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Migration and Settlement:16. Czechoslovakia

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MIGRATION AND SETTLEMENT:
16. CZECHOSLOVAKIA

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FOREWORD

Interest in human settlement systems and policies has been a central part of urban-related work at the International Institute for Applied Systems Analysis (IIASA) from the outset. From 1975 through 1978 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 dissemination of the Task's results and to the conclusion of its comparative study, which, under the leadership of Dr. Frans Willekens, is focusing on a comparative quantitative assessment of recent migration patterns and spatial population dynamics in all of IIASA's 17 National Member Organization countries.

The comparative analysis of national patterns of interregional migration and spatial population growth is being carried out by an international network of scholars who are using methodology and computer programs developed at IIASA.

In this report, Dr. Karel Kühnl presents a comprehensive picture of internal migration and population redistribution patterns in Czechoslovakia. The country's particularly rich data bank provides the basis for this interesting analysis of migration activity over time with an emphasis on regional disparities.

Reports summarizing previous work on migration and settlement at IIASA are listed at the end of this report.

Andrei Rogers
Chairman
Human Settlements
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CONTENTS

1 INTRODUCTION

1.1 Purpose and Background

The Czechoslovak Socialist Republic (CSSR) is a small European country of 15 183 656 inhabitants (in 1978) living on 127 877 square kilometers of land. Its population density (118.7 inhabitants per square kilometer in 1978), its share of urban population (around 70 percent), its life expectancy (70.3 in 1975), and its infant mortality rate (20.8 per thousand in 1975) all represent average European figures. Fertility in the CSSR, however, is slightly above average because of successful pronatalist policies that were implemented during the latter half of the 1960s.

As have its neighboring countries, Czechoslovakia has reached this level of development through a long history of social and economic change (Hampl and Pavlík 1976, Hampl 1977), an evolution that follows the perspective of the so-called demographic transition. Recently, the study of demography has expanded and new methodologies have enabled scholars to improve their analyses of the spatial change that occurs across regions. In the CSSR more and more attention has been given to the problems of migration (Andrle 1975, Souček 1972, Kotačka 1974, Veselá 1975, Kühnl 1975, 1977, 1978) and to questions concerning urbanization and settlement structure (Häufler 1966, Michalec 1973, Blažek 1975, Kohout *et al.* 1975, Malík *et al.* 1975, Koubek 1975, Hampl and Pavlík 1977, Musil 1977, Hampl 1978). New terms such as "geodemography" have become a part of the literature (Hampl 1977). Recently this research on the spatial aspects of the population has become an essential part of regional economic and physical planning.

This study contributes to the analysis of spatial population growth. Its primary aim is a better understanding of the role of migration in regional population distribution and redistribution in the CSSR. Written as part of the collection of comparative studies for each of the 17 member countries of the

International Institute for Applied Systems Analysis, the study evaluates the population dynamics of the CSSR using the largest regional aggregations in the country: 10 regions. These regions were chosen because of the availability of the necessary data, their comparability with data for other countries in the comparative study, and their feasibility for implementation with the available multiregional computer program.

After the administrative subdivisions of Czechoslovakia are described and the 10 regions delineated, a short overview of the country's demographic history is presented. Section 2 then deals with current patterns of regional population growth and of its components (fertility, mortality, and migration). Regional differences in the population's age composition are also discussed. In Section 3 the results of the multiregional population analysis are presented: life tables, fertility and migration analysis, and population projections. Finally, section 4 presents an outline of population policies in Czechoslovakia, emphasizing the influence of regional distribution on production and on urbanization.

1.2 The Administrative Subdivision of Czechoslovakia

Since 1968 the territory of the CSSR has been divided into two national republics, the Czech Socialist Republic (CSR) and the Slovak Socialist Republic (SSR). A further territorial subdivision is represented by three administrative levels.

1. Administrative regional units (*kraje*): There are 12 regional units – 8 in the CSR and 4 in the SSR. Prague, the capital of the CSSR, and Bratislava, the capital of the SSR (since 1969) are independent administrative units on this first divisional level. Until 1968 Bratislava, together with Western Slovakia, constituted one administrative unit. The division of these two areas has been the only change that has occurred since 1960, when the new administration organization was formed.
2. Administrative districts (*okresy*): There are 112 districts – 75 in the CSR and 37 in the SSR. Independent regional units on this second level are the largest towns (excluding Prague and Bratislava), Brno, Ostrava, Košice and Plzeň. Since the time of the modification of the administrative division in 1960, five additional districts have been constituted in Slovakia (in 1968 and 1969).
3. Administrative communes (*obce*) represent the lowest level of administrative division. Their total number has continually decreased in the course of development. In 1950 there were 14 803 administrative communes in the CSSR; in 1961 there were 11 963; in 1970, 10 602; and in 1978, 8 862.

This study is based on the first level of administrative division, the regional units. The two cities of Prague and Bratislava were incorporated into their surrounding region, thus reducing the number of regions to 10 (Figure 1 and Table 1).

Administrative regional units (—)	Regions (▬)	Republics (▬)	
1. Prague 2. Central Bohemia	Central Bohemia (CB)		
3. Southern Bohemia	Southern Bohemia (SB)	Czech Socialist Republic (CSR) 8 administrative regional units 7 regions	Czechoslovak Socialist Republic (CSSR)
4. Western Bohemia	Western Bohemia (WB)		
5. Northern Bohemia	Northern Bohemia (NB)		
6. Eastern Bohemia	Eastern Bohemia (EB)		
7. Southern Moravia	Southern Moravia (SM)		
8. Northern Moravia	Northern Moravia (NM)		
9. Bratislava 10. Western Slovakia	Western Slovakia (WS)	Slovak Socialist Republic (SSR) 4 administrative regional units 3 regions	
11. Central Slovakia	Central Slovakia (CS)		
12. Eastern Slovakia	Eastern Slovakia (ES)		

FIGURE 1 Regional units used in the multiregional population study of Czechoslovakia.

TABLE 1 Area and population: CSSR regions, 1978.

Region	Area (in km^2)	Population (thousands)	Density (people/km^2)
Central Bohemia	11 498	2 331.7	202.8
Southern Bohemia	11 347	684.7	60.3
Western Bohemia	10 873	886.5	81.5
Northern Bohemia	7 810	1 163.6	149.0
Eastern Bohemia	11 241	1 246.1	110.9
Southern Moravia	15 027	2 028.6	135.0
Northern Moravia	11 067	1 927.8	174.2
Western Slovakia	14 859	2 037.9	137.1
Central Slovakia	17 976	1 506.0	83.8
Eastern Slovakia	16 179	1 370.7	84.7
CSSR	127 877	15 183.6	118.7
CSR	78 863	10 269.0	130.2
SSR	49 014	4 914.6	100.3

SOURCE: Federal Statistical Office 1978.

Prague became part of the Central Bohemia region, and Bratislava became part of Western Slovakia. This modification allows for a more homogeneous set of regions with regard to area and at the same time corresponds more with the actual geographic regions. (Prague and Bratislava are highly integrated with their administrative surroundings through commuting and are therefore included as a part of the regions in the majority of geographical and physical planning studies.) Another important reason for considering these two cities as part of the larger regions is the continuous assimilation of new communes into the boundaries of the cities. Because of this constant change, it is impossible to adequately evaluate developmental trends.

Although this consolidation into 10 regions allows for more homogeneous divisions, many dissimilarities in demographic behavior still exist across regions. Differences occur not only between urban and rural populations but also between larger groups of populations within a region. For example, Western Bohemia contains two groups of populations that are quite different in character. An analysis of the population dynamics of a regional aggregation of the former 19 administrative regional units that were defined prior to 1960 would, of course, provide a clearer picture of demographic behavior. This aggregation was not used because data were not available and the IIASA computer could only accommodate a maximum of 12 regions.

1.3 Historical Survey

The Czech and Slovak Republics differ a great deal in the development of their populations. From the second half of the eighteenth century, the available

pre–World War I data confirm a faster growth in the population of what is now the Czech Republic than in the territory that is now Slovakia. In the following period, however, there was a continuously higher relative growth in Slovakia. This difference in the population dynamics of the two national units of Czechoslovakia was primarily a result of unequal economic and social development. Both world wars also played important roles in demographic development, having a greater unfavorable influence in the Czech than in Slovakian regions. Tables 2 and 3 show these discrepancies for the nation as a whole and for the two republics.

THE DEMOGRAPHIC TRANSITION

Before the first independent state was constituted in 1918, the territory that is now Czechoslovakia belonged to the Austro–Hungarian Empire. The present Czech Republic was a part of Austria, and Slovakia was a part of Hungary, which was the less developed half of the monarchy.

The economically and socially more developed *Czech Lands* (Bohemia and Moravia) were densely populated as early as the second half of the eighteenth century and therefore differed from their neighboring countries.

TABLE 2 Development of the population: CSSR, CSR, and SSR, 1787–1978.

	Population (thousands)			Index (1921 = 100)			SSR population as a percentage of the CSSR population
Year	CSSR	CSR	SSR	CSSR	CSR	SSR	
1787	6 300	4 355	1 945	48.5	43.5	65.0	30.9
1800	6 783	4 674	2 109	52.2	46.7	70.4	31.1
1840	8 724	6 369	2 355	67.1	63.6	78.7	27.0
1869	10 039	7 557	2 482	77.2	75.5	82.9	24.8
1880	10 699	8 221	2 478	82.3	82.1	82.8	23.1
1890	11 261	8 666	2 595	86.6	86.6	86.7	23.0
1900	12 156	9 373	2 783	93.5	93.6	93.0	22.9
1910	12 996	10 079	2 917	99.9	100.7	97.4	22.5
1921	13 003	10 009	2 994	100.0	100.0	100.0	23.0
1930	13 998	10 674	3 324	107.7	106.6	111.0	23.7
1950	12 338	8 896	3 442	94.8	88.9	115.0	27.9
1961	13 746	9 572	4 174	105.7	95.6	139.4	30.4
1970	14 345	9 808	4 537	110.3	98.8	151.5	31.6
1978	15 184	10 269	4 915	116.8	102.6	164.2	32.4

NOTE: Estimated data are used for the period until 1840; from 1869 to 1970 census data are used; and the 1978 statistics are from registration data. For the period 1869–1950 *de facto* population data are used; from 1961 resident population data are used.

SOURCES: The 1787 data are from Srb 1967, p. 20; the 1800 and 1840 data are from Häufler 1966, p. 8; the 1869–1970 data are from Retrospektivní lexikon obcí ČSSR 1850–1970 [Retrospective Handbook of Communities of the CSSR 1850–1970], Prague, 1978; and the 1978 data are from the Federal Statistical Office 1980.

TABLE 3 Natural demographic dynamics (crude rate per thousand): CSSR, CSR, and SSR, 1870–1978.

Period (average annual)	Birth rate			Death rate			Natural increase rate		
Year	CSSR	CSR	SSR	CSSR	CSR	SSR	CSSR	CSR	SSR
1870–1874	40.8	39.7	44.3	32.5	29.4	42.4	8.3	10.3	1.9
1875–1879	39.8	38.4	44.5	30.5	28.6	36.6	9.3	9.8	7.9
1880–1884	38.8	37.6	42.8	30.4	28.9	35.7	8.4	8.7	7.1
1885–1889	38.6	37.0	44.0	29.7	28.5	33.6	8.9	8.5	6.4
1890–1894	37.1	35.8	41.5	28.7	27.7	32.4	8.4	8.1	9.1
1895–1899	36.9	35.8	40.8	25.7	25.0	28.0	11.2	10.8	12.8
1900–1904	35.4	34.4	38.9	24.2	23.5	26.4	11.2	10.9	12.5
1905–1909	32.5	31.2	36.8	22.4	21.7	24.8	10.1	9.5	12.0
1910–1914	29.2	27.7	34.0	20.0	19.4	22.1	9.2	8.3	11.9
1915–1919	16.5	15.3	20.6	19.9	19.6	21.1	−3.4	−4.3	−0.5
1920–1924	26.8	24.1	35.4	16.5	15.6	19.5	10.3	8.5	15.9
1925–1929	22.9	20.3	31.1	15.2	14.3	18.0	7.7	6.0	13.1
1930–1934	19.7	17.5	26.7	13.7	13.2	15.4	6.0	4.3	11.3
1935–1939	17.1	15.2	22.7	13.2	13.0	13.8	3.9	2.2	8.9
1940–1944	20.8	19.5	24.9	14.3	13.9	15.4	6.5	5.6	9.5
1945–1949	22.4	21.3	25.3	13.6	13.5	14.0	8.8	7.8	11.3
1950–1954	22.0	19.6	28.0	10.9	11.0	10.5	11.1	8.6	17.5
1955–1959	18.5	15.9	24.9	9.7	10.0	8.7	8.8	5.9	16.2
1960–1964	16.3	14.4	20.6	9.5	10.3	7.8	6.8	4.1	12.8
1965–1969	15.5	14.4	18.0	10.4	11.3	8.4	5.1	3.1	9.6
1970–1974	17.7	17.0	19.2	11.5	12.5	9.3	6.2	4.5	9.9
1970	15.9	15.1	17.8	11.6	12.6	9.3	4.3	2.5	8.5
1971	16.5	15.7	18.2	11.5	12.4	9.4	5.0	3.3	8.8
1972	17.4	16.6	19.1	11.1	12.1	9.0	6.3	4.5	10.1
1973	18.9	18.3	20.0	11.6	12.5	9.4	7.3	5.8	10.6
1974	19.9	19.4	20.8	11.7	12.7	9.6	8.2	6.7	11.2
1975	19.6	19.1	20.6	11.5	12.4	9.5	8.1	6.7	11.1
1976	19.2	18.5	20.8	11.4	12.4	9.5	7.8	6.1	11.3
1977	18.7	17.8	20.6	11.5	12.4	9.8	7.2	5.4	10.8
1978	18.4	17.5	20.5	11.6	12.4	9.8	6.8	5.1	10.7

NOTE: In the period 1870–1899, rates for the Czech Republic are for 1917 boundaries, and rates for the Slovak Republic are estimated for present-day boundaries. In the period 1900–1944, all rates are for 1937 boundaries.
SOURCES: Srb 1967 and Federal Statistical Office, selected years.

The first phase of demographic transition in the Czech Lands took place between 1820 and 1875. A characteristic feature of this period was the slow decrease in fertility and mortality rates: the average annual national increase of population ranged between 8 and 10 per thousand. During the second period,

1875–1930, there was a continuous but faster decrease in fertility and mortality. The most important period of demographic changes was between 1890 and 1910: a period that marked the middle of the process of demographic transition in the Czech Lands. The process of change was completed by the 1930s, when for the first time the total fertility rate fell below 2.0. Because of the length of the period (about 100 years) and because of the continuous decrease in birth and death rates, demographic development in the Czech Lands was more like the French type of transition than the English (Pavlík and Wynnyczuk, 1974, p. 324).

In *Slovakia* the more outstanding demographic transitions took place only at the end of the nineteenth century and at the beginning of the twentieth century. From the end of the 1870s, there occurred a continuous decrease in the mortality rate below the 35 per thousand level (a phenomenon that began in the Czech Lands in 1815–1819). By 1896 Slovakia reached a mortality level of 30 per thousand (a level attained in the Czech Lands in 1870–1874). If we do not consider the exceptional years of World War I, the more significant fall in the fertility rate occurred during the second half of the 1920s. (During these years the total fertility rate decreased to a rate below 4.0 in Slovakia, whereas in the Czech Lands this level was reached in the period 1910–1921.) Although the birth rate remained high and the death rate decreased substantially (from 42.4 to 28.0 percent), the highest intensity of natural and total population increase occurred after World War II (Table 3). Since 1955 total fertility and mortality rates have been decreasing, especially infant mortality, and by 1960 life expectancies were approximately the same in the Slovak and Czech Republics. As a consequence of this and the favorable age composition of the population, the rate of natural increase has gone up. Although the fertility level in Slovakia is still higher than in the Czech Republic, the difference between the two levels is decreasing. (The total fertility rate was 64 percent higher in the SSR than in the CSR in 1920–1937, 26 percent higher in 1945–1959, and only 14 percent higher in 1960–1978.)

Demographic transition in Slovakia (compared with the CSR) was thus marked by a delayed start, a faster course, and by greater differences between fertility and mortality levels.

REGIONAL DIFFERENTIATION OF POPULATION DEVELOPMENT

Data concerning the population development of the 10 observed regions from 1869 are presented in Table 4. Other basic characteristics (population density, percentage share of the CSSR population, proportion of population concentrated in larger cities with more than 20 000 inhabitants) are also given for each region and each census year. Table 5 gives the average annual population growth rates in intercensal periods until 1970 and also during the years 1970–1978, which are taken from registration data.

TABLE 4 Population characteristics in census years: CSSR regions, 1869–1970.[a]

Region	Area (in km²)	Characteristic[b]	Year of census 1869	1880	1890	1900	1910	1921	1930	1950	1961	1970
Central Bohemia	11 498	P	1 248.5	1 402.7	1 531.8	1 702.4	1 860.5	1 907.4	2 174.9	2 142.9	2 275.3	2 270.3
		PD	108.6	122.0	133.2	148.0	161.8	165.9	189.1	186.4	197.9	197.4
		PLC	20.2	25.0	29.0	33.5	37.8	40.0	44.5	50.7	52.6	53.9
		PS	12.4	13.2	13.7	14.0	14.3	14.7	15.5	17.4	16.6	15.8
Southern Bohemia	11 347	P	782.4	823.6	817.6	836.0	854.0	836.2	810.2	625.6	649.6	652.1
		PD	69.0	72.6	72.1	73.7	75.3	73.7	71.4	55.1	57.2	57.5
		PLC	–	3.1	3.9	5.4	6.4	6.9	7.3	12.7	16.7	19.4
		PS	7.8	7.7	7.3	6.9	6.6	6.4	5.8	5.1	4.7	4.6
Western Bohemia	10 873	P	879.9	962.1	996.8	1 081.6	1 168.1	1 156.1	1 211.4	772.6	828.7	848.6
		PD	80.9	88.5	91.7	99.5	107.4	106.3	111.4	71.1	76.2	78.0
		PLC	3.2	4.7	10.3	13.5	17.0	16.3	19.4	20.0	23.8	27.8
		PS	8.8	9.0	8.9	8.9	9.0	8.9	8.7	6.3	6.0	5.9
Northern Bohemia	7 810	P	981.2	1 106.0	1 209.8	1 387.8	1 515.0	1 455.3	1 570.7	1 027.0	1 086.4	1 101.8
		PD	125.6	141.6	154.9	177.7	194.0	186.3	201.1	131.5	139.1	141.1
		PLC	5.7	8.5	11.9	19.0	22.1	23.4	24.5	29.3	32.5	35.5
		PS	9.8	10.3	10.7	11.4	11.6	11.2	11.2	8.3	7.9	7.7
Eastern Bohemia	11 241	P	1 280.1	1 342.6	1 367.7	1 395.1	1 456.9	1 381.9	1 409.3	1 153.9	1 199.0	1 201.4
		PD	113.9	119.4	121.7	124.1	129.6	122.9	125.4	102.7	106.7	106.9
		PLC	–	1.7	3.2	3.5	5.7	6.4	7.5	8.4	12.0	14.4
		PS	12.7	12.5	12.1	11.5	11.2	10.6	10.1	9.3	8.7	8.4
Southern Moravia	15 027	P	1 295.3	1 398.7	1 476.7	1 569.4	1 692.4	1 729.7	1 834.0	1 751.4	1 900.9	1 934.7
		PD	86.2	93.1	98.3	104.4	112.6	115.1	122.0	116.6	126.5	128.7
		PLC	9.8	10.4	13.1	14.7	17.8	18.6	22.3	27.6	27.5	31.4
		PS	12.9	13.1	13.1	12.9	13.0	13.3	13.1	14.2	13.8	13.5
Northern Moravia	11 067	P	1 089.7	1 185.8	1 265.1	1 401.2	1 532.0	1 542.9	1 663.0	1 422.7	1 631.6	1 798.8
		PD	98.5	107.1	114.3	126.6	138.4	139.4	150.3	128.6	147.4	162.5
		PLC	7.2	9.2	11.4	17.1	23.5	25.2	27.0	28.5	35.0	42.7
		PS	10.8	11.1	11.2	11.6	11.8	11.9	11.9	11.5	11.9	12.5

Western Slovakia	14 859	P	922.4	962.3	1 026.5	1 110.4	1 180.6	1 248.4	1 405.2	1 490.0	1 760.1	1 884.9
		PD	62.1	64.8	69.1	74.7	79.5	84.0	94.6	100.3	118.5	126.9
		PLC	7.3	7.2	7.4	8.0	8.9	13.2	19.0	20.7	23.1	26.8
		PS	9.2	9.0	9.1	9.1	9.1	9.6	10.0	12.1	12.8	13.1
Central Slovakia	17 976	P	799.3	785.1	833.7	893.9	943.4	949.2	1 030.2	1 052.7	1 301.0	1 401.7
		PD	44.5	43.7	46.4	49.7	52.5	52.8	57.3	58.6	72.4	78.0
		PLC	–	–	–	–	–	–	4.5	7.1	8.2	16.8
		PS	8.0	7.3	7.4	7.4	7.3	7.3	7.4	8.5	9.5	9.8
Eastern Slovakia	16 179	P	760.1	730.1	735.0	778.6	792.7	796.3	888.7	899.6	1 112.9	1 250.7
		PD	47.0	45.1	45.4	48.1	49.0	49.2	54.9	55.6	68.8	77.3
		PLC	4.1	4.8	5.3	6.1	9.2	10.4	12.0	11.3	12.3	21.1
		PS	7.6	6.8	6.5	6.4	6.1	6.1	6.3	7.3	8.1	8.7
CSSR	127 877	P	10038.9	10699.0	11 260.7	12 156.4	12995.6	13003.4	13997.6	12 338.4	13 745.5	14 345.0
		PD	78.5	83.7	88.1	95.1	101.6	101.7	109.5	96.5	107.5	112.2
		PLC	6.4	8.4	10.8	13.8	17.0	18.4	21.7	25.1	27.2	31.6
		PS	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
CSR	78 863	P	7 557.1	8 221.5	8 665.5	9 373.5	10078.9	10009.5	10673.5	8 896.1	9 571.6	9 807.7
		PD	95.8	104.3	109.9	118.9	127.8	126.9	135.3	112.8	121.4	124.4
		PLC	7.2	9.6	12.7	16.5	20.2	21.5	24.5	29.3	32.3	35.9
		PS	75.2	76.9	77.0	77.1	77.5	77.0	76.3	72.1	69.6	68.4
SSR	49 014	P	2 481.8	2 477.5	2 595.2	2 782.9	2 916.7	2 993.9	3 324.1	3 442.3	4 174.0	4 537.3
		PD	50.6	50.5	52.9	56.8	59.5	61.1	67.8	70.2	85.2	92.6
		PLC	3.9	4.2	4.4	4.9	6.1	8.3	12.6	14.1	15.6	22.1
		PS	24.8	23.1	23.0	22.9	22.5	23.0	23.7	27.9	30.4	31.6

[a]Until 1950 *de facto* population data were used; from 1961 resident population data were used.

[b]Characteristics: P = population in thousands
PD = population density (people/km²)
PLC = proportion (percent) of the population that is concentrated in large cities (cities with 20 thousand or more inhabitants in respective year of census; cities' territories according to administrative delineation of 1 January 1972)
PS = share (percent) of the CSSR population

SOURCE: Retrospektivní lexikon obcí ČSSR 1850–1970 [Retrospective Handbook of Communities, CSSR 1850–1970], Prague, 1978.

TABLE 5 Average annual population growth rates (per thousand)[a]: CSSR regions, 1869–1978.

Region	1869–1880	1880–1890	1890–1900	1900–1910	1910–1921	1921–1930	1930–1950	1950–1961	1961–1970	1970–1978
Central Bohemia	10.6	8.8	10.6	8.9	2.5	13.4	−0.8	5.5	−0.2	3.3
Southern Bohemia	4.7	−0.7	2.1	2.2	−2.1	−3.2	−13.4	3.4	0.4	6.0
Western Bohemia	8.1	3.5	8.2	7.7	−1.0	4.8	−23.4	6.4	2.4	5.4
Northern Bohemia	10.9	9.0	13.7	8.8	−4.0	7.8	−22.1	5.1	1.4	6.8
Eastern Bohemia	4.3	1.9	2.0	4.3	−5.2	2.0	−10.4	3.5	0.2	4.5
Southern Moravia	7.0	5.4	6.1	7.5	2.2	6.0	−2.4	7.4	1.8	5.9
Northern Moravia	7.8	6.5	10.3	8.9	0.7	7.6	−8.1	12.5	10.0	8.6
Western Slovakia	3.8	6.5	7.9	6.1	5.5	12.1	3.0	15.1	7.0	9.7
Central Slovakia	−1.6	6.0	7.0	5.4	0.6	8.4	1.1	19.3	7.6	8.9
Eastern Slovakia	−3.7	0.7	5.8	1.8	0.4	11.2	0.6	19.3	12.1	11.3
CSSR	5.8	5.1	7.6	6.7	0.1	7.5	−6.6	9.8	4.4	7.0
CSR	7.7	5.3	7.8	7.3	−0.7	6.6	−9.5	6.7	2.5	5.7
SSR	−0.2	4.6	7.0	4.7	2.6	10.7	1.8	17.5	8.6	9.9

[a]The average annual growth rate (per thousand) was calculated using the formula:

$$g = (1/n)\ln(P_{t+n}/P_t)1000$$

where n = number of years in period, P_t = initial population, P_{t+n} = final population.

SOURCES: Derived from the data at censuses 1869–1970 and from the population registration in the years 1971–1978; the Retrospektivní lexikon obcí ČSSR 1850–1970 [Retrospective Handbook of the Communities of the CSSR 1850–1970], Prague, 1978; and the Federal Statistical Office, selected years.

As can be seen from these tables, long-term population growth in Czechoslovakia may be divided into two main periods: before and after 1950. The period before 1950 exhibited a higher regional differentiation of population growth. From the 1850s to the 1950s the difference of regional population shares became greater and the variability of regional population densities increased (Figures 2 and 3). In both the CSR and the SSR, however, there were positive correlations between regional population growth and density.

The two world wars had a profound effect on this stage of development. In 1910–1921 four out of the seven Czech regions had a decrease in population, whereas all three Slovakian regions had an increase in population, although to a lesser degree than in the previous periods. World War II and its consequences (e.g., the transfer of the population of German nationality) had an even greater effect on the population structure of Czechoslovakia, particularly in the Czech Republic. Between 1930 and 1950, the average annual decrease of population in the CSR was 9.5 per thousand and was reflected in varying intensity in all seven Czech regions. (In Western and Northern Bohemia this decrease was higher than 20 per thousand.) The three Slovakian regions had a population increase in the period 1930–1950, although it was substantially lower than in previous periods. As a consequence the population shares of the Slovakian regions rapidly increased (Figure 2). The regions of Central Bohemia and Southern Moravia also increased their population share between 1930 and 1950.

The period after 1950 was characterized by rapid population growth in the Slovakian regions. Average annual population growth rates in the fifties reached the highest values ever recorded in the regional population development of Czechoslovakia. This was primarily a consequence of the stabilization of high natural increase rates, which reflected the economic and social development as well as increasing urbanization. A characteristic feature of the postwar population development of Slovakia has been a steady decline in the regional variability of population density (Figure 3). (A more detailed regional division, however, shows that the variability of population density continued to increase in both the Slovak and Czech Republics.) The region that grew the most in the entire country during the postwar period was Eastern Slovakia.

Since 1950 the population shares of the seven Czech regions have varied. Central Bohemia has experienced a decrease, while the industrial development of Northern Moravia has caused significant growth proportional to the rest of the CSSR. Eastern Bohemia and particularly Southern Bohemia recently have shown a remarkable increase in their population growth, although in the long run their population shares show a decrease. In Northern and Western Bohemia, a stabilization of relative population growth has occurred.

The 1970s witnessed a notable trend toward uniformity in population growth within the CSSR. Fertility policies were influential in this equalization, but even more important was the decline in internal migration.

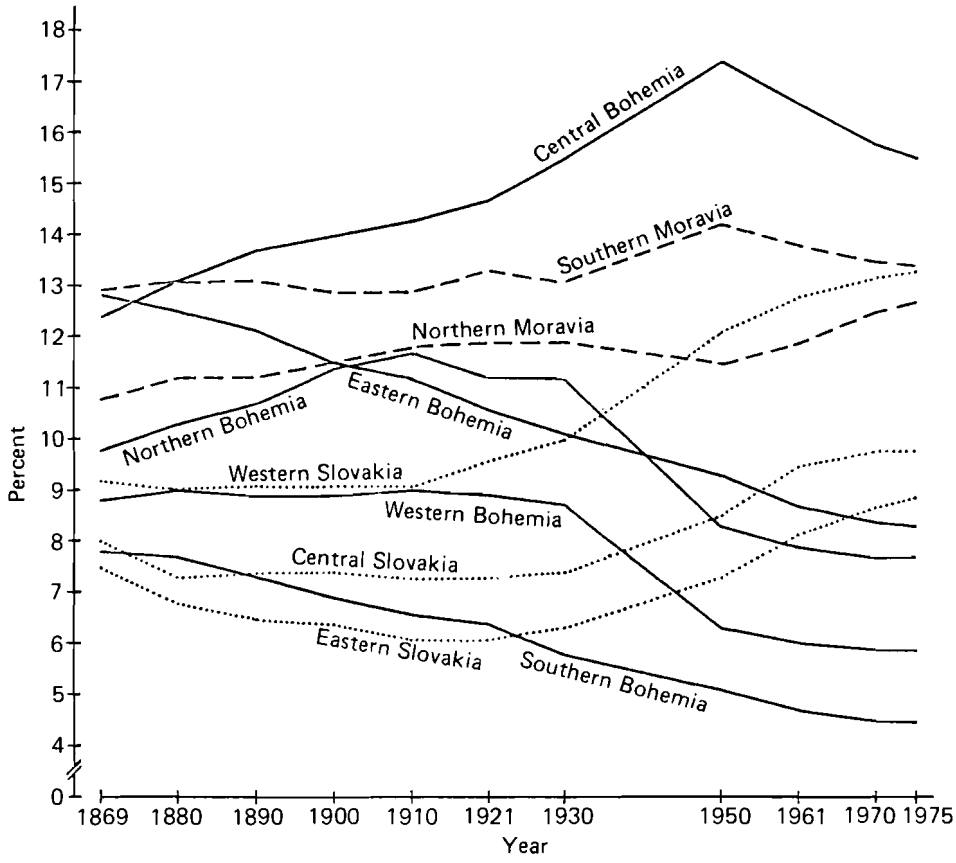

FIGURE 2 Regional shares of the CSSR population, 1869–1975.

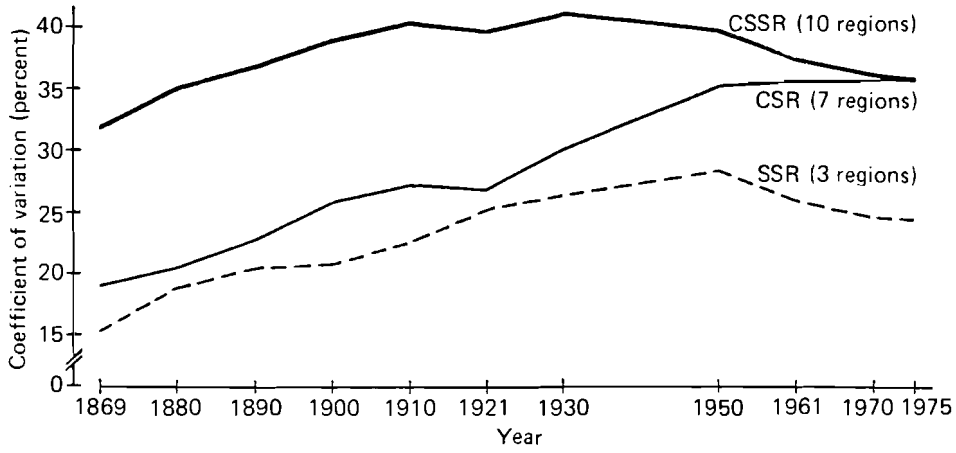

FIGURE 3 Variation in regional population densities of the CSSR, CSR, and SSR, 1869–1975.

2 CURRENT PATTERNS OF SPATIAL POPULATION GROWTH

This section evaluates the components of regional population growth: fertility, mortality, and internal migration. The analysis is of the 10 regions of the CSSR (as described in section 1.2) for the period 1961–1975. For the period before (1950–1960) and after (1976–1978), only two basic macroregions – the Czech and Slovak Republics – are evaluated. The study is based on registration data, which are published yearly in *Population Movement in the CSSR* edited by the Federal Statistical Office together with the Czech and Slovak Statistical Offices. This source presents detailed age-specific data for the national republics and the 12 administrative regional units. (Only crude indicators are available for the smaller spatial units.)

Registration of internal migration was introduced in Czechoslovakia in 1949, thus replacing censuses as the means of acquiring this information. A person who moves permanently from one place to another must now report the place of his new residence. Only moves out of the communes, the smallest administrative units, are considered as migrations. The basic data of internal migration are published every year, and they give the numbers of migrating persons by republics, administrative regional units, administrative districts, groups of communes according to their population size, and separate cities with more than 10000 inhabitants. The places of origin and destination are given according to administrative districts, and moves among the groups of communes are given by their population size. Also included in the data are such characteristics as sex, age, and occupation of migrants between republics and age and occupation of migrants between administrative regional units. Since 1966, reasons for internal migration have also been included in the registration questionnaire for administrative districts and cities with more than 10000 inhabitants. (External migration has not been considered in this report, although the data are available from the passport office.)

The following subsections consist of a survey of basic components of population growth (natural increase and net migration) and an analysis of the importance of these components to total regional population growth. Attention is then paid to regional differentials in fertility, mortality, and internal migration. The section ends with a survey of regional differentiation of the population's age composition.

2.1 Basic Characteristics of Regional Population Development, 1961–1975

Table 6 gives data on the evolution of natural increase and migration for the 10 CSSR regions during three 5-year periods beginning in 1961. Figure 4 illustrates these components of regional demographic change. These surveys clearly show that natural increase has been the decisive factor influencing the population growth of the regions. This was especially true in the 1970s; in all regions there was an increase in fertility levels.

TABLE 6 Components of regional population change (average annual rate per thousand): CSSR regions, 1961–1975.

Region	Period	Natural increase	Internal net migration	External net migration	Total population change
Central Bohemia	1961–1965	−0.3	2.7	−0.2	2.2
	1966–1970	−1.8	2.2	−0.1	0.3
	1971–1975	1.0	2.1	−0.1	3.0
Southern Bohemia	1961–1965	3.0	−1.7	−0.1	1.2
	1966–1970	1.7	0.1	−0.2	1.6
	1971–1975	4.5	1.1	0.0	5.6
Western Bohemia	1961–1965	5.9	1.9	−0.5	7.3
	1966–1970	3.8	1.9	−4.4	1.3
	1971–1975	6.7	−0.4	−0.2	6.1
Northern Bohemia	1961–1965	6.6	−0.7	−0.7	5.2
	1966–1970	5.1	−1.9	−2.1	1.1
	1971–1975	8.3	−1.6	0.0	6.7
Eastern Bohemia	1961–1965	2.8	−2.0	−0.1	0.7
	1966–1970	1.7	−0.9	−0.3	0.5
	1971–1975	4.8	−0.6	0.1	4.3
Southern Moravia	1961–1965	5.2	−1.9	0.0	3.3
	1966–1970	3.4	−0.9	−0.2	2.3
	1971–1975	5.7	0.1	0.0	5.8
Northern Moravia	1961–1965	9.0	4.5	−0.1	13.4
	1966–1970	6.9	2.2	−0.2	8.9
	1971–1975	8.9	0.3	−0.1	9.1
Western Slovakia	1961–1965	9.7	−0.7	0.0	9.0
	1966–1970	7.0	0.4	−0.1	7.3
	1971–1975	8.5	0.9	0.0	9.4
Central Slovakia	1961–1965	12.5	−2.6	0.0	9.9
	1966–1970	9.0	−2.3	−0.1	6.6
	1971–1975	10.2	−1.8	−0.1	8.3
Eastern Slovakia	1961–1965	15.9	−2.2	0.1	13.8
	1966–1970	12.3	−2.7	0.8	10.4
	1971–1975	13.3	−2.1	0.2	11.4
CSSR	1961–1965	6.7	0.0	−0.1	6.6
	1966–1970	4.7	0.0	−0.5	4.2
	1971–1975	7.0	0.0	−0.1	6.9
CSR	1961–1965	4.3	0.8	−0.2	4.9
	1966–1970	2.7	0.6	−0.8	2.5
	1971–1975	5.4	0.3	0.0	5.7
SSR	1961–1965	12.3	−1.7	0.0	10.6
	1966–1970	9.1	−1.3	0.2	8.0
	1971–1975	10.4	−0.8	0.0	9.6

SOURCE: Derived from Federal Statistical Office, selected years.

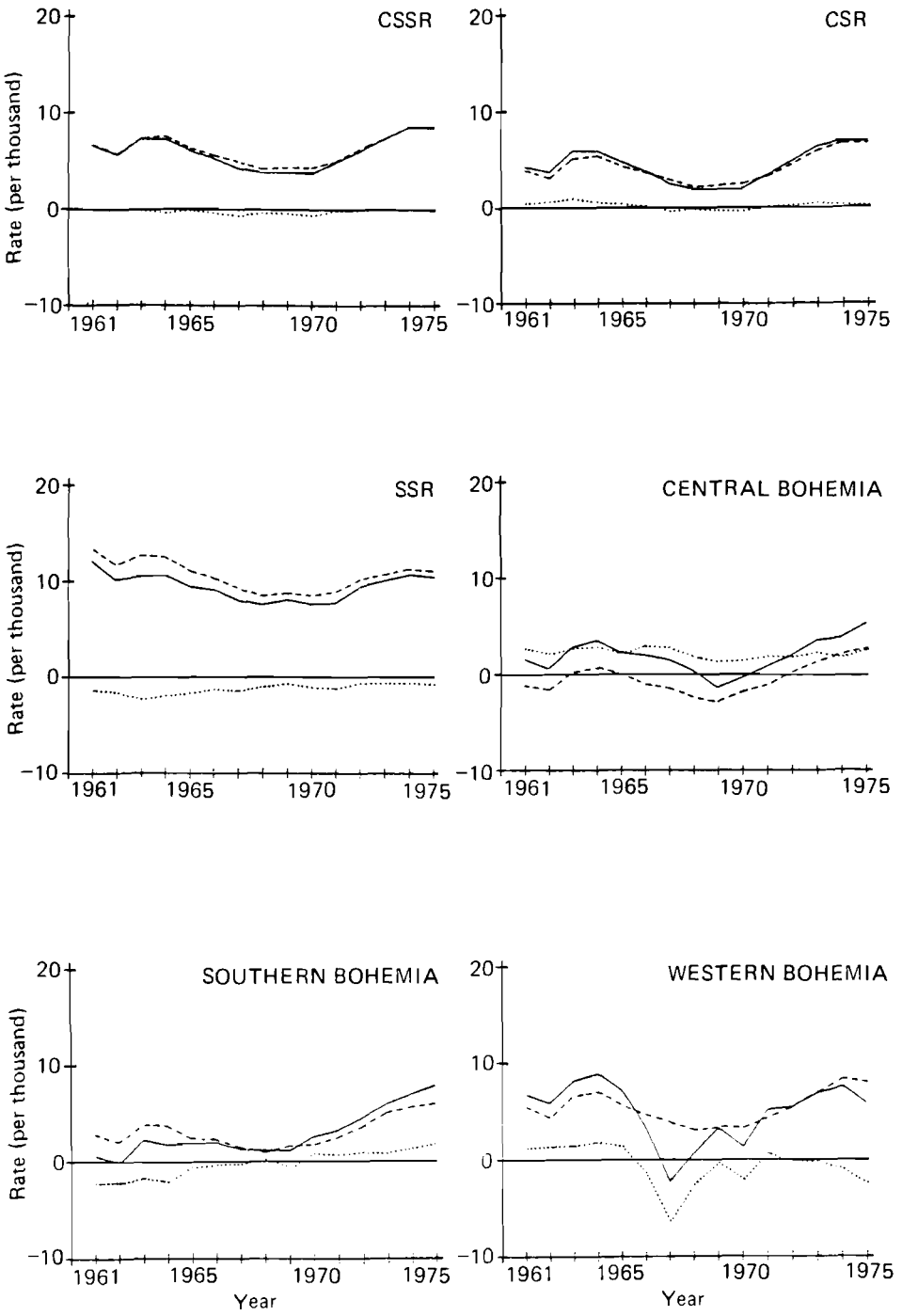

FIGURE 4 Rates of population change (—), natural increase (----), and net migration – including external migration (·····), 1961–1975.

