COMPARATIVE ANALYSIS OF DEMOGRAPHIC DEVELOPMENT OF RUSSIA AND UKRAINE

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Resum
Aquest article té com a objectiu fer una anàlisi comparativa del desenvolupament demogràfic a Rússia i Ucraïna en el curs de les darreres dècades i examinar les tendències futures possibles de l'evolució de les seves estructures per edat i sexe. Ja que l'envelliment és un tema demogràfic d'interès comú en els països desenvolupats, se li ha dedicat una atenció especial.

Resumen
Este artículo tiene como objetivo hacer un análisis comparativo del desarrollo demográfico en Rusia y Ucrania en el curso de las últimas décadas y examinar las posibles tendencias futuras de la evolución de sus estructuras por edad y sexo. Ya que el envejecimiento es un tema demográfico de interés común en los países desarrollado, se le ha dedicado una atención especial.

Résumé
Cet article se propose comme objectif de faire une analyse comparative du développement démographique en Russie et en Ukraine en cours des dernières décenies et d'examiner les tendances futures possibles de l'évolution de leurs structures par âge et sexe. Étant donné que le vieillissement constitue un thème démographique d'intérêt commun dans les pays dévoloppés, ce sujet fait l'objet d'une attention spéciale.

Abstract
The paper aims at making a comparative analysis of demographic development in Russia and Ukraine for the last decades and of possible future trends in their population age-sex structure. As population ageing is a common feature of population dynamics of devoloped countries particular consideration has been given to corresponding age structure characteristics.

CONTENS

INTRODUCTION

Russia and Ukraine were the biggest republics of the former USSR with about 70 per cent of its population and their demographic development determined to a great extent that of the whole USSR. Now both of them are in a state of transition to a market economy, the processes of transition having many similarities.

The paper aims at making a comparative analysis of demographic development of Russia and Ukraine for the last decades and of possible future trends of their population age-sex structure. As population ageing is a common feature of population dynamics of developed countries particular consideration has been given to corresponding age structure characteristics.

Demographic situation in Russia and Ukraine in 1995 is characterizes by low fertility rates and high mortality rates (see Table 1), both natural and total increase being negative. The alarming figures of the total fertility rate (TFR) and the life expectancy at birth (LE) are not sudden, they result from the previous demographic development. Table 1 represents dynamics of the TFR, LE for males and females for Russia and Ukraine demonstrating considerable similarities in their trends.

Here we are not going to continue the discussion about demographic situation in these countries, namely to discuss if it can be considered as a "crisis" (see DaVavzo J. and G. Farnsworth, 1996; Problemy demograficheskogo razvitiya Rossii, 1995; Vishnevsky A. 1995, 1996; Volkov A.,1993). Besides, by now more or less unified poit if view has been formed,

namely that mortality situation is a serious crisis while low fertility levels are normal for developed countries. So we shall dwell upon comparative analysis. This is the very beginning of laborious research and there are more questions then explanations.

The main data sources are: Avdeev A. and A. Monnier (1996); Demograficheskiy ezhegodnik SSSR 1990 (1990); Demograficheskiy ezhegodnik 1991 (1991); Lutz W., Pirozhkov S. and S. Scherbov (1990); Naselenie Ukrainy 1992 (1993); Naselenie Ukrainy 1993; Naselenie Ukrainy 1994 (1995); Stolnitz G. (Ed.) (1992); The Demographic Yearbook of Russia (1995); Vishnevsky A. (Ed.) (1996).

CHANGES IN MAIN DEMOGRAPHIC PROCESSES AND CHARACTERISTICS OF AGEING, 1959-1995.

As can be seen from Table 1 fertility changes in Russia and Ukraine in 1959-1995 are similar. Thus the TFR had declined till the end of the 70th, then pronatalist measures of the the 80th led to fertility increase in mid-80th followed by fertility decline, being accelerated by economic hardships of the early 90th. Moreover this similarity is true not only for the TFRs - age profiles of fertility for Russia and Ukraine are almost the same (see Table 2). Nevertheless it should be noted that in Ukraine fertility decline of the 90th was a little bit less sharp than that in Russia.

As for life expectancy, for both countries negative trends in the dynamics of mortality appeared in mid-60th, then in the mid-80th some life expectancy increase took place and since the end of the 80th till 1994 LE had decreased. Age profiles of mortality for Russia and Ukraine are almost the same as well. But life expectancy for Ukraine has been higher than that

for Russia (see Table 1, Fig. 1) and it's fall was more smouth. Thus the difference between values of the LE for Russia and Ukraine has increased. Namely, in 1989 LE for males in Ukraine was by 1.9 year higher than in Russia (0.9 - for females) and by 1994 this difference had become 5.9 years for males (2.5 for females).

Nevertheless general trends of natural population movement for Russia and Ukraine have been similar, this is also confirmed by the rate of natural increase (RNI) dynamics (see Fig.2).

Unlike natural movement considerable differences in migration trend can bee seen (Table 1). Thus for Russia net migration had been negative till 70th, since then it has been positive and since 1991 it has rapidly increased. Unlike Russia for Ukraine net migration had been positive up to the year 1993; since 1990 it has declined being now negative.

Consider now population age structure and some characteristics of population ageing. Age structure by broad age groups for Russia and Ukraine for 1959-1995 is given in Table 3. To understand better changes in population structure the age composition of 1896-1897 is also given.

Figures show convincingly the proportion of children decrease and that of elderly increase. Though general trends are similar, for Russia the proportion of children is higher than that for Ukraine and the proportion of elderly is on the contrary lower (see Table 3, Fig.3).

It is recognized that population ageing has multiple effects on the family, labour market, health expenditures, pension and welfare expenditures and so on. Thus we dwell upon characteristics of ageing for Russia and Ukraine. A number of such characteristics, e.g.

dependency ratios, proportion of the population 75 and older in the population 60 and older, ageing index, are given in Table 4, Fig. 4-7.

It can bee seen that trends of dependency ratios for Russia and Ukraine are similar. For both countries old-age dependency, proportion of 75 and older in the population 60 and older as well as ageing index have steadily increase, values of these indicators being higher for Ukraine.

THE FUTURE EVOLUTION OF AGEING IN RUSSIA AND UKRAINE

To assess the range of possible changes in the considered population characteristics population projections up to the year 2024 have been made according to low and high scenarios. The low scenario assumes keeping constant the crisis demographic rates of 1994, the high scenario is based on rather high fertility and life expectancy at birth levels of 1989, both scenarios assuming zero migration (the corresponding values of the TFR and LE for 1989 and 1994 are given in Table 1).

Results of computations are given in Tables 3,4 and Fig. 3-7. They demonstrate first of all the similarity between dynamics of characteristics considered for Russia and Ukraine. Thus, for example, according to both scenarios the proportion of 60+ in the next decade will slightly decrease as this age is reached by small cohorts born during the World War II (the deformations of age structure can easily be seen from Fig. 8 showing population pyramids) and then it will steadily increase. For most considered characteristics of ageing values for Ukraine are greater than fir Russia.

To understand better recent demographic situation and the future evolution of ageing in Russia and Ukraine a comparison with countries of the ECE region (Stolnitz, 1992) has been made.

As for both Russia and Ukraine values of 60+ proportion for low and high scenarios are close their averages have been taken and compared with 60+ proportion for the ECE region (see the lower part of Fig.3). Unlike steadily increase of 60+ proportion for the ECE region this indicator for Russia and Ukraine changes less regularly due to deformations of population age structure.

For the proportion of population 75+ in the population 60+ the difference from the ECE region is much greater than for the previous one as it can be seen from Fig.7. While for the ECE region this proportion varies slightly and it's value has been around 30 per cent since the end of the 70th, for Russia and Ukraine this proportion changes markedly reflecting age structure deformations.

Trends of the ageing index for Russia, Ukraine and the ECE region are similar, it's values being higher for the ECE region (see Fig.6).

