REGIONAL POPULATION PROJECTIONS FOR IIASA NATIONS

Andrei Rogers

March 1983
WP-83-41

INTERNATIONAL INSTITUTE FOR APPLIED SYSTEMS ANALYSIS
A-2361 Laxenburg, Austria

FOREWORD

The evolution of human populations over time and space has been a central concern of many scholars in the Human Settlements and Services Area at IIASA during the past several years. From 1975 through 1978 some of this interest was manifested in the work of the Migration and Settlement Task, which was formally concluded in November 1978. Since then, attention has turned to disseminating the Task's results, to concluding its comparative study, and to exploring possible future activities that might apply the mathematical methodology to other research topics.

This paper is part of the Task's dissemination effort. It is a draft of a chapter that is to appear in a volume entitled *Migration and Settlement: A Comparative Study*. Other selected publications summarizing the work of the Migration and Settlement Task are listed at the back.

Andrei Rogers
former Chairman
of the Human Settlements
and Services Area

CONTENTS

REGIONAL POPULATION PROJECTIONS FOR IIASA NATIONS

The populations of IIASA's member nations are currently experiencing dramatic changes in patterns of demographic behavior. The consequences of these changes are likely to be profound and their impacts are already being felt in labor and housing markets, in health care demand levels, in retirement income maintenance programs, and in what might generally be referred to as the service needs of "changing lifestyles". Yet the underlying processes producing these new patterns are imperfectly understood, and any assessments of future prospects therefore could be founded on false expectations. Nevertheless planning for social service requirements of necessity requires estimates of future levels of demand, and population projections traditionally have served as a driving force in such estimations.

1. THE POPULATIONS OF IIASA NATIONS: RETROSPECT AND PROSPECT

Though differing in cultures, socioeconomic systems, and languages, the 17 IIASA member nations share a central characteristic: low levels of fertility. In 1982, fully 13 of the 17 countries exhibited below replacement levels of fertility;

the other four countries (Bulgaria, Czechoslovakia, Poland, and the Soviet Union) showed fertility levels at or barely above the 2.1 babies per woman that is necessary for one generation to replace itself with another (Table 1). Moreover, past trends suggest that sometime during the 1980s the total fertility rates in *all* of the IIASA nations probably will fall below the 2.1 figure, an event that is already creating concern among national policy makers in several of these countries.

For a number of IIASA countries, notably Canada and the United States, the foremost feature of recent demographic history has been the bulge introduced into the national age structures by the unusually large birth cohorts born after World War II — the so-called baby boom. This boom has created problems that change as the bulge moves upward in the years. From nurseries to nursing homes, smaller birth cohorts have easier lives as they enter structures designed for the larger cohorts that preceded them, whereas the baby boom cohorts have to adjust to structures designed for the smaller cohorts that they followed.

During the 1960-1980 period many IIASA member nations entered a period of transition to zero growth. According to the most recent estimates and projections published by the United Nations (1981), the total population of these countries grew by 160 million persons during this 20-year period, totalling approximately 980 million in 1980. These populations are expected (in the medium variant projection) to increase by another 120 million to reach 1.1 billion by the year 2000 (Table 2). Three of the 17 countries were already experiencing negative population growth in 1980 (Austria, the Federal Republic of Germany, and the United Kingdom) and a fourth (Sweden) is projected to enter this group by the end of this century. The German Democratic Republic was essentially at zero growth in 1980, and Finland, Hungary, and Italy are projected to join it by the year 2000. Thus the populations of 8 of the 17 countries are expected to cease growing within the span of the next two decades, and no IIASA country is projected to exhibit an annual population growth rate of as much as 1 percent by the end of this period.

Table 1. Total fertility rate per woman, IIASA countries 1950-1982.

Year	Country								
	Austria	Bulgaria	Canada	Czech.	FRG	Finland	France	GDR	Hungary
1950	2.1	2.9	3.5	3.0	2.1		2.9	2.3	2.6
1955	2.2	2.4	3.8	2.8	2.1		2.7	2.4	2.8
1960	2.6	2.3	3.9	2.4	2.4	2.7	2.7	2.3	2.0
1965	2.7	2.1	3.1	2.4	2.5	2.4	2.8	2.5	1.8
1970	2.3	2.2	2.3	2.1	2.0	1.8	2.5	2.2	2.0
1975	1.8	2.2	1.8	2.5	1.4		1.9	1.5	2.4
1978	1.6	2.2	1.8	2.4	1.4		1.8	1.6	2.1
1981	1.6	2.1	1.8	2.3	1.4	1.6	1.9	1.9	2.0
1982	1.7	2.2	1.8	2.1	1.5	1.6	2.0	1.9	1.9

Year	Italy	Japan	Nether-lands	Poland	Soviet Union	Sweden	UK	US
1950	2.5	3.6	3.1	3.7	2.9	2.3	2.2	3.1
1955	2.3	2.4	3.0	3.6	2.9	2.2	2.2	3.6
1960	2.4	2.0	3.1	3.0	2.8	2.2	2.7	3.6
1965	2.6	2.1	3.0	2.5	2.5	2.4	2.9	2.9
1970	2.4	2.1	2.6	2.2	2.4	1.9	2.4	2.5
1975	2.2	1.9	1.7	2.3	2.4	1.8	1.8	1.8
1978	1.9	1.8	1.6	2.2	2.3	1.6	1.7	1.8
1981	1.7	1.8	1.6	2.3	2.3	1.7	1.9	1.8
1982	1.7	1.8	1.6	2.3	2.3	1.7	1.9	1.9

Sources: Data for 1950-1978 taken from U.S. Bureau of the Census, International Population Dynamics 1950-1979 Demographic Estimates for Countries with a Population of 5 Million or More. Washington, D.C., 1980. All 1981 (and 1982) data taken from Population Reference Bureau, Inc. 1981 (1982) World Population Data Sheet. Washington, D.C., 1981 (1982). Data on Finland taken from Economic Commission for Europe, Post-war Demographic Trends in Europe and the Outlook Until the Year 2000, United Nations, New York, 1975.

Table 2. Population size and average annual rate of increase for the world and for IIASA countries, UN medium variant, 1960-2000, as assessed in 1980.

Region	Population (millions)			Average annual rate of growth (%)		
	1960	1980	2000	1960-1965	1975-1980	1995-2000
World Total	3,037	4,432	6,119	1.99	1.72	1.50
More developed regions	945	1,131	1,272	1.19	0.70	0.48
Less developed regions	2,092	3,301	4,847	2.34	2.08	1.77
IIASA Countries Total	820	980	1,100	---	---	---
Austria	7.0	7.5	7.4	0.58	-0.10	-0.04
Bulgaria	7.9	9.0	9.7	0.83	0.64	0.29
Canada	17.9	24.5	34.8	1.85	1.49	0.93
Czechoslovakia	13.7	15.3	16.8	0.73	0.71	0.49
Federal Republic of Germany	55.4	60.9	58.8	1.25	-0.29	-0.16
Finland	4.4	4.9	5.1	0.60	0.63	0.04
France	45.7	53.5	56.3	1.30	0.30	0.22
German Democratic Republic	17.2	16.9	16.9	-0.26	0.01	0.00
Hungary	10.0	10.8	11.0	0.33	0.40	0.08
Italy	50.2	56.9	59.1	0.67	0.39	0.08
Japan	94.1	116.6	129.3	0.99	0.88	0.49
Netherlands	11.5	14.1	15.2	1.37	0.60	0.30
Poland	29.6	35.8	41.2	1.27	1.02	0.54
Soviet Union	214.3	265.5	310.2	1.49	0.93	0.64
Sweden	7.5	8.3	8.1	0.67	0.20	-0.12
United Kingdom	52.6	55.9	55.2	0.73	-0.05	-0.06
United States	180.7	223.2	263.8	1.45	0.89	0.67

Source: United Nations (1981)

The UN projections may be compared with the 17 national multiregional population projections contained in the individual reports of the Comparative Migration and Settlement (CMS) Study. These simple fixed-coefficient extrapolations which were produced with the same computer program but with data for different reference years in the 1970s, are summarized in Table 3 and in Appendix A. Linear interpolation was used to bring the different reference years to the common 1980 starting point, and to obtain the projections for the years 2000 and 2030. For example, Austria's population in 1980 was obtained by interpolating four years into the projection period 1976-1981.

The CMS projections foresee an increase of 125 million people between 1980 and the end of the century. About three-quarters of this increase is expected to take place in the two most populous countries: the Soviet Union (36.5 percent), and the United States (36.6 percent). One out of every two persons residing in a IIASA country in 1980 lived in one of these two nations. This fraction is projected to increase slightly (by 2.6 percent) by the year 2000.

The process of generating national and regional population projections was greatly simplified in the CMS Study by the assumption that no international migration would occur during the projection period. This assumption is incorrect for all IIASA countries, of course, but it is especially incorrect for Canada, Sweden, and the United States. In the latter country, for example, *legal* net immigration currently accounts for almost a half of annual population growth; *illegal* immigration contributes an additional amount of unknown dimensions. The relative contribution of net immigration is somewhat lower in Canada but much higher in Sweden.

A comparison of IIASA's constant-coefficient projections for the year 2000 with those produced by the United Nations indicates a reasonably close agreement for most countries, with the notable exception of Canada. The UN projection of 34.8 million for Canada seems to be unrealistically high; the IIASA projection of 28.6 million possibly is too low, because it

Table 3. Population prospects in IIASA countries as assessed in 1970-1980: IIASA and United Nations data.

Country (reference year)	Life expectancy at birth			Gross reproduction rate			Total population (in millions)			
		UN			UN		IIASA		UN	
	IIASA Ref. Yr	1975-1980	1995-2000	IIASA Ref. Yr	1975-1980	1995-2000	1980	2000	1980	2000
Austria (1971)	70.5	71.7	74.2	1.09	0.80	0.82	7.6	8.0	7.5	7.4
Bulgaria (1975)	70.9	72.0	73.8	1.10	1.09	1.02	9.0	9.6	9.0	9.7
Canada (1971)	72.5	73.5	75.0	1.23	0.91	0.91	23.0	28.6	24.5	34.8
Czechoslovakia (1975)	70.3	70.2	73.0	1.21	1.15	1.04	15.4	17.2	15.3	16.8
Fed. Rep. of Germany (1974)	71.9	71.8	74.2	0.73	0.70	0.80	61.3	57.6	60.9	58.8
Finland (1974)	71.7	72.7	74.3	0.79	0.80	0.82	4.8	4.8	4.9	5.1
France (1975)	73.5	73.7	75.2	0.94	0.91	0.88	53.3	55.7	53.5	56.3*
German Dem. Rep. (1975)	71.7	71.8	74.8	0.76	0.88	0.86	16.6	15.7	16.9	16.9
Hungary (1974)	69.0	69.9	72.9	1.14	1.03	0.91	10.8	11.3	10.8	11.0
Italy (1978)	74.1	72.5	74.6	0.91	0.93	0.83	57.0	59.5	56.9	59.1
Japan (1970)	72.1	75.6	77.3	1.05	0.88	0.95	116.4	129.4	116.6	129.3
Netherlands (1974)	74.7	74.8	75.8	0.87	0.77	0.85	13.9	15.1	14.1	15.2
Poland (1977)	70.6	70.8	73.2	1.10	1.10	1.02	35.7	40.7	35.8	41.2
Soviet Union (1974)	69.3	69.6	71.5	1.33	1.16	1.14	266.0	311.6	265.5	310.2
Sweden (1974)	75.2	75.3	76.0	0.92	0.80	0.80	8.3	8.2	8.3	8.1
United Kingdom (1970)	71.9	72.3	74.5	1.18	0.84	0.85	56.5	61.8	55.9	55.2
United States (1970)	70.8	72.9	73.9	1.26	0.94	1.02	225.0	270.7	223.2	263.8
					IIASA Countries Total		981	1106	980	1100

Source: Appendix B and United Nations (1981) medium variant.

ignores international migration. Projections carried out by Statistics Canada, for example, give a "fan" with a low of 28 million and a high of close to 35 million. The former assumes a total fertility rate of 1.8 and a net immigration of 60,000 per year, the latter assumes a total fertility rate of 2.6 in 1985 and a net immigration of 100,000 per year (Beaujot 1978).

Two other national IIASA projected totals differ significantly from those of the United Nations: the United Kingdom and the United States. In both cases, the use of 1970 as the reference year led to the adoption of a fertility level that was much too high; by 1980 it already had declined by over 25 percent in each of the two countries. The use of the higher fertility levels, of course, contributed to raising the projected population totals, at the same time that ignoring international migration had the opposite effect.

Aggregate national population totals conceal the diversity of age compositions among the 17 IIASA countries and, at an even more spatially disaggregated level of detail, among their principal subnational populations. At this level additional difficulties arise. Mortality levels probably will not change significantly in the future and, in any case, the impact of changes in mortality patterns on population projections is relatively small. The effect of different levels of fertility can be considerable, but unless radical changes in current lifestyles occur, it is unlikely that dramatic deviations from replacement level fertility will take place between today and the year 2000. Internal migration patterns, however, have changed substantially during the past two decades and could continue to shift in the future. Moreover, their impact on regional population growth can be significant. Yet the CMS projections assume migration rates to remain fixed. The regional projections, therefore, must be interpreted with great caution.

2. OBSERVED COMPONENTS OF CHANGE AND AGE STRUCTURES

The age composition of a population reflects the impacts of past patterns of fertility, mortality, and migration. In a growing or stationary population, the number of individuals in any age group will normally be smaller than in the immediately younger age group. But past fluctuations in the components of change, notably variations in birth rates at the national and regional levels and migration at the local level, may distort this pattern. Such regional variations were substantial in the 17 IIASA populations during the 1970s.

2.1 Natural Increase and Net Migration at the Regional Level

During the 1970s, the populations of the 139 regions of the CMS Study grew at an average annual rate of less than 0.9 percent. But this growth was spread unevenly across the 17 national landscapes. For example a few regions were growing at unusually high rates (Appendix B). Three regions in the Soviet Union (the urban areas of the Byelorussian, the Central Asian, and the Baltic Republics) and the Kanto region in Japan all were growing more than 3 percent a year. The Kinki region in Japan, British Columbia in Canada, and three more regions in the Soviet Union (the urban areas of the RSFSR, the Ukrainian-Moldavian and the Kazakh Republics) were increasing at annual rates above 2 percent.

A number of regions in IIASA countries were also exhibiting moderately high rates of population *decline*. The Tohoku, Shikoku, and Kyushu regions in Japan, West Berlin, Hamburg, and the Saarland region in the Federal Republic of Germany, and the rural parts of the Soviet Union all were showing annual rates of population decline of 1 percent or more.

The above 9 regions of growth and 7 regions of decline are identified in the scatter diagram of Figure 1. They may be found to the right and left, respectively, of the downward sloping lines running from left to right that delineate different rates

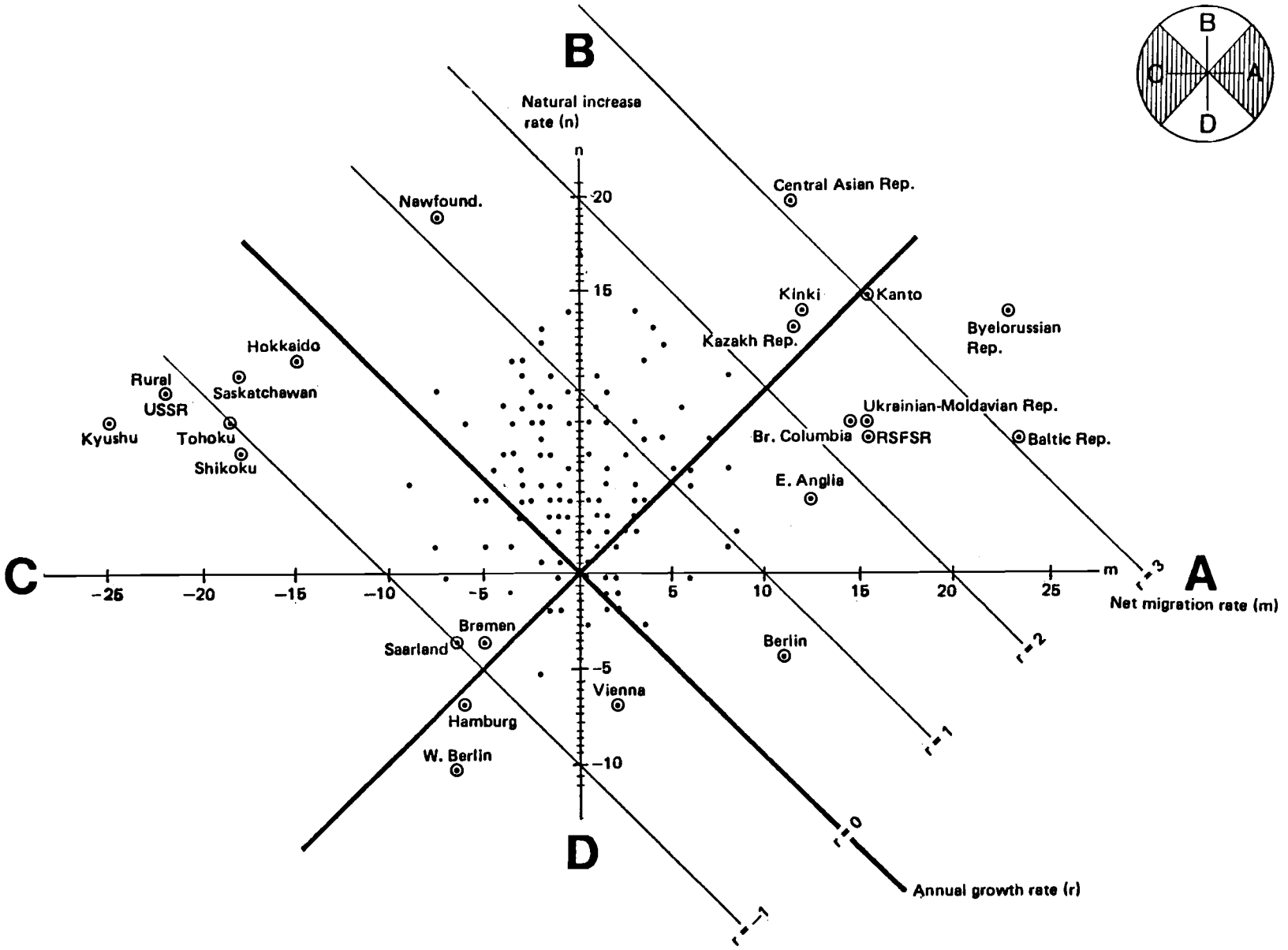


Figure 1. Natural increase (n) and net migration (m) in the 139 IIASA regions.

of population growth. The remaining 123 regions are delineated by a dot located at the intersection of their respective values for net migration on the horizontal axis and for natural increase or decrease on the vertical axis. Note that the four quadrants separate the 139 observations according to the signs of the two components of change: net inmigration or outmigration (+,-) and natural increase or decrease (+,-). Thus, for example, all populations represented in the upper right quadrant are growing as a consequence of both natural increase and net inmigration, whereas those in the lower right quadrant are declining as a result of both natural decrease and net outmigration.

Fertility declines have elevated the relative importance of migration as a contributor to regional population growth. Migration produces changes that are felt both at the local level and at the national level. It transfers labor from labor surplus areas to areas with labor deficits and moves the national economy to greater efficiency. But this adjustment of the national labor market has local consequences with regard to equity. Because of these potentially negative consequences, and because of its interrelatedness with emerging economic, social, and environmental problems, population movement has attracted growing attention in recent years, as national policies for guiding population redistribution have been increasingly called for.

According to Figure 1 (and Appendix B) a few regions were attracting migrants at unusually high rates. The 9 "growth" regions listed above plus East Anglia in the United Kingdom and Berlin in the German Democratic Republic all were *gaining* migrants at net rates of more than one percent. Four regions in Japan (Kyushu, Tohoku, Shikoku, and Hokkaido), Saskatchewan province in Canada, and the rural areas of the Soviet Union all were *losing* migrants at net rates in excess of one percent.

Figure 1 also identifies the relative contributions of net migration and natural increase to regional population growth. A rotation of the horizontal and vertical axes counter-clockwise 45 degrees partitions the 139 observations into 4 quadrants marked A, B, C, and D in the illustration. All populations in

quadrant A were growing primarily as a consequence of net inmigration and those in B because of natural increase. Regional populations in quadrant C were declining primarily because of net outmigration and those in D because of natural increase.

Canada's province of British Columbia, located in quadrant A, was growing at an annual rate of 2.3 percent during the decade of the 1970s. This rate was the sum of a 0.9 percentage rate of natural increase and a 1.4 percent rate of net inmigration. Thus net inmigration accounted for about 62.3 percent of regional population growth. British Columbia's sister provinces, Newfoundland and Saskatchewan, located in quadrants B and C, respectively, illustrate alternative combinations. Newfoundland's rate of natural increase was the principal contributor to its population growth, more than compensating for its losses due to outmigration. Not so with Saskatchewan, whose net outmigration rate of 1.8 percent swamped the contribution of its natural increase rate of 1.1 percent to give the region a declining rate of growth of 0.7 percent per annum.

A few IIASA regions were experiencing population decline in the 1970s because of both an excess of deaths over births and an outflow of migrants that exceeded the inflow. Fully 9 regions fell into this category, including city regions such as Bremen, Hamburg, and West Berlin. The latter two city populations lost more people from natural decrease than from net outmigration and therefore are located in quadrant D in Figure 1. Joining them there is the city population of Vienna, whose growth due to net inmigration was not sufficient to counter the losses due to natural increase, giving the city a negative population growth rate of -0.5 percent.

Figure 1 and Appendix B show that a significant fraction of all regional growth in IIASA nations during the 1970s, and a large proportion of net migration contributing to that growth was confined to a comparatively small number of regions. The spatial evolutions of national populations, however, are also tightly linked with the age compositions of their regional populations. Prospects for future growth depend not only on

the components of change but also on the starting age distributions that are to experience these regimes of fertility, mortality, and migration.

2.2 Age Structures

Population age structures in the 17 IIASA nations in 1980 exhibited discernable signs of aging, showing age pyramids that were relatively narrow at the base and relatively wide at the apex. The young populations (those under 15 years) seldom accounted for more than a quarter of the national total, and the share of the elderly population (those 65 and over) generally exceeded 10 percent. For the IIASA national populations taken as a whole these two percentages were 24.0 and 11.8, respectively (Table 4).

Despite the generality of these broad patterns, significant national differences in degrees of population aging nevertheless were evident in 1980. By population aging is meant an increase in the ratio of old people (65 years and over) to young people (less than 15 years of age) or alternatively of old people to the adult population (those 15 to 64 years of age)—a ratio we shall call the elderly dependency ratio.

According to Table 4, Sweden and the German Democratic Republic were the "oldest" IIASA populations in 1980, with elderly dependency ratios of 0.26 and 0.25, respectively. Japan and Canada were the "youngest" with ratios of 0.13 and 0.14, respectively. When the older part of the elderly population is considered (those 75 years and older), France joins the German Democratic Republic and Sweden, as the only three countries with over 6 percent of the national population in that age category.

Our earlier examination of annual growth rates among IIASA nations revealed significant differences between the 17 countries. For example, the population of the Soviet Union toward the end of the 1970s was growing at an annual rate of 0.9 percent, whereas that of the Federal Republic of Germany was declining

Table 4. Population structure in IIASA countries in the year 1980.