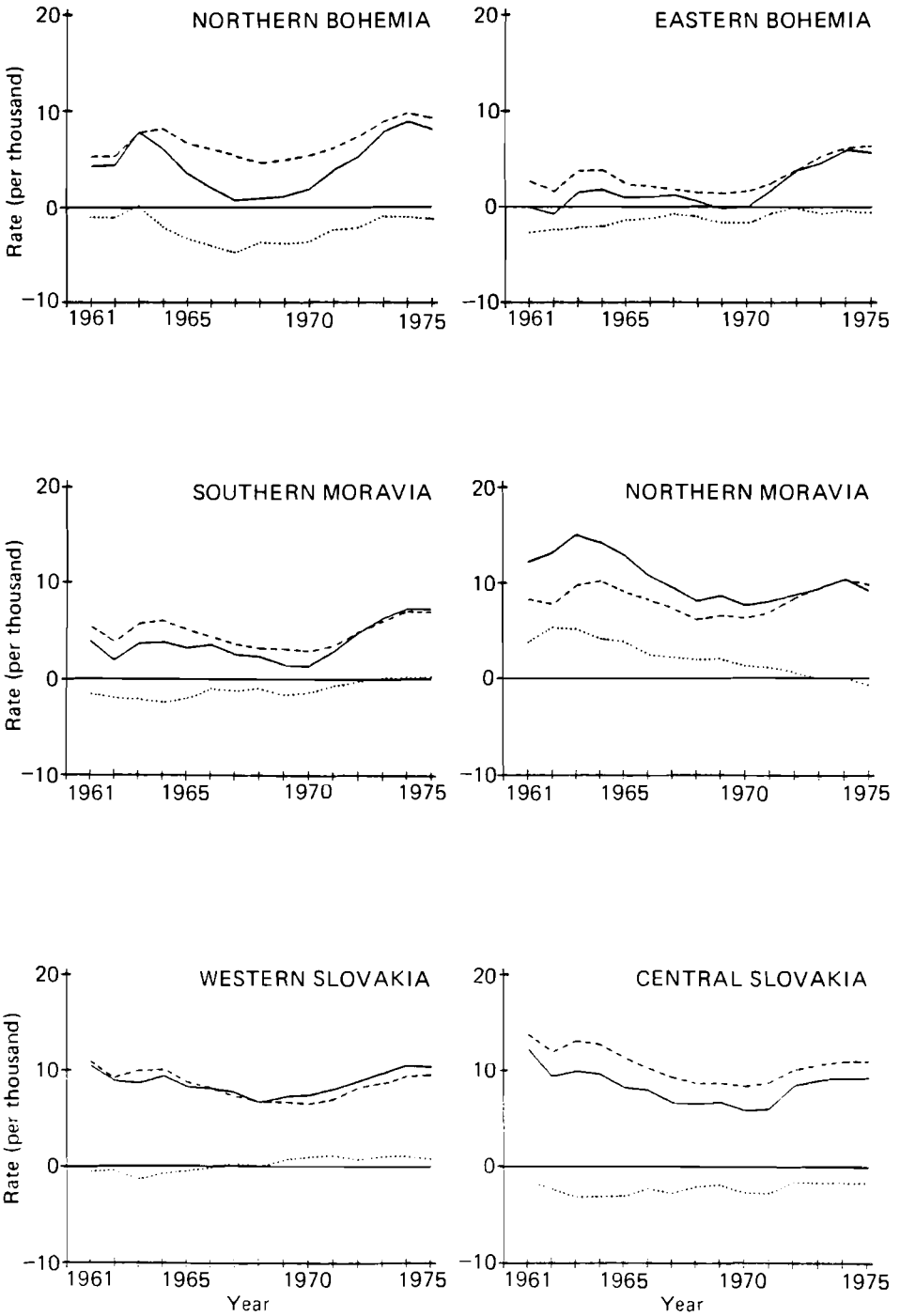

FIGURE 4 *Continued.*

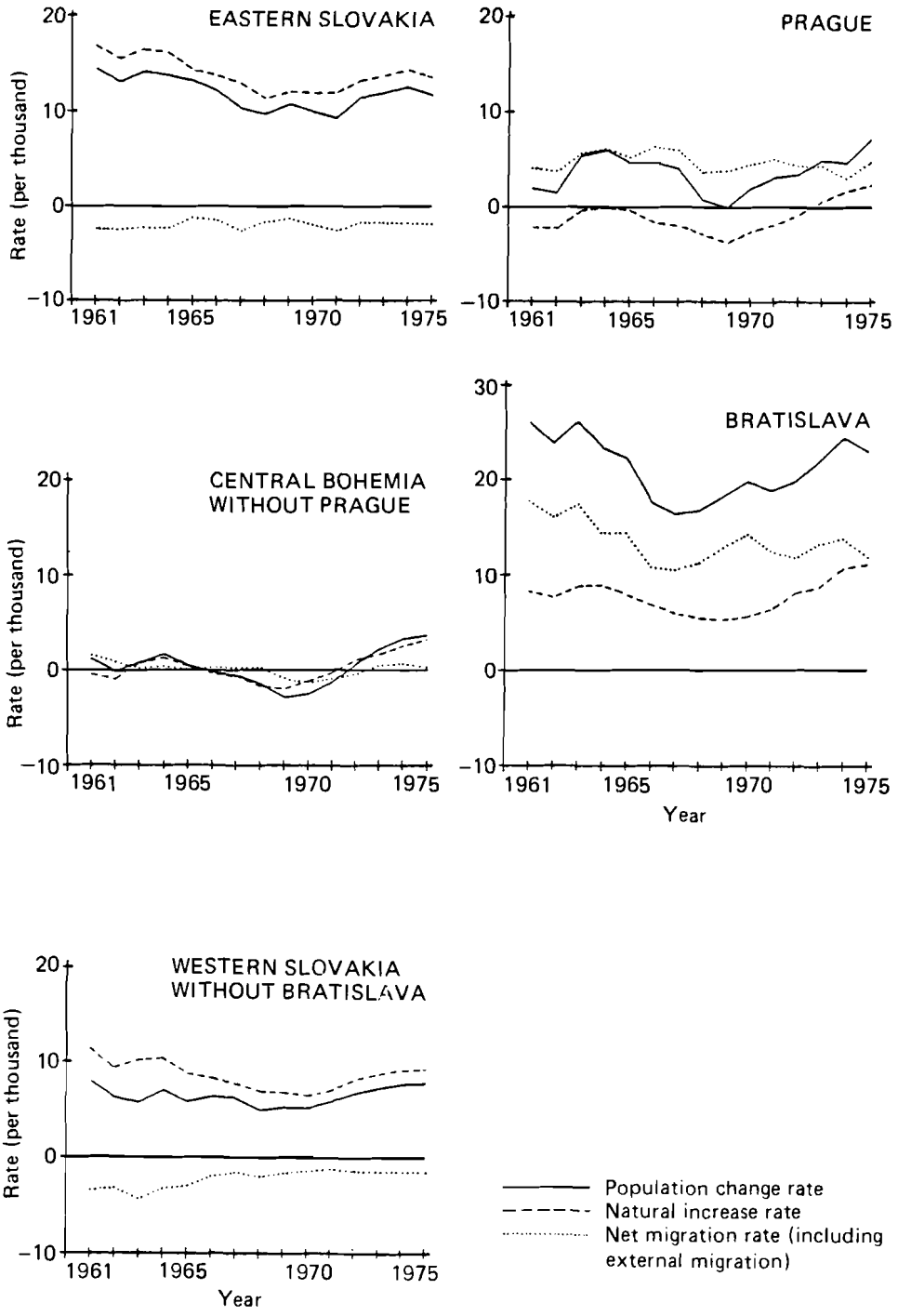

FIGURE 4 *Continued.*

Central Bohemia (which includes Prague) is the only region where internal migration was more influential in population growth than natural increase in the 1960s and early 1970s. It also had the lowest rate of natural increase among the 10 regions. In the period 1966–1970 a greater decrease in population growth due to external migration (emigration of inhabitants of German nationality) was registered in Northern Bohemia and primarily in Western Bohemia, where migration played a significant role in population development.

The data in Table 6 show other characteristic features of regional population development in Czechoslovakia during the period 1961–1975. For example, the natural increase rate was much more stable across regions than was the internal net migration rate. The greatest change in internal net migration appeared in Northern Moravia. At the beginning of the period this region had the highest net in-migration rate, whereas at the end of the period it registered a net out-migration rate. This same phenomenon occurred in Western Bohemia in the 1970s. Conversely, a net out-migration rate changed into a net in-migration rate in the regions of Southern Bohemia, Western Slovakia, and Southern Moravia during the period 1961–1975, while Eastern Bohemia showed a decrease in its net out-migration rate.

Finally, another characteristic feature of population development in the last 15–20 years has been a continual decrease in the regional variability of natural increase and internal net migration rates. As a consequence, the regional system has become more and more homogeneous from the point of view of total population change over the evaluation period.

2.2 Fertility

FERTILITY IN THE CZECH AND SLOVAK REPUBLICS AND ALL OF CZECHOSLOVAKIA, 1945–1978

In the postwar period the fertility rate in Czechoslovakia showed considerable change (see Table 7 and Figure 5). Immediately after the Second World War this rate was close to the high level that had existed in the 1920s (almost three children per woman). A particularly rapid increase took place in the Czech Republic; in Slovakia the increase was slower but more permanent. Even more pronounced was the rise in the net reproduction rate, which was primarily because of a sudden drop in infant mortality.

This change in fertility was a result of favorable economic, social, and demographic factors. The many marriages that had been postponed because of the war finally took place. Also at this time the legal marriage age was lowered to 18 years. After 1945 and especially after 1948 when the political character of Czechoslovakia changed, social security became higher, unemployment disappeared, and real incomes grew, creating favorable conditions for raising children. As a result, the intervals between births were shortened and the mean age of

TABLE 7 Fertility characteristics (rate per woman): CSSR, CSR, and SSR, 1945–1978.

Period (average annual) Year	Total fertility rate[a]			Net reproduction rate		
	CSSR	CSR	SSR	CSSR	CSR	SSR
1945–1949	2.994	2.920	3.199	1.293	1.289	1.317
1950–1954	2.948	2.706	3.546	1.313	1.241	1.519
1955–1959	2.678	2.399	3.332	1.241	1.120	1.519
1960–1964	2.427	2.194	2.936	1.140	1.035	1.371
1965–1969	2.146	1.964	2.547	1.009	0.925	1.195
1970–1974	2.261	2.158	2.499	1.068	1.020	1.178
1970	2.074	1.929	2.400	0.979	0.914	1.125
1971	2.127	1.994	2.428	1.004	0.944	1.141
1972	2.215	2.094	2.490	1.046	0.989	1.171
1973	2.387	2.312	2.565	1.125	1.088	1.213
1974	2.504	2.462	2.614	1.184	1.165	1.234
1975	2.461	2.432	2.548	1.162	1.158	1.209
1976	2.430	2.389	2.544	1.149	1.135	1.194
1977	2.378	2.339	2.487	1.127	1.111	1.172
1978	2.368	2.326	2.472	1.126	1.106	1.173

[a]The total fertility rate is five times the sum of the age-specific fertility rates.
SOURCES: Federal Statistical Office, selected years.

mothers became younger. (The highest fertility rate after the war occurred among women 22–23 years of age compared with 26–27 years of age during the prewar period.)

This sudden rise in the fertility level was not to last, however. With the more frequent migrations from the country to towns, the legislation allowing abortions (enacted in 1957), and the effort to increase the standard of living, family sizes became smaller. In 1965–1969 the net reproduction rate in the Czech Republic went below 1.00, bringing the country-wide rate down to 1.009.

This unfavorable development led to population policies that resulted in yet another rise in the birth rate beginning in 1969. The most important of these population measures (enacted after the 14th Congress of the Communist Party of Czechoslovakia in 1971 and 1973) included an extended paid maternity leave, a maternity allowance, an expansion of birth grants, and an introduction of state loans for newly married couples (Pavlík and Wynnyczuk 1974 and Population Policy in Czechoslovakia 1978). These measures were implemented immediately, and their effects were more permanent than those of previous policies. By 1974 the total fertility rate (TFR) returned to a high level in both republics, the most notable increase being in the CSR, which had a 28 percent net reproduction rate increase from 1970 to 1974. Slovakia's fertility level in the 1970s increased only about 10 percent, causing the levels in both republics to become less diverse. Family sizes as well became more similar across the

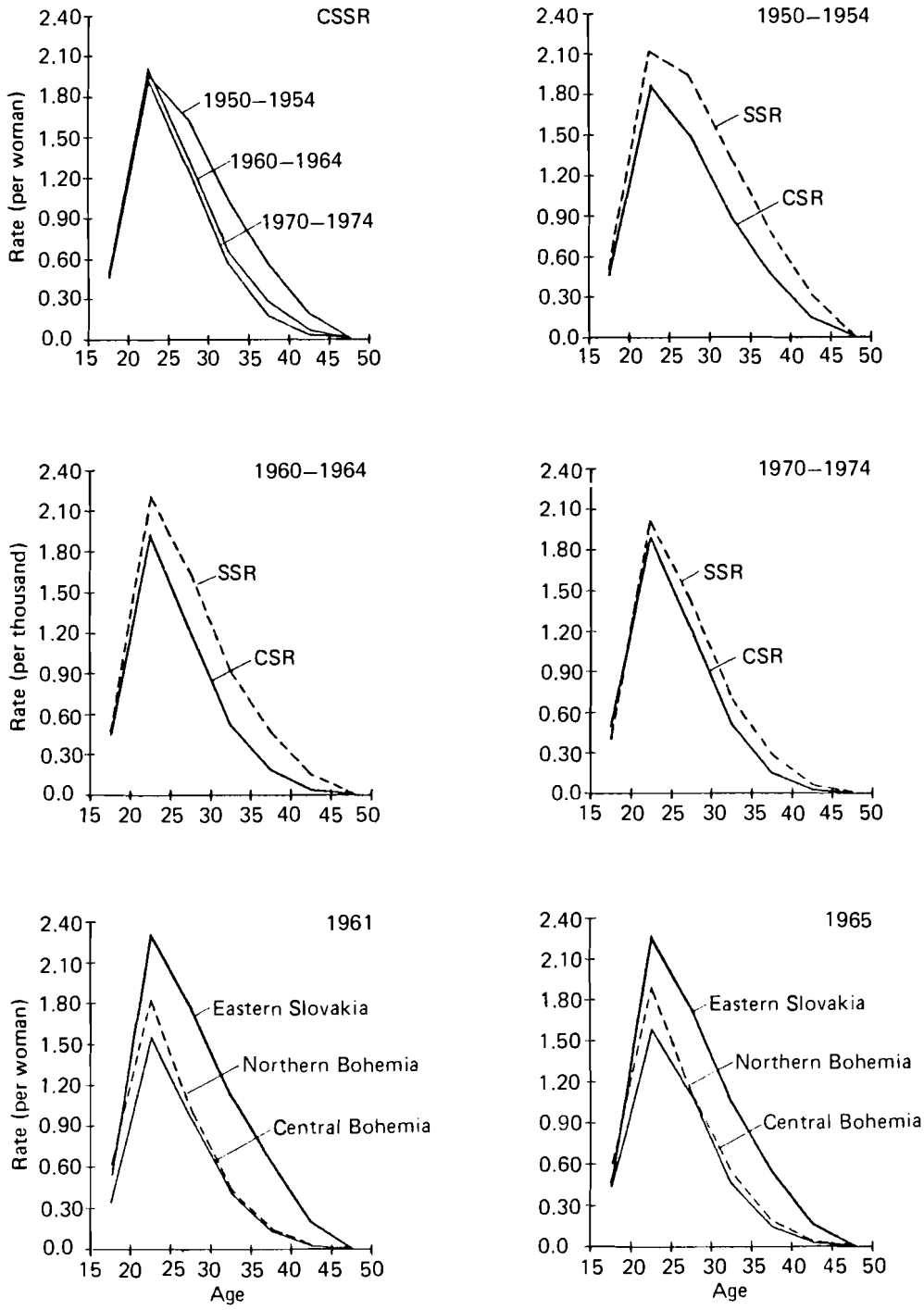

FIGURE 5 Age-specific fertility rates for the CSSR, CSR, SSR, and selected regions, 1950–1975.

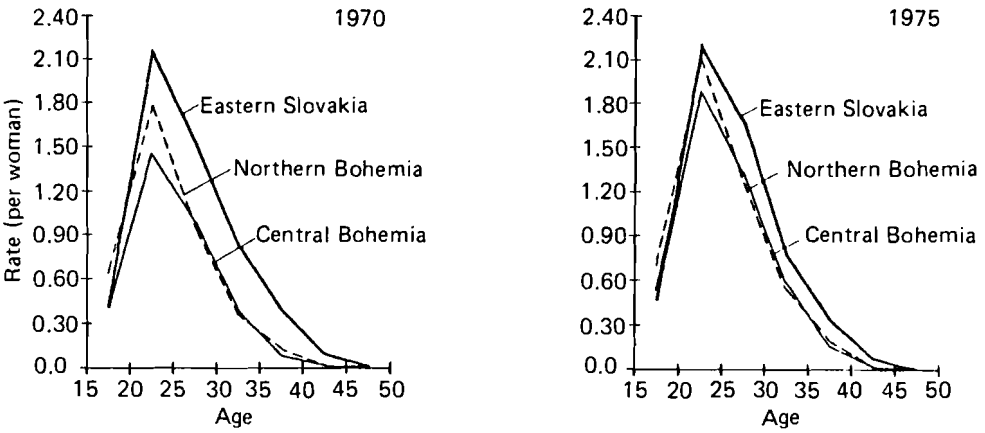

FIGURE 5 *Continued.*

country as a result of the population policies. More families began having two children and less had three or more. The age of childbearing mothers also reflected a gradual leveling of demographic differences in the CSSR as a whole.

REGIONAL FERTILITY DIFFERENTIALS

In Table 8, selected fertility characteristics for the years 1961, 1965, 1970, and 1975 are shown for the 10 regions of the CSSR. From the data, one can formulate several conclusions.

Differences in fertility levels among the 10 regions are decreasing. The process of homogenization, which began before 1970, expanded as a result of pro-natal measures (see Figure 6). During the period 1970–1975 the highest relative increase in total fertility rates occurred in those regions showing the lowest rates in 1970.

In Slovakia, where the total fertility rates were originally higher, the pro-natal measures had less impact and the equalizing of regions took longer than in the CSR. In Slovakia, for example, the highest TFR was about 23.8 percent (in 1961) and about 17.7 percent (in 1975) higher than the lowest TFR. In the Czech Republic this difference reached 38.1 percent in 1961 and 8.6 percent in 1975. Although regional variability has abated in recent years, differences in fertility rates still exist. Eastern Slovakia still has the highest TFR and Central Bohemia the lowest (see Table 8 and Figure 5).

Table 8 also summarizes the percent of births that were either first or second births. For example, in 1975 in Central Bohemia 87.3 percent of all births were first or second children. As shown, Slovakia has a lower percent of

TABLE 8 Fertility characteristics: CSSR regions, selected years.

Region	Crude birth rate (per thousand)				Total fertility rate (per woman)				1st and 2nd births (percent)				Mean age of the fertility schedule[a]			
	1961	1965	1970	1975	1961	1965	1970	1975	1961	1965	1970	1975	1961	1965	1970	1975
Central Bohemia	10.3	12.4	12.8	17.3	1.718	1.893	1.689	2.289	86.0	86.5	89.9	87.3	25.4	25.4	25.5	25.3
Southern Bohemia	13.9	14.6	15.0	18.6	2.227	2.229	2.028	2.417	77.6	76.3	85.3	81.9	25.9	25.9	25.1	25.1
Western Bohemia	14.8	15.7	15.5	19.7	2.220	2.201	1.933	2.456	78.1	78.2	84.3	81.9	25.2	25.2	24.6	24.9
Northern Bohemia	13.9	16.3	16.8	20.6	2.053	2.205	1.968	2.485	77.2	77.9	85.4	81.9	24.9	25.2	24.5	24.7
Eastern Bohemia	13.5	14.3	15.2	19.1	2.149	2.166	2.002	2.469	80.0	80.7	86.7	83.2	25.6	25.5	24.9	24.9
Southern Moravia	14.7	15.4	15.0	19.1	2.243	2.244	1.972	2.486	76.6	77.9	84.2	81.7	26.0	25.9	25.2	25.2
Northern Moravia	16.4	17.8	16.7	20.1	2.373	2.423	2.054	2.474	74.9	75.1	82.1	80.1	25.5	25.7	25.2	25.1
Western Slovakia	18.6	17.3	16.3	19.6	2.676	2.493	2.152	2.384	64.5	66.6	74.9	77.7	26.5	26.5	26.0	25.8
Central Slovakia	21.3	19.5	17.8	20.3	3.043	2.854	2.458	2.542	60.1	60.7	69.6	73.0	26.9	26.8	26.2	25.9
Eastern Slovakia	23.8	22.0	20.1	22.3	3.314	3.156	2.744	2.805	54.5	55.7	64.7	67.7	27.3	27.2	26.6	26.2
CSSR	15.8	16.4	15.9	19.6	2.344	2.369	2.074	2.461	71.2	72.8	80.0	79.6	25.9	26.0	25.5	25.4
CSR	13.7	15.1	15.1	19.1	2.112	2.178	1.929	2.432	78.7	79.3	85.4	82.8	25.5	25.6	25.0	25.1
SSR	20.8	19.3	17.8	20.6	2.960	2.782	2.400	2.548	60.1	61.4	70.1	73.3	26.8	26.8	26.3	25.9

[a]The mean age of the fertility schedule was calculated using the formula:

$$\bar{m} = \sum_{x} (x + 2.5)F(x)/[\sum_{x} F(x)]$$

where $F(x)$ equals the age-specific fertility rates per thousand population.
SOURCE: Federal Statistical Office, selected years.

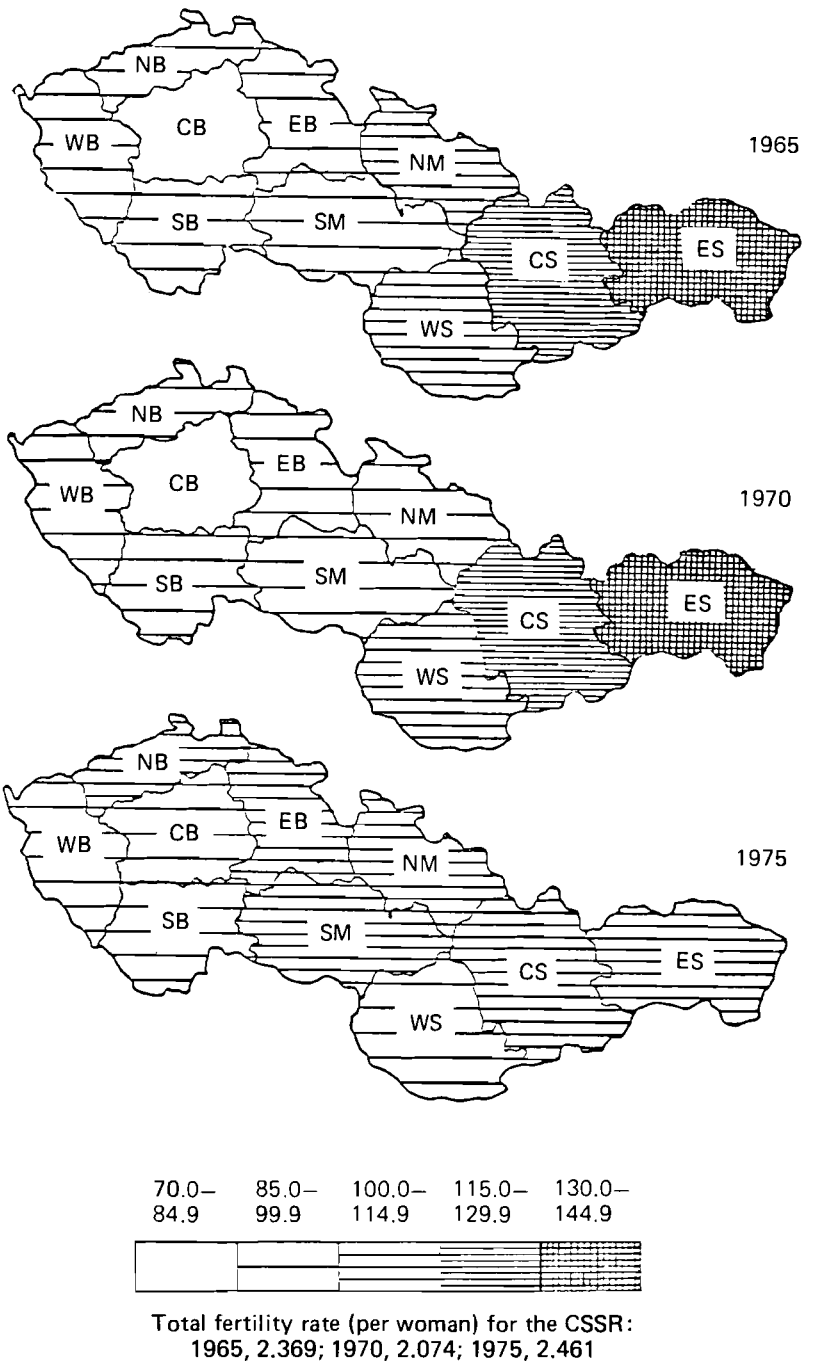

FIGURE 6 Relative total fertility rates for the CSSR regions, 1965, 1970, and 1975. Note: The values represent the ratio (percent) of the regional total fertility rates to the CSSR total fertility rate.

first and second order births than does the Czech Republic, implying that more third and fourth order births occur in the SSR than in the CSR. Over the years, however, the differences between these two republics have declined.

Differences in the mean ages of the fertility schedules have also declined in Czechoslovakia (Table 8), again illustrating the growing homogeneity of the population.

2.3 Mortality

MORTALITY IN THE CZECH AND SLOVAK REPUBLICS AND ALL OF CZECHOSLOVAKIA, 1945–1978

The evolution of mortality in Czechoslovakia after World War II can be divided into two basic stages, separated by the beginning of the 1960s. The first stage shows a sudden drop in the mortality level, the second bears characteristics of stagnation. Table 9 gives the life expectancies at birth after the war, and Table 10 shows infant mortality rates.

During the period 1950–1960, Czechoslovakia experienced the highest increase in life expectancy at birth since the second half of the previous century. Mortality rates for both sexes and the majority of the age groups decreased during this decade. The elongation of the life expectancy at birth, however, was primarily caused by the rapid drop in infant mortality (58 percent for males and 44 percent for females in the CSR; 61 percent for males and 50 percent for

TABLE 9 Life expectancy at birth by sex: CSSR, CSR, and SSR, 1949–1978.

Period or year	Life expectancy at birth[a]					
	CSSR		CSR		SSR	
	Male	Female	Male	Female	Male	Female
1949–1951	60.93	65.53	62.16	66.97	59.00	62.37
1955	66.24	71.15	66.74	71.79	65.58	69.91
1960–1961	67.64	73.12	67.55	73.41	68.36	72.73
1965	62.27	73.20	67.15	73.42	67.90	72.86
1970	66.23	72.94	66.12	73.01	66.73	72.92
1971	66.25	73.25	66.18	73.32	66.59	73.22
1972	67.03	73.62	67.22	73.66	66.91	73.72
1973	66.53	73.49	66.52	73.64	66.77	73.32
1974	66.73	73.53	66.76	73.54	66.84	73.65
1975	66.90	73.86	67.01	73.94	66.79	73.82
1976	66.99	74.05	67.07	74.14	66.97	74.02
1977	66.99	74.12	67.13	74.14	66.76	74.17
1978	67.08	74.12	67.21	74.23	66.90	74.02

[a]The figures after 1965 were calculated according to the internationally recommended definition of live-born children.

SOURCES: Srb 1967 and Federal Statistical Office, selected years.

TABLE 10 Infant mortality (both sexes combined): CSSR, CSR, and SSR, 1945–1978.

Period (average annual) Year	Number of infant deaths per thousand live births[a]		
	CSSR	CSR	SSR
1945–1949	99.9	86.7	130.2
1950–1954	58.2	46.8	78.7
1955–1959	31.0	25.1	40.5
1960–1964	22.5	19.8	26.8
1965–1969	23.5	22.1	25.9
1970–1974	21.4	19.7	24.6
1970	22.1	20.2	25.7
1971	21.7	20.2	24.4
1972	21.6	19.5	25.4
1973	21.3	19.4	24.8
1974	20.5	19.3	22.8
1975	20.8	19.4	23.7
1976	21.0	19.1	24.5
1977	19.7	18.7	21.5
1978	18.8	17.1	21.8

[a]The figures after 1965 were calculated according to the internationally recommended definition of live-born children.
SOURCES: Srb 1967 and Federal Statistical Office, selected years.

females in the SSR (Srb *et al.* 1971, p. 332)). Because of the faster decrease of the mortality level in Slovakia, by the end of the 1950s and the beginning of the 1960s there was a leveling off of life expectancy at birth in both republics.

Life expectancy at birth unfortunately diminished once again in the 1960s and remained at a relatively stable level throughout the decade. According to an analysis made by the Federal Statistical Office (see Causes of Increase of Mortality in 1960–1970), mortality rates went up largely as a result of male deaths. Male mortality increased about 16.1 percent in the CSSR (19.5 percent in the CSR and 7.3 percent in the SSR), whereas the increase for females was only 2.9 percent (4.6 percent in the CSR and a decrease of about 1.9 percent in the SSR). Deaths were more noticeable in males above 30 years of age, particularly ages 40–50 and above 65; death rates did not increase for females before ages 60–80. The main causes of death were diseases of the blood system, tumors, accidents, poisonings, and suicides. In 1960 the share of the above-mentioned causes was 71.6 percent, and in 1970 it was 79.7 percent.

A slight improvement in the mortality level began in 1970. By 1978 life expectancy at birth reached 70.6 years in the CSSR (70.7 in the CSR and 70.5 in the SSR). Because of a rise in female life expectancies, the gap between male and female expected lifetimes grew. (In 1949–1950 it was 4.6 years in

the CSSR; in 1960–1961, 5.5 years; in 1970, 6.7 years; and in 1978, 7.0 years.)

REGIONAL MORTALITY DIFFERENTIALS

Basic characteristics of the mortality level's evolution in the 10 CSSR regions are given in Table 11. Interesting comparisons may be drawn from these data. Contrary to the gradual equalizing of fertility levels across regions, mortality differentials have remained more or less the same over the last 15–20 years. The male life expectancy at birth was about 4.2 percent higher in the highest region than in the lowest region in 1960/1961, about 4.0 percent in 1970/1971, and about 4.1 percent in 1975/1976. Between 1960 and 1975 the variability of female life expectancies at birth ranged from 3.0 to 3.4 percent.

The age structure of the population is an important variable in regional life expectancy differentials. Characteristically in Czechoslovakia, the older age groups have experienced a gradual decrease in regional variability, whereas the differences of younger age groups remain more or less at the same level. However, infant mortality, the strongest influence on life expectancy at birth, has increased in regional variability.

As mentioned above, there is a growing discrepancy between male and female life expectancies. Although this discrepancy continues to exist across regions, this variable is becoming more homogeneous.

The order or ranking of the level of mortality has remained relatively constant over the years. The highest life expectancy at birth for both sexes combined is in Southern Moravia, followed by Eastern Bohemia. The lowest level exists in Northern Bohemia, followed by Western Bohemia.

Northern Bohemia and the Slovakian regions have high levels of infant mortality and deaths during the ages 15–25. A comparison of the age-specific death rates in the two republics shows more deaths in younger age groups and less deaths in older age groups in Slovakia than in the CSR (Figure 7). This regularity applies typically for males; females have no such visible differences in age-specific death rates between the republics.

It is possible to characterize the relative regional level of mortality by using a standardization that applies the national age-specific death rates (in the CSSR) to the age groups (5-year age groups) in each regional population and compares them with the observed number of deaths. From the analysis of the years 1960/1961, 1970/1971, and 1975 (Table 12 and Figure 8), we can see that Northern Bohemia has a mortality rate for both males and females that is at least 10 percent higher than the CSSR standard in all the selected years. From the point of view of male mortality, Western Bohemia is the closest to Northern Bohemia. Central Bohemia has the third highest standardized mortality ratio for both sexes. On the contrary, the lowest male mortality levels in comparison with the CSSR standard exist in the Slovakian regions, Southern Moravia, and Eastern Bohemia. During the whole observed period, the lowest female standardized

TABLE 11a Crude death rates and infant mortality rates: CSSR regions, selected years.

Region	Crude death rate (per thousand)				Infant mortality rate[a]			
	1961	1965	1970	1975	1961	1965	1970	1975
Central Bohemia	11.5	12.4	14.7	14.6	17.4	24.2	20.5	21.3
Southern Bohemia	11.1	12.1	13.3	12.6	18.9	26.0	19.1	19.5
Western Bohemia	9.3	10.0	12.1	11.7	20.9	23.1	19.7	17.4
Northern Bohemia	8.7	9.6	11.4	11.4	22.2	26.6	24.6	24.4
Eastern Bohemia	10.9	12.0	13.6	12.8	17.2	22.2	20.0	16.8
Southern Moravia	9.3	10.3	12.2	12.1	19.2	20.7	17.4	16.4
Northern Moravia	8.2	8.8	10.4	10.5	20.3	24.9	20.7	19.6
Western Slovakia	7.7	8.6	10.0	10.1	25.5	27.7	25.4	21.7
Central Slovakia	7.6	8.2	9.4	9.5	27.2	27.4	22.9	21.6
Eastern Slovakia	7.0	7.6	8.3	8.8	31.3	30.7	28.8	28.5
CSSR	9.2	10.0	11.6	11.5	22.7	25.5	22.1	20.8
CSR	9.9	10.7	12.6	12.4	19.3	23.7	20.2	19.4
SSR	7.5	8.2	9.3	9.5	27.8	28.5	25.7	23.7

TABLE 11b Life expectancies by sex at birth and age 60: CSSR regions, selected years.

	Life expectancy at birth by sex						Life expectancy at age 60 by sex					
	1960/1961		1970/1971		1975/1976		1960/1961		1970/1971		1975/1976	
Region	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Central Bohemia[b]	67.5	73.3	66.1	73.0	67.0	74.0	14.6	18.1	13.9	18.0	14.5	18.5
Southern Bohemia	67.5	73.2	66.5	73.8	67.3	74.4	15.1	18.2	14.5	18.4	14.9	18.9
Western Bohemia	66.4	72.8	65.1	72.3	66.5	73.5	14.6	17.9	13.6	17.6	14.0	18.3
Northern Bohemia	66.2	72.2	64.6	71.9	65.6	72.7	14.3	17.6	13.4	17.3	13.9	17.9
Eastern Bohemia	68.2	73.8	66.8	73.6	68.3	74.6	15.3	18.4	14.5	18.3	15.2	18.8
Southern Moravia	69.0	74.4	67.2	74.2	68.0	75.2	16.2	19.2	14.9	18.8	15.2	19.2
Northern Moravia	67.3	73.5	66.2	73.2	66.8	74.0	15.4	18.3	14.4	18.1	14.7	18.6
Western Slovakia[c]	68.7	73.1	67.3	73.2	67.2	74.0	16.6	18.5	15.5	18.7	15.6	19.2
Central Slovakia	68.0	72.4	66.8	73.2	67.0	74.3	16.5	18.2	15.5	18.4	15.9	19.2
Eastern Slovakia	68.4	72.6	66.3	72.9	66.7	73.8	16.9	18.5	15.8	18.5	16.0	19.2
CSSR	67.6	73.1	66.2	72.9	66.9	74.0	15.5	18.4	14.6	18.3	14.9	18.6
CSR	67.6	73.4	66.1	73.0	67.0	74.0	15.1	18.3	14.3	18.2	14.6	18.5
SSR	68.4	72.7	66.7	72.9	66.9	73.9	16.6	18.4	15.7	18.7	15.7	19.0
Range between highest and lowest regional LE values (10 regions)	2.8	2.2	2.7	2.3	2.7	2.5	2.6	1.6	2.4	1.5	2.1	1.3
Maximum regional difference of LE between males and females	6.4		7.3		7.3		3.5		4.1		4.3	
Minimum regional difference of LE between males and females	4.2		5.9		6.3		1.6		2.7		3.3	

[a] The figures after 1965 were calculated to the internationally recommended definition of live-born children.
[b] Life expectancies (LE) of Central Bohemia during the period 1960/1961, 1970/1971, 1975/1976 were derived as an average of the published life expectancies of Prague and of the Central Bohemia administrative regional unit.
[c] Life expectancies of Western Slovakia during the periods 1970/1971 and 1975/1976 were derived as an average of the published life expectancies of Bratislava and of the Western Slovakia administrative regional unit.

SOURCES: Srb 1967, and Federal Statistical Office 1973, 1979.

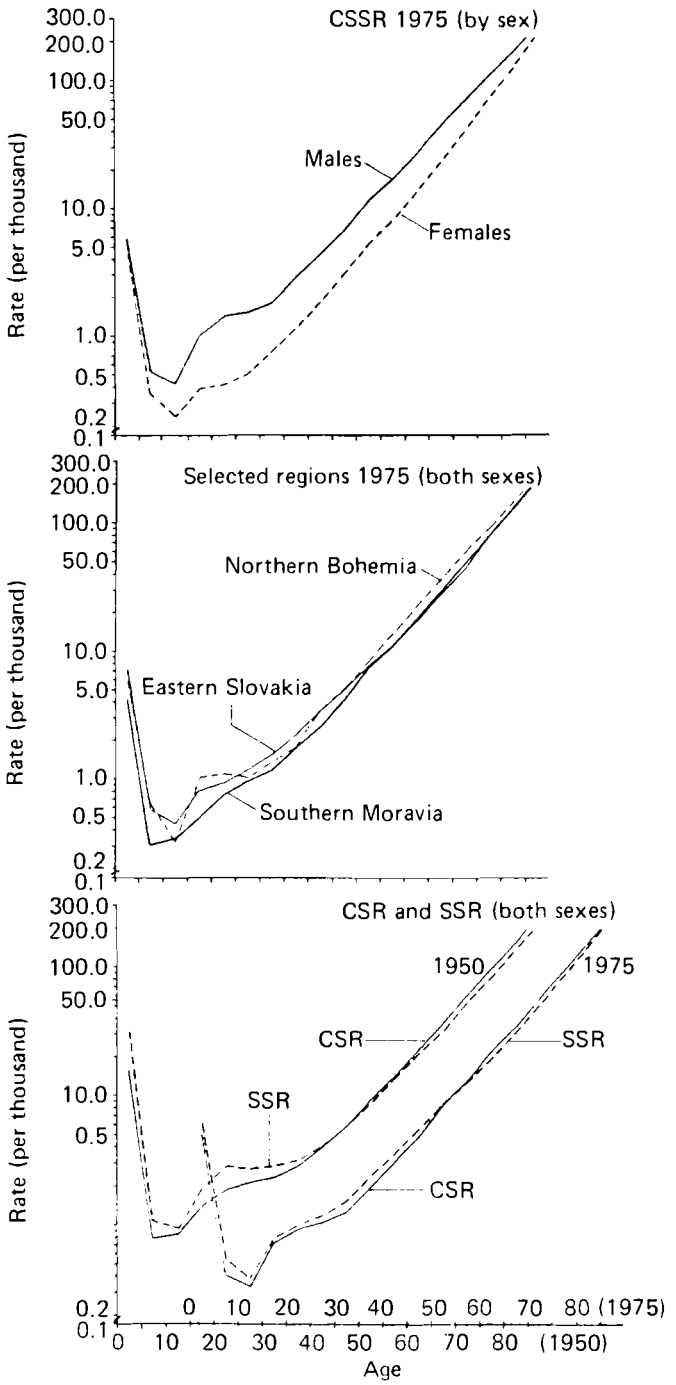

FIGURE 7 Age-specific mortality rates.

TABLE 12 Standardized mortality ratio (percent)[a]: CSSR regions, 1960/1961, 1970/1971, and 1975.

Region	1960/1961		1970/1971		1975		Both sexes combined	Population below age 60	Population above age 60
	Male	Female	Male	Female	Male	Female			
Central Bohemia	107.7	102.5	107.7	104.3	105.9	103.0	104.5	98.1	105.8
Southern Bohemia	103.1	101.8	102.6	99.1	96.8	97.1	97.0	94.6	97.5
Western Bohemia	112.6	104.8	114.4	108.4	110.4	107.3	108.9	100.6	111.4
Northern Bohemia	114.1	110.0	116.0	111.7	113.7	114.6	114.1	109.9	115.5
Eastern Bohemia	100.3	99.4	101.3	100.3	94.7	97.8	96.2	89.1	97.8
Southern Moravia	91.5	90.0	95.8	95.0	95.6	93.7	94.7	90.2	95.7
Northern Moravia	101.7	98.7	101.1	100.8	102.7	101.1	102.0	99.2	102.8
Western Slovakia	90.6	98.3	92.0	98.1	95.5	97.0	96.2	105.5	93.4
Central Slovakia	93.1	102.7	92.2	95.6	93.6	96.5	94.8	104.8	91.8
Eastern Slovakia	90.5	101.6	88.4	95.0	95.6	98.4	96.8	112.1	91.5
CSSR	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[a]Ratio (percent) of actual deaths in the region to the deaths expected by applying the CSSR age-specific mortality rates (5-year age groups) to the regional population at risk.

SOURCE: Derived from Federal Statistical Office, selected years.

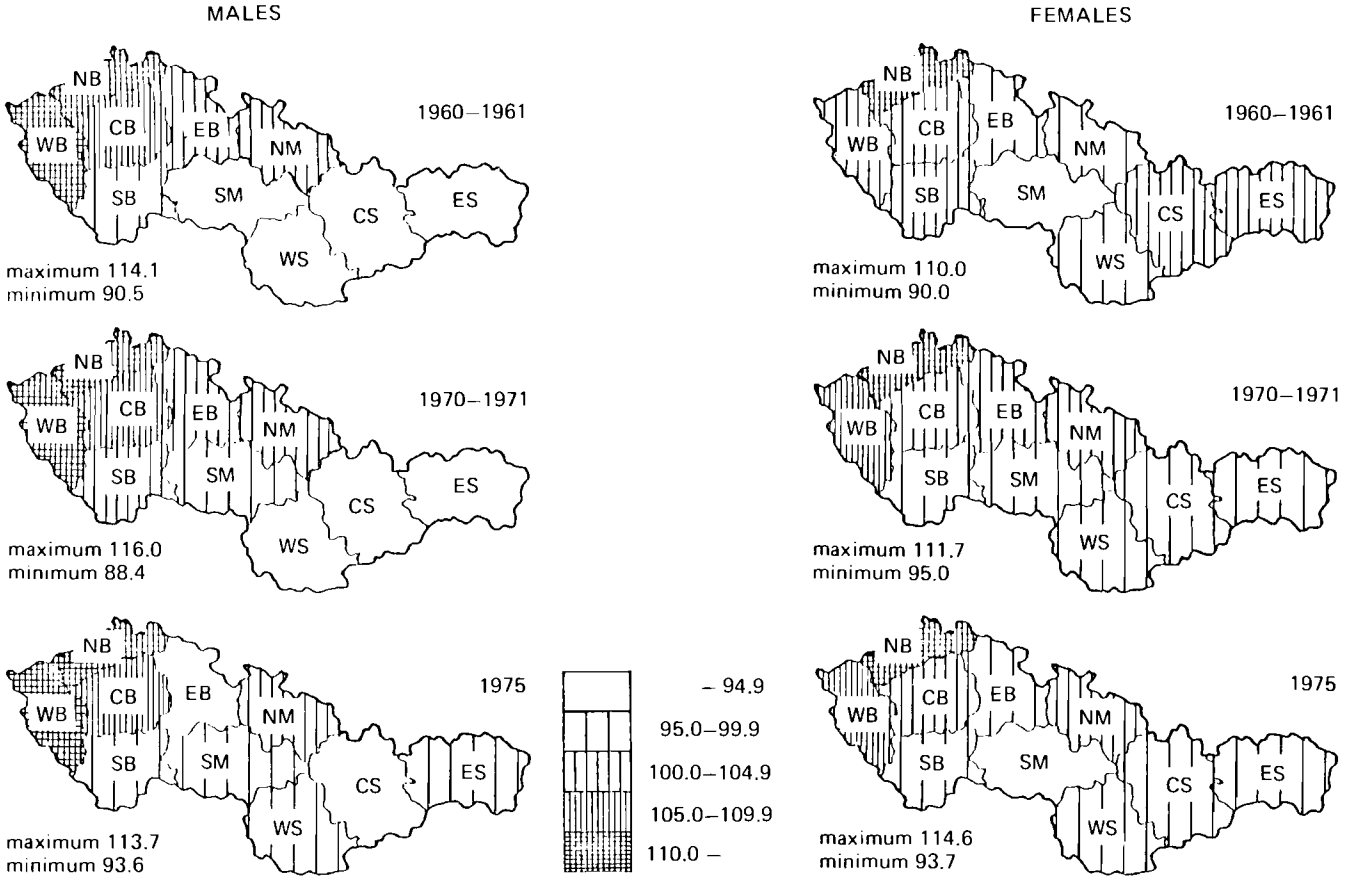

FIGURE 8 Standardized mortality ratios (males and females) for the CSSR regions, 1960–1961, 1970–1971, and 1975. Note: The values represent the ratio (percent) of actual deaths in the region to deaths expected by applying the CSSR age-specific mortality rates to the regional population at risk.

mortality ratio is in Southern Moravia. The development of the mortality level in Southern Bohemia is a unique example of a gradual improvement in the standardized mortality ratio for males as well as females.

As previously mentioned, differences in age-specific death rates exist among the regions. The basic picture of this regional differentiation can be seen from the data in the last columns of Table 12. Let us compare, for example, Eastern Bohemia and Western Slovakia. In both these regions the standardized mortality ratio for the 1975 total population is the same. But differences can be found in the population younger than 60 years and older than 60 years. Eastern Bohemia is in both cases below the standard of the CSSR, whereas the younger population of Western Slovakia is above the standard. This result reflects the differences in the life expectancies of both regions – Eastern Bohemia has a higher life expectancy at birth, Western Slovakia has a higher life expectancy at age 60.

2.4 Internal Migration

It is impossible in this brief study to describe in full detail the migration process in Czechoslovakia. Attention is paid, therefore, to the evaluation of main trends in the postwar development of internal migration and to recent characteristics of migration among the 10 regions, focusing on the age structure of migrants. For further aspects of the CSSR migration process, see the literature cited in subsection 1.1

Recall that migration data in Czechoslovakia are derived from a registration system and that migration is defined as a permanent change of residence between administrative communes. The registration system records the number of moves, not of migrants; if a certain person changes his or her permanent address twice a year there are two moves recorded.

MIGRATION IN THE CZECH AND SLOVAK REPUBLICS AND IN CZECHOSLOVAKIA AS A WHOLE, 1950–1978

The intensity of internal migration in Czechoslovakia has undergone important changes since 1950. As can be seen in Table 13 and Figure 9, the crude migration rate decreased rapidly during the course of the 1950s from about 50 per thousand population to about 30 per thousand. Since the beginning of the 1960s the amount of internal migration slowly diminished and in the second half of the 1970s it was about 25 per thousand. The crude migration rate was considerably higher in the Czech Republic than in Slovakia in the 1950s, with the decrease being more pronounced in the CSR; after 1970, however, there was a marked tendency toward equalization. The reason for the higher migration intensity in the CSR at the beginning of the period under observation is quite clear. In the CSR, territories formerly inhabited by Germans were newly settled, mainly by Czechs, after World War II. This process continued into the 1950s (see also subsection 4.1).

TABLE 13 Internal migration characteristics given in crude rates (per thousand): CSSR, CSR, and SSR, 1950–1978.