CONCLUSIONS

Results obtained demonstrate similarity between dynamics of main demographic processes and age structure characteristics for Russia and Ukraine. The essential difference is that the ranges within which considered population characteristics for low and high scenarios vary for Russia are as a rule wider than for Ukraine.

For better understanding of this difference regional and/or ethnic differentiation of demographic characteristics should be taken into account. Besides, a careful consideration of migration trends and their effects on future evolution of population is required.

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FIGURES

TABLES

Table 1.

Dynamics of the TFR, LE and net migration for Russia and Ukraine, 1959-1995

Year	*TFR*	*LE*		*Net*
		males	*females*	*migration (thousands)*
RUSSIA				
1959	2.62	63.0*	71.4*	-285.8
1970	1.99	63.1**	73.4**	-127.6
1979	1.88	61.7***	73.1***	75.0
1989	2.02	64.2	74.5	82.9
1990	1.90	63.8	74.3	164.0
1991	1.73	63.5	74.3	51.6
1992	1.55	62.0	73.8	176.1
1993	1.38	58.9	71.9	430.1
1994	1.39	57.6	71.2	810.0
1995	1.35	58.2	71.7	502.0
UKRAINE				
1959	2.29	66.2	72.8	-
1970	2.07	66.6	74.5	88
1979	1.98	64.8	74.1	17.1
1989	1.93	66.1	75.2	44.3
1990	1.85	65.6	74.9	79.3
1991	1.77	64.7	74.3	148.4
1992	1.67	63.8	74.0	288.1
1993	1.62	63.5	73.7	49.6
1994	1.50	63.5	73.7	-143.2
1995	1.40	62.2	72.9	-288.0

* - for 1958-1959
** - for 1969-1970
*** - for 1979-1980

Table 2.

Age-specific fertility rates for Russia and Ukraine, for 1989 and 1994

Age group	*1989*		*1994*	
	Russia	*Ukraine*	*Russia*	*Ukraine*
-15	52.5	55.7	49.4	56.2
20-24	163.9	166.3	119.1	124.7
25-29	103.1	95.4	66.4	67.6
30-34	54.6	46.2	29.3	29.6
35-39	22.0	17.0	10.5	10.9
40-44	5.0	4.0	2.2	2.4
45+	0.2	0.2	0.1	0.2

Table 3. **Age structure by broad age groups and proportion of population 75 and over, Russia and Ukraine**

Year	*1896-97*	*1959*	*1970*	*1979*	*1989*	*1995*
RUSSIA						
Males						
0-14	38.2	33.2	29.7	23.9	25.1	23.3
15-59	54.8	60.6	62.6	67.5	64.8	64.9
60+	7.0	6.2	7.7	8.6	10.1	11.8
75+	1.3	1.2	1.5	1.5	1.9	1.8
Females						
0-14	37.2	25.9	23.9	19.7	21.4	19.8
15-59	55.2	62.9	61.5	62.2	58.8	59.3
60+	7.6	11.2	14.6	18.1	19.8	20.9
75+	1.4	2.4	3.4	4.4	6.0	5.7
Both sexes						
0-14	37.7	29.2	26.5	21.6	23.1	21.5
15-59	55.0	61.8	61.5	64.7	61.6	61.9
60+	7.3	9.0	12.0	13.7	15.3	16.6
75+	1.3	1.9	2.5	3.1	4.1	3.9
Year	*1999*	*2004*	*2009*	*2014*	*2019*	*2024*
LOW SCENARIO						
Both sexes						
0-14	19.4	16.5	15.9	16.3	16.0	15.0
15-59	62.7	65.9	67.3	65.4	63.8	63.0
60+	17.9	17.6	16.8	18.3	20.2	22.0
75+	3.9	4.8	5.2	5.6	5.1	4.7
HIGH SCENARIO						
Both sexes						
0-14	21.4	20.2	20.2	20.5	20.5	20.1
15-59	60.6	62.0	62.7	61.0	59.5	58.6
60+	18.0	17.8	17.1	18.5	20.0	21.3
75+	4.1	5.0	5.4	5.9	5.3	4.9

Table 3. (continued)

Age structure by broad age groups and proportion of population 75 and over, Russia and Ukraine

Year	*1896-97*	*1959*	*1970*	*1979*	*1989*	*1995*
UKRAINE						
Males						
0-14	40.7	25.8	28.2	23.9	23.8	22.5
15-59	53.2	66.0	61.4	65.1	63.4	63.8
60+	6.1	8.2	10.4	11.0	12.8	13.7
75+	1.2	1.4	1.8	2.3	2.9	2.4
Females						
0-14	41.2	20.6	22.3	19.4	19.7	18.7
15-59	53.3	67.1	60.7	61.0	57.9	58.9
60+	5.5	12.3	17.0	19.6	22.4	22.4
75+	0.9	2.5	3.4	5.0	6.9	6.3
Both sexes						
0-14	40.9	22.9	25.0	21.5	21.6	20.4
15-59	53.2	66.6	61.0	62.8	60.4	61.2
60+	5.9	10.5	14.0	15.7	18.0	18.4
75+	1.0	2.0	2.7	3.8	5.0	4.5
Year	*1999*	*2004*	*2009*	*2014*	*2019*	*2024*
LOW SCENARIO						
Both sexes						
0-14	18.9	16.8	16.1	16.3	15.9	15.1
15-59	61.2	63.2	64.8	63.7	63.0	62.4
60+	19.9	20.0	19.1	20.0	21.1	22.6
75+	4.6	5.5	5.7	6.2	5.9	5.4
HIGH SCENARIO						
Both sexes						
0-14	20.2	19.4	19.4	19.5	19.4	19.0
15-59	59.3	60.1	60.9	60.1	59.7	59.1
60+	20.5	2-.5	19.7	20.4	21.0	21.9
75+	5.1	6.0	6.2	6.9	6.4	5.9