Country (reference year)	Population (millions)	% (0-14)	% (15-64)	% (65+)	Elderly dependency ratio	% (75+)
Austria (1971)	7.6	22.6	62.8	14.6	0.23	5.7
Bulgaria (1975)	9.0	22.4	65.9	11.7	0.18	3.8
Canada (1971)	23.0	26.7	64.6	8.8	0.14	3.3
Czechoslovakia (1975)	15.4	24.5	63.1	12.5	0.20	4.2
Fed. Rep. of Germany (1974)	61.3	18.2	66.7	15.1	0.23	5.8
Finland (1974)	4.8	20.0	67.6	12.4	0.18	4.7
France (1975)	53.3	21.2	64.3	14.5	0.22	6.4
German Dem. Republic (1975)	16.6	18.6	65.2	16.2	0.25	6.7
Hungary (1974)	10.8	21.8	65.1	13.0	0.20	4.5
Italy (1978)	57.0	22.4	64.6	13.0	0.20	4.8
Japan (1970)	116.4	24.5	67.1	8.4	0.13	2.8
Netherlands (1974)	13.9	23.0	65.6	11.5	0.17	4.5
Poland (1977)	35.7	24.3	65.9	9.9	0.15	3.5
Soviet Union (1974)	266.0	25.0	63.0	12.0	0.19	4.2
Sweden (1974)	8.3	20.2	63.6	16.3	0.26	6.4
United Kingdom (1970)	56.5	23.5	62.4	14.1	0.23	5.3
United States (1970)	225.0	26.1	63.3	10.7	0.17	4.2
All 17 countries	980.6	24.0	64.2	11.8	0.18	4.4

at the rate of 0.3 percent per annum (Table 2). But the growth differentials inside IIASA countries were even more divergent. The population of the Kanto region in Japan, for example, was growing at an annual rate of 2.2 percent per year in 1980, at the same time that the population of a sister region in Japan, the Kyushu region, was declining by 1.5 percent per year (Appendix A).

Regional disparities in growth rates, reflecting differentials in fertility, mortality, and migration, give rise to regional differentials in the prominence of particular age groups in subnational population totals. For example, according to Table 5 (and Appendix A) fully one out of every five residents (20.4 percent) in Vienna, Austria was 65 years or older in 1980; yet only one in ten residents of the province of Vorarlberg was in that age group at that time (10.1 percent). Roughly one out of every six people in the former region was under 15 years of age (16.5 percent); whereas more than one out of every four of the latter's population was in this age group in 1980 (27.4 percent).

As much as one-third of the population of Newfoundland in Canada and of the Central Asian Republics in the Soviet Union was younger than 15 years of age in 1980; less than half of that fraction was to be found in the same population age group in the Hamburg city region of the Federal Republic of Germany (14.2 percent). Only 6.5 percent of the population of the Kanto region in Japan was aged 65 and over in 1980; the corresponding percentage in the sister region of Shikoku was almost twice as large (12.5 percent).

A convenient summary measure of regional differentials is the mean absolute deviation expressed as a percentage of the national measure (MAD/N %). This indicator was previously used to examine regional differentials in mortality (Termote 1982) and migration (Rogers and Castro 1983). It is calculated by summing the absolute deviations of regional measures from the national one, dividing the sum by the number of regions, and expressing the result as a percentage of the national figure.

According to the MAD/N % measures set out in Table 5, the countries exhibiting the greatest degrees of regional differences in the prevalence of elderly people were the Soviet Union (25.3 percent), Japan (22.5 percent), Bulgaria (17.8 percent), and Austria (17.7 percent). Those with the greatest spatial variation in fractions of young populations were the Soviet Union (15.6 percent), Italy (12.5 percent), and Austria (11.2 percent). All of these countries showed larger values for the MAD/N % index than the corresponding value calculated for the 17 countries taken as a single "nation". Thus in these instances, regional variation *within* IIASA countries was more pronounced than *between* IIASA countries.

The age structure of a population has important consequences for its future growth. Because fertility rates in past years have exhibited more fluctuations than mortality rates, accurate projections of future births and the number of young persons are more difficult to carry out than estimating the number who will survive among those already born. Moreover, the age composition of a recently growing population has a built-in "momentum" for further population growth even if birth rates suddenly fall to bare replacement levels (Keyfitz 1971).

3. MULTIREGIONAL POPULATION PROJECTIONS

Population projections trace out the consequences of a set of assumptions regarding fertility, mortality, and migration. Population forecasts, on the other hand, are unconditional statements about the future population of a given area at some future date. Both need to take into account population processes and determinants in order to achieve results that improve on crude extrapolation procedures.

For many, the forecasting of future populations is seen as the principal justification for the art and science of demography. Yet most demographers will only accept responsibility for the formal exercise of projection; they, understandably, are not

Table 5. Regional differentials in age composition in the year 1980.

Country (reference year: number of regions)	% (0-14)				% (65+)			
	National	Lowest	Highest	MAD/N %	National	Lowest	Highest	MAD/N %
Austria (1971:9)	22.6	16.5	27.6	11.2	14.6	10.1	20.4	17.7
Bulgaria (1975:7)	22.4	19.9	24.6	7.8	11.7	9.1	16.7	17.8
Canada (1971:10)	26.7	25.6	35.3	7.9	8.8	6.7	11.7	15.8
Czechoslovakia (1975:10)	24.5	21.1	28.4	5.3	12.5	9.3	15.9	15.0
Fed. Rep. of Germany (1974:11)	18.2	14.2	19.6	7.2	15.1	13.9	21.7	9.8
Finland (1974:12)	20.0	19.0	23.3	4.4	12.4	9.5	14.8	9.9
France (1975:8)	21.2	18.4	24.3	7.7	14.5	12.1	18.3	12.6
German Dem. Republic (1975:5)	18.6	17.6	20.4	4.2	16.2	13.3	18.2	9.9
Hungary (1974:6)	21.8	19.0	25.2	7.1	13.0	11.7	14.5	7.3
Italy (1978:5)	22.4	20.1	26.7	12.5	13.0	10.9	14.2	9.6
Japan (1970:8)	24.5	22.7	25.1	2.9	8.4	6.5	12.5	22.5
Netherlands (1974:5)	23.0	21.4	24.8	5.2	11.5	9.2	14.4	14.0
Poland (1977:13)	24.3	18.3	26.9	8.2	9.9	6.4	11.6	12.8
Soviet Union (1974:8)	25.0	20.3	33.2	15.6	12.0	7.1	15.4	25.3
Sweden (1974:8)	20.2	19.3	21.5	3.4	16.3	14.2	18.1	7.6
United Kingdom (1970:10)	23.5	22.5	24.8	3.5	14.1	12.6	16.2	5.6
United States (1970:4)	26.1	24.9	26.8	2.1	10.7	9.5	11.5	5.7
All 17 countries	24.0	18.2	26.7	9.1	11.8	8.4	16.3	16.8

eager to take the further step of commenting extensively on the plausibility of their assumptions and thereby to turn their projections into predictions.

The now standard method for generating population projections relies on a recognition of the contribution made by each component of population change, and assesses this contribution by the application of age-specific rates—a procedure that allows producers and users of population projections to take explicit account of the age dependence of demographic events.

Until about two decades ago, the contribution of internal migration to future population growth was assessed in non-spatial terms. The evolution of regional populations affected by migration was examined by adding the contribution of *net* migration to that of natural increase. The dynamics of redistribution, therefore, were expressed over time but not over space; the evolution of a system of interacting regional populations was studied one region at a time.

Beginning in the mid-1960s, efforts to express the dynamics of spatial change in matrix form began to appear in the demographic literature and had considerable success in describing processes of geographical redistribution in multiregional population systems (Rogers 1968). Such studies have viewed the spatial distribution of a multiregional population across its constituent regions and the age compositions of its regional populations as being determined by the interactions of fertility, mortality, and interregional migration. People are born, age with the passage of time, reproduce, migrate, and ultimately die. In connecting these events and flows to determine the growth rate of each regional population, one also obtains the number of people in that region and their age composition.

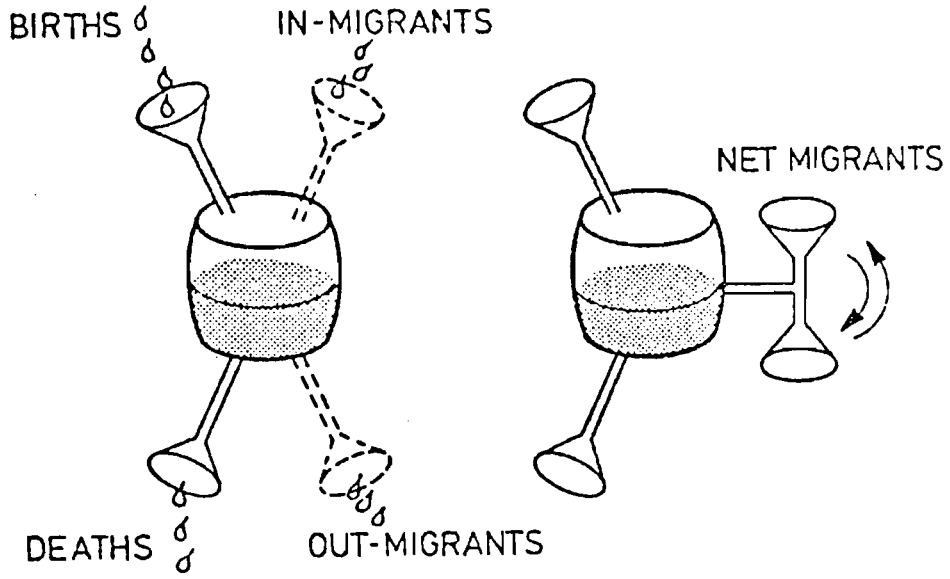
3.1 The Multiregional Model

Multiregional generalizations of the classical models of mathematical demography project the numerical consequences, to an initial (single-sex) multiregional population, of a particular set of assumptions regarding future fertility, mortality, and internal migration. They introduce multiple populations and thereby permit the association of *gross flows* with the *populations at risk* of experiencing these flows.

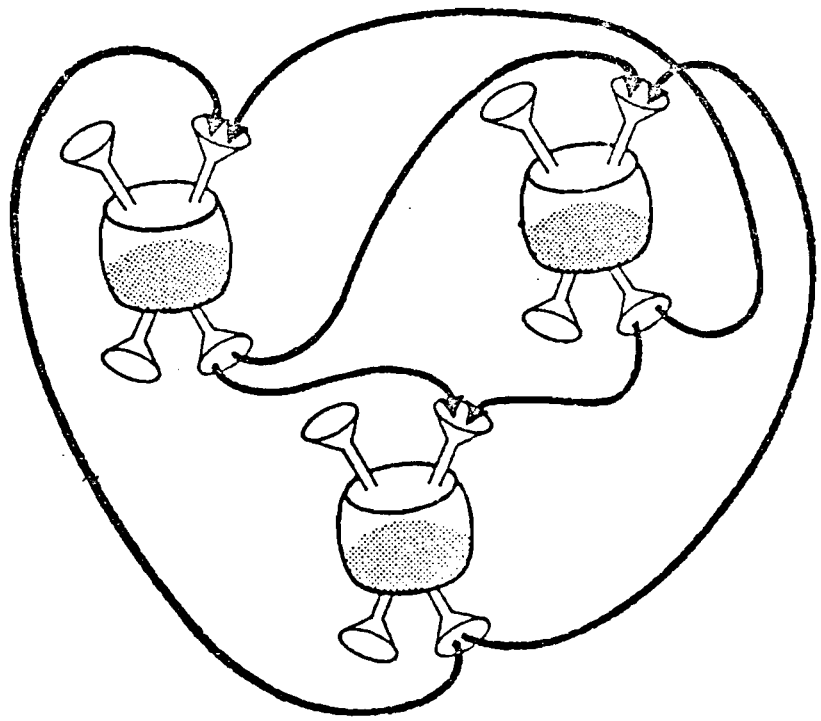
The fundamental difference between the uniregional and the multiregional approaches to population analysis is illustrated in Figure 2. Imagine a barrel containing a continuously fluctuating level of water. At any given moment the water level is changing as a consequence of losses because of two outflows, identified by the labels *deaths* and *outmigrants* and gains introduced by two inflows labeled *births* and *inmigrants*.

If it is assumed that each barrel's migration outflow and its migration inflow, during a unit period of time, vary in direct proportion to the average water level in the barrel at that time, then the two flows may be consolidated into a single *net* flow (which may be positive or negative), and the ratio of this net flow to the average water level defines the appropriate rate of net inmigration. Such a perspective of the problem reflects a uniregional approach.

Now imagine an interconnected system of three barrels, say, where each barrel is linked to the other two by a network of flows, as in Figure 2B. In this system the migration outflows from two barrels define the migration inflow of the third. A uniregional analysis of the evolution of water levels in this three-barrel system would focus on the changes in the outflows and inflows in each barrel, one at a time. A multiregional perspective, on the other hand, would regard the three barrels as a system of three interacting bodies of water, with a pattern of outflows and inflows to be examined as a simultaneous system of relationships. Moreover, the multiregional approach would



A. Uniregional model



B. Multiregional model

Figure 2. Contrasting the uniregional and the multiregional perspectives.

focus on migration outflows; hence the associated migration rates would always be positive, and they would refer to the appropriate population exposed to the possibility of outmigrating.

Two fundamental features, then, distinguish the multiregional from the uniregional perspective: the population being examined and the definition of rates of flow. The multiregional approach considers the entire population as an interacting system; the uniregional approach examines each subpopulation one at a time. Moreover, the multiregional approach employs rates of flow that always refer to the appropriate at-risk populations; the uniregional approach, by relying on *net* rates, cannot do that.

The mechanics of multiregional projections typically revolve around three basic steps. The first ascertains the starting age-region distributions and the age-specific regional schedules of fertility, mortality, and migration to which the multiregional population has been subject during a past period; the second adopts a set of assumptions regarding the future behavior of such schedules; and the third derives the consequences of applying these schedules to the initial population.

The discrete model of multiregional demographic growth expresses the population projection process by means of a matrix operation in which a multiregional population, set out as a vector, is multiplied by a growth matrix that survives that population forward over time. The projection calculates the region and age-specific survivors of a multiregional population of a given sex and adds to this total the new births that survive to the end of the unit time interval. As in the uniregional model, survival of individuals from one moment in time to another, say 5 years later, is calculated by diminishing each regional population to take into account the decrement due to mortality. In the multiregional model, however, we also need to include the decrement due to outmigration and the increment contributed by inmigration. An analogous problem is presented by surviving children born during the 5 year interval. Some of these migrate with their parents; others are born after their parents have migrated but before the time interval has elapsed.

3.2 The Uniregional and the Multiregional Perspectives Contrasted

A multiregional perspective in demographic analysis focuses simultaneously on several interdependent population *stocks*, on the *events* that alter the levels of such stocks, and on the gross *flows* that connect these stocks to form a system of interacting populations. The perspective deals with rates that refer to true populations at risk, and it considers the dynamics of multiple populations exposed to multiregional growth regimes defined by such rates. All of these attributes are absent in a uniregional perspective of growth and change in multiple interacting populations.

To deal with the interlinkages that connect one population's dynamics to another's, the uniregional perspective generally must resort to the use of ad hoc procedures and unsatisfactory concepts such as the statistical fiction of the invisible net migrant. But does it really matter? What are the drawbacks of a view that ignores gross flows in favor of a focus on net changes in stocks? In what respects is a multiregional perspective superior to a regional one?

A focus on gross flows more clearly identifies the regularities, illuminates the dynamics, and enhances the understanding of demographic processes that occur within multiple interacting populations. Distinguishing between flows and changes in stocks reveals regularities that otherwise may be obscured; focusing on flows into and out of a region-specific stock exposes dynamics that otherwise may be hidden; and linking explanatory variables to disaggregated gross flows permits a more appropriately specified causal analysis.

Net rates express differences between arrivals and departures as a fraction of the single population experiencing both. But net rates also reflect sizes of population stocks. For example, if the gross rates of migration between urban and rural areas of a nation are held constant, the net migration rate will change over time with shifts in the relative population totals in each area. Accordingly, one's inferences about changes in

net migration patterns over time will confound the impacts of migration propensities with those of changing population stocks, hiding regularities that may prevail among gross migration flows (Rogers 1982).

Gross flow data permit the construction of improved population projection models. It can be demonstrated that multiregional projection models based on gross flow statistics are superior to uniregional models in at least three respects. First, uniregional models can introduce a bias into the projections, and they can produce inconsistent results in long-term prognoses. Second, the impacts of changes in age compositions on movement patterns can be very important, yet a uniregional perspective fixes these impacts at the start of a projection and thereby can introduce a potentially serious bias into the projection. Third, multiregional projection models have a decisive advantage over uniregional models in that they alone can follow subpopulations over time. Thus they can produce disaggregated projections that are impossible to obtain with uniregional models (Rogers 1982).

Finally, causal explanations brought forth by studies of population redistribution all too often have been founded on models of population dynamics that reflect inadequate statistical perspectives. For example, no reliable inferences about migration behavior can be made on the basis of cross-sectional tabulations of changing fractions of a population defined to be net migrants. Data on gross flows are essential, and increasingly it is being recognized that such data must be available in disaggregated form.

But simple (Markovian based) multiregional demographic models also are inadequate in several respects, largely because they generally adopt three assumptions that are violated by the empirical process generating the data. First, the population is not a homogeneous one; the same parameter values do not hold for all members of the population. Second, the observed parameter values do not remain constant over time. And third, an individual's propensity to leave a particular region is not

independent of his or her past migration patterns and also may not be independent of the migration patterns of others.

In other words the empirical process being studied is *inhomogeneous*, *nonstationary*, and *temporally dependent*. And tests for the empirical validity of each of these assumptions must either establish that the other two assumptions are valid or that controls for their effects are incorporated into the tests.

Heterogeneous populations exhibiting temporally dependent changing patterns contain subgroups whose demographic behavior is diverse. To the extent that their differing propensities to experience events and movements can be incorporated in a formal macrodemographic analysis, illumination of the aggregate patterns of behavior is enhanced. For instance, our understanding of migration is enriched by information on the degree to which such movements occur among those who have previously migrated. In generating such information, a multiregional analysis can identify, for example, how much of a change in levels of migration in a country can be attributed to "chronic" migrants as opposed to "first" migrants.

Multiregional demography is a young branch of formal demography, and its potential contributions are only now coming to be recognized. Further progress in the field will depend to a large extent on the experiences gained in investigations such as the Comparative Migration and Settlement Study.

4. PROJECTED PATTERNS OF GROWTH AND DECLINE: 1980-2000

The growth, spatial distribution, and regional age compositions of a national multiregional population undisturbed by international migration are completely determined by the recent history of fertility, mortality, and internal migration it has been subject to. The current crude regional birth, death, migration, and growth rates are all governed by the interaction of the prevailing regime of growth with the current regional age compositions and regional shares of the total population.

The projections produced by the CMS Study assumed a fixed regime of growth and an absence of international migration. The resulting patterns of population growth and decline during the 1980-2000 period are examined in this section.

4.1 Growth, Decline, and Redistribution

The total population of the 17 IIASA countries increased at the annual rate of 0.9 percent during the 20-year period from 1960 to 1980. According to the projections produced by the CMS Study this rate of growth should decline to about 0.6 percent during the following 20-year period (Table 6). Contributing to this aggregate rate are national rates as diverse as Canada's 1.1 percent and the negative 0.3 percent rates of the two Germanys. Lying within this range are the zero-growth rates of Finland and Sweden. In addition to Canada, above average growth rates are exhibited by Poland (0.7 percent), the Soviet Union (0.8 percent), and the United States (0.9 percent).

Disaggregating the growth rates by age groups, one finds that the elderly population in the 17 IIASA countries should increase at twice the rate of the young population and that the very old (75 years and over) should increase even more rapidly. These aggregate figures, however, conceal wide national variations. The elderly populations in the presently "older" countries such as Austria, the two Germanys, Sweden, and the United Kingdom are not expected to show any increase during the period 1980-2000; the highest rates of increase for this age group are projected for the currently "young" countries such as Canada (1.9 percent) and Japan (2.5 percent)—a veritable "population explosion", when one recalls that India's population has been growing at a rate of 2.5 percent during the past two decades.

A serious drawback of the projections produced by the CMS Study is their reliance on fertility patterns that prevailed during a single reference year. In cases where the reference year is as far back as 1970 or 1971 and where fertility declined substantially during the following decade (Austria, Canada, Japan, the United Kingdom, and the United States), no effort

Table 6. Average annual population growth rates for subgroups from the year 1980 to the year 2000.

Country (reference year)	r	r (0-14)	r (15-64)	r (65+)	r (75+)
Austria (1971)	0.003	0.004	0.005	-0.007	-0.007
Bulgaria (1975)	0.003	0.002	0.002	0.012	0.014
Canada (1971)	0.011	0.010	0.010	0.019	0.022
Czechoslovakia (1975)	0.006	0.005	0.007	-0.001	0.003
Federal Republic of Germany (1974)	-0.003	-0.010	-0.002	-0.001	-0.003
Finland (1974)	-0.000	-0.008	0.001	0.004	0.008
France (1975)	0.002	-0.001	0.003	0.003	0.001
German Democratic Republic (1975)	-0.003	-0.010	0.000	-0.010	-0.018
Hungary (1974)	0.002	0.002	0.002	0.003	0.005
Italy (1978)	0.002	-0.005	0.003	0.010	0.014
Japan (1970)	0.005	-0.003	0.005	0.025	0.022
Netherlands (1974)	0.004	-0.004	0.005	0.010	0.013
Poland (1977)	0.007	0.003	0.006	0.014	0.014
Soviet Union (1974)	0.008	0.008	0.008	0.009	0.012
Sweden (1974)	-0.000	-0.005	0.001	-0.000	0.010
United Kingdom (1970)	0.004	0.006	0.005	-0.002	0.004
United States (1970)	0.009	0.009	0.010	0.007	0.014
All 17 countries	0.006	0.004	0.006	0.008	0.010

was made to incorporate this decline in the fixed-coefficient projections. The impact of excluding such declines in birth rates could be considerable.

Table 7 sets out the average annual growth rates obtained from an alternative set of population projections for the four countries that, according to Table 3, experienced the largest percentage fertility declines during the decade of the 1970s: Austria (27%), Canada (26%), the United Kingdom (29%), and the United States (25%). In these projections all birth rates were reduced proportionately for the second 5-year projection interval to the 1975-1980 levels reported by the United Nations and presented in Table 3. From that point on, the respective fertility regimes remained unchanged.

Table 7. Average annual population growth rates for subgroups from the year 1980 to the year 2000: alternative projection with reduced fertility levels.

Country (reference year)	r	r(0-14)	r(15-64)
Austria (1971)	-0.001	-0.009	0.002
Canada (1971)	0.006	-0.003	0.007
United Kingdom (1970)	-0.001	-0.008	0.002
United States (1970)	0.004	-0.002	0.006

The impacts of the fertility reductions on the average annual growth rates were quite remarkable. Aggregate rates for all four countries declined, of course, but for Austria and the United Kingdom they turned negative, as did all of the rates for the 0-14 age group. Corresponding impacts were felt in aggregate population totals and age compositions. The widely recognized sensitivity of population projections to variations in fertility levels, demonstrated once again in this experiment,

underscores the need to interpret the outcomes of such exercises with great caution.

The diversity of growth rates revealed by a disaggregation by age is further amplified by a disaggregation across regions. Table 8 shows the lowest and highest regional values in each country for the projected annual rates of increase for the young and the elderly populations. Also included are the corresponding MAD/N % measures.* Comparing the national MAD/N % figures with those calculated for the collection of 17 IIASA nations taken as a whole reveals that regional differences in growth rates *within* several IIASA countries are higher than *between* them. Those countries showing high regional differentials in growth rates tend to have one or more regions exhibiting negative growth rates.

Countries with high projected regional differentials in aggregate growth rates are Austria, the two Germanys, Japan, and the Soviet Union. Among these, Austria and the Soviet Union also show high regional differences in both the growth rates of the young and the elderly populations, Japan only for the young population, and the Federal Republic of Germany only for the elderly population. A few other countries also exhibit high regional differentials only for a particular age group: Bulgaria, France, and the Netherlands for the young population and Czechoslovakia for the elderly population.

Regional differentials in aggregate growth rates are manifested in changing spatial distributions of the national population. In a few IIASA countries the projected changes in regional shares are significant (Appendix A). For example, during the 20-year period 1980-2000, Quebec in Canada can expect, on present trends, to see its share of the national population drop by more than 2 percentage points, approximately the increase

*The latter were not computed for Finland and Sweden in those three instances where the national measure indicated near zero growth rates, and negative national growth rates were treated as positive values to produce positive values for the MAD/N % measure.