Region	Period (average annual) Year	Crude rate (per thousand) Total migration within CSSR[a]	Migration within regions[b]	Migration between regions within republics[b]	Migration between republics
CSSR	1950–1954	48.9	25.8	18.8	4.3
	1955–1959	32.7	18.1	11.9	2.7
	1960–1964	28.7	19.4	7.2	2.1
	1965–1969	26.2	17.9	6.4	1.9
	1970–1974	26.3	19.0	5.9	1.4
	1975	26.3	19.4	5.7	1.2
	1976	27.2	20.4	5.6	1.2
	1977	24.6	18.3	5.2	1.1
	1978	24.9	18.6	5.2	1.1
		Total migration within CSSR[a]	Migration within CSR regions[b]	Migration between CSR regions[b]	Migration from CSR to SSR
CSR	1950–1954	52.2	28.6	21.3	2.3
	1955–1959	35.6	20.4	13.7	1.5
	1960–1964	30.8	21.0	8.7	1.1
	1965–1969	28.0	19.2	7.8	1.0
	1970–1974	27.8	19.9	7.1	0.8
	1975	27.2	19.6	6.9	0.7
	1976	27.7	20.2	6.8	0.7
	1977	25.2	18.3	6.3	0.7
	1978	25.4	18.5	6.3	0.6
		Total migration within CSSR[a]	Migration within SSR regions[b]	Migration between SSR regions[b]	Migration from SSR to CSR
SSR	1950–1954	40.7	19.2	12.3	9.2
	1955–1959	25.4	12.4	7.4	5.6
	1960–1964	24.1	16.0	3.6	4.5
	1965–1969	22.0	15.1	3.2	3.7
	1970–1974	23.1	17.4	3.1	2.6
	1975	24.5	19.1	3.2	2.2
	1976	26.1	20.8	3.2	2.1
	1977	23.3	18.4	2.9	1.9
	1978	24.0	18.9	3.1	2.0

[a] Total internal migration includes: migration between republics, between regions within republics, between districts within regions, between communes within districts. Migration within administrative communes is not included.

[b] The migration within and between regions: includes 19 administrative regions (13 in the CSR and 6 in the SSR) until 1959; from 1960 the number of regions drops to 10 (7 in the CSR and 3 in the SSR). Czech regions from 1960: Central Bohemia, Southern Bohemia, Western Bohemia, Northern Bohemia, Eastern Bohemia, Southern Moravia, Northern Moravia. Slovak regions from 1960: Western Slovakia, Central Slovakia, Eastern Slovakia.

SOURCE: Derived from Federal Statistical Office, selected years.

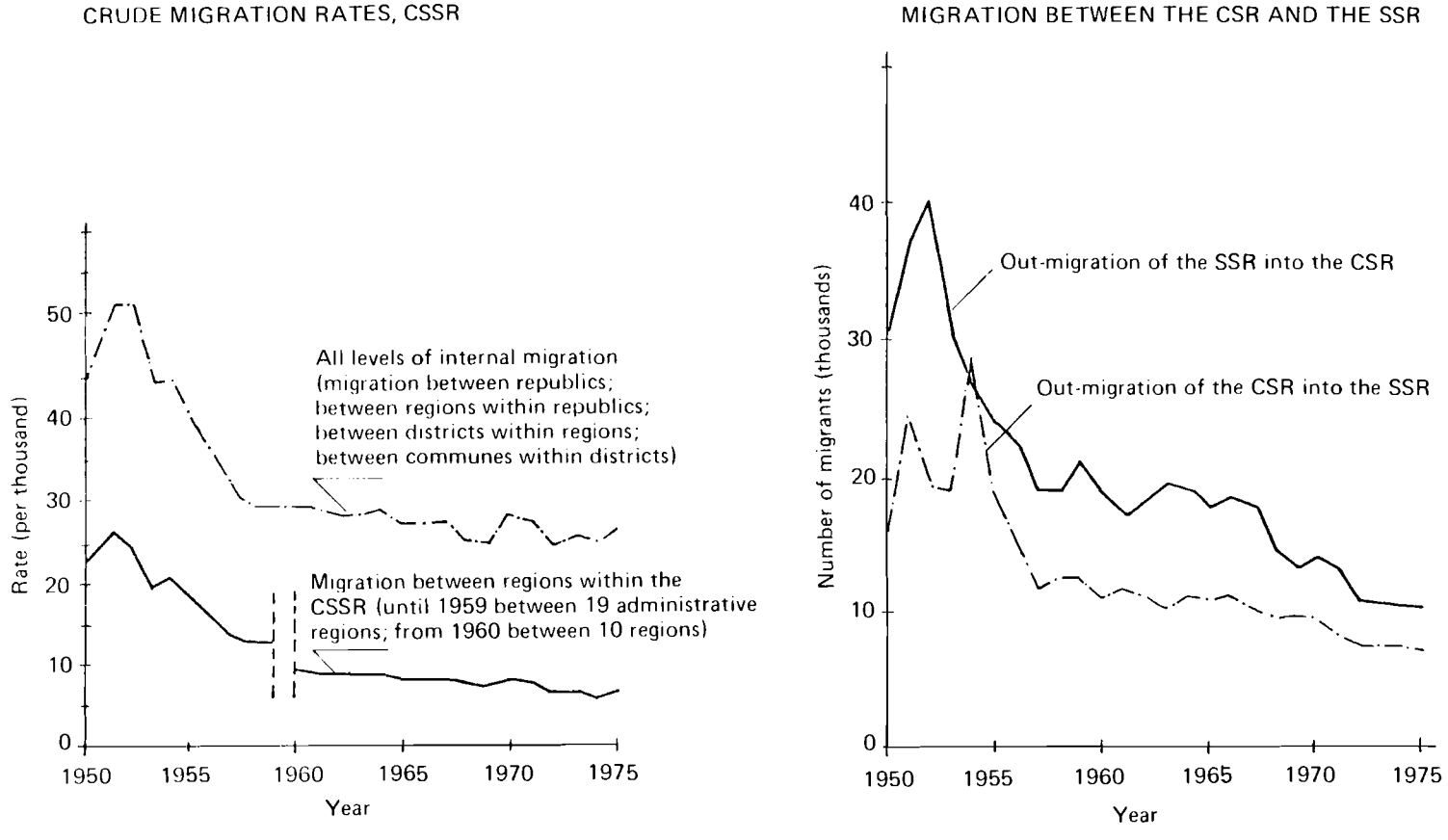

FIGURE 9 Crude migration rates in the CSSR and migration between the CSR and the SSR, 1950–1975.

The gradual slowdown of internal migration in Czechoslovakia since the beginning of the 1960s was caused by a lower number of migrants in the Czech Republic, while the migration rates of the Slovakian population remained basically the same. The decrease in the CSR migration rate was also influenced by a rapid decline in the number of administrative communes, which were the basic spatial units for registration. (The number of administrative communes in the CSR in 1950 was 11 459; in 1961, 8 726; and in 1978, 6 076; in the SSR in 1950 it was 3 344; in 1961, 3 237; and in 1978, 2 792). Roughly speaking, almost half of the variation in intensity of internal migration in the Czech Republic and in Czechoslovakia as a whole during the period 1960–1978 can be explained by just such changes in the number of basic spatial units.*

The data collected in Table 13 show other features of Czechoslovakian spatial mobility. Generally, the larger the region used in the migration analysis, the more rapid the decline in migration rates. The highest level of migration in Czechoslovakia is between the Czech and the Slovak Republics. The crude out-migration rate from the CSR to the SSR decreased from 2.3 per thousand at the beginning of the 1950s to 0.6 per thousand in 1978; the reverse flow was from 9.2 per thousand to 2.0 per thousand. The net migration loss of the Slovak Republic to the Czech Republic dropped considerably from an annual average of 10 368 persons in the early 1950s to 3 564 persons in the period 1971–1975 (Figure 9).

Interregional migration had a similar tendency, being quite high in the 1950s and decreasing steadily. Comparison is difficult, however, because until 1959 19 regions were used in the analysis, and since 1960 only 10 regions were used. In spite of this, the decrease of migration intensity at this level is evident. The trends of interregional migration within the republics, however, were different; there was a marked decrease in the CSR but almost a stability (or even an increase) in Slovakia. The least change in migration intensity was recorded at the lowest regional level, i.e., between communes within administrative districts.

We may conclude that the characteristic feature of postwar migration in Czechoslovakia, and especially in the last 15–20 years, is the decrease of migration intensity at the highest regional levels. This trend is caused by the gradual leveling of economic and social differences at this level. At the same time, there is a continuing and strengthening concentration of economic and social activities in lower regional levels that reflects, mainly in the CSR, a growing attractivity of the small- and middle-sized cities and a stability of migration rates among communes within administrative districts. The result of this tendency is the gradual shortening of distances migrated and the increased importance placed on housing and environmental conditions (Kühnl 1978).

*If the number of communes decreases by 1 000, then the total number of internal migrants declines by about 6 000–12 000 persons. This result is derived from an assumption based on the size of administratively merged communes (of 200 to 300 inhabitants) and on the expected intensity of out-migration (30–40 per thousand).

INTERREGIONAL MIGRATION PATTERNS, 1961–1975

The evolution of interregional migration in recent years can be seen in the matrix of migration streams given in Table 14. In this table the averages of the annual number of migrants and crude migration rates for three 5-year periods beginning in 1961 are given, along with the total numbers of in- and out-migrants for each region. Several observations can be made on the basis of this table.

A decrease in crude out-migration rates over the periods given is evident in all 10 regions. But the decline in these rates has not been uniform across regions.

The ranking of regions from the point of view of total crude out-migration rates, however, has not changed significantly. The highest out-migration rates are consistently in Western and Northern Bohemia (almost 1.5 times as high as the regional average), and the lowest rates are typically in Western and Eastern Slovakia (60–70 percent of regional average).

There also exists a strong and increasingly positive correlation between regional in- and out-migration rates: the higher the region's in-migration rate, the higher its out-migration rate. Because of this, the regions having the highest out-migration rates also have the highest rate of migration turnover (about 21 persons per thousand were annually recorded as in- or out-migrants in the regions of Western and Northern Bohemia in the period 1971–1975; in Western and Eastern Slovakia it is about 10 persons per thousand). Note that the total level of regional migration interaction is closely linked with the geographical position of the regions and their mutual accessibility. (Most of the Bohemian regions have migration turnover rates above the national average, while all the rates of the Slovakian regions are below average.) The evolution of these internal migration turnover rates is shown in Figure 10.

Most interregional migration streams decreased in intensity during the period 1961–1975. Only five streams have higher out-migration rates in the period 1971–1975 than in the period 1961–1965 (from Central Bohemia to Southern and Eastern Bohemia, from Northern Bohemia to Southern Bohemia, and from Eastern Slovakia to Western Slovakia).

A faster decline in intensity can be seen for the longer distance migration streams. Thus the share of migration between adjacent regions has increased in Czechoslovakia (by 63.5 percent during the period 1961–1965 and by 67.9 percent during the period 1971–1975). The Northern to Central Bohemia migration stream continues to have the highest intensity, largely because of its central position and the attractivity of Prague – the core of Central Bohemia.

Pronounced changes can be seen in the migration balance of some regions during the years 1961–1975. Central Bohemia has the highest net in-migration rate during this period, mainly because of the presence of the capital, high industrialization, a large range of attractive economic activities, and a shortage of labor caused by a low natural increase. Central Bohemia's net migration gain at this time represents about 60 percent of the total gain of all regions having a positive net migration rate.

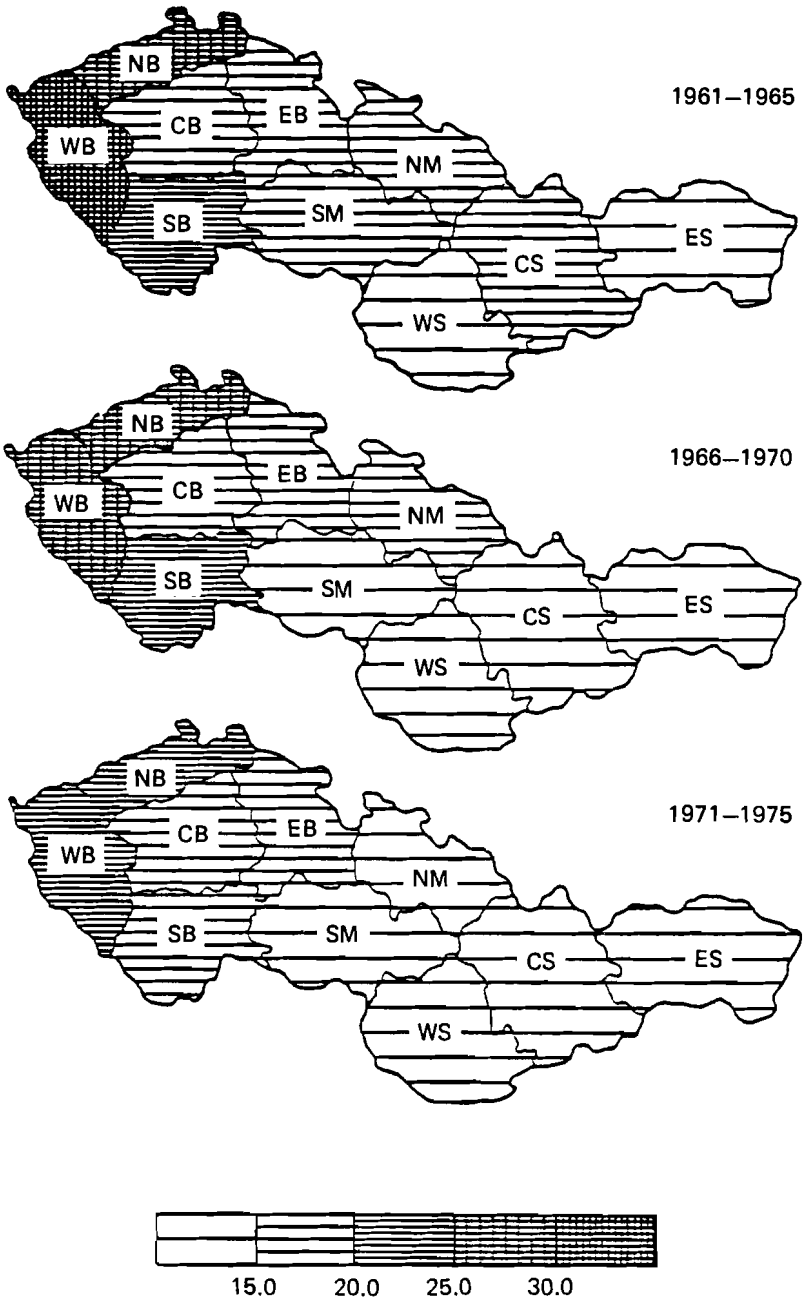

FIGURE 10 Internal migration turnover rates for the CSSR regions, 1961–1975.

TABLE 14 Average annual number of migrants N (thousands) and crude migration rates R (per 10 000 mid-year population): CSSR regions, 1961–1965, 1966–1970, and 1971–1975.

Region of origin and period	Region of destination																				Total out-migration[a]	
	CB		SB		WB		NB		EB		SM		NM		WS		CS		ES			
	N	*R*	*N*	*R*	*N*	*R*	*N*	*R*	*N*	*R*	*N*	*R*	*N*	*R*	*N*	*R*	*N*	*R*	*N*	*R*	*N*	*R*
Central Bohemia																						
1961–1965	–	–	7.9	6.9	15.1	13.2	22.6	19.8	13.2	11.5	7.1	6.2	7.5	6.6	3.3	2.9	2.2	1.9	1.5	1.3	80.4	70.3
1966–1970	–	–	8.6	7.5	14.9	13.0	20.8	18.1	13.9	12.1	6.6	5.8	6.3	5.4	3.4	3.0	1.8	1.5	1.4	1.2	77.7	67.6
1971–1975	–	–	9.8	8.6	13.1	11.5	19.3	16.9	14.7	12.9	6.2	5.4	5.2	4.6	2.5	2.2	1.6	1.4	1.3	1.1	73.7	64.6
Southern Bohemia																						
1961–1965	11.6	35.7	–	–	8.2	25.1	3.9	11.9	2.9	8.8	5.8	17.9	3.2	9.8	1.7	5.1	0.7	2.3	0.6	1.7	38.6	118.3
1966–1970	10.6	32.4	–	–	6.3	19.2	3.6	10.9	2.7	8.2	5.2	15.9	2.8	8.5	1.5	4.5	0.7	2.2	0.5	1.4	33.9	103.2
1971–1975	11.1	33.6	–	–	4.7	14.3	2.7	8.2	2.7	8.3	5.2	15.6	1.9	5.8	1.1	3.5	0.5	1.4	0.4	1.1	30.3	91.8
Western Bohemia																						
1961–1965	18.3	43.5	6.0	14.3	–	–	11.1	26.3	3.7	8.8	6.0	14.2	6.7	16.0	3.4	8.0	2.0	4.8	2.2	5.2	59.4	141.1
1966–1970	17.0	39.5	5.9	13.7	–	–	10.7	25.0	3.8	8.9	5.5	12.8	4.4	10.3	3.2	7.4	1.6	3.7	1.6	3.8	53.7	125.1
1971–1975	15.9	36.9	5.8	13.4	–	–	9.0	20.8	3.6	8.3	5.4	12.5	3.3	7.6	2.2	5.1	1.1	2.6	1.1	2.6	47.4	109.8
Northern Bohemia																						
1961–1965	30.0	54.5	3.7	6.8	13.4	24.4	–	–	10.1	18.3	5.1	9.3	6.3	11.4	3.6	6.5	2.1	3.9	2.4	4.4	76.7	139.5
1966–1970	28.5	51.2	4.4	7.9	15.0	26.9	–	–	10.1	18.2	4.9	8.8	5.6	10.1	3.4	6.1	1.8	3.2	1.7	3.1	75.4	135.5
1971–1975	26.4	47.2	4.7	8.4	10.3	18.5	–	–	9.0	16.1	4.3	7.8	3.7	6.7	2.2	4.0	1.3	2.3	1.4	2.4	63.3	113.4
Eastern Bohemia																						
1961–1965	19.1	31.8	3.0	5.0	5.6	9.4	10.8	17.9	–	–	9.6	16.0	9.9	16.5	2.3	3.9	1.2	2.0	1.2	1.9	62.7	104.4
1966–1970	18.3	30.4	3.1	5.2	5.1	8.4	10.3	17.1	–	–	8.9	14.8	7.8	12.9	2.4	3.9	1.1	1.8	1.0	1.6	58.0	96.1
1971–1975	18.3	30.2	3.0	4.9	3.8	6.2	9.0	14.8	–	–	8.3	13.7	5.8	9.6	1.8	2.9	1.0	1.6	0.9	1.4	51.9	85.3
Southern Moravia																						
1961–1965	11.5	12.0	6.0	6.2	8.9	9.3	6.2	6.5	7.8	8.1	–	–	35.6	37.1	6.1	6.4	2.4	2.6	1.5	1.6	86.0	89.8
1966–1970	9.4	9.6	5.6	5.7	7.1	7.4	5.2	5.4	7.9	8.1	–	–	30.0	30.9	5.2	5.4	2.3	2.3	1.2	1.2	73.9	76.0
1971–1975	9.1	9.3	5.4	5.6	4.6	4.7	3.9	4.0	7.2	7.3	–	–	21.5	21.9	4.7	4.8	1.9	2.0	1.0	1.0	59.3	60.6
Northern Moravia																						
1961–1965	8.9	10.6	2.0	2.4	4.6	5.5	4.9	5.8	5.6	6.6	22.0	26.1	–	–	6.2	7.4	5.0	5.9	3.4	4.0	62.6	74.3
1966–1970	8.4	9.5	2.8	3.1	4.8	5.4	4.6	5.1	6.4	7.2	21.9	24.6	–	–	6.6	7.4	4.7	5.3	3.2	3.6	63.4	71.2
1971–1975	8.1	8.8	2.4	2.6	3.6	3.9	3.5	3.8	5.6	6.0	21.7	23.6	–	–	4.2	4.6	3.7	4.1	2.1	2.3	54.9	59.7
Western Slovakia																						
1961–1965	5.0	6.5	2.1	2.4	4.6	5.2	4.6	5.1	3.4	3.8	6.5	7.3	11.5	12.7	–	–	20.4	22.6	6.3	7.0	64.4	71.6
1966–1970	4.3	4.6	1.7	1.9	3.4	3.6	3.6	3.8	3.1	3.4	6.2	6.6	8.4	9.0	–	–	18.0	19.2	5.3	5.7	54.0	57.8
1971–1975	3.4	3.6	1.2	1.2	2.0	2.0	2.3	2.3	2.4	2.4	4.8	5.0	4.7	4.8	–	–	17.9	18.6	5.0	5.3	43.7	45.3

Central Slovakia																					
1961–1965	3.2	4.8	1.3	2.0	2.9	4.4	2.9	4.4	1.7	2.5	3.5	5.3	12.0	18.0	23.9	35.9	–	–	9.5	14.3	60.9	91.6
1966–1970	2.9	4.2	0.9	1.3	2.0	2.8	2.3	3.3	2.0	2.9	3.7	5.3	9.6	13.8	24.1	34.7	–	–	8.1	11.7	55.6	80.0
1971–1975	2.6	3.6	0.7	1.0	1.3	1.8	1.6	2.3	1.4	2.0	2.7	3.7	6.7	9.4	24.6	34.5	–	–	8.2	11.5	49.8	69.8
Eastern Slovakia																					
1961–1965	3.1	5.3	1.0	1.7	4.2	7.2	5.8	10.2	2.2	3.8	2.2	3.8	8.1	14.1	7.5	13.1	7.5	13.1	–	–	41.6	72.3
1966–1970	3.6	5.8	1.0	1.7	3.4	5.6	3.7	6.1	2.7	4.4	2.1	3.5	8.0	13.0	8.2	13.5	7.7	12.5	–	–	40.4	66.1
1971–1975	3.2	5.0	0.9	1.4	2.4	3.8	3.2	5.0	1.9	2.9	1.9	2.9	4.6	7.2	9.0	13.9	8.1	12.5	–	–	35.2	54.6
Total in-migration[b]																					
1961–1965	110.7	96.9	33.0	101.4	67.5	160.2	72.8	132.2	50.6	84.2	67.8	70.8	100.8	119.8	58.0	64.5	43.5	65.2	28.6	49.7	633.3	90.7
1966–1970	103.0	89.6	34.0	103.8	62.0	144.5	64.8	116.3	52.6	87.2	65.0	66.9	82.9	93.2	58.0	62.1	39.7	57.2	24.0	39.3	586.0	81.8
1971–1975	98.1	85.9	33.9	102.7	45.8	106.3	54.5	97.5	48.5	80.0	60.5	61.8	57.4	62.4	52.3	54.3	37.1	51.9	21.4	33.2	509.5	69.9

[a] Total out-migration rate equals the rate per population of the region of origin.

[b] Total in-migration rate equals the rate per population of the region of destination.

SOURCE: Derived from Federal Statistical Office, selected years.

Central and Eastern Slovakia, on the other hand, have the highest net out-migration rates during the period 1961–1975. There are basic changes, however, in the regional structure of their net out-migration rates: a decrease in migration to the Czech regions (mainly Northern Moravia) and an increase to Western Slovakia. The net migration losses of these regions represent about 65 percent of the total loss of all regions having a negative net migration rate.

Some regions have changed from having a net migration loss to having a net gain (Southern Bohemia, Western Slovakia, and Southern Moravia), whereas others show the reverse trend (Western Bohemia and Northern Moravia).

The evolution of the major net interregional migration flows are illustrated in Figure 11, and the regional net migration rates are given in Figure 12.

THE AGE COMPOSITION OF MIGRANTS AND AGE-SPECIFIC MIGRATION RATES

Age selectivity is one of the most characteristic features of migration. In the following we will discuss the age patterns of migrants between the 10 regions of Czechoslovakia and analyze the population at risk of migrating.

Table 15 presents the basic characteristics of these migrants, using 1975 data. The largest percentage of migrants fall in the 20–24 age group, the mean age of all migrants in 1975 being 26 years (25.6 years for males, and 26.5 years for females).

One characteristic feature of the age-specific migration pattern in the CSSR is a relatively high share of older migrants; the proportion of migrants over 60 is about 7 percent in Czechoslovakia (about 8 percent in the CSR and about 5 percent in the SSR). Also of note is the difference in the number of children among migrants and non-migrants. The ratio of the 0–14 to 20–39 age groups is 41.5 percent among all migrants compared with about 80 percent for the whole population.

The age composition of migrants changes with the distance moved. The youngest are migrants between republics, whereas the migration at the lowest regional level, i.e., communes within administrative districts, has the oldest age composition.

For a better understanding of age-specific migration patterns, it is necessary to examine migration data by relating them to the population at risk. These age-specific out-migration rates are shown in Figures 13 and 14. One can see that the age-specific out-migration profiles (schedules) have a characteristic shape. The highest migration rate is in the 20–24 age group, which is accompanied by children below 10 years of age. The curve is lowest in the 10–14 age group and after 40 years, with a rise beginning somewhere between the ages of 60 and 70. (This increase is rather specific to migration in Czechoslovakia and can be explained by the rejoining of old people to the families of their children and by a relatively high intensity of movement to retirement homes.)

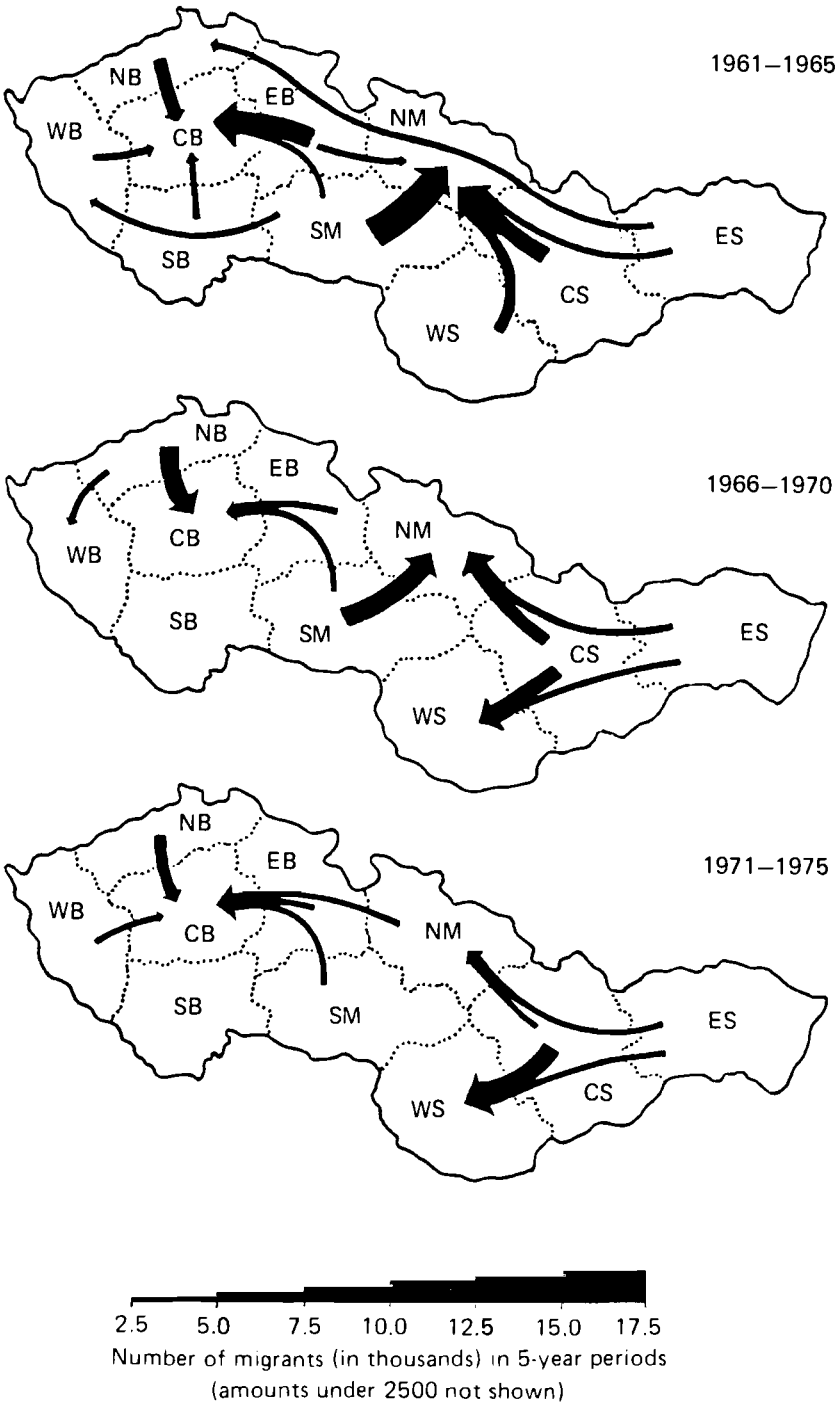

FIGURE 11 Main net migration flows among the CSSR regions, 1961–1965, 1966–1970, and 1971–1975.

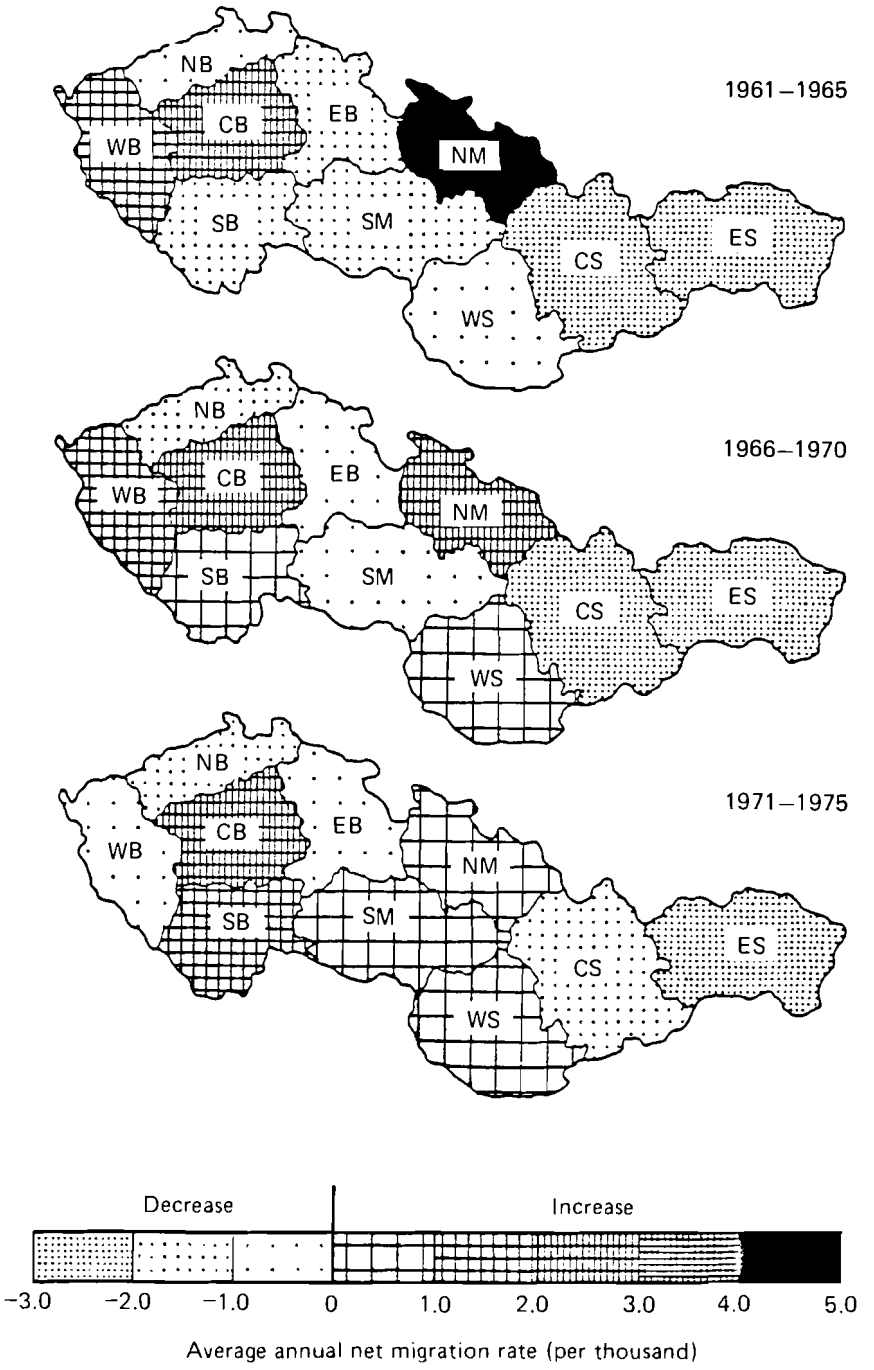

FIGURE 12 Internal net migration rates for the CSSR regions, 1961–1975.

TABLE 15 Characteristics of the age composition and sex structure of internal migrants by levels of move: CSSR, CSR, and SSR, 1975.

Republic and level of move	Mean age			Median age			Proportion of female population (percent)	Proportion of migrants above age 60 (percent)	$\frac{0-14}{20-39}$ 100	$\frac{20-29}{20-54}$ 100
	Both sexes combined	Male	Female	Both sexes combined	Male	Female				
CSSR										
Total migration within CSSR	26.0	25.6	26.5	23.7	24.3	23.1	50.9	7.1	41.5	70.3
between republics	23.7	23.6	23.9	22.4	22.9	21.7	48.3	4.7	51.0	69.1
between administrative regional units within republics	26.2	25.4	26.8	23.7	24.1	23.2	51.0	7.2	44.5	67.3
between administrative districts within administrative regional units	24.7	24.4	24.8	22.8	23.4	22.2	51.0	6.1	47.6	71.0
between communes within administrative districts	26.9	26.4	27.4	24.2	25.2	23.6	51.0	7.9	36.3	71.8
CSR										
Total migration within CSSR	26.7	26.1	27.3	23.9	24.5	23.3	50.6	7.9	42.2	68.5
Out-migration to SSR	24.7	24.7	24.8	23.0	23.6	22.2	49.0	5.6	53.8	64.1
Total migration within CSR	26.7	26.1	27.3	23.9	24.6	23.3	50.7	7.9	41.9	68.6
between administrative regional units	26.4	25.6	27.1	23.8	24.2	23.3	50.9	7.5	46.0	65.8
between administrative districts within administrative regional units	24.9	24.6	25.1	22.9	23.6	22.3	50.6	6.3	49.8	68.8
between communes within administrative districts	28.0	27.3	28.7	24.5	25.4	23.9	50.6	9.1	35.5	70.3
SSR										
Total migration within CSSR	24.5	24.3	24.7	23.2	23.8	22.7	51.4	5.4	40.1	74.4
Out-migration to CSR	23.0	22.9	23.2	22.0	22.6	21.4	47.9	4.1	49.2	72.5
Total migration within SSR	24.6	24.4	24.8	23.3	24.0	22.8	51.7	5.5	39.3	74.6
between administrative regional units	25.2	24.6	25.7	23.3	23.7	22.9	51.5	6.0	39.4	72.5
between administrative districts within administrative regional units	24.1	23.9	24.2	22.6	23.2	22.1	52.1	5.8	42.6	75.9
between communes within administrative districts	24.7	24.6	24.8	23.7	24.6	23.0	51.7	5.2	37.7	74.8

SOURCE: Derived from Federal Statistical Office 1975.

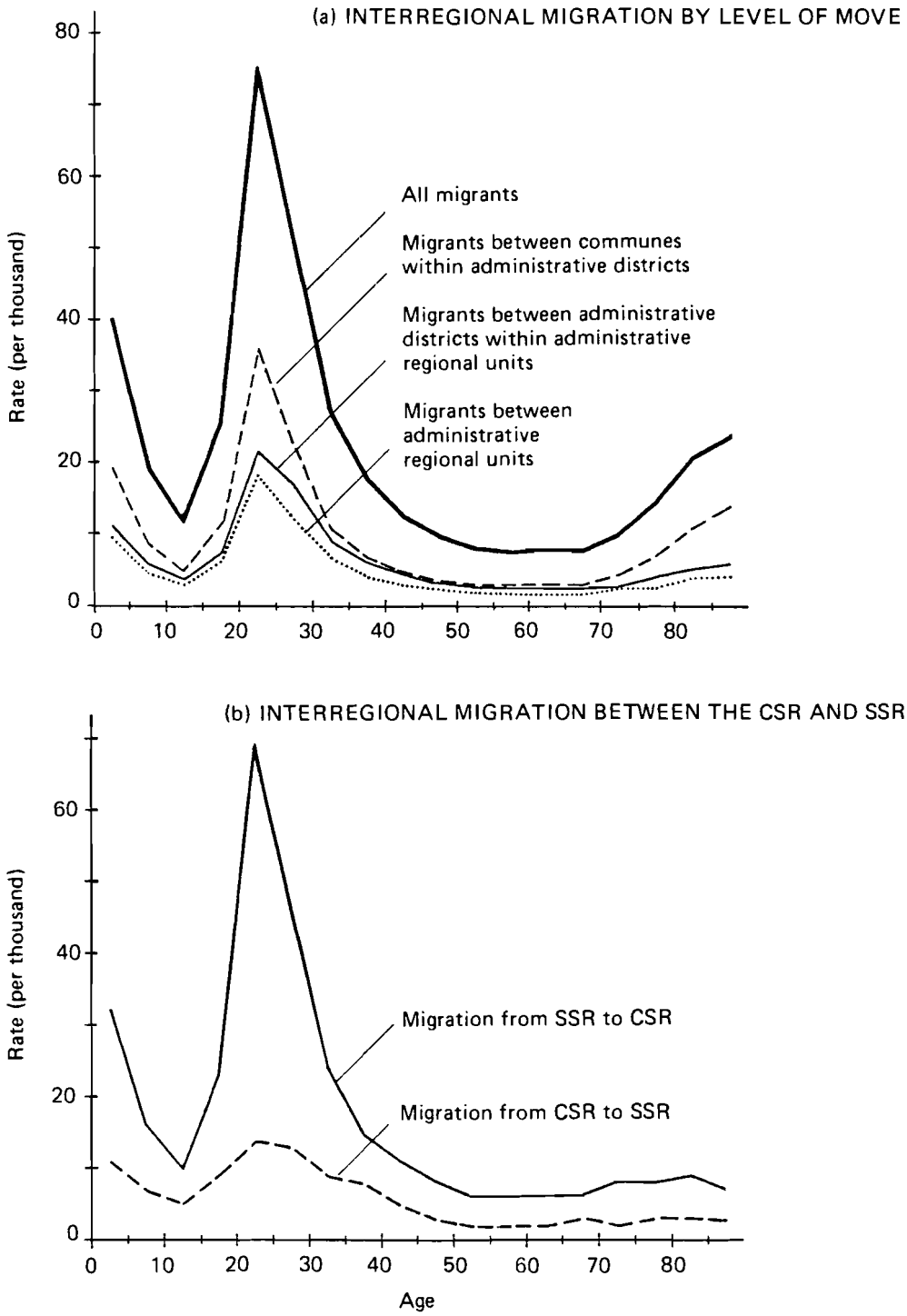

FIGURE 13 Migration profiles for the CSSR, 1975.

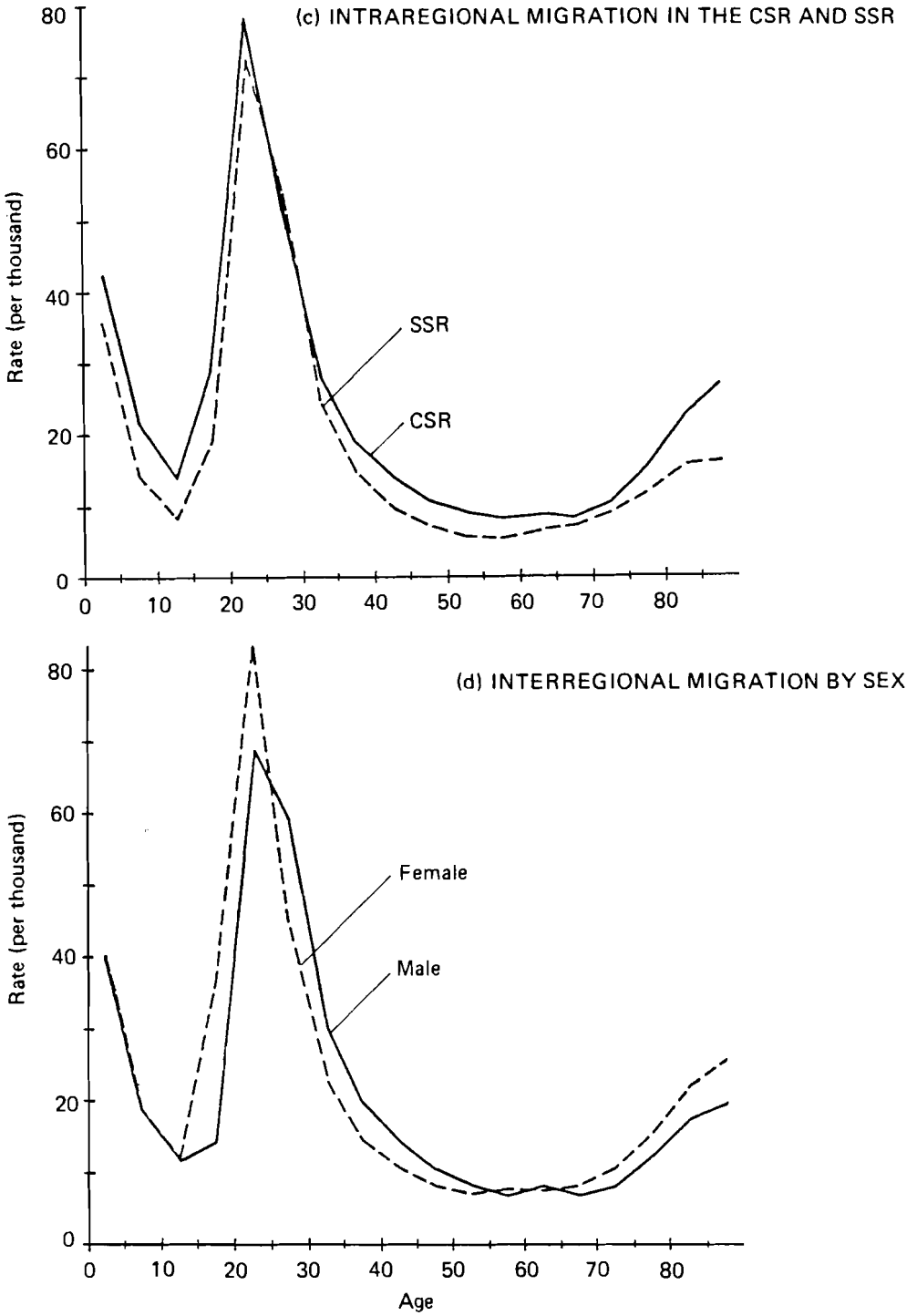

FIGURE 13 *Continued.*

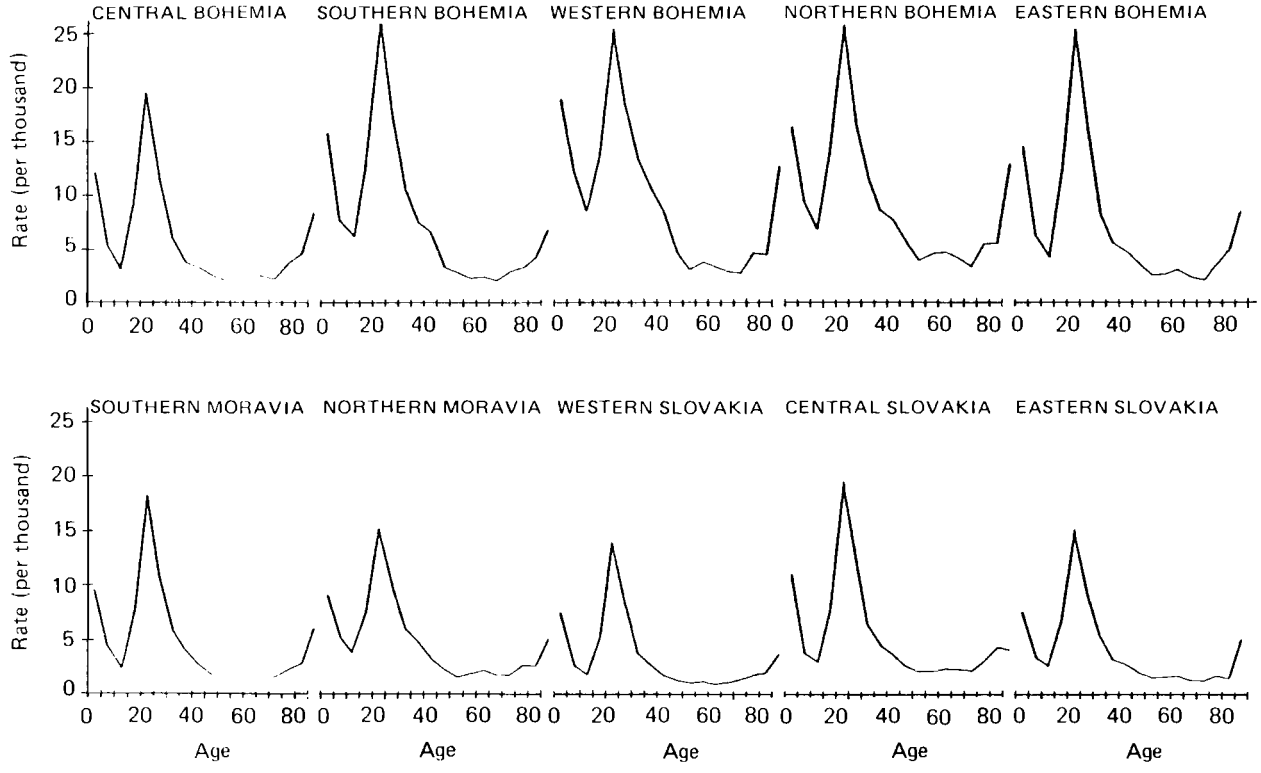

FIGURE 14 Total internal age-specific out-migration rates for the CSSR regions.