Table 4. **Characteristics of ageing for the populations of Russia and Ukraine**

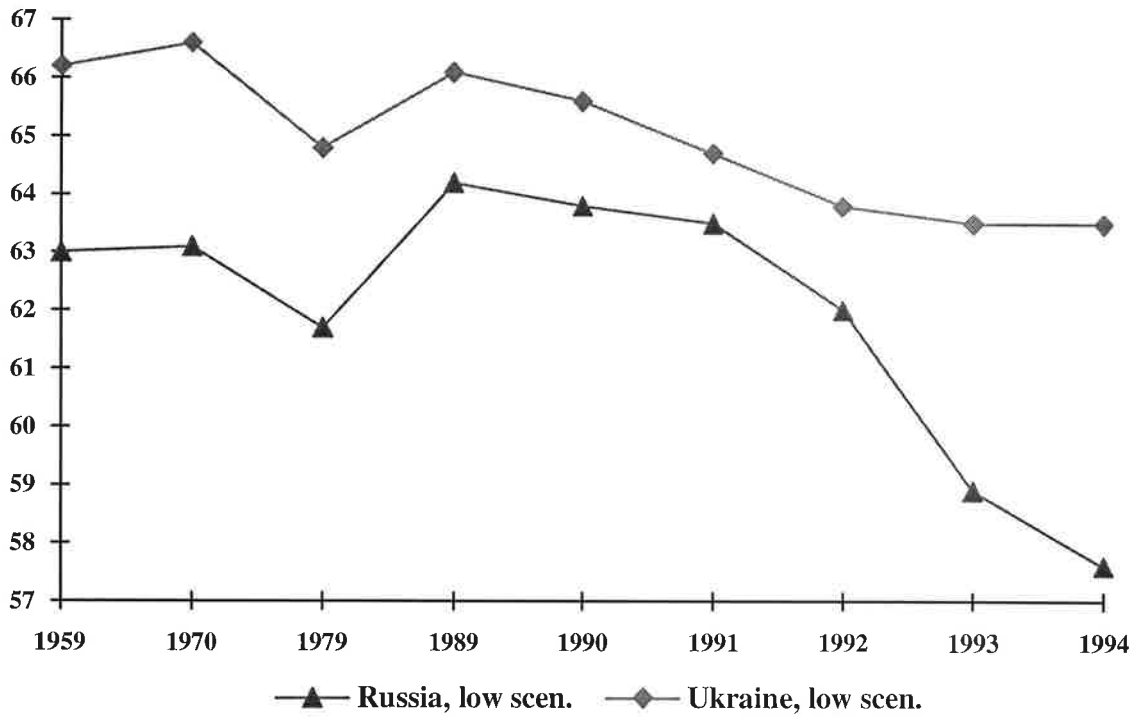
Year	*1896-97*	*1959*	*1970*	*1979*	*1989*	*1995*
RUSSIA						
Dependency ratio						
Youth:	68.5	47.2	43.2	33.5	37.6	34.7
Aged:	13.3	14.7	19.5	21.1	24.9	26.8
Total:	81.8	61.9	62.7	54.6	62.5	61.5
Proportion of old-age dependency in the total dependency ratio						
	16.3	23.7	31.1	38.6	39.8	43.6
Proportion of population 75+ in the population 60+						
	18.1	20.5	20.8	22.6	26.8	23.5
Ageing index						
	19.4	30.8	45.1	63.4	66.2	77.4
Year	*1999*	*2004*	*2009*	*2014*	*2019*	*2024*
LOW SCENARIO						
Dependency ratio						
Youth:	30.9	25.0	23.6	25.0	25.1	23.8
Aged:	28.5	26.6	25.0	27.9	31.6	35.0
Total:	59.4	51.6	48.6	52.9	56.7	58.8
Proportion of old-age dependency in the total dependency ratio						
	48.0	51.6	51.4	52.7	55.7	59.5
Proportion of population 75+ in the population 60+						
	21.8	27.3	31.0	30.6	25.2	21.4
Ageing index						
	92.3	106.7	105.7	112.3	126.2	146.7
HIGH SCENARIO						
Dependency ratio						
Youth:	35.4	32.5	32.3	33.5	34.3	34.2
Aged:	29.7	28.6	27.3	30.2	33.5	36.2
Total:	65.1	61.1	59.6	63.7	67.8	70.4
Proportion of old-age dependency in the total dependency ratio						
	45.6	46.8	45.8	47.8	49.4	51.4
Proportion of population 75+ in the population 60+						
	22.8	28.1	32.1	31.9	26.5	23.0
Ageing index						
	84.1	88.1	84.6	90.2	97.6	106.0

Table 4.
(continued)

Characteristics of ageing for the populations of Russia and Ukraine

Year	*1896-97*	*1959*	*1970*	*1979*	*1989*	*1995*
UKRAINE						
Dependency ratio						
Youth:	76.9	34.4	40.9	34.2	35.7	33.5
Aged:	11.0	15.7	22.9	24.9	29.8	30.0
Total:	87.9	50.1	63.8	59.1	65.5	63.5
Proportion of old-age dependency in the total dependency ratio						
	12.5	31.4	35.9	42.2	45.5	47.3
Proportion of population 75+ in the population 60+						
	17.6	19.2	19.4	24.2	28.0	24.5
Ageing index						
	14.3	45.8	56.1	72.9	83.4	89.8
Year	*1999*	*2004*	*2009*	*2014*	*2019*	*2024*
LOW SCENARIO						
Dependency ratio						
Youth:	30.9	26.6	24.8	25.5	25.2	24.2
Aged:	32.6	31.7	29.6	31.5	33.4	36.2
Total:	63.5	58.3	54.4	57.0	58.6	60.4
Proportion of old-age dependency in the total dependency ratio						
	51.3	54.4	54.4	55.2	57.0	60.0
Proportion of population 75+ in the population 60+						
	23.3	27.5	29.7	31.1	28.2	24.0
Ageing index						
	105.3	191.2	119.1	123.3	132.5	150.0
HIGH SCENARIO						
Dependency ratio						
Youth:	34.0	32.3	32.0	32.4	32.5	32.2
Aged:	34.6	34.2	32.3	33.9	35.1	37.0
Total:	68.6	66.5	64.3	66.3	67.6	69.3
Proportion of old-age dependency in the total dependency ratio						
	50.4	51.4	50.3	51.1	52.0	53.5
Proportion of population 75+ in the population 60+						
	24.8	29.0	31.6	33.7	30.8	27.0
Ageing index						
	101.7	105.9	101.2	104.6	108.3	114.9

Fig. 1 **Dynamics of the LE for males, Russia and Ukraine**



Dynamics of the LE for females, Russia and Ukraine

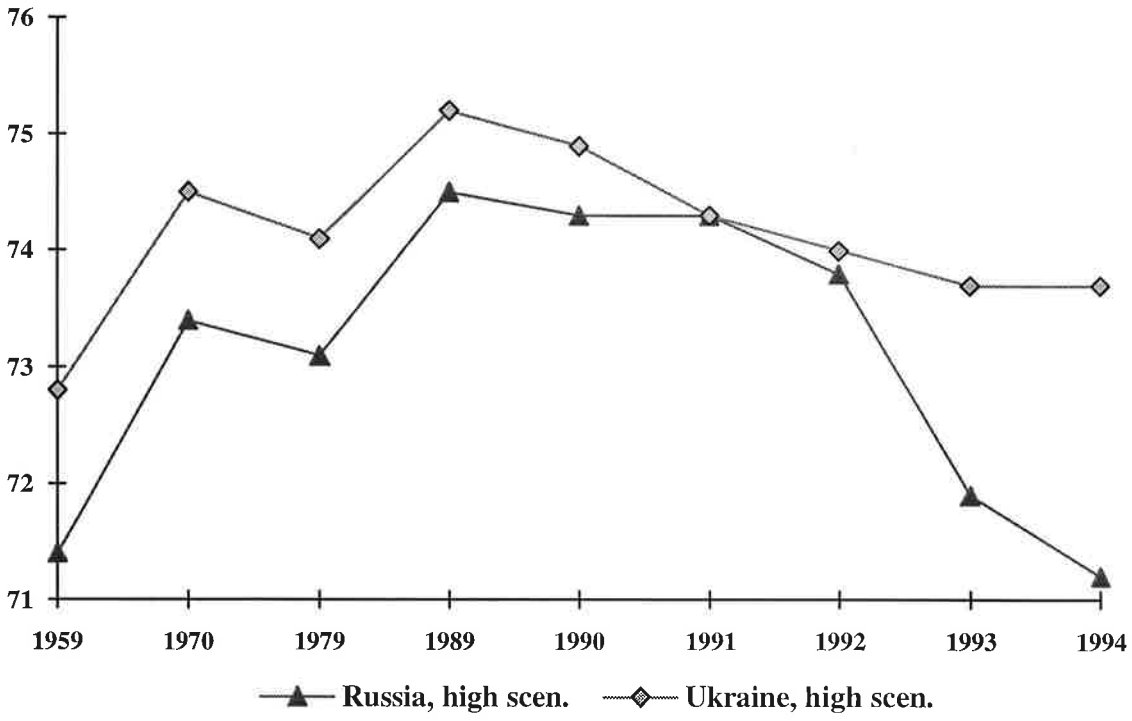
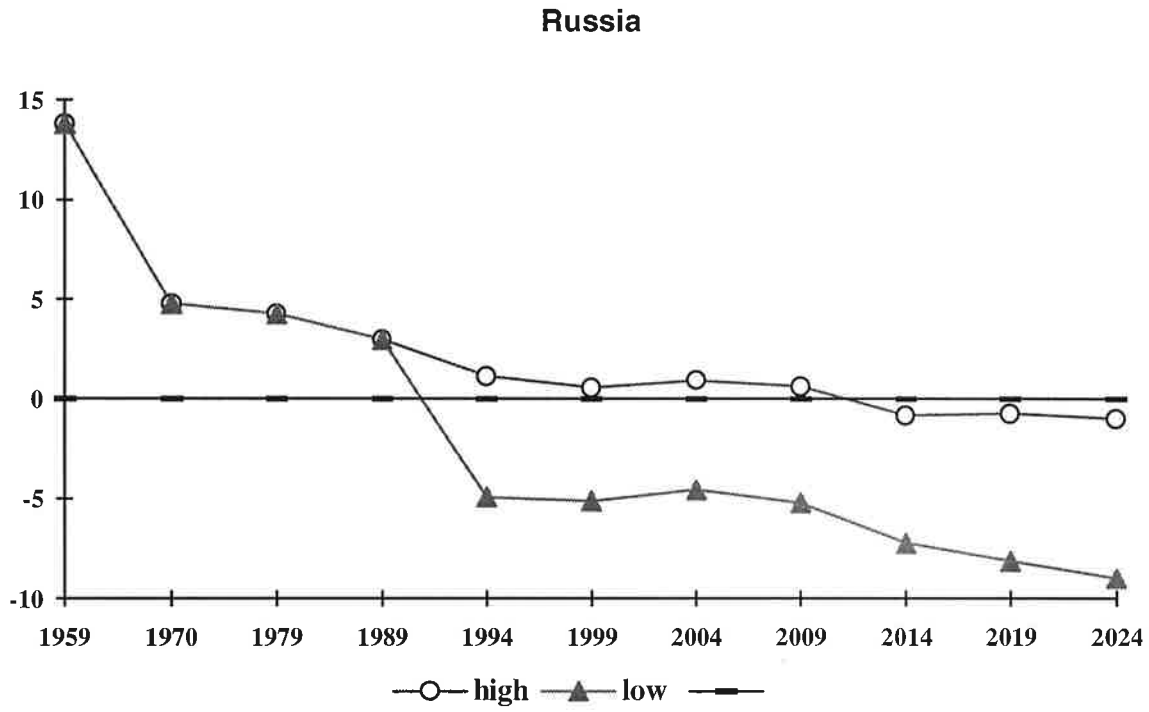