Table 8. Regional differentials in average annual population growth rates for subgroups from the year 1980 to the year 2000.

Country (reference year: number of regions)	r (all ages)				r (0-14)				r (65+)			
	Nat.	Low	High	MAD/N %	Nat.	Low	High	MAD/N %	Nat.	Low	High	MAD/N %
Austria (1971:9)	0.003	-0.004	0.011	148.0	0.004	-0.002	0.011	105.6	-0.007	-0.019	0.006	108.1
Bulgaria (1975:7)	0.003	-0.002	0.008	91.8	0.002	-0.004	0.005	127.2	0.012	0.003	0.023	44.0
Canada (1971:10)	0.011	-0.003	0.020	41.2	0.010	-0.003	0.018	44.8	0.019	0.006	0.025	30.0
Czechoslovakia (1975:10)	0.006	0.003	0.009	29.8	0.005	0.002	0.008	25.2	-0.001	-0.009	0.010	817.1
Fed. Rep. of Germany (1974:11)	-0.003	-0.012	-0.001	107.2	-0.010	-0.021	-0.007	33.8	-0.001	-0.033	0.003	456.8
Finland (1974:12)	-0.000	-0.006	0.005	x	-0.008	-0.014	-0.001	45.2	0.004	-0.002	0.011	63.6
France (1975:8)	0.002	-0.000	0.004	68.1	-0.001	-0.004	0.002	118.7	0.003	0.000	0.006	45.5
German Dem. Republic (1975:5)	-0.003	-0.006	0.008	129.7	-0.010	-0.014	0.005	45.0	-0.010	-0.013	-0.003	29.3
Hungary (1974:6)	0.002	0.001	0.004	49.1	0.002	0.001	0.004	53.2	0.003	-0.001	0.007	63.7
Italy (1978:5)	0.002	-0.001	0.005	93.0	-0.005	-0.010	0.001	88.8	0.010	0.007	0.013	21.1
Japan (1970:8)	0.005	-0.015	0.013	196.2	-0.003	-0.025	0.005	343.5	0.025	0.011	0.034	26.2
Netherlands (1974:5)	0.004	-0.001	0.008	97.1	-0.004	-0.009	0.001	100.9	0.010	0.003	0.021	48.9
Poland (1977:13)	0.007	0.003	0.012	31.4	0.003	-0.002	0.008	73.3	0.014	0.008	0.031	33.0
Soviet Union (1974:8)	0.008	-0.010	0.022	129.6	0.008	-0.009	0.025	140.8	0.009	-0.005	0.023	128.7
Sweden (1974:8)	-0.000	-0.002	0.002	x	-0.005	-0.008	-0.002	29.1	-0.000	-0.003	0.004	x
United Kingdom (1970:10)	0.004	0.002	0.011	43.1	0.006	0.004	0.011	26.6	-0.002	-0.007	0.005	127.4
United States (1970:4)	0.009	0.005	0.015	27.2	0.009	0.007	0.014	21.2	0.007	0.002	0.015	58.8
All 17 countries	0.006	-0.003	0.011	88.2	0.004	-0.010	0.010	158.8	0.008	-0.010	0.025	101.5

that is projected for its sister region, British Columbia. The West region in the Netherlands, during the same period of time, is expected to lose more than 4 percentage points, the Kyushu region in Japan more than 3 percentage points, and the rural parts of the Soviet Union almost 10 percentage points. Larger shares of the national total population are projected for the Uusimaa (Helsinki) region in Finland (1.96 points), Berlin in the German Democratic Republic (1.63 points), the Kanto and Kinki regions in Japan (5.63 points and 1.84 points, respectively), and the West region of the United States (2.07 points).

4.2 Changing Settlement Patterns

Since the late 1960s and early 1970s many of the IIASA nations have shown a surprising uniformity in their spatial patterns of population redistribution. In most, the historical processes leading to population concentration have been weakened or reversed, producing a turnabout—a decentralization of national populations away from their large metropolitan agglomerations. Discussing this trend, Vining and Kontuly (1978, p. 66) observed:

> Of the eighteen countries studied here, eleven (Japan, Sweden, Italy, Norway, Denmark, and The Netherlands) show either a reversal in the direction of net population flow from periphery to core or a drastic reduction in the level of this net flow. In the first seven of these eleven countries, this reduction or reversal first became evident in the 1970s; in the last four, its onset was recorded in the 1960s. Six countries (Hungary, Finland, Spain, Poland, Taiwan, and South Korea) have yet to show an attenuation in the movement of persons into their core regions. Some possibly unreliable British data likewise fail to reveal a slackening in the growth of the regions surrounding London ... migration continues heavy into the capital regions of three of the Eastern European countries that publish annual migration data (Poland, Hungary, and East Germany). However, the low rates of natural increase in these regions has blunted their expansion.

Although the regionalizations adopted in the CMS Study are ill-suited to deal with questions of metropolitan deconcentration, nevertheless it is instructive to examine the projected shares of national populations that are associated with several city regions. Table 9 indicates that, even with the assumption of unchanging fertility, mortality, and origin-destination-specific migration rates, a number of city regions such as Vienna, Hamburg, Bremen, Paris, Lodz, and Stockholm are projected to show declining shares of their national populations over the next 20 years and beyond. At the same time, almost all East European city regions, together with Helsinki and Tokyo, are expected to experience increases in their allocation of the national population total. The South East region centered on London is projected to continue to maintain its stable 32 percent of the United Kingdom's population.

Translating changing regional shares into numbers of people reveals that a few city regions are projected to gain or lose substantial numbers of people. The Kanto region centered on Tokyo, for example, is projected to grow by more than 11 million residents, an increase of 30 percent in 20 years. Gdansk, Katowice, and Warsaw in Poland should increase by 26, 22, and 19 percent, respectively, Sofia in Bulgaria and Berlin in the German Democratic Republic by 17 percent each, and Cracow in Poland by 16 percent.

Major declines in city-region growth are expected for the German-speaking populations of West Berlin (-17 percent), Hamburg (-17 percent), Bremen (-13 percent), and Vienna (-7 percent).

Table 9. Changes in the shares of the total national population projected for selected city regions in IIASA member countries (in percent).

Country/City Region	Regional share of national total		
	1980	2000	2030
Austria: Vienna	20.36	17.89	15.88
Bulgaria: Sofia	12.73	13.91	15.06
Fed. Rep. of Germany: Hamburg	2.64	2.34	2.21
Bremen	1.13	1.05	1.03
Finland: Uusimaa (Helsinki)	23.90	25.86	27.10
France: Paris	18.79	18.35	17.77
Ger. Dem. Republic: Berlin	6.87	8.50	10.62
Hungary: Central (Budapest)	28.70	29.18	29.33
Japan: Kanto (Tokyo)	33.28	38.91	43.41
Poland: Warsaw	6.42	6.71	7.02
Lodz	3.14	2.92	2.63
Gdansk	3.78	4.19	4.60
Katowice	10.39	11.14	11.86
Cracow	3.31	3.38	3.45
Sweden: Stockholm	18.07	17.58	16.86
UK: South East (London)	31.72	31.56	31.60

5. AGE STRUCTURES IN THE YEAR 2000

Transformations of the 1980 age structures into those of the year 2000 reflect variations in projected national and regional growth rates during the 1980-2000 period. The principal results of the previous section, therefore, reappear in a different guise in this one. For example, the 0.8 percent annual growth rate of the elderly population in the 17 IIASA nations produces a very small aggregate aging effect, increasing the fractions of persons 65 years and older from 11.8 percent in 1980 (Table 4) to 12.2 percent in the year 2000 (Table 10), raising the elderly dependency ratio from 0.18 to 0.19. The decline in the rate of growth of the elderly population in the German Democratic Republic displaces it as the second "oldest" IIASA population, lowering its elderly percentage from 16.2 in 1980 to 14.1 in the year 2000. Japan's corresponding fraction grows from 8.4 percent to 12.5 percent, reflecting a population increase of over 6 million persons (two-thirds of the 1980 total) over the 20-year interval. Sweden is once again projected to be the "oldest" IIASA national population in the year 2000 with an unchanging elderly fraction of 16.3 percent. That elderly population, however, will become older in average age. Whereas in 1980, 6.4 percent of Sweden's population was aged 75 years and over, by the year 2000, this share is projected to increase to 7.4 percent.

Changes in population size are a major driving force behind shifts in demands for public services and in revenues to support such services. But many service demands increase or decline in proportion to the pattern of population growth in certain age groups. The need for elementary schools falls with declines in the numbers of children and teenagers. Demands for police forces and prisons increases with the growth of young adults in the ages of peak criminal activity. Health care requirements grow with the rise of persons in the pensionable age groups.

An important anticipated shift in the age structures of a number of IIASA's national populations is a sharp decline in the fraction accounted for by young people. Between 1980 and the year 2000, the number of children under 15 years of age is

Table 10. Population structure in IIASA countries in the year 2000.

Country (reference year)	Population (millions)	% (0-14)	% (15-64)	% (65+)	Elderly dependency ratio	% (75+)
Austria (1971)	8.0	23.0	65.0	12.1	0.19	4.7
Bulgaria (1975)	9.6	21.8	64.2	13.9	0.22	4.7
Canada (1971)	28.6	26.0	63.7	10.3	0.16	4.2
Czechoslovakia (1975)	17.2	24.3	64.7	11.0	0.17	4.0
Fed. Rep. of Germany (1974)	57.6	15.9	68.5	15.6	0.23	5.9
Finland (1974)	4.8	17.2	69.3	13.5	0.19	5.6
France (1975)	55.7	19.8	65.4	14.7	0.23	6.2
German Dem. Republic (1975)	15.7	16.2	69.7	14.1	0.20	4.9
Hungary (1974)	11.3	21.7	65.0	13.3	0.20	4.8
Italy (1989)	59.5	19.5	65.3	15.2	0.23	6.1
Japan (1970)	129.4	20.5	67.0	12.5	0.19	3.9
Netherlands (1974)	15.1	19.6	67.5	12.9	0.19	5.4
Poland (1977)	40.7	22.7	65.8	11.5	0.18	4.1
Soviet Union (1974)	311.6	25.2	62.5	12.2	0.20	4.6
Sweden (1974)	8.2	18.4	65.2	16.3	0.25	7.8
United Kingdom (1970)	61.8	24.2	63.5	12.3	0.19	5.3
United States (1970)	270.7	26.0	63.7	10.2	0.16	4.6
All 17 countries	1105.7	23.3	64.5	12.2	0.19	4.8

expected to fall by more than 2 million in the Federal Republic of Germany, a drop of almost 20 percent. Declines of 17 and 14 percent are projected for the German Democratic Republic and Finland, respectively. Italy and Sweden are each expected to lose 9 percent, Japan and the Netherlands approximately 7 percent. These developments, of course, have direct consequences for the derived demand for teachers and for the educational system in general. The uncertainties for educational planning at the regional level are even greater because of the impact of shifting patterns of internal migration.

The relatively high birth rates of the late 1950s and early 1960s in a number of IIASA countries have been affecting the sizes of their labor force since 1970 and will continue to do so until the early 1980s. During the 1980s those reaching the pensionable ages (here approximated by the population aged 65 and over) will be survivors of the relatively smaller birth cohorts of the post-World War I era. Thus the size of the population in the labor force ages should increase slightly during the 1980-2000 projection period.

Changes in the size of the population of working age, taken here to consist of persons aged 15-64, is only a crude approximation of changes in the labor force, because the latter figure of course also depends on the proportions in these age groups who are economically active—working or seeking work. And in recent years these proportions have been growing for married women and declining for young workers and older males. Nevertheless, changes in the size of this broad age group suggest corresponding changes in the working population brought about by demographic factors. During the period 1980-2000, the *fraction* of the 17 nation IIASA total population that is in this category remains virtually constant, because the rates of growth of both this subgroup and the aggregate population are approximately equal (0.6 percent). But the *size* of the population of working age is projected to increase from 630 to approximately 713 million persons, an increase of 13 percent (Appendix A). Only in the Federal Republic of Germany is this population subgroup expected to decline slightly.

Beyond simple extrapolations of national and regional populations in the labor force, lies a system of interdependent relationships that are poorly understood and whose development into the future is difficult to project. Foremost among these is the question of labor force participation of married women and the relationship between such participation and fertility. Women are entering and remaining in the labor force for longer periods of time and are therefore caught between the desire and need to work and the desire and responsibilities of childbearing. No projection of the evolution of such interdependencies in the IIASA countries was attempted in the CMS Study.

Finally, the relative size of the elderly population is projected to increase dramatically during the next few decades in several IIASA countries and to decline in others. Elderly dependency ratios are projected to decline, for example, in Austria, Czechoslovakia, the German Democratic Republic, Sweden, the United Kingdom, and the United States. They are expected to increase for Bulgaria, Canada, Finland, France, Italy, Japan, the Netherlands, Poland, and the Soviet Union. The most significant decline is projected for the German Democratic Republic (20 percent) and the sharpest increase for Japan (46 percent).

Although the actuarial problems of pensions are serious, they may be dwarfed by those of social service provision, particularly health care. Leaving aside the problems of inflation, the drain on the working population of a growing dependent population of the elderly is calculable and total expenditures can be projected with some confidence using alternative assumptions regarding economic growth. The health service needs of the elderly, on the other hand, are more difficult to forecast. But they will undoubtedly increase at least in proportion to the advancing mean age of the elderly population.

The number of people aged 75 and over in IIASA nations is projected to grow from 43 to 53 million persons during the 20-year period from 1980 to 2000. This is a prospective increase of 23 percent in a population subgroup that makes particularly heavy demands on a nation's health and service system—demands

that generally increase faster than population size. The proportion of people requiring regular attendance increases sharply above age 75. Stays in acute or long-term hospitals increase, as do numbers of doctors visits and of persons entering nursing homes; costs related to health care increase dramatically.

The projected aggregate increase of almost a fourth the population of the 75 and over age group hides large variations at the national level. In Canada and in Japan, for example, the expected increase is much higher: 56 and 57 percent, respectively. However, in Austria and in the German Democratic Republic the populations in this subgroup should *decline* by about 12 and 30 percent, respectively.

Extrapolation of current trends identifies important differences in the "graying" of IIASA's national populations; also revealed are significant regional differences. In a number of countries, one can already find spatial concentrations of the aged, for example, in Vienna, Austria, the Southwest and the Mediterranean regions in France, and the Shikoku and Kyushu regions in Japan. If current migration patterns remain constant, some regions will experience a considerable further aging of their populations. The number of elderly persons in the Kanto region of Japan, for example, is projected to almost double in size between 1980 and 2000 (Appendix A). Because of the higher than average rate of natural increase in the region, however, the share accorded to the elderly population will continue to be lower in Kanto than in the rest of Japan. Regions in other countries that are projected to experience high increases in the numbers of elderly persons between 1980 and 2000 are, for example, British Columbia (166 percent) in Canada, Sofia (158 percent) in Bulgaria, and the Kazakh Republics (156 percent) in the Soviet Union. A few regions centered on large cities may expect substantial declines in the numbers of their aged. In West Berlin, for example, the elderly population will decrease by about a half and in Vienna by almost a third. Whereas in 1980, about one out of every five persons in Vienna was 65 years or older. This fraction is projected to be only one out of every seven by the year 2000.

Patterns of regional differentiation in age composition in the year 2000 are summarized in Table 11. A comparison of these figures with the corresponding data for 1980, set out in Table 5, shows that Italy and the Soviet Union continue to exhibit the highest degrees of regional differences in the prevalence of young populations, with the former country overtaking the latter by the year 2000. Japan and the Soviet Union once again lead the IIASA countries in the amount of regional variations in the concentration of elderly people. In this indicator too, the Soviet Union is overtaken by Japan by the year 2000. In both 1980 and in the year 2000, Austria and Bulgaria show higher than average degrees of variation in regional concentrations of the elderly.

For the 17 IIASA nations as a whole, it appears that differences in the fractions of regional populations found in the young and elderly categories by the year 2000 are likely to rise for the young and decline for the elderly. The MAD/N % figure for the former increases from 9.1 to 13.3 percent, whereas that for the latter decreases from 16.8 to 12.6 percent.

6. CONCLUSION: POPULATION PROCESSES, PROSPECTS, AND ISSUES

Social concern with population processes arises when the demographic acts of individuals affect the welfare of others and combine in ways that produce a sharp divergence between the sum of individual (private) preferences and social well-being. In such instances, population processes properly become the subject of public debate and the object of public policy.

Population policies are actions undertaken by public bodies with the aim of affecting processes of demographic growth and change. Family planning programs, investments in health care facilities and services, and government-assisted migration are examples of public actions taken, respectively, to reduce fertility levels, to promote health and longevity, and to foster personal betterment through geographical mobility.

Table 11. Regional differentials in age composition in the year 2000.

Country (reference year: number of regions)	% (0-14)				% (65+)			
	National	Lowest	Highest	MAD/N %	National	Lowest	Highest	MAD/N %
Austria (1971:9)	23.0	16.9	27.2	9.6	12.1	9.2	15.0	13.6
Bulgaria (1975:7)	21.8	19.5	23.9	6.4	13.9	12.2	18.4	13.1
Canada (1971:10)	26.0	24.2	35.4	10.1	10.3	7.3	14.2	11.9
Czechoslovakia (1975:10)	24.3	21.7	27.8	3.8	11.0	9.5	12.4	6.4
Fed. Rep. of Germany (1974:11)	15.9	12.3	17.5	7.1	15.6	14.2	18.1	4.6
Finland (1974:12)	17.2	16.0	21.0	5.9	13.5	11.6	15.3	8.0
France (1975:8)	19.8	17.0	23.5	8.5	14.7	12.1	18.5	12.3
Germ. Dem. Republic (1975:5)	16.2	15.3	17.7	5.3	14.1	10.4	15.9	11.1
Hungary (1974:6)	21.7	19.0	24.8	6.4	13.3	12.2	14.0	4.1
Italy (1978:5)	19.5	16.5	24.3	17.1	15.2	12.6	17.2	11.9
Japan (1970:8)	20.5	18.2	21.2	5.6	12.5	9.8	20.1	31.8
Netherlands (1974:5)	19.6	18.1	21.4	5.7	12.9	12.0	14.8	6.8
Poland (1977:13)	22.7	16.4	27.3	10.0	11.5	9.1	13.6	9.1
Soviet Union (1974:8)	25.2	21.6	35.4	15.5	12.2	6.9	16.9	24.4
Sweden (1974:8)	18.4	17.1	19.9	3.4	16.3	14.7	17.5	5.4
United Kingdom (1970:10)	24.2	22.8	25.7	3.9	12.3	11.3	14.4	5.8
United States (1970:4)	26.0	25.6	27.1	2.2	10.2	9.5	10.9	5.8
All 17 countries	23.3	15.9	26.0	13.3	12.2	10.2	16.3	12.6

6.1 Fertility and Migration

Among national population policies in the less developed world, the problem of fertility reduction has been of paramount importance. The negative consequences of rapid population growth for socioeconomic development are becoming widely recognized and this has led many developing countries to undertake serious efforts to control fertility.

Among the more developed countries the perceived negative consequences of population *decline* have generated, in a number of IIASA countries, a fear of possible future labor shortages, "stagnating" non-innovative aging populations, and reduced national influence in international affairs ("demographic suicide"). A few countries have responded with pronatalist measures; others have adopted policies on egalitarian grounds that reduce the burdens for childbearing and childrearing. Free medical care before, during, and after delivery, child grants, paid maternity leaves, tighter controls on abortion, free infant, preschool, and school health care, educational grants, low-interest loans, family and housing allowances are some of the measures that have been adopted.

Concern with national population growth or decline necessarily has been a concern about levels of fertility. Spatial population policies, on the other hand, tend to focus primarily on internal migration and its contribution to human settlement growth and structure. The potential negative impacts of rapid rates of urban growth on socioeconomic development have led to the adoption of policies to curtail growth in certain localities, while at the same time stimulating it in others. Generally, such national urbanization or human settlement policies have been defended on the grounds either of national efficiency or of regional equity. They may seek to encourage some underemployed people in declining regions to migrate and shift to more productive occupations, for example. Or they might strive to divert migrants away from major overcrowded metropolitan areas. And they may try to make it possible for

an economically depressed region to attract the skilled and professional manpower that it needs for its growth and development.

During the past two decades shifts in long-standing demographic patterns of fertility and migration in IIASA countries have brought about a growing debate about the long-range implications of current trends. Declining rates of national population growth, continuing differential levels of regional economic activity, and shifts in the migration patterns of people and jobs are changing the sizes, age compositions, and spatial distributions of the 17 national populations, altering thereby the well-being of particular population groups and regions. Major declines in fertility have dramatically changed prospects for future population growth at the same time that new patterns of internal migration are rearranging the territorial structures of national populations. The combination has brought forward two major policy issues: the consequences of changing age profiles and the impacts of changing spatial distributions.

6.2 Slowing Population Growth and Changing Age Profiles

By 1980 almost all of the 17 IIASA populations had entered a period of transition to non-growth. Population increase averaged less than one percent per year during the preceding 20 years and is projected to drop to slightly over half that rate during the following two decades. Fully eight of the 17 IIASA national populations will cease to grow by the end of this century if current fertility rates remain unchanged. Another four or five are likely to be growing at very near zero population growth levels at that time.

Fertility rates in IIASA member nations have been declining for most of the past two decades and now are at below replacement levels in 13 out of 17 countries. A sharp reversal of this historical pattern is not a likely prospect. About 10 percent of the women in several European countries go through life without bearing any children and another 20 percent have only one. If

bare replacement level fertility is to occur in such countries, 50 percent have to have three children each. Past and current trends suggest that this is not likely to happen soon.

The impacts of declining birth rates are felt in population age compositions: reducing the proportion in the youngest age groups, increasing the proportion aged 65 and over, and leaving approximately the same fraction in the working ages. Changing age compositions will affect school enrollments, demands for health care and particular categories of housing units, and the sizes of the beneficiary and donor populations involved in social security systems.

School enrollments are correlated with the number of children. Health care facilities and nursing homes expand or contract with changes in the sizes of the elderly population. Housing demand varies with, among other things, the number of persons in the ages of principal home-ownership, usually young and middle-aged adults.

Of particular concern to IIASA nations is the projected increase in the number and proportion of older people, especially of the very old populations. In most IIASA nations a major part of the costs of ensuring the well-being of the elderly is borne by those in the labor force by means of payroll taxes or income taxes. Thus if these countries decide to continue current levels of health care and income maintenance (social security) benefits to their elderly citizens, then fertility declines imply rising per capita support burdens on the workforce.

Non-growth at the national level does not imply a corresponding halt of population growth for local areas and regions, since migration will continue to cause some regions to grow and others to decline. Thus problems of expansion and contraction will continue to confront national and regional decision makers.

6.3 Migration Shifts and Changing Spatial Distributions

Shifts in the patterns of migration flows, together with the emergence of low fertility levels at the regional scale, are altering national territorial arrangements. The attractiveness of large urban centers has diminished in a number of IIASA's market economy countries and regional redistributions of population and economic activity are signalling changing regional fortunes and giving rise to a variety of regional conflicts of interest.

Rearrangements of national territorial structures are contributing to political and economic imbalances in the distribution of employment, income, and wealth. In the United States, the Northeast shows declining rates of population growth, while the South continues to maintain its share of the national population. In Canada, Quebec is projected to experience a sharp decline in relative population size, while British Columbia's share is expected to increase its share of the national population total. In Japan, the Kanto region centered on Tokyo continues to attract migrants and could account for almost 40 percent of Japan's population by the year 2000, at the same time that the Kyushu and Shikoku regions continue to lose their populations to other parts of the nation. Insufficient social infrastructure will need to be expanded in the growing regions and obsolescent physical plants will need to be revitalized or replaced in the regions of decline.

