)	(1%)
Socio-economic								
Image	.39	.23	.23	.23	.39	.21	.36	.21
Status	.39	.23	.23	.24	.39	.22	.36	.23
housing qual	.39	.23	.23	.24	.39	.22	.36	.23
	(1%)	(5%)	(5%)	(6%)	(3%)	(3%)	(13%)	(12%)

It is clear that there is still quite a considerable variation in the mobility rates which remains unexplained. For the neighbourhoods in Tilburg, high residual values are concentrated in the central parts of the pre-war city and in only a few neighbourhoods outside the ringroad that encloses the Old City. In the Old City, the housing stock and population composition is strongly differentiated. When the areas in which different types of local government policy (population structure, socio-cultural, welfare, housing) were in operation during the research period are identified, and their incidence is compared the distribution of residuals, there is sufficient evidence to conclude that policy is an important influential factor on mobility.

The residuals for families, solitary movers and 'all residents' show a significant statistical correlation with areas where local population allocation policies and public housing policies have been in use. The residuals of total mobility of 'all residents' correlate significantly (at 95% confidence level) with urban renewal, rebuilding and renovation policies but social and cultural services have no apparent correlation with the residuals (Table 9.9).

Table 9.9 Association between local policies and mobility rate residuals after controlling for demographic, housing and socio-economic variables, for neighbourhoods in medium-sized Dutch cities

Mobility category	Policies		
	Population	Socio-cultural	Housing
Total population	X	0	X
Population in families	X	0	0
Single	X	0	0
Within neighbourhood	0	0	0
To other neighbourhoods	X	0	0
From other neighbourhoods	0	0	0
To other cities	X	0	X
From other cities	X	0	X

Notes: X = Chi square significant at 95% level, 0 = Chi square not significant at 95% level

The second analysis was concerned only with Tilburg. Location quotients which measure higher than expected in-migration for each population category, were determined for each of the 169 subneighbourhoods. The residential environment characteristics appear to explain much of the variance in the spatial distribution of quotients for the group comprising young solitary movers ($R^2 = 0.68$), and to a slightly lesser extent, for single-parent families ($R^2 = 0.55$). The results indicate that only a low percentage of variance is explained by the residential environment variables for the families without children ($R^2 = 0.27$). A more detailed discussion of these results is contained in Musterd (1986). The unexplained variance

can again be related to policy variables if the 169 sub-neighbourhoods are aggregated to 33 larger neighbourhoods (Table 9.10). For older solitary movers, families with children and single-parent families, the policy variables do not add anything to the explanation. This may be due to a possible correlation between the policy and residential environment variables used. For example, urban renewal policy will correlate with the environmental characteristics that indicate the physical quality of the neighbourhood. However, a significant correlation was found for other household categories between the residuals and the population policy. If we compare the Chi^2 values, they are clearly highest for families without children. It is this category of household that is sensitive to policy since it is most dependent on non-commercial rented dwellings.

Table 9.10 Association between local policies and location quotient residuals after controlling for residential environment variables, Tilburg

Mobility category	Policies		
	Population	Socio-cultural	Housing
Solitary movers			
Young	X	0	0
Older	0	0	0
Old	X	X	0
Families			
Without children	X	0	0
With children	0	0	0
Single parent	0	0	0

9.8 Conclusion

It has been shown that household categories vary in their sensitivity to the residential environment and to local government policy. These factors seem to be responsible for part of the explanation of different mobility rates and location quotients at the neighbourhood level. However, this does not necessarily mean there are causal relationships between these factors and either the propensity for individual households to move or the direction in which they move. They are important influences but perhaps more so in the form of intermediary variables. On the basis of results presented here we do have an indication that policy and environmental characteristics can strengthen or weaken the processes at neighbourhood level. The results justify further research into local policy and residential environment as factors that explain mobility.

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10. THE HOUSING MARKET AS A SOURCE OF URBAN DEMOGRAPHIC AND SOCIAL CHANGE: THE IMPACT OF FLAT BREAK-UPS IN LONDON AND CONDOMINIUM CONVERSION IN THE NETHERLANDS

Chris Hamnett, Menno Maas and Jan van Weesep

10.1 Introduction

A great deal of research has been done on urban social patterns over the past sixty years and it is now accepted that the structure and composition of the resident population in different areas are influenced to an important extent by the structure and geography of housing opportunities. The reason is simple. Robson (1975) has pointed out that 'social areas are made up of people living in houses, distributed in space'. Given the well-known relationships between house type, tenure, price and the like and the character of the resident population and the fact that different types of housing are not ditributed randomly over space, it follows that the social composition of different residential areas is likely to reflect, to a greater or lesser extent, the distribution of the housing stock by type, tenure, price and accesss (Robson 1969, Bourne 1981, Bassett and Short 1981).

