

**AGEING –
A CHALLENGE AND AN OPPORTUNITY FOR THE
COUNTRIES OF EASTERN EUROPE,
CAUCASUS AND CENTRAL ASIA**

Chisinau, March 2007

The Demographic Factor

Dimiter Philipov
Vienna Institute of Demography

CONTENTS

1. Definition and measurement of ageing:
 - Indicators, trends, pyramids
2. Demographic causes of ageing:
 - Changes in fertility; recent trends
 - Changes in mortality; recent trends
3. Demographic aspects of ageing (a brief):
 - Marital status of the aged
 - Gender differences in the aged population
4. Summary: the future of population ageing

1. Defining aging:

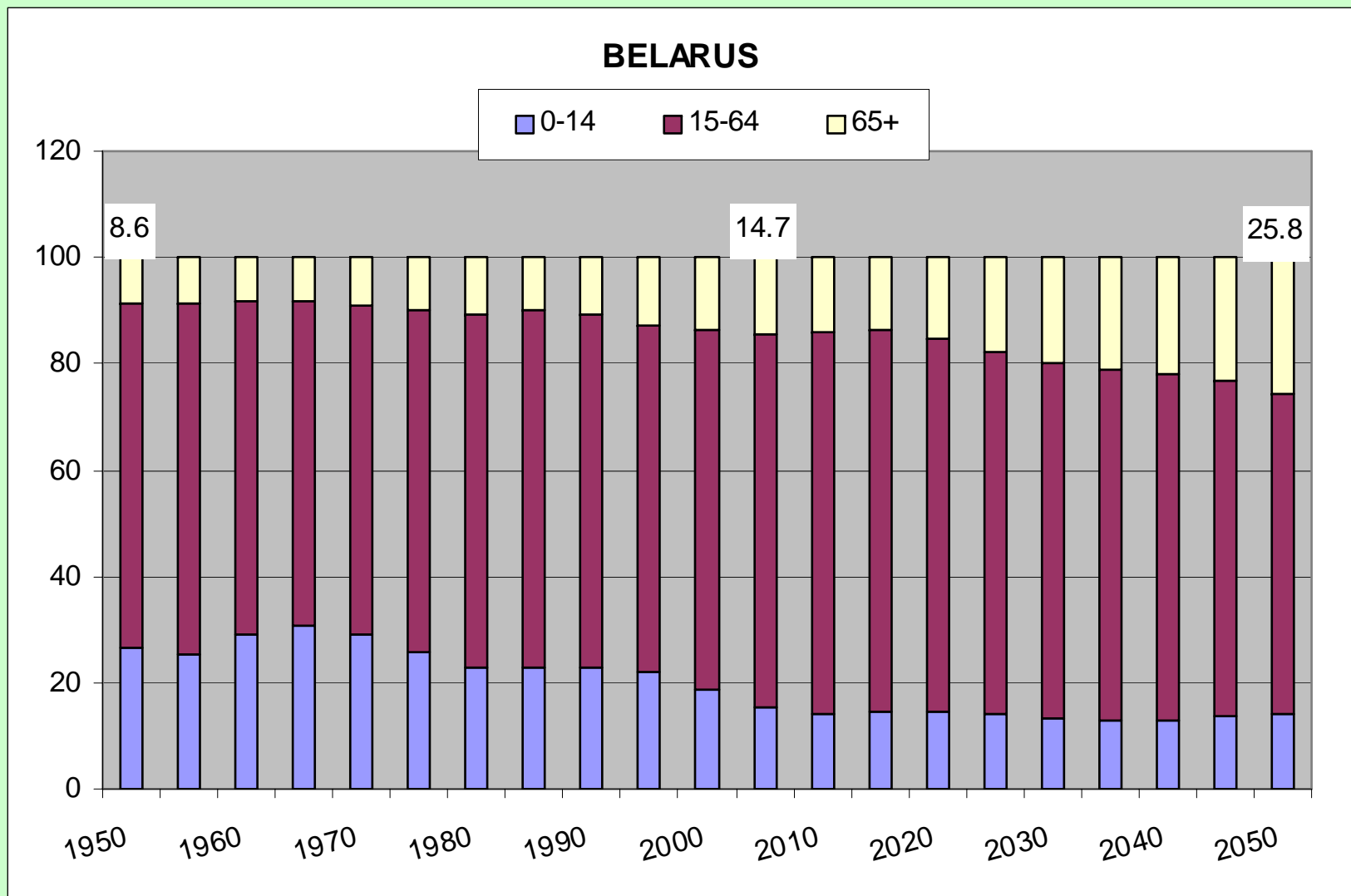
- Who is old? A person can be biologically old; or a person in pension; or a person who is a grandparent, etc.
- A demographic definition of “old people”: the proportion of the population aged 65 or more years (or 60 or more)
 - This is a basic indicator of population ageing
- Oldest-old: more than 80 years old

Other indicators:

- Median age of the population
- Old-age support ratio

Usually defined as the ratio of the population aged 65+ to the population aged 15 to 64 completed years of age (per 100 persons)

Other definitions: 65+/20-64; 60+/15-64; ...