There are some remarkable differences in age-specific migration risk according to the level of the move; the curve is larger for short distance moves between communes within administrative districts and smaller for interregional moves (Figure 13a). This last regularity does not hold for interregional age-specific migration rates between the CSR and the SSR (Figure 13b). Age-specific migration from the Slovak Republic to the Czech Republic gives different pictures for the opposite migration streams. We can only guess at the explanation – the moves from the CSR to the SSR are represented mainly by returning migrants after several years of sojourn in the CSR. The migrants of higher professional levels, managers, and scientific workers are probably also included in this stream. In any case, the reasons for both migration streams must be completely different. Figure 13c compares the age-specific intraregional migration rates of the CSR and the SSR; the similarity of the shape of both profiles is remarkable, thus showing the more general significance of these curves. Age-specific migration rates by sex are compared in Figure 13d. The increase of the intensity of female migration begins in the 15–19 age group; its peak is more pronounced than that of men, and it decreases a few years sooner. Having these two profiles in mind, we can better understand the shape of the total age-specific migration curve.

Figure 14 shows total out-migration rates for the 10 regions of the CSSR.

2.5 Age Composition of the Population

The evolution of fertility, mortality, and migration, as well as the direct and indirect consequences of the two world wars, have determined the age composition of each region in the CSSR.

As can be seen from Table 16 and Figures 15 and 16, there exists a significant difference between the age composition of the CSR and SSR population. Table 16 shows that Slovakia has a median age 4.3 years lower than the CSR in 1975 (28.4 years in the SSR and 32.7 years in the CSR). People aged 60 and over constitute 14.5 percent of the population of Slovakia and 18.6 percent of the Czech Republic. Conversely, the percentage of the youngest part of the population (0–14 years) is lower in the CSR (22.3 percent) than in the SSR (26.0 percent).

Among the 10 observed regions, Eastern Slovakia has the youngest population, whereas Central Bohemia has the oldest. The difference between these two extremes was 11.7 years in 1961, 11.8 years in 1970, and 9.7 years in 1975. Although there have been fluctuations in median ages since 1961, the ranking of the regions in this respect has remained the same.

The most notable variations in the 1975 population age compositions of both republics occur in the 55–59 age group (mainly because of the lower birth rate during World War I), in the 35–45 age groups (as a consequence of the fertility decrease in the 1930s), and in the 5–24 age groups (as a result of the natality level in the 1950s and 1960s). Growth due to natural increase is also evident during the period 1970–1975.

TABLE 16 Age composition of the population: CSSR regions, 1961, 1970, and 1975[a].

	Age group as a percent of the total regional population														
	0–14			15–39			40–59			60 +			Median age		
Region	1961	1970	1975	1961	1970	1975	1961	1970	1975	1961	1970	1975	1961	1970	1975
Central Bohemia	21.5	17.4	19.3	33.2	34.9	34.6	28.1	26.2	24.1	17.2	21.5	22.0	37.6	38.1	36.3
Southern Bohemia	25.3	21.6	22.4	33.4	35.6	36.1	24.6	23.3	22.1	16.7	19.5	19.4	33.6	34.0	32.7
Western Bohemia	26.9	22.6	23.2	35.8	37.9	37.8	24.3	23.6	22.6	13.0	15.9	16.4	31.7	31.8	31.4
Northern Bohemia	28.4	22.3	23.7	36.3	38.9	38.3	24.0	24.2	22.5	11.3	14.6	15.5	30.5	30.7	30.6
Eastern Bohemia	24.8	21.0	22.2	33.3	35.4	35.5	25.0	23.4	22.1	16.9	20.2	20.2	34.2	34.7	33.2
Southern Moravia	25.6	21.8	22.5	34.6	35.8	36.0	24.7	23.7	22.2	15.1	18.7	19.3	32.7	33.6	32.8
Northern Moravia	28.3	24.4	24.7	36.4	38.2	38.3	23.1	22.5	21.7	12.2	14.9	15.3	30.2	29.9	30.3
Western Slovakia	30.1	24.9	24.3	36.2	37.6	38.3	22.0	22.6	21.9	11.7	14.9	15.5	28.9	29.7	29.7
Central Slovakia	31.5	27.9	26.2	36.4	36.9	38.3	20.8	21.4	21.1	11.3	13.8	14.4	27.7	28.3	28.3
Eastern Slovakia	33.8	30.2	28.5	36.7	37.1	38.3	19.5	20.2	20.3	10.0	12.5	12.9	25.9	26.3	26.6
CSSR	27.3	23.2	23.5	35.2	36.7	37.0	23.8	23.3	22.2	13.7	16.8	17.3	31.5	31.8	31.3
CSR	25.4	21.3	22.3	34.6	36.5	36.5	25.2	24.0	22.6	14.8	18.2	18.6	33.2	33.6	32.7
SSR	31.5	27.3	26.0	36.4	37.3	38.3	20.9	21.5	21.2	11.2	13.9	14.5	27.7	28.3	28.4

[a] Age structure at 1 March 1961, 31 December 1970, and 31 December 1975.
SOURCE: Derived from Federal Statistical Office, selected years.

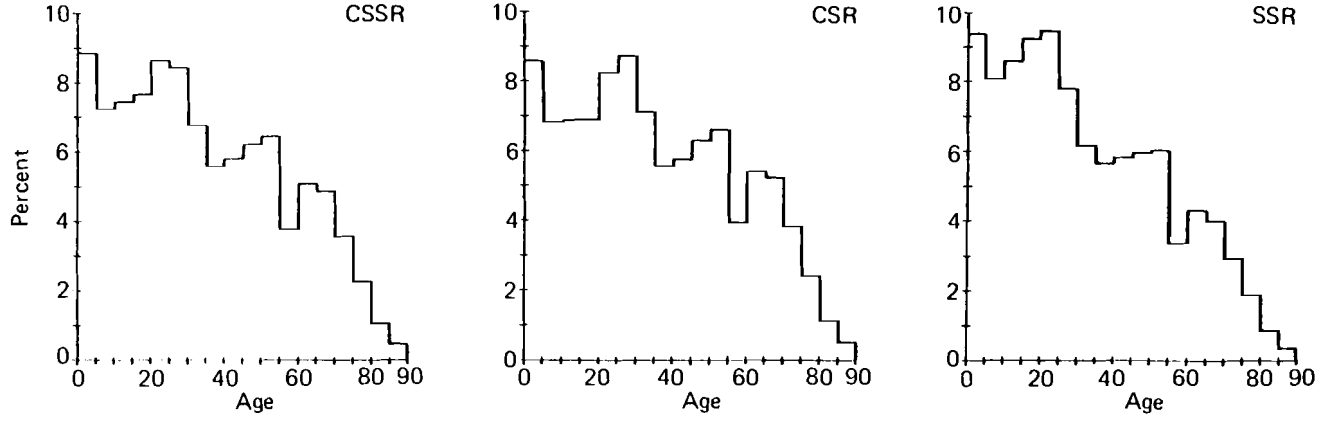

FIGURE 15 Age compositions of the CSSR, CSR, and SSR populations, 1975.

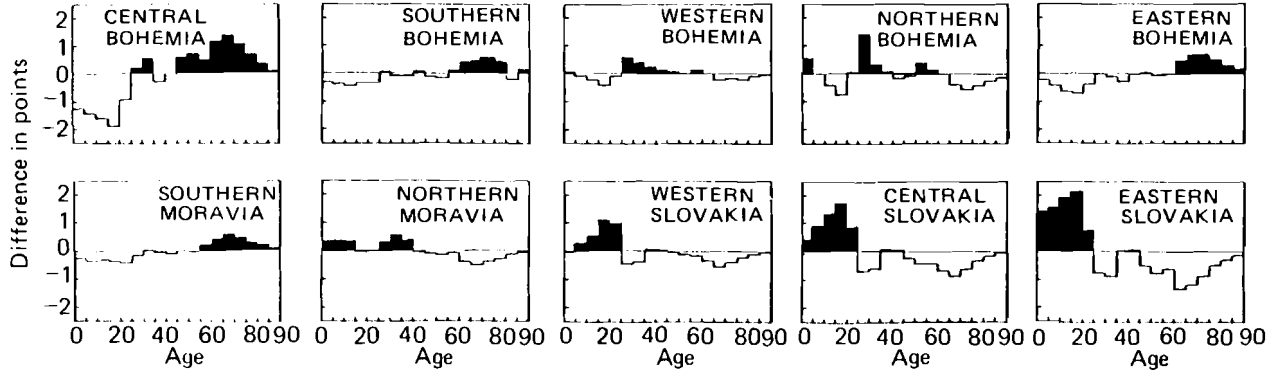

FIGURE 16 Relative differences in the regional population age compositions of the CSSR (CSSR = 0), 1975.

A more detailed description of the regional population's age composition can be found in Figure 16, which displays the relative differences from the national age profile (according to 5-year age groups) for all regions. One can see, for example, how the age structures of Western and Northern Bohemia were influenced by the postwar in-migration (in connection with the population redistribution patterns that occurred after the German emigration) and by the natural reproduction of migrants. The consequences of a relatively high net migration gain in the 1950s and 1960s is also evident in the age composition of Northern Moravia. Southern Bohemia, Eastern Bohemia, and Southern Moravia show a similar age structure. Similarity is also seen among the Slovakian regions but not between the SSR and the CSR.

As mentioned above, the age compositions and population dynamics of each region are the result of simultaneous interactions of three demographic processes: fertility, mortality, and migration. For a better understanding of these complicated relationships we will now turn to the multiregional analysis of the CSSR.

3 MULTIREGIONAL POPULATION ANALYSIS

The previous sections have surveyed contemporary trends of single-region population dynamics in the CSSR and focused on the evaluation of regional differences in the components of population growth: fertility, mortality, and migration. The traditional approach of a separate evaluation of these components cannot reveal their mutally interdependent effects and therefore cannot provide a precise picture of their common influences on the spatial distribution and redistribution of populations. Only by simultaneously examining all regions, using a multiregional approach, can population dynamics be comprehensively analyzed. Single spatial units can then be connected through the interaction of migrations into one spatial system.

In the last 15 years, methods of multiregional analysis and multiregional mathematical demography have been developed and investigated by Rogers (1968, 1971, 1975) and his colleagues (Rogers and Willekens 1976, Rogers and Ledent 1976, Willekens 1977, Ledent 1978, Rogers 1981). Over the years, Rogers and his associates at the International Institute for Applied Systems Analysis have developed a package of computer programs (Willekens and Rogers, 1976, 1977, 1978), which have since been used in comparative studies of IIASA's National Member Organization countries.

This section presents an assessment of the principal results derived from a multiregional population analysis of Czechoslovakia for the year 1975 on the basis of the above-mentioned model. Although the program was applied to three separate aggregations – republics, 12 administrative regional units, and 10 regions – the results presented here are only those of the 10 region aggregation (for reasons explained in subsection 1.2). A short survey of input data and the

processing needed for the multiregional analysis begins the discussion. The following parts then present the main characteristics of the regional populations in 1975 on the basis of multiregional life tables. The section ends with the presentation of the medium- and long-term multiregional population projections.

3.1 Data

This study uses registration data, which are officially published every year by the Federal, the Czech, and the Slovak Statistical Offices. As mentioned earlier, vital migration data are given in these sources for selected towns, administrative districts, administrative regional units, and both national republics. Age-specific data (in 5-year age intervals) are published yearly only for administrative regional units (12 units) and for both national republics. These data give the age composition of the population (to the end of the respective year), births according to the age of the mothers, and age-specific mortality statistics.

Data on internal migrations are also published yearly and report information on the streams between administrative districts, administrative regional units, and republics. The age specification of these streams, however, is not available except for migrations between the Czech and the Slovak Republics. For the administrative regional units it is possible to have, from the above-mentioned source, the data for the age composition of the total number of out-migrants and in-migrants, including external migration. It was therefore necessary to estimate the age composition of interregional migration streams for the multiregional analysis. This was performed in two stages. The first step was to eliminate external migration from the data for each of the 12 administrative regional units. This was done by calculating the external migration for both republics and applying this estimate to the individual administrative regional units. Since external migration is not significant, this procedure seemed adequate. The next step was to estimate the age composition of migration streams between regional units by applying a multidimensional entropy maximization method (Willekens *et al.* 1979). The data were then aggregated into 10 regions. Appendix A gives data for 1975 that have been prepared according to the procedure described above. These birth, death, and out-migration statistics are the basis for the following analysis.

3.2 Multiregional Life Table

The standard life table has a basic importance in demographic analysis. It describes the evolution of a hypothetical cohort of babies born at a given moment and exposed to unchanging age-specific mortality rates. This type of life table focuses on a single-region population that is closed to migration.

Multiregional life tables deal with spatial population systems, comprising several regions, and incorporate the combined effects of mortality and migration. Such life tables describe the evolution of several regional cohorts of babies exposed to unchanging age-specific mortality rates as well as the age- and

destination-specific regional migration. The methodology for the construction of a multiregional life table is described in Rogers (1975) and the computer program is given in Willekens and Rogers (1978).

The starting point in constructing multiregional life tables is the computation of age-specific probabilities of dying and migrating from the observed regional mortality and out-migration rates. On the basis of these probabilities it is possible to derive additional parameters: the number of survivors expected at exact age x in each region, the number of years lived in each region by the initial unit cohort, the survivorship proportion, and the life expectancy.

Appendix B gives the observed regional age-specific rates for fertility, mortality, and out-migration for the 10 regions. Appendix C gives the most important characteristics of the 10-region life table for Czechoslovakia. The rates and probabilities are computed for a 5-year age interval; the probabilities are estimated by assuming the possibility for multiple transitions during the 5-year period of time ("Option 3" see Willekens and Rogers 1978).

LIFE HISTORY OF THE BIRTH COHORT

The life history of each cohort is derived from the multiplication of the birth cohort (the radix) by the mortality and migration probabilities (Appendix C.1).

For example, of the 100 000 children born in Northern Bohemia, 2 906 will die before they reach age 5 (i.e., 100 000 times 0.029064 equals 2 906), 2 968 will move to Central Bohemia, and 89 530 will still be in Northern Bohemia at exact age 5.

Of the 100 000 people born in Northern Bohemia, 97 094 (100 000 minus 2 906) will still be alive at age 5, from which 89 530 will still be in Northern Bohemia and 7 564 (97 094 minus 89 530) will be in other regions.

Of these 89 530, the number of people dying before reaching age 10 is 286 (89 530 times 0.003196) and the number of those migrating to Central Bohemia is 1 634 (89 530 times 0.018251). The number of people who were in Northern Bohemia at age 5 and will still be there at age 10 is 85 109 (89 530 times 0.950616). What happens to the 2 968 migrants born in Northern Bohemia and living in Central Bohemia at exact age 5? They may die, they may move back to Northern Bohemia or to other regions, or they may stay in Central Bohemia. Here the calculations assume that the mortality and migration behavior depends on the region of residence at the beginning of the interval, i.e., in our example, on the probabilities of Central Bohemia. Thus 6 (2 968 times 0.001981) people die before reaching age 10, 2 884 (2 968 times 0.971645) remain in Central Bohemia, 18 (2 968 times 0.006111) move back to Northern Bohemia, and 60 (2 968 minus 6 minus 2 884 minus 18) move to other regions. Continuing this procedure through the last age group, we obtain a detailed description of the life history of the 100 000 people born in Northern Bohemia. The last age group is open-ended; therefore all people who reach age 85 are expected to die in that age group.

TABLE 17 Probabilities of surviving to exact age 20 (both sexes combined): CSSR regions, 1975.

	Region of residence at age 20										
Region of birth	CB	SB	WB	NB	EB	SM	NM	WS	CS	ES	Total
Central Bohemia	0.831	0.021	0.023	0.033	0.027	0.013	0.009	0.004	0.003	0.002	0.966
Southern Bohemia	0.064	0.785	0.025	0.016	0.019	0.035	0.013	0.006	0.004	0.002	0.969
Western Bohemia	0.073	0.033	0.744	0.037	0.019	0.028	0.015	0.011	0.006	0.005	0.971
Northern Bohemia	0.078	0.018	0.030	0.763	0.028	0.016	0.013	0.008	0.004	0.004	0.962
Eastern Bohemia	0.056	0.010	0.012	0.025	0.808	0.029	0.018	0.007	0.004	0.003	0.972
Southern Moravia	0.017	0.011	0.008	0.008	0.013	0.864	0.036	0.010	0.004	0.002	0.973
Northern Moravia	0.017	0.006	0.007	0.007	0.011	0.046	0.854	0.009	0.008	0.004	0.969
Western Slovakia	0.006	0.003	0.003	0.003	0.004	0.010	0.009	0.887	0.031	0.009	0.965
Central Slovakia	0.007	0.003	0.003	0.003	0.004	0.007	0.015	0.056	0.849	0.018	0.965
Eastern Slovakia	0.009	0.004	0.007	0.007	0.005	0.007	0.012	0.023	0.020	0.862	0.956

SOURCE: Derived from Appendix C. 2 by dividing the values in the Appendix by 100 000.

The life histories of the people born in the various regions may be aggregated to give the exact age of the expected number of survivors, their place of birth, and their places of residence (Appendix C. 2). These results may also be interpreted as probabilities – both conditional probabilities and unconditional probabilities. If divided by the radix (the size of birth cohort), they would denote the probabilities of being in the various regions at a certain age when born in a specific region. For example, the probabilities that a person born in region *i* will be in region *j* at age 20 can be obtained (Table 17). Regional differences in the total probabilities of surviving to age 20 are not surprising. But there is a considerable regional variation in the proportion surviving in the region of birth. The largest value (0.89) is recorded for Western Slovakia and the smallest (0.74) for Western Bohemia. The values also demonstrate the higher level of out-migration for the regions in Bohemia and mirror some other features of interregional migration patterns (i.e., the relation between migration and distance and the relation between migration and the attractiveness of regions).

Table 18 also demonstrates the interregional mobility level of the CSSR population and the variations of this level between regions. There are probabilities that an individual born in a particular region will still be there at exact age 20, at exact age 35, and at exact age 60. These ages represent three significant periods of working life (entry into the labor force, relative professional and migration stability, and retirement). As can be seen from Table 18, two regions, i.e., Western and Northern Bohemia, will lose about 25 percent of their potential labor force before this potential can be realized, and an additional 20 percent before this 1975 cohort reaches age 35. Finally, about 60 percent of those born in these regions will not be there at age 60 because of the effects of mortality and mainly migration. These values are higher than those of other regions, particularly the Slovakian regions, which have the most spatially stable population.

TABLE 18 Probabilities of surviving at exact ages 20, 35, and 60 in the region of birth (both sexes combined): CSSR regions, 1975.

	Probabilities of surviving at age:		
Region of birth	20	35	60
Central Bohemia	0.831	0.698	0.568
Southern Bohemia	0.785	0.595	0.461
Western Bohemia	0.744	0.556	0.408
Northern Bohemia	0.763	0.582	0.427
Eastern Bohemia	0.808	0.625	0.496
Southern Moravia	0.864	0.719	0.592
Northern Moravia	0.854	0.723	0.579
Western Slovakia	0.887	0.773	0.635
Central Slovakia	0.849	0.689	0.551
Eastern Slovakia	0.862	0.729	0.592

EXPECTATION OF LIFE

An important life table statistic is life expectancy at birth. In a multiregional analysis the total life expectancy of a given birth cohort depends not only on the mortality regime of the region of birth, but also on the mortality regimes of the other regions to which the members of the birth cohort may migrate. It is assumed that a person who moves is exposed to the mortality rate prevailing in his new region of residence. A person may thus either lose or gain in total expectation of life as a consequence of migration. Therefore, the total life expectancy computed in multiregional demography differs from the life expectancies derived for isolated (closed) spatial units, which are based on the hypothesis that a person never leaves his region of birth. In the multiregional analysis, the number of years that a person aged x, born in a particular region, may expect to live beyond age x is decomposed according to the region of birth and region of residence. The spatial dimension is thus introduced into classical demographic analysis.

The complete table for the expectation of life is given in Appendix C. 3. Part a of Table 19 shows the expectation of life at birth by the region of birth and region of residence, and part b gives the relative structure of these values, i.e., net allocations of the expectation of life at birth, which can be used as one indicator of the lifetime migration level. From these tables the following types of information can be gathered. A person born in Western Bohemia can expect to live 70.15 years, out of which 44.92 years are spent in his region of birth, about 8.6 years are spent in Central Bohemia, about 3.8 years in Northern Bohemia, and so on. The values in Table 19 (part b) show that Western and Northern Bohemia have the highest level of out-migration. Children born in these regions will spend only 64.0 and 66.7 percent of their life, respectively, in their native region. Conversely, Western Slovakia has the lowest level of out-migration; the birth cohort can expect to live 84.8 percent of its lifetime in this region. The 64–85 percent range demonstrates a rather low level of Czechoslovakian interregional migration in comparison with other developed countries.* The proportional allocations of life expectancies (Table 19, part b) give additional interesting information concerning interregional migration patterns in

*It is not possible to make a precise comparison of the level of interregional migration based on the individual country studies in the IIASA Comparative Migration and Settlement series because of the varying sizes of the countries and number of regional units used in each study. The delineation of the units also differ from study to study. (Several analyses regard cities, mainly capitals, as separate regions.) Another inconsistency arises from the character of the spatial mobility data. Data based on a population register represent migrations, or moves, in which the same person can be included more than once, whereas data based on censuses represent migrants and their spatial transitions; therefore, migration rates are somewhat inflated when matched against transition rates. In spite of these problems, it is possible to make a rough comparison of interregional migration in Czechoslovakia with that of several European countries. The following information is taken or derived from data produced by IIASA's Comparative Migration and Settlement Study. The year or period of observation and the number of regional units are given in parentheses after the range of the level of interregional migration in the stated country: Finland 34–53 percent (1974, 12); United Kingdom 41–62 percent (1970–1971, 10); Sweden 46–64 percent (1974, 8); The Netherlands 46–69 percent (1974, 5); German Democratic Republic 72–80 percent (1975, 5); Austria 73–88 percent (1971, 9); and Bulgaria 74–87 percent (1975, 7).

TABLE 19 Expectations of life and migration levels (both sexes combined): CSSR regions, 1975.

Region of birth	Region of residence CB	SB	WB	NB	EB	SM	NM	WS	CS	ES	Total
a. Expectation of life (years)											
Central Bohemia	54.52	2.26	2.42	3.60	3.02	1.73	1.22	0.60	0.43	0.32	70.12
Southern Bohemia	8.19	48.52	2.57	1.97	2.26	3.97	1.63	0.80	0.46	0.28	70.65
Western Bohemia	8.62	3.24	44.92	3.80	2.17	3.09	1.78	1.24	0.72	0.57	70.15
Northern Bohemia	9.45	2.02	2.98	46.27	3.19	1.94	1.52	0.93	0.53	0.49	69.32
Eastern Bohemia	7.30	1.28	1.38	2.93	50.61	3.40	2.22	0.89	0.51	0.40	70.92
Southern Moravia	2.81	1.38	0.93	1.05	1.76	56.70	4.39	1.29	0.59	0.32	71.22
Northern Moravia	2.59	0.77	0.87	0.90	1.37	5.32	55.90	1.13	1.01	0.54	70.40
Western Slovakia	1.03	0.34	0.39	0.45	0.58	1.33	1.13	59.64	4.16	1.31	70.36
Central Slovakia	1.12	0.35	0.39	0.47	0.56	1.04	1.81	7.53	54.58	2.52	70.37
Eastern Slovakia	1.44	0.46	0.75	0.90	0.69	0.93	1.47	3.46	2.68	57.03	69.81
b. Migration level (proportional allocation of life expectancy)											
Central Bohemia	0.778	0.032	0.034	0.051	0.043	0.025	0.017	0.009	0.006	0.005	1.000
Southern Bohemia	0.116	0.687	0.036	0.028	0.032	0.056	0.023	0.011	0.007	0.004	1.000
Western Bohemia	0.123	0.046	0.640	0.054	0.031	0.044	0.026	0.018	0.010	0.008	1.000
Northern Bohemia	0.136	0.029	0.043	0.667	0.046	0.028	0.022	0.014	0.008	0.007	1.000
Eastern Bohemia	0.103	0.018	0.019	0.041	0.714	0.048	0.031	0.013	0.007	0.006	1.000
Southern Moravia	0.040	0.019	0.013	0.015	0.025	0.796	0.062	0.018	0.008	0.004	1.000
Northern Moravia	0.037	0.011	0.012	0.013	0.019	0.076	0.794	0.016	0.014	0.008	1.000
Western Slovakia	0.015	0.005	0.005	0.006	0.008	0.019	0.016	0.848	0.059	0.019	1.000
Central Slovakia	0.016	0.005	0.005	0.007	0.008	0.015	0.026	0.107	0.775	0.036	1.000
Eastern Slovakia	0.021	0.007	0.011	0.013	0.010	0.013	0.021	0.049	0.038	0.817	1.000

the CSSR. For instance, people born in the four Bohemian regions spend at least 10 percent of their lives in Central Bohemia. This is because of the attractiveness of Prague and its metropolitan area. The only other similar level of attraction can be seen for migrants from Central Slovakia to Western Slovakia (in which the capital of Slovakia, Bratislava, is located). The data also demonstrate that both the Moravian regions belong to the most spatially stable parts of Czechoslovakia.

The effects of interregional migration on the proportional allocation of life expectancies between regions and the expectation of life for the region as a whole can be seen by comparing multiregional values with single-region values (Table 20). The single-region and multiregional life expectancies have an almost identical geographical structure and a high level of correlation ($r = 0.9752$). But the variance is lower in the case of multiregional life expectancies. The values in Table 20 show that regions with high single-region life expectancies have rather low multiregional values and regions with low single-region life expectancies have rather high multiregional values (the change in multiregional values

TABLE 20 Expectations of life at birth (both sexes combined), single-region and multiregional values: CSSR regions, 1975.

Region	Single-region life expectancy	Multiregional life expectancy
Central Bohemia	70.10	70.11
Southern Bohemia	70.85	70.65
Western Bohemia	69.77	70.15
Northern Bohemia	68.74	69.32
Eastern Bohemia	71.22	70.93
Southern Moravia	71.46	71.22
Northern Moravia	70.28	70.39
Western Slovakia	70.36	70.36
Central Slovakia	70.42	70.37
Eastern Slovakia	69.90	69.80
Calculated value for the total CSSR	70.31	
Weighted average for the total CSSR[a]		70.40
Coefficient of variation (percent)	1.0	0.7
Correlation coefficient	0.9752	
Regression coefficient[b]	0.6850	

[a] Dominant eigenvalue of the matrix.
[b] Change in multiregional values per unit change in single-region values.

per unit change in single-region values, i.e., the regression coefficient is 0.6805). However, this smoothing effect of migration on regional mortality differentials is a result not only of migration flows but also of the characteristics of the regions of origin and assumptions used in the construction of multiregional life tables. Ledent (1980) demonstrates that the traditional multiregional life table, which assumes the same age-specific mobility schedules for all individuals of a given region (population homogeneity) and the independence of a person's previous life history (Markovian behavior), ignores the generally well-established fact that migration propensities are heavily dependent on an individual's birthplace.* Therefore, in his paper Ledent introduces the construction of alternative multiregional life tables that are based on the dissagregation of age-specific migration streams according to birthplace of migrants (place-of-birth-dependent approach). From the application of this new approach on the data of the United States, Ledent finds that the reducing effect of migration on the regional mortality variation is not so high and that differentials between the total regional life expectancies take on values nearing those they would have if migration were ignored. This new version of the multiregional life table also reduces the fraction of the regional expectation of life at birth to be spent outside the region of birth.

3.3 Multiregional Fertility and Migration Analysis

Multiregional life tables enable us to derive a number of measures that summarize the differences in fertility, mortality, and migration of people born in the various regions of Czechoslovakia. Among these measures the net reproduction rate and the net migraproduction rate are the most important.

SPATIAL NET REPRODUCTION RATE

The multiregional (spatial) net reproduction rate (NRR) is analogous to the more conventional single-region net reproduction rate generally calculated in classical demographic analysis. It is the total number of children that a member of a life table population may expect to have throughout his or her lifetime. In contrast to the single-region NRR, however, the spatial NRR reflects not only the effects of mortality but also those of migration on reproduction behavior.

*Of the people living in region *i* those born in region *i* have a lower propensity to migrate to region *j* than those who were born in neither *i* nor *j*; those born in region *j* have the highest probability of migrating back to their region of birth. This trend can be seen in Czechoslovakia; of all the people who migrate from the CSR to the SSR, about 65 percent are Slovakians. Thus the intensity of out-migration to Slovakia is much less for the Czech population than for the Slovakian population. But the counter-flow (i.e., from the Slovak to the Czech Republic) does not show such a difference in migration intensity. Thus these findings verify the heterogeneity of populations in their propensity for migration but, at the same time, they indicate that this propensity is conditioned by many aspects. One significant factor is the level of urbanization. It is interesting to note, that the Czechs living in Slovakia are more concentrated in towns than the Slovakians living in the Czech Republic.

The assumption is made that people who migrate adopt fertility, mortality, and migration regimes of the new region of residence. The spatial net reproduction rate is defined as

$$ {}_{i}NRR_{j} = \sum_{x=0}^{Z} {}_{i}L_{j}(x)F_{j}(x) $$

where

- ${}_{i}NRR_{j}$ is the number of children a member of the life table population born in region i may expect to have in region j
- Z is the starting age of the last age group
- ${}_{i}L_{j}(x)$ is the number of person-years lived in each region j between the ages x and $x + 4$ by a member of the multiregional life table population born in region i
- $F_{j}(x)$ is the age-specific fertility rate in region j

The summation of ${}_{i}NRR_{j}$ over all regions of residence gives ${}_{i}NRR$, the total net reproduction rate of individuals born in region i. Therefore, just as in the case of spatial life expectancy, the net reproduction rate can be apportioned among the constituent regions of a multiregional system.

The net reproduction matrix is presented in Table 21 (part a). Note that the figures of the total net reproduction rate are based on 1975 data, which represented a favorable fertility situation in Czechoslovakia; all regions have ${}_{i}NRR$ higher than 1.00, i.e., a fertility level that is above replacement. The regional ${}_{i}NRR$ varies from the lowest level of 1.101 in Central Bohemia to 1.286 in Eastern Slovakia.

The elements of the matrix show where the reproduction of a member of a cohort, born in a given region, will actually occur. For instance, a person born in Western Bohemia will have 1.159 children on the average. Of this total 0.802 will be born in Western Bohemia, 0.114 in Central Bohemia, 0.058 in Northern Bohemia, and 0.185 in other regions. Note that only the region of Eastern Slovakia is able to reproduce its own population without the "help" of in-migrants; it has the only diagonal figure greater than 1.0. Other Slovakian regions and also Moravian regions are very near this value.

It is also interesting to see how Central Bohemia, with the lowest total net reproduction rate, benefits from the migration of potential childbearers. The table shows that a group of 100 persons born in any other region will give birth to at least 1 child in Central Bohemia; this figure reaches 10–12 for natives of Bohemian regions. On the other hand, among 100 persons born in Central Bohemia only a small number of children will be born in another region.

Regional allocations of spatial net reproduction are given in part b of Table 21. It shows, for example, that a person born in Western Bohemia would experience only 69.2 percent of total lifetime births in the same region, which reflects

TABLE 21 Spatial net reproduction rates and allocations (both sexes combined): CSSR regions, 1975.

Region of birth of parent	Region of birth of child										Total
	CB	SB	WB	NB	EB	SM	NM	WS	CS	ES	
a. Net reproduction rate											
Central Bohemia	0.872	0.033	0.037	0.055	0.044	0.024	0.017	0.008	0.006	0.005	1.101
Southern Bohemia	0.109	0.822	0.040	0.028	0.032	0.058	0.023	0.011	0.007	0.004	1.134
Western Bohemia	0.114	0.047	0.802	0.058	0.030	0.044	0.026	0.017	0.011	0.010	1.159
Northern Bohemia	0.125	0.028	0.046	0.839	0.046	0.026	0.021	0.013	0.008	0.008	1.160
Eastern Bohemia	0.097	0.017	0.020	0.045	0.884	0.049	0.032	0.012	0.008	0.007	1.171
Southern Moravia	0.034	0.019	0.013	0.015	0.025	0.976	0.064	0.018	0.009	0.005	1.178
Northern Moravia	0.032	0.009	0.013	0.013	0.019	0.076	0.971	0.015	0.015	0.009	1.172
Western Slovakia	0.013	0.005	0.006	0.006	0.008	0.018	0.016	0.983	0.064	0.022	1.141
Central Slovakia	0.014	0.005	0.005	0.007	0.008	0.014	0.027	0.104	0.962	0.042	1.188
Eastern Slovakia	0.018	0.006	0.011	0.013	0.009	0.013	0.021	0.046	0.040	1.109	1.286
b. Net reproduction allocation (proportional distribution)											
Central Bohemia	0.792	0.030	0.034	0.050	0.040	0.021	0.015	0.007	0.006	0.005	1.000
Southern Bohemia	0.096	0.725	0.035	0.025	0.028	0.051	0.020	0.010	0.006	0.004	1.000
Western Bohemia	0.098	0.041	0.692	0.050	0.026	0.038	0.022	0.015	0.009	0.009	1.000
Northern Bohemia	0.108	0.024	0.040	0.723	0.040	0.022	0.018	0.011	0.007	0.007	1.000
Eastern Bohemia	0.083	0.015	0.017	0.038	0.755	0.042	0.027	0.010	0.007	0.006	1.000
Southern Moravia	0.029	0.016	0.011	0.013	0.021	0.829	0.054	0.015	0.008	0.004	1.000
Northern Moravia	0.027	0.008	0.011	0.011	0.016	0.065	0.828	0.013	0.013	0.008	1.000
Western Slovakia	0.012	0.004	0.005	0.005	0.007	0.016	0.014	0.862	0.056	0.019	1.000
Central Slovakia	0.012	0.004	0.004	0.006	0.007	0.012	0.023	0.087	0.810	0.035	1.000
Eastern Slovakia	0.014	0.005	0.009	0.010	0.007	0.010	0.016	0.036	0.031	0.862	1.000

the unattractiveness of the region for native childrearing. It also shows that the regions in Moravia and Slovakia have regional allocations above the unweighted regional average (78.8 percent). On the other hand, the Bohemian regions, which have the lowest levels of total fertility but higher levels of out-migration, have a below-average propensity of child bearing in the region of birth.

A comparison similar to that of life expectancy can be made between the total multiregional values and the single-region values for regional net reproduction rates. Table 22 shows that the variance of the fertility of regional cohorts in which migration is considered is reduced compared with the variance of regional fertility with no allowance for migration. The range of spatial NRRs (1.101–1.286) is less than that of single-region NRRs (1.090–1.321). The NRR for Czechoslovakia as a whole is increased from 1.164 to 1.176 when migration is taken into account. However, the geographical distributions of the single-reigon and multiregional rates are very similar (the correlation between the two sets of rates being 0.9994). There is again a typical regression toward the mean with a regression coefficient of 0.7943. It mirrors the fact that the

TABLE 22 Net reproduction rates (both sexes combined), single-region and multiregional values: CSSR regions, 1975.

Region	Single-region NRR	Multiregional NRR
Central Bohemia	1.090	1.101
Southern Bohemia	1.128	1.134
Western Bohemia	1.158	1.159
Northern Bohemia	1.160	1.160
Eastern Bohemia	1.174	1.171
Southern Moravia	1.184	1.178
Northern Moravia	1.171	1.172
Western Slovakia	1.136	1.141
Central Slovakia	1.195	1.188
Eastern Slovakia	1.321	1.286
Calculated value for all the CSSR	1.164	
Weighted average for all the CSSR[a]		1.176
Coefficient of variation (percent)	4.9	3.9
Correlation coefficient	0.9994	
Regression coefficient[b]	0.7943	

[a] Dominant eigenvalue of the net rate of reproduction matrix.
[b] The change in multiregional values per unit change in single-region values.

spatial NRR for a region with out-migration to regions of lower fertility is less than the nonspatial NRR (the case of Eastern Slovakia), and conversely, the total spatial NRR for a region with out-migration to regions of higher fertility will be larger than the nonspatial value (the case of Central Bohemia).

As mentioned earlier, the multiregional model is based on the assumption that people adopt the fertility behavior of the population in the region to which they move. This assumption has not as yet been satisfactorily verified in Czechoslovakia. Although some findings are contradictory,* Czechoslovakian demographers argue that the fertility rates of migrants are either very near to those of the place of their new residence or fall between those of the place of origin and place of destination. Therefore, we are of the same opinion as Rees (1979, p. 100) who recommends in his multiregional analysis of the United Kingdom that "It would be instructive in the spatial fertility expectancy calculation to substitute fertility rates interpolated between origin and destination region according to length of stay".

MIGRATION ANALYSIS

It was shown in subsection 3.2 that spatial migration expectancy can be defined as the expected number of years lived in region j by individuals born in region i. This measure, which is based on duration times, may be complemented by an alternative definition. Migration, like childbearing is also a recurrent event in the fact that one person may migrate several times during his lifetime. Measures of migration recurrence are the gross migraproduction rate (GMR) and the net migraproduction rate (NMR). Even though the gross migraproduction rate is a single-region measure given in the terms of multiregional mobility analysis, a short survey of it is presented in this section. Both measures of migration – the GMR and the NMR – are introduced together in this study because they are mutually connected.

The *gross migraproduction rate* is the analog of the gross reproduction rate; it is the sum of the age-specific annual out-migration rates multiplied by the width of the age interval. The GMR, therefore, represents the level of migration out of a given region at a particular moment in time.

The gross migraproduction rates for each migration stream and for the total out-migration of each region are given in Table 23. The highest levels of out-migration are expected to occur in the regions of Western and Northern Bohemia (0.866 and 0.842). The lowest are to be found in Western Slovakia (0.311) and Eastern Slovakia (0.379). The figures of this table also demonstrate

*According to data on births dissaggregated by nationality of mothers in the period 1975–1977, Slovakian females living in the Czech Republic have a fertility level about 15–20 percent higher than the Czech female inhabitants and about 5–10 percent lower than Slovakian females living in Slovakia. The Czech females living in Slovakia have a fertility level about 15–20 percent higher than the Czech females in the Czech Republic and even somewhat higher than the Slovakian females living in Slovakia. Similar results can be obtained if we compare levels of fertility according to crude birth rates. (Recall that the Czechs living in Slovakia are more concentrated in towns than the Slovakians living in the Czech Republic.)

TABLE 23 Gross migraproduction rates[a] (both sexes combined): CSSR regions, 1975.

Region of origin	Region of destination										
	CB	SB	WB	NB	EB	SM	NM	WS	CS	ES	Total
Central Bohemia	–	0.076	0.090	0.146	0.109	0.045	0.034	0.014	0.011	0.008	0.531
Southern Bohemia	0.277	–	0.091	0.062	0.070	0.123	0.044	0.018	0.011	0.006	0.701
Western Bohemia	0.306	0.117	–	0.157	0.068	0.095	0.053	0.033	0.020	0.017	0.866
Northern Bohemia	0.366	0.068	0.125	–	0.126	0.055	0.048	0.025	0.013	0.015	0.842
Eastern Bohemia	0.249	0.036	0.043	0.113	–	0.106	0.070	0.022	0.013	0.011	0.662
Southern Moravia	0.078	0.043	0.029	0.032	0.057	–	0.146	0.035	0.014	0.007	0.442
Northern Moravia	0.074	0.020	0.028	0.028	0.043	0.172	–	0.027	0.030	0.015	0.437
Western Slovakia	0.025	0.008	0.011	0.012	0.015	0.035	0.030	–	0.136	0.039	0.311
Central Slovakia	0.028	0.008	0.011	0.014	0.015	0.025	0.055	0.252	–	0.084	0.491
Eastern Slovakia	0.036	0.012	0.025	0.029	0.019	0.021	0.043	0.107	0.087	–	0.379

[a] The gross migraproduction rate for Czechoslovakia as a whole is 0.522 at this level of regional differentiation.

some features of interregional migration in Czechoslovakia: the strong dependence of migration on distance and the existence of two or three relatively closed regional subsystems. For example, the unweighted average of the number of out-migrations per person for adjacent regions is 0.124, the average for non-adjacent regions is four times lower, i.e., 0.030. But the majority of the migration flows between the adjacent Moravian and Slovakian regions have out-migration rates around 0.030. Thus if we take the total average of the figures in the matrix, i.e., 0.063, as a critical value for a higher order of regionalization, it is possible to define two basic migration subsystems: the Czech regions and the Slovakian regions. Within the framework of the Czech subsystem there are two areas with a high level of migration interaction: Bohemia and Moravia.

Other interesting findings can be derived from Table 23. The interregional rates show that there is a positive correlation between the values that occupy symmetrical positions to the main diagonal ($r = 0.686$). This symmetry demonstrates that a high intensity of out-migration from region i to region j is connected with the high intensity of out-migration in the opposite direction. Another result concerns the relationship between the intensity of out-migration streams and the total out-migration rates of the respective regions of destination, i.e., between ${}_iGMR_j$ and ${}_iGMR$ (where ${}_iGMR_j$ is the sum of the out-migration rates from region i to region j and ${}_iGMR$ is the sum of the total out-migration rates from region i). While the Bohemian regions have a positive correlation between these values, the Slovakian regions have a negative one.

The *net migraproduction rate* (NMR) is exactly analogous to the net reproduction rate except that it considers numbers of migrations rather than numbers of births and is defined as

$$ {}_iNMR_j = \sum_{x=0}^{Z} {}_iL_j(x)\, M_j(x) $$

where

- ${}_iNMR_j$ is the number of migrations a member of the life table population born in region i may expect to make from region j
- Z is the starting age of the last age group
- ${}_iL_j(x)$ is the number of person-years lived in each region j between the ages of x and $x + 4$ by a member of the multiregional life table population born in region i
- $M_j(x)$ is the age-specific rate of out-migration from region j

The net migraproduction rate ${}_iNMR_j$ describes the average number of migrations made out of region j by an individual born in region i during his or her lifetime. The summation of ${}_iNMR_j$ over all regions of out-migration gives ${}_iNMR$, the total migraproduction rate of individuals born in region i, i.e., the average

number of out-migrations a person born in region *i* is expected to make during his or her lifetime, assuming the prevailing migration and mortality regimes remain constant. Thus, in contrast to the GMR, the NMR measures the intensity of out-migration over a lifetime and includes also the effect of mortality.

The net migraproduction matrix is presented in Table 24. As can be seen, the total net migraproduction rates (part a of Table 24) validate the earlier findings dealing with the different regional levels of out-migration. The highest number of interregional moves is to be expected for a person born in the region of Western Bohemia (0.663), and the lowest for a person born in Western Slovakia (0.287). All the Bohemian regions with the exception of Central Bohemia have levels of out-migration above the regional average in its unweighted form (0.468); the Moravian and the Slovakian regions are below this average. Thus it is again illustrated that the level of interregional mobility is decreasing in Czechoslovakia from the West to the East. This is partly a result of the shape of the CSSR, which causes differences in the accessibility of the regions.

Table 24 part b gives the net migraproduction allocations for all regions, i.e., the proportion of the total number of migrations made by individuals born in a given region from each region of residence. Most of the interregional migrations are made from the region of birth. However, this proportion varies widely between regions, ranging from 77.1 percent for Central Bohemia to 84.5 percent for Central Slovakia. At least 21 percent of the interregional migrations made by the natives of all Bohemian regions are from regions other than the region of birth. This shows that migrants originally from these regions are more ready to migrate again and have probably a higher tendency of return moves than have the natives from other regions.