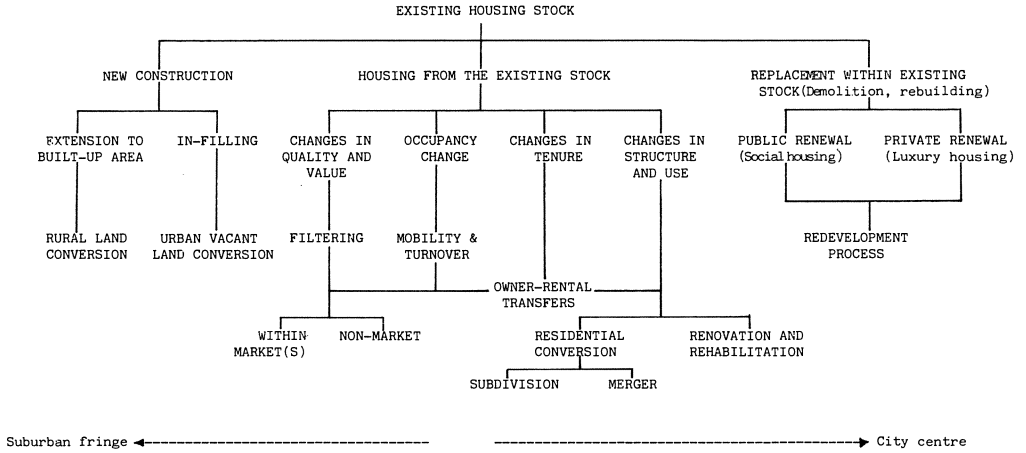
The relationships between the characteristics of the housing stock and the resident population in different areas are well-known and long established. Less attention however, has been paid to the role played by housing market change in residential social change. There are two direct sources of change in the social and population composition of residential areas: 'in-situ' change and migration. Migration is generally seen as the most important and White (1985) has suggested that 'migration is the most important direct determinant of the stability or transformation of the demographic and social composition of urban neighbourhoods' (p. 134). But neither in-situ population change or residential migration within urban areas takes place in a vacuum. While migration can and does reshape the social characteristics of residential areas, it takes place within the changing structure of opportunities and constraints afforded by the distribution, type and nature of the housing stock and the operation of the housing market (Short 1978, Van Weesep 1985). Residential social change can therefore be seen to partly result from the changing relationships between the demand for and the supply of housing, differentiated by size, type, quality, price, tenure and location. As White (1985) argues, 'intra-urban migration is most significantly related to housing opportunites and to the constraints that act to restrict housing choice for certain sub-groups of the population. Thus the level and type of movement is profoundly affected by such aspects of the housing situation as the workings of public sector housing, the localised nature of new construction and the availability of cheap privately-rented inner-city apartments' (p. 150).

Changes in the structure of housing supply can be categorised in a variety of different ways. As Bourne (1981) has pointed out, housing can be added (or removed) from the existing stock as a result of new construction on previously undeveloped land, modifications to the form, tenure or structure of the existing stock, and through the replacement of the existing stock by clearance and/or new building (Figure 10.1). Because cities tend to be developed outwards over time in a roughly concentric fashion (Adams 1970), such supply changes have

J. Stillwell and H.J. Scholten, Contemporary Research in Population Geography, 197–210.

a distinct spatial imprint. Whereas the majority of new construction takes place at or beyond the periphery of the build-up area, modification or replacement of the existing stock take place, by definition, within the confines of the existing built-up area.

Figure 10.1 Types and processes of change in an urban housing stock



Source: Bourne, L. (1981, p.28), reprinted with permission of the author.

10.2 The geography of housing tenure change

Each of these types of change in the structure of housing supply can involve changes in the geographical distribution of the structure of the housing stock by type, price and tenure and each can lead to residential social change. The role of housing tenure is particularly crucial, both because of the constraints on access to different housing tenures and because the structure of housing tenure is highly geographically differentiated. Bourne (1981) argues that where the 'urban housing stock is spatially differentiated by tenure, a changing pattern of ... housing tenure will alter the movements of households accordingly. The suburbanisation of the high rise rental apartment in North America during the 1960s ... irreversibly remade the image of the suburbs, and the geography of housing demand and opportunities by tenure' (pp 141-2). In most Western European and North American cities, the dominance of private renting in the 19th and early 20th centuries has meant that the older inner urban areas were predominantly privately rented, whereas the subsequent growth of new built owner occupation has been predominantly a suburban phenomenon (Hamnett 1983, Hamnett and Randolph 1983). The post-war redevelopment of British and Dutch inner cities by local authorities has meant that large areas of poorer private rented housing have been replaced by council housing. Also, many privately rented properties in the inner cities of Britain, Western Europe and North America have been sold for owner occupation. This has resulted in major changes in both the tenure and social structure of the inner cities. In Britain,

these tenure changes have been associated with social polarisation by tenure as the more highly skilled and more affluent have moved into owner occupation and the less skilled, lower paid, the unemployed and minority groups have become concentrated in the council sector (Hamnett 1983; 1984, Hamnett and Randolph 1986, Bentham 1986, Malpass 1983).

In the short and medium term, changes in the existing housing stock constitute the major source of housing supply change and one of the most important of these changes has been the sale of privately rented houses for owner occupation (Harloe 1984). Until the late 1960s this process of tenure transformation was almost entirely restricted to house property. But the 1970s have seen the rapid growth of a new phenomenon in the private housing markets of a number of western economies. Known variously as condominium conversion in Canada and the United States, flat 'break-up' in England and 'appartementssplitsing' in The Netherlands, it has involved the conversion and sale of multi-unit rented apartment buildings to individual owner occupation. The precise form of the process varies from country to country, but conversion generally results in the decline of private renting and growth of owner occupation. The underlying economic causes of the process have been analysed in detail elsewhere (Hamnett and Randolph 1984; 1985; 1986, Van Weesep 1981; 1984, Van Weesep and Maas 1984) and will not be repaeated here. The important point to stress is that the incidence and the impact of the process have been most strongly marked in large cities where there is a large stock of apartment buildings and where the housing market is tight and high levels of demand and limited supply have made conversions very profitable. In such cities, the changes in tenure associated with this process have been very marked and in this chapter we will examine some of the social changes which have resulted from conversions in London, Amsterdam, Rotterdam and The Hague.