Fig. 2 **Dynamics of the RNI for Russia and Ukraine according to low and high scenarios, 1959 - 2024.**



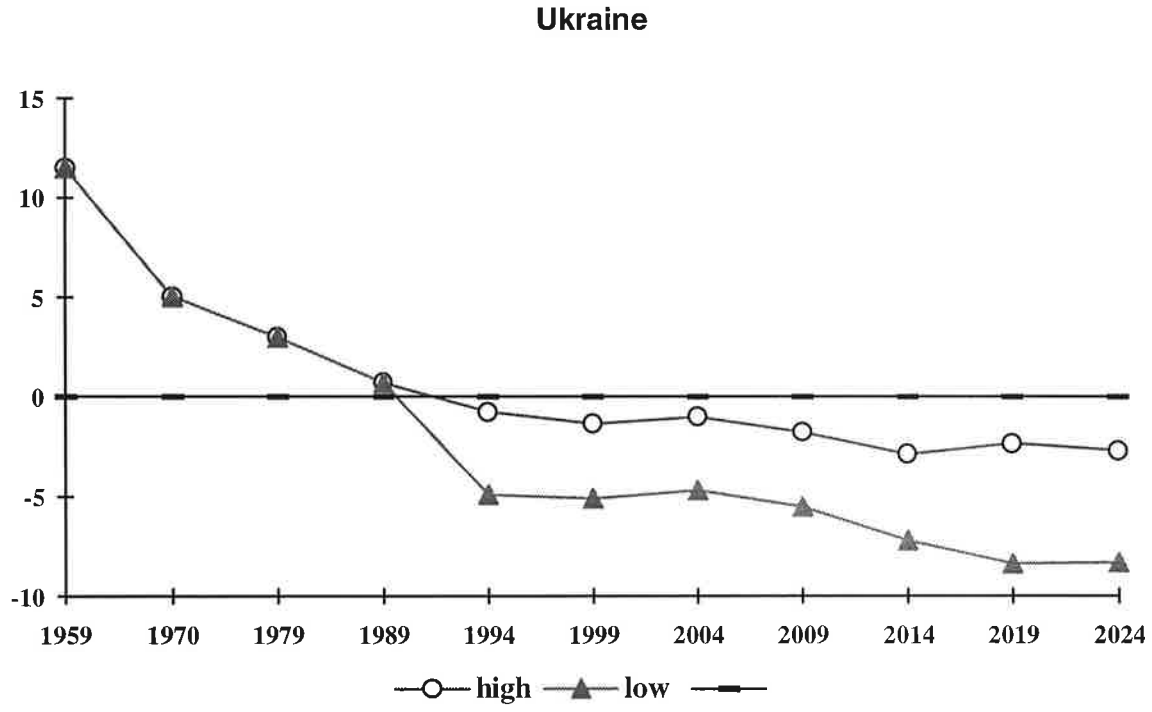
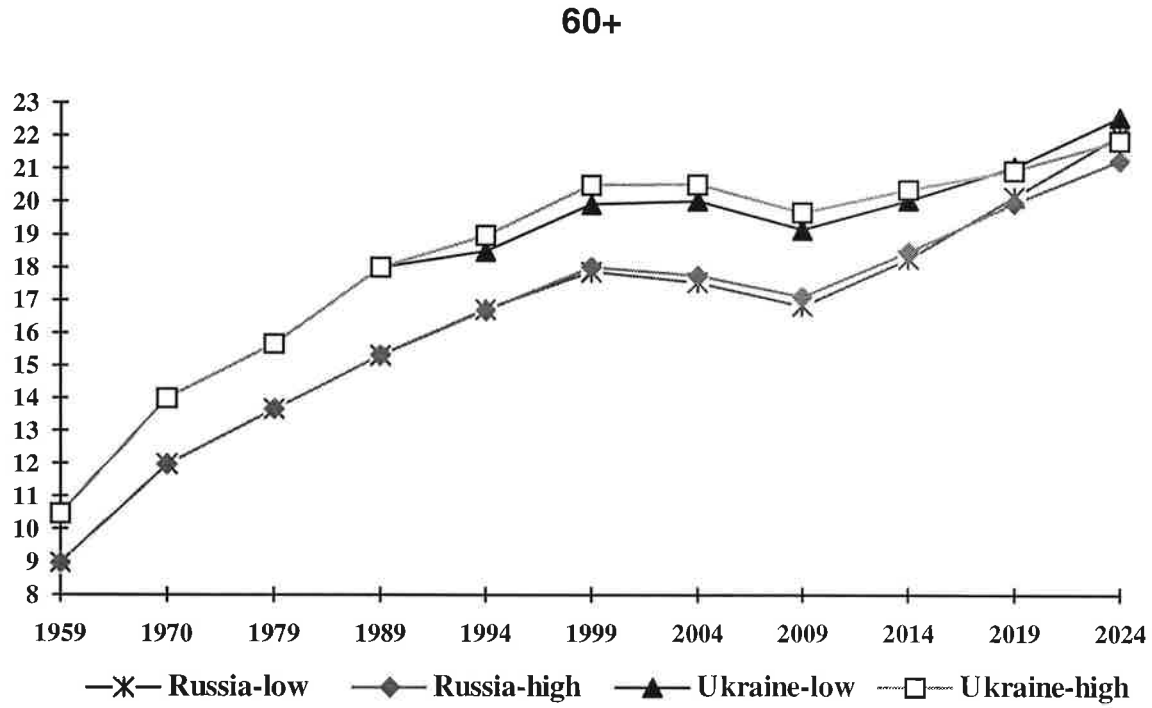


Fig.3 **Dynamics of 60+ proportion for Russia and Ukraine according to low and high scenarios, 1959 - 2024**