If the diagonal values of the net migraproduction allocation matrix are compared with the figures of the total net migraproduction rate (Table 24 part a), we can see that there exists a negative correlation between these values in the case of Czechoslovakia. Thus the higher the regional level of out-migration, the lower the proportion of migrations made out of the region of birth. The same relationships are obtained, for example, in the cases of Great Britain (Rees 1979) and the Netherlands (Drewe 1980), but opposite relationships exist in the cases of Hungary (Bies and Tekse 1980), Sweden (Andersson and Holmberg 1980), Bulgaria (Philipov 1981), the German Democratic Republic (Mohs 1980), and the Federal Republic of Germany (Koch and Gatzweiler 1980). This type of relationship seems to be a good characteristic with which to carry out international comparisons of interregional migration patterns.

Finally, the comparison of the NMR calculation based on the multiregional population model with that based on the single-region population model is presented in Table 25. The regional variance of the multiregional migraproduction rates is larger than the corresponding variance between mortality and fertility measures. The same is true for the differences between the single-region and multiregional values. (The coefficient of variation for single-region migration values is 31.7 percent, and that for multiregional values is 26.1 percent.)

TABLE 24 Spatial net migraproduction rates and allocations (both sexes combined): CSSR regions, 1975.

Region of birth	Region of out-migration CB	SB	WB	NB	EB	SM	NM	WS	CS	ES	Total
a. Net migraproduction rates											
Central Bohemia	0.357	0.016	0.021	0.032	0.020	0.007	0.005	0.002	0.002	0.001	0.463
Southern Bohemia	0.041	0.458	0.023	0.017	0.015	0.017	0.007	0.002	0.002	0.001	0.583
Western Bohemia	0.043	0.024	0.519	0.033	0.014	0.013	0.008	0.004	0.003	0.002	0.663
Northern Bohemia	0.047	0.014	0.026	0.495	0.021	0.008	0.007	0.003	0.003	0.002	0.626
Eastern Bohemia	0.036	0.009	0.012	0.025	0.431	0.015	0.010	0.003	0.002	0.002	0.545
Southern Moravia	0.013	0.010	0.008	0.009	0.011	0.315	0.019	0.004	0.003	0.001	0.393
Northern Moravia	0.012	0.005	0.007	0.008	0.009	0.023	0.311	0.003	0.005	0.002	0.385
Western Slovakia	0.005	0.002	0.003	0.004	0.004	0.006	0.005	0.233	0.020	0.005	0.287
Central Slovakia	0.005	0.002	0.003	0.004	0.004	0.004	0.008	0.023	0.342	0.010	0.405
Eastern Slovakia	0.007	0.003	0.007	0.008	0.004	0.004	0.006	0.010	0.013	0.273	0.335
b. Net migraproduction allocation (proportional distribution)											
Central Bohemia	0.771	0.035	0.046	0.069	0.043	0.015	0.011	0.004	0.004	0.002	1.000
Southern Bohemia	0.070	0.786	0.039	0.029	0.026	0.030	0.012	0.003	0.003	0.002	1.000
Western Bohemia	0.065	0.036	0.782	0.050	0.021	0.020	0.012	0.006	0.005	0.003	1.000
Northern Bohemia	0.075	0.022	0.042	0.791	0.034	0.013	0.010	0.005	0.005	0.003	1.000
Eastern Bohemia	0.066	0.016	0.022	0.046	0.791	0.028	0.018	0.005	0.004	0.004	1.000
Southern Moravia	0.033	0.025	0.020	0.023	0.028	0.802	0.048	0.010	0.008	0.003	1.000
Northern Moravia	0.031	0.013	0.018	0.021	0.023	0.060	0.808	0.008	0.013	0.005	1.000
Western Slovakia	0.017	0.008	0.012	0.013	0.013	0.020	0.017	0.811	0.072	0.017	1.000
Central Slovakia	0.013	0.006	0.008	0.010	0.009	0.011	0.020	0.055	0.845	0.023	1.000
Eastern Slovakia	0.021	0.009	0.020	0.023	0.012	0.012	0.019	0.030	0.039	0.815	1.000

TABLE 25 Net migraproduction rates (both sexes combined), single-region and multiregional values: CSSR regions, 1975.

Region	Single-region NMR	Multiregional NMR
Central Bohemia	0.436	0.463
Southern Bohemia	0.615	0.583
Western Bohemia	0.732	0.663
Northern Bohemia	0.685	0.626
Eastern Bohemia	0.565	0.545
Southern Moravia	0.378	0.393
Northern Moravia	0.373	0.385
Western Slovakia	0.265	0.287
Central Slovakia	0.420	0.405
Eastern Slovakia	0.320	0.335
Calculated value for all the CSSR	0.517	
Weighted average for all the CSSR[a]		0.572
Coefficient of variation (percent)	31.7	26.1
Correlation coefficient	0.9950	
Regression coefficient[b]	0.8008	

[a] Dominant eigenvalue of the net migraproduction rate matrix.
[b] The change in multiregional values per unit change in single-region values.

Table 25 also shows that the level of interregional mobility for Czechoslovakia as a whole is about 10 percent higher in the multiregional analysis (0.517 migrations per person in the single-region model and 0.572 migrations per person in the multiregional model).

In the last part of this section we present two discussion notes concerning the characterization and measurement of the level of migration and the possibility of enriching the migration models.

As stated in subsection 3.2 the principle of the homogeneity of populations from the point of view of migration behavior, i.e., the dependence of migration only on the age structure of the population (which is the basic assumption when constructing multiregional life tables) really does not give a true picture of the complex migration process. It has been stressed that the approach probably overvalues the real level of migration and thus overestimates its influence on regional mortality. Using the article of Ledent (1980) and partial data from Czechoslovakia, we find that besides age there exist other factors that strongly influence the selectivity of migration. The first group contains

external factors, reflecting the economic and urban maturity, the social climate, and the ecological quality of the spatial units in which the observed populations live. These factors, when considered as a whole, give a total picture of the varied migration attractiveness of each spatial unit. But the influence of these factors on migration behavior differs among population categories and varies depending on the global changes in the spatial structure.

The second group of factors influencing migration selectivity constitutes internal factors directly linked with the population and its migrants. Besides the close relationship of the migration process to life cycles, as reflected in the age of the migrants, the migration history of individuals may also be considered to be an internal factor. As shown in subsection 3.2, the intensity of migration streams between regional units varies significantly according to a person's birthplace. Other empirical studies, for example, Morrison (1967, 1971), Speare (1970), and Clark and Huff (1977), have emphasized the close relationship between the total out-migration rate and the duration of residence. They conclude that the out-migration rate decreases according to the duration of residence: more precisely, that persons living in a given area for a longer time have a lower out-migration rate than those living there for a shorter time.

It would be useful to incorporate the varied migration patterns according to place of birth and duration of residence into the multiregional models. The lack of adequate data, however, is a serious obstacle to this approach. Nevertheless it would be highly recommendable to modify (approximately at least) the probabilities of out-migration by their dependence on the length of the stay in the respective region when creating multiregional life tables. In discussing these problems the works of Ginsberg (1971, 1972) are particularly relevant.

The second discussion note concerns the fact that the out-migration rate from a regional unit is conditioned by the position of that unit within the whole regional system. It is generally known that the intensity of the migration stream depends not only on the number and age structure of the origin region's population but also on the total attractiveness of the destination region (in contrast to fertility and mortality rates). Thus the total out-migration rate of a particular region is conditioned by a complex of attracting forces within the entire regional system. This is reflected in various gravity models, which have been successfully applied to migration models and have been widely used in planning. In such cases, the gravitational force of the region of destination has usually been expressed simply by the amount of population or by some modification of this number. It would be useful to see how this fact is reflected in the intensity values of migration streams and how it could be incorporated into multiregional life table construction.

3.4 Multiregional Population Projection

The data on regional fertility, mortality, and interregional migration presented in the preceding sections can be used to construct a discrete model of multi-

regional population projection. This model is based on the multiregional matrix growth operator or generalized Leslie matrix (Rogers 1975)

$$\boldsymbol{K}(t+1) = \mathbf{G}\boldsymbol{K}(t)$$

where the vector $\boldsymbol{K}(t)$ sets out the multiregional population disaggregated by age and region, and the matrix $\mathbf{G}$ is composed of zeros and elements that represent the various age/region-specific components of population change.

It must be emphasized that in this report the elements of the growth matrix are assumed to remain constant with regard to time, i.e., the age-specific fertility and mortality rates, and age/destination-specific migration rates remain at the 1975 level. Therefore, the projection describes what would happen under these specific conditions, and its result must not be interpreted as a forecast of the future.

This is especially important to stress in the case of Czechoslovakia where the development of the single components of population growth went through significant changes in the 1970s, especially in the case of fertility and interregional migration. In 1975 the country experienced a favorable level of fertility with relatively low regional variability. By 1979, however, the net reproduction rate reached 1.108 (in comparison with 1.164 in 1975), and in the early 1980s it is likely to reach a level near 1.000, a change that also has affected the regional variability of fertility in comparison with 1975. But significant changes have also occurred since 1975 in interregional migration; the total intensity has decreased and even changes in the net migration of certain regions can be seen. Because of these recent shifts in demographic behavior, the year 1975 is not representative of current trends, and projections based on 1975 data could be misleading. Bearing these facts in mind, we will continue with the multiregional projection analysis of future population development.

The main purpose of projecting the population with a constant growth matrix is to study the future impact and mainly long-term demographic and regional implications of current patterns of behavior. The important indicators of these trends are characteristics of the *stable population*. It is well known that a population closed to migration and exposed to an unchanging fertility and mortality regime, would ultimately reach a stable age structure, which increases at a constant rate through time. As shown by Rogers (1975), the same is true in the case of a multiregional population system that is closed to external migration and subjected to unchanging multiregional age-specific mortality, fertility, and internal migration rates. The annual growth rate of the stable population, i.e., the intrinsic growth rate (r), only depends on the observed schedules and is independent of the population size and age composition in the base year. It is computed as follows:

$$r = 0.2 \ln \lambda$$

where λ is the 5-year growth ratio of the stable population; it is the dominant characteristic root of the growth matrix.

A related demographic measure is the *stable equivalent of the observed population*. This is the population that has the same age distribution and rate of growth as the stable population and, in the long run, would produce the same stable population as the observed population under projection. The major difference between the stable equivalent population and the observed population is that the effect of the age structure is removed from the growth of the former population. Dividing each region's stable equivalent by the sum of all stable equivalents gives *the stable regional shares* (SHA).

Appendix D gives population projections to the years 2000 and 2025 (using constant 1975 rates of fertility, mortality, and migration) for the 10 regions of Czechoslovakia as well as the stable equivalent of the 1975 population. Table 26 summarizes some characteristics of the initial (1975) and projected populations.

The information contained in Table 26 is supplemented in Table 27. It represents comparisons of the projected average annual growth rates of the population until 2025 with analogous growth rates representing the period 1950–1975. Table 27 shows that, based on 1975 rates, the population development of Czechoslovakia until 2025 would have a favorable reproduction and migration regime (when the effect of external migration is not taken into account). The average annual population growth rate in the period 1975–2000 would reach 6.03 per thousand and in 2000–2025, 6.27. In both cases these values are only partly lower than those reached in the period 1950–1975, and they reflect the favorable fertility situation of 1975. But one observes large differences between the two national republics and among the single regions. The projections to 2025 for the Slovak Republic, taken as a whole and as three fundamental regions, show a gradual decrease in the growth rate: a substantially lower level in comparison with the period 1950–1975. On the other hand, the Czech Republic, taken as a whole and as separate regions (with the exception of Western Bohemia and Northern Moravia), would have a population growth near to the 1950–1975 level. The total growth rate of the Slovak Republic, however, would still be somewhat higher than that of the Czech Republic in both 25-year periods.

According to the multiregional projection, the regional variability of the growth rate would also gradually decrease during the 50-year period. The projected evolution would evoke changes in the regional redistribution of the population; all of the Slovak regions and some of the regions of Southern Bohemia, Southern Moravia, and Northern Moravia would increase their share of the national population.

Assuming that fertility, mortality, and interregional migration rates would remain the same as in 1975, the projections show that the regional variability of the mean age of the population would decrease by 2025. The range of the mean ages among regions would decrease from the 1975 value of 7.25 years to 4.31 years in 2000 and 2.90 years in 2025. In the Czech regions, with the exception of Northern Moravia, mean ages would decrease along with a decrease in the proportion of the population older than 60 years; in the Slovakian

TABLE 26 Characteristics of the 1975, 2000, and 2025 populations and of the stable equivalent population (both sexes combined): CSSR region.

Characteristic	Region										
	CB	SB	WB	NB	EB	SM	NM	WS	CS	ES	CSSR
Population (thousands)											
1975	2300.7	668.0	872.8	1135.8	1124.6	1985.2	1875.3	1966.9	1455.5	1316.9	14801.7
2000	2520.5	774.2	953.0	1262.9	1345.6	2287.6	2211.5	2412.4	1757.6	1686.2	17211.5
2025	2922.0	918.4	1055.6	1415.6	1538.0	2709.8	2572.0	2869.4	2054.6	2076.9	20132.3
Stable equivalent	2008.8	644.3	653.0	886.6	1005.7	1990.4	1724.8	1879.7	1266.9	1856.6	13916.8
Distribution (percent)											
1975	15.54	4.51	5.90	7.67	8.27	13.41	12.68	13.29	9.83	8.90	100.00
2000	14.64	4.50	5.54	7.34	7.82	13.29	12.85	14.01	10.21	9.80	100.00
2025	14.51	4.56	5.24	7.03	7.64	13.46	12.78	14.25	10.21	10.32	100.00
Stable equivalent	14.44	4.63	4.69	6.37	7.23	14.30	12.39	13.51	9.10	13.34	100.00
Average annual growth rate (per thousand)											
1975–1980	4.55	7.06	5.09	6.29	4.72	6.82	8.36	10.22	9.28	11.51	7.48
1995–2000	5.12	6.75	4.06	4.66	4.98	6.40	6.50	7.21	6.56	8.73	6.23
2020–2025	5.98	6.65	4.25	4.66	5.46	6.72	5.78	6.26	5.65	7.69	6.04
Stable equivalent	6.37	6.37	6.37	6.37	6.37	6.37	6.37	6.37	6.37	6.37	6.37
Mean age											
1975	38.23	35.85	34.44	33.89	36.20	35.80	33.49	33.44	32.35	30.98	34.61
2000	36.29	34.69	34.54	34.13	34.98	34.67	34.04	34.20	33.38	31.98	34.34
2025	35.69	34.66	34.30	33.95	34.74	34.47	34.26	35.02	34.28	32.79	34.49
Stable equivalent	35.41	34.54	33.76	33.51	34.40	34.34	34.00	34.90	34.10	32.92	34.25
Percent of population younger than 15 years											
1975	18.95	22.14	23.00	23.38	21.97	22.34	24.51	24.25	26.24	28.56	23.36
2000	21.66	23.80	23.96	24.36	23.82	24.15	24.61	24.01	25.42	27.76	24.27
2025	22.66	24.28	24.63	24.99	24.48	24.77	24.87	23.83	25.07	27.39	24.61
Stable equivalent	23.01	24.51	25.16	25.41	24.87	25.01	25.17	24.08	25.34	27.41	24.96
Percent of population older than 60 years											
1975	22.23	19.59	16.53	15.57	20.32	19.43	15.45	15.56	14.53	13.00	17.41
2000	16.46	15.32	15.09	14.06	15.92	15.58	14.40	14.57	14.19	13.07	14.90
2025	17.03	16.40	15.91	15.17	16.70	16.43	15.97	17.11	16.54	15.06	16.33
Stable equivalent	16.57	16.12	14.93	14.43	16.07	16.10	15.43	16.52	15.85	14.93	15.80

TABLE 27 Average annual population growth rates,[a] comparison of the rates for the period 1950–1975 with the projected rates for the period 1975–2025 (both sexes combined): CSSR regions.

Region	Period		
	1950–1975	1975–2000	2000–2025
Central Bohemia	2.84	3.65	5.91
Southern Bohemia	2.62	5.90	6.83
Western Bohemia	4.88	3.52	4.09
Northern Bohemia	4.03	4.24	4.57
Eastern Bohemia	2.38	3.77	5.35
Southern Moravia	5.01	5.67	6.77
Northern Moravia	11.05	6.60	6.04
Western Slovakia	11.11	8.17	6.94
Central Slovakia	12.96	7.54	6.25
Eastern Slovakia	15.24	9.89	8.34
CSSR	7.28	6.03	6.27
CSR	4.93	4.84	5.81
SSR	12.79	8.46	7.14
Coefficient of variation (percent)			
CSSR (10 regions)	63.7	34.9	19.2
CSR (7 regions)	59.3	24.5	17.1
SSR (3 regions)	12.9	11.6	10.5

[a] The average annual growth rate (per thousand) is derived by using the formula:

$$g = (1/n) \ln (P_{t+n}/P_t)1000$$

where $n = 5$ years, P_t = initial population, and P_{t+n} = final population.

SOURCE: Data for the period 1950–1975 are derived from the 1950 census and from the 1975 population registration. Projected data are derived from the data in Appendix A.

regions the projections show a partial aging of population in contrast to 1975. Considering Czechoslovakia as a whole, however, no significant changes in either the mean age of the population or the proportion of young and old would occur.

For the study of potential consequences of contemporary (in this case, 1975) reproduction behavior and migration flows, an evaluation of the stable equivalent population is most instructive. As we can see from the data presented in Table 26, when the influences of the existing age structure and the initial regional distribution are eliminated, stable growth occurs at the annual rate of 6.37 per thousand. This value for Czechoslovakia as a whole is near the 1975–2025 values and does not differ much from the contemporary growth rate in the CSSR. The projections for the individual regions, however, show significant differences. The initial regional populations are far from being stable inasmuch

as their share of the total population of the CSSR, their age structure, and their growth rates do not remain constant in the projection.

Of the data given in Table 26, the most important characteristics are those concerning the regional shares and the age composition of the CSSR stable population. It is evident that primarily the regions of Western Bohemia and Northern Bohemia, as well as Eastern Bohemia, would have lower population shares at stability than in the base year, 1975. This may be interpreted as a consequence of the lower level of fertility, of the above-average intensity of out-migration, and of the negative net migration. A similar lower stable population share would exist in Central Bohemia, mainly because of its lower fertility level, and in Central Slovakia, mainly because of its high level of negative net migration. Conversely, Eastern Slovakia, which has the highest level of fertility in the CSSR, would experience the highest increase in its share of the population from 1975 to stability. The Czech regions that would increase their share of population would be Southern Bohemia and particularly Southern Moravia. In both cases these are regions with relatively favorable fertility and mortality levels and with positive net migration.

It is also interesting to compare the evolving proportional shares of the two basic areas of Czechoslovakia – the Czech and Slovak Republics – since they exhibit different fertility and out-migration rates. If we compare the share of population of both these areas in the 1975 base year with their stable population shares, we see that the Slovakian share of the CSSR population would increase approximately by 4 percent, which is essentially the same percentage difference that existed between the republics for the net reproduction rate in 1975. This only confirms that the differences in the mortality and migration levels between the Czech and Slovak Republics were minimal in 1975.

An important characteristic that reflects the consequences of a constant reproduction and migration regime is the *age composition of the stable population*. Table 26 shows that the projected mean age of the stable population would not differ much from the 1975 mean age for Czechoslovakia as a whole. But there are significant changes within the individual regions. All the regions in the Czech Republic, with the exception of Northern Moravia, indicate a stable population having a younger mean age than in 1975 – a decrease within the range 0.4 years (Northern Bohemia) to 2.8 years (Central Bohemia). In these regions the proportion of the younger population, 0–15 years, would increase and simultaneously the share of those over 60 would decrease. On the other hand, in Northern Moravia and all of the Slovakian regions the stable population would have an older mean age (an increase in the Slovakian regions of 1.7 years on the average and in Northern Moravia of 0.5 years). Since at present the Czech regions have an older population than the Slovakian regions, the consequence of this development would be a gradual equalizing among the regions and thus a lessening in the regional variability of the age structures. In 1975 the range between regions with the highest mean age (Central Bohemia) and the lowest mean age (Eastern Slovakia) represented 7.3 years; in the projected stable population this range would amount to 2.5 years.

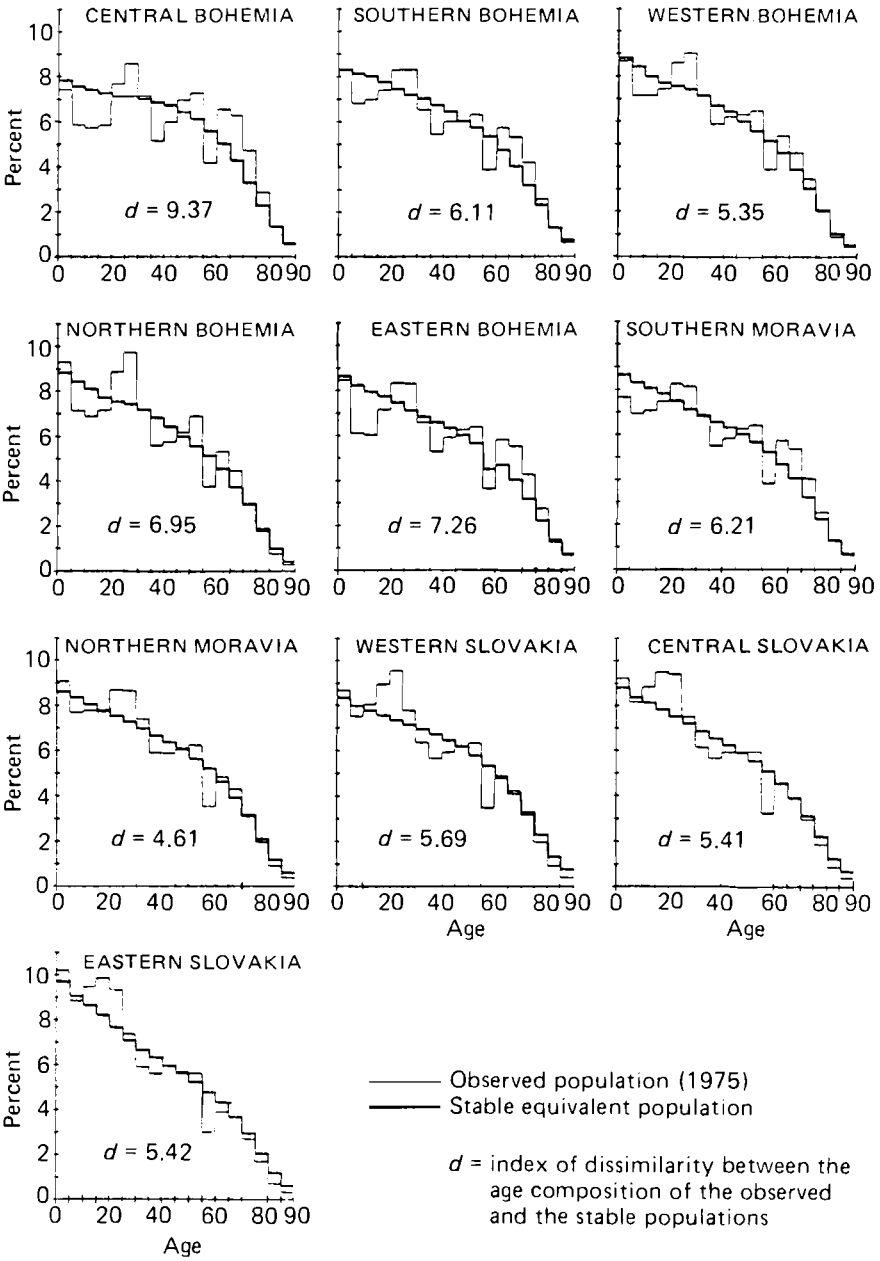

FIGURE 17 Observed (1975) and stable equivalent regional population age compositions of the CSSR.

These results are not surprising when one considers the differences between the fertility level in the 1975 base year and previous periods. Most of the Czech regions had a higher fertility level in 1975 than in the previous 20–25 years, whereas the contrary was true for the Slovakian regions. The mortality level and the intensity of interregional migration have a substantially lower influence on the age structure of regional stable populations. Note, however, that this is only true for higher levels of regional aggregations and that the influence of migration would naturally increase, if smaller and therefore more regional units were used in the analysis.

We now turn to the proportion of the population that has the greatest importance on economic development: the 15–60 year olds. Again assuming a constant 1975 fertility and migration reproduction regime and constant rates for the projections, we find that the labor force share of the population in the long run would not substantially decrease either for Czechoslovakia as a whole or for its separate regions. The increase or decrease of the regional shares between the 1975 and stable equivalent populations would not exceed 2 percent in any region.

A more detailed comparison of the initial and stable population age structures is illustrated in Figure 17. It is evident from the graphs that the age composition at stability would be substantially more even than the 1975 population and would have a characteristic shape for all regions, with Eastern Slovakia having the steepest and Central Bohemia having the most gentle slope.

It is also interesting to compare the age composition of the initial and stable populations by the index of dissimilarity. The highest value of this index (9.37), which means the least similarity between age structures, exists in Central Bohemia; the greatest similarity exists in Northern Moravia (4.61). In contrast to the Slovakian regions, the Czech regions had a substantially smaller proportion of people in the 0–20 age groups in 1975. This again reflects the higher fertility level after 1975 than before in the Czech regions.

4 POPULATION DISTRIBUTION POLICY

The regulation and guidance of the spatial distribution of populations in Czechoslovakia is based on the fundamental aims of development in socialist societies. These aims encompass the continual upgrading of living standards for everyone and the safeguarding of a healthy and cultural environment. Such principles provide the base upon which all planning activities are built.

Planning activities are particularly important in a country like Czechoslovakia where economic and social development across regions has advanced at an irregular pace. Because of this uneven growth, every effort has been made in the CSSR to improve the standard of living in all regions.

4.1 The Postwar Territorial Development of Czechoslovakia

The most influential factor affecting population redistribution within the CSSR immediately after World War II was the migration of Germans. By the middle

of 1947, over three million Germans moved out of Czechoslovakia, thus causing a sudden change in the population structure of Bohemia and, to a lesser extent, of Moravia and Slovakia. An effort was made to avoid the regional inequality that would have evolved in the absence of strong public measures. Organized recruitment was initiated, with material rewards as incentives, and the development of technical and social infrastructures began.

These new population policies led to a heavy migration from Slovakia to the Czech Republic, which reached its peak at the beginning of the 1950s and began to decrease gradually thereafter. The decrease was a result of a second factor affecting regional development: the industrialization of Slovakia, which not only brought industry to the labor market but also raised the economic and social level of the SSR.

Industrial restructuring was a third factor in the postwar planning policies of the CSSR. Prewar industry focused on consumer goods; postwar industry turned to heavy industry. The coal mining area of the northwest, for example, received concentrated investments of money and labor after World War II. At the same time there was an effort made to construct and maintain industry in less developed regions, such as South Bohemia, Moravia, and parts of Slovakia. The shifting of industrial locations caused a significant amount of interregional migration, the main result of which was a marked variation in the age structures of populations across regions. The labor force was drawn primarily from the agricultural regions, thus draining the rural areas of their youth. By the middle of the 1960s, it was necessary to attract the young back to the country by increasing incomes and raising the standard of living in rural settlements.

Another policy that began at the end of the 1950s and lasted through part of the 1970s was a limitation of population growth in Prague. Employment was regulated, and only people who had a job in Prague were able to move there. Housing construction was reduced, and investments were directed elsewhere.

By the end of the 1960s, the population distribution of the CSSR was quite different from what it had been 15 years before. But this redistribution did not stabilize the spatial population pattern. A new pattern, having two characteristic features, began to evolve; people began to migrate shorter distances, and they were no longer as strongly influenced by economic advantages as previously (Kühnl 1978, Kühnl and Hampl 1981).

In the early 1970s a new program of investment began, which involved the spatial restructuring of socioeconomic activities. The Prague and Bratislava agglomerations and Northern Bohemia became the recipients of large investments, which initiated a period of modernization. By the end of the 1970s, however, an insufficient amount of labor was attracted to these regions for several primary reasons; out-of-date working places were not closed down, housing needs were greater than the increased construction provided, and people became more concerned with their surrounding environment. The major agglomerations, therefore, did not receive all of the intended in-migration.

4.2 The Czechoslovakian Concept of Settlement System Planning

Czechoslovakia, like other socialist countries, has increased the amount of attention paid to the spatial aspects of economic planning – the equalization of economic development across regions. On the basis of a series of analytical studies done by the Research Institute of Building and Architecture and other physical planning institutions, in 1967 the Czechoslovakian government established directives for a long-term settlement plan.

The first phase of the settlement plan began with the division of three hierarchical levels of settlement centers: local, district, and regional. Local centers catered to cities and surrounding areas of 3 to 6 thousand inhabitants and were responsible for the basic personal and social needs of the people. District centers were mainly developed cities and surrounding areas of a minimum of 30 thousand inhabitants with a planned 50 thousand residents that provided more facilities than the smaller centers. Finally, regional centers, the highest level of division, provided their inhabitants with more specialized facilities. The function of these centers was fulfilled by the 19 capital cities. District centers were defined by the government in 1971 in the CSR and in 1972 in the SSR. Local centers were approved by Regional National Committees. Together, the CSSR had 247 district centers (170 in the CSR) and 1463 local centers (859 in the CSR).

Because local and district centers were allotted decisive roles in physical planning, the system of centers brought positive results, such as in the development of services and the allocation of housing. It became more and more clear, however, that this system was not suitable for existing and developing urban agglomerations and urbanized zones and that problems concerning local centers resulted from an underestimation of future urban growth and service needs.

Thus a second phase of settlement planning began, one that emphasized the growth of urban areas. Balancing job opportunities with available labor force, protecting the environment, providing high living standards, and preserving land for agricultural production became the primary concerns of the decision makers. In 1976, therefore, the CSSR was divided into 19 regional settlement concentrations (12 in the CSR and 7 in the SSR – category I), which contained 35 district settlements (22 in the CSR and 13 in the SSR – category II).

Table 28 shows the percent of the population living in these settlements in 1970 and the expected percentage in the year 2000. The number of Slovakian inhabitants is expected to increase by 30.5 percent by the year 2000 (from 1970), whereas the number of Czech inhabitants is only expected to increase by 11.5 percent. The Czech Republic can expect a more significant regional variability in the next 20 to 30 years than Slovakia, mainly because of the young population that is now living in the urbanized areas of the CSR. Natural increase will cause these areas to grow considerably more than comparable areas in Slovakia. Of course, this urban growth will be influenced by such external factors as housing construction, transportation investment, and environmental conditions.

TABLE 28 Existing and expected share (percent) of population.

Settlement	CSSR		CSR		SSR	
	1970	2000[a]	1970	2000[a]	1970	2000
Regional						
Category I	44.5	46.5 49.0	49.2	51.0 55.0	34.4	37.6
Category II	10.3	11.8 12.4	9.2	10.0 11.0	12.7	14.2
District	9.0	10.8 11.1	9.3	10.0 11.0	8.5	11.3
Remaining	36.2	30.9 27.5	32.3	29.0 23.9	44.4	36.9
Total	100.0	100.0	100.0	100.0	100.0	100.0

[a]The minimum and maximum projected values are given for the CSSR and the CSR.
SOURCE: Výhledové směry urbanizace a dlouhodobé koncepce rozvoje osídlení CSSR – svodný materiál [Perspective directions of urbanization and long-term concepts of development of the CSSR settlement], Terplan Praha, Urbion Bratislava 1978, p. 17.

5 CONCLUSION

Until recently, demographic analyses have dealt predominantly with population characteristics and processes from the point of view of time. The dimension of space was usually left aside even though time–space analyses of population problems were important to decision makers. Many questions often arose such as: how can we accurately measure the migration level; in what manner is it possible to relate migration with fertility and mortality; what are the effects of migration on regional fertility and mortality levels; and how can we improve the methodology of regional population projections and forecasts?

Many such questions can at least be partly answered by multiregional population analyses in which all components of demographic dynamics are integrated into one complex system. The study applies this new approach to 10 regions of Czechoslovakia. It should be considered only as an introduction and a first illustration of population redistribution analysis. There still exist, however, some open questions in the present multiregional population analysis. It neglects specifications of migration other than age. The identification of more specific migration rates, such as ones disaggregated by events in the migration history of inhabitants, would provide new directions of understanding the spatial redistribution of a population.

One main result of the multiregional population analysis is the regional population projections. In Czechoslovakia, as well as in some other countries,

the common approach to these projections is to deal with natural population dynamics and migration separately. (In the CSSR there exist regional projections based on the fertility and mortality development with adjustments made for net migration.) Some of the problems of this approach can be removed by projections based on the multiregional population model. However, a full utilization of this new methodological approach for regional population projections, forecasts, and population distribution policy requires further research.

Despite several unanswered questions and some problems that have yet to be solved, the multiregional population analysis provides a notable step toward a better understanding of spatial demographic dynamics, an understanding that promotes more effective planning. It is hoped that this study will stimulate further work in this field.

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APPENDIXES

Appendix A

OBSERVED POPULATION AND NUMBERS OF BIRTHS, DEATHS, AND MIGRANTS BY AGE AND REGION: 1975

APPENDIX A

Observed population characteristics.

region c.boh

age	population	births	deaths	migration from c.boh	s.boh	c.boh to w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	170534.	0.	921.	0.	329.	368.	543.	388.	173.	134.	54.	44.	31.
5	133911.	0.	53.	0.	130.	133.	169.	137.	64.	42.	19.	18.	10.
10	131444.	3.	41.	0.	77.	78.	97.	95.	39.	26.	13.	10.	9.
15	137481.	3658.	101.	0.	188.	246.	381.	303.	122.	88.	41.	33.	23.
20	178803.	16740.	159.	0.	497.	595.	961.	691.	288.	220.	83.	71.	53.
25	197526.	13251.	189.	0.	325.	354.	613.	441.	200.	138.	60.	46.	33.
30	164194.	4895.	197.	0.	163.	167.	262.	187.	92.	63.	30.	21.	15.
35	119762.	1018.	233.	0.	78.	78.	114.	98.	43.	28.	15.	11.	10.
40	137086.	165.	435.	0.	75.	78.	109.	99.	41.	28.	14.	10.	8.
45	156255.	2.	742.	0.	52.	73.	99.	90.	33.	26.	12.	11.	7.
50	167496.	0.	1331.	0.	47.	60.	111.	75.	32.	25.	10.	7.	6.
55	94813.	0.	1134.	0.	32.	41.	61.	49.	27.	16.	5.	5.	4.
60	150472.	0.	3159.	0.	50.	62.	108.	78.	33.	34.	10.	6.	5.
65	143464.	0.	4916.	0.	41.	64.	97.	72.	33.	27.	8.	5.	4.
70	107108.	0.	6047.	0.	26.	34.	72.	51.	20.	15.	6.	5.	6.
75	66078.	0.	6087.	0.	24.	36.	92.	48.	19.	15.	3.	3.	2.
80	30942.	0.	4465.	0.	11.	24.	50.	33.	8.	9.	1.	2.	0.
85	13336.	0.	3293.	0.	15.	18.	31.	25.	8.	8.	3.	2.	2.
total	2300705.	39732.	33503.	0.	2160.	2509.	3970.	2960.	1275.	942.	388.	310.	228.

region s.boh

age	population	births	deaths	migration from c.boh	s.boh	s.boh to w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	55805.	0.	268.	308.	0.	131.	80.	87.	165.	61.	26.	15.	8.
5	45718.	0.	16.	124.	0.	53.	27.	34.	72.	23.	11.	7.	3.
10	46372.	1.	16.	113.	0.	40.	20.	30.	55.	18.	10.	5.	3.
15	50057.	1298.	36.	230.	0.	89.	56.	68.	120.	42.	20.	12.	6.
20	55607.	5898.	49.	576.	0.	193.	130.	143.	245.	90.	35.	23.	13.
25	55824.	3696.	49.	422.	0.	113.	82.	90.	166.	54.	24.	15.	8.
30	43881.	1152.	58.	199.	0.	57.	37.	40.	83.	27.	13.	7.	4.
35	36277.	304.	62.	120.	0.	32.	19.	25.	48.	15.	8.	4.	3.
40	39897.	43.	129.	118.	0.	30.	18.	24.	43.	14.	7.	4.	2.
45	40613.	0.	186.	59.	0.	17.	10.	13.	20.	8.	4.	2.	1.
50	41703.	0.	311.	49.	0.	14.	11.	11.	18.	7.	3.	2.	1.
55	25381.	0.	325.	20.	0.	8.	5.	7.	14.	4.	1.	1.	1.
60	38277.	0.	736.	34.	0.	12.	9.	10.	16.	8.	3.	1.	1.
65	35169.	0.	1126.	26.	0.	11.	7.	8.	14.	6.	1.	1.	1.
70	27201.	0.	1376.	27.	0.	9.	9.	9.	14.	5.	3.	2.	1.
75	17404.	0.	1445.	22.	0.	7.	7.	6.	9.	3.	1.	1.	0.
80	8591.	0.	1213.	15.	0.	5.	5.	5.	4.	2.	0.	0.	0.
85	4221.	0.	995.	10.	0.	3.	3.	3.	4.	2.	0.	0.	0.
total	667993.	12392.	8396.	2472.	0.	824.	535.	613.	1110.	389.	170.	102.	56.

region w.boh

age	population	births	deaths	migration from c.boh	s.boh	w.boh to w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	76168.	0.	341.	461.	224.	0.	269.	110.	167.	97.	63.	37.	30.
5	62361.	0.	26.	248.	134.	0.	121.	56.	96.	49.	35.	21.	15.
10	62224.	4.	14.	191.	88.	0.	76.	43.	63.	32.	27.	13.	13.
15	64448.	2187.	44.	287.	112.	0.	162.	74.	104.	57.	42.	24.	20.
20	75054.	7904.	69.	685.	252.	0.	360.	149.	204.	117.	69.	46.	38.
25	78067.	4951.	78.	551.	182.	0.	257.	107.	156.	81.	51.	34.	26.
30	62270.	1711.	74.	311.	115.	0.	136.	56.	92.	47.	34.	19.	15.
35	50601.	403.	110.	209.	75.	0.	77.	38.	59.	29.	24.	12.	12.
40	53151.	72.	170.	183.	62.	0.	66.	34.	48.	24.	19.	11.	9.
45	54790.	1.	276.	100.	27.	0.	38.	20.	24.	14.	11.	7.	5.
50	56271.	0.	474.	68.	19.	0.	35.	13.	18.	10.	6.	4.	3.
55	33127.	0.	480.	39.	16.	0.	23.	11.	18.	9.	5.	3.	2.
60	45816.	0.	978.	53.	19.	0.	32.	13.	17.	13.	6.	3.	3.
65	40197.	0.	1470.	41.	14.	0.	25.	11.	16.	10.	4.	2.	2.
70	29439.	0.	1825.	25.	9.	0.	18.	7.	9.	5.	4.	2.	3.
75	17412.	0.	1681.	28.	7.	0.	22.	7.	8.	4.	2.	1.	1.
80	7929.	0.	1191.	14.	3.	0.	11.	4.	3.	2.	0.	0.	0.
85	3471.	0.	899.	15.	6.	0.	9.	4.	4.	3.	1.	1.	1.
total	872796.	17233.	10200.	3509.	1364.	0.	1737.	757.	1106.	603.	403.	240.	198.

region n.boh

age	population	births	deaths	migration from c.boh	s.boh	n.boh to w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	104943.	0.	623.	676.	162.	280.	0.	242.	117.	105.	59.	33.	32.
5	82057.	0.	53.	309.	82.	126.	0.	104.	57.	45.	28.	16.	13.
10	78565.	3.	25.	229.	52.	78.	0.	77.	36.	28.	20.	10.	12.
15	80871.	3243.	82.	462.	89.	178.	0.	178.	80.	68.	44.	23.	24.
20	100777.	10466.	112.	1146.	210.	389.	0.	376.	165.	147.	74.	46.	47.
25	110484.	6815.	114.	857.	143.	243.	0.	253.	118.	95.	51.	32.	31.
30	81066.	2142.	113.	437.	81.	128.	0.	119.	62.	50.	31.	16.	15.
35	63350.	571.	116.	259.	47.	70.	0.	72.	35.	27.	19.	9.	12.
40	65257.	90.	226.	243.	42.	67.	0.	70.	31.	25.	16.	9.	10.
45	70586.	8.	376.	186.	25.	55.	0.	57.	22.	20.	12.	8.	7.
50	78510.	0.	677.	151.	21.	44.	0.	45.	19.	17.	10.	5.	5.
55	42470.	0.	597.	75.	15.	31.	0.	31.	17.	12.	6.	4.	3.
60	59968.	0.	1438.	118.	21.	42.	0.	44.	19.	22.	9.	4.	5.
65	50204.	0.	1911.	86.	15.	36.	0.	34.	16.	15.	6.	3.	4.
70	34202.	0.	2169.	47.	8.	17.	0.	21.	9.	7.	4.	3.	4.
75	20050.	0.	1977.	50.	7.	16.	0.	18.	7.	6.	3.	1.	2.
80	8841.	0.	1388.	23.	2.	9.	0.	10.	2.	3.	0.	0.	0.
85	3599.	0.	910.	20.	4.	7.	0.	9.	3.	3.	1.	0.	1.
total	1135800.	23338.	12907.	5374.	1026.	1816.	0.	1760.	815.	695.	393.	222.	227.