A region's political representation in national bodies and its claims on national resources are generally linked to its population size. Shrinking populations imply reduced influence and reduced claims. Moreover, declining regions may lose much of their scarce human capital, receiving less-skilled inmigrants in exchange. Population groups that are heavily dependent on public support may grow in relative size raising the per capita public burden. Outdated public facilities, inadequate transportation systems, and other symptoms of decline emerge at a time of eroding local tax bases and sharply escalating service demands.

APPENDIX A: REGIONAL POPULATION PROJECTIONS, ANNUAL RATES OF INCREASE (r), AND PERCENTAGE SHARES (Perc.), FOR THE 139 IIASA REGIONS, TOTAL POPULATIONS FOR ALL AGES COMBINED AND FOR MAJOR AGE GROUPINGS

All ages

Country (reference year) and region	1980 Population (1)	r (2)	Perc. (3)	Mean age (4)	2000 Population (5)	r (6)	Perc. (7)	Mean age (8)	2030 Population (9)	r (10)	Perc. (11)	Mean age (12)	Stable r (13)	Perc. (14)	Mean age (15)
Austria (1971)															
Burgenland	269.	-0.001	3.55	35.95	263.	-0.002	3.28	36.08	252.	-0.002	2.85	37.12	0.005	0.77	36.04
Carinthia	544.	0.004	7.18	34.33	593.	0.004	7.37	34.60	654.	0.002	7.41	35.97	0.005	6.37	35.48
Lower Austria	1404.	-0.001	18.53	36.68	1410.	0.000	17.54	36.43	1412.	-0.001	16.00	37.64	0.005	5.84	36.84
Upper Austria	1277.	0.005	16.85	34.21	1435.	0.006	17.85	34.18	1665.	0.004	18.86	35.44	0.005	14.76	35.37
Salzburg	437.	0.009	5.77	33.83	525.	0.009	6.53	33.94	658.	0.006	7.45	35.25	0.005	8.99	35.65
Styria	1213.	0.002	16.01	35.24	1280.	0.002	15.92	35.23	1367.	0.001	15.48	36.49	0.005	9.56	35.81
Tyrol	589.	0.009	7.77	32.95	717.	0.009	8.91	33.19	920.	0.007	10.41	34.57	0.005	24.77	35.08
Vorarlberg	301.	0.011	3.98	31.87	378.	0.011	4.70	32.47	500.	0.008	5.66	33.65	0.005	21.54	34.43
Vienna	1543.	-0.005	20.36	41.40	1438.	-0.002	17.89	39.73	1402.	-0.001	15.88	39.96	0.005	7.40	38.80
Austria	7577.	0.002	100.00	36.16	8038.	0.003	100.00	35.64	8830.	0.003	100.00	36.55	0.005	100.00	35.52
Bulgaria (1975)															
North West	1040.	-0.001	11.59	39.38	1003.	-0.001	10.45	39.14	985.	0.001	9.64	37.74	0.002	8.47	37.37
North	1417.	0.002	15.79	38.04	1447.	0.001	15.07	38.23	1507.	0.002	14.74	37.63	0.002	15.49	37.46
North East	1540.	0.007	17.16	34.14	1705.	0.005	17.76	35.20	1908.	0.004	18.67	35.16	0.002	24.26	35.51
South West	705.	0.002	7.85	35.08	703.	-0.002	7.32	37.47	642.	-0.003	6.28	38.16	0.002	2.83	36.36
South	2247.	0.008	25.04	34.12	2502.	0.004	26.07	35.60	2759.	0.003	27.00	35.93	0.002	26.67	36.09
South East	884.	0.004	9.84	34.95	902.	0.000	9.40	36.88	879.	-0.000	8.60	36.24	0.002	6.39	35.51
Sofia	1143.	0.013	12.73	34.91	1335.	0.006	13.91	36.75	1539.	0.004	15.06	36.78	0.002	15.88	37.23
Bulgaria	8976.	0.006	100.00	35.61	9596.	0.003	100.00	36.71	10220.	0.002	100.00	36.50	0.002	100.00	36.42
Canada (1971)															
Newfoundland	573.	0.014	2.49	27.23	749.	0.012	2.62	27.95	1048.	0.010	2.87	28.99	0.007	4.71	29.09
Prince Edward Island	119.	0.009	0.52	31.61	145.	0.009	0.51	32.02	188.	0.008	0.51	33.63	0.007	0.52	33.59
Nova Scotia	836.	0.009	3.64	31.49	1008.	0.008	3.52	32.48	1275.	0.007	3.49	34.10	0.007	3.56	33.86
New Brunswick	683.	0.010	2.97	30.46	833.	0.009	2.91	31.72	1048.	0.007	2.87	33.59	0.007	2.68	33.33
Quebec	6340.	0.008	27.56	31.30	7274.	0.005	25.42	34.09	7999.	0.002	21.91	36.61	0.007	12.10	35.51
Ontario	8226.	0.013	35.75	32.08	10442.	0.010	36.50	33.50	13649.	0.008	37.39	35.09	0.007	37.67	34.98
Manitoba	1013.	0.005	4.40	32.40	1119.	0.004	3.91	33.09	1301.	0.005	3.56	34.14	0.007	3.48	33.78
Saskatchewan	895.	-0.005	3.89	32.94	838.	-0.003	2.93	34.05	847.	0.003	2.32	34.30	0.007	2.23	33.75
Alberta	1823.	0.018	7.92	30.03	2506.	0.013	8.76	31.23	3520.	0.010	9.65	32.88	0.007	11.96	33.17
British Columbia	2500.	0.023	10.87	32.74	3700.	0.017	12.93	34.07	5625.	0.012	15.41	35.96	0.007	21.09	36.39
Canada	23008.	0.012	100.00	31.63	28612.	0.009	100.00	33.29	36500.	0.007	100.00	35.03	0.007	100.00	34.69
Czechoslovakia (1975)															
Central Bohemia	2354.	0.005	15.32	37.58	2521.	0.005	14.64	36.29	3015.	0.006	14.52	35.52	0.006	14.43	35.41
Southern Bohemia	692.	0.007	4.50	35.38	774.	0.007	4.50	34.69	950.	0.007	4.58	34.57	0.006	4.63	34.54
Western Bohemia	895.	0.005	5.83	34.34	953.	0.004	5.54	34.54	1080.	0.005	5.20	34.14	0.006	4.69	33.76
Northern Bohemia	1172.	0.006	7.63	33.86	1263.	0.005	7.34	34.13	1450.	0.005	6.99	33.80	0.006	6.37	33.51
Eastern Bohemia	1254.	0.005	8.16	35.76	1346.	0.005	7.82	34.98	1582.	0.006	7.62	34.62	0.006	7.23	34.40
Southern Moravia	2054.	0.007	13.37	35.38	2288.	0.006	13.29	34.67	2804.	0.007	13.51	34.37	0.006	14.30	34.34
Northern Moravia	1955.	0.008	12.73	33.50	2212.	0.006	12.85	34.04	2648.	0.006	12.76	34.17	0.006	12.39	34.00
Western Slovakia	2070.	0.010	13.47	33.46	2412.	0.007	14.02	34.20	2959.	0.006	14.26	35.06	0.006	13.51	34.90
Central Slovakia	1525.	0.009	9.92	32.50	1758.	0.007	10.21	33.38	2113.	0.006	10.18	34.34	0.006	9.10	34.10
Eastern Slovakia	1395.	0.012	9.08	31.14	1686.	0.008	9.80	31.98	2157.	0.008	10.39	32.87	0.006	13.34	32.92
Czechoslovakia	15366.	0.007	100.00	34.40	17212.	0.006	100.00	34.34	20757.	0.006	100.00	34.42	0.006	100.00	34.25

All ages

Country (reference year) and region	1980 Population (1)	1980 r (2)	1980 Perc. (3)	1980 Mean age (4)	2000 Population (5)	2000 r (6)	2000 Perc. (7)	2000 Mean age (8)	2030 Population (9)	2030 r (10)	2030 Perc. (11)	2030 Mean age (12)	Stable r (13)	Stable Perc. (14)	Stable Mean age (15)
Fed.Rep.of Germany (1974)															
Schleswig-Holstein	2589.	0.000	4.22	38.06	2487.	-0.004	4.32	40.87	1966.	-0.011	4.36	45.23	-0.013	4.27	45.49
Hamburg	1616.	-0.012	2.64	41.26	1348.	-0.009	2.34	42.84	997.	-0.012	2.21	46.09	-0.013	2.16	46.16
Lower Saxony	7266.	-0.000	11.85	37.67	7021.	-0.003	12.19	40.03	5604.	-0.010	12.55	43.88	-0.013	12.77	44.28
Bremen	691.	-0.008	1.13	39.39	604.	-0.007	1.05	41.32	463.	-0.011	1.03	44.60	-0.013	1.03	44.83
N. Rhine-Westphalia	16934.	-0.003	27.63	37.97	15608.	-0.006	27.09	40.97	11836.	-0.012	26.23	44.82	-0.013	24.53	44.98
Hessen	5565.	-0.000	9.08	38.33	5351.	-0.004	9.29	41.17	4248.	-0.011	9.41	45.22	-0.013	9.38	45.50
Rhineland-Palatinate	3605.	-0.004	5.88	38.18	3256.	-0.006	5.65	41.58	2449.	-0.012	5.43	45.71	-0.013	5.09	45.82
Baden-Wuerttemberg	9274.	0.001	15.13	37.01	9071.	-0.003	15.74	40.24	7308.	-0.010	16.20	44.25	-0.013	16.98	44.62
Bavaria	10864.	0.000	17.72	37.80	10571.	-0.003	18.35	40.68	8595.	-0.010	19.05	44.67	-0.013	20.54	45.02
Saarland	1039.	-0.010	1.69	38.28	831.	-0.012	1.44	42.52	539.	-0.016	1.20	46.29	-0.013	0.97	45.54
West Berlin	1854.	-0.015	3.03	41.80	1469.	-0.011	2.55	41.21	1057.	-0.013	2.34	44.10	-0.013	2.27	44.04
Fed.Rep. of Germany	61298.	-0.002	100.00	38.03	57618.	-0.004	100.00	40.81	45124.	-0.011	100.00	44.71	-0.013	100.00	44.96
Finland (1974)															
Uusimaa	1153.	0.012	23.90	35.26	1245.	0.001	25.86	38.55	1114.	-0.010	27.10	43.08	-0.010	27.57	43.06
Turku and Pori	720.	0.007	14.93	36.62	739.	0.000	15.35	39.44	655.	-0.010	15.93	43.64	-0.010	16.36	43.57
Ahvenanmaa	23.	0.009	0.48	36.73	26.	0.003	0.53	37.92	26.	-0.006	0.62	42.04	-0.010	0.78	42.91
Hame	687.	0.007	14.24	36.22	707.	0.000	14.68	39.49	621.	-0.010	15.10	43.86	-0.010	15.23	43.68
Kymi	347.	0.000	7.19	36.63	324.	-0.004	6.74	40.00	261.	-0.012	6.36	43.94	-0.010	6.08	43.39
Mikkeli	205.	-0.006	4.24	36.64	180.	-0.006	3.74	39.94	141.	-0.012	3.43	43.45	-0.010	3.29	42.83
Pohjois-Karjala	173.	-0.004	3.59	35.93	154.	-0.006	3.21	39.25	122.	-0.012	2.96	42.95	-0.010	2.84	42.25
Kuopio	249.	-0.002	5.15	35.78	228.	-0.005	4.74	39.47	182.	-0.011	4.42	43.40	-0.010	4.23	42.72
Keski-Suomi	240.	0.001	4.98	35.64	229.	-0.003	4.77	39.08	188.	-0.011	4.58	42.88	-0.010	4.49	42.43
Vaasa	423.	-0.000	8.76	35.96	392.	-0.005	8.14	38.95	316.	-0.011	7.69	42.26	-0.010	7.48	41.83
Oulu	411.	0.004	8.52	32.96	413.	-0.001	8.58	36.28	350.	-0.009	8.51	40.05	-0.010	8.55	39.78
Lappi	194.	-0.002	4.01	33.31	176.	-0.005	3.66	37.81	136.	-0.011	3.31	41.75	-0.010	3.10	40.93
Finland	4825.	0.005	100.00	35.62	4815.	-0.001	100.00	38.87	4111.	-0.010	100.00	42.98	-0.010	100.00	42.75
France (1975)															
Paris Region	10023.	0.003	18.79	35.84	10227.	-0.000	18.35	37.47	9712.	-0.003	17.77	39.54	-0.003	17.77	39.46
Paris Basin	9868.	0.005	18.50	35.80	10489.	0.002	18.82	37.49	10465.	-0.002	19.15	40.52	-0.003	19.36	40.63
North	3941.	0.001	7.39	34.03	3996.	-0.000	7.17	35.07	3826.	-0.003	7.00	37.24	-0.003	6.70	37.26
East	4957.	0.002	9.29	34.94	5034.	-0.001	9.03	37.18	4664.	-0.004	8.53	40.34	-0.003	7.12	40.00
West	7065.	0.005	13.24	36.08	7626.	0.003	13.68	37.21	7873.	-0.001	14.40	39.77	-0.003	16.61	40.04
Southwest	5574.	0.001	10.45	39.23	5549.	-0.001	9.96	40.75	5221.	-0.003	9.55	43.74	-0.003	8.82	43.52
Middle East	6271.	0.005	11.76	36.29	6693.	0.002	12.01	38.03	6676.	-0.002	12.21	40.90	-0.003	12.28	41.02
Mediterranean	5643.	0.006	10.58	39.20	6123.	0.003	10.99	41.02	6223.	-0.001	11.39	44.20	-0.003	11.34	44.38
France	53342.	0.004	100.00	36.41	55738.	0.001	100.00	38.02	54660.	-0.002	100.00	40.77	-0.003	100.00	40.78
German Dem.Rep.(1975)															
North	2087.	0.000	12.54	35.21	2051.	-0.000	13.04	38.27	1710.	-0.006	13.36	43.43	-0.012	13.45	43.07
Berlin	1143.	0.008	6.87	36.84	1337.	0.007	8.50	37.53	1359.	-0.002	10.62	41.62	-0.012	18.21	42.82
Southwest	2520.	-0.001	15.14	37.23	2433.	0.000	15.46	39.23	2030.	-0.007	15.86	43.57	-0.012	16.22	43.48
South	6948.	-0.005	41.75	39.00	6107.	-0.004	38.82	40.91	4571.	-0.010	35.72	45.24	-0.012	27.24	44.38
Middle	3945.	-0.001	23.70	36.75	3802.	-0.000	24.17	39.36	3128.	-0.007	24.45	44.36	-0.012	24.88	44.02
German Dem.Rep.	16642.	-0.002	100.00	37.58	15730.	-0.001	100.00	39.64	12798.	-0.007	100.00	44.14	-0.012	100.00	43.69

All ages

Country (reference year) and region	1980 Population (1)	r (2)	Perc. (3)	Mean age (4)	2000 Population (5)	r (6)	Perc. (7)	Mean age (8)	2030 Population (9)	r (10)	Perc. (11)	Mean age (12)	Stable r (13)	Stable Perc. (14)	Stable Mean age (15)
Hungary (1974)															
Central	3093.	0.007	28.70	37.44	3297.	0.003	29.18	37.71	3567.	0.003	29.33	37.42	0.003	29.29	37.23
North Hungary	1389.	0.004	12.89	35.53	1429.	0.001	12.65	36.45	1509.	0.002	12.40	35.84	0.003	12.32	35.64
North Plain	1581.	0.004	14.67	34.55	1641.	0.002	14.52	35.19	1761.	0.002	14.48	34.77	0.003	14.44	34.59
South Plain	1472.	0.002	13.66	36.97	1489.	0.001	13.17	36.94	1575.	0.002	12.95	36.28	0.003	12.87	36.05
North Trans-Danubia	1911.	0.008	17.74	34.82	2079.	0.004	18.40	35.50	2295.	0.003	18.87	35.26	0.003	19.11	35.15
South Trans-Danubia	1330.	0.003	12.34	36.38	1365.	0.002	12.08	36.64	1455.	0.002	11.97	36.04	0.003	11.97	35.87
Hungary	10775.	0.005	100.00	36.11	11301.	0.002	100.00	36.55	12162.	0.003	100.00	36.12	0.003	100.00	35.94
Italy (1978)															
Northwest	15427.	0.000	27.09	37.57	15239.	-0.001	25.62	40.12	13747.	-0.004	23.89	42.37	-0.002	21.51	41.85
Northeast	10429.	0.002	18.31	37.52	10515.	-0.001	17.68	40.44	9499.	-0.005	16.51	43.54	-0.002	11.20	43.08
Central	10868.	0.004	19.08	37.40	11355.	0.001	19.09	40.28	10816.	-0.003	18.79	42.79	-0.002	16.60	42.77
South	13638.	0.006	23.95	32.98	15140.	0.004	25.45	35.05	15967.	0.001	27.74	37.34	-0.002	36.35	37.62
Islands	6591.	0.006	11.57	33.78	7235.	0.004	12.16	35.82	7522.	-0.000	13.07	38.29	-0.002	14.33	38.59
Italy	56954.	0.003	100.00	35.99	59484.	0.001	100.00	38.39	57551.	-0.002	100.00	40.71	-0.002	100.00	40.13
Japan (1970)															
Hokkaido	5027.	-0.003	4.32	33.92	4395.	-0.007	3.40	39.59	3421.	-0.007	2.55	40.27	0.000	2.11	39.01
Tohoku	10472.	-0.008	8.99	35.63	8849.	-0.008	6.84	40.91	7274.	-0.004	5.43	41.19	0.000	5.12	40.70
Kanto	38752.	0.022	33.28	31.49	50364.	0.010	38.91	35.05	58128.	0.003	43.41	36.91	0.000	46.58	37.39
Chubu	19923.	0.012	17.11	33.44	22759.	0.005	17.58	37.27	23638.	0.000	17.65	38.74	0.000	17.19	38.78
Kinki	20375.	0.018	17.50	32.29	25031.	0.008	19.34	35.87	27067.	0.001	20.21	37.62	0.000	19.56	37.82
Chugoku	7150.	0.002	6.14	35.89	6879.	-0.002	5.31	40.20	6109.	-0.004	4.56	40.76	0.000	4.06	40.02
Shikoku	3538.	-0.009	3.04	37.24	2867.	-0.010	2.21	42.14	2254.	-0.006	1.68	41.36	0.000	1.49	40.30
Kyushu	11188.	-0.015	9.61	35.77	8299.	-0.014	6.41	40.78	6017.	-0.007	4.49	39.73	0.000	3.89	38.43
Japan	116425.	0.010	100.00	33.30	129441.	0.004	100.00	36.95	133908.	0.000	100.00	38.07	0.000	100.00	38.11
Netherlands (1974)															
North	1569.	0.010	11.25	34.52	1840.	0.006	12.19	37.00	1965.	-0.001	13.38	41.21	-0.005	15.15	41.74
East	2771.	0.011	19.86	33.43	3244.	0.006	21.48	36.54	3353.	-0.002	22.83	40.84	-0.005	24.01	41.19
West	6129.	-0.001	43.94	35.45	5994.	-0.002	39.69	38.41	5322.	-0.006	36.23	42.28	-0.005	33.43	41.97
South-West	343.	0.010	2.46	35.93	394.	0.005	2.61	38.23	407.	-0.002	2.77	42.68	-0.005	2.78	43.05
South	3136.	0.010	22.48	33.00	3629.	0.005	24.03	37.41	3643.	-0.003	24.80	42.22	-0.005	24.64	42.44
Netherlands	13949.	0.006	100.00	34.41	15102.	0.002	100.00	37.59	14691.	-0.003	100.00	41.80	-0.005	100.00	41.89
Poland (1977)															
Warsaw	2296.	0.013	6.42	35.87	2734.	0.007	6.71	37.52	3190.	0.004	7.02	39.10	0.003	6.36	39.16
Lodz	1122.	0.007	3.14	36.41	1190.	0.001	2.92	38.85	1196.	-0.001	2.63	40.68	0.003	1.74	39.79
Gdansk	1353.	0.017	3.78	31.88	1708.	0.009	4.19	34.47	2089.	0.005	4.60	36.79	0.003	4.34	36.98
Katowice	3711.	0.014	10.39	33.39	4537.	0.008	11.14	35.74	5389.	0.004	11.86	37.63	0.003	14.18	37.73
Cracow	1183.	0.011	3.31	34.15	1377.	0.006	3.38	36.66	1568.	0.003	3.45	38.66	0.003	4.98	38.40
East-Central	2976.	0.005	8.33	33.69	3137.	0.002	7.70	35.19	3262.	0.001	7.18	36.53	0.003	5.45	36.24
Northeast	2461.	0.009	6.89	32.05	2774.	0.004	6.81	34.26	3046.	0.002	6.70	36.15	0.003	5.03	36.13
Northwest	2191.	0.013	6.13	30.59	2568.	0.006	6.31	34.46	2823.	0.001	6.21	36.99	0.003	4.77	36.79
South	2576.	0.009	7.21	32.83	2931.	0.005	7.20	34.85	3263.	0.002	7.18	36.65	0.003	7.25	36.52
Southeast	4318.	0.009	12.08	32.76	4954.	0.006	12.17	33.03	5914.	0.005	13.01	33.61	0.003	23.33	33.64
East	2524.	0.006	7.06	34.00	2702.	0.002	6.64	35.35	2874.	0.002	6.32	36.36	0.003	5.64	36.06
West-Central	4841.	0.009	13.55	32.84	5452.	0.005	13.39	34.68	6026.	0.002	13.26	36.82	0.003	9.38	36.65
West	4185.	0.010	11.71	31.97	4656.	0.003	11.43	35.84	4812.	-0.000	10.59	38.32	0.003	7.56	37.88
Poland	35735.	0.010	100.00	33.06	40719.	0.005	100.00	35.15	45451.	0.002	100.00	36.88	0.003	100.00	36.43