Dynanics of 60+ proportion for Russia, Ukraine and ECE region

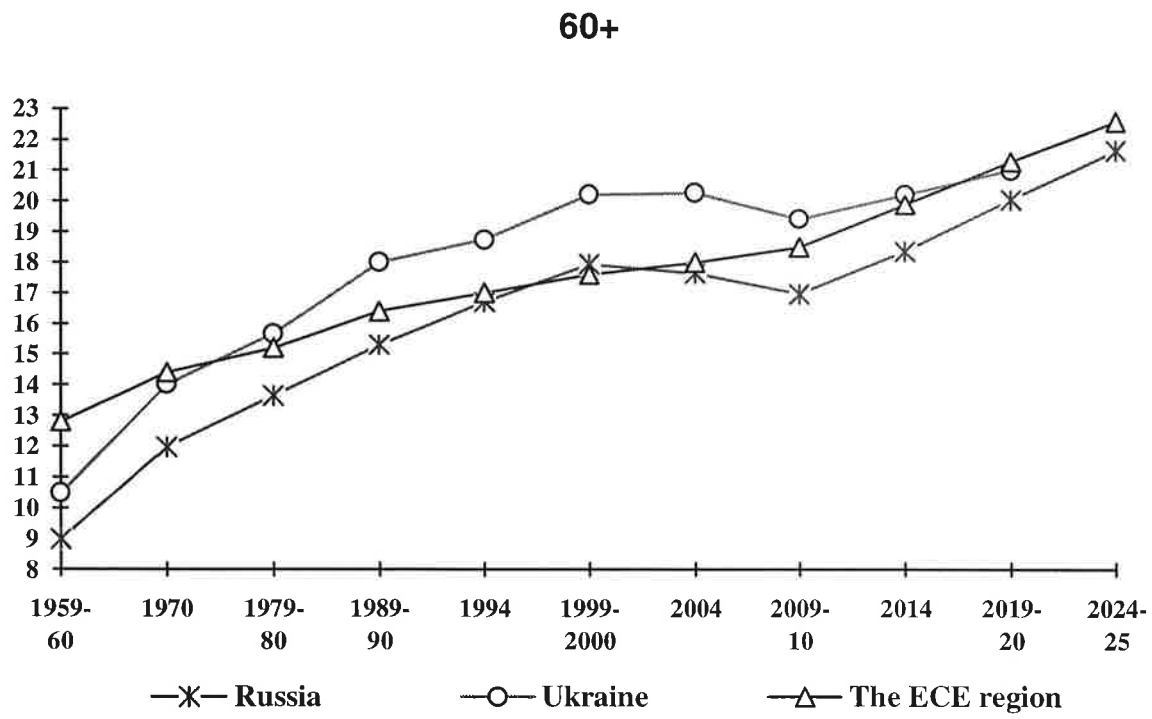
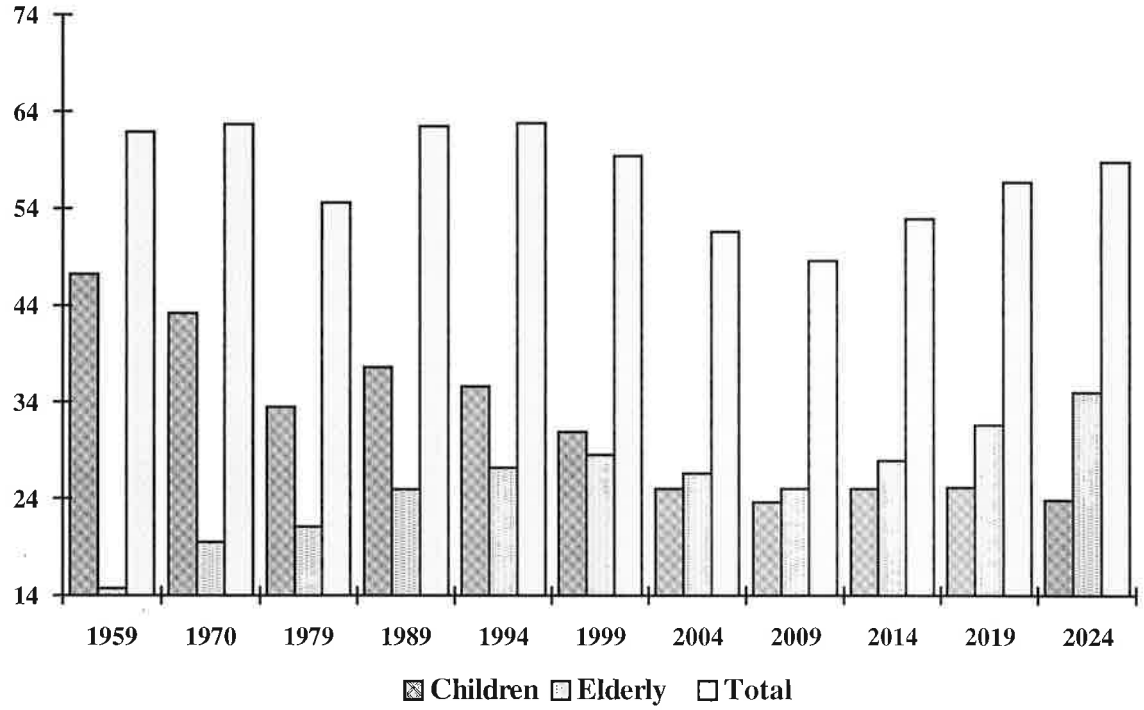


Fig. 4 **Dynamics of dependency ratio, 1959 - 2024, according to low and high scenarios**