APPENDIX A *Continued.*

region e.boh

age	population	births	deaths	migration from c.boh	s.boh	e.boh to w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	103465.	0.	437.	505.	94.	108.	256.	0.	252.	170.	57.	32.	26.
5	83281.	0.	34.	181.	38.	38.	77.	0.	97.	57.	21.	12.	8.
10	82276.	1.	24.	137.	24.	24.	47.	0.	63.	37.	16.	8.	7.
15	87527.	2635.	60.	371.	55.	73.	181.	0.	184.	117.	45.	24.	20.
20	101980.	11218.	90.	992.	139.	172.	452.	0.	407.	272.	82.	51.	43.
25	101459.	6762.	104.	676.	85.	96.	272.	0.	262.	157.	50.	32.	26.
30	80411.	2210.	86.	270.	38.	40.	102.	0.	110.	65.	24.	13.	10.
35	64371.	465.	117.	154.	21.	21.	49.	0.	59.	34.	14.	7.	7.
40	72449.	81.	192.	154.	20.	21.	48.	0.	55.	33.	13.	7.	6.
45	76523.	6.	296.	127.	13.	19.	42.	0.	42.	29.	10.	7.	5.
50	77974.	0.	617.	87.	9.	13.	38.	0.	32.	21.	7.	4.	3.
55	44015.	0.	513.	38.	6.	8.	20.	0.	25.	14.	3.	3.	2.
60	71305.	0.	1403.	76.	10.	14.	39.	0.	34.	30.	8.	3.	3.
65	67609.	0.	2165.	55.	7.	12.	29.	0.	29.	21.	4.	3.	3.
70	52340.	0.	2775.	38.	5.	7.	24.	0.	20.	12.	5.	3.	3.
75	33476.	0.	2785.	44.	4.	7.	30.	0.	18.	11.	2.	2.	2.
80	16409.	0.	2238.	32.	3.	6.	21.	0.	9.	9.	1.	1.	0.
85	7729.	0.	1794.	24.	4.	5.	13.	0.	9.	8.	1.	1.	1.
total	1224599.	23378.	15730.	3961.	575.	684.	1740.	0.	1707.	1097.	363.	213.	175.

region s.mor

age	population	births	deaths	migration from c.boh	s.boh	s.mor to w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	166351.	0.	696.	231.	177.	113.	115.	193.	0.	560.	136.	56.	28.
5	137092.	0.	43.	86.	76.	43.	37.	71.	0.	202.	54.	23.	10.
10	139948.	1.	48.	56.	41.	23.	19.	44.	0.	108.	34.	12.	7.
15	147425.	3890.	75.	173.	103.	76.	80.	151.	0.	379.	107.	42.	21.
20	163356.	17771.	128.	531.	292.	200.	225.	383.	0.	994.	222.	101.	52.
25	161616.	11162.	159.	370.	173.	108.	132.	224.	0.	558.	138.	61.	30.
30	134158.	3983.	159.	158.	85.	50.	54.	92.	0.	255.	71.	27.	13.
35	108269.	953.	195.	93.	49.	27.	27.	55.	0.	135.	43.	15.	10.
40	115139.	173.	303.	69.	33.	19.	19.	40.	0.	94.	27.	11.	6.
45	123699.	11.	544.	44.	17.	14.	13.	29.	0.	69.	19.	9.	4.
50	127085.	0.	980.	41.	17.	13.	16.	26.	0.	66.	15.	6.	3.
55	75300.	0.	857.	19.	12.	9.	9.	18.	0.	47.	9.	5.	2.
60	113787.	0.	2126.	30.	16.	12.	15.	25.	0.	82.	15.	5.	3.
65	105881.	0.	3224.	29.	14.	13.	14.	25.	0.	74.	11.	5.	3.
70	79609.	0.	4121.	22.	11.	8.	12.	20.	0.	46.	13.	6.	4.
75	49670.	0.	4117.	22.	8.	7.	13.	16.	0.	37.	7.	3.	2.
80	24665.	0.	3302.	14.	4.	5.	8.	12.	0.	24.	3.	1.	0.
85	12124.	0.	2871.	13.	7.	5.	6.	12.	0.	26.	4.	1.	1.
total	1985174.	37944.	23948.	2001.	1135.	745.	814.	1436.	0.	3756.	928.	389.	199.

region n.mor

age	population	births	deaths	migration from c.boh	s.boh	n.mor to w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	169983.	0.	817.	219.	83.	107.	97.	143.	628.	0.	110.	113.	55.
5	144158.	0.	50.	103.	45.	51.	39.	65.	324.	0.	54.	58.	24.
10	145427.	3.	54.	88.	31.	35.	26.	54.	230.	0.	44.	39.	23.
15	145213.	4377.	100.	153.	45.	68.	64.	105.	424.	0.	80.	79.	40.
20	162942.	17556.	151.	427.	117.	163.	163.	242.	961.	0.	151.	173.	87.
25	162131.	10825.	182.	305.	72.	91.	98.	147.	622.	0.	96.	108.	52.
30	138267.	3829.	178.	159.	43.	51.	50.	73.	348.	0.	61.	59.	27.
35	110123.	990.	224.	102.	27.	30.	27.	48.	213.	0.	40.	36.	22.
40	109890.	173.	328.	76.	18.	22.	19.	35.	141.	0.	26.	26.	14.
45	114311.	6.	590.	55.	11.	18.	15.	28.	98.	0.	19.	22.	9.
50	116997.	0.	984.	37.	7.	11.	13.	18.	71.	0.	12.	12.	6.
55	66052.	0.	824.	17.	5.	8.	7.	12.	59.	0.	6.	9.	4.
60	90621.	0.	1820.	31.	8.	12.	14.	20.	77.	0.	13.	11.	6.
65	80283.	0.	2759.	22.	6.	10.	10.	15.	65.	0.	7.	8.	5.
70	59217.	0.	3223.	15.	4.	6.	7.	11.	40.	0.	7.	8.	5.
75	35855.	0.	3164.	16.	3.	6.	9.	10.	37.	0.	4.	5.	3.
80	16492.	0.	2364.	10.	1.	4.	5.	7.	13.	0.	1.	2.	1.
85	7332.	0.	1818.	7.	2.	3.	3.	5.	14.	0.	1.	2.	1.
total	1875294.	37759.	19630.	1842.	528.	696.	666.	1038.	4365.	0.	732.	770.	384.

region w.slov

age	population	births	deaths	migration from c.boh	s.boh	w.slov to w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	171153.	0.	939.	89.	41.	50.	53.	64.	156.	137.	0.	548.	146.
5	147826.	0.	71.	29.	15.	16.	14.	20.	54.	42.	0.	171.	39.
10	157925.	7.	61.	21.	9.	10.	8.	14.	33.	25.	0.	112.	35.
15	175828.	3888.	119.	74.	27.	38.	42.	58.	129.	106.	0.	354.	97.
20	188113.	18290.	167.	207.	69.	93.	107.	131.	290.	251.	0.	1171.	327.
25	152294.	10836.	160.	102.	30.	36.	44.	53.	129.	99.	0.	575.	156.
30	125197.	4042.	160.	44.	15.	16.	19.	22.	59.	47.	0.	215.	56.
35	110929.	1263.	249.	28.	9.	10.	10.	15.	37.	27.	0.	121.	41.
40	116631.	279.	393.	20.	6.	6.	7.	10.	23.	17.	0.	87.	27.
45	122164.	20.	694.	15.	4.	5.	5.	8.	16.	14.	0.	69.	17.
50	124706.	1.	1069.	11.	3.	4.	5.	6.	12.	10.	0.	54.	15.
55	67999.	0.	863.	3.	1.	2.	2.	2.	8.	5.	0.	42.	11.
60	96028.	0.	1811.	6.	1.	3.	3.	3.	8.	9.	0.	51.	17.
65	83294.	0.	2528.	6.	1.	3.	3.	3.	9.	8.	0.	49.	17.
70	62176.	0.	3153.	6.	2.	3.	5.	6.	12.	10.	0.	32.	13.
75	38745.	0.	3218.	4.	1.	1.	4.	2.	6.	5.	0.	35.	13.
80	17715.	0.	2362.	4.	0.	1.	1.	1.	3.	3.	0.	19.	4.
85	8166.	0.	1837.	3.	1.	1.	1.	2.	3.	4.	0.	11.	5.
total	1966889.	38626.	19854.	672.	235.	298.	333.	420.	987.	819.	0.	3716.	1036.

APPENDIX A *Continued.*

region c.slov

age	population	births	deaths	migration from c.boh	s.boh	c.slov to w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	134488.	0.	737.	77.	31.	36.	42.	46.	81.	188.	732.	0.	239.
5	118661.	0.	58.	26.	12.	12.	12.	15.	30.	60.	228.	0.	68.
10	128717.	6.	33.	21.	8.	8.	8.	11.	20.	40.	201.	0.	69.
15	138115.	3140.	112.	67.	22.	29.	35.	42.	70.	153.	521.	0.	168.
20	136668.	14022.	154.	158.	48.	60.	77.	85.	137.	315.	1318.	0.	484.
25	108835.	8045.	138.	82.	22.	26.	35.	39.	67.	139.	764.	0.	250.
30	89508.	2984.	159.	36.	11.	12.	15.	16.	31.	63.	322.	0.	89.
35	82618.	1128.	196.	23.	7.	7.	8.	11.	19.	38.	196.	0.	69.
40	86466.	255.	310.	20.	6.	6.	7.	9.	15.	31.	163.	0.	55.
45	86468.	15.	428.	14.	3.	5.	5.	7.	10.	24.	112.	0.	32.
50	86847.	2.	704.	11.	2.	3.	5.	5.	8.	19.	95.	0.	30.
55	46627.	0.	558.	4.	1.	2.	2.	2.	5.	9.	52.	0.	19.
60	65770.	0.	1238.	4.	1.	2.	3.	3.	5.	14.	92.	0.	29.
65	57463.	0.	1691.	4.	1.	2.	3.	3.	5.	13.	75.	0.	30.
70	42652.	0.	2037.	5.	1.	2.	4.	4.	6.	12.	38.	0.	18.
75	27138.	0.	2208.	4.	1.	1.	2.	2.	3.	6.	46.	0.	17.
80	12604.	0.	1705.	3.	0.	1.	2.	2.	2.	5.	32.	0.	8.
85	5846.	0.	1335.	2.	0.	1.	1.	1.	1.	3.	11.	0.	4.
total	1455491.	29597.	13801.	561.	177.	215.	266.	303.	515.	1132.	4998.	0.	1678.

region e.slov

age	population	births	deaths	migration from c.boh	s.boh	e.slov to w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	134299.	0.	980.	90.	37.	74.	84.	50.	63.	129.	261.	228.	0.
5	116812.	0.	69.	38.	17.	31.	29.	20.	28.	50.	95.	92.	0.
10	125039.	13.	58.	33.	13.	22.	21.	17.	21.	38.	96.	74.	0.
15	129989.	3037.	105.	89.	30.	68.	81.	54.	63.	121.	216.	178.	0.
20	122977.	13357.	117.	181.	58.	123.	155.	94.	107.	217.	489.	444.	0.
25	97605.	8204.	117.	88.	26.	51.	68.	42.	51.	92.	293.	232.	0.
30	78002.	3129.	126.	43.	14.	25.	31.	19.	25.	46.	132.	95.	0.
35	74254.	1315.	169.	27.	9.	15.	16.	12.	15.	26.	73.	52.	0.
40	78072.	354.	275.	23.	7.	13.	14.	11.	13.	23.	68.	50.	0.
45	75014.	17.	387.	16.	4.	10.	10.	8.	8.	17.	45.	37.	0.
50	74250.	0.	596.	11.	3.	7.	10.	6.	6.	13.	35.	28.	0.
55	39466.	0.	448.	4.	1.	3.	4.	3.	4.	6.	18.	20.	0.
60	51271.	0.	908.	6.	2.	4.	6.	4.	4.	10.	36.	25.	0.
65	48060.	0.	1426.	5.	1.	4.	4.	3.	3.	7.	23.	19.	0.
70	35554.	0.	1637.	4.	1.	3.	5.	3.	3.	7.	11.	9.	0.
75	22568.	0.	1873.	3.	1.	2.	4.	2.	2.	3.	15.	11.	0.
80	9531.	0.	1314.	2.	0.	1.	1.	1.	0.	1.	5.	4.	0.
85	4158.	0.	988.	2.	1.	2.	2.	1.	1.	3.	6.	4.	0.
total	1316921.	29426.	11593.	665.	225.	458.	545.	350.	417.	809.	1917.	1602.	0.

Appendix B

OBSERVED AGE-SPECIFIC MORTALITY, FERTILITY, AND OUT-MIGRATION RATES: 1975

APPENDIX B

Mortality rates.

death rates
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age	c.boh	s.boh	w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	0.005401	0.004802	0.004477	0.005937	0.004224	0.004184	0.004806	0.005486	0.005480	0.007297
5	0.000396	0.000350	0.000417	0.000646	0.000408	0.000314	0.000347	0.000480	0.000489	0.000591
10	0.000312	0.000345	0.000225	0.000318	0.000292	0.000343	0.000371	0.000386	0.000256	0.000464
15	0.000735	0.000719	0.000683	0.001014	0.000686	0.000509	0.000689	0.000677	0.000811	0.000808
20	0.000889	0.000881	0.000919	0.001111	0.000883	0.000784	0.000927	0.000888	0.001127	0.000951
25	0.000957	0.000878	0.000999	0.001032	0.001025	0.000984	0.001123	0.001051	0.001268	0.001199
30	0.001200	0.001322	0.001188	0.001394	0.001070	0.001185	0.001287	0.001278	0.001776	0.001615
35	0.001946	0.001709	0.002174	0.001831	0.001818	0.001801	0.002034	0.002245	0.002372	0.002276
40	0.003173	0.003233	0.003198	0.003463	0.002650	0.002632	0.002985	0.003370	0.003585	0.003522
45	0.004749	0.004580	0.005037	0.005327	0.003868	0.004398	0.005161	0.005681	0.004950	0.005159
50	0.007946	0.007457	0.008424	0.008623	0.007913	0.007711	0.008410	0.008572	0.008106	0.008027
55	0.011960	0.012805	0.014490	0.014057	0.011655	0.011381	0.012475	0.012691	0.011967	0.011352
60	0.020994	0.019228	0.021346	0.023979	0.019676	0.018684	0.020084	0.018859	0.018823	0.017710
65	0.034266	0.032017	0.036570	0.038065	0.032022	0.030449	0.034366	0.030350	0.029428	0.029671
70	0.056457	0.050586	0.061993	0.063417	0.053019	0.051766	0.054427	0.050711	0.047759	0.046043
75	0.092118	0.083027	0.096543	0.098603	0.083194	0.082887	0.088244	0.083056	0.081362	0.082994
80	0.144302	0.141194	0.150208	0.156996	0.136389	0.133874	0.143342	0.133333	0.135275	0.137866
85	0.246926	0.235726	0.259003	0.252848	0.232113	0.236803	0.247954	0.224957	0.228361	0.237614
gross	3.173634	3.004303	3.339470	3.393309	2.964513	2.953438	3.145164	2.920357	2.915977	2.975791
crude	0.014562	0.012569	0.011687	0.011364	0.012845	0.012063	0.010468	0.010094	0.009482	0.008803
m.age	78.8137	78.8949	78.8779	78.4690	78.9451	79.0967	78.8728	78.4594	78.5594	78.5483

Fertility rates.

age	c.boh	s.boh	w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.000023	0.000022	0.000064	0.000038	0.000012	0.000007	0.000021	0.000044	0.000047	0.000104
15	0.026607	0.025930	0.033934	0.040101	0.030105	0.026386	0.030142	0.022113	0.022735	0.023364
20	0.093623	0.106066	0.105311	0.103853	0.110002	0.108787	0.107744	0.097229	0.102599	0.108614
25	0.067085	0.066208	0.063420	0.061683	0.066648	0.069065	0.066767	0.071152	0.073919	0.084053
30	0.029812	0.026253	0.027477	0.026423	0.027484	0.029689	0.027693	0.032285	0.033338	0.040114
35	0.008500	0.008380	0.007964	0.009013	0.007224	0.008802	0.008990	0.011386	0.013653	0.017709
40	0.001204	0.001078	0.001355	0.001379	0.001118	0.001503	0.001574	0.002392	0.002949	0.004534
45	0.000013	0.	0.000018	0.000113	0.000078	0.000089	0.000052	0.000164	0.000173	0.000227
50	0.	0.	0.	0.	0.	0.	0.	0.000008	0.000023	0.
55	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
60	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
65	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
70	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
75	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
80	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
85	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
gross	1.134332	1.169682	1.197718	1.213021	1.213354	1.221639	1.214915	1.183861	1.247181	1.393595
crude	0.017269	0.018551	0.019745	0.020548	0.019090	0.019114	0.020135	0.019638	0.020335	0.022345
m.age	25.3747	25.1116	24.8735	24.7150	24.9317	25.2607	25.0825	25.8389	25.9383	26.3230

Out-migration rates.

	migration from c.boh to									
age	total	c.boh	s.boh	w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	0.012103	0.	0.001929	0.002158	0.003184	0.002275	0.001014	0.000786	0.000317	0.000258	0.000182
5	0.005392	0.	0.000971	0.000993	0.001262	0.001023	0.000478	0.000314	0.000142	0.000134	0.000075
10	0.003378	0.	0.000586	0.000593	0.000738	0.000723	0.000297	0.000198	0.000099	0.000076	0.000068
15	0.010365	0.	0.001367	0.001789	0.002771	0.002204	0.000887	0.000640	0.000298	0.000240	0.000167
20	0.019345	0.	0.002780	0.003328	0.005375	0.003865	0.001611	0.001230	0.000464	0.000397	0.000296
25	0.011188	0.	0.001645	0.001792	0.003103	0.002233	0.001013	0.000699	0.000304	0.000233	0.000167
30	0.006090	0.	0.000993	0.001017	0.001596	0.001139	0.000560	0.000384	0.000183	0.000128	0.000091
35	0.003966	0.	0.000651	0.000651	0.000952	0.000818	0.000359	0.000234	0.000125	0.000092	0.000083
40	0.003370	0.	0.000547	0.000569	0.000795	0.000722	0.000299	0.000204	0.000102	0.000073	0.000058
45	0.002579	0.	0.000333	0.000467	0.000634	0.000576	0.000211	0.000166	0.000077	0.000070	0.000045
50	0.002227	0.	0.000281	0.000358	0.000663	0.000448	0.000191	0.000149	0.000060	0.000042	0.000036
55	0.002531	0.	0.000338	0.000432	0.000643	0.000517	0.000285	0.000169	0.000053	0.000053	0.000042
60	0.002565	0.	0.000332	0.000412	0.000718	0.000518	0.000219	0.000226	0.000066	0.000040	0.000033
65	0.002447	0.	0.000286	0.000446	0.000676	0.000502	0.000230	0.000188	0.000056	0.000035	0.000028
70	0.002203	0.	0.000243	0.000317	0.000672	0.000476	0.000187	0.000140	0.000065	0.000047	0.000056
75	0.003662	0.	0.000363	0.000545	0.001392	0.000726	0.000288	0.000227	0.000045	0.000045	0.000030
80	0.004460	0.	0.000356	0.000776	0.001616	0.001067	0.000259	0.000291	0.000032	0.000065	0.
85	0.008398	0.	0.001125	0.001350	0.002325	0.001875	0.000600	0.000600	0.000225	0.000150	0.000150
gross	0.531357	0.	0.075623	0.089973	0.145573	0.108530	0.044936	0.034222	0.013566	0.010888	0.008045
crude	0.006408	0.	0.000939	0.001091	0.001726	0.001287	0.000554	0.000409	0.000169	0.000135	0.000099
m.age	35.6068	0.	32.7006	34.8130	37.3866	36.7363	34.3979	36.7169	33.3271	32.8891	33.9103

	migration from s.boh to									
age	total	c.boh	s.boh	w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	0.015787	0.005519	0.	0.002347	0.001434	0.001559	0.002957	0.001093	0.000466	0.000269	0.000143
5	0.007743	0.002712	0.	0.001159	0.000591	0.000744	0.001575	0.000503	0.000241	0.000153	0.000066
10	0.006340	0.002437	0.	0.000863	0.000431	0.000647	0.001186	0.000388	0.000216	0.000108	0.000065
15	0.012845	0.004595	0.	0.001778	0.001119	0.001358	0.002397	0.000839	0.000400	0.000240	0.000120
20	0.026040	0.010358	0.	0.003471	0.002338	0.002572	0.004406	0.001619	0.000629	0.000414	0.000234
25	0.017448	0.007559	0.	0.002024	0.001469	0.001612	0.002974	0.000967	0.000430	0.000269	0.000143
30	0.010642	0.004535	0.	0.001299	0.000843	0.000912	0.001891	0.000615	0.000296	0.000160	0.000091
35	0.007553	0.003308	0.	0.000882	0.000524	0.000689	0.001323	0.000413	0.000221	0.000110	0.000083
40	0.006517	0.002958	0.	0.000752	0.000451	0.000602	0.001078	0.000351	0.000175	0.000100	0.000050
45	0.003299	0.001453	0.	0.000419	0.000246	0.000320	0.000492	0.000197	0.000098	0.000049	0.000025
50	0.002782	0.001175	0.	0.000336	0.000264	0.000264	0.000432	0.000168	0.000072	0.000048	0.000024
55	0.002403	0.000788	0.	0.000315	0.000197	0.000276	0.000552	0.000158	0.000039	0.000039	0.000039
60	0.002456	0.000888	0.	0.000314	0.000235	0.000261	0.000418	0.000209	0.000078	0.000026	0.000026
65	0.002133	0.000739	0.	0.000313	0.000199	0.000227	0.000398	0.000171	0.000028	0.000028	0.000028
70	0.002904	0.000993	0.	0.000331	0.000331	0.000331	0.000515	0.000184	0.000110	0.000074	0.000037
75	0.003218	0.001264	0.	0.000402	0.000402	0.000345	0.000517	0.000172	0.000057	0.000057	0.
80	0.004190	0.001746	0.	0.000582	0.000582	0.000582	0.000466	0.000233	0.	0.	0.
85	0.005923	0.002369	0.	0.000711	0.000711	0.000711	0.000948	0.000474	0.	0.	0.
gross	0.701117	0.276983	0.	0.091484	0.061830	0.070055	0.122618	0.043769	0.017788	0.010720	0.005870
crude	0.009388	0.003701	0.	0.001234	0.000801	0.000918	0.001662	0.000582	0.000254	0.000153	0.000084
m.age	31.6327	32.2364	0.	30.5611	34.1714	32.9793	30.3084	31.8304	26.4173	27.0982	27.3130

APPENDIX B *Continued.*

	migration from w.boh to										
age	total	c.boh	s.boh	w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	0.019142	0.006052	0.002941	0.	0.003532	0.001444	0.002193	0.001274	0.000827	0.000486	0.000394
5	0.012428	0.003977	0.002149	0.	0.001940	0.000898	0.001539	0.000786	0.000561	0.000337	0.000241
10	0.008775	0.003070	0.001414	0.	0.001221	0.000691	0.001012	0.000514	0.000434	0.000209	0.000209
15	0.013685	0.004453	0.001738	0.	0.002514	0.001148	0.001614	0.000884	0.000652	0.000372	0.000310
20	0.025582	0.009127	0.003358	0.	0.004797	0.001985	0.002718	0.001559	0.000919	0.000613	0.000506
25	0.018510	0.007058	0.002331	0.	0.003292	0.001371	0.001998	0.001038	0.000653	0.000436	0.000333
30	0.013249	0.004994	0.001847	0.	0.002184	0.000899	0.001477	0.000755	0.000546	0.000305	0.000241
35	0.010573	0.004130	0.001482	0.	0.001522	0.000751	0.001166	0.000573	0.000474	0.000237	0.000237
40	0.008579	0.003443	0.001166	0.	0.001242	0.000640	0.000903	0.000452	0.000357	0.000207	0.000169
45	0.004490	0.001825	0.000493	0.	0.000694	0.000365	0.000438	0.000256	0.000201	0.000128	0.000091
50	0.003128	0.001208	0.000338	0.	0.000622	0.000231	0.000320	0.000178	0.000107	0.000071	0.000053
55	0.003804	0.001177	0.000483	0.	0.000694	0.000332	0.000543	0.000272	0.000151	0.000091	0.000060
60	0.003470	0.001157	0.000415	0.	0.000698	0.000284	0.000371	0.000284	0.000131	0.000065	0.000065
65	0.003110	0.001020	0.000348	0.	0.000622	0.000274	0.000398	0.000249	0.000100	0.000050	0.000050
70	0.002785	0.000849	0.000306	0.	0.000611	0.000238	0.000306	0.000170	0.000136	0.000068	0.000102
75	0.004595	0.001608	0.000402	0.	0.001263	0.000402	0.000459	0.000230	0.000115	0.000057	0.000057
80	0.004666	0.001766	0.000378	0.	0.001387	0.000504	0.000378	0.000252	0.	0.	0.
85	0.012676	0.004322	0.001729	0.	0.002593	0.001152	0.001152	0.000864	0.000288	0.000288	0.000288
gross	0.866231	0.306184	0.116586	0.	0.157142	0.068047	0.094936	0.052937	0.033260	0.020098	0.017040
crude	0.011362	0.004020	0.001563	0.	0.001990	0.000867	0.001267	0.000691	0.000462	0.000275	0.000227
m.age	33.7191	34.1824	31.3295	0.	36.1662	35.3894	32.2784	33.8112	29.3380	30.6710	32.3957

	migration from n.boh to										
age	total	c.boh	s.boh	w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	0.016256	0.006442	0.001544	0.002668	0.	0.002306	0.001115	0.001001	0.000562	0.000314	0.000305
5	0.009506	0.003766	0.000999	0.001536	0.	0.001267	0.000695	0.000548	0.000341	0.000195	0.000158
10	0.006899	0.002915	0.000662	0.000993	0.	0.000980	0.000458	0.000356	0.000255	0.000127	0.000153
15	0.014171	0.005713	0.001101	0.002201	0.	0.002201	0.000989	0.000841	0.000544	0.000284	0.000297
20	0.025800	0.011372	0.002084	0.003860	0.	0.003731	0.001637	0.001459	0.000734	0.000456	0.000466
25	0.016500	0.007757	0.001294	0.002199	0.	0.002290	0.001068	0.000860	0.000462	0.000290	0.000281
30	0.011583	0.005391	0.000999	0.001579	0.	0.001468	0.000765	0.000617	0.000382	0.000197	0.000185
35	0.008682	0.004088	0.000742	0.001105	0.	0.001137	0.000552	0.000426	0.000300	0.000142	0.000189
40	0.007861	0.003724	0.000644	0.001027	0.	0.001073	0.000475	0.000383	0.000245	0.000138	0.000153
45	0.005554	0.002635	0.000354	0.000779	0.	0.000808	0.000312	0.000283	0.000170	0.000113	0.000099
50	0.004038	0.001923	0.000267	0.000560	0.	0.000573	0.000242	0.000217	0.000127	0.000064	0.000064
55	0.004568	0.001766	0.000353	0.000730	0.	0.000730	0.000400	0.000283	0.000141	0.000094	0.000071
60	0.004736	0.001968	0.000350	0.000700	0.	0.000734	0.000317	0.000367	0.000150	0.000067	0.000083
65	0.004283	0.001713	0.000299	0.000717	0.	0.000677	0.000319	0.000299	0.000120	0.000060	0.000080
70	0.003509	0.001374	0.000234	0.000497	0.	0.000614	0.000263	0.000205	0.000117	0.000088	0.000117
75	0.005486	0.002494	0.000349	0.000798	0.	0.000898	0.000349	0.000299	0.000150	0.000050	0.000100
80	0.005542	0.002602	0.000226	0.001018	0.	0.001131	0.000226	0.000339	0.	0.	0.
85	0.013337	0.005557	0.001111	0.001945	0.	0.002501	0.000834	0.000834	0.000278	0.	0.000278
gross	0.841546	0.365989	0.068063	0.124563	0.	0.125589	0.055081	0.048078	0.025391	0.013399	0.015393
crude	0.010854	0.004731	0.000903	0.001599	0.	0.001550	0.000718	0.000612	0.000346	0.000195	0.000200
m.age	36.5031	36.8421	33.9515	36.3459	0.	38.9002	35.6372	37.1988	32.4329	28.8171	35.7690

migration from e.boh to

age	total	c.boh	s.boh	w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	0.014498	0.004881	0.000909	0.001044	0.002474	0.	0.002436	0.001643	0.000551	0.000309	0.000251
5	0.006352	0.002173	0.000456	0.000456	0.000925	0.	0.001165	0.000684	0.000252	0.000144	0.000096
10	0.004412	0.001665	0.000292	0.000292	0.000571	0.	0.000766	0.000450	0.000194	0.000097	0.000085
15	0.012225	0.004239	0.000628	0.000834	0.002068	0.	0.002102	0.001337	0.000514	0.000274	0.000229
20	0.025593	0.009727	0.001363	0.001687	0.004432	0.	0.003991	0.002667	0.000804	0.000500	0.000422
25	0.016322	0.006663	0.000838	0.000946	0.002681	0.	0.002582	0.001547	0.000493	0.000315	0.000256
30	0.008357	0.003358	0.000473	0.000497	0.001268	0.	0.001368	0.000808	0.000298	0.000162	0.000124
35	0.005686	0.002392	0.000326	0.000326	0.000761	0.	0.000917	0.000528	0.000217	0.000109	0.000109
40	0.004928	0.002126	0.000276	0.000290	0.000663	0.	0.000759	0.000455	0.000179	0.000097	0.000083
45	0.003842	0.001660	0.000170	0.000248	0.000549	0.	0.000549	0.000379	0.000131	0.000091	0.000065
50	0.002745	0.001116	0.000115	0.000167	0.000487	0.	0.000410	0.000269	0.000090	0.000051	0.000038
55	0.002704	0.000863	0.000136	0.000182	0.000454	0.	0.000568	0.000318	0.000068	0.000068	0.000045
60	0.003043	0.001066	0.000140	0.000196	0.000547	0.	0.000477	0.000421	0.000112	0.000042	0.000042
65	0.002411	0.000814	0.000104	0.000177	0.000429	0.	0.000429	0.000311	0.000059	0.000044	0.000044
70	0.002235	0.000726	0.000096	0.000134	0.000459	0.	0.000382	0.000229	0.000096	0.000057	0.000057
75	0.003585	0.001314	0.000119	0.000209	0.000896	0.	0.000538	0.000329	0.000060	0.000060	0.000060
80	0.004997	0.001950	0.000183	0.000366	0.001280	0.	0.000548	0.000548	0.000061	0.000061	0.
85	0.008539	0.003105	0.000518	0.000647	0.001682	0.	0.001164	0.001035	0.000129	0.000129	0.000129
gross	0.662364	0.249189	0.035707	0.043491	0.113132	0.	0.105755	0.069798	0.021548	0.013061	0.010685
crude	0.008586	0.003235	0.000470	0.000559	0.001421	0.	0.001394	0.000896	0.000296	0.000174	0.000143
m.age	34.0162	34.3201	31.8768	34.1318	36.4266	0.	32.5580	34.5176	29.1385	31.7555	31.8461

migration from s.mor to

age	total	c.boh	s.boh	w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	0.009672	0.001389	0.001064	0.000679	0.000691	0.001160	0.	0.003366	0.000818	0.000337	0.000168
5	0.004391	0.000627	0.000554	0.000314	0.000270	0.000518	0.	0.001473	0.000394	0.000168	0.000073
10	0.002458	0.000400	0.000293	0.000164	0.000136	0.000314	0.	0.000772	0.000243	0.000086	0.000050
15	0.007678	0.001173	0.000699	0.000516	0.000543	0.001024	0.	0.002571	0.000726	0.000285	0.000142
20	0.018365	0.003251	0.001788	0.001224	0.001377	0.002345	0.	0.006085	0.001359	0.000618	0.000318
25	0.011100	0.002289	0.001070	0.000668	0.000817	0.001386	0.	0.003453	0.000854	0.000377	0.000186
30	0.006000	0.001178	0.000634	0.000373	0.000403	0.000686	0.	0.001901	0.000529	0.000201	0.000097
35	0.004193	0.000859	0.000453	0.000249	0.000249	0.000508	0.	0.001247	0.000397	0.000139	0.000092
40	0.002762	0.000599	0.000287	0.000165	0.000165	0.000347	0.	0.000816	0.000234	0.000096	0.000052
45	0.001762	0.000356	0.000137	0.000113	0.000105	0.000234	0.	0.000558	0.000154	0.000073	0.000032
50	0.001597	0.000323	0.000134	0.000102	0.000126	0.000205	0.	0.000519	0.000118	0.000047	0.000024
55	0.001726	0.000252	0.000159	0.000120	0.000120	0.000239	0.	0.000624	0.000120	0.000066	0.000027
60	0.001784	0.000264	0.000141	0.000105	0.000132	0.000220	0.	0.000721	0.000132	0.000044	0.000026
65	0.001776	0.000274	0.000132	0.000123	0.000132	0.000236	0.	0.000699	0.000104	0.000047	0.000028
70	0.001784	0.000276	0.000138	0.000100	0.000151	0.000251	0.	0.000578	0.000163	0.000075	0.000050
75	0.002315	0.000443	0.000161	0.000141	0.000262	0.000322	0.	0.000745	0.000141	0.000060	0.000040
80	0.002879	0.000568	0.000162	0.000203	0.000324	0.000487	0.	0.000973	0.000122	0.000041	0.
85	0.006186	0.001072	0.000577	0.000412	0.000495	0.000990	0.	0.002145	0.000330	0.000082	0.000082
gross	0.442151	0.077964	0.042915	0.028861	0.032484	0.057360	0.	0.146225	0.034683	0.014212	0.007446
crude	0.005744	0.001008	0.000572	0.000375	0.000410	0.000723	0.	0.001892	0.000467	0.000196	0.000100
m.age	33.8802	34.8934	31.3336	33.4433	36.1335	35.8108	0.	34.1459	30.8704	29.7768	31.5756

APPENDIX B *Continued.*

migration from n.mor to

age	total	c.boh	s.boh	w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	0.009148	0.001288	0.000488	0.000629	0.000571	0.000841	0.003694	0.	0.000647	0.000665	0.000324
5	0.005293	0.000714	0.000312	0.000354	0.000271	0.000451	0.002248	0.	0.000375	0.000402	0.000166
10	0.003919	0.000605	0.000213	0.000241	0.000179	0.000371	0.001582	0.	0.000303	0.000268	0.000158
15	0.007286	0.001054	0.000310	0.000468	0.000441	0.000723	0.002920	0.	0.000551	0.000544	0.000275
20	0.015245	0.002621	0.000718	0.001000	0.001000	0.001485	0.005898	0.	0.000927	0.001062	0.000534
25	0.009813	0.001881	0.000444	0.000561	0.000604	0.000907	0.003836	0.	0.000592	0.000666	0.000321
30	0.006299	0.001150	0.000311	0.000369	0.000362	0.000528	0.002517	0.	0.000441	0.000427	0.000195
35	0.004949	0.000926	0.000245	0.000272	0.000245	0.000436	0.001934	0.	0.000363	0.000327	0.000200
40	0.003431	0.000692	0.000164	0.000200	0.000173	0.000319	0.001283	0.	0.000237	0.000237	0.000127
45	0.002406	0.000481	0.000096	0.000157	0.000131	0.000245	0.000857	0.	0.000166	0.000192	0.000079
50	0.001598	0.000316	0.000060	0.000094	0.000111	0.000154	0.000607	0.	0.000103	0.000103	0.000051
55	0.001923	0.000257	0.000076	0.000121	0.000106	0.000182	0.000893	0.	0.000091	0.000136	0.000061
60	0.002119	0.000342	0.000088	0.000132	0.000154	0.000221	0.000850	0.	0.000143	0.000121	0.000066
65	0.001843	0.000274	0.000075	0.000125	0.000125	0.000187	0.000810	0.	0.000087	0.000100	0.000062
70	0.001739	0.000253	0.000068	0.000101	0.000118	0.000186	0.000675	0.	0.000118	0.000135	0.000084
75	0.002594	0.000446	0.000084	0.000167	0.000251	0.000279	0.001032	0.	0.000112	0.000139	0.000084
80	0.002668	0.000606	0.000061	0.000243	0.000303	0.000424	0.000788	0.	0.000061	0.000121	0.000061
85	0.005183	0.000955	0.000273	0.000409	0.000409	0.000682	0.001909	0.	0.000136	0.000273	0.000136
gross	0.437279	0.074313	0.020425	0.028226	0.027771	0.043099	0.171668	0.	0.027260	0.029591	0.014925
crude	0.005877	0.000982	0.000282	0.000371	0.000355	0.000554	0.002328	0.	0.000390	0.000411	0.000205
m.age	33.7812	35.4864	31.6180	34.7682	37.0697	36.4861	33.1097	0.	29.4395	31.6123	32.4090

migration from w.slov to

age	total	c.boh	s.boh	w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	0.007502	0.000520	0.000240	0.000292	0.000310	0.000374	0.000911	0.000800	0.	0.003202	0.000853
5	0.002706	0.000196	0.000101	0.000108	0.000095	0.000135	0.000365	0.000284	0.	0.001157	0.000264
10	0.001691	0.000133	0.000057	0.000063	0.000051	0.000089	0.000209	0.000158	0.	0.000709	0.000222
15	0.005261	0.000421	0.000154	0.000216	0.000239	0.000330	0.000734	0.000603	0.	0.002013	0.000552
20	0.014066	0.001100	0.000367	0.000494	0.000569	0.000696	0.001542	0.001334	0.	0.006225	0.001738
25	0.008037	0.000670	0.000197	0.000236	0.000289	0.000348	0.000847	0.000650	0.	0.003776	0.001024
30	0.003938	0.000351	0.000120	0.000128	0.000152	0.000176	0.000471	0.000375	0.	0.001717	0.000447
35	0.002686	0.000252	0.000081	0.000090	0.000090	0.000135	0.000334	0.000243	0.	0.001091	0.000370
40	0.001741	0.000171	0.000051	0.000051	0.000060	0.000086	0.000197	0.000146	0.	0.000746	0.000231
45	0.001252	0.000123	0.000033	0.000041	0.000041	0.000065	0.000131	0.000115	0.	0.000565	0.000139
50	0.000962	0.000088	0.000024	0.000032	0.000040	0.000048	0.000096	0.000080	0.	0.000433	0.000120
55	0.001118	0.000044	0.000015	0.000029	0.000029	0.000029	0.000118	0.000074	0.	0.000618	0.000162
60	0.001052	0.000062	0.000010	0.000031	0.000031	0.000031	0.000083	0.000094	0.	0.000531	0.000177
65	0.001189	0.000072	0.000012	0.000036	0.000036	0.000036	0.000108	0.000096	0.	0.000588	0.000204
70	0.001431	0.000097	0.000032	0.000048	0.000080	0.000097	0.000193	0.000161	0.	0.000515	0.000209
75	0.001832	0.000103	0.000026	0.000026	0.000103	0.000052	0.000155	0.000129	0.	0.000903	0.000336
80	0.002032	0.000226	0.	0.000056	0.000056	0.000056	0.000169	0.000169	0.	0.001073	0.000226
85	0.003796	0.000367	0.000122	0.000122	0.000122	0.000245	0.000367	0.000490	0.	0.001347	0.000612
gross	0.311461	0.024990	0.008211	0.010513	0.011969	0.015143	0.035154	0.030009	0.	0.136041	0.039431
crude	0.004330	0.000342	0.000119	0.000152	0.000169	0.000214	0.000502	0.000416	0.	0.001889	0.000527
m.age	33.0427	34.1512	29.0633	30.4544	32.2634	32.1241	30.9071	32.7897	0.	33.2526	35.8201

migration from c.slov to

age	total	c.boh	s.boh	w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	0.010945	0.000573	0.000231	0.000268	0.000312	0.000342	0.000602	0.001398	0.005443	0.	0.001777
5	0.003902	0.000219	0.000101	0.000101	0.000101	0.000126	0.000253	0.000506	0.001921	0.	0.000573
10	0.002999	0.000163	0.000062	0.000062	0.000062	0.000085	0.000155	0.000311	0.001562	0.	0.000536
15	0.008015	0.000485	0.000159	0.000210	0.000253	0.000304	0.000507	0.001108	0.003772	0.	0.001216
20	0.019624	0.001156	0.000351	0.000439	0.000563	0.000622	0.001002	0.002305	0.009644	0.	0.003541
25	0.013084	0.000753	0.000202	0.000239	0.000322	0.000358	0.000616	0.001277	0.007020	0.	0.002297
30	0.006647	0.000402	0.000123	0.000134	0.000168	0.000179	0.000346	0.000704	0.003597	0.	0.000994
35	0.004575	0.000278	0.000085	0.000085	0.000097	0.000133	0.000230	0.000460	0.002372	0.	0.000835
40	0.003608	0.000231	0.000069	0.000069	0.000081	0.000104	0.000173	0.000359	0.001885	0.	0.000636
45	0.002452	0.000162	0.000035	0.000058	0.000058	0.000081	0.000116	0.000278	0.001295	0.	0.000370
50	0.002050	0.000127	0.000023	0.000035	0.000058	0.000058	0.000092	0.000219	0.001094	0.	0.000345
55	0.002059	0.000086	0.000021	0.000043	0.000043	0.000043	0.000107	0.000193	0.001115	0.	0.000407
60	0.002326	0.000061	0.000015	0.000030	0.000046	0.000046	0.000076	0.000213	0.001399	0.	0.000441
65	0.002367	0.000070	0.000017	0.000035	0.000052	0.000052	0.000087	0.000226	0.001305	0.	0.000522
70	0.002110	0.000117	0.000023	0.000047	0.000094	0.000094	0.000141	0.000281	0.000891	0.	0.000422
75	0.003022	0.000147	0.000037	0.000037	0.000074	0.000074	0.000111	0.000221	0.001695	0.	0.000626
80	0.004364	0.000238	0.	0.000079	0.000159	0.000159	0.000159	0.000397	0.002539	0.	0.000635
85	0.004105	0.000342	0.	0.000171	0.000171	0.000171	0.000171	0.000513	0.001882	0.	0.000684
gross	0.491272	0.028054	0.007778	0.010708	0.013563	0.015154	0.024721	0.054836	0.252158	0.	0.084300
crude	0.006764	0.000385	0.000122	0.000148	0.000183	0.000208	0.000354	0.000778	0.003434	0.	0.001153
m.age	33.8985	34.0309	25.2339	33.5514	35.3780	34.1653	31.3291	32.1327	34.4674	0.	34.6125

migration from e.slov to

age	total	c.boh	s.boh	w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	0.007565	0.000670	0.000276	0.000551	0.000625	0.000372	0.000469	0.000961	0.001943	0.001698	0.
5	0.003424	0.000325	0.000146	0.000265	0.000248	0.000171	0.000240	0.000428	0.000813	0.000788	0.
10	0.002679	0.000264	0.000104	0.000176	0.000168	0.000136	0.000168	0.000304	0.000768	0.000592	0.
15	0.006924	0.000685	0.000231	0.000523	0.000623	0.000415	0.000485	0.000931	0.001662	0.001369	0.
20	0.015190	0.001472	0.000472	0.001000	0.001260	0.000764	0.000870	0.001765	0.003976	0.003610	0.
25	0.009661	0.000902	0.000266	0.000523	0.000697	0.000430	0.000523	0.000943	0.003002	0.002377	0.
30	0.005513	0.000551	0.000179	0.000321	0.000397	0.000244	0.000321	0.000590	0.001692	0.001218	0.
35	0.003299	0.000364	0.000121	0.000202	0.000215	0.000162	0.000202	0.000350	0.000983	0.000700	0.
40	0.002844	0.000295	0.000090	0.000167	0.000179	0.000141	0.000167	0.000295	0.000871	0.000640	0.
45	0.002066	0.000213	0.000053	0.000133	0.000133	0.000107	0.000107	0.000227	0.000600	0.000493	0.
50	0.001603	0.000148	0.000040	0.000094	0.000135	0.000081	0.000081	0.000175	0.000471	0.000377	0.
55	0.001596	0.000101	0.000025	0.000076	0.000101	0.000076	0.000101	0.000152	0.000456	0.000507	0.
60	0.001892	0.000117	0.000039	0.000078	0.000117	0.000078	0.000078	0.000195	0.000702	0.000488	0.
65	0.001436	0.000104	0.000021	0.000083	0.000083	0.000062	0.000062	0.000146	0.000479	0.000395	0.
70	0.001294	0.000113	0.000028	0.000084	0.000141	0.000084	0.000084	0.000197	0.000309	0.000253	0.
75	0.001905	0.000133	0.000044	0.000089	0.000177	0.000089	0.000089	0.000133	0.000665	0.000487	0.
80	0.001574	0.000210	0.	0.000105	0.000105	0.000105	0.	0.000105	0.000525	0.000420	0.
85	0.005291	0.000481	0.000241	0.000481	0.000481	0.000241	0.000241	0.000722	0.001443	0.000962	0.
gross	0.378781	0.035735	0.011880	0.024755	0.029438	0.018790	0.021429	0.043078	0.106802	0.086874	0.
crude	0.005306	0.000505	0.000171	0.000348	0.000414	0.000266	0.000317	0.000614	0.001456	0.001216	0.
m.age	33.7128	33.2038	31.8671	33.6378	33.8689	33.4313	30.5244	32.8734	35.0964	33.7056	0.