10.3 Tenure change and social change in inner London's purpose-built private flat sector

The standing private housing stock of central and inner London has been subject to three major inter-related processes of change in tenure and occupancy over the last 20 years. The first process involves the transfer of multi-occupied privately rented housing to single family owner occupation associated with gentrification (Williams 1976, Hamnett and Williams 1980). The second process, which is the subject of current research, is the convesion of existing owner occupied or privately rented houses into flats for sale. The scale and extent of this process has grown rapidly over the last few years as the number and proportion of single and two person households has grown, as demand for housing has outstripped supply and as house prices have risen rapidly. Flat conversion can have the opposite effect to gentrification as several separate household spaces are created in what was previously one dwelling. The third type of change, and the one we wish to focus on here is the change which has taken place in central and inner London's large standing stock of purpose-built private flats over the last 20 years. Known as flat 'break-up', it involves the sale for owner occupation of individual flats in blocks of privately rented flats. Because of the existence of the leasehold form of tenure and the absence of condominium legislation in England and Wales, individual flats are sold on a long lease (usually 99 years) without converting the whole block to condominium status. The existence of security of tenure legislation also means that sales can only take place on a gradual basis to sitting tenants or as flats become vacant. But, though

the sale process is gradual and incremental, it is a good example of the role of tenure-induced social change precisely because the physical stock of housing has remained largely unchanged.

10.3.1 The scale of the 'break-up' process in central London

The scale, history and explanation of the flat 'break-up' process has been analysed in detail elsewhere (Hamnett and Randolph 1984; 1985; 1986) and will not be repeated here. The major point which needs to be made here is that in 1966, the high-water mark of the sector immediately prior to break-up, there were some 173,000 privately rented flats in purpose-built blocks in Greater London, 8% of the total housing stock and 28% of all privately rented dwellings. The concentration of such flats was greatest in the three central London boroughs of Camden, Kensington and Westminster where there were approximately 47,500 such flats, 28% of the Greater London total. These flats accounted for no less than 27% of all dwellings and 48% of all privately rented dwellings in the three central London boroughs in 1966. In addition there were some 3,300 owner occupied flats in central London in 1966, a grand total of 51,000 flats. Most of these blocks were built over 50 years ago for a relatively well-off white-collar population. The sale of the privately rented flats got under way in the late 1960s, and between 1966 and 1981, the number of usually resident household spaces in privately rented flats had been reduced by approximately 22,000 or 50% whereas the number of owner occupied flats had increased by approximately 12,000 or 350% (Table 10.1). These figures show that a major change in tenure structure took place between 1966 and 1981.

Table 10.1 The changing tenurial composition of privately owned blocks of flats in Greater London, 1966-1981

TENURE		Inner London	Central London	Outer London
1966				
Owner-occupied		11,240	3,290	36,920
Rented unfurnished		110,470	43,450	54,330
Rented furnished		6,480	4,350	2,280
Total		128,190	51,090	93,530
1981				
Owner-occupied		35,645	14,947	77,794
Rented unfurnished		54,166	21,877	37,853
Rented furnished		8,184	4,586	5,544
Total		97,995	41,410	121,191
Change 1966-81				
Owner-occupied:	Number	+24,405	+11,657	+40,874
	%	+217.1	+354.3	+110.7
Rented unfurnished:	Number	-56,304	-21,573	-16,477
	%	-50.9	-49.7	-30.3
Rented furnished	Number	+1,704	+236	+3,264
	%	+22.8	+5.4	+143.2
Total change:	Number	-30,195	-9,680	+27,661
	%	-30.8	-18.9	+24.6

One of the most important changes has been the reduction in the total enumerated usually resident private household spaces in the blocks. It can be seen from Table 10.1 that there were approximately 10,000 fewer enumerated usually resident household spaces in the purpose-built flat sector in 1981 than there were in 1966. Given that very few of the blocks had been demolished in the interim, that there were very few sharing households in the sector in 1966, and that no more than 1,500 flats had been municipalised in Camden, almost 10,000 usually resident private household spaces appear to have been lost between 1966 and 1981. As we have argued elsewhere, the explanation for this decline lies in the fact that a large number of flats were either being held vacant by landlords pending sale or had been sold to not usually resident overseas or company buyers for short-term use. This is difficult to demonstrate from 1981 Census small area data on vacant household spaces because they are not disaggregated by building type and cannot, of course, be disaggregated by tenure. But by using large scale maps with census enumeration boundaries superimposed, it proved possible to identify 101 blocks of flats in central London which were large enough to constitute individual census enumeration districts in both 1971 and 1981. These blocks collectively accounted for no less than 12,900 household spaces, a quarter of the 1966 central London total in purpose-built private blocks of flats. Figures for these blocks (Table 10.2) reveal that owner occupation increased by 265%, growing from 6 to 23% of all household spaces, while unfurnished private renting declined by 55% from 71 to just 33% of all household spaces.

Table 10.2 Tenure and vacancy changes for household spaces in 101 blocks of flats in Central London, 1971-1981