All ages

Country (reference year) and region	1980 Population (1)	r (2)	Perc. (3)	Mean age (4)	2000 Population (5)	r (6)	Perc. (7)	Mean age (8)	2030 Population (9)	r (10)	Perc. (11)	Mean age (12)	Stable r (13)	Stable Perc. (14)	Stable Mean age (15)
Soviet Union (1974)															
Urban areas of the:															
RSFSR	100770.	0.022	37.89	34.29	134783.	0.010	43.25	35.35	169291.	0.006	44.75	36.91	0.006	44.03	37.04
Ukrainian+Mold.SSRs	33815.	0.022	12.71	34.12	45630.	0.011	14.64	34.66	58062.	0.007	15.35	36.17	0.006	15.08	36.35
Byelorussian SSR	5567.	0.033	2.09	30.63	8273.	0.013	2.65	31.64	10707.	0.006	2.83	33.83	0.006	2.76	34.07
Central Asian Rep.s	10449.	0.030	3.93	27.83	16227.	0.016	5.21	27.91	23516.	0.010	6.22	28.82	0.006	7.19	29.01
Kazakh SSR	8475.	0.023	3.19	30.22	11534.	0.010	3.70	31.71	14521.	0.006	3.84	33.10	0.006	3.85	33.21
Caucasian Republics	7729.	0.018	2.91	30.64	10411.	0.012	3.34	31.69	13983.	0.008	3.70	32.66	0.006	4.34	32.96
Baltic Republics	5146.	0.028	1.93	34.26	7415.	0.013	2.38	35.24	9757.	0.007	2.58	37.33	0.006	2.55	37.68
Rural areas of USSR	94021.	-0.012	35.35	34.22	77350.	-0.006	24.82	34.84	78495.	0.004	20.75	32.79	0.006	20.21	32.74
Soviet Union	265972.	0.010	100.00	33.68	311623.	0.007	100.00	34.38	378331.	0.006	100.00	35.06	0.006	100.00	35.10
Sweden (1974)															
Stockholm	1492.	0.001	18.07	37.78	1444.	-0.002	17.58	39.77	1305.	-0.004	16.86	41.47	-0.004	16.22	41.18
East Middle	1409.	0.001	17.06	37.91	1384.	-0.002	16.84	39.29	1282.	-0.004	16.57	41.08	-0.004	16.15	40.94
South Middle	767.	0.001	9.28	38.84	745.	-0.002	9.07	39.89	693.	-0.003	8.96	41.47	-0.004	8.91	41.41
South	1182.	0.003	14.31	38.75	1206.	0.000	14.68	40.15	1163.	-0.002	15.03	41.95	-0.004	15.47	42.06
West	1636.	0.003	19.81	38.21	1669.	0.000	20.31	39.36	1618.	-0.002	20.91	41.18	-0.004	21.68	41.36
North Middle	860.	0.001	10.41	39.63	843.	-0.002	10.26	40.27	792.	-0.003	10.23	41.92	-0.004	10.08	41.88
Lower North	403.	0.001	4.88	39.70	395.	-0.001	4.81	40.41	371.	-0.003	4.79	42.06	-0.004	4.72	42.02
Upper North	510.	0.005	6.17	36.94	530.	0.001	6.45	38.44	514.	-0.002	6.64	40.31	-0.004	6.77	40.46
Sweden	8259.	0.002	100.00	38.36	8216.	-0.001	100.00	39.67	7738.	-0.003	100.00	41.41	-0.004	100.00	41.40
United Kingdom (1970)															
North	3463.	0.003	6.13	35.96	3710.	0.004	6.01	35.27	4252.	0.005	5.85	35.41	0.005	5.68	35.34
Yorkshire + Humbers.	4884.	0.001	8.65	35.87	5123.	0.003	8.29	34.80	5837.	0.005	8.03	34.66	0.005	7.88	34.60
North West	6938.	0.002	12.29	35.53	7439.	0.004	12.04	34.09	8684.	0.005	11.95	34.10	0.005	11.88	34.11
East Midlands	3628.	0.007	6.42	35.43	4173.	0.007	6.76	34.69	5097.	0.006	7.01	35.07	0.005	7.23	35.23
West Midlands	5423.	0.004	9.61	35.16	5922.	0.005	9.59	34.71	6912.	0.005	9.51	34.73	0.005	9.57	34.75
East Anglia	1937.	0.013	3.43	36.51	2404.	0.010	3.89	36.17	3066.	0.007	4.22	37.01	0.005	4.42	37.31
South East	17908.	0.003	31.72	36.46	19493.	0.005	31.56	35.57	22969.	0.005	31.60	35.74	0.005	31.96	35.79
South West	4159.	0.009	7.37	37.19	4868.	0.007	7.88	36.49	5999.	0.006	8.26	36.98	0.005	8.50	37.14
Wales	2818.	0.003	4.99	36.69	3020.	0.004	4.89	35.81	3500.	0.005	4.82	35.96	0.005	4.78	35.94
Scotland	5306.	0.002	9.40	34.85	5617.	0.003	9.09	34.00	6357.	0.004	8.75	34.40	0.005	8.10	34.24
United Kingdom	56463.	0.004	100.00	35.99	61769.	0.005	100.00	35.13	72664.	0.005	100.00	35.34	0.005	100.00	35.39
United States (1970)															
Northeast	51450.	0.005	22.86	33.78	57207.	0.005	21.13	33.59	69196.	0.006	19.86	34.16	0.007	18.82	33.93
North Central	61677.	0.009	27.41	32.29	73081.	0.008	27.00	32.37	93811.	0.008	26.92	33.29	0.007	27.12	33.28
South	69924.	0.011	31.08	32.67	84306.	0.009	31.15	33.57	108364.	0.008	31.10	34.82	0.007	31.10	34.76
West	41965.	0.018	18.65	32.00	56086.	0.012	20.72	33.01	77102.	0.009	22.13	34.58	0.007	22.96	34.78
United States	225016.	0.011	100.00	32.70	270681.	0.008	100.00	33.13	348473.	0.008	100.00	34.22	0.007	100.00	34.21

Ages 0-14

Country (reference year) and region	1980 Population (1)	1980 r (2)	1980 Perc. (3)	2000 Population (4)	2000 r (5)	2000 Perc. (6)	2030 Population (7)	2030 r (8)	2030 Perc. (9)	Stable r (10)	Stable Perc. (11)
Austria (1971)											
Burgenland	62.	-0.009	23.06	61.	-0.006	23.22	56.	-0.003	22.37	0.005	23.08
Carinthia	135.	-0.007	24.81	147.	-0.000	24.83	154.	0.001	23.62	0.005	23.94
Lower Austria	316.	-0.012	22.48	318.	-0.002	22.57	304.	-0.002	21.50	0.005	21.98
Upper Austria	315.	-0.008	24.67	357.	0.003	24.89	395.	0.003	23.71	0.005	23.71
Salzburg	109.	-0.002	24.92	130.	0.007	24.72	155.	0.006	23.58	0.005	23.32
Styria	286.	-0.010	23.54	302.	-0.001	23.58	307.	0.001	22.47	0.005	22.86
Tyrol	154.	-0.004	26.12	186.	0.008	25.90	227.	0.007	24.67	0.005	24.33
Vorarlberg	83.	0.001	27.56	103.	0.009	27.15	131.	0.008	26.11	0.005	25.60
Vienna	254.	-0.010	16.46	243.	0.000	16.93	233.	-0.001	16.64	0.005	17.11
Austria	1713.	-0.008	22.61	1847.	0.001	22.98	1962.	0.002	22.22	0.005	23.57
Bulgaria (1975)											
North West	208.	0.001	20.02	207.	0.001	20.63	212.	0.001	21.56	0.002	21.79
North	282.	0.009	19.90	289.	0.002	19.94	310.	0.003	20.56	0.002	20.64
North East	379.	0.009	24.59	407.	0.005	23.87	461.	0.004	24.14	0.002	23.85
South West	164.	-0.006	23.26	151.	-0.005	21.55	136.	-0.003	21.15	0.002	22.42
South	534.	0.004	23.76	573.	0.002	22.91	629.	0.003	22.81	0.002	22.71
South East	208.	0.004	23.58	205.	-0.001	22.75	207.	0.001	23.60	0.002	24.10
Sofia	236.	0.028	20.67	260.	0.005	19.50	308.	0.005	20.02	0.002	19.75
Bulgaria	2011.	0.007	22.41	2093.	0.002	21.81	2263.	0.003	22.15	0.002	22.20
Canada (1971)											
Newfoundland	202.	0.006	35.25	265.	0.008	35.40	360.	0.009	34.36	0.007	34.30
Prince Edward Island	35.	-0.003	29.11	43.	0.004	29.48	52.	0.006	27.94	0.007	27.99
Nova Scotia	234.	-0.004	27.95	278.	0.003	27.62	334.	0.006	26.19	0.007	26.44
New Brunswick	200.	-0.004	29.29	241.	0.002	28.88	286.	0.005	27.25	0.007	27.50
Quebec	1622.	-0.013	25.58	1762.	-0.003	24.22	1786.	0.000	22.33	0.007	23.25
Ontario	2155.	-0.001	26.20	2677.	0.004	25.64	3318.	0.006	24.31	0.007	24.42
Manitoba	272.	-0.007	26.88	303.	-0.001	27.09	339.	0.004	26.06	0.007	26.41
Saskatchewan	246.	-0.020	27.52	234.	-0.007	27.89	232.	0.001	27.44	0.007	27.99
Alberta	530.	0.006	29.08	718.	0.007	28.65	958.	0.008	27.21	0.007	27.07
British Columbia	639.	0.010	25.56	923.	0.010	24.94	1318.	0.010	23.43	0.007	23.21
Canada	6135.	-0.004	26.66	7442.	0.003	26.01	8983.	0.005	24.61	0.007	25.13
Czechoslovakia (1975)											
Central Bohemia	497.	0.026	21.10	546.	0.008	21.66	692.	0.009	22.96	0.006	23.01
Southern Bohemia	164.	0.021	23.70	184.	0.007	23.80	233.	0.009	24.55	0.006	24.51
Western Bohemia	217.	0.016	24.26	228.	0.005	23.96	269.	0.007	24.92	0.006	25.16
Northern Bohemia	292.	0.019	24.95	308.	0.007	24.36	367.	0.007	25.28	0.006	25.41
Eastern Bohemia	297.	0.020	23.68	320.	0.007	23.82	392.	0.008	24.78	0.006	24.87
Southern Moravia	489.	0.020	23.83	552.	0.007	24.15	702.	0.009	25.03	0.006	25.01
Northern Moravia	494.	0.015	25.28	544.	0.006	24.61	664.	0.008	25.08	0.006	25.17
Western Slovakia	514.	0.015	24.81	579.	0.002	24.01	707.	0.007	23.88	0.006	24.08
Central Slovakia	400.	0.009	26.21	447.	0.001	25.42	530.	0.006	25.07	0.006	25.34
Eastern Slovakia	396.	0.010	28.37	468.	0.003	27.76	590.	0.007	27.35	0.006	27.41
Czechoslovakia	3760.	0.017	24.47	4178.	0.005	24.27	5145.	0.008	24.79	0.006	24.96

Ages 0-14

Country (reference year) and region	1980 Population (1)	r (2)	Perc. (3)	2000 Population (4)	r (5)	Perc. (6)	2030 Population (7)	r (8)	Perc. (9)	Stable r (10)	Stable Perc. (11)
Fed.Rep.of Germany (1974)											
Schleswig-Holstein	489.	-0.031	18.87	398.	-0.009	16.00	261.	-0.014	13.26	-0.013	13.08
Hamburg	229.	-0.046	14.16	166.	-0.012	12.31	104.	-0.014	10.48	-0.013	10.37
Lower Saxony	1421.	-0.028	19.56	1225.	-0.008	17.45	841.	-0.012	14.86	-0.013	14.61
Bremen	115.	-0.041	16.60	88.	-0.012	14.58	58.	-0.013	12.52	-0.013	12.38
N. Rhine-Westphalia	3044.	-0.035	17.98	2426.	-0.012	15.54	1551.	-0.014	13.10	-0.013	12.95
Hessen	975.	-0.029	17.52	810.	-0.010	15.13	541.	-0.013	12.74	-0.013	12.57
Rhineland-Palatinate	665.	-0.037	18.45	512.	-0.014	15.71	320.	-0.015	13.06	-0.013	12.95
Baden-Wuerttemberg	1781.	-0.028	19.21	1513.	-0.009	16.68	1037.	-0.012	14.19	-0.013	13.98
Bavaria	2000.	-0.029	18.41	1701.	-0.009	16.09	1174.	-0.012	13.65	-0.013	13.47
Saarland	179.	-0.049	17.27	119.	-0.022	14.32	64.	-0.018	11.93	-0.013	12.16
West Berlin	274.	-0.028	14.75	203.	-0.013	13.84	130.	-0.014	12.25	-0.013	12.17
Fed.Rep. of Germany	11171.	-0.032	18.22	9161.	-0.010	15.90	6081.	-0.013	13.48	-0.013	13.33
Finland (1974)											
Uusimaa	223.	-0.003	19.34	203.	-0.010	16.32	156.	-0.011	14.03	-0.010	14.02
Turku and Pori	139.	-0.009	19.31	122.	-0.011	16.57	94.	-0.010	14.31	-0.010	14.32
Ahvenanmaa	5.	-0.003	20.00	5.	-0.003	17.91	4.	-0.007	15.46	-0.010	14.99
Hame	133.	-0.009	19.38	116.	-0.012	16.41	88.	-0.011	14.11	-0.010	14.17
Kymi	66.	-0.021	18.98	52.	-0.016	15.99	36.	-0.012	13.90	-0.010	14.17
Mikkeli	39.	-0.029	19.28	30.	-0.018	16.71	21.	-0.012	14.74	-0.010	15.05
Pohjois-Karjala	34.	-0.030	19.71	27.	-0.018	17.50	19.	-0.012	15.38	-0.010	15.73
Kuopio	49.	-0.027	19.89	39.	-0.017	16.99	27.	-0.012	14.76	-0.010	15.10
Keski-Suomi	48.	-0.020	20.10	40.	-0.015	17.39	29.	-0.012	15.26	-0.010	15.47
Vaasa	89.	-0.016	21.15	73.	-0.014	18.57	52.	-0.012	16.59	-0.010	16.81
Oulu	96.	-0.015	23.30	87.	-0.013	21.01	65.	-0.011	18.61	-0.010	18.73
Lappi	43.	-0.035	21.97	33.	-0.019	18.84	22.	-0.013	16.42	-0.010	16.85
Finland	965.	-0.014	20.00	827.	-0.013	17.17	613.	-0.011	14.91	-0.010	15.00
France (1975)											
Paris Region	2032.	-0.004	20.27	1938.	-0.007	18.95	1731.	-0.005	17.82	-0.003	17.87
Paris Basin	2220.	-0.010	22.49	2180.	-0.006	20.78	1962.	-0.005	18.74	-0.003	18.72
North	956.	-0.010	24.25	938.	-0.007	23.47	834.	-0.005	21.81	-0.003	21.84
East	1097.	-0.016	22.14	1023.	-0.009	20.32	849.	-0.007	18.21	-0.003	18.45
West	1595.	-0.008	22.58	1649.	-0.005	21.62	1554.	-0.003	19.74	-0.003	19.61
Southwest	1040.	-0.016	18.65	960.	-0.009	17.29	806.	-0.006	15.43	-0.003	15.60
Middle East	1331.	-0.010	21.23	1311.	-0.004	19.59	1183.	-0.004	17.72	-0.003	17.63
Mediterranean	1036.	-0.012	18.36	1039.	-0.005	16.96	935.	-0.005	15.02	-0.003	14.94
France	11307.	-0.010	21.20	11037.	-0.006	19.80	9854.	-0.005	18.03	-0.003	18.07
German Dem.Rep.(1975)											
North	426.	-0.032	20.40	358.	-0.018	17.45	243.	-0.014	14.22	-0.012	14.48
Berlin	213.	-0.019	18.65	237.	-0.005	17.73	204.	-0.009	15.01	-0.012	14.48
Southwest	479.	-0.026	19.02	409.	-0.014	16.81	285.	-0.013	14.06	-0.012	14.13
South	1221.	-0.031	17.57	932.	-0.019	15.26	578.	-0.017	12.65	-0.012	13.15
Middle	752.	-0.033	19.07	620.	-0.017	16.31	414.	-0.015	13.24	-0.012	13.50
German Dem.Rep.	3091.	-0.030	18.57	2556.	-0.016	16.25	1725.	-0.014	13.48	-0.012	13.82

Ages 0-14

Country (reference year) and region	1980 Population (1)	1980 r (2)	1980 Perc. (3)	2000 Population (4)	2000 r (5)	2000 Perc. (6)	2030 Population (7)	2030 r (8)	2030 Perc. (9)	Stable r (10)	Stable Perc. (11)
Hungary (1974)											
Central	587.	0.033	18.99	626.	-0.001	18.98	706.	0.004	19.80	0.003	19.98
North Hungary	317.	0.011	22.83	321.	-0.001	22.45	354.	0.004	23.49	0.003	23.64
North Plain	398.	0.012	25.19	406.	-0.001	24.76	453.	0.004	25.74	0.003	25.90
South Plain	313.	0.017	21.28	321.	-0.001	21.54	356.	0.004	22.63	0.003	22.81
North Trans-Danubia	446.	0.021	23.36	480.	0.000	23.07	550.	0.005	23.97	0.003	24.11
South Trans-Danubia	290.	0.015	21.79	299.	-0.001	21.91	334.	0.004	22.96	0.003	23.11
Hungary	2352.	0.020	21.83	2452.	-0.001	21.70	2754.	0.004	22.65	0.003	22.81
Italy (1978)											
Northwest	3100.	-0.024	20.09	2527.	0.002	16.59	2069.	-0.004	15.05	-0.002	15.28
Northeast	2107.	-0.023	20.21	1731.	0.001	16.46	1369.	-0.005	14.41	-0.002	14.60
Central	2225.	-0.018	20.47	1955.	0.002	17.22	1677.	-0.003	15.50	-0.002	15.47
South	3640.	-0.008	26.69	3680.	0.003	24.30	3581.	0.000	22.43	-0.002	22.27
Islands	1690.	-0.007	25.65	1677.	0.003	23.18	1600.	-0.001	21.27	-0.002	21.11
Italy	12762.	-0.016	22.41	11570.	0.002	19.45	10296.	-0.002	17.89	-0.002	18.61
Japan (1970)											
Hokkaido	1196.	-0.010	23.80	823.	-0.011	18.71	646.	-0.003	18.87	0.000	19.64
Tohoku	2452.	-0.015	23.42	1652.	-0.012	18.67	1371.	-0.001	18.85	0.000	19.17
Kanto	9708.	0.027	25.05	10686.	0.007	21.22	12030.	0.004	20.70	0.000	20.64
Chubu	4890.	0.013	24.55	4690.	0.004	20.61	4789.	0.003	20.26	0.000	20.32
Kinki	5023.	0.021	24.65	5233.	0.007	20.91	5522.	0.003	20.40	0.000	20.40
Chugoku	1656.	0.002	23.16	1305.	-0.003	18.97	1176.	0.000	19.26	0.000	19.76
Shikoku	802.	-0.013	22.68	522.	-0.009	18.21	437.	-0.001	19.38	0.000	20.07
Kyushu	2746.	-0.020	24.55	1669.	-0.015	20.11	1289.	-0.003	21.42	0.000	22.36
Japan	28474.	0.011	24.46	26580.	0.002	20.53	27260.	0.003	20.36	0.000	20.46
Netherlands (1974)											
North	380.	-0.007	24.22	388.	0.002	21.07	357.	-0.003	18.16	-0.005	17.82
East	687.	-0.008	24.81	695.	0.001	21.43	620.	-0.004	18.48	-0.005	18.21
West	1309.	-0.023	21.36	1084.	-0.007	18.08	832.	-0.007	15.64	-0.005	15.69
South-West	80.	-0.004	23.33	80.	0.000	20.30	70.	-0.005	17.32	-0.005	17.08
South	749.	-0.016	23.88	709.	-0.002	19.54	599.	-0.005	16.45	-0.005	16.24
Netherlands	3206.	-0.016	22.98	2956.	-0.003	19.57	2479.	-0.005	16.87	-0.005	16.80
Poland (1977)											
Warsaw	432.	0.034	18.82	490.	-0.004	17.91	559.	0.002	17.52	0.003	17.61
Lodz	205.	0.023	18.26	196.	-0.010	16.45	191.	-0.002	15.98	0.003	16.52
Gdansk	332.	0.024	24.56	379.	-0.000	22.22	442.	0.004	21.17	0.003	21.14
Katowice	821.	0.021	22.13	920.	-0.001	20.27	1054.	0.003	19.55	0.003	19.54
Cracow	258.	0.018	21.77	271.	-0.003	19.65	296.	0.002	18.85	0.003	19.09
East-Central	745.	0.011	25.03	754.	-0.006	24.04	761.	-0.000	23.31	0.003	23.62
Northeast	656.	0.007	26.66	700.	-0.004	25.22	730.	0.000	23.95	0.003	24.09
Northwest	569.	0.017	25.97	586.	-0.005	22.82	609.	0.001	21.57	0.003	21.79
South	635.	0.009	24.64	679.	-0.003	23.15	721.	0.001	22.11	0.003	22.29
Southeast	1161.	0.013	26.89	1354.	0.001	27.33	1593.	0.004	26.93	0.003	27.03
East	628.	0.012	24.90	653.	-0.004	24.18	681.	0.000	23.69	0.003	24.01
West-Central	1215.	0.015	25.09	1270.	-0.004	23.31	1336.	0.001	22.18	0.003	22.40
West	1018.	0.016	24.32	998.	-0.008	21.44	978.	-0.001	20.32	0.003	20.69
Poland	8674.	0.015	24.27	9250.	-0.004	22.72	9949.	0.001	21.89	0.003	22.53

Ages 0-14

Country (reference year) and region	1980 Population (1)	1980 r (2)	1980 Perc. (3)	2000 Population (4)	2000 r (5)	2000 Perc. (6)	2030 Population (7)	2030 r (8)	2030 Perc. (9)	Stable r (10)	Stable Perc. (11)
Soviet Union (1974)											
Urban areas of the:											
RSFSR	20469.	0.015	20.31	29077.	0.002	21.57	34726.	0.004	20.51	0.006	20.54
Ukrainian+Mold.SSRs	7240.	0.017	21.41	10391.	0.004	22.77	12617.	0.004	21.73	0.006	21.73
Byelorussian SSR	1329.	0.029	23.87	2132.	0.005	25.77	2586.	0.004	24.16	0.006	24.12
Central Asian Rep.s	3471.	0.024	33.22	5746.	0.012	35.41	8170.	0.009	34.74	0.006	34.93
Kazakh SSR	2252.	0.013	26.57	3166.	0.004	27.45	3833.	0.004	26.40	0.006	26.42
Caucasian Republics	2177.	0.007	28.17	3020.	0.005	29.00	3942.	0.006	28.19	0.006	28.26
Baltic Republics	1102.	0.022	21.42	1625.	0.008	21.92	1994.	0.004	20.44	0.006	20.31
Rural areas of USSR	28339.	-0.026	30.14	23513.	-0.007	30.40	24733.	0.003	31.51	0.006	31.52
Soviet Union	66380.	-0.003	24.96	78669.	0.000	25.24	92602.	0.004	24.48	0.006	24.63
Sweden (1974)											
Stockholm	290.	-0.008	19.42	248.	-0.003	17.14	212.	-0.004	16.27	-0.004	16.39
East Middle	294.	-0.004	20.90	263.	-0.002	18.97	230.	-0.004	17.93	-0.004	17.97
South Middle	158.	-0.003	20.58	142.	-0.002	19.03	125.	-0.003	18.07	-0.004	18.08
South	235.	-0.001	19.90	219.	-0.000	18.13	199.	-0.002	17.13	-0.004	17.02
West	334.	-0.002	20.43	313.	-0.001	18.75	286.	-0.002	17.66	-0.004	17.52
North Middle	166.	-0.003	19.29	153.	-0.003	18.19	136.	-0.003	17.19	-0.004	17.19
Lower North	78.	-0.001	19.39	72.	-0.003	18.12	64.	-0.003	17.16	-0.004	17.16
Upper North	110.	0.002	21.54	105.	-0.002	19.91	97.	-0.003	18.85	-0.004	18.74
Sweden	1666.	-0.003	20.17	1514.	-0.002	18.43	1349.	-0.003	17.43	-0.004	17.42
United Kingdom (1970)											
North	796.	-0.007	22.99	888.	0.003	23.94	1004.	0.004	23.62	0.005	23.66
Yorkshire + Humbers.	1177.	-0.003	24.09	1285.	0.004	25.08	1458.	0.004	24.98	0.005	24.99
North West	1691.	-0.003	24.37	1910.	0.005	25.67	2208.	0.005	25.42	0.005	25.40
East Midlands	875.	0.003	24.11	1030.	0.007	24.69	1235.	0.006	24.23	0.005	24.10
West Midlands	1326.	0.000	24.45	1467.	0.006	24.77	1700.	0.005	24.59	0.005	24.54
East Anglia	440.	0.009	22.72	548.	0.010	22.82	677.	0.006	22.10	0.005	21.88
South East	4050.	-0.001	22.62	4518.	0.006	23.18	5246.	0.005	22.85	0.005	22.79
South West	934.	0.003	22.46	1122.	0.008	23.04	1349.	0.006	22.49	0.005	22.38
Wales	641.	-0.004	22.74	713.	0.004	23.60	816.	0.005	23.30	0.005	23.30
Scotland	1313.	-0.004	24.76	1443.	0.002	25.69	1602.	0.003	25.19	0.005	25.29
United Kingdom	13243.	-0.001	23.45	14923.	0.005	24.16	17294.	0.005	23.80	0.005	23.74
United States (1970)											
Northeast	12801.	0.002	24.88	14633.	-0.001	25.58	17452.	0.005	25.22	0.007	25.49
North Central	16519.	0.007	26.78	19823.	0.002	27.12	24970.	0.007	26.62	0.007	26.74
South	18367.	0.006	26.27	21695.	0.003	25.73	27153.	0.007	25.06	0.007	25.18
West	10940.	0.014	26.07	14335.	0.006	25.56	19022.	0.008	24.67	0.007	24.65
United States	58627.	0.007	26.05	70487.	0.002	26.04	88597.	0.007	25.42	0.007	25.54