Russia



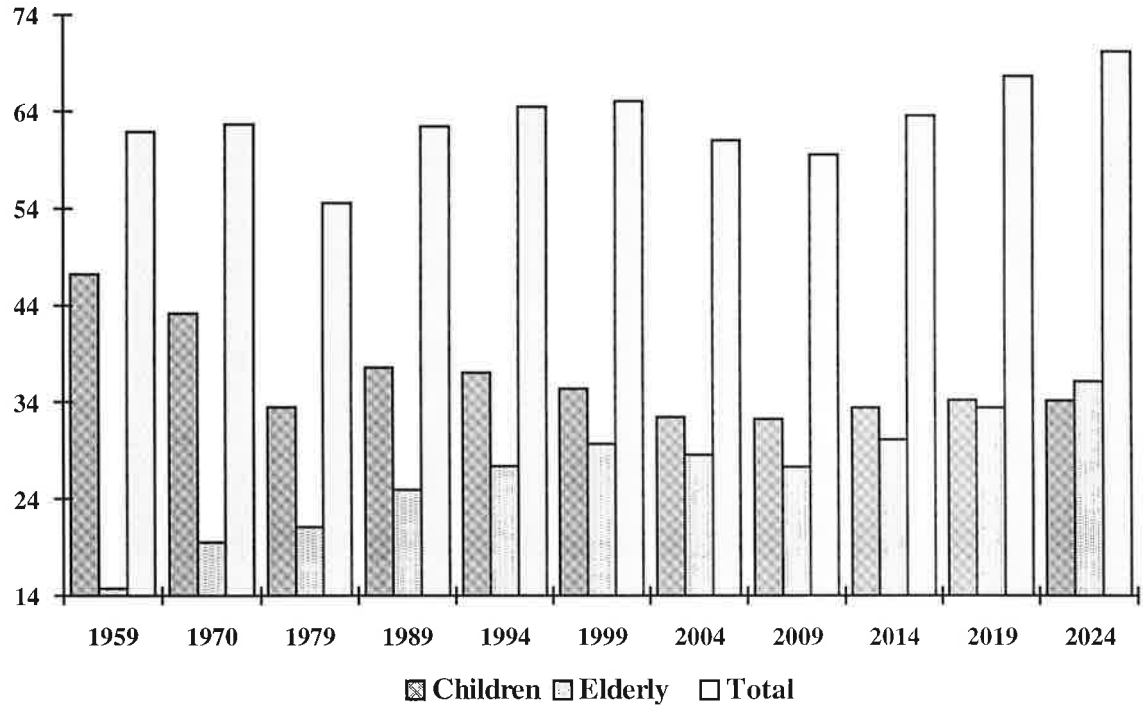
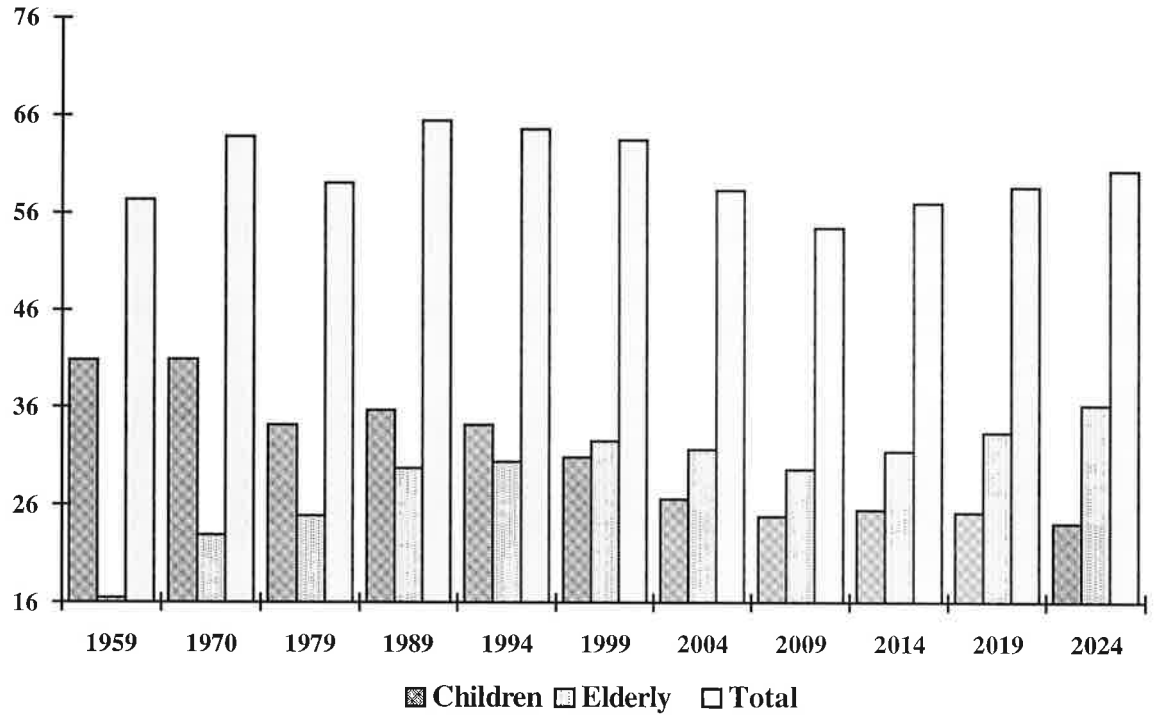


Fig. 5 **Dynamics of dependency ratio, 1959 - 2024, according to low and high scenarios**

Ukraine



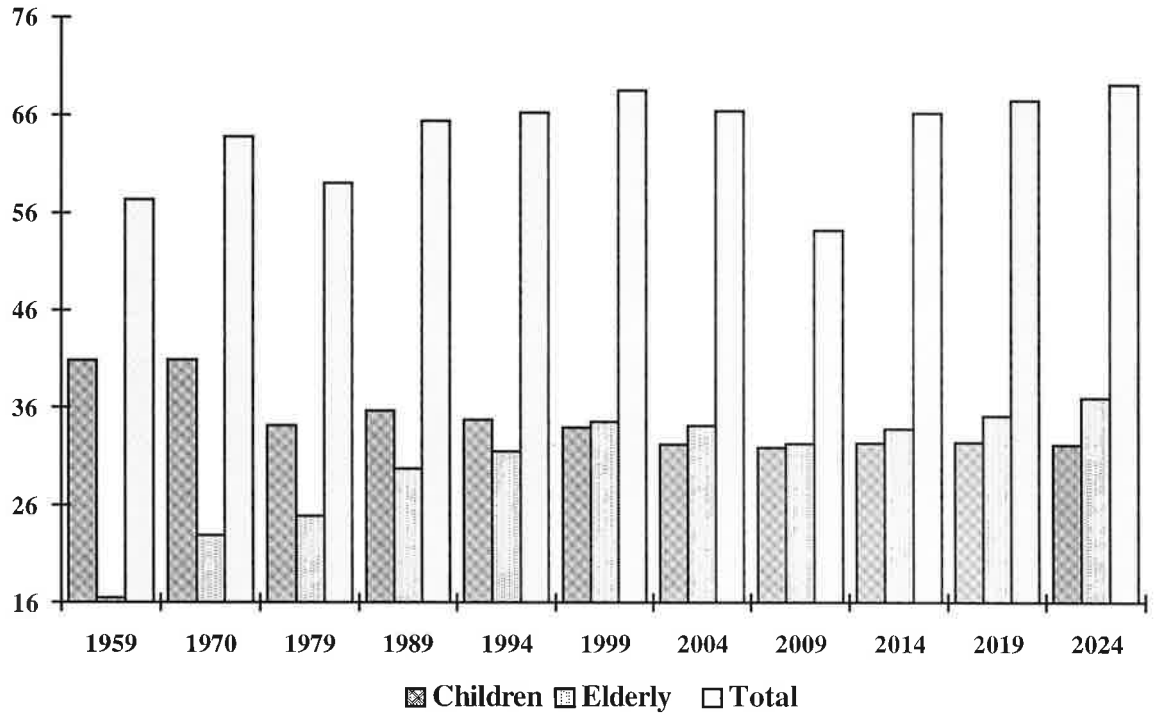
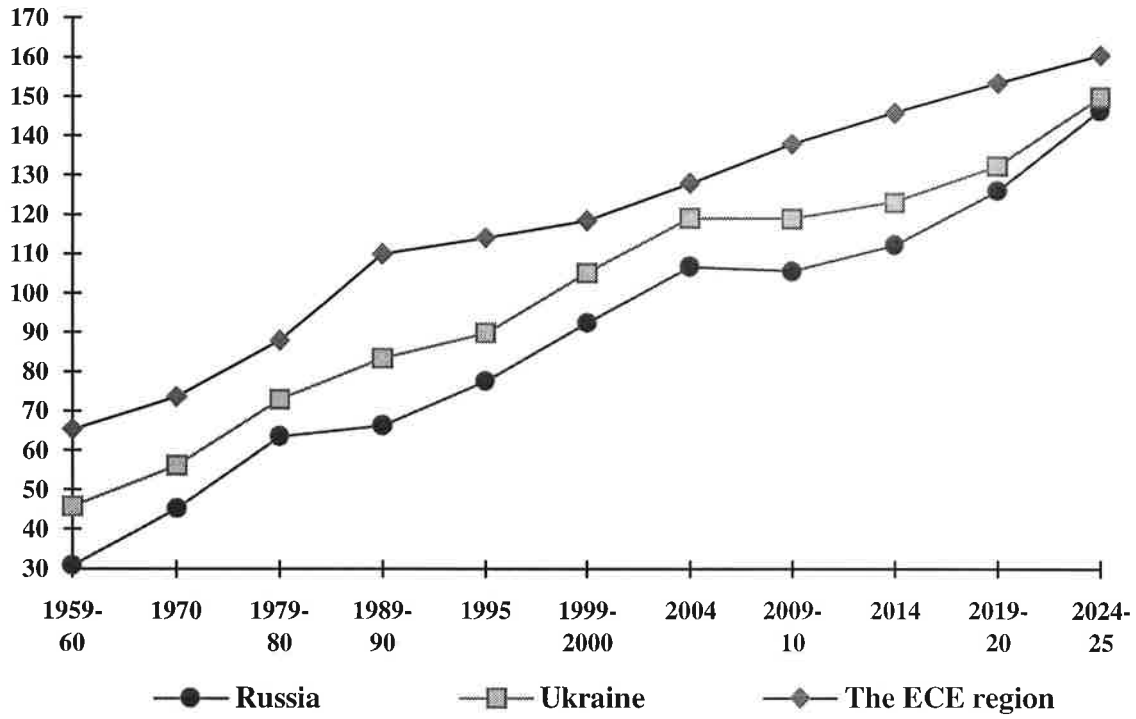


Fig. 6

Dynamics of the ageing index for Russia, Ukraine and the ECE region, low scen.