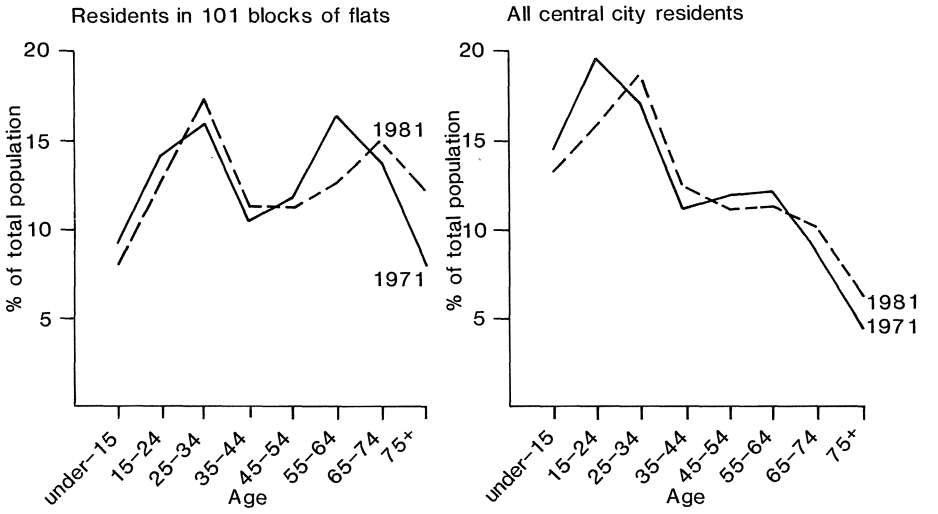
Tenure	1971	%	1981	%	1971-81	%
Owner Occupied	814	6.3	2,969	23.0	+2,155	+264.7
Local authority	320	2.5	436	3.4	+116	-36.3
Rented unfurnished	9,241	71.4	4,266	33.0	-4,975	+53.8
Rented furnished	1,425	11.0	948	7.3	-477	-33.4
Vacant	1,137	8.8	4,302	33.2	+3,165	+278.4
Total	12,937	100.0	12,921	100.0	-16	-0.1

These figures are comparable with those for central London as a whole, but the key figures are those for vacant household spaces which increased by over 3,000 or 278% from 9 to 33% of all spaces. If these figures are extrapolated to the whole central London sector, they produce a total of 12,000 vacant spaces which more than accounts for the 10,000 enumerated usually resident household spaces which disappeared between 1966 and 1981. This indicates that the flat break-up process is accompanied by a considerable reduction in the number of usually resident households. Part of this reduction will be temporary as the vacant flats are sold, but for those units sold to companies or overseas buyers as investments or temporary accommodation, the reduction will be permanent. Either way, it can be argued that the flat break-up process has contributed to the rapid decline in the number of usually resident households in central London between 1971 and 1981, a decline of 15% in Camden, 21% in Westminster and 28% in Kensington.

10.3.2 The demographic and social consequences of flat break-up

The break-up process has also resulted in considerable changes in the age structure of the blocks. The age structure of central city residents is usually typified by a high proportion of people aged 24-35, a low proportion of children aged 15 and under and people aged 35-54 and a relatively low proportion of older people. But as Figure 10.2 shows, the age structure of residents in the 101 large blocks is even more unusual having a bi-modal distribution in 1971. The blocks had high proportions of residents aged 25-34 and 55-64 years. This second peak is quite distinctive but what is important for our analysis is that although the proportion of 25-34 year old residents remained almost exactly the same in 1981, the second peak had shifted from the 55-64 age group in 1971 to the 65-74 group in 1981. The proportion of the population aged 75 plus also increased by 27% in the blocks over 1971-81 compared to an increase of just 3% in the three central boroughs as a whole. We believe that the principal reason for this shift in the second age peak in the blocks can be explained as a result of the tenure changes which have taken place in the blocks. Because of landlords decisions not to relet on vacancy, the large group of longstanding rented tenants who were in their 50s and 60s in 1971 have simply aged in situ without being replaced by a younger age cohort of renters. Instead, they have been replaced by younger buyers in their 20s and 30s.

Figure 10.2 Age structure of residents in 101 blocks of flats in Central London compared with all central city residents, 1971 and 1981



This conclusion can be supported by two pieces of evidence. First, the 1981 Census figures for the blocks reveal that only 32% of owner occupiers were pensioner households compared to 53% of unfurnished rented tenants. Second, the results of a small survey of residents in some 25 blocks in 1981 showed that the average age of household heads renting unfurnished was 64 years compared to an average age of 43 years for open market buyers. Whereas 75% of all owners had moved into their flats since 1970. Only 17% of unfurnished tenants had done so. The largest proportion (49%) of unfurnished tenants had moved into their flats

during the 1960s (prior to break-up) and another 20% had been resident since 1950. Because landlords ceased new lettings in the early 1970s, the existing older rental tenants simply aged in situ while younger renters were not replaced when they moved.

Table 10.3 The occupational characteristics of economically active and retired household heads in 101 blocks of flats in Central London, 1971-81

Occupational Status	1971	%	1981	%	1971-81	%
Managerial	304	28.3	232	30.6	-72	-23.7
Professional	129	12.0	80	10.5	-49	-38.0
Other non-manual	336	31.3	288	37.9	-48	-14.3
Self-employed	47	4.4	44	5.8	-3	-6.4
Skilled manual	40	3.7	28	3.7	-12	-30.0
Semi-skilled and service workers	60	5.6	43	5.6	-17	-28.3
Unskilled	26	2.4	20	2.6	-6	-23.1
Armed Forces and inadequately described	132	12.3	25	3.3	-107	-81.1
Total	1,074	100.0	760	100.0	-314	-29.2