Ages 15-64

Country (reference year) and region	1980 Population (1)	r (2)	Perc. (3)	2000 Population (4)	r (5)	Perc. (6)	2030 Population (7)	r (8)	Perc. (9)	Stable r (10)	Stable Perc. (11)
Austria (1971)											
Burgenland	169.	0.002	62.91	167.	0.000	63.24	158.	-0.004	62.71	0.005	64.15
Carinthia	341.	0.008	62.64	377.	0.007	63.57	410.	0.001	62.64	0.005	63.44
Lower Austria	871.	0.004	62.06	907.	0.003	64.29	895.	-0.003	63.37	0.005	64.38
Upper Austria	805.	0.011	63.08	923.	0.008	64.31	1059.	0.002	63.56	0.005	64.04
Salzburg	276.	0.013	63.27	342.	0.011	65.11	422.	0.005	64.09	0.005	63.99
Styria	765.	0.006	63.04	827.	0.005	64.57	870.	-0.001	63.65	0.005	64.59
Tyrol	368.	0.015	62.57	462.	0.011	64.47	583.	0.005	63.43	0.005	63.22
Vorarlberg	188.	0.016	62.35	241.	0.011	63.70	314.	0.007	62.73	0.005	62.32
Vienna	974.	-0.003	63.17	979.	0.002	68.06	944.	-0.003	67.29	0.005	68.54
Austria	4759.	0.006	62.81	5222.	0.006	64.97	5653.	0.000	64.02	0.005	63.83
Bulgaria (1975)											
North West	659.	-0.003	63.31	611.	-0.004	60.93	623.	0.001	63.23	0.002	63.49
North	927.	-0.001	65.42	929.	-0.000	64.22	979.	0.003	64.97	0.002	65.17
North East	1000.	0.004	64.90	1090.	0.003	63.93	1218.	0.004	63.85	0.002	63.67
South West	461.	0.002	65.41	446.	-0.004	63.55	405.	-0.004	62.99	0.002	64.22
South	1485.	0.006	66.10	1614.	0.003	64.50	1776.	0.003	64.38	0.002	64.40
South East	581.	0.001	65.70	564.	-0.004	62.56	550.	0.000	62.60	0.002	63.20
Sofia	802.	0.005	70.19	911.	0.006	68.20	1041.	0.006	67.64	0.002	67.20
Bulgaria	5914.	0.003	65.89	6165.	0.001	64.25	6592.	0.003	64.51	0.002	64.63
Canada (1971)											
Newfoundland	333.	0.017	58.04	429.	0.015	57.34	596.	0.009	56.88	0.007	57.00
Prince Edward Island	71.	0.015	59.70	87.	0.013	59.79	111.	0.006	58.88	0.007	59.36
Nova Scotia	521.	0.014	62.34	626.	0.011	62.18	780.	0.005	61.17	0.007	61.69
New Brunswick	421.	0.016	61.65	512.	0.012	61.47	632.	0.005	60.25	0.007	60.88
Quebec	4225.	0.015	66.65	4779.	0.006	65.71	5052.	-0.000	63.16	0.007	64.48
Ontario	5336.	0.018	64.87	6676.	0.012	63.93	8570.	0.006	62.79	0.007	63.26
Manitoba	634.	0.008	62.61	689.	0.007	61.57	796.	0.004	61.18	0.007	61.84
Saskatchewan	544.	-0.002	60.77	485.	-0.001	57.89	494.	0.001	58.31	0.007	59.12
Alberta	1155.	0.024	63.35	1575.	0.016	62.87	2178.	0.008	61.86	0.007	61.92
British Columbia	1613.	0.027	64.52	2364.	0.019	63.91	3513.	0.010	62.44	0.007	62.41
Canada	14853.	0.017	64.56	18224.	0.011	63.69	22720.	0.005	62.25	0.007	62.49
Czechoslovakia (1975)											
Central Bohemia	1483.	-0.003	63.03	1663.	0.007	65.96	1969.	0.008	65.31	0.006	65.43
Southern Bohemia	431.	0.002	62.25	502.	0.008	64.81	607.	0.008	63.91	0.006	64.08
Western Bohemia	573.	-0.000	64.00	620.	0.004	65.08	693.	0.006	64.14	0.006	64.50
Northern Bohemia	750.	-0.001	64.01	826.	0.006	65.41	934.	0.006	64.41	0.006	64.67
Eastern Bohemia	773.	-0.001	61.61	864.	0.006	64.24	1004.	0.007	63.46	0.006	63.77
Southern Moravia	1277.	0.001	62.16	1470.	0.008	64.27	1778.	0.008	63.40	0.006	63.59
Northern Moravia	1246.	0.005	63.71	1438.	0.007	65.01	1689.	0.007	63.77	0.006	64.02
Western Slovakia	1324.	0.007	63.96	1574.	0.010	65.25	1889.	0.007	63.82	0.006	64.17
Central Slovakia	965.	0.008	63.29	1128.	0.009	64.19	1331.	0.006	62.98	0.006	63.39
Eastern Slovakia	869.	0.011	62.31	1058.	0.011	62.74	1334.	0.007	61.82	0.006	61.98
Czechoslovakia	9691.	0.003	63.07	11143.	0.008	64.74	13226.	0.007	63.72	0.006	63.90

Ages 15-64

Country (reference year) and region	1980 Population (1)	1980 r (2)	1980 Perc. (3)	2000 Population (4)	2000 r (5)	2000 Perc. (6)	2030 Population (7)	2030 r (8)	2030 Perc. (9)	Stable r (10)	Stable Perc. (11)
Fed.Rep.of Germany (1974)											
Schleswig-Holstein	1689.	0.009	65.21	1706.	-0.004	68.61	1233.	-0.017	62.70	-0.013	62.61
Hamburg	1082.	-0.005	66.93	959.	-0.008	71.15	661.	-0.018	66.27	-0.013	66.52
Lower Saxony	4723.	0.008	65.00	4718.	-0.004	67.20	3544.	-0.016	62.57	-0.013	62.30
Bremen	459.	-0.001	66.44	420.	-0.007	69.56	303.	-0.017	65.29	-0.013	65.23
N. Rhine-Westphalia	11448.	0.005	67.61	10741.	-0.007	68.82	7586.	-0.018	64.09	-0.013	64.36
Hessen	3746.	0.006	67.32	3698.	-0.004	69.10	2701.	-0.017	63.58	-0.013	63.55
Rhineland-Palatinate	2383.	0.004	66.09	2181.	-0.007	66.97	1517.	-0.018	61.95	-0.013	62.30
Baden-Wuerttemberg	6205.	0.008	66.91	6180.	-0.004	68.13	4592.	-0.016	62.84	-0.013	62.64
Bavaria	7244.	0.007	66.68	7228.	-0.004	68.37	5413.	-0.016	62.98	-0.013	62.81
Saarland	707.	-0.002	68.05	562.	-0.014	67.57	338.	-0.023	62.73	-0.013	64.63
West Berlin	1179.	-0.011	63.56	1058.	-0.009	72.00	710.	-0.017	67.10	-0.013	67.52
Fed.Rep. of Germany	40865.	0.005	66.67	39450.	-0.005	68.47	28598.	-0.017	63.38	-0.013	63.36
Finland (1974)											
Uusimaa	797.	0.012	69.07	894.	0.003	71.81	721.	-0.010	64.75	-0.010	65.17
Turku and Pori	482.	0.006	66.94	511.	0.002	69.13	413.	-0.010	63.02	-0.010	63.55
Ahvenanmaa	15.	0.010	65.23	18.	0.006	69.14	16.	-0.006	64.26	-0.010	63.27
Hame	464.	0.007	67.50	491.	0.001	69.41	390.	-0.010	62.81	-0.010	63.50
Kymi	235.	0.001	67.69	225.	-0.003	69.33	166.	-0.012	63.42	-0.010	64.65
Mikkeli	138.	-0.003	67.29	123.	-0.005	68.27	89.	-0.012	63.11	-0.010	64.52
Pohjois-Karjala	117.	-0.003	67.46	105.	-0.003	68.07	76.	-0.012	62.82	-0.010	64.42
Kuopio	168.	0.001	67.66	156.	-0.003	68.47	114.	-0.012	62.91	-0.010	64.44
Keski-Suomi	163.	0.002	67.79	158.	-0.001	68.77	119.	-0.011	63.30	-0.010	64.45
Vaasa	277.	-0.001	65.67	259.	-0.003	66.10	195.	-0.011	61.68	-0.010	62.67
Oulu	276.	0.007	67.07	279.	0.001	67.44	220.	-0.010	62.74	-0.010	63.66
Lappi	133.	0.004	68.50	120.	-0.005	68.13	86.	-0.013	63.01	-0.010	64.73
Finland	3264.	0.006	67.65	3338.	0.000	69.33	2605.	-0.010	63.37	-0.010	64.17
France (1975)											
Paris Region	6781.	0.005	67.66	7026.	0.001	68.70	6409.	-0.004	65.99	-0.003	66.34
Paris Basin	6216.	0.010	62.99	6772.	0.003	64.56	6460.	-0.004	61.73	-0.003	61.88
North	2505.	0.006	63.57	2573.	0.002	64.39	2409.	-0.004	62.96	-0.003	63.28
East	3232.	0.008	65.20	3335.	0.000	66.25	2945.	-0.007	63.14	-0.003	63.89
West	4408.	0.009	62.39	4841.	0.005	63.48	4839.	-0.003	61.46	-0.003	61.49
Southwest	3517.	0.004	63.10	3562.	0.000	64.20	3192.	-0.006	61.13	-0.003	61.73
Middle East	4057.	0.009	64.70	4420.	0.003	66.05	4216.	-0.004	63.16	-0.003	63.29
Mediterranean	3602.	0.009	63.82	3950.	0.004	64.51	3790.	-0.005	60.89	-0.003	61.05
France	34319.	0.008	64.34	36480.	0.002	65.45	34259.	-0.004	62.68	-0.003	62.91
German Dem.Rep.(1975)											
North	1384.	0.012	66.33	1433.	-0.002	69.87	1086.	-0.017	63.50	-0.012	64.71
Berlin	761.	0.020	66.55	961.	0.006	71.83	906.	-0.009	66.69	-0.012	65.60
Southwest	1646.	0.007	65.30	1689.	-0.001	69.42	1296.	-0.015	63.87	-0.012	64.55
South	4464.	0.001	64.25	4205.	-0.006	68.86	2870.	-0.018	62.79	-0.012	64.37
Middle	2599.	0.010	65.87	2670.	-0.003	70.22	1991.	-0.017	63.63	-0.012	64.73
German Dem.Rep.	10853.	0.007	65.21	10958.	-0.003	69.66	8149.	-0.016	63.68	-0.012	64.76

Ages 15-64

Country (reference year) and region	1980 Population (1)	1980 r (2)	1980 Perc. (3)	2000 Population (4)	2000 r (5)	2000 Perc. (6)	2030 Population (7)	2030 r (8)	2030 Perc. (9)	Stable r (10)	Stable Perc. (11)
Hungary (1974)											
Central	2078.	-0.002	67.18	2217.	0.004	67.23	2361.	0.005	66.20	0.003	66.53
North Hungary	905.	-0.001	65.15	918.	0.001	64.19	957.	0.005	63.44	0.003	63.80
North Plain	988.	-0.001	62.53	1027.	0.003	62.59	1085.	0.005	61.63	0.003	61.93
South Plain	945.	-0.004	64.18	960.	0.002	64.48	1005.	0.005	63.78	0.003	64.17
North Trans-Danubia	1241.	0.002	64.95	1346.	0.004	64.71	1457.	0.005	63.51	0.003	63.73
South Trans-Danubia	862.	-0.001	64.83	880.	0.002	64.46	929.	0.005	63.86	0.003	64.23
Hungary	7019.	-0.001	65.14	7347.	0.003	65.01	7795.	0.005	64.09	0.003	64.42
Italy (1978)											
Northwest	10172.	0.007	65.94	10248.	-0.004	67.25	9071.	-0.007	65.99	-0.002	66.06
Northeast	6837.	0.008	65.56	7021.	-0.002	66.77	6145.	-0.009	64.70	-0.002	64.86
Central	7143.	0.008	65.73	7449.	-0.001	65.60	6932.	-0.006	64.09	-0.002	63.79
South	8513.	0.012	62.42	9552.	0.003	63.09	9915.	-0.002	62.10	-0.002	61.63
Islands	4119.	0.010	62.49	4600.	0.003	63.58	4680.	-0.003	62.21	-0.002	61.76
Italy	36785.	0.009	64.59	38871.	-0.001	65.35	36744.	-0.005	63.85	-0.002	63.32
Japan (1970)											
Hokkaido	3420.	-0.005	68.04	2884.	-0.013	65.62	2173.	-0.005	63.54	0.000	64.62
Tohoku	6953.	-0.009	66.40	5649.	-0.013	63.84	4596.	-0.002	63.19	0.000	63.50
Kanto	26526.	0.019	68.45	34750.	0.008	69.00	38409.	0.003	66.08	0.000	64.92
Chubu	13315.	0.010	66.83	15181.	0.001	66.70	15155.	0.001	64.11	0.000	63.54
Kinki	13822.	0.016	67.84	17048.	0.004	68.11	17689.	0.001	65.35	0.000	64.58
Chugoku	4699.	-0.001	65.72	4413.	-0.008	64.15	3814.	-0.002	62.43	0.000	62.72
Shikoku	2292.	-0.012	64.79	1768.	-0.017	61.69	1386.	-0.003	61.47	0.000	62.16
Kyushu	7141.	-0.017	63.83	4997.	-0.021	60.22	3635.	-0.005	60.42	0.000	61.37
Japan	78168.	0.008	67.14	86691.	0.001	66.97	86858.	0.001	64.86	0.000	64.27
Netherlands (1974)											
North	991.	0.016	63.14	1207.	0.007	65.61	1215.	-0.004	61.83	-0.005	61.21
East	1784.	0.017	64.38	2148.	0.006	66.21	2085.	-0.005	62.17	-0.005	61.83
West	4057.	0.005	66.19	4098.	-0.001	68.36	3427.	-0.009	64.39	-0.005	64.93
South-West	214.	0.014	62.24	256.	0.007	64.86	246.	-0.006	60.49	-0.005	60.06
South	2099.	0.018	66.93	2484.	0.005	68.45	2310.	-0.007	63.39	-0.005	63.29
Netherlands	9144.	0.011	65.56	10193.	0.003	67.49	9282.	-0.007	63.18	-0.005	63.08
Poland (1977)											
Warsaw	1608.	0.010	70.02	1919.	0.009	70.18	2145.	0.005	67.25	0.003	67.58
Lodz	789.	0.003	70.32	834.	0.004	70.06	799.	0.001	66.81	0.003	68.27
Gdansk	908.	0.015	67.13	1172.	0.011	68.63	1365.	0.005	65.33	0.003	65.43
Katowice	2552.	0.014	68.75	3177.	0.009	70.03	3595.	0.005	66.71	0.003	66.98
Cracow	805.	0.009	68.07	947.	0.007	68.82	1031.	0.004	65.73	0.003	66.29
East-Central	1892.	0.002	63.57	1966.	0.003	62.66	2001.	0.001	61.35	0.003	61.99
Northeast	1564.	0.010	63.54	1735.	0.005	62.56	1856.	0.002	60.92	0.003	61.30
Northwest	1482.	0.011	67.62	1719.	0.007	66.94	1804.	0.002	63.92	0.003	64.51
South	1688.	0.010	65.55	1922.	0.006	65.59	2075.	0.002	63.59	0.003	64.04
Southeast	2680.	0.007	62.07	3029.	0.007	61.12	3598.	0.006	60.83	0.003	61.00
East	1604.	0.003	63.55	1680.	0.004	62.19	1758.	0.002	61.16	0.003	61.77
West-Central	3114.	0.007	64.32	3577.	0.007	65.62	3801.	0.002	63.07	0.003	63.55
West	2849.	0.007	68.09	3100.	0.004	66.58	3047.	0.000	63.32	0.003	64.23
Poland	23534.	0.008	65.86	26777.	0.006	65.76	28873.	0.003	63.53	0.003	63.83

Ages 15-64

Country (reference year) and region	1980 Population (1)	r (2)	Perc. (3)	2000 Population (4)	r (5)	Perc. (6)	2030 Population (7)	r (8)	Perc. (9)	Stable r (10)	Stable Perc. (11)
Soviet Union (1974)											
Urban areas of the:											
RSFSR	69532.	0.020	69.00	90360.	0.010	67.04	110755.	0.004	65.42	0.006	65.64
Ukrainian+Mold.SSRs	22885.	0.020	67.68	30201.	0.011	66.19	37595.	0.004	64.75	0.006	64.87
Byelorussian SSR	3831.	0.033	68.82	5492.	0.013	66.38	6929.	0.005	64.72	0.006	64.69
Central Asian Rep.s	6232.	0.032	59.64	9361.	0.017	57.69	13308.	0.009	56.59	0.006	56.16
Kazakh SSR	5591.	0.025	65.97	7380.	0.010	63.99	9097.	0.005	62.64	0.006	62.79
Caucasian Republics	4895.	0.020	63.32	6410.	0.011	61.57	8458.	0.007	60.48	0.006	60.16
Baltic Republics	3471.	0.028	67.45	4960.	0.012	66.89	6340.	0.005	64.97	0.006	64.89
Rural areas of USSR	51216.	-0.015	54.47	40729.	-0.010	52.66	42998.	0.003	54.78	0.006	55.36
Soviet Union	167652.	0.010	63.03	194894.	0.006	62.54	235479.	0.004	62.24	0.006	62.37
Sweden (1974)											
Stockholm	986.	-0.001	66.05	974.	-0.000	67.46	848.	-0.005	64.95	-0.004	65.06
East Middle	890.	-0.000	63.16	900.	0.001	65.05	805.	-0.004	62.81	-0.004	62.71
South Middle	474.	-0.002	61.80	473.	0.001	63.51	428.	-0.004	61.75	-0.004	61.57
South	747.	0.001	63.19	781.	0.002	64.73	726.	-0.003	62.42	-0.004	62.00
West	1036.	0.001	63.32	1086.	0.003	65.11	1020.	-0.003	63.07	-0.004	62.59
North Middle	538.	-0.001	62.57	543.	0.002	64.42	496.	-0.004	62.62	-0.004	62.45
Lower North	252.	-0.002	62.52	255.	0.002	64.57	232.	-0.004	62.65	-0.004	62.48
Upper North	328.	0.002	64.29	347.	0.003	65.42	324.	-0.003	63.11	-0.004	62.79
Sweden	5250.	-0.000	63.57	5360.	0.001	65.23	4880.	-0.004	63.06	-0.004	62.82
United Kingdom (1970)											
North	2190.	0.005	63.25	2362.	0.005	63.68	2719.	0.003	63.95	0.005	64.21
Yorkshire + Humbers.	3023.	0.002	61.90	3206.	0.005	62.59	3685.	0.004	63.12	0.005	63.29
North West	4284.	0.003	61.75	4686.	0.006	62.99	5508.	0.004	63.43	0.005	63.55
East Midlands	2272.	0.008	62.64	2654.	0.009	63.59	3246.	0.005	63.68	0.005	63.63
West Midlands	3416.	0.004	62.98	3752.	0.006	63.35	4403.	0.004	63.70	0.005	63.75
East Anglia	1207.	0.014	62.33	1535.	0.011	63.85	1941.	0.005	63.32	0.005	63.12
South East	11255.	0.003	62.85	12537.	0.007	64.32	14820.	0.004	64.55	0.005	64.60
South West	2550.	0.010	61.32	3046.	0.010	62.58	3751.	0.005	62.52	0.005	62.46
Wales	1760.	0.004	62.45	1911.	0.006	63.29	2224.	0.004	63.55	0.005	63.73
Scotland	3282.	0.003	61.86	3536.	0.006	62.95	4004.	0.003	62.98	0.005	63.36
United Kingdom	35241.	0.005	62.41	39225.	0.007	63.50	46300.	0.004	63.72	0.005	63.81
United States (1970)											
Northeast	32712.	0.006	63.58	36355.	0.010	63.55	43537.	0.006	62.92	0.007	63.51
North Central	38660.	0.010	62.68	46171.	0.013	63.18	58193.	0.007	62.03	0.007	62.42
South	43948.	0.011	62.85	53567.	0.012	63.54	66990.	0.007	61.82	0.007	62.31
West	27053.	0.020	64.47	36418.	0.016	64.93	48504.	0.008	62.91	0.007	63.11
United States	142373.	0.011	63.27	172511.	0.013	63.73	217225.	0.007	62.34	0.007	62.75

Ages 65+

Country (reference year) and region	1980 Population (1)	1980 r (2)	1980 Perc. (3)	2000 Population (4)	2000 r (5)	2000 Perc. (6)	2030 Population (7)	2030 r (8)	2030 Perc. (9)	Stable r (10)	Stable Perc. (11)
Austria (1971)											
Burgenland	38.	-0.000	14.04	36.	-0.002	13.54	38.	0.007	14.92	0.005	12.77
Carinthia	68.	0.009	12.55	69.	-0.005	11.59	90.	0.013	13.74	0.005	12.62
Lower Austria	217.	-0.004	15.46	185.	-0.006	13.14	214.	0.011	15.13	0.005	13.65
Upper Austria	156.	0.003	12.25	155.	0.000	10.80	212.	0.018	12.73	0.005	12.25
Salzburg	52.	0.010	11.81	53.	-0.001	10.16	81.	0.018	12.33	0.005	12.70
Styria	163.	0.003	13.43	152.	-0.006	11.84	190.	0.013	13.88	0.005	12.55
Tyrol	67.	0.011	11.31	69.	0.003	9.63	109.	0.020	11.91	0.005	12.46
Vorarlberg	30.	0.012	10.09	35.	0.012	9.15	56.	0.019	11.17	0.005	12.08
Vienna	314.	-0.010	20.37	216.	-0.021	15.02	225.	0.006	16.08	0.005	14.36
Austria	1105.	-0.001	14.59	969.	-0.007	12.06	1215.	0.013	13.75	0.005	12.60
Bulgaria (1975)											
North West	173.	0.007	16.67	185.	0.003	18.44	150.	-0.003	15.22	0.002	14.72
North	208.	0.008	14.68	229.	0.006	15.83	218.	-0.003	14.46	0.002	14.18
North East	162.	0.020	10.51	208.	0.013	12.19	229.	-0.000	12.01	0.002	12.48
South West	80.	0.026	11.34	105.	0.015	14.90	102.	-0.001	15.86	0.002	13.35
South	228.	0.025	10.14	315.	0.018	12.59	354.	0.004	12.82	0.002	12.89
South East	95.	0.021	10.72	133.	0.018	14.69	121.	-0.006	13.80	0.002	12.70
Sofia	104.	0.048	9.13	164.	0.009	12.30	190.	-0.010	12.35	0.002	13.05
Bulgaria	1050.	0.020	11.70	1338.	0.012	13.95	1364.	-0.002	13.35	0.002	13.17
Canada (1971)											
Newfoundland	38.	0.027	6.70	54.	0.009	7.26	92.	0.021	8.76	0.007	8.70
Prince Edward Island	13.	0.013	11.19	16.	0.005	10.74	25.	0.021	13.19	0.007	12.65
Nova Scotia	81.	0.018	9.72	103.	0.005	10.21	161.	0.020	12.64	0.007	11.86
New Brunswick	62.	0.019	9.05	80.	0.006	9.64	131.	0.020	12.51	0.007	11.62
Quebec	493.	0.027	7.77	733.	0.014	10.08	1161.	0.016	14.51	0.007	12.27
Ontario	735.	0.021	8.94	1090.	0.015	10.43	1761.	0.020	12.90	0.007	12.32
Manitoba	107.	0.016	10.52	127.	0.001	11.34	166.	0.017	12.75	0.007	11.75
Saskatchewan	105.	0.014	11.71	119.	-0.002	14.22	121.	0.013	14.24	0.007	12.89
Alberta	138.	0.023	7.57	212.	0.017	8.48	385.	0.024	10.92	0.007	11.01
British Columbia	248.	0.029	9.92	412.	0.019	11.15	795.	0.025	14.13	0.007	14.38
Canada	2020.	0.023	8.78	2947.	0.013	10.30	4796.	0.020	13.14	0.007	12.38
Czechoslovakia (1975)											
Central Bohemia	374.	0.007	15.87	312.	-0.009	12.38	353.	-0.009	11.72	0.006	11.56
Southern Bohemia	97.	0.010	14.05	88.	-0.001	11.39	110.	-0.004	11.54	0.006	11.40
Western Bohemia	105.	0.013	11.74	104.	-0.000	10.96	118.	-0.008	10.94	0.006	10.34
Northern Bohemia	129.	0.020	11.04	129.	-0.006	10.23	149.	-0.010	10.31	0.006	9.92
Eastern Bohemia	184.	0.008	14.70	161.	-0.003	11.94	186.	-0.006	11.76	0.006	11.37
Southern Moravia	288.	0.011	14.02	265.	-0.003	11.58	325.	-0.003	11.57	0.006	11.40
Northern Moravia	215.	0.016	11.01	230.	0.002	10.38	295.	-0.002	11.15	0.006	10.81
Western Slovakia	232.	0.020	11.22	259.	0.004	10.73	364.	0.003	12.30	0.006	11.75
Central Slovakia	160.	0.019	10.50	183.	0.008	10.39	252.	0.005	11.95	0.006	11.27
Eastern Slovakia	130.	0.016	9.33	160.	0.013	9.50	234.	0.009	10.83	0.006	10.61
Czechoslovakia	1915.	0.013	12.46	1891.	-0.000	10.98	2387.	-0.002	11.50	0.006	11.13