Dynamics of the ageing index for Russia, Ukraine and the ECE region, high scen.

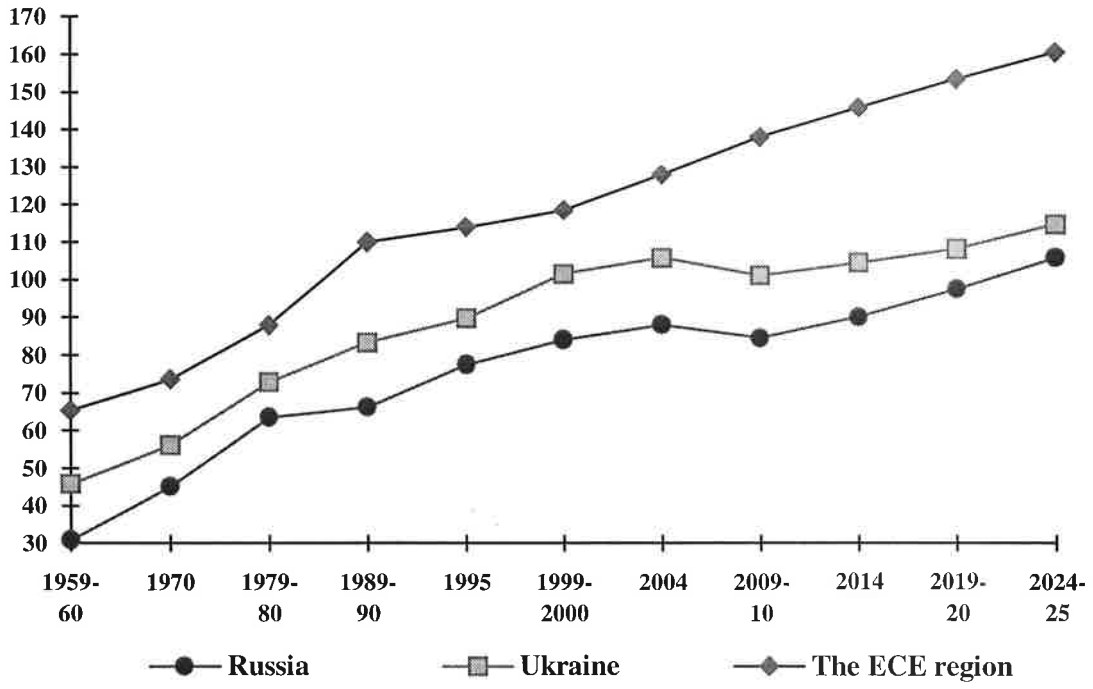
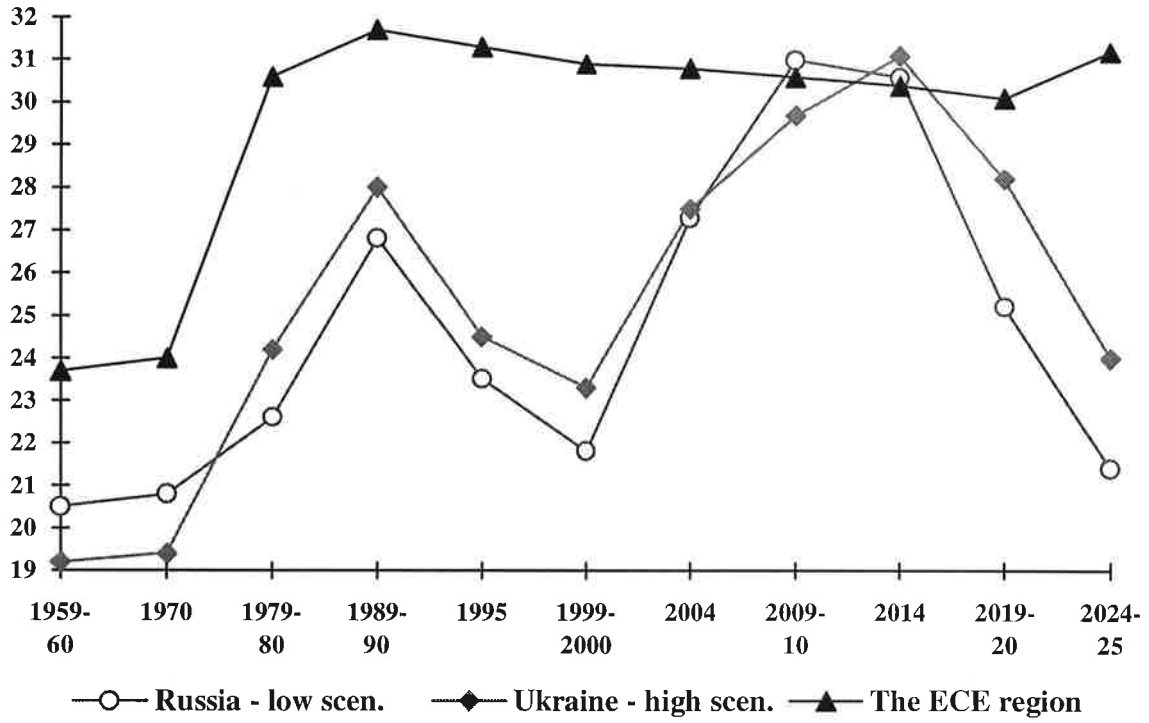