The occupational status of occupationally active and retired household heads in the 101 blocks was overwhelmingly white collar in both 1971 and 1981. Table 10.3 shows that in 1971 no less than 40% of economically active and retired household heads were classed as professional and managerial compared to a three borough average of 24% and a Greater London average of 20%. When the other non-manual categories are added, the proportion of non-manual household heads in the blocks totalled 72%. The proportion inreased to 79% by 1981 and the 1981 Census revealed the existence of distinct differences between owners and renters. Almost 75% of owners had professional, managerial or intermediate white-collar occupations, compared to just over half of tenants (Table 10.4). This suggests that as the break-up process continues and more flats are sold for owner occupation, the proportion of white-collar workers in the blocks is likely to increase still further. The division between owners and renters was even more marked where incomes are concerned. The results of the sample survey revealed that where as 46% of tenants said their gross household income was less than L5,000 pa in 1981 only 9% of owners fell into this category. Conversely, 41% of owners said that their gross household income exceeded L12,000 pa, but only 13% of renters were in this category. It would appear from our survey that the new owners are younger, have a higher proportion of professional and manual occupations and are more affluent than renters. This is not suprising in that many renters are retired and the price of the flats precludes all but the better-off from ownership. In November 1986, Chesterton's, a leading firm of estate agents and chartered surveyors, estimated that the average price of long leasehold flats in the Mayfair, Belgravia and St. James areas of central London varied from L65,000 for one-room studio flats to L250,000 for three-bedroom flats and L450,000 for five-bedroom flats. At these prices, only the very well-off can afford to purchase and the central London flat market is becoming the preserve of the international wealthy.

Table 10.4 The socio-economic characteristics of economically active and retired household heads in 101 blocks of flats in Central London, 1981

SEG		Owner Occupied	%	Unfurnished	%	Other rented	%	Total
Managerial	No.	94	35.1	77	31.9	61	24.3	232
	%	40.5		33.2		26.3		100
Professional	No.	48	17.9	17	7.1	15	6.0	80
	%	60.0		21.2		18.8		100
Other non-manual	No.	91	33.9	102	42.3	95	37.8	288
	%	31.6		35.4		33.0		100
Self-employed	No.	11	4.1	23	9.5	10	4.0	44
	%	25.0		52.3		22.7		100
Skilled manual	No.	6	2.2	5	2.1	17	6.8	28
	%	21.4		17.9		60.7		100
Semi-skilled and service workers	%	25.6		16.3		58.1		100
Unskilled	No.	0	0.0	2	0.8	18	7.2	20
	%	0.0		10.0		90.0		100
Armed Forces and Inadeq. Desc.	No.	7	2.6	8	3.3	10	4.0	25
	%	28.0		32.0		40.0		100
Total	No.	268	100.0	241	100.0	251	100.0	760
	%	35.3		31.7		33.0		100

10.4 Tenure change and social change in the Dutch large cities

In the Netherlands, the term 'appartementsrecht' (condominium) applies to a form of real property in which a distinction is made between separate units and common elements. The units can be owned, financed and traded individually, but ownership of a unit is inseparable from a share in the ownership of the common elements, such as the land, the structural elements of the building and other elements that are intended for use by more than one household (Beekhuis 1973). In spite of the difference in legal title, the condominium resembles the long-lease arrangement favoured in British flat break-ups, and it is employed to the same purpose. In both countries, owners of rental property have found the title conversion to be a convenient arrangement to sell former rented units for owner occupancy.

The conversion of the title from a fee simple to a horizontal property regime ('conversion') must be distinguished from the sale of the units to new owners ('horizontal sale'). The conversion is often employed to create separate accounting entities. especially in complexes that combine residential and commercial property. It is also applied as a part of a long-term management strategy by the owners of new rental complexes to allow the option of eventual horizontal sale when buildings have aged and the financial returns on renting deteriorate. In these cases, the rental tenants are not replaced upon conversion, and there are no immediate effects on the social composition of residential areas. But even when horizontal sales are the

sort-term goal, the effects of conversion may not be immediately felt due to tenure protection statutes, which guarantee the occupant perpetual use. Invariably, some units and even entire complexes are purchased by speculative investors who gamble on a rapid turn-over of the tenants. But like in Britain, the change from rental use to owner occupancy can only take place when the present tenant chooses to vacate the unit. It often takes several years before even a majority of the dwellings have undergone the tenure change (Van Weesep and Maas 1984).

10.4.1 The scale of conversion and horizontal sales in the Netherlands

The sale of private rented housing for owner-occupancy is a well-established phenomenon and occurs throughout the Netherlands. It is the major cause of the decline of the private rented sector, from 60% of the stock in 1947 to 16% in 1985; in this period some 750,000 dwellings changed over between the two sectors (Dijkhuis-Potgieser 1985, Van Weesep 1982). Since the late 1960s, conversion to condominium has become a major element in this tenure change, but only in areas with a significant proportion of multi-family housing. As in Britain, single-family housing can be held in fee simple ownership. In the smaller towns and cities, multi-family housing is not common in the older stock, and while condominiums do occur, they tend to be purpose-built service flats or relatively new rental complexes in which horizontal sale is not the immediate goal. The effects of conversion to condominium on the population composition of residential areas are therefore more marked in the larger cities and other communities within metropolitan areas, especially in those in the highly urbanized western part of the country.

Table 10.5 The total number of condominium units in the fourteen Dutch municipalities with conversion controls, by age of neighbourhood, in percentages

City	Age 1914 %	Age 1914-1940 %	Age 1940 %	Total number	% of total housing stock
Amsterdam	53.9	24.3	21.7	25485	7.8
Delft	(i)	37.8	62.2	5411	14.8
Dordrecht	24.0	7.9	68.1	5384	
's Gravenhage	37.8	43.3	18.9	92126	47.3
Groningen	22.1	28.9	49.0	15745	22.2
Leiden	32.9	8.4	58.5	6285	15.4
Nijmegen	40.4	6.2	53.4	5436	
Rotterdam	20.2	45.8	34.1	56766	21.3
Rijswijk	(i)	12.1	87.9	10828	51.1
Schiedam	10.5	37.5	52.0	6686	31.4
Utrecht	39.0	15.2	45.8	19567	21.7
Vlaardingen	11.5	19.7	68.7	7193	23.6
Vooburg	(i)	31.7	68.3	9183	51.9
Zwolle	(i)	32.3	67.7	2023	5.9