Ages 65+

Country (reference year) and region	1980 Population (1)	1980 r (2)	1980 Perc. (3)	2000 Population (4)	2000 r (5)	2000 Perc. (6)	2030 Population (7)	2030 r (8)	2030 Perc. (9)	Stable r (10)	Stable Perc. (11)
Fed.Rep.of Germany (1974)											
Schleswig-Holstein	412.	0.006	15.92	383.	0.005	15.39	473.	0.007	24.04	-0.013	24.31
Hamburg	306.	-0.007	18.91	223.	-0.007	16.54	232.	0.006	23.25	-0.013	23.11
Lower Saxony	1122.	0.007	15.44	1077.	0.005	15.35	1279.	0.009	22.57	-0.013	23.09
Bremen	117.	0.002	16.96	96.	-0.004	15.86	103.	0.008	22.19	-0.013	22.39
N. Rhine-Westphalia	2442.	0.007	14.42	2441.	0.006	15.64	2699.	0.008	22.80	-0.013	22.70
Hessen	844.	0.006	15.16	844.	0.005	15.76	1006.	0.008	23.68	-0.013	23.87
Rhineland-Palatinate	557.	0.008	15.46	564.	0.006	17.32	612.	0.007	25.00	-0.013	24.75
Baden-Wuerttemberg	1288.	0.012	13.88	1379.	0.011	15.20	1679.	0.008	22.97	-0.013	23.38
Bavaria	1620.	0.009	14.91	1643.	0.007	15.54	2008.	0.008	23.36	-0.013	23.72
Saarland	152.	0.005	14.68	151.	0.003	18.11	137.	0.003	25.34	-0.013	23.21
West Berlin	402.	-0.020	21.69	208.	-0.018	14.16	218.	0.002	20.65	-0.013	20.31
Fed.Rep. of Germany	9262.	0.006	15.11	9007.	0.005	15.63	10445.	0.008	23.15	-0.013	23.31
Finland (1974)											
Uusimaa	134.	0.037	11.59	148.	0.011	11.87	236.	-0.010	21.22	-0.010	20.81
Turku and Pori	99.	0.032	13.76	106.	0.007	14.30	148.	-0.009	22.67	-0.010	22.13
Ahvenanmaa	3.	0.025	14.78	3.	-0.006	12.95	5.	-0.003	20.27	-0.010	21.73
Hame	90.	0.038	13.13	100.	0.008	14.18	143.	-0.010	23.08	-0.010	22.32
Kymi	46.	0.029	13.33	48.	0.004	14.68	59.	-0.011	22.69	-0.010	21.18
Mikkeli	27.	0.018	13.43	27.	0.002	15.03	31.	-0.010	22.15	-0.010	20.43
Pohjois-Karjala	22.	0.033	12.83	22.	0.000	14.43	26.	-0.009	21.79	-0.010	19.85
Kuopio	31.	0.028	12.44	33.	0.004	14.54	41.	-0.008	22.33	-0.010	20.46
Keski-Suomi	29.	0.033	12.11	32.	0.005	13.84	40.	-0.010	21.44	-0.010	20.08
Vaasa	56.	0.031	13.18	60.	-0.001	15.32	69.	-0.011	21.73	-0.010	20.52
Oulu	40.	0.035	9.62	48.	0.008	11.55	65.	-0.004	18.66	-0.010	17.61
Lappi	18.	0.039	9.53	23.	0.010	13.03	28.	-0.003	20.57	-0.010	18.43
Finland	596.	0.033	12.35	650.	0.006	13.49	893.	-0.009	21.73	-0.010	20.83
France (1975)											
Paris Region	1210.	0.002	12.07	1263.	0.006	12.35	1572.	0.004	16.18	-0.003	15.79
Paris Basin	1432.	0.006	14.52	1537.	0.006	14.66	2044.	0.008	19.53	-0.003	19.40
North	480.	0.000	12.18	485.	0.002	12.14	583.	0.008	15.24	-0.003	14.87
East	627.	0.005	12.66	676.	0.008	13.43	870.	0.007	18.65	-0.003	17.66
West	1061.	0.010	15.02	1137.	0.005	14.90	1480.	0.010	18.80	-0.003	18.89
Southwest	1017.	0.006	18.25	1027.	0.001	18.51	1224.	0.007	23.44	-0.003	22.67
Middle East	882.	0.006	14.06	961.	0.007	14.36	1277.	0.009	19.13	-0.003	19.07
Mediterranean	1006.	0.016	17.82	1134.	0.006	18.52	1499.	0.010	24.08	-0.003	24.00
France	7716.	0.007	14.47	8221.	0.005	14.75	10548.	0.008	19.30	-0.003	19.02
German Dem.Rep.(1975)											
North	277.	-0.004	13.27	260.	0.042	12.67	381.	0.032	22.28	-0.012	20.80
Berlin	169.	-0.009	14.80	140.	0.041	10.44	249.	0.037	18.30	-0.012	19.91
Southwest	395.	0.001	15.68	335.	0.026	13.77	448.	0.023	22.07	-0.012	21.32
South	1263.	-0.003	18.18	970.	0.023	15.89	1122.	0.019	24.56	-0.012	22.48
Middle	594.	-0.004	15.06	512.	0.035	13.47	724.	0.031	23.13	-0.012	21.77
German Dem.Rep.	2698.	-0.003	16.21	2217.	0.030	14.09	2923.	0.026	22.84	-0.012	21.42

Ages 65+

Country (reference year) and region	1980 Population (1)	1980 r (2)	1980 Perc. (3)	2000 Population (4)	2000 r (5)	2000 Perc. (6)	2030 Population (7)	2030 r (8)	2030 Perc. (9)	Stable r (10)	Stable Perc. (11)
Hungary (1974)											
Central	428.	0.018	13.83	454.	0.001	13.78	500.	-0.011	14.01	0.003	13.49
North Hungary	167.	0.014	12.03	191.	0.007	13.35	197.	-0.012	13.07	0.003	12.56
North Plain	194.	0.010	12.28	208.	0.005	12.66	223.	-0.011	12.64	0.003	12.17
South Plain	214.	0.011	14.54	208.	-0.000	13.98	214.	-0.012	13.59	0.003	13.02
North Trans-Danubia	224.	0.014	11.70	254.	0.007	12.22	287.	-0.010	12.53	0.003	12.16
South Trans-Danubia	178.	0.007	13.37	186.	0.004	13.63	192.	-0.011	13.18	0.003	12.66
Hungary	1404.	0.013	13.03	1501.	0.004	13.29	1613.	-0.011	13.26	0.003	12.77
Italy (1978)											
Northwest	2155.	0.007	13.97	2463.	0.007	16.17	2606.	0.005	18.96	-0.002	18.66
Northeast	1485.	0.011	14.23	1763.	0.004	16.77	1984.	0.008	20.89	-0.002	20.53
Central	1500.	0.015	13.80	1951.	0.008	17.18	2207.	0.007	20.40	-0.002	20.74
South	1485.	0.011	10.89	1908.	0.011	12.61	2471.	0.012	15.48	-0.002	16.10
Islands	782.	0.010	11.87	957.	0.009	13.23	1242.	0.011	16.51	-0.002	17.13
Italy	7407.	0.010	13.01	9043.	0.008	15.20	10511.	0.008	18.26	-0.002	18.07
Japan (1970)											
Hokkaido	410.	0.030	8.17	688.	0.023	15.66	602.	-0.018	17.59	0.000	15.73
Tohoku	1066.	0.018	10.18	1548.	0.019	17.49	1306.	-0.015	17.96	0.000	17.33
Kanto	2518.	0.035	6.50	4927.	0.037	9.78	7689.	-0.003	13.23	0.000	14.45
Chubu	1718.	0.026	8.62	2888.	0.029	12.69	3694.	-0.007	15.63	0.000	16.13
Kinki	1530.	0.032	7.51	2749.	0.034	10.98	3857.	-0.005	14.25	0.000	15.02
Chugoku	795.	0.019	11.12	1161.	0.020	16.88	1119.	-0.013	18.31	0.000	17.52
Shikoku	443.	0.011	12.53	576.	0.013	20.10	432.	-0.019	19.16	0.000	17.77
Kyushu	1301.	0.014	11.63	1632.	0.010	19.67	1093.	-0.021	18.16	0.000	16.27
Japan	9782.	0.026	8.40	16171.	0.028	12.49	19791.	-0.007	14.78	0.000	15.27
Netherlands (1974)											
North	198.	0.019	12.64	245.	0.007	13.32	393.	0.013	20.01	-0.005	20.97
East	300.	0.023	10.82	401.	0.011	12.36	649.	0.012	19.35	-0.005	19.96
West	763.	0.012	12.45	813.	-0.001	13.56	1063.	0.007	19.98	-0.005	19.38
South-West	50.	0.019	14.43	59.	0.004	14.84	90.	0.012	22.19	-0.005	22.85
South	288.	0.029	9.19	436.	0.018	12.01	735.	0.011	20.16	-0.005	20.47
Netherlands	1599.	0.018	11.46	1953.	0.007	12.93	2930.	0.010	19.95	-0.005	20.12
Poland (1977)											
Warsaw	256.	0.003	11.16	326.	0.013	11.91	486.	-0.001	15.23	0.003	14.81
Lodz	128.	0.004	11.42	161.	0.005	13.49	206.	-0.007	17.22	0.003	15.21
Gdansk	112.	0.012	8.31	156.	0.019	9.15	282.	0.002	13.50	0.003	13.43
Katowice	338.	0.005	9.11	440.	0.021	9.70	741.	0.001	13.74	0.003	13.48
Cracow	120.	0.010	10.16	159.	0.013	11.53	242.	-0.000	15.42	0.003	14.62
East-Central	339.	0.011	11.40	417.	0.007	13.30	500.	0.002	15.34	0.003	14.39
Northeast	241.	0.005	9.80	339.	0.019	12.22	461.	0.006	15.13	0.003	14.61
Northwest	140.	0.021	6.40	263.	0.025	10.24	410.	0.001	14.52	0.003	13.70
South	253.	0.005	9.81	330.	0.018	11.25	467.	0.005	14.30	0.003	13.67
Southeast	477.	0.004	11.04	572.	0.010	11.55	724.	0.007	12.24	0.003	11.96
East	292.	0.009	11.55	368.	0.008	13.63	435.	0.002	15.15	0.003	14.23
West-Central	512.	0.007	10.58	604.	0.009	11.08	889.	0.002	14.75	0.003	14.05
West	318.	0.020	7.59	558.	0.020	11.98	787.	-0.001	16.36	0.003	15.08
Poland	3527.	0.008	9.87	4692.	0.014	11.52	6629.	0.002	14.59	0.003	13.64

Ages 65+

Country (reference year) and region	1980 Population (1)	1980 r (2)	1980 Perc. (3)	2000 Population (4)	2000 r (5)	2000 Perc. (6)	2030 Population (7)	2030 r (8)	2030 Perc. (9)	Stable r (10)	Stable Perc. (11)
Soviet Union (1974)											
Urban areas of the:											
RSFSR	10769.	0.049	10.69	15347.	0.030	11.39	23810.	0.020	14.06	0.006	13.81
Ukrainian+Mold.SSRs	3690.	0.046	10.91	5038.	0.025	11.04	7850.	0.022	13.52	0.006	13.40
Byelorussian SSR	407.	0.043	7.32	649.	0.035	7.85	1191.	0.024	11.12	0.006	11.19
Central Asian Rep.s	745.	0.049	7.13	1120.	0.035	6.90	2037.	0.025	8.66	0.006	8.92
Kazakh SSR	632.	0.047	7.46	988.	0.038	8.56	1592.	0.020	10.96	0.006	10.79
Caucasian Republics	657.	0.046	8.51	981.	0.038	9.42	1584.	0.020	11.33	0.006	11.58
Baltic Republics	573.	0.042	11.13	830.	0.031	11.20	1423.	0.022	14.59	0.006	14.80
Rural areas of USSR	14466.	0.028	15.39	13108.	0.008	16.95	10764.	0.007	13.71	0.006	13.12
Soviet Union	31940.	0.038	12.01	38061.	0.022	12.21	50251.	0.018	13.28	0.006	13.00
Sweden (1974)											
Stockholm	217.	0.022	14.52	222.	-0.011	15.40	245.	-0.003	18.77	-0.004	18.55
East Middle	225.	0.016	15.95	221.	-0.010	15.97	247.	-0.002	19.26	-0.004	19.32
South Middle	135.	0.015	17.62	130.	-0.010	17.46	140.	-0.002	20.18	-0.004	20.35
South	200.	0.017	16.90	207.	-0.007	17.14	238.	-0.001	20.45	-0.004	20.97
West	266.	0.017	16.25	269.	-0.008	16.14	312.	0.000	19.27	-0.004	19.89
North Middle	156.	0.013	18.14	147.	-0.012	17.39	160.	-0.001	20.19	-0.004	20.36
Lower North	73.	0.013	18.09	68.	-0.011	17.32	75.	-0.002	20.19	-0.004	20.36
Upper North	72.	0.021	14.17	78.	-0.004	14.68	93.	-0.001	18.04	-0.004	18.47
Sweden	1343.	0.017	16.26	1343.	-0.009	16.34	1509.	-0.001	19.50	-0.004	19.76
United Kingdom (1970)											
North	476.	0.009	13.75	460.	-0.005	12.39	529.	0.014	12.44	0.005	12.13
Yorkshire + Humbers.	684.	0.008	14.01	632.	-0.009	12.33	695.	0.012	11.91	0.005	11.72
North West	963.	0.007	13.88	843.	-0.010	11.34	968.	0.014	11.15	0.005	11.05
East Midlands	481.	0.011	13.25	489.	-0.004	11.73	616.	0.014	12.09	0.005	12.27
West Midlands	682.	0.014	12.57	703.	-0.005	11.87	810.	0.012	11.71	0.005	11.70
East Anglia	290.	0.018	14.95	321.	0.002	13.34	447.	0.015	14.58	0.005	15.00
South East	2602.	0.010	14.53	2438.	-0.007	12.51	2894.	0.013	12.61	0.005	12.61
South West	675.	0.015	16.22	700.	-0.003	14.38	899.	0.014	14.99	0.005	15.16
Wales	417.	0.007	14.81	396.	-0.008	13.11	460.	0.013	13.15	0.005	12.97
Scotland	710.	0.009	13.39	638.	-0.009	11.36	751.	0.013	11.82	0.005	11.35
United Kingdom	7979.	0.010	14.13	7620.	-0.007	12.34	9070.	0.013	12.48	0.005	12.45
United States (1970)											
Northeast	5936.	0.011	11.54	6219.	-0.008	10.87	8207.	0.012	11.86	0.007	11.00
North Central	6498.	0.011	10.54	7087.	-0.005	9.70	10647.	0.014	11.35	0.007	10.85
South	7610.	0.019	10.88	9044.	-0.000	10.73	14221.	0.014	13.12	0.007	12.51
West	3972.	0.023	9.46	5334.	0.004	9.51	9576.	0.016	12.42	0.007	12.24
United States	24016.	0.015	10.67	27683.	-0.003	10.23	42652.	0.014	12.24	0.007	11.71

Ages 75+

Country (reference year) and region	1980 Population (1)	1980 r (2)	1980 Perc. (3)	2000 Population (4)	2000 r (5)	2000 Perc. (6)	2030 Population (7)	2030 r (8)	2030 Perc. (9)	Stable r (10)	Stable Perc. (11)
Austria (1971)											
Burgenland	14.	0.018	5.28	13.	0.013	4.94	13.	0.018	5.22	0.005	4.68
Carinthia	25.	0.026	4.53	26.	0.010	4.45	31.	0.018	4.77	0.005	4.76
Lower Austria	86.	0.017	6.15	71.	0.001	5.02	76.	0.001	5.36	0.005	5.16
Upper Austria	58.	0.021	4.54	57.	0.010	3.95	70.	0.012	4.18	0.005	4.49
Salzburg	19.	0.033	4.32	20.	0.009	3.90	28.	0.007	4.27	0.005	4.83
Styria	61.	0.020	4.99	58.	0.008	4.53	65.	0.009	4.75	0.005	4.64
Tyrol	24.	0.028	4.15	26.	0.005	3.63	38.	0.006	4.14	0.005	4.83
Vorarlberg	11.	0.035	3.66	12.	0.012	3.19	20.	0.007	3.91	0.005	4.67
Vienna	131.	0.014	8.50	93.	-0.010	6.48	86.	-0.022	6.14	0.005	5.48
Austria	429.	0.020	5.67	376.	0.003	4.68	426.	0.002	4.83	0.005	4.79
Bulgaria (1975)											
North West	76.	0.055	7.32	76.	0.035	7.62	65.	-0.002	6.62	0.002	6.18
North	82.	0.042	5.81	87.	0.034	6.05	90.	0.005	5.98	0.002	5.57
North East	48.	0.024	3.13	67.	0.036	3.95	86.	0.009	4.51	0.002	4.46
South West	23.	0.025	3.23	34.	0.032	4.86	38.	0.002	5.89	0.002	4.84
South	62.	0.020	2.76	96.	0.036	3.84	121.	0.009	4.39	0.002	4.51
South East	28.	0.026	3.21	41.	0.039	4.50	47.	-0.000	5.33	0.002	4.58
Sofia	18.	-0.000	1.60	48.	0.062	3.56	67.	0.017	4.36	0.002	4.04
Bulgaria	338.	0.033	3.77	450.	0.038	4.69	514.	0.006	5.03	0.002	4.74
Canada (1971)											
Newfoundland	14.	0.020	2.45	23.	0.019	3.02	34.	0.033	3.23	0.007	3.56
Prince Edward Island	6.	0.011	4.98	7.	0.011	5.07	10.	0.031	5.38	0.007	5.75
Nova Scotia	32.	0.012	3.81	45.	0.015	4.48	61.	0.031	4.82	0.007	5.01
New Brunswick	24.	0.015	3.56	35.	0.016	4.16	50.	0.034	4.78	0.007	4.90
Quebec	169.	0.029	2.67	276.	0.021	3.80	429.	0.026	5.36	0.007	4.91
Ontario	282.	0.021	3.43	430.	0.023	4.12	661.	0.027	4.85	0.007	5.13
Manitoba	42.	0.010	4.15	56.	0.012	5.04	65.	0.026	4.97	0.007	5.03
Saskatchewan	43.	0.006	4.76	56.	0.010	6.65	50.	0.016	5.90	0.007	5.86
Alberta	52.	0.018	2.88	85.	0.024	3.38	142.	0.033	4.62	0.007	4.62
British Columbia	101.	0.020	4.02	177.	0.028	4.78	312.	0.034	5.55	0.007	6.40
Canada	765.	0.020	3.32	1190.	0.022	4.16	1814.	0.028	4.97	0.007	5.24
Czechoslovakia (1975)											
Central Bohemia	128.	0.029	5.43	117.	0.018	4.64	148.	0.014	4.91	0.006	4.05
Southern Bohemia	35.	0.027	5.00	33.	0.015	4.28	45.	0.019	4.75	0.006	4.17
Western Bohemia	34.	0.031	3.75	36.	0.026	3.79	47.	0.011	4.31	0.006	3.51
Northern Bohemia	39.	0.036	3.32	47.	0.034	3.71	60.	0.012	4.16	0.006	3.34
Eastern Bohemia	67.	0.029	5.31	60.	0.015	4.48	79.	0.017	4.98	0.006	4.18
Southern Moravia	100.	0.030	4.89	100.	0.017	4.39	133.	0.017	4.74	0.006	4.19
Northern Moravia	71.	0.035	3.64	82.	0.031	3.71	116.	0.015	4.40	0.006	3.84
Western Slovakia	79.	0.039	3.79	96.	0.034	3.97	141.	0.037	4.76	0.006	4.37
Central Slovakia	54.	0.035	3.57	66.	0.035	3.76	95.	0.035	4.50	0.006	4.21
Eastern Slovakia	45.	0.041	3.20	56.	0.041	3.32	85.	0.035	3.95	0.006	3.93
Czechoslovakia	651.	0.033	4.23	694.	0.026	4.03	949.	0.022	4.57	0.006	4.03