Fig. 7

Proportion of population 75 and over in the population 60 and over



Proportion of population 75 and over in the population 60 and over

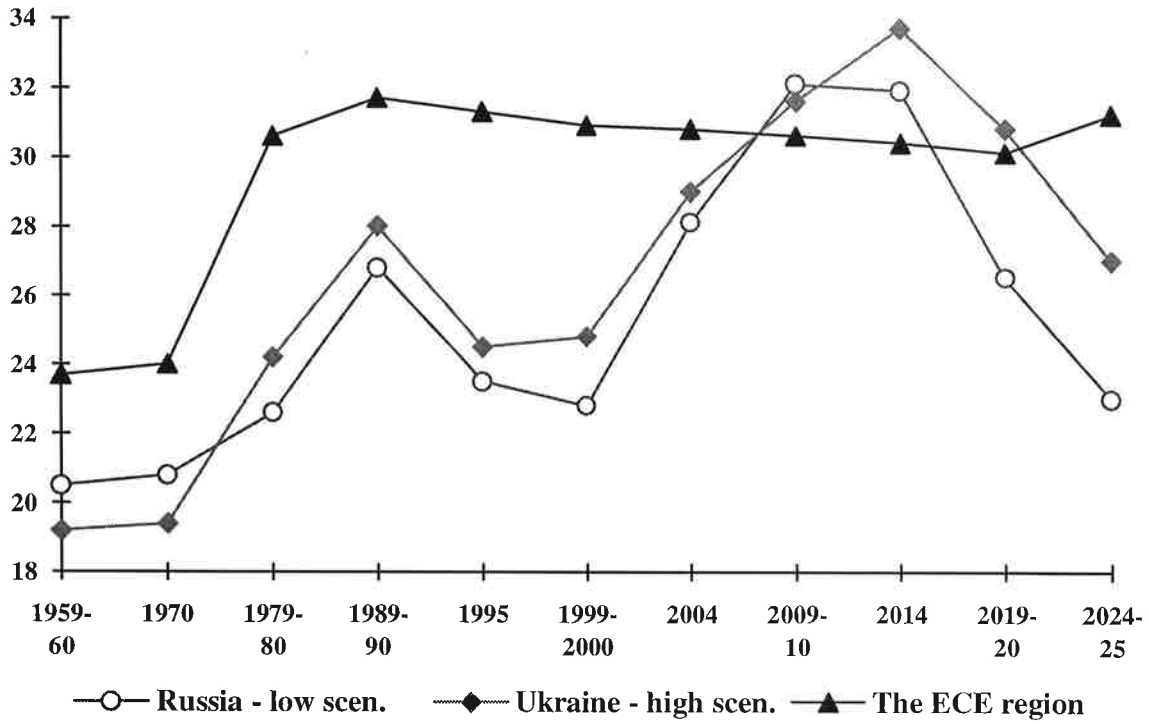
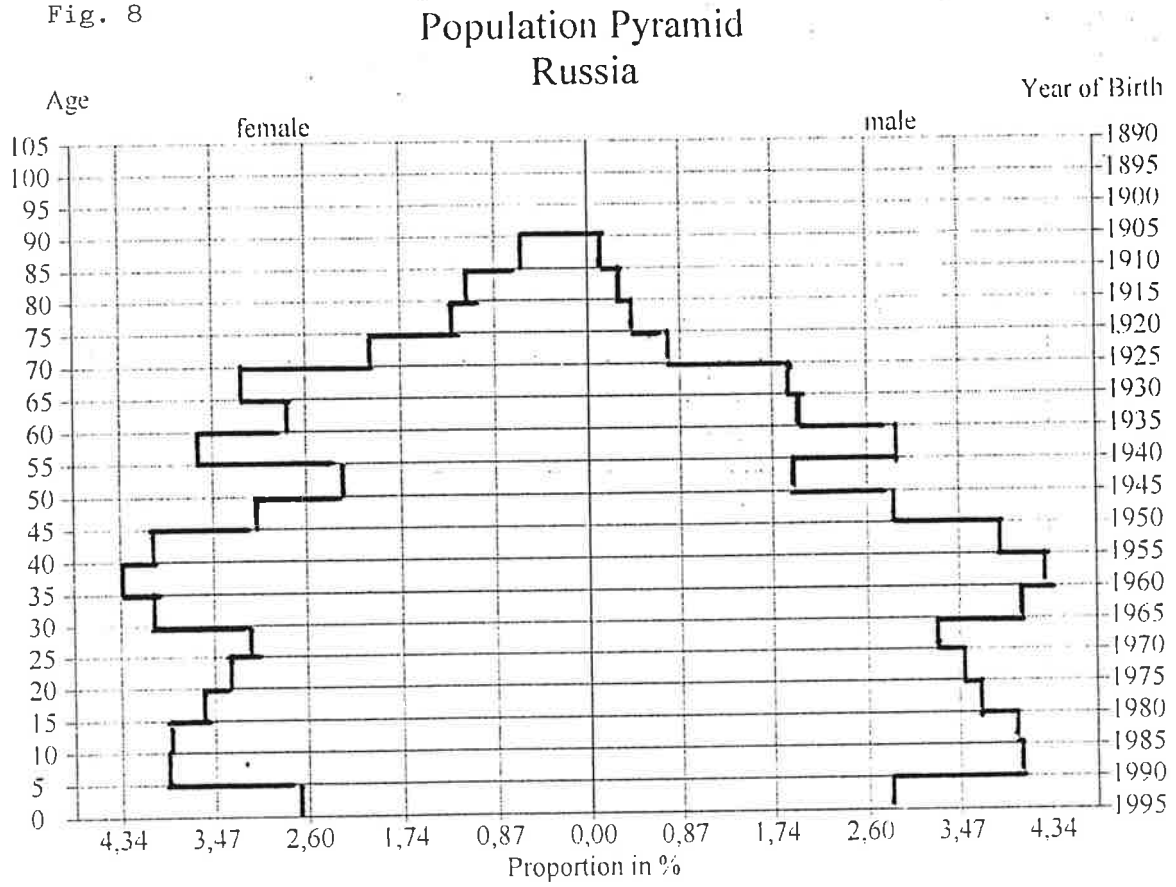
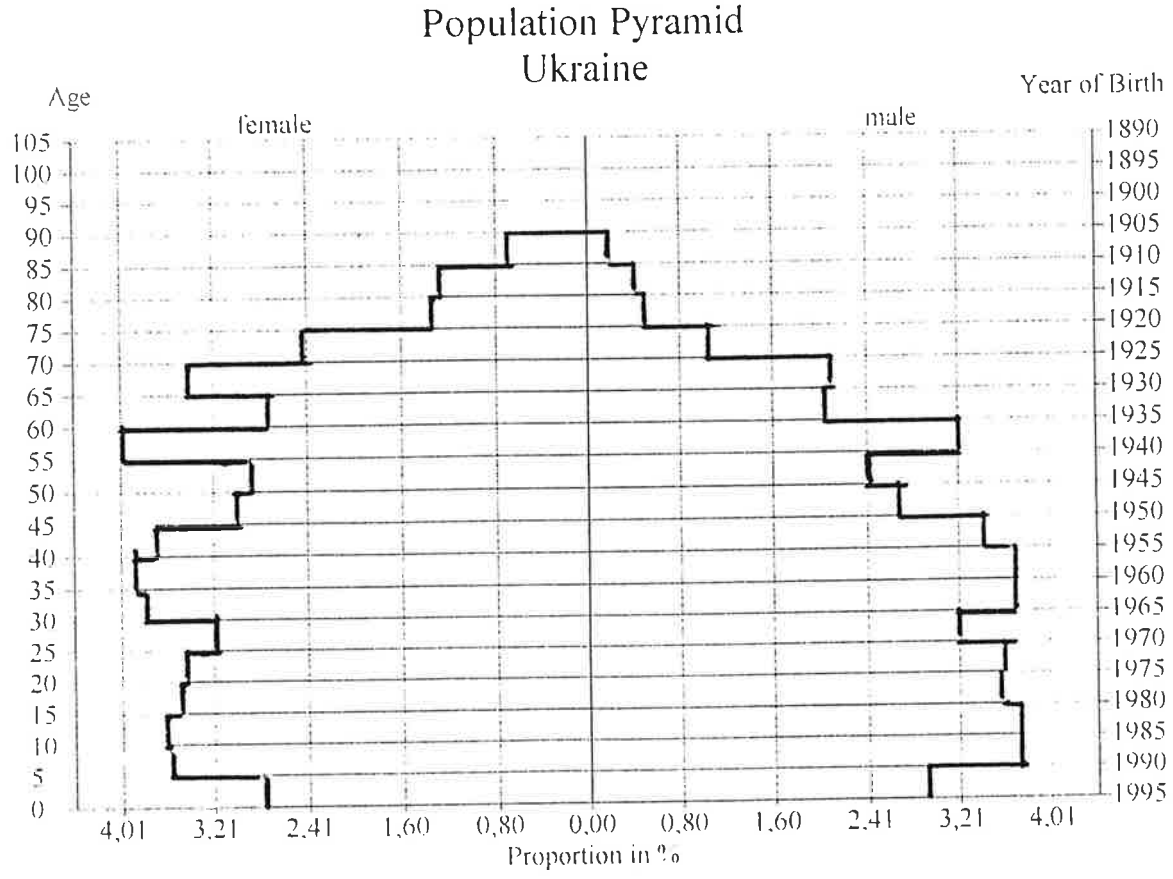


Fig. 8



Produced with PyramidS



Produced with PyramidS