Notes:
(i) The fifteenth municipality with conversion controls (Doesburg) has an insignificant number of condominiums
(ii) Included in 1914-1940 neighbourhoods
(iii) Source: Rijkskadaster (National Land Register)

The concern over the effects of conversion for the housing policies of the municipalities (Van Weesep and Hamnett 1986) has led to the implementation of conversion controls by the national government. They are, however, only applied in municipalities that were granted such authority by the national government (Van Weesep and Maas 1984). To date, 15 cities have enacted a conversion regulation and in most of them the condominium sector is of substantial size, both in absolute numbers and in terms of the percentage of the total housing stock that has been converted (Table 10.5). The figures for the cities in the The Hague region (The Hague, Rijswijk, Voorburg) show how far the process can proceed. Leaving aside single-family housing (approximately 10% of total stock) and publicly owned housing (approximately 30%), which is by and large not being sold to tenants (Boelhouwer and Van Weesep 1987), around 80% of the dwellings with conversion potential have been converted in The Hague - almost half of the total stock. In other cities, condominiums account for 20-30% of the total stock and 40-60% of the potential. But in many neighbourhoods the size of the condominium sector and the proportion of the units that have been sold to owner-occupiers is substantially larger than the data for the entire cities suggest.

At the beginning of the 1970s, most conversions took place in late-19th century neighbourhoods irrespective of their socio-economic status. The conversion controls, introduced since 1975, caused a significant drop in the number of new conversions in low-status neighbourhoods where housing quality standards were not always met, but it did not effect the large existing supply especially in the cities of Amsterdam and The Hague. Since then, conversions have been concentrated in areas built in the 1920s and 1930s and a surge of conversion activity also occurred in post-World War II (WWII) areas. Cooperative-to-condominium conversion also became a major development in 1977 when it was learned that from 1978 on, a 6% transfer tax would be applied to such title changes. Overall, conversion activity has moved from older to more recently built neighbourhoods, diversifying the condominium stock to resemble the range of the former multi-family rental stock.

Although the process of conversion to condominium showed a considerable acceleration in the 1970s, relatively little is known about the effects of conversion and horizontal sale on the segmentation of housing supply, the housing situations of the occupants, and the changes in the social structure of the neighbourhoods. Indeed, even the housing authorities of the cities with conversion ordinances are unaware of the magnitude of the process within their own jurisdiction. Empirical data collection, by means of checking entries in the Land Register and surveying owners of condominium units proved to be the only means to ascertain such effects. The Land Register yielded information on both conversions and horizontal sales. From this it was possible to establish the number of properties affected, the rate at which the process proceeded and the price changes involved. The survey of owners helped to determine their household characteristics, their housing behaviour, and their position in the housing market. This investigation was started in 1980, and by 1985 a dozen neighbourhoods in the cities of Amsterdam, The Hague and Rotterdam had been covered. In one Rotterdam study area, the renting population was also surveyed to establish a control group to gauge the magnitude of social change caused by the sale of units to owner-occupiers.

10.4.2 The characteristics of the condominium sector in selected neighbourhoods

The neighourhoods selected for study varied greatly from each other, but in each city three types of neighbourhoods were selected: those built before WWI, those built between the wars, and those built post-war. In Amsterdam and in The Hague a high- and a low-status neighbourhood in the pre-WWI areas were also selected. The proportion of the converted stock in the total housing stock varied greatly, ranging from 6% in the post-war area in Amsterdam to over 80% in the area built between the wars in The Hague. In general, the Amsterdam neighbourhoods had the smallest proportion of condominiums, the neighbourhoods in The Hague the largest. This is a reflection of the magnitude of the conversions in the cities as a whole, but is also indicative of the size of the areas and of the differences in the composition of their housing stock. In the post-war areas, relatively few sales of units had taken place, reflecting the tendency of owners of new buildings to convert without the intention to sell units in the short run. In the other areas, the sales ranged from around 30 to 80%. The sale to speculators frequently precedes the sale to owner-occupiers, which accounts for some striking differences between the total sales and the proportion of owner-occupiers. These differences also reflect the length of time since the conversion. Thus, the proportion of sales to owner-occupiers is much lower in the more recently built areas (between 15-25% of the converted units) than in the pre-1914 neighbourhoods (between 20-70%). Due to the general price fall averaging over 40% in the owner occupied housing market between 1979 and 1984, some units remain rented even after the occurence of a vacancy. Some owner-occupied units can even temporarily revert back to the rental sector when the current owner has to move and finds it impossible to sustain the financial loss from a sale. Increasing vacancies in the condominium sector also suggest that some owners are biding their time. Owner-occupiers of condominiums therefore account for 3-14% of the total number of households in their neighbourhoods; within these areas, specific blocks and sections score much higher, and therefore the effects on the social structure, albeit localised, can be quite striking.