Ages 75+

Country (reference year) and region	1980 Population (1)	r (2)	Perc. (3)	2000 Population (4)	r (5)	Perc. (6)	2030 Population (7)	r (8)	Perc. (9)	Stable r (10)	Stable Perc. (11)
Fed.Rep.of Germany (1974)											
Schleswig-Holstein	167.	0.026	6.46	150.	0.002	6.04	181.	-0.008	9.23	-0.013	10.84
Hamburg	126.	0.015	7.80	90.	-0.009	6.69	88.	-0.012	8.80	-0.013	10.07
Lower Saxony	445.	0.031	6.12	415.	0.006	5.90	482.	-0.005	8.50	-0.013	10.22
Bremen	45.	0.023	6.54	38.	-0.003	6.35	38.	-0.007	8.26	-0.013	9.74
N. Rhine-Westphalia	920.	0.036	5.43	894.	0.009	5.73	991.	-0.004	8.37	-0.013	9.79
Hessen	327.	0.033	5.87	320.	0.012	5.99	381.	-0.003	8.96	-0.013	10.48
Rhineland-Palatinate	212.	0.036	5.87	211.	0.009	6.49	230.	-0.002	9.40	-0.013	10.86
Baden-Wuerttemberg	490.	0.039	5.29	514.	0.011	5.67	646.	-0.004	8.84	-0.013	10.46
Bavaria	620.	0.034	5.71	625.	0.011	5.91	758.	-0.003	8.82	-0.013	10.43
Saarland	54.	0.036	5.22	54.	0.015	6.52	49.	-0.007	9.11	-0.013	9.64
West Berlin	173.	0.003	9.31	86.	-0.037	5.84	84.	-0.012	7.93	-0.013	8.62
Fed.Rep. of Germany	3579.	0.032	5.84	3398.	0.007	5.90	3927.	-0.004	8.70	-0.013	10.23
Finland (1974)											
Uusimaa	54.	0.078	4.66	62.	0.016	4.99	107.	-0.011	9.61	-0.010	9.42
Turku and Pori	39.	0.071	5.41	45.	0.019	6.02	66.	-0.006	10.08	-0.010	9.77
Ahvenanmaa	1.	0.039	6.05	2.	-0.001	5.93	2.	-0.004	9.10	-0.010	9.94
Hame	35.	0.080	5.08	42.	0.019	5.96	64.	-0.008	10.31	-0.010	9.89
Kymi	17.	0.069	4.90	19.	0.015	5.76	25.	-0.009	9.54	-0.010	8.82
Mikkeli	10.	0.044	4.74	10.	0.015	5.68	13.	-0.006	8.88	-0.010	8.10
Pohjois-Karjala	8.	0.068	4.42	9.	0.011	5.65	11.	-0.002	9.00	-0.010	8.12
Kuopio	11.	0.058	4.53	13.	0.018	5.80	17.	-0.001	9.45	-0.010	8.58
Keski-Suomi	10.	0.070	4.33	13.	0.020	5.47	17.	-0.006	8.93	-0.010	8.28
Vaasa	21.	0.059	4.92	26.	0.014	6.52	30.	-0.008	9.42	-0.010	8.78
Oulu	14.	0.060	3.40	19.	0.022	4.58	27.	0.005	7.79	-0.010	7.39
Lappi	7.	0.080	3.67	10.	0.027	5.46	12.	0.005	9.07	-0.010	8.22
Finland	227.	0.070	4.70	263.	0.018	5.56	391.	-0.007	9.51	-0.010	9.09
France (1975)											
Paris Region	552.	0.026	5.51	516.	0.014	5.04	703.	0.011	7.24	-0.003	7.21
Paris Basin	637.	0.029	6.46	644.	0.018	6.14	896.	0.018	8.56	-0.003	9.01
North	202.	0.022	5.11	188.	0.024	4.71	230.	0.020	6.02	-0.003	6.30
East	264.	0.031	5.32	258.	0.020	5.13	357.	0.017	7.67	-0.003	7.75
West	452.	0.029	6.39	480.	0.019	6.29	631.	0.019	8.01	-0.003	8.66
Southwest	454.	0.027	8.15	453.	0.015	8.17	551.	0.017	10.56	-0.003	10.77
Middle East	387.	0.027	6.17	392.	0.021	5.86	552.	0.015	8.27	-0.003	8.70
Mediterranean	450.	0.036	7.97	507.	0.016	8.29	691.	0.017	11.11	-0.003	11.76
France	3397.	0.029	6.37	3439.	0.018	6.17	4613.	0.016	8.44	-0.003	8.79
German Dem.Rep.(1975)											
North	111.	0.025	5.32	81.	0.066	3.97	138.	0.084	8.08	-0.012	8.18
Berlin	67.	0.020	5.84	40.	0.040	3.03	79.	0.058	5.85	-0.012	7.50
Southwest	158.	0.033	6.26	121.	0.068	4.96	164.	0.055	8.09	-0.012	8.43
South	534.	0.034	7.68	363.	0.060	5.95	433.	0.050	9.47	-0.012	9.23
Middle	240.	0.026	6.09	169.	0.060	4.44	263.	0.076	8.40	-0.012	8.63
German Dem.Rep.	1109.	0.030	6.67	775.	0.061	4.92	1077.	0.061	8.42	-0.012	8.49

Ages 75+

Country (reference year) and region	1980 Population (1)	1980 r (2)	1980 Perc. (3)	2000 Population (4)	2000 r (5)	2000 Perc. (6)	2030 Population (7)	2030 r (8)	2030 Perc. (9)	Stable r (10)	Stable Perc. (11)
Hungary (1974)											
Central	149.	0.031	4.82	173.	0.017	5.26	209.	0.019	5.85	0.003	5.16
North Hungary	57.	0.025	4.11	67.	0.024	4.70	80.	0.015	5.27	0.003	4.64
North Plain	69.	0.023	4.35	74.	0.022	4.52	91.	0.018	5.16	0.003	4.54
South Plain	75.	0.027	5.08	77.	0.015	5.18	88.	0.016	5.56	0.003	4.87
North Trans-Danubia	78.	0.034	4.07	89.	0.024	4.30	115.	0.020	5.00	0.003	4.49
South Trans-Danubia	62.	0.030	4.64	64.	0.024	4.72	75.	0.018	5.13	0.003	4.55
Hungary	489.	0.029	4.54	546.	0.020	4.83	656.	0.018	5.39	0.003	4.77
Italy (1978)											
Northwest	786.	0.038	5.09	959.	0.001	6.30	1079.	-0.004	7.85	-0.002	8.06
Northeast	544.	0.042	5.21	730.	0.006	6.94	833.	0.002	8.77	-0.002	9.16
Central	555.	0.041	5.11	809.	0.012	7.13	948.	0.003	8.77	-0.002	9.47
South	536.	0.036	3.93	734.	0.010	4.85	978.	0.016	6.13	-0.002	6.97
Islands	292.	0.032	4.43	380.	0.006	5.26	504.	0.015	6.70	-0.002	7.55
Italy	2713.	0.038	4.76	3613.	0.007	6.07	4343.	0.005	7.55	-0.002	7.95
Japan (1970)											
Hokkaido	127.	0.038	2.53	217.	0.027	4.94	276.	-0.015	8.06	0.000	6.18
Tohoku	353.	0.031	3.37	491.	0.021	5.55	577.	-0.014	7.93	0.000	6.68
Kanto	796.	0.042	2.06	1469.	0.032	2.92	3275.	0.002	5.63	0.000	5.66
Chubu	570.	0.033	2.86	902.	0.025	3.96	1625.	-0.003	6.88	0.000	6.42
Kinki	492.	0.044	2.42	838.	0.027	3.35	1676.	-0.003	6.19	0.000	5.96
Chugoku	287.	0.024	4.01	399.	0.021	5.81	527.	-0.012	8.63	0.000	7.22
Shikoku	164.	0.019	4.63	202.	0.017	7.04	208.	-0.021	9.23	0.000	7.36
Kyushu	474.	0.023	4.23	591.	0.013	7.12	531.	-0.022	8.82	0.000	6.82
Japan	3263.	0.034	2.80	5110.	0.025	3.95	8695.	-0.004	6.49	0.000	6.05
Netherlands (1974)											
North	81.	0.029	5.18	109.	0.012	5.90	168.	0.019	8.56	-0.005	9.76
East	116.	0.031	4.19	165.	0.016	5.10	269.	0.018	8.03	-0.005	9.00
West	305.	0.024	4.97	353.	0.005	5.90	453.	0.012	8.51	-0.005	8.79
South-West	21.	0.031	6.08	27.	0.010	6.83	40.	0.018	9.86	-0.005	10.97
South	105.	0.041	3.35	168.	0.022	4.63	298.	0.017	8.17	-0.005	9.05
Netherlands	628.	0.029	4.50	822.	0.012	5.44	1228.	0.016	8.36	-0.005	9.11
Poland (1977)											
Warsaw	97.	0.049	4.24	118.	0.012	4.32	208.	0.041	6.53	0.003	6.19
Lodz	46.	0.045	4.07	59.	0.019	4.97	83.	0.038	7.34	0.003	6.14
Gdansk	38.	0.062	2.83	54.	0.013	3.17	115.	0.043	5.50	0.003	5.42
Katowice	118.	0.045	3.19	142.	0.009	3.12	239.	0.033	5.36	0.003	5.19
Cracow	44.	0.052	3.69	57.	0.013	4.16	102.	0.035	6.51	0.003	5.99
East-Central	120.	0.046	4.03	157.	0.011	5.00	203.	0.032	6.23	0.003	5.98
Northeast	93.	0.050	3.79	120.	0.018	4.32	187.	0.032	6.14	0.003	6.33
Northwest	48.	0.056	2.21	85.	0.039	3.30	163.	0.041	5.77	0.003	5.55
South	91.	0.052	3.54	112.	0.011	3.83	182.	0.032	5.59	0.003	5.56
Southeast	172.	0.054	3.99	207.	0.008	4.19	277.	0.030	4.68	0.003	4.79
East	104.	0.050	4.11	137.	0.013	5.07	177.	0.030	6.16	0.003	5.89
West-Central	183.	0.052	3.77	225.	0.005	4.13	364.	0.038	6.05	0.003	5.82
West	109.	0.060	2.60	191.	0.036	4.10	326.	0.039	6.78	0.003	6.31
Poland	1264.	0.051	3.54	1665.	0.015	4.09	2682.	0.036	5.90	0.003	5.55

Ages 75+

Country (reference year) and region	1980 Population (1)	1980 r (2)	1980 Perc. (3)	2000 Population (4)	2000 r (5)	2000 Perc. (6)	2030 Population (7)	2030 r (8)	2030 Perc. (9)	Stable r (10)	Stable Perc. (11)
Soviet Union (1974)											
Urban areas of the:											
RSFSR	3569.	0.071	3.54	5497.	-0.011	4.08	8897.	0.022	5.26	0.006	5.91
Ukrainian+Mold.SSRs	1255.	0.069	3.71	1855.	-0.012	4.07	2941.	0.022	5.07	0.006	5.74
Byelorussian SSR	151.	0.077	2.71	227.	-0.001	2.75	445.	0.027	4.15	0.006	4.87
Central Asian Rep.s	261.	0.079	2.50	414.	-0.007	2.55	774.	0.027	3.29	0.006	3.94
Kazakh SSR	216.	0.076	2.55	337.	-0.006	2.92	598.	0.020	4.12	0.006	4.60
Caucasian Republics	226.	0.072	2.92	339.	-0.010	3.26	666.	0.019	4.34	0.006	5.08
Baltic Republics	218.	0.076	4.23	307.	-0.008	4.13	552.	0.019	5.66	0.006	6.55
Rural areas of USSR	5365.	0.061	5.71	5359.	-0.035	6.93	4569.	-0.009	5.82	0.006	5.93
Soviet Union	11261.	0.066	4.23	14336.	-0.020	4.60	19383.	0.015	5.12	0.006	5.65
Sweden (1974)											
Stockholm	82.	0.029	5.48	108.	0.004	7.47	115.	-0.003	8.84	-0.004	8.34
East Middle	88.	0.026	6.24	105.	0.002	7.56	114.	-0.002	8.86	-0.004	8.56
South Middle	54.	0.026	7.08	63.	-0.001	8.40	65.	0.000	9.45	-0.004	9.24
South	80.	0.025	6.76	99.	0.002	8.22	113.	0.000	9.72	-0.004	9.68
West	106.	0.026	6.45	129.	0.003	7.73	144.	0.002	8.93	-0.004	9.02
North Middle	61.	0.025	7.09	69.	-0.001	8.21	72.	0.002	9.05	-0.004	8.91
Lower North	29.	0.025	7.18	32.	-0.001	8.13	34.	0.002	9.13	-0.004	8.94
Upper North	27.	0.035	5.24	34.	0.003	6.47	41.	0.005	7.98	-0.004	8.00
Sweden	526.	0.027	6.37	639.	0.002	7.78	698.	0.000	9.03	-0.004	8.87
United Kingdom (1970)											
North	172.	0.023	4.96	185.	0.006	5.00	191.	0.000	4.49	0.005	4.56
Yorkshire + Humbers.	253.	0.019	5.18	266.	0.002	5.19	258.	-0.002	4.43	0.005	4.47
North West	352.	0.017	5.07	351.	-0.000	4.72	346.	-0.002	3.98	0.005	4.10
East Midlands	182.	0.022	5.01	205.	0.008	4.92	233.	0.002	4.56	0.005	4.80
West Midlands	247.	0.026	4.56	298.	0.009	5.03	311.	-0.002	4.50	0.005	4.57
East Anglia	113.	0.026	5.84	142.	0.010	5.91	180.	0.004	5.89	0.005	6.26
South East	1009.	0.017	5.63	1096.	0.001	5.62	1146.	0.000	4.99	0.005	5.13
South West	263.	0.026	6.33	312.	0.007	6.41	359.	0.003	5.98	0.005	6.26
Wales	155.	0.025	5.52	164.	0.007	5.45	170.	0.001	4.85	0.005	4.92
Scotland	257.	0.021	4.85	264.	-0.000	4.70	270.	0.003	4.25	0.005	4.25
United Kingdom	3003.	0.020	5.32	3284.	0.004	5.32	3464.	0.000	4.77	0.005	4.91
United States (1970)											
Northeast	2344.	0.011	4.56	2812.	0.006	4.92	3189.	0.029	4.61	0.007	4.49
North Central	2616.	0.008	4.24	3214.	0.009	4.40	4172.	0.034	4.45	0.007	4.51
South	3012.	0.026	4.31	4087.	0.011	4.85	5753.	0.031	5.31	0.007	5.34
West	1555.	0.020	3.71	2391.	0.020	4.26	3846.	0.035	4.99	0.007	5.26
United States	9527.	0.016	4.23	12504.	0.011	4.62	16960.	0.032	4.87	0.007	4.94

APPENDIX B: ANNUAL REGIONAL RATES OF GROWTH (r), NATURAL INCREASE (n), AND NET MIGRATION (m)

Country (ref.year) and region	r (1)	n (2)	m (3)
Austria (1971)			
Burgenland	-1.695	1.878	-3.573
Carinthia	3.347	5.131	-1.784
Lower Austria	-0.923	-0.019	-0.904
Upper Austria	4.277	4.574	-0.297
Salzburg	9.502	6.836	2.666
Styria	1.686	2.953	-1.267
Tyrol	9.386	8.133	1.253
Vorarlberg	11.780	10.841	0.939
Vienna	-4.589	-6.483	1.894
Austria	1.599	1.599	0.
Bulgaria (1975)			
North West	-0.058	0.744	-0.802
North	2.964	1.929	1.035
North East	7.907	8.382	-0.475
South West	2.823	6.761	-3.938
South	7.899	7.936	-0.037
South East	4.615	8.206	-3.591
Sofia	14.726	9.091	5.635
Bulgaria	6.263	6.263	0.
Canada (1971)			
Newfoundland	11.939	19.338	-7.399
Prince Edward Island	7.335	9.468	-2.133
Nova Scotia	7.224	9.686	-2.462
New Brunswick	8.271	11.263	-2.992
Quebec	7.059	9.780	-2.721
Ontario	11.913	10.177	1.736
Manitoba	2.591	10.098	-7.507
Saskatchewan	-7.096	10.814	-17.910
Alberta	17.492	13.625	3.867
British Columbia	23.162	8.723	14.439
Canada	10.439	10.439	0.
Czechoslovakia (1975)			
Central Bohemia	5.452	2.707	2.745
Southern Bohemia	7.710	5.982	1.728
Western Bohemia	6.142	8.058	-1.916
Northern Bohemia	7.668	9.184	-1.516
Eastern Bohemia	5.528	6.245	-0.717
Southern Moravia	7.501	7.051	0.450
Northern Moravia	9.252	9.667	-0.415
Western Slovakia	10.447	9.544	0.903
Central Slovakia	9.286	10.853	-1.567
Eastern Slovakia	11.411	13.542	-2.131
Czechoslovakia	8.098	8.098	0.

Country (ref.year) and region	r (1)	n (2)	m (3)
Fed.Rep.of Germany (1974)			
Schleswig-Holstein	1.156	-2.533	3.689
Hamburg	-12.683	-6.787	-5.896
Lower Saxony	0.594	-1.325	1.919
Bremen	-8.535	-3.739	-4.796
N. Rhine-Westphalia	-2.508	-1.679	-0.829
Hessen	0.040	-1.680	1.720
Rhineland-Palatinate	-3.377	-2.064	-1.313
Baden-Wuerttemberg	1.368	0.982	0.386
Bavaria	0.637	-0.917	1.554
Saarland	-9.746	-3.058	-6.688
West Berlin	-16.494	-9.954	-6.540
Fed.Rep. of Germany	-1.630	-1.630	0.
Finland (1974)			
Uusimaa	11.783	5.577	6.206
Turku and Pori	5.805	2.859	2.946
Ahvenanmaa	9.132	1.272	7.860
Hame	6.511	3.499	3.012
Kymi	-0.616	1.211	-1.827
Mikkeli	-7.337	-0.377	-6.960
Pohjois-Karjala	-5.774	1.557	-7.331
Kuopio	-3.025	1.770	-4.795
Keski-Suomi	-0.063	3.145	-3.208
Vaasa	-1.286	4.260	-5.546
Oulu	3.623	7.058	-3.435
Lappi	-3.486	5.407	-8.893
Finland	3.794	3.794	0.
France (1975)			
Paris Region	3.180	6.093	-2.913
Paris Basin	4.299	3.930	0.369
North	1.339	5.752	-4.413
East	1.998	4.450	-2.452
West	4.787	3.889	0.898
Southwest	0.522	-0.836	1.358
Middle East	4.467	3.191	1.276
Mediterranean	6.161	0.129	6.032
France	3.529	3.529	0.
German Dem.Rep.(1975)			
North	-0.986	0.046	-1.032
Berlin	6.571	-4.562	11.133
Southwest	-1.986	-2.478	0.492
South	-6.673	-4.907	-1.766
Middle	-2.535	-2.858	0.323
German Dem.Rep.	-3.421	-3.421	0.

Country (ref.year) and region	r (1)	n (2)	m (3)
Hungary (1974)			
Central	7.450	3.795	3.655
North Hungary	4.532	6.483	-1.951
North Plain	4.843	8.850	-4.007
South Plain	2.922	4.116	-1.194
North Trans-Danubia	8.578	8.021	0.557
South Trans-Danubia	3.797	4.792	-0.995
Hungary	5.798	5.798	0.
Italy (1978)			
Northwest	0.247	-0.254	0.501
Northeast	1.825	0.090	1.735
Central	3.747	1.890	1.857
South	6.069	8.588	-2.519
Islands	5.549	7.367	-1.818
Italy	3.200	3.200	0.
Japan (1970)			
Hokkaido	-3.216	11.567	-14.783
Tohoku	-10.088	8.238	-18.326
Kanto	30.241	14.883	15.358
Chubu	15.381	11.776	3.605
Kinki	26.503	14.281	12.222
Chugoku	2.170	8.345	-6.175
Shikoku	-11.711	6.438	-18.149
Kyushu	-16.700	8.633	-25.333
Japan	11.854	11.854	0.
Netherlands (1974)			
North	10.777	5.741	5.036
East	11.674	7.182	4.492
West	-0.744	4.415	-5.159
South-West	10.818	4.714	6.104
South	10.726	7.101	3.625
Netherlands	5.686	5.686	0.
Poland (1977)			
Warsaw	13.518	5.734	7.784
Lodz	7.533	4.300	3.233
Gdansk	16.923	12.350	4.573
Katowice	14.602	7.764	6.838
Cracow	11.360	8.274	3.086
East-Central	5.215	9.227	-4.012
Northeast	8.307	11.694	-3.387
Northwest	13.626	14.141	-0.515
South	9.245	9.739	-0.494
Southeast	8.244	11.032	-2.788
East	5.898	8.900	-3.002
West-Central	9.159	10.428	-1.269
West	10.776	12.528	-1.752
Poland	10.034	10.034	0.

Country (ref.year) and region	r (1)	n (2)	m (3)
Soviet Union (1974)			
Urban areas of:			
RSFSR	23.053	7.564	15.489
Ukrainian+Mold.SSRs	23.648	8.259	15.389
Byelorussian SSR	36.731	13.931	22.800
Central Asian Rep.s	31.457	20.042	11.415
Kazakh SSR	25.190	13.608	11.582
Caucasian Republics	17.610	14.545	3.065
Baltic Republics	30.993	7.547	23.446
Rural areas of USSR	-12.432	9.603	-22.035
Soviet Union	9.386	9.386	0.
Sweden (1974)			
Stockholm	1.518	4.506	-2.988
East Middle	2.284	3.428	-1.144
South Middle	1.306	2.246	-0.940
South	4.343	2.730	1.613
West	4.213	3.293	0.920
North Middle	1.964	-0.279	2.243
Lower North	1.671	-0.477	2.148
Upper North	5.941	4.641	1.300
Sweden	2.882	2.882	0.
United Kingdom (1970)			
North	3.288	3.595	-0.307
Yorkshire + Humbers.	1.688	4.805	-3.117
North West	2.172	3.856	-1.684
East Midlands	8.171	5.293	2.878
West Midlands	5.178	6.732	-1.554
East Anglia	16.768	4.181	12.587
South East	3.270	4.121	-0.851
South West	11.180	2.504	8.676
Wales	3.202	2.740	0.462
Scotland	1.785	4.557	-2.772
United Kingdom	4.300	4.300	0.
United States (1970)			
Northeast	3.154	6.768	-3.614
North Central	6.720	8.793	-2.073
South	9.921	9.794	0.127
West	18.768	10.536	8.232
United States	8.912	8.912	0.

REFERENCES

Beaujot, R.P. (1978) Canada's Population: Growth and Dualism. *Population Bulletin* 33(2). Washington, D.C.: Population Reference Bureau, Inc.

Keyfitz, N. (1971) On the Momentum of Population Growth. *Demography* 7:71-80.

Rogers, A. (1968) *Matrix Analysis of Interregional Population Growth and Distribution*. Berkeley: University of California Press.

Rogers, A. (1982) *Parametrized Multistate Population Dynamics*. WP-82-125. Laxenburg, Austria: International Institute for Applied Systems Analysis.

Rogers, A. and L. J. Castro (1983) *Regional Migration Differentials in IIASA Nations*. WP-83-00. Laxenburg, Austria: International Institute for Applied Systems Analysis.

Termote, M. (1982) *Regional Mortality Differentials in IIASA Nations*. CP-82-28. Laxenburg, Austria: International Institute for Applied Systems Analysis.

United Nations (1981) *World Population Prospects as Assessed in 1980* Population Studies, No. 78. New York: United Nations, Department of International Economic and Social Affairs.

Vining Jr., D.R., and T. Kontuly (1978) Population Dispersal from Major Metropolitan Regions: An International Comparison. *International Regional Science Review* 3(1):49-73.

COMPARATIVE MIGRATION AND SETTLEMENT
PUBLICATIONS

Migration and Settlement 1: United Kingdom
P.H. Rees (1979) RR-79-3

Migration and Settlement 2: Finland
K. Rikkinen (1979) RR-79-9

Migration and Settlement 3: Sweden
A.E. Andersson and I. Holmberg (1980) RR-80-5

Migration and Settlement 4: German Democratic Republic
G. Mohs (1980) RR-80-6

Migration and Settlement 5: Netherlands
P. Drewe (1980) RR-80-13

Migration and Settlement 6: Canada
M. Termote (1980) RR-80-29

Migration and Settlement 7: Hungary
K. Bies and K. Tekse (1980) RR-80-34

Migration and Settlement 8: Soviet Union
S. Soboleva (1980) RR-80-36

Migration and Settlement 9: Federal Republic of Germany
R. Koch and H.P. Gatzweiler (1980) RR-80-37

Migration and Settlement 10: Austria
M. Sauberer (1981) RR-81-6

Migration and Settlement 11: Poland
K. Dziewonski and P. Korcelli (1981) RR-81-20

Migration and Settlement 12: Bulgaria
D. Philipov (1981) RR-81-21

Migration and Settlement 13: Japan
N. Nanjo, T. Kawashima, and T. Kuroda (1982) RR-82-5

Migration and Settlement 14: United States
L.H. Long and W. Frey (1982) RR-82-15

Migration and Settlement 15: France
J. Ledent with the collaboration of D. Courgeau (1982) RR-82-28

Migration and Settlement 16: Czechoslovakia
K. Kühnl (1982) RR-82-32

Migration and Settlement 17: Italy
D. Campisi, A. La Bella, and G. Rabino (1982) RR-82-33

Choices in the Construction of Multiregional Life Tables
J. Ledent and P. Rees (1980) WP-80-173

Migration and Urban Change
P. Korcelli (1981) WP-81-140

Data Bases and Accounting Frameworks for IIASA's Comparative Migration and Settlement Study
P. Rees and F. Willekens (1981) CP-81-39

Regional Mortality Differentials in IIASA Nations
M. Termote (1982) CP-82-28

Regional Fertility Differentials in IIASA Nations
Y. Kim (1983) CP-83-18