Appendix C

SELECTED MULTIREGIONAL LIFE TABLE RESULTS

C.1 Probabilities of Dying and Migrating
C.2 Expected Numbers of Survivors at Exact Age x
C.3 Life Expectancies by Region of Birth

APPENDIX C.1 Probabilities of Dying and Migrating.

region c.boh
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age	death	migration from c.boh to c.boh	s.boh	w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	0.026581	0.916796	0.008958	0.009949	0.014649	0.010588	0.004957	0.003820	0.001570	0.001250	0.000883
5	0.001981	0.971645	0.004741	0.004789	0.006111	0.005003	0.002400	0.001567	0.000719	0.000671	0.000374
10	0.001558	0.981803	0.002875	0.002894	0.003609	0.003560	0.001491	0.000987	0.000500	0.000381	0.000342
15	0.003670	0.946481	0.006534	0.008536	0.013126	0.010524	0.004418	0.003183	0.001508	0.001188	0.000832
20	0.004450	0.905533	0.012752	0.015308	0.024465	0.017704	0.007922	0.006080	0.002362	0.001955	0.001469
25	0.004780	0.941846	0.007769	0.008449	0.014613	0.010553	0.005010	0.003461	0.001534	0.001152	0.000831
30	0.005986	0.964477	0.004787	0.004877	0.007648	0.005521	0.002790	0.001904	0.000920	0.000635	0.000454
35	0.009679	0.971007	0.003162	0.003135	0.004596	0.003986	0.001784	0.001157	0.000627	0.000454	0.000414
40	0.015738	0.967910	0.002645	0.002737	0.003822	0.003507	0.001480	0.001006	0.000507	0.000359	0.000288
45	0.023465	0.964069	0.001610	0.002250	0.003038	0.002785	0.001034	0.000811	0.000376	0.000343	0.000219
50	0.038964	0.950426	0.001339	0.001704	0.003139	0.002134	0.000918	0.000716	0.000288	0.000201	0.000172
55	0.058094	0.930103	0.001575	0.002003	0.002974	0.002416	0.001343	0.000794	0.000250	0.000249	0.000199
60	0.099734	0.888786	0.001494	0.001840	0.003170	0.002325	0.000995	0.001020	0.000303	0.000181	0.000151
65	0.157817	0.831889	0.001210	0.001866	0.002806	0.002123	0.000984	0.000797	0.000239	0.000149	0.000120
70	0.247376	0.744225	0.000936	0.001196	0.002516	0.001830	0.000724	0.000540	0.000255	0.000183	0.000220
75	0.374352	0.613656	0.001211	0.001764	0.004468	0.002420	0.000967	0.000753	0.000154	0.000153	0.000103
80	0.530282	0.457868	0.000955	0.002049	0.004201	0.002885	0.000710	0.000785	0.000089	0.000175	0.000000
85	1.000000	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

region s.boh
****

age	death	migration from c.boh to s.boh	w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	0.023754	0.025564	0.902369	0.010766	0.006819	0.007349	0.013827	0.005274	0.002263	0.001307	0.000708
5	0.001754	0.013222	0.960422	0.005560	0.002905	0.003652	0.007697	0.002493	0.001201	0.000764	0.000330
10	0.001721	0.011944	0.967167	0.004177	0.002125	0.003185	0.005829	0.001917	0.001073	0.000537	0.000324
15	0.003587	0.021905	0.934558	0.008459	0.005465	0.006573	0.011525	0.004144	0.001989	0.001189	0.000605
20	0.004403	0.047357	0.874513	0.015859	0.011259	0.012054	0.020278	0.007929	0.003118	0.002043	0.001187
25	0.004404	0.035610	0.912660	0.009468	0.007156	0.007710	0.014054	0.004758	0.002133	0.001325	0.000722
30	0.006574	0.021828	0.942029	0.006173	0.004109	0.004433	0.009118	0.003025	0.001469	0.000789	0.000454
35	0.008531	0.016038	0.954794	0.004218	0.002559	0.003364	0.006419	0.002030	0.001090	0.000545	0.000411
40	0.016024	0.014281	0.952449	0.003596	0.002188	0.002925	0.005224	0.001714	0.000862	0.000491	0.000248
45	0.022647	0.007022	0.961376	0.002017	0.001193	0.001556	0.002389	0.000958	0.000480	0.000241	0.000121
50	0.036625	0.005603	0.950090	0.001599	0.001260	0.001263	0.002064	0.000805	0.000346	0.000230	0.000116
55	0.062025	0.003676	0.926751	0.001459	0.000917	0.001292	0.002582	0.000741	0.000187	0.000186	0.000185
60	0.091767	0.003992	0.897162	0.001407	0.001052	0.001182	0.001894	0.000948	0.000357	0.000120	0.000120
65	0.148258	0.003129	0.842688	0.001316	0.000837	0.000972	0.001703	0.000727	0.000124	0.000123	0.000123
70	0.224669	0.003828	0.764098	0.001261	0.001259	0.001290	0.002008	0.000717	0.000433	0.000290	0.000147
75	0.343942	0.004211	0.645269	0.001328	0.001331	0.001177	0.001761	0.000585	0.000198	0.000197	0.000001
80	0.521856	0.004687	0.466860	0.001550	0.001540	0.001592	0.001279	0.000633	0.000001	0.000001	0.000000
85	1.000000	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

region w.boh
****

age	death	migration from c.boh	s.boh	w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov
0	0.022291	0.027953	0.013447	0.888858	0.016129	0.006853	0.010323	0.006069	0.003920	0.002302	0.001853
5	0.002084	0.019192	0.010292	0.937900	0.009261	0.004390	0.007488	0.003834	0.002742	0.001647	0.001171
10	0.001135	0.014982	0.006841	0.956049	0.005910	0.003399	0.004973	0.002523	0.002135	0.001029	0.001024
15	0.003419	0.021273	0.008243	0.930871	0.011902	0.005606	0.007827	0.004342	0.003190	0.001820	0.001508
20	0.004588	0.042116	0.015244	0.876485	0.021872	0.009513	0.012802	0.007578	0.004435	0.002947	0.002419
25	0.004982	0.033347	0.010855	0.907309	0.015399	0.006617	0.009549	0.005051	0.003182	0.002101	0.001606
30	0.005937	0.023979	0.008758	0.930472	0.010346	0.004383	0.007140	0.003675	0.002663	0.001482	0.001166
35	0.010777	0.019897	0.007076	0.938310	0.007253	0.003656	0.005642	0.002781	0.002305	0.001152	0.001150
40	0.015860	0.016577	0.005569	0.942849	0.005912	0.003109	0.004376	0.002192	0.001736	0.001001	0.000819
45	0.024861	0.008794	0.002372	0.953493	0.003316	0.001772	0.002122	0.001237	0.000972	0.000619	0.000441
50	0.041235	0.005751	0.001607	0.943876	0.002942	0.001106	0.001528	0.000850	0.000510	0.000339	0.000255
55	0.069827	0.005456	0.002234	0.912549	0.003184	0.001549	0.002531	0.001265	0.000702	0.000422	0.000282
60	0.101302	0.005167	0.001860	0.883178	0.003080	0.001279	0.001673	0.001277	0.000592	0.000296	0.000296
65	0.167450	0.004266	0.001465	0.819518	0.002567	0.001157	0.001684	0.001046	0.000423	0.000212	0.000212
70	0.268222	0.003199	0.001164	0.721258	0.002261	0.000907	0.001166	0.000646	0.000520	0.000262	0.000394
75	0.388682	0.005207	0.001328	0.596384	0.004020	0.001336	0.001522	0.000756	0.000382	0.000192	0.000191
80	0.545909	0.004666	0.001006	0.441783	0.003574	0.001363	0.001023	0.000674	0.000001	0.000001	0.000000
85	1.000000	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

region n.boh
****

age	death	migration from c.boh	s.boh	w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	0.029064	0.029680	0.007223	0.012175	0.895302	0.010698	0.005410	0.004794	0.002695	0.001515	0.001445
5	0.003196	0.018251	0.004873	0.007326	0.950616	0.006157	0.003452	0.002698	0.001686	0.000967	0.000779
10	0.001589	0.014267	0.003241	0.004802	0.964607	0.004801	0.002284	0.001759	0.001263	0.000632	0.000753
15	0.005004	0.027092	0.005291	0.010412	0.927179	0.010488	0.004893	0.004124	0.002671	0.001403	0.001441
20	0.005476	0.051887	0.009736	0.017573	0.875066	0.017097	0.008026	0.007089	0.003579	0.002240	0.002232
25	0.005137	0.036591	0.006173	0.010276	0.916487	0.010800	0.005267	0.004209	0.002277	0.001423	0.001360
30	0.006921	0.025868	0.004812	0.007476	0.937333	0.007057	0.003770	0.003013	0.001879	0.000970	0.000901
35	0.009127	0.019757	0.003593	0.005264	0.948865	0.005498	0.002721	0.002081	0.001472	0.000698	0.000924
40	0.017132	0.017914	0.003099	0.004886	0.945000	0.005167	0.002328	0.001863	0.001197	0.000671	0.000742
45	0.026242	0.012638	0.001708	0.003724	0.947072	0.003881	0.001515	0.001368	0.000823	0.000549	0.000478
50	0.042177	0.009111	0.001274	0.002651	0.938662	0.002719	0.001158	0.001032	0.000608	0.000304	0.000304
55	0.067813	0.008164	0.001638	0.003347	0.911042	0.003382	0.001872	0.001315	0.000658	0.000439	0.000330
60	0.112935	0.008691	0.001562	0.003089	0.866066	0.003254	0.001422	0.001635	0.000673	0.000299	0.000373
65	0.173603	0.007110	0.001253	0.002960	0.808553	0.002831	0.001347	0.001249	0.000505	0.000253	0.000336
70	0.273454	0.005144	0.000889	0.001838	0.713347	0.002319	0.001002	0.000774	0.000447	0.000336	0.000450
75	0.395189	0.008004	0.001149	0.002539	0.587055	0.002943	0.001156	0.000977	0.000493	0.000167	0.000328
80	0.563363	0.006765	0.000597	0.002622	0.422160	0.002989	0.000609	0.000893	0.000001	0.000001	0.000000
85	1.000000	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

APPENDIX C.1 *Continued.*

region e.boh

age	death	migration from		e.boh to						
		c.boh	s.boh	w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	0.021054	0.022715	0.004350	0.004955	0.011460	0.910851	0.011468	0.007788	0.002657	0.001498	0.001205
5	0.002040	0.010629	0.002258	0.002230	0.004487	0.966822	0.005719	0.003363	0.001255	0.000719	0.000477
10	0.001459	0.008201	0.001443	0.001435	0.002796	0.976787	0.003784	0.002217	0.000969	0.000485	0.000423
15	0.003429	0.020246	0.003079	0.004076	0.009843	0.937689	0.010135	0.006490	0.002536	0.001356	0.001121
20	0.004415	0.044571	0.006550	0.008100	0.020275	0.876657	0.018442	0.012590	0.003915	0.002447	0.002037
25	0.005107	0.031496	0.004070	0.004578	0.012634	0.917201	0.012254	0.007435	0.002431	0.001546	0.001248
30	0.005353	0.016279	0.002321	0.002427	0.006094	0.954047	0.006645	0.003943	0.001480	0.000800	0.000612
35	0.009055	0.011654	0.001603	0.001588	0.003680	0.963222	0.004471	0.002578	0.001075	0.000537	0.000536
40	0.013192	0.010324	0.001349	0.001409	0.003190	0.962852	0.003702	0.002219	0.000882	0.000474	0.000406
45	0.019202	0.008025	0.000829	0.001206	0.002638	0.962200	0.002664	0.001835	0.000637	0.000446	0.000318
50	0.038803	0.005317	0.000555	0.000798	0.002312	0.948107	0.001960	0.001286	0.000431	0.000246	0.000185
55	0.056651	0.004037	0.000641	0.000849	0.002105	0.930706	0.002665	0.001490	0.000322	0.000321	0.000214
60	0.093805	0.004780	0.000637	0.000885	0.002426	0.892522	0.002156	0.001895	0.000510	0.000192	0.000192
65	0.148292	0.003442	0.000444	0.000751	0.001793	0.841489	0.001834	0.001318	0.000255	0.000191	0.000191
70	0.234128	0.002790	0.000374	0.000510	0.001732	0.757267	0.001485	0.000887	0.000374	0.000226	0.000227
75	0.344553	0.004378	0.000411	0.000696	0.002938	0.643472	0.001830	0.001107	0.000206	0.000205	0.000204
80	0.508793	0.005276	0.000502	0.000989	0.003382	0.477711	0.001517	0.001493	0.000170	0.000168	0.000000
85	1.000000	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

region s.mor

age	death	migration from		e.mor to						
		c.boh	s.boh	w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	0.020797	0.006715	0.004990	0.003225	0.003319	0.005479	0.933302	0.015803	0.003906	0.001639	0.000825
5	0.001572	0.003130	0.002713	0.001532	0.001333	0.002546	0.976821	0.007198	0.001950	0.000838	0.000365
10	0.001713	0.002001	0.001441	0.000809	0.000674	0.001556	0.986119	0.003798	0.001208	0.000429	0.000251
15	0.002561	0.005786	0.003367	0.002520	0.002667	0.004952	0.960057	0.012405	0.003559	0.001415	0.000712
20	0.003941	0.015739	0.008268	0.005855	0.006666	0.010891	0.909378	0.028155	0.006478	0.003038	0.001591
25	0.004914	0.011203	0.005077	0.003228	0.003997	0.006602	0.941647	0.016400	0.004146	0.001859	0.000927
30	0.005915	0.005821	0.003061	0.001812	0.001973	0.003339	0.964811	0.009191	0.002599	0.000997	0.000482
35	0.008975	0.004243	0.002199	0.001212	0.001223	0.002482	0.970523	0.006050	0.001949	0.000685	0.000458
40	0.013088	0.002950	0.001391	0.000803	0.000806	0.001696	0.973417	0.003971	0.001151	0.000470	0.000257
45	0.021760	0.001736	0.000667	0.000550	0.000510	0.001139	0.969677	0.002699	0.000747	0.000355	0.000158
50	0.037837	0.001548	0.000640	0.000490	0.000602	0.000978	0.954522	0.002478	0.000566	0.000227	0.000114
55	0.055354	0.001189	0.000746	0.000558	0.000558	0.001122	0.936553	0.002920	0.000562	0.000313	0.000126
60	0.089283	0.001195	0.000637	0.000476	0.000591	0.000994	0.902651	0.003251	0.000600	0.000201	0.000121
65	0.141536	0.001169	0.000566	0.000521	0.000558	0.001010	0.850897	0.002968	0.000448	0.000204	0.000123
70	0.229212	0.001069	0.000539	0.000384	0.000574	0.000977	0.763872	0.002236	0.000639	0.000298	0.000200
75	0.343396	0.001486	0.000549	0.000468	0.000865	0.001097	0.648806	0.002505	0.000481	0.000208	0.000138
80	0.501663	0.001557	0.000446	0.000551	0.000870	0.001347	0.490452	0.002659	0.000340	0.000114	0.000001
85	1.000000	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

region n.mor
****

age	death	migration from c.boh	s.boh	w.boh	n.boh	e.boh	s.mor	n.mor to n.mor	w.slov	c.slov	e.slov
0	0.023748	0.006196	0.002360	0.002978	0.002751	0.004006	0.017346	0.932791	0.003134	0.003144	0.001545
5	0.001736	0.003544	0.001548	0.001720	0.001336	0.002222	0.010982	0.972252	0.001861	0.001978	0.000822
10	0.001853	0.003005	0.001055	0.001178	0.000885	0.001834	0.007784	0.978797	0.001504	0.001324	0.000782
15	0.003435	0.005183	0.001534	0.002286	0.002175	0.003525	0.014090	0.961042	0.002733	0.002647	0.001349
20	0.004615	0.012725	0.003527	0.004805	0.004921	0.007068	0.027294	0.922869	0.004578	0.005018	0.002579
25	0.005584	0.009216	0.002187	0.002715	0.002987	0.004380	0.018226	0.946999	0.002945	0.003197	0.001565
30	0.006414	0.005666	0.001531	0.001789	0.001776	0.002583	0.012171	0.962855	0.002185	0.002074	0.000956
35	0.010113	0.004556	0.001205	0.001319	0.001202	0.002133	0.009386	0.965726	0.001790	0.001592	0.000978
40	0.014814	0.003389	0.000801	0.000969	0.000843	0.001555	0.006242	0.968449	0.001163	0.001150	0.000622
45	0.025464	0.002337	0.000469	0.000761	0.000635	0.001188	0.004149	0.962877	0.000808	0.000931	0.000382
50	0.041178	0.001514	0.000288	0.000449	0.000531	0.000735	0.002896	0.951183	0.000492	0.000489	0.000245
55	0.060478	0.001208	0.000356	0.000563	0.000494	0.000852	0.004178	0.930521	0.000428	0.000638	0.000285
60	0.095609	0.001541	0.000401	0.000595	0.000689	0.000995	0.003833	0.894836	0.000652	0.000548	0.000301
65	0.158194	0.001158	0.000319	0.000523	0.000521	0.000793	0.003438	0.833989	0.000374	0.000425	0.000266
70	0.239523	0.000974	0.000263	0.000385	0.000448	0.000719	0.002614	0.753751	0.000461	0.000528	0.000332
75	0.361450	0.001480	0.000284	0.000549	0.000821	0.000941	0.003470	0.629873	0.000379	0.000471	0.000283
80	0.527600	0.001632	0.000166	0.000646	0.000800	0.001156	0.002155	0.465181	0.000168	0.000330	0.000165
85	1.000000	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

region w.slov
****

age	death	migration from c.boh	s.boh	w.boh	n.boh	e.boh	s.mor	n.mor to n.mor	w.slov	c.slov	e.slov
0	0.027048	0.002546	0.001161	0.001397	0.001496	0.001797	0.004364	0.003864	0.937341	0.014929	0.004057
5	0.002397	0.000985	0.000506	0.000531	0.000470	0.000672	0.001811	0.001409	0.984230	0.005682	0.001306
10	0.001928	0.000667	0.000284	0.000312	0.000252	0.000441	0.001040	0.000786	0.989687	0.003502	0.001099
15	0.003382	0.002105	0.000762	0.001066	0.001182	0.001622	0.003604	0.002983	0.970866	0.009726	0.002703
20	0.004448	0.005508	0.001811	0.002418	0.002813	0.003366	0.007371	0.006549	0.928736	0.028652	0.008329
25	0.005249	0.003352	0.000974	0.001160	0.001437	0.001706	0.004119	0.003216	0.955936	0.017866	0.004985
30	0.006381	0.001758	0.000592	0.000627	0.000749	0.000869	0.002317	0.001853	0.974348	0.008313	0.002192
35	0.011157	0.001256	0.000401	0.000440	0.000444	0.000667	0.001639	0.001197	0.975685	0.005301	0.001813
40	0.016706	0.000847	0.000252	0.000251	0.000293	0.000421	0.000968	0.000716	0.974793	0.003621	0.001131
45	0.027995	0.000599	0.000160	0.000199	0.000199	0.000319	0.000637	0.000557	0.965934	0.002727	0.000675
50	0.041956	0.000424	0.000116	0.000154	0.000192	0.000231	0.000461	0.000385	0.953444	0.002063	0.000576
55	0.061496	0.000209	0.000069	0.000137	0.000137	0.000139	0.000553	0.000346	0.933268	0.002885	0.000760
60	0.090053	0.000284	0.000048	0.000141	0.000140	0.000142	0.000380	0.000426	0.905176	0.002404	0.000807
65	0.141055	0.000308	0.000052	0.000153	0.000153	0.000155	0.000465	0.000411	0.853840	0.002527	0.000881
70	0.225032	0.000376	0.000127	0.000185	0.000307	0.000377	0.000756	0.000627	0.769359	0.002025	0.000829
75	0.343890	0.000348	0.000089	0.000087	0.000341	0.000178	0.000529	0.000437	0.649877	0.003078	0.001146
80	0.500051	0.000619	0.000001	0.000154	0.000154	0.000159	0.000474	0.000467	0.494321	0.002971	0.000629
85	1.000000	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

APPENDIX C.1 *Continued.*

region c.slov
****

age	death	migration from c.slov to c.boh	s.boh	w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	0.027038	0.002786	0.001119	0.001291	0.001511	0.001653	0.002956	0.006603	0.025388	0.921361	0.008294
5	0.002439	0.001098	0.000504	0.000499	0.000502	0.000630	0.001268	0.002484	0.009439	0.978322	0.002814
10	0.001286	0.000817	0.000309	0.000308	0.000309	0.000427	0.000780	0.001533	0.007713	0.983875	0.002643
15	0.004036	0.002412	0.000790	0.001041	0.001255	0.001502	0.002533	0.005385	0.018229	0.956946	0.005871
20	0.005567	0.005750	0.001738	0.002184	0.002798	0.003039	0.004994	0.010881	0.044431	0.902212	0.016405
25	0.006289	0.003750	0.001000	0.001178	0.001595	0.001757	0.003061	0.006127	0.033242	0.931110	0.010891
30	0.008805	0.002004	0.000608	0.000658	0.000826	0.000884	0.001724	0.003421	0.017420	0.958844	0.004807
35	0.011780	0.001383	0.000418	0.000415	0.000477	0.000657	0.001142	0.002239	0.011532	0.965896	0.004061
40	0.017754	0.001140	0.000339	0.000338	0.000395	0.000511	0.000856	0.001743	0.009152	0.964691	0.003082
45	0.024457	0.000791	0.000170	0.000281	0.000280	0.000395	0.000566	0.001342	0.006254	0.963676	0.001787
50	0.039732	0.000608	0.000111	0.000166	0.000275	0.000276	0.000443	0.001044	0.005212	0.950486	0.001647
55	0.058108	0.000404	0.000101	0.000200	0.000200	0.000203	0.000507	0.000903	0.005210	0.932255	0.001909
60	0.089889	0.000277	0.000070	0.000138	0.000205	0.000207	0.000348	0.000961	0.006332	0.899574	0.001999
65	0.137093	0.000299	0.000075	0.000149	0.000221	0.000225	0.000377	0.000964	0.005607	0.852744	0.002247
70	0.213393	0.000459	0.000093	0.000181	0.000360	0.000369	0.000556	0.001100	0.003506	0.778302	0.001680
75	0.338114	0.000496	0.000127	0.000124	0.000246	0.000253	0.000381	0.000747	0.005777	0.651597	0.002138
80	0.505473	0.000652	0.000001	0.000216	0.000423	0.000439	0.000443	0.001082	0.007032	0.482491	0.001747
85	1.000000	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

region e.slov
****

age	death	migration from e.slov to c.boh	s.boh	w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	0.035645	0.003261	0.001332	0.002577	0.002941	0.001793	0.002308	0.004570	0.009207	0.007951	0.928416
5	0.002943	0.001630	0.000726	0.001289	0.001217	0.000852	0.001205	0.002109	0.004020	0.003873	0.980136
10	0.002312	0.001321	0.000516	0.000861	0.000827	0.000677	0.000843	0.001501	0.003805	0.002921	0.984415
15	0.004024	0.003406	0.001141	0.002533	0.003013	0.002044	0.002427	0.004548	0.008118	0.006628	0.962118
20	0.004747	0.007323	0.002312	0.004725	0.005954	0.003709	0.004362	0.008463	0.018889	0.016833	0.922683
25	0.005963	0.004503	0.001310	0.002498	0.003351	0.002104	0.002613	0.004579	0.014510	0.011322	0.947247
30	0.008028	0.002750	0.000885	0.001546	0.001925	0.001201	0.001600	0.002880	0.008271	0.005902	0.965012
35	0.011309	0.001808	0.000597	0.000976	0.001049	0.000797	0.001005	0.001712	0.004815	0.003411	0.972520
40	0.017450	0.001455	0.000439	0.000804	0.000867	0.000691	0.000823	0.001437	0.004251	0.003106	0.968678
45	0.025465	0.001042	0.000260	0.000644	0.000642	0.000519	0.000523	0.001097	0.002905	0.002384	0.964518
50	0.039350	0.000713	0.000194	0.000450	0.000641	0.000387	0.000389	0.000837	0.002254	0.001799	0.952986
55	0.055211	0.000479	0.000120	0.000354	0.000472	0.000358	0.000480	0.000714	0.002142	0.002375	0.937294
60	0.084833	0.000533	0.000178	0.000353	0.000523	0.000355	0.000358	0.000885	0.003196	0.002212	0.906574
65	0.138140	0.000446	0.000090	0.000353	0.000351	0.000269	0.000271	0.000622	0.002064	0.001702	0.855691
70	0.206535	0.000443	0.000112	0.000326	0.000541	0.000334	0.000336	0.000774	0.001226	0.001008	0.788365
75	0.343699	0.000449	0.000152	0.000294	0.000584	0.000303	0.000305	0.000450	0.002268	0.001665	0.649832
80	0.512648	0.000572	0.000001	0.000282	0.000280	0.000290	0.000002	0.000287	0.001459	0.001156	0.483022
85	1.000000	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

APPENDIX C.2 Expected numbers of survivors at exact age x.

age	initial region of cohort	c.boh								
***	**********									
	total	c.boh	s.boh	w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	100000.	100000.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	97342.	91680.	896.	995.	1465.	1059.	496.	382.	157.	125.	88.
10	97147.	89152.	1317.	1392.	1971.	1501.	734.	533.	231.	191.	125.
15	96996.	87611.	1550.	1607.	2239.	1805.	887.	626.	285.	228.	159.
20	96639.	83097.	2056.	2292.	3276.	2665.	1309.	928.	438.	339.	238.
25	96206.	75768.	2958.	3408.	5044.	3934.	2026.	1498.	674.	519.	376.
30	95740.	71932.	3388.	3843.	5869.	4530.	2469.	1803.	835.	619.	452.
35	95159.	69797.	3620.	4012.	6143.	4807.	2719.	1960.	937.	673.	490.
40	94242.	68112.	3744.	4045.	6212.	4982.	2869.	2038.	1005.	707.	528.
45	92767.	66227.	3801.	4057.	6184.	5100.	2978.	2094.	1050.	728.	547.
50	90587.	64041.	3789.	4058.	6093.	5136.	3007.	2106.	1064.	740.	552.
55	87033.	61003.	3705.	3969.	5953.	5037.	2967.	2078.	1050.	727.	544.
60	81866.	56850.	3555.	3777.	5634.	4872.	2915.	2015.	1011.	706.	530.
65	73741.	50641.	3296.	3470.	5091.	4513.	2728.	1899.	952.	655.	497.
70	62148.	42210.	2855.	2964.	4281.	3932.	2405.	1652.	837.	574.	438.
75	46830.	31472.	2231.	2203.	3180.	3075.	1892.	1285.	666.	462.	362.
80	29484.	19378.	1487.	1385.	2032.	2074.	1280.	848.	446.	312.	243.
85	13882.	8915.	717.	663.	955.	1060.	651.	421.	226.	156.	118.

age	initial region of cohort	s.boh								
***	**********									
	total	c.boh	s.boh	w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	100000.	0.	100000.	0.	0.	0.	0.	0.	0.	0.	0.
5	97625.	2556.	90237.	1077.	682.	735.	1383.	527.	226.	131.	71.
10	97451.	3725.	86698.	1534.	942.	1067.	2072.	761.	343.	205.	104.
15	97285.	4744.	83882.	1848.	1121.	1346.	2575.	931.	446.	256.	136.
20	96938.	6447.	78459.	2497.	1605.	1903.	3509.	1314.	636.	368.	198.
25	96509.	9906.	68798.	3606.	2573.	2831.	4956.	2037.	924.	560.	319.
30	96067.	12164.	62964.	4070.	3116.	3328.	5810.	2430.	1119.	675.	391.
35	95451.	13391.	59454.	4283.	3352.	3589.	6310.	2650.	1251.	739.	432.
40	94594.	14191.	56875.	4347.	3451.	3767.	6607.	2765.	1340.	778.	471.
45	93109.	14753.	54260.	4373.	3486.	3892.	6810.	2843.	1398.	805.	489.
50	90967.	14738.	52214.	4337.	3442.	3903.	6787.	2840.	1405.	810.	491.
55	87521.	14393.	49647.	4220.	3371.	3822.	6627.	2785.	1379.	795.	483.
60	82173.	13648.	46056.	3972.	3187.	3684.	6395.	2676.	1316.	767.	472.
65	74423.	12392.	41360.	3616.	2879.	3399.	5903.	2492.	1230.	708.	443.
70	63165.	10496.	34884.	3057.	2418.	2948.	5131.	2149.	1071.	619.	392.
75	48415.	7984.	26675.	2271.	1812.	2312.	4015.	1670.	852.	501.	323.
80	31300.	5057.	17231.	1413.	1156.	1553.	2676.	1090.	569.	339.	215.
85	14929.	2426.	8054.	668.	550.	795.	1345.	534.	286.	167.	105.

APPENDIX C.2 *Continued.*

age ***	initial region of cohort w.boh **********									
	total	c.boh	s.boh	w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	100000.	0.	0.	100000.	0.	0.	0.	0.	0.	0.	0.
5	97771.	2795.	1345.	88886.	1613.	685.	1032.	607.	392.	230.	185.
10	97566.	4483.	2233.	83403.	2383.	1086.	1708.	954	382.	291.	
15	97448.	5728.	2757.	79776.	2818.	1384.	2137.	1168.	830.	471.	379.
20	97110.	7306.	3301.	74379.	3677.	1870.	2783.	1552.	1108.	629.	505.
25	96665.	10255.	4194.	65466.	5133.	2628.	3727.	2213.	1470.	877.	701.
30	96183.	12336.	4688.	59612.	5953.	3080.	4356.	2597.	1717.	1031.	814.
35	95598.	13681.	5053.	55624.	6346.	3355.	4787.	2837.	1908.	1126.	884.
40	94618.	14675.	5305.	52307.	6524.	3562.	5080.	2977.	2048.	1187.	952.
45	93132.	15330.	5419.	49422.	6562.	3708.	5275.	3067.	2135.	1228.	986.
50	90869.	15384.	5371.	47205.	6448.	3744.	5283.	3066.	2143.	1239.	987.
55	87205.	15017.	5215.	44615.	6261.	3667.	5166.	2999.	2092.	1209.	963.
60	81542.	14307.	4974.	40781.	5909.	3556.	5021.	2894.	2007.	1167.	927.
65	73438.	13027.	4576.	36076.	5308.	3293.	4653.	2697.	1868.	1077.	864.
70	61637.	11064.	3937.	29618.	4436.	2867.	4064.	2328.	1628.	939.	757.
75	45975.	8383.	3061.	21393.	3273.	2241.	3172.	1800.	1283.	750.	618.
80	28756.	5313.	2021.	12790.	2061.	1510.	2119.	1173.	854.	502.	412.
85	13398.	2530.	965.	5674.	950.	768.	1066.	571.	428.	247.	201.

age ***	initial region of cohort n.boh **********									
	total	c.boh	s.boh	w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	100000.	0.	0.	0.	100000.	0.	0.	0.	0.	0.	0.
5	97094.	2968.	722.	1218.	89530.	1070.	541.	479.	269.	152.	144.
10	96793.	4566.	1162.	1820.	85147.	1611.	872.	727.	428.	244.	216.
15	96639.	5757.	1430.	2172.	82169.	2012.	1089.	881.	545.	302.	283.
20	96177.	7807.	1839.	2953.	76321.	2841.	1543.	1250.	786.	431.	407.
25	95671.	11418.	2534.	4121.	67142.	4015.	2249.	1872.	1094.	634.	592.
30	95184.	13616.	2895.	4584.	61853.	4602.	2695.	2204.	1289.	754.	692.
35	94553.	15014.	3154.	4834.	58181.	4953.	2993.	2410.	1439.	827.	749.
40	93668.	15961.	3321.	4919.	55344.	5193.	3186.	2522.	1542.	872.	808.
45	92134.	16644.	3419.	4977.	52421.	5378.	3331.	2606.	1611.	905.	842.
50	89836.	16834.	3424.	4997.	49736.	5447.	3372.	2626.	1629.	923.	850.
55	86166.	16540.	3353.	4890.	46774.	5351.	3326.	2585.	1604.	907.	834.
60	80642.	15835.	3228.	4666.	42696.	5197.	3273.	2509.	1547.	884.	807.
65	72165.	14516.	3002.	4295.	37063.	4831.	3067.	2363.	1452.	821.	757.
70	60330.	12391.	2605.	3667.	30034.	4214.	2704.	2052.	1274.	720.	668.
75	44807.	9415.	2037.	2723.	21478.	3295.	2127.	1593.	1007.	581.	550.
80	27862.	5993.	1357.	1702.	12678.	2217.	1434.	1045.	675.	390.	369.
85	12781.	2861.	651.	804.	5396.	1122.	725.	512.	339.	193.	180.

age initial region of cohort e.boh
*** **********

	total	c.boh	s.boh	w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	100000.	0.	0.	0.	0.	100000.	0.	0.	0.	0.	0.
5	97895.	2271.	435.	495.	1146.	91085.	1147.	779.	266.	150.	120.
10	97694.	3218.	650.	693.	1521.	88090.	1667.	1082.	387.	220.	166.
15	97550.	3929.	778.	811.	1733.	86074.	2002.	1271.	480.	267.	206.
20	97213.	5563.	1043.	1173.	2529.	80795.	2856.	1835.	716.	394.	308.
25	96782.	8946.	1588.	1859.	4058.	71044.	4247.	2872.	1062.	619.	488.
30	96290.	11012.	1883.	2169.	4817.	65369.	5036.	3392.	1274.	749.	589.
35	95744.	11957.	2043.	2295.	5046.	62506.	5421.	3625.	1404.	813.	633.
40	94856.	12560.	2140.	2339.	5108.	60321.	5639.	3735.	1489.	851.	674.
45	93523.	12973.	2194.	2366.	5095.	58181.	5791.	3807.	1545.	875.	696.
50	91554.	13096.	2199.	2386.	5035.	56058.	5819.	3814.	1557.	890.	701.
55	87972.	12833.	2153.	2341.	4913.	53205.	5703.	3735.	1528.	873.	687.
60	82858.	12224.	2069.	2233.	4641.	49582.	5538.	3594.	1463.	848.	665.
65	74945.	11175.	1923.	2061.	4194.	44312.	5147.	3355.	1371.	785.	622.
70	63606.	9504.	1666.	1763.	3514.	37336.	4497.	2891.	1197.	688.	548.
75	48452.	7216.	1304.	1314.	2606.	28310.	3515.	2234.	948.	554.	449.
80	31324.	4595.	870.	828.	1658.	18252.	2355.	1458.	632.	374.	303.
85	15150.	2226.	423.	401.	789.	8745.	1193.	719.	320.	187.	148.

age initial region of cohort s.mor
*** **********

	total	c.boh	s.boh	w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	100000.	0.	0.	0.	0.	0.	100000.	0.	0.	0.	0.
5	97920.	672.	499.	322.	332.	548.	93330.	1580.	391.	164.	83.
10	97764.	976.	745.	458.	453.	780.	91197.	2216.	575.	246.	119.
15	97597.	1176.	863.	524.	511.	918.	89962.	2522.	688.	289.	144.
20	97339.	1712.	1132.	748.	756.	1343.	86439.	3562.	1010.	423.	214.
25	96948.	3150.	1769.	1252.	1359.	2214.	78790.	5781.	1556.	708.	370.
30	96466.	4136.	2086.	1477.	1688.	2650.	74394.	6826.	1881.	870.	458.
35	95886.	4635.	2252.	1575.	1816.	2848.	71931.	7299.	2078.	951.	500.
40	95003.	4981.	2355.	1615.	1871.	2981.	69934.	7515.	2209.	1000.	542.
45	93699.	5181.	2380.	1623.	1875.	3042.	68167.	7582.	2266.	1023.	560.
50	91597.	5213.	2356.	1619.	1849.	3043.	66159.	7505.	2262.	1031.	561.
55	88074.	5126.	2297.	1585.	1811.	2977.	63194.	7317.	2210.	1007.	549.
60	83067.	4896.	2195.	1508.	1719.	2873.	59245.	7010.	2113.	975.	532.
65	75478.	4480.	2025.	1385.	1558.	2652.	53526.	6485.	1966.	902.	498.
70	64503.	3830.	1749.	1185.	1317.	2309.	45586.	5581.	1715.	791.	440.
75	49513.	2930.	1370.	885.	987.	1812.	34851.	4318.	1358.	638.	363.
80	32250.	1883.	911.	558.	638.	1221.	22639.	2815.	907.	431.	246.
85	15851.	921.	439.	269.	307.	627.	11115.	1376.	460.	215.	121.

APPENDIX C.2 *Continued.*

age	initial region of cohort						n.mor			
***	**********									
	total	c.boh	s.boh	w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	100000.	0.	0.	0.	0.	0.	0.	100000.	0.	0.	0.
5	97625.	620.	236.	298.	275.	401.	1735.	93279.	313.	314.	155.
10	97455.	957.	384.	450.	398.	606.	2729.	90710.	492.	498.	231.
15	97276.	1241.	480.	547.	475.	772.	3407.	88803.	634.	615.	302.
20	96943.	1709.	615.	746.	678.	1080.	4552.	85408.	892.	841.	422.
25	96498.	2862.	928.	1153.	1138.	1664.	6544.	79006.	1310.	1245.	647.
30	95968.	3675.	1104.	1339.	1399.	1978.	7678.	74978.	1579.	1466.	771.
35	95355.	4146.	1222.	1437.	1522.	2151.	8376.	72301.	1769.	1594.	836.
40	94401.	4500.	1306.	1486.	1584.	2284.	8851.	69901.	1906.	1680.	904.
45	93000.	4719.	1342.	1505.	1601.	2358.	9088.	67754.	1978.	1720.	934.
50	90690.	4789.	1345.	1515.	1593.	2385.	9116.	65281.	1993.	1737.	936.
55	87009.	4711.	1315.	1482.	1563.	2338.	8909.	62131.	1953.	1693.	915.
60	81792.	4504.	1263.	1412.	1486.	2260.	8628.	57855.	1869.	1632.	884.
65	74013.	4140.	1175.	1303.	1358.	2103.	8028.	51816.	1753.	1511.	827.
70	62518.	3541.	1021.	1114.	1150.	1835.	7024.	43251.	1533.	1319.	729.
75	47623.	2705.	802.	832.	861.	1440.	5491.	32625.	1212.	1058.	596.
80	30517.	1738.	536.	526.	559.	975.	3686.	20571.	812.	712.	402.
85	14543.	850.	258.	255.	269.	504.	1857.	9584.	412.	354.	199.

age	initial region of cohort						w.slov			
***	**********									
	total	c.boh	s.boh	w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	100000.	0.	0.	0.	0.	0.	0.	0.	100000.	0.	0.
5	97295.	255.	116.	140.	150.	180.	436.	386.	93734.	1493.	406.
10	97062.	354.	165.	187.	193.	243.	607.	518.	92274.	1997.	525.
15	96877.	423.	192.	213.	214.	285.	704.	587.	91343.	2291.	625.
20	96548.	628.	261.	311.	327.	435.	1030.	867.	88736.	3089.	864.
25	96114.	1171.	427.	531.	594.	732.	1659.	1467.	82583.	5356.	1595.
30	95604.	1516.	511.	621.	726.	868.	1979.	1739.	79164.	6493.	1988.
35	94978.	1700.	561.	659.	781.	935.	2150.	1879.	77278.	6905.	2129.
40	93928.	1828.	592.	676.	803.	983.	2257.	1949.	75502.	7094.	2244.
45	92367.	1902.	603.	677.	805.	1005.	2305.	1974.	73682.	7130.	2285.
50	89856.	1923.	603.	676.	794.	1010.	2304.	1966.	71230.	7082.	2269.
55	86131.	1890.	589.	660.	776.	988.	2249.	1917.	67960.	6885.	2217.
60	80888.	1797.	561.	624.	731.	944.	2166.	1827.	63469.	6623.	2145.
65	73562.	1640.	515.	571.	658.	866.	1996.	1683.	57504.	6118.	2011.
70	63112.	1401.	443.	487.	553.	749.	1740.	1445.	49141.	5368.	1786.
75	48891.	1076.	349.	367.	420.	596.	1378.	1133.	37831.	4281.	1460.
80	32013.	689.	233.	228.	272.	399.	924.	740.	24615.	2910.	1002.
85	15897.	342.	111.	109.	127.	202.	469.	363.	12190.	1479.	505.

age initial region of cohort c.slov
*** **********

	total	c.boh	s.boh	w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	100000.	0.	0.	0.	0.	0.	0.	0.	0.	100000.	0.
5	97296.	279.	112.	129.	151.	165.	296.	660.	2539.	92136.	829.
10	97059.	387.	161.	174.	197.	226.	422.	881.	3375.	90159.	1077.
15	96930.	470.	190.	201.	224.	267.	502.	1008.	4042.	88722.	1303.
20	96844.	700.	263.	300.	344.	409.	748.	1476.	5560.	84955.	1789.
25	96018.	1258.	422.	506.	612.	685.	1219.	2376.	8991.	76851.	3099.
30	95433.	1629.	508.	602.	757.	830.	1500.	2800.	11214.	71768.	3826.
35	94646.	1828.	560.	647.	818.	901.	1659.	3000.	12224.	68941.	4068.
40	93561.	1962.	593.	665.	842.	951.	1758.	3092.	12756.	66677.	4265.
45	91943.	2052.	610.	673.	849.	981.	1818.	3141.	13073.	64389.	4356.
50	89652.	2081.	611.	679.	843.	993.	1831.	3134.	13050.	62102.	4329.
55	86063.	2052.	597.	665.	828.	975.	1800.	3064.	12780.	59065.	4237.
60	81012.	1960.	570.	633.	783.	937.	1747.	2922.	12248.	55115.	4096.
65	73683.	1786.	524.	580.	707.	864.	1621.	2689.	11454.	49621.	3835.
70	63373.	1523.	453.	495.	597.	752.	1420.	2307.	10069.	42352.	3405.
75	49537.	1170.	356.	373.	455.	598.	1127.	1800.	7903.	32989.	2766.
80	32586.	753.	239.	234.	291.	404.	759.	1168.	5335.	21526.	1878.
85	16057.	372.	113.	113.	141.	210.	389.	574.	2792.	10405.	948.

age initial region of cohort e.slov
*** **********

	total	c.boh	s.boh	w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	100000.	0.	0.	0.	0.	0.	0.	0.	0.	0.	100000.
5	96435.	326.	133.	258.	294.	179.	231.	457.	921.	795.	92842.
10	96154.	486.	204.	368.	400.	260.	351.	648.	1290.	1145.	91002.
15	95936.	618.	251.	437.	467.	324.	436.	778.	1635.	1399.	89590.
20	95552.	937.	353.	653.	728.	512.	671.	1182.	2349.	1954.	86212.
25	95098.	1635.	558.	1036.	1224.	838.	1083.	1901.	3917.	3297.	79608.
30	94540.	2079.	665.	1192.	1464.	1006.	1332.	2240.	5031.	4057.	75474.
35	93805.	2347.	736.	1265.	1568.	1098.	1484.	2429.	5616.	4389.	72872.
40	92762.	2522.	780.	1288.	1600.	1156.	1576.	2510.	5897.	4527.	70905.
45	91172.	2641.	802.	1298.	1603.	1197.	1639.	2563.	6103.	4617.	68710.
50	88861.	2681.	804.	1302.	1584.	1214.	1655.	2566.	6131.	4636.	66288.
55	85341.	2640.	788.	1273.	1550.	1195.	1629.	2514.	6025.	4542.	63185.
60	80512.	2521.	751.	1201.	1461.	1155.	1587.	2404.	5787.	4406.	59239.
65	73482.	2308.	696.	1096.	1316.	1071.	1477.	2225.	5461.	4112.	53721.
70	63128.	1971.	600.	931.	1098.	931.	1292.	1906.	4800.	3614.	45984.
75	49636.	1508.	470.	695.	822.	734.	1019.	1486.	3766.	2872.	36265.
80	32445.	963.	315.	433.	520.	495.	686.	962.	2549.	1945.	23578.
85	15793.	470.	149.	204.	237.	252.	343.	462.	1308.	974.	11394.