10.4.3 The consequences of conversion to condominiums in the Netherlands

While conversion generally proceeds without major alterations in the physical appearance of the buildings, social and demographic changes are frequently the result of horizontal sale to owner-occupiers. The surveys indicated that owner-occupiers were not a homogeneous group, reflecting the diversity of the condominium stock. The units range from small studios and one-bedroom flats to large apartments with more than four bedrooms. It is therefore not surprising to find that single persons and two-person households, who account for roughly 60% of the cities' population are underrepresented among the buyers in the areas with the larger apartments (Table 10.6). The prices paid in 1978, when the real estate market peaked, ranged from an average of f. 22,000 (guilders) in the low-status pre-WWI neighbourhood in Amsterdam to f. 220,000 in the high-status pre-WWI area in that city. At the same time the average prices in the neighbourhoods built between the wars ranged from f. 60,000 to f. 75,000, and in the post-WWII areas they varied from f. 80,000 to f. 140,000. In most areas, households with low incomes cannot afford to buy the units and they are being displaced in the long-run, but it should be pointed out that the social status positions range more widely than the income level suggests. In many intermediate status areas, a significant proportion

Table 10.6 Characteristics of owner-occupiers of condominiums in case study neighbourhoods

Case-study areas	City (i)	Left other home	Single or two persons	Age of head >35yr	Net income above f. 2000	Two-income househ.
Pre-1914 neighbourhoods						
Concertgebouwbuurt (high status)	A	65.8	67.4	19.2	80.8	28.9
Statenkwartier (high status)	H	57.1	75.0	25.5	55.7	50.0
Middelland	R	78.8	50.1	46.0	62.0 (ii)	37.5
Staatsliedenbuurt (low status)	A	23.4	90.9	80.6	26.9	26.9
Valkenboskwartier	H	46.4	50.0	36.1	44.3	29.0
1914-1940 neighbourhoods						
Blijdorp/Bergpolder	R	58.2	70.9	44.7	51.5	30.0
Charlois	R	73.6	52.0	65.7	65.5	58.9
Hoofddorpplein	A	71.4	80.3	64.8	49.5	29.6
Laakkwartier	H	27.7	50.0	60.7	48.1	39.0
post-1940 neighbourhoods						
Mariahoeve	H	51.4	94.8	15.8	64.5	9.1
Osdorp	A	65.6	81.0	54.3	83.0	20.7
Pendrecht	R	49.2	67.8	55.9	71.0	32.2

Notes:
(i) A = Amsterdam; H = The Hague; R = Rotterdam.
(ii) Income more than f. 2500
(iii) Figures are percentages

of the households with higher incomes derived this from more than one source. It is commensurate with these observations that many of the buyers were not starters in the housing market and that the heads of the households were frequently over 35 years of age. The profile of the owner-occupiers in some of the areas suggests a social and demographic change from the typical renting population, but overall this data is inconclusive. Therefore, a more detailed study was carried out in pre-WWII area of Charlois in Rotterdam, where also the renter population was surveyed. The comparison with the owner-occupiers of the condominiums in this area clearly indicate the magnitude of the population change (Table 10.7). The in-coming owner occupiers are on average much younger and their social status position is much higher as reflected in the unemployent rate and the income level. The conversion process also affects the residential environment. Even though conversion does not alter the physical appearance of the housing stock and of the neighbourhood, the growth of the number of owner-occupiers and social and demographic changes of the area's population has some demonstrable effects on the rate of investment in maintenance and rehabilitation of the housing stock and on the use of, and consequently on the provision of services and facilities. The expectation that owner occupiers give much attention to the

appearance of their buildings and invest in repairs and improvements was clearly born out in all the neighbourhoods surveyed; everywhere, over two-thirds of the owners made improvements. The level of investment, though variable, was on average much higher than the norms set for the private housing rental sector. Differences also exist in the number and in the type of improvements. Necessary emergency repairs are carried out everywhere. Upgrading of kitchens and bathrooms is common, even in the relatively modern post-WWII areas. But luxury improvements, such as the construction of fire places, is mostly limited to the more expensive areas.

Table 10.7 Characteristics of owner-occupiers of condominiums and renters in Charlois, in percentages

Tenure	Average length of tenure	Age of head >35yr	Young family	Head househ. employed	Net income above f.2000	Two income househ.
Owner-occupiers of condominiums	56 months	65.7	23.5	7.3	83.7	58.9
Renters	179 months	27.5	5.2	47.9	41.8	36.0

To ascertain how the population change resulting from the horizontal change affects other aspects of the residential environment than the dwellings themselves and the buildings of which they are part, the activity patterns of owner-occupiers and renters in Charlois were analysed. The investigation brought significant differences to light (Maas 1984). The renters patronise neighbourhood facilities, while the owner-occupiers are more orientated to the higher-order services and facilities in the city centre. Scattered establishments in the neighbourhood suffered particularly from this, since the owner-occupiers show a strong preference for facilities in the commercial centres when they do look locally to satisfy their needs. Further analysis showed that these differences are strongly related to the lower average age of the owner-occupiers and to their higher income position and the predominance of households with two working partners. Such people are less involved in neighbourhood affairs, a tendency that is furthered by their short period of residency, and they tend to combine various activities in multi-purpose trips. Although it remains impossible to quantify the effects of the horizontal sales on the residential environment, it is clear that the population changes that are brought about by the process of conversion to condominiums range further than the alteration of the demographic and social structure of the population alone.

10.5 Conclusion

It has been argued that changes in the supply of housing play a major role in changing the characteristics of the resident population. Because access to the housing market is unevenly structured according to the tenure and the price of the stock, and the occupation and income characteristics of households, changes in the tenure and price structure of the housing market

can and do result in changes in the social and demographic composition of different areas. This is true both where there are major geographical variations in the supply of new housing, and, as has been demostrated in this chapter, where the existing housing stock is subject to modification. As a consequence of the flat break-ups in central London and the conversion to condominiums in the three largest cities in the Netherlands, considerable changes in both the size and the social characteristics of the population do occur. These are clearly the result of the changes in tenure composition in the standing stock. In addition, it has been demonstrated that the changes of the neighbourhoods do not stop at that. The changing demographic and social characteristics in themselves cause further changes in the residential environment. Both the quality of the standing stock and the composition and quality of the various neighbourhood facilities and services can also be affected, which demonstrates the importance of the anlalysis of processes in the housing market for the understanding of neighbourhood change in general.

11. 1983, 1986, ...,

Robert Woods

In the period since the first British-Dutch Symposium on Population Geography, which was held in the Netherlands in September, 1983, there have been considerable advances in that broad field of population studies inhabited by geographers. Yet many of these developments also highlight methodological problems and deficiencies in the sources of data. Although some of the most important research questions remain unchanged, there are not only signs of new issues coming to the fore, but also that the environment in which research is undertaken may be changing in ways that are important for all those who work on population matters.

Contemporary Studies of Migration (White and Van der Knaap 1985), the proceedings of the first symposium, emphasized that theme in population geography which has attracted the most attention in recent years: the analysis, description, prediction and explanation of migration flows at a variety of scales. In 1984, Geography and Population: Approaches and Applications, edited by John I. Clarke for the International Geographical Union's Commission on Population Geography, was published. This volume reflects some of the important strengths and weaknesses in contemporary population geography. There is concern to place the sub-field of population geography within the broader field of of geography; to demonstrate its credentials as a spatial science by stressing the significance of distribution and mapping; to contribute to policy-oriented issues and with the need for education about population. On the other hand, there is a clear reluctance to engage in theorizing, which tends to make population geography rather isolated from other areas of the social sciences, and to find a way of harmonizing the interests of geographers and demographers in such a way that the study of population is advanced. Economic, social and spatial planning have always provided a context for demographic research in the Netherlands, and 1984 also saw publication of Demographic Research and Spatial Policy: The Dutch Experience (ter Heide and Willekens 1986), containing a set of policy-oriented, methodological studies of internal migration and regional population projection.

Some of the themes in Clarke (1984) are also obvious in Population Geography: Progress and Prospect (Pacione 1986), but by 1986, the swing towards a rather narrower definition of the sub-field and a range of concerns which were increasingly demographic seemed to be apparent. The volume contained ten chapters on fertility, mortality, national popluation policies, data sources, population modelling and theories, and four on aspects of migration or population redistribution. In the same year, Population Structures and Models: Developments in Spatial Demography (Woods and Rees 1986) carried the trend towards spatial demography even further, aiming to re-emphasize the importance of taking a spatial perspective on demographic patterns, structures and systems not only for the geographical community, but also for demographers as a whole. The old interests in pattern, process and policy remained, but a more analytical than descriptive approached was evident.

J. Stillwell and H.J. Scholten, Contemporary Research in Population Geography, 211–213.

The second British-Dutch Symposium on Population Geography was also held in 1986 at Oxford, the fruits of which are now here for all to see. Chapters 2-10 in this volume fully reflect not only the way in which geographers are directing their efforts in this area, but also the importance of international co-operation in finding solutions to common problems. Of these nine chapters, three have been written jointly by British and Dutch geographers while all but one of the remainder have been organized to counterpose British and Dutch contributions on the same theme.

Many issues and problems are raised, but let me select three for special mention. Some are traditional concerns, others represent new ideas on old topics or what could be described as new pre-occupations. First, and always present, is the anxiety about data quality and availability. Each one of the contributions is to some extent limited by its reliance upon official or semi-official statistics. In this respect, the Dutch demographic database is far superior to the British, as the comparative work reported in Chapter 2 on projection models clearly reveals. Second, there is a clearly recognized need to incorporate fertility swings and variations into the study of population structures not only because of their direct demographic significance, but also because they influence social and educational planning in such an important way. Likewise, the effects of ageing are inescapable in post-industrial societies with low birth rates. Chapters 3 and 7 examine these issues. The latter, in particular, develops some interesting points about the migration patterns of retired persons which it links with the future role of divorce, dual pensions and international retirement migration. Third, the traditional interest in mobility and migration is very prominent, however, there are some new twists and turns. Chapter 5.I emphasises the need for 'employer orientated demand-side models' which can deal with labour migration in the context created by personnel management in large corporate organizations. In the Netherlands, labour mobility is less likely to necessitate residential mobility (Chapter 5.II). One of the most striking themes in this volume is represented by the research reported in Chapters 8, 9 and 10 on the associations between household formation, mobility and the changing structure of the housing market. These are highly complicated issues, but it is here that population geographers are making some of their most important contributions via their comparative work and as a consequence of their ability to integrate movement in the social, economic and spatial dimensions with the structures by which they are constrained and on which they ultimately have an influence.

Which issues were not considered at the Second British-Dutch Symposium? Once again it seems worthwhile pointing out that, with the possible exception of Chapter 6, little attempt is made at a higher level of theorizing which recognizes the socio-political context of Britain and the Netherlands. There are two good reasons for pausing to reflect on this omission. First, it remains all too easy to describe, model and forecast without being too concerned with the cultural and political legacy with which people find themselves burdened and without attempting some interpretation, with the aid of theory, of their behaviour within such a constraining system. But without this form of reflection and speculation, it will prove difficult to put significant developments in their place and to create a clear picture of the social meaning of birth, death and ageing, marriage, migration and occupational mobility. Second, Chapter 4.II contains an illuminating reference, almost a cry of despair, to the role of civil servants and their seeming reluctance to use models developed by academics. There is increasing pressure on academic researchers, geographers included, in both Britain and the Netherlands to become more customer oriented and to provide demand-led research in the

way planners have done. There is obvious scope for such work in the new age of useful knowledge, but it has long been a right and an obligation amongst academics to ask their own questions rather than to answer those set by others, or merely to provide easily digestible material for policy makers. The first victim of this trend is likely to be the more abstract of theorizing while the second victim may well be academic independence.

Setting aside these causes for concern, it is clear that the population geographers of Britain and the Netherlands have learnt much from one another and their continued exchanges will only serve to strengthen their contributions to the discipline.

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