APPENDIX C.3 Life expectancies by region of birth.

dxpectations of life by place of birth
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age ***	initial region of cohort c.boh ********** total	c.boh	s.boh	w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	70.11037	54.52310	2.26224	2.41710	3.59695	3.02522	1.72887	1.21602	0.59796	0.42619	0.31671
5	66.95657	51.08909	2.30101	2.45755	3.65755	3.08064	1.76334	1.23941	0.61026	0.43462	0.32309
10	62.08558	46.53781	2.24867	2.40105	3.57646	3.02092	1.73521	1.21835	0.60149	0.42736	0.31825
15	57.17854	42.05449	2.17830	2.32750	3.47353	2.94042	1.69614	1.19039	0.58911	0.41724	0.31143
20	52.38050	37.79371	2.09306	2.23521	3.34368	2.83567	1.64561	1.15458	0.57256	0.40411	0.30231
25	47.60526	33.83573	1.97220	2.09715	3.14253	2.67697	1.56637	1.09673	0.54622	0.38364	0.28772
30	42.82460	30.14346	1.81609	1.91800	2.87284	2.46897	1.45660	1.01587	0.50948	0.35579	0.26750
35	38.07086	26.60406	1.64308	1.72335	2.57481	2.23872	1.32919	0.92321	0.46604	0.32401	0.24438
40	33.41714	23.20465	1.46373	1.52638	2.27212	2.00083	1.19389	0.82614	0.41907	0.29056	0.21975
45	28.90857	19.95315	1.28366	1.33230	1.97416	1.76093	1.05529	0.72793	0.37036	0.25651	0.19428
50	24.54422	16.83828	1.10509	1.14042	1.68285	1.52081	0.91551	0.62954	0.32094	0.22217	0.16862
55	20.44440	13.93400	0.93495	0.95642	1.40556	1.29069	0.78128	0.53505	0.27335	0.18910	0.14401
60	16.57688	11.21442	0.77223	0.78026	1.14042	1.04955	0.65095	0.44382	0.22766	0.15729	0.12029
65	13.12782	8.80580	0.62504	0.62055	0.90246	0.86919	0.53135	0.36003	0.18620	0.12849	0.09871
70	10.11049	6.71346	0.49421	0.47752	0.69382	0.69162	0.42398	0.28436	0.14899	0.10304	0.07950
75	7.59979	4.97582	0.38434	0.35786	0.52246	0.54377	0.33324	0.22057	0.11751	0.08144	0.06279
80	5.60009	3.59144	0.29512	0.26416	0.38793	0.42712	0.26029	0.16940	0.09240	0.06378	0.04845
85	4.08436	2.53260	0.22975	0.19237	0.28603	0.34289	0.20502	0.13124	0.07535	0.05125	0.03786

age ***	initial region of cohort s.boh ********** total	c.boh	s.boh	w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	70.64705	8.18972	48.52029	2.56906	1.96651	2.25934	3.96946	1.63416	0.79530	0.46449	0.27871
5	67.30524	8.32353	44.82926	2.60400	1.99690	2.29550	4.03064	1.66042	0.80885	0.47245	0.28367
10	62.42053	8.17721	40.36995	2.54167	1.95879	2.25336	3.94917	1.63032	0.79568	0.46467	0.27970
15	57.52273	7.97352	36.05529	2.45910	1.90912	2.19520	3.83649	1.58962	0.77677	0.45362	0.27399
20	52.72010	7.71350	31.99788	2.35585	1.84567	2.11928	3.69334	1.53742	0.75165	0.43914	0.26636
25	47.94307	7.32415	28.32534	2.20822	1.74563	2.00606	3.49045	1.45743	0.71457	0.41705	0.25416
30	43.15213	6.78352	25.02674	2.01864	1.60563	1.85501	3.22634	1.34789	0.66468	0.38683	0.23686
35	38.41468	6.15801	21.98205	1.81290	1.44659	1.68583	2.92974	1.20355	0.60689	0.35229	0.21682
40	33.74007	5.48485	19.10679	1.60124	1.27989	1.50668	2.61489	1.09152	0.54389	0.31539	0.19493
45	29.23809	4.79513	16.42740	1.39262	1.11402	1.32506	2.29631	0.95834	0.47904	0.27792	0.17226
50	24.86763	4.09756	13.88803	1.18603	0.94983	1.14203	1.97668	0.82472	0.41329	0.24009	0.14937
55	20.74839	3.42681	11.52530	0.98832	0.79260	0.96632	1.67134	0.69653	0.35004	0.20370	0.12743
60	16.93608	2.79675	9.36379	0.80343	0.64465	0.80085	1.38395	0.57575	0.29084	0.16942	0.10666
65	13.43932	2.21326	7.40238	0.63219	0.50801	0.64629	1.11496	0.46212	0.23560	0.13749	0.08703
70	10.38918	1.70186	5.70413	0.48075	0.38890	0.51027	0.87695	0.36082	0.18653	0.10947	0.06950
75	7.79270	1.26606	4.26325	0.35211	0.28897	0.39411	0.67185	0.27356	0.14405	0.08497	0.05376
80	5.68667	0.91668	3.08751	0.25043	0.20991	0.30086	0.50484	0.20267	0.10932	0.06429	0.04015
85	4.18099	0.66879	2.23910	0.17654	0.15443	0.23761	0.38510	0.15284	0.08611	0.04996	0.03050

age initial region of cohort w.boh
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	total	c.boh	s.boh	w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	70.15070	8.62206	3.23882	44.91948	3.79806	2.16553	3.09069	1.78510	1.23645	0.71951	0.57501
5	66.69313	8.74717	3.27828	41.11382	3.84341	2.19738	3.13476	1.81028	1.25462	0.73002	0.58338
10	61.82760	8.57900	3.19347	36.78529	3.74906	2.15659	3.07110	1.77408	1.23074	0.71588	0.57241
15	56.89944	8.32745	3.06932	32.64353	3.62016	2.09583	2.97615	1.72179	1.19443	0.69486	0.55591
20	52.08891	8.02092	2.92407	28.78867	3.46555	2.01935	2.85985	1.65777	1.14868	0.66896	0.53508
25	47.31753	7.60373	2.74371	25.30464	3.25368	1.91231	2.70466	1.56804	1.08730	0.63310	0.50636
30	42.54190	7.05460	2.52658	22.18029	2.98184	1.77353	2.50811	1.45086	1.00989	0.58668	0.46952
35	37.78704	6.41743	2.28733	19.30253	2.67849	1.61613	2.28438	1.31763	0.92127	0.53388	0.42798
40	33.15231	5.73464	2.03734	16.65061	2.36617	1.45010	2.04731	1.17764	0.82628	0.47829	0.38391
45	28.64165	5.02074	1.78200	14.18564	2.05265	1.27810	1.80203	1.03418	0.72718	0.42109	0.33803
50	24.29247	4.30071	1.52952	11.88040	1.74583	1.10491	1.55643	0.89120	0.62759	0.36372	0.29217
55	20.20810	3.60986	1.29030	9.74727	1.45485	0.93888	1.32226	0.75476	0.53253	0.30882	0.24856
60	16.43790	2.96151	1.06754	7.80606	1.18278	0.78263	1.10176	0.62648	0.44384	0.25742	0.20788
65	12.97610	2.35784	0.86025	6.05114	0.93148	0.63586	0.89403	0.50528	0.36093	0.20945	0.16985
70	9.98178	1.83213	0.67968	4.54507	0.71461	0.50775	0.71162	0.39822	0.28824	0.16781	0.13664
75	7.53053	1.39882	0.53072	3.31953	0.53886	0.40296	0.56055	0.30942	0.22810	0.13315	0.10842
80	5.54283	1.04576	0.40670	2.33540	0.39777	0.31820	0.43619	0.23620	0.17885	0.10401	0.08374
85	4.03080	0.78108	0.31582	1.56717	0.29197	0.25795	0.34191	0.18158	0.14460	0.08339	0.06532

age initial region of cohort n.boh
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	total	c.boh	s.boh	w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	69.32455	9.45334	2.01926	2.97889	46.26778	3.18956	1.93976	1.52091	0.93344	0.53076	0.49086
5	66.32487	9.65989	2.06111	3.03671	42.77266	3.25749	1.98389	1.55409	0.95444	0.54275	0.50183
10	61.52340	9.49534	2.01886	2.96768	38.39408	3.19838	1.95358	1.52776	0.93940	0.53423	0.49408
15	56.61702	9.24335	1.95503	2.86912	34.12662	3.10973	1.90595	1.48858	0.91573	0.52096	0.48195
20	51.87685	8.93515	1.87947	2.74968	30.17074	2.99852	1.84669	1.44033	0.88553	0.50442	0.46632
25	47.13831	8.48011	1.77515	2.57940	26.58162	2.83525	1.75739	1.36637	0.84109	0.47926	0.44268
30	42.36644	7.86595	1.64161	2.36396	23.32943	2.62342	1.63653	1.26629	0.78280	0.44524	0.41121
35	37.63248	7.16148	1.49261	2.13073	20.31141	2.38830	1.49707	1.15273	0.71589	0.40642	0.37583
40	32.96467	6.40248	1.33388	1.89058	17.47347	2.14009	1.34631	1.03199	0.64311	0.36493	0.33782
45	28.47173	5.62435	1.17318	1.65353	14.84018	1.88887	1.19189	0.91004	0.56824	0.32278	0.29866
50	24.13613	4.83661	1.01277	1.41826	12.37696	1.63595	1.03585	0.78774	0.49262	0.28014	0.25923
55	20.05780	4.07433	0.85929	1.19181	10.10408	1.39233	0.88563	0.67010	0.41982	0.23897	0.22144
60	16.26034	3.34972	0.71411	0.97718	8.02244	1.16067	0.74171	0.55807	0.35089	0.19982	0.18572
65	12.87671	2.69178	0.58217	0.78155	6.20173	0.94961	0.60921	0.45486	0.28821	0.16424	0.15334
70	9.91238	2.10490	0.46403	0.60494	4.63798	0.76109	0.48959	0.36115	0.23179	0.13258	0.12434
75	7.48043	1.61748	0.36581	0.45798	3.37071	0.60576	0.38963	0.28288	0.18481	0.10590	0.09946
80	5.50941	1.21860	0.28375	0.33945	2.35590	0.47956	0.30700	0.21824	0.14626	0.08316	0.07748
85	4.06048	0.92464	0.22584	0.24985	1.60049	0.39229	0.24683	0.17124	0.12059	0.06723	0.06148

APPENDIX C.3 *Continued.*

age initial region of cohort e.boh
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	total	c.boh	s.boh	w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	70.93058	7.30258	1.27656	1.38291	2.93357	50.60956	3.40045	2.22277	0.88855	0.51070	0.40295
5	67.40231	7.40163	1.29290	1.40000	2.96740	46.81813	3.44430	2.25068	0.90087	0.51786	0.40854
10	62.53535	7.27632	1.26780	1.37245	2.90524	42.32901	3.37935	2.20766	0.88602	0.50945	0.40205
15	57.62406	7.10389	1.23309	1.33593	2.82615	37.92812	3.29032	2.15062	0.86511	0.49772	0.39311
20	52.81504	6.88438	1.19052	1.28952	2.72634	33.76822	3.17679	2.07820	0.83735	0.48246	0.38125
25	48.03954	6.54030	1.12788	1.21695	2.56837	29.99666	3.00748	1.96589	0.79515	0.45847	0.36238
30	43.27221	6.05554	1.04353	1.11860	2.35108	26.60818	2.78185	1.81332	0.73856	0.42529	0.33626
35	38.50448	5.49028	0.94696	1.00841	2.10693	23.42079	2.52467	1.64042	0.67283	0.38691	0.30627
40	33.84142	4.89550	0.84557	0.89573	1.85903	20.40279	2.25680	1.46180	0.60287	0.34666	0.27468
45	29.28821	4.28274	0.74176	0.78273	1.61280	17.52593	1.98342	1.28103	0.53036	0.30545	0.24198
50	24.86436	3.66299	0.63777	0.66980	1.37088	14.78345	1.70905	1.10047	0.45708	0.26381	0.20905
55	20.77505	3.07528	0.54007	0.56273	1.14400	12.28040	1.45121	0.93077	0.38803	0.22445	0.17813
60	16.90300	2.50906	0.44601	0.45944	0.92633	9.93703	1.20161	0.76709	0.32172	0.18638	0.14833
65	13.42372	1.99343	0.35995	0.36471	0.72939	7.85410	0.97205	0.61627	0.26115	0.15159	0.12107
70	10.37112	1.53601	0.28308	0.27942	0.55644	6.04512	0.76628	0.48063	0.20673	0.12072	0.09668
75	7.83284	1.15367	0.21836	0.20804	0.41467	4.54857	0.59252	0.36648	0.16068	0.09440	0.07545
80	5.74873	0.84184	0.16425	0.15087	0.30106	3.31955	0.44795	0.27214	0.12243	0.07197	0.05666
85	4.21694	0.61503	0.12638	0.10916	0.21870	2.40862	0.34065	0.20339	0.09605	0.05616	0.04279

age initial region of cohort s.mor
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	total	c.boh	s.boh	w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	71.21648	2.81115	1.37983	0.93376	1.04792	1.75496	56.70341	4.38874	1.29190	0.58758	0.31724
5	67.67591	2.85371	1.39640	0.94536	1.06171	1.77824	52.97179	4.44160	1.30937	0.59587	0.32187
10	62.77998	2.81615	1.36683	0.92691	1.04332	1.74713	48.33768	4.35162	1.28678	0.58633	0.31724
15	57.88328	2.76585	1.32799	0.90333	1.02040	1.70663	43.78002	4.23772	1.25664	0.57363	0.31105
20	53.03008	2.69900	1.28029	0.87306	0.99056	1.65309	39.36550	4.09270	1.21635	0.55687	0.30267
25	48.23392	2.58451	1.21065	0.82501	0.94001	1.56804	35.26354	3.86829	1.15507	0.52995	0.28884
30	43.46228	2.40859	1.11680	0.75843	0.86573	1.44983	31.46973	3.56089	1.07174	0.49171	0.26884
35	38.71016	2.19446	1.01047	0.68344	0.77960	1.31525	27.84509	3.21417	0.97499	0.44721	0.24547
40	34.04664	1.96181	0.89862	0.60584	0.68983	1.17407	24.37069	2.85422	0.87122	0.40002	0.22031
45	29.48563	1.71798	0.78479	0.52788	0.59948	1.02970	21.02514	2.49114	0.76394	0.35160	0.19398
50	25.10507	1.47373	0.67356	0.45151	0.51160	0.88726	17.84153	2.13655	0.65787	0.30362	0.16786
55	21.00913	1.23920	0.56844	0.37864	0.42816	0.75184	14.88337	1.80127	0.55722	0.25792	0.14306
60	17.12498	1.01227	0.46754	0.30838	0.34773	0.62109	12.09566	1.47865	0.46070	0.21379	0.11915
65	13.59546	0.80349	0.37478	0.24356	0.27416	0.50054	9.57657	1.18033	0.37191	0.17311	0.09703
70	10.48324	0.61810	0.29227	0.18540	0.20937	0.39341	7.36454	0.91348	0.29252	0.13694	0.07720
75	7.90019	0.46390	0.22326	0.13704	0.15643	0.30445	5.53276	0.69019	0.22592	0.10624	0.06002
80	5.79077	0.33911	0.16592	0.09857	0.11416	0.23229	4.03777	0.50665	0.17123	0.08017	0.04490
85	4.19555	0.24772	0.12456	0.07017	0.08322	0.18107	2.89169	0.36988	0.13264	0.06112	0.03348

age	initial region of cohort				n.mor						
***	**********										
	total	c.boh	s.boh	w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	70.59262	2.58499	0.77183	0.87410	0.90027	1.36703	5.31827	55.90276	1.12874	1.00647	0.53817
5	67.04419	2.63201	0.78456	0.88774	0.91512	1.39002	5.40322	52.31314	1.14817	1.02290	0.54730
10	62.15715	2.59617	0.77001	0.87011	0.89946	1.36662	5.29818	47.68484	1.12953	1.00386	0.53837
15	57.26696	2.54446	0.74922	0.84608	0.87868	1.33372	5.15024	43.15910	1.10268	0.97712	0.52565
20	52.45495	2.47714	0.72356	0.81565	0.85196	1.29054	4.96266	38.81463	1.06712	0.94293	0.50877
25	47.68531	2.37013	0.68693	0.77021	0.80882	1.22540	4.69806	34.73410	1.01501	0.89324	0.48341
30	42.93472	2.21291	0.63779	0.70955	0.74719	1.13729	4.35349	30.91448	0.94534	0.82755	0.44913
35	38.19464	2.02207	0.58090	0.64134	0.67543	1.03633	3.96056	27.25187	0.86364	0.75264	0.40987
40	33.55527	1.81351	0.51982	0.57042	0.60000	0.92934	3.54436	23.76132	0.77506	0.67353	0.36791
45	29.02323	1.59300	0.45646	0.49861	0.52341	0.81856	3.11555	20.41896	0.68233	0.59228	0.32405
50	24.69885	1.37148	0.39403	0.42804	0.44870	0.70865	2.69310	17.27177	0.59025	0.51207	0.28077
55	20.63789	1.15655	0.33427	0.36003	0.37700	0.60292	2.28912	14.34150	0.50185	0.43518	0.23946
60	16.79474	0.94868	0.27681	0.29456	0.30785	0.50083	1.89912	11.58882	0.41704	0.36129	0.19975
65	13.29730	0.75645	0.22356	0.23385	0.24414	0.40608	1.53615	9.10247	0.33854	0.29310	0.16297
70	10.28259	0.58841	0.17685	0.18018	0.18871	0.32327	1.21669	6.97451	0.26941	0.23383	0.13072
75	7.71676	0.44459	0.13647	0.13433	0.14214	0.25243	0.94024	5.17276	0.20958	0.18218	0.10204
80	5.64094	0.32982	0.10333	0.09830	0.10547	0.19603	0.71553	3.71440	0.16124	0.13935	0.07746
85	4.09090	0.24710	0.08026	0.07194	0.07894	0.15712	0.54863	2.61057	0.12797	0.10926	0.05913

age	initial region of cohort				w.slov						
***	**********										
	total	c.boh	s.boh	w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	70.35710	1.03293	0.34385	0.38861	0.44850	0.57531	1.32634	1.12877	59.64077	4.15942	1.31258
5	67.24352	1.05511	0.35042	0.39583	0.45712	0.58669	1.35200	1.15022	56.32078	4.23670	1.33864
10	62.39878	1.04197	0.34401	0.38837	0.44941	0.57720	1.32838	1.12969	51.66489	4.15698	1.31787
15	57.51339	1.02391	0.33545	0.37881	0.43976	0.56468	1.29709	1.10333	47.02533	4.05430	1.29071
20	52.70117	1.00018	0.32487	0.36655	0.42726	0.54799	1.25660	1.06944	42.52289	3.92884	1.25656
25	47.92739	0.95791	0.30843	0.34629	0.40523	0.52010	1.19231	1.01356	38.25841	3.72689	1.19826
30	43.16971	0.89275	0.28556	0.31802	0.37287	0.48102	1.10355	0.93514	34.23290	3.43693	1.11096
35	38.43814	0.81597	0.25925	0.28643	0.33567	0.43673	1.00217	0.84607	30.34099	3.10695	1.00992
40	33.83984	0.72916	0.23148	0.25409	0.29724	0.39056	0.89608	0.75363	26.61370	2.76908	0.90480
45	29.36932	0.64053	0.20305	0.22178	0.25873	0.34336	0.78774	0.66020	23.02554	2.43090	0.79749
50	25.12024	0.55202	0.17518	0.19035	0.22147	0.29691	0.68153	0.56905	19.63724	2.10344	0.69305
55	21.09849	0.46522	0.14816	0.15981	0.18546	0.25176	0.57887	0.48097	16.44642	1.78902	0.59281
60	17.30405	0.38142	0.12222	0.13047	0.15088	0.20836	0.47995	0.39644	13.45040	1.48749	0.49642
65	13.77840	0.30261	0.09785	0.10283	0.11869	0.16758	0.38629	0.31665	10.67863	1.20262	0.40464
70	10.64585	0.23227	0.07613	0.07794	0.09039	0.13134	0.30226	0.24919	8.22233	0.94679	0.32123
75	8.01517	0.17321	0.05776	0.05696	0.06691	0.10073	0.23075	0.18468	6.16668	0.72880	0.24967
80	5.92303	0.12673	0.04273	0.04055	0.04809	0.07610	0.17270	0.13576	4.54136	0.55151	0.18751
85	4.39300	0.09506	0.03198	0.02861	0.03403	0.05872	0.12869	0.09986	3.35696	0.42046	0.14062

APPENDIX C.3 *Continued.*

age initial region of cohort c.slov
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	total	c.boh	s.boh	w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	70.36596	1.11984	0.34627	0.38549	0.47445	0.56162	1.03789	1.81445	7.52646	54.57710	2.52239
5	67.25191	1.14380	0.35302	0.39289	0.48376	0.57298	1.05914	1.84790	7.67038	51.15688	2.57118
10	62.40984	1.12943	0.34684	0.38603	0.47596	0.56430	1.04323	1.81272	7.53677	46.58620	2.52835
15	57.48957	1.10881	0.33823	0.37686	0.46571	0.55235	1.02078	1.76643	7.35550	42.03457	2.47034
20	52.70993	1.08293	0.32786	0.36540	0.45286	0.53707	0.99251	1.70917	7.13632	37.70564	2.40016
25	47.98461	1.03787	0.31182	0.34643	0.43045	0.51154	0.94673	1.61822	6.79652	33.69901	2.28602
30	43.26357	0.96862	0.28935	0.31953	0.39723	0.47501	0.88133	1.49255	6.30892	30.01241	2.11861
35	38.60268	0.88538	0.26354	0.28919	0.35894	0.43326	0.80522	1.35175	5.74231	26.54537	1.92771
40	34.02128	0.79438	0.23579	0.25750	0.31874	0.38880	0.72327	1.20465	5.14141	23.22937	1.72738
45	29.57599	0.69920	0.20723	0.22565	0.27835	0.34312	0.63878	1.05636	4.52960	20.07436	1.52335
50	25.26792	0.60181	0.17848	0.19370	0.23827	0.29686	0.55335	0.90837	3.91691	17.06006	1.32010
55	21.21743	0.50684	0.15085	0.16273	0.19969	0.25208	0.47095	0.76622	3.32994	14.25179	1.12634
60	17.38443	0.41463	0.12426	0.13281	0.16243	0.20878	0.39085	0.62927	2.76518	11.61680	0.93942
65	13.86479	0.32878	0.09950	0.10484	0.12802	0.16843	0.31544	0.50148	2.23599	9.21858	0.76374
70	10.71386	0.25173	0.07714	0.07947	0.09740	0.13208	0.24681	0.38600	1.75071	7.09017	0.60237
75	8.00791	0.18610	0.05788	0.05785	0.07154	0.10082	0.18721	0.28656	1.33266	5.26814	0.45915
80	5.87318	0.13537	0.04240	0.04139	0.05158	0.07641	0.13988	0.20790	1.01033	3.82624	0.34168
85	4.34553	0.09954	0.03125	0.02995	0.03754	0.05958	0.10515	0.15068	0.78510	2.79344	0.25330

age initial region of cohort e.slov
*** **********

	total	c.boh	s.boh	w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	69.80467	1.44108	0.45607	0.75006	0.90103	0.68602	0.93102	1.47025	3.45725	2.68384	57.02807
5	67.29246	1.48589	0.46947	0.77110	0.92671	0.70673	0.95945	1.51275	3.56117	2.76243	54.13676
10	62.48196	1.46911	0.46209	0.75708	0.91138	0.69737	0.94713	1.48843	3.51411	2.72007	49.51519
15	57.61870	1.44369	0.45129	0.73783	0.89086	0.68373	0.92880	1.45465	3.44589	2.65997	44.92199
20	52.83997	1.40879	0.43729	0.71227	0.86316	0.66459	0.90358	1.40919	3.35549	2.58292	40.50268
25	48.08014	1.34789	0.41542	0.67125	0.81596	0.63227	0.86178	1.33486	3.20676	2.45721	36.33672
30	43.34912	1.25765	0.38552	0.61630	0.74970	0.58726	0.80300	1.23322	2.98905	2.27725	32.45018
35	38.66934	1.14954	0.35120	0.55564	0.67476	0.53580	0.73425	1.11844	2.72872	2.07001	28.75099
40	34.07613	1.03123	0.31428	0.49307	0.59696	0.48106	0.66003	0.99793	2.44914	1.85299	25.19945
45	29.62654	0.90762	0.27636	0.43076	0.51955	0.42490	0.58338	0.87623	2.16280	1.63456	21.81038
50	25.33228	0.78151	0.23837	0.36884	0.44342	0.36813	0.50587	0.75473	1.87487	1.41677	18.57977
55	21.27393	0.65788	0.20156	0.30862	0.36992	0.31276	0.43053	0.63702	1.59609	1.20636	15.55320
60	17.40000	0.53708	0.16585	0.25030	0.29863	0.25855	0.35652	0.52251	1.32505	1.00088	12.68464
65	13.82536	0.42416	0.13246	0.19609	0.23274	0.20756	0.28640	0.41501	1.06912	0.80684	10.05498
70	10.68294	0.32426	0.10285	0.14797	0.17532	0.16233	0.22372	0.31949	0.83809	0.63323	7.75567
75	7.90719	0.23719	0.07690	0.10632	0.12627	0.12260	0.16813	0.23550	0.63442	0.47870	5.72116
80	5.77222	0.17247	0.05719	0.07578	0.08975	0.09289	0.12581	0.17165	0.48400	0.36124	4.14144
85	4.22260	0.12750	0.04407	0.05488	0.06459	0.07265	0.09550	0.12722	0.38377	0.28014	2.97227

Appendix D

MULTIREGIONAL POPULATION PROJECTIONS AND STABLE EQUIVALENT POPULATIONS: 1975–2025

LEGEND

m.ag:	mean age of population
sha:	percentage of population in each region
lam:	intrinsic growth ratio
r:	intrinsic growth rate

APPENDIX D

Multiregional population projections.

year 1975

population

age	total	c.boh	s.boh	w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	1287189.	170534.	55805.	76168.	104943.	103465.	166351.	169983.	171153.	134488.	134299.
5	1071877.	133911.	45718.	62361.	82057.	83281.	137092.	144158.	147826.	118661.	116812.
10	1097937.	131444.	46372.	62224.	78565.	82276.	139948.	145427.	157925.	128717.	125039.
15	1156954.	137481.	50057.	64448.	80871.	87527.	147425.	145213.	175828.	138115.	129989.
20	1286277.	178803.	55607.	75054.	100777.	101980.	163356.	162942.	188113.	136668.	122977.
25	1225841.	197526.	55824.	78067.	110484.	101459.	161616.	162131.	152294.	108835.	97605.
30	996954.	164194.	43881.	62270.	81066.	80411.	134158.	138267.	125137.	89508.	78002.
35	820554.	119762.	36277.	50601.	63350.	64371.	108269.	110123.	110929.	82618.	74254.
40	874038.	137086.	39897.	53151.	65257.	72449.	115139.	109890.	116631.	86466.	78072.
45	920423.	156255.	40613.	54790.	70586.	76523.	123699.	114311.	122164.	86468.	75014.
50	951839.	167496.	41703.	56271.	78510.	77974.	127085.	116997.	124706.	86847.	74250.
55	535250.	94813.	25381.	33127.	42470.	44015.	75300.	66052.	67999.	46627.	39466.
60	783315.	150472.	38277.	45816.	59968.	71305.	113787.	90621.	96028.	65770.	51271.
65	711624.	143464.	35169.	40197.	50204.	67609.	105881.	80283.	83294.	57463.	48060.
70	529498.	107108.	27201.	29439.	34202.	52340.	79609.	59217.	62176.	42652.	35554.
75	328396.	66078.	17404.	17412.	20050.	33476.	49670.	35855.	38745.	27138.	22568.
80	153719.	30942.	8591.	7929.	8841.	16409.	24665.	16492.	17715.	12604.	9531.
85	69982.	13336.	4221.	3471.	3599.	7729.	12124.	7332.	8166.	5846.	4158.
total	14801667.	2300705.	667998.	872796.	1135800.	1224599.	1985174.	1875294.	1966889.	1455491.	1316921.

percentage distribution

age	total	c.boh	s.boh	w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	8.6962	7.4122	8.3541	8.7269	9.2396	8.4489	8.3797	9.0643	8.7017	9.2400	10.1980
5	7.2416	5.8204	6.8440	7.1450	7.2246	6.8007	6.9058	7.6872	7.5157	8.1526	8.8701
10	7.4177	5.7132	6.9419	7.1293	6.9172	6.7186	7.0497	7.7549	8.0292	8.8435	9.4948
15	7.8164	5.9756	7.4936	7.3841	7.1202	7.1474	7.4263	7.7435	8.9394	9.4892	9.8707
20	8.6901	7.7717	8.3244	8.5993	8.8728	8.3276	8.2288	8.6889	9.5640	9.3898	9.3382
25	8.2818	8.5855	8.3569	8.9445	9.7274	8.2851	8.1412	8.6456	7.7429	7.4775	7.4116
30	6.7354	7.1367	6.5690	7.1345	7.1373	6.5663	6.7580	7.3731	6.3652	6.1497	5.9231
35	5.5437	5.2054	5.4307	5.7976	5.5776	5.2565	5.4539	5.8723	5.6398	5.6763	5.6385
40	5.9050	5.9584	5.9726	6.0897	5.7455	5.9161	5.7999	5.8599	5.9297	5.9407	5.9284
45	6.2184	6.7916	6.0798	6.2775	6.2147	6.2488	6.2311	6.0956	6.2110	5.9408	5.6962
50	6.4306	7.2802	6.2430	6.4472	6.9123	6.3673	6.4017	6.2389	6.3403	5.9669	5.6382
55	3.6161	4.1210	3.7996	3.7955	3.7392	3.5942	3.7931	3.5222	3.4572	3.2035	2.9968
60	5.2921	6.5403	5.7301	5.2493	5.2798	5.8227	5.7318	4.8324	4.8822	4.5188	3.8932
65	4.8077	6.2357	5.2648	4.6055	4.4201	5.5209	5.3336	4.2811	4.2348	3.9480	3.6494
70	3.5773	4.6554	4.0720	3.3730	3.0113	4.2741	4.0102	3.1577	3.1611	2.9304	2.6998
75	2.2186	2.8721	2.6054	1.9950	1.7653	2.7336	2.5020	1.9120	1.9699	1.8645	1.7137
80	1.0385	1.3449	1.2861	0.9085	0.7784	1.3399	1.2425	0.8794	0.9007	0.8660	0.7237
85	0.4728	0.5796	0.6319	0.3977	0.3169	0.6311	0.6107	0.3910	0.4152	0.4017	0.3157
total	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000
m.ag	34.6112	38.2274	35.8529	34.4405	33.8931	36.2021	35.7952	33.4938	33.4356	32.3507	30.9770
sha	100.0000	15.5436	4.5130	5.8966	7.6735	8.2734	13.4118	12.6695	13.2883	9.8333	8.8971

year 2000

population

age	total	c.boh	s.boh	w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	1488386.	196730.	65642.	82581.	112105.	115955.	197971.	194461.	201931.	155560.	165451.
5	1363484.	177903.	60320.	74778.	101095.	104658.	180153.	178516.	188265.	145411.	152384.
10	1325736.	171316.	58294.	70939.	94416.	99883.	174365.	171284.	189100.	145885.	150256.
15	1360068.	180155.	60234.	73053.	96319.	103357.	179976.	173578.	196474.	148314.	148607.
20	1388909.	197391.	63054.	77833.	103602.	108627.	185297.	178676.	194665.	142143.	137622.
25	1251655.	183902.	57590.	71306.	97518.	98304.	164778.	163544.	170876.	124472.	119364.
30	1050978.	150333.	46819.	58281.	77868.	79524.	136252.	138687.	149522.	109421.	104271.
35	1069514.	149673.	46844.	57445.	74877.	78361.	137724.	139159.	158732.	116412.	110287.
40	1115324.	156468.	49479.	58329.	76004.	82268.	143210.	138478.	173342.	123410.	114336.
45	1220417.	191365.	54521.	66135.	90228.	95111.	157571.	151607.	181805.	122700.	109375.
50	1131903.	197569.	53026.	66938.	94316.	93639.	152546.	145934.	144022.	97289.	86623.
55	880087.	152857.	39828.	51619.	66916.	71702.	121354.	119084.	112248.	77233.	67248.
60	674405.	102931.	30382.	39331.	48373.	53507.	91518.	88957.	92426.	66782.	60197.
65	639859.	101750.	29766.	37114.	43993.	53462.	86939.	79367.	87106.	63107.	57254.
70	557182.	93257.	25335.	31170.	38384.	46890.	77508.	68082.	76147.	53433.	46976.
75	423370.	71581.	19392.	22623.	30014.	35557.	59149.	51059.	58055.	40566.	35375.
80	145162.	24056.	7197.	7772.	9497.	12464.	21708.	17417.	19812.	13581.	11658.
85	125107.	21305.	6512.	5772.	7347.	12325.	19559.	13612.	17832.	11892.	8950.
total	17211546.	2520542.	774235.	953018.	1262873.	1345593.	2287579.	2211500.	2412360.	1757610.	1686237.

percentage distribution

age	total	c.boh	s.boh	w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	8.6476	7.8051	8.4783	8.6652	8.8770	8.6174	8.6542	8.7932	8.3707	8.8507	9.8118
5	7.9219	7.0581	7.7909	7.8465	8.0052	7.7779	7.8753	8.0722	7.8042	8.2732	9.0370
10	7.7026	6.7968	7.5292	7.4436	7.4763	7.4229	7.6222	7.7452	7.8388	8.3002	8.9107
15	7.9021	7.1475	7.7798	7.6654	7.6270	7.6811	7.8675	7.8489	8.1445	8.4384	8.8129
20	8.0696	7.8313	8.1441	8.1670	8.2037	8.0728	8.1001	8.0794	8.0695	8.0873	8.1615
25	7.2722	7.2961	7.4384	7.4821	7.7219	7.3057	7.2032	7.3951	7.0834	7.0819	7.0787
30	6.1062	5.9643	6.0471	6.1154	6.1660	5.9099	5.9562	6.2712	6.1982	6.2256	6.1837
35	6.2139	5.9381	6.0504	6.0277	5.9291	5.8235	6.0205	6.2925	6.5800	6.6233	6.5404
40	6.4801	6.2077	6.3907	6.1204	6.0184	6.1139	6.2603	6.2617	7.1856	7.0214	6.7806
45	7.0907	7.5922	7.0419	6.9396	7.1446	7.0683	6.8881	6.8554	7.5364	6.9811	6.4864
50	6.5764	7.8384	6.8489	7.0238	7.4683	6.9590	6.6685	6.5989	5.9701	5.5353	5.1370
55	5.1134	6.0644	5.1442	5.4163	5.2987	5.3286	5.3049	5.3847	4.6530	4.3942	3.9881
60	3.9183	4.0837	3.9242	4.1270	3.8304	3.9765	4.0007	4.0225	3.8313	3.7996	3.5699
65	3.7176	4.0368	3.8446	3.8943	3.4836	3.9731	3.8005	3.5888	3.6108	3.5905	3.3954
70	3.2373	3.6999	3.2722	3.2706	3.0394	3.4847	3.3882	3.0786	3.1565	3.0401	2.7859
75	2.4598	2.8399	2.5047	2.3738	2.3766	2.6425	2.5856	2.3088	2.4066	2.3080	2.0979
80	0.8434	0.9544	0.9295	0.8155	0.7520	0.9263	0.9489	0.7876	0.8213	0.7727	0.6914
85	0.7269	0.8453	0.8410	0.6057	0.5818	0.9160	0.8550	0.6155	0.7392	0.6766	0.5308
total	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000
m.ag	34.3447	36.2928	34.6895	34.5411	34.1278	34.9812	34.6743	34.0405	34.1985	33.3836	31.9809
sha	100.0000	14.6445	4.4983	5.5371	7.3374	7.8180	13.2910	12.8489	14.0159	10.2118	9.7971
lam	1.031632	1.025923	1.034340	1.020511	1.023599	1.025236	1.032505	1.033025	1.036720	1.033363	1.044631
r	0.006228	0.005119	0.006753	0.004061	0.004665	0.004985	0.006398	0.006498	0.007212	0.006564	0.008733

APPENDIX D *Continued.*

year 2025

population

age	total	c.boh	s.boh	w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	1733914.	230891.	77450.	91866.	125186.	132506.	235260.	224550.	236298.	178815.	201093.
5	1634408.	218210.	73810.	86054.	117190.	124206.	221399.	211622.	225259.	169568.	187090.
10	1585556.	213018.	71707.	82121.	111439.	119743.	214564.	203384.	222240.	166639.	180700.
15	1567873.	214006.	71175.	81498.	109575.	119110.	213145.	200340.	221448.	163858.	173717.
20	1535782.	216401.	70714.	82170.	109979.	117902.	208597.	197784.	214793.	156293.	161150.
25	1447262.	210743.	66987.	78575.	106262.	110750.	194497.	187642.	201222.	144429.	146156.
30	1336929.	196354.	61042.	71312.	97009.	100407.	177496.	172786.	189993.	135050.	135480.
35	1291495.	190105.	58326.	67045.	90571.	95404.	170283.	164835.	189401.	133273.	132249.
40	1311301.	198282.	59572.	67407.	90924.	97752.	173733.	165157.	193978.	133973.	130524.
45	1317897.	209642.	61018.	69308.	93904.	101698.	177316.	166119.	189022.	128093.	121777.
50	1155424.	185120.	53957.	61722.	84404.	90720.	155129.	147333.	161192.	110764.	105083.
55	927487.	141582.	41968.	48662.	64431.	70906.	123241.	119743.	133717.	94019.	89219.
60	879166.	128387.	39036.	45086.	57455.	65286.	116352.	112510.	131925.	93995.	89133.
65	817225.	116549.	36757.	41048.	51295.	60959.	108054.	99970.	128956.	89966.	83672.
70	739822.	114547.	33844.	37802.	49002.	58383.	98838.	90211.	112986.	75815.	68394.
75	503155.	84545.	24539.	26928.	36031.	42689.	71032.	63544.	67051.	45534.	41262.
80	238909.	38785.	11317.	12152.	15011.	20298.	35053.	31236.	32712.	22501.	19844.
85	108730.	14869.	5163.	4896.	5882.	9311.	15800.	13186.	17184.	12038.	10402.
total	20132334.	2922033.	918382.	1055652.	1415550.	1538029.	2709788.	2571954.	2869376.	2054624.	2076945.

percentage distribution

age	total	c.boh	s.boh	w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	8.6126	7.9017	8.4333	8.7023	8.8436	8.6153	8.6819	8.7307	8.2352	8.7031	9.6822
5	8.1183	7.4678	8.0370	8.1517	8.2788	8.0756	8.1704	8.2280	7.8504	8.2530	9.0080
10	7.8757	7.2901	7.8080	7.7792	7.8725	7.7855	7.9181	7.9078	7.7452	8.1104	8.7003
15	7.7878	7.3239	7.7501	7.7202	7.7408	7.7443	7.8657	7.7894	7.7176	7.9751	8.3640
20	7.6284	7.4058	7.6998	7.7838	7.7694	7.6658	7.6979	7.6900	7.4857	7.6069	7.7590
25	7.1887	7.2122	7.2941	7.4432	7.5067	7.2008	7.1776	7.2957	7.0127	7.0295	7.0370
30	6.6407	6.7198	6.6467	6.7553	6.8531	6.5283	6.5502	6.7181	6.6214	6.5730	6.5231
35	6.4150	6.5059	6.3510	6.3511	6.3983	6.2030	6.2840	6.4090	6.6008	6.4865	6.3675
40	6.5134	6.7858	6.4866	6.3853	6.4232	6.3557	6.4113	6.4215	6.7603	6.5205	6.2844
45	6.5462	7.1745	6.6440	6.5654	6.6337	6.6123	6.5435	6.4589	6.5876	6.2344	5.8633
50	5.7391	6.3353	5.8752	5.8468	5.9626	5.8985	5.7248	5.7285	5.6177	5.3910	5.0595
55	4.6070	4.8453	4.5698	4.6097	4.5517	4.6102	4.5480	4.6557	4.6601	4.5759	4.2957
60	4.3669	4.3937	4.2506	4.2709	4.0588	4.2448	4.2938	4.3745	4.5977	4.5748	4.2915
65	4.0593	3.9886	4.0024	3.8884	3.6236	3.9634	3.9875	3.8869	4.4942	4.3787	4.0286
70	3.6748	3.9201	3.6852	3.5809	3.4617	3.7959	3.6474	3.5075	3.9377	3.6900	3.2930
75	2.4992	2.8934	2.6719	2.5508	2.5453	2.7756	2.6213	2.4707	2.3368	2.2162	1.9867
80	1.1867	1.3273	1.2323	1.1512	1.0604	1.3197	1.2936	1.2145	1.1400	1.0951	0.9554
85	0.5401	0.5089	0.5622	0.4638	0.4156	0.6054	0.5831	0.5127	0.5989	0.5859	0.5008
total	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000
m.ag	34.4904	35.6909	34.6601	34.3028	33.9518	34.7418	34.4693	34.2579	35.0220	34.2771	32.7949
aha	100.0000	14.5141	4.5617	5.2436	7.0312	7.6396	13.4599	12.7752	14.2526	10.2056	10.3165
lam	1.030681	1.030379	1.033802	1.021486	1.023551	1.027679	1.034187	1.029317	1.031820	1.028662	1.039202
r	0.006044	0.005985	0.006649	0.004252	0.004656	0.005461	0.006723	0.005779	0.006265	0.005652	0.007691

stable equivalent to original population
****

age	total	c.boh	s.boh	w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	1207192.	158912.	54082.	57356.	78730.	86721.	172290.	150960.	156345.	111666.	180132.
5	1152467.	153326.	52573.	54675.	74917.	82958.	165121.	144320.	150175.	106381.	168021.
10	1114126.	149875.	51259.	52222.	71609.	80376.	160325.	138767.	146051.	102939.	160701.
15	1076320.	146131.	49554.	50535.	68910.	77868.	155305.	133887.	142181.	99221.	152730.
20	1038298.	143851.	47982.	49911.	67467.	75025.	148572.	129937.	138057.	95237.	142259.
25	1000754.	143318.	46378.	48760.	66190.	71839.	141440.	125592.	134148.	91166.	131923.
30	963583.	141782.	44662.	46560.	63771.	68917.	135740.	120533.	130553.	87176.	123889.
35	925531.	138928.	43024.	44086.	60655.	66325.	130528.	115134.	126305.	83268.	117277.
40	884928.	135001.	41163.	41547.	57235.	63632.	125194.	109542.	121371.	79195.	111047.
45	840046.	129556.	39067.	39215.	53625.	60639.	119344.	103657.	115523.	74950.	104469.
50	787690.	122192.	36711.	36793.	49907.	57017.	112210.	96961.	108372.	70180.	97348.
55	725315.	112756.	33858.	33726.	45553.	52660.	103736.	89143.	99829.	64624.	89430.
60	649148.	100620.	30388.	29949.	40007.	47263.	93373.	79649.	89734.	57967.	80199.
65	553271.	85030.	26006.	25257.	33174.	40362.	80115.	67517.	77266.	49728.	68815.
70	435351.	65951.	20568.	19328.	25110.	31863.	63457.	52654.	61448.	39773.	55200.
75	301169.	44580.	14383.	12782.	16556.	22238.	44294.	36078.	43059.	28130.	39070.
80	169654.	24429.	8131.	6878.	8834.	12754.	25416.	20032.	24825.	16142.	22213.
85	89952.	12284.	4370.	3287.	4252.	7068.	13654.	10133.	14232.	9006.	11666.
total	13914795.	2008520.	644159.	652866.	886504.	1005524.	1990115.	1724495.	1879474.	1266749.	1856389.

percentage distribution
- - - - - - - - - - - -

age	total	c.boh	s.boh	w.boh	n.boh	e.boh	s.mor	n.mor	w.slov	c.slov	e.slov
0	8.6756	7.9119	8.3958	8.7852	8.8810	8.6244	8.6573	8.7538	8.3185	8.8151	9.7033
5	8.2823	7.6338	8.1615	8.3746	8.4509	8.2503	8.2971	8.3688	7.9903	8.3980	9.0509
10	8.0068	7.4620	7.9575	7.9989	8.0777	7.9934	8.0561	8.0468	7.7709	8.1263	8.6567
15	7.7351	7.2755	7.6928	7.7404	7.7732	7.7440	7.8038	7.7638	7.5649	7.8327	8.2272
20	7.4618	7.1620	7.4488	7.6449	7.6105	7.4613	7.4655	7.5348	7.3455	7.5182	7.6632
25	7.1920	7.1355	7.1998	7.4686	7.4665	7.1445	7.1071	7.2828	7.1375	7.1968	7.1065
30	6.9249	7.0590	6.9334	7.1316	7.1935	6.8539	6.8207	6.9895	6.9463	6.8819	6.6736
35	6.6514	6.9170	6.6791	6.7528	6.8420	6.5960	6.5588	6.6764	6.7202	6.5734	6.3175
40	6.3596	6.7214	6.3902	6.3637	6.4563	6.3282	6.2908	6.3521	6.4577	6.2519	5.9819
45	6.0371	6.4503	6.0648	6.0067	6.0490	6.0306	5.9969	6.0109	6.1466	5.9167	5.6275
50	5.6608	6.0837	5.6990	5.6356	5.6297	5.6704	5.6384	5.6226	5.7661	5.5401	5.2439
55	5.2125	5.6139	5.2562	5.1658	5.1386	5.2370	5.2126	5.1692	5.3115	5.1016	4.8174
60	4.6652	5.0096	4.7175	4.5873	4.5129	4.7003	4.6918	4.6187	4.7744	4.5760	4.3201
65	3.9761	4.2335	4.0372	3.8687	3.7421	4.0140	4.0257	3.9152	4.1110	3.9257	3.7069
70	3.1287	3.2835	3.1930	2.9605	2.8324	3.1688	3.1886	3.0533	3.2694	3.1397	2.9735
75	2.1644	2.2196	2.2328	1.9578	1.8675	2.2116	2.2257	2.0921	2.2910	2.2206	2.1046
80	1.2192	1.2162	1.2623	1.0535	0.9965	1.2684	1.2771	1.1616	1.3208	1.2743	1.1966
85	0.6464	0.6116	0.6783	0.5035	0.4796	0.7029	0.6861	0.5876	0.7572	0.7110	0.6284
total	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000
m.ag	34.2505	35.4083	34.5416	33.7647	33.5118	34.3955	34.3417	34.0002	34.8982	34.0991	32.9244
sha	100.0000	14.4344	4.6293	4.6919	6.3709	7.2263	14.3021	12.3933	13.5070	9.1036	13.3411
lam	1.032376	1.032376	1.032376	1.032376	1.032376	1.032376	1.032376	1.032376	1.032376	1.032376	1.032376
r	0.006373	0.006373	0.006373	0.006373	0.006373	0.006373	0.006373	0.006373	0.006373	0.006373	0.006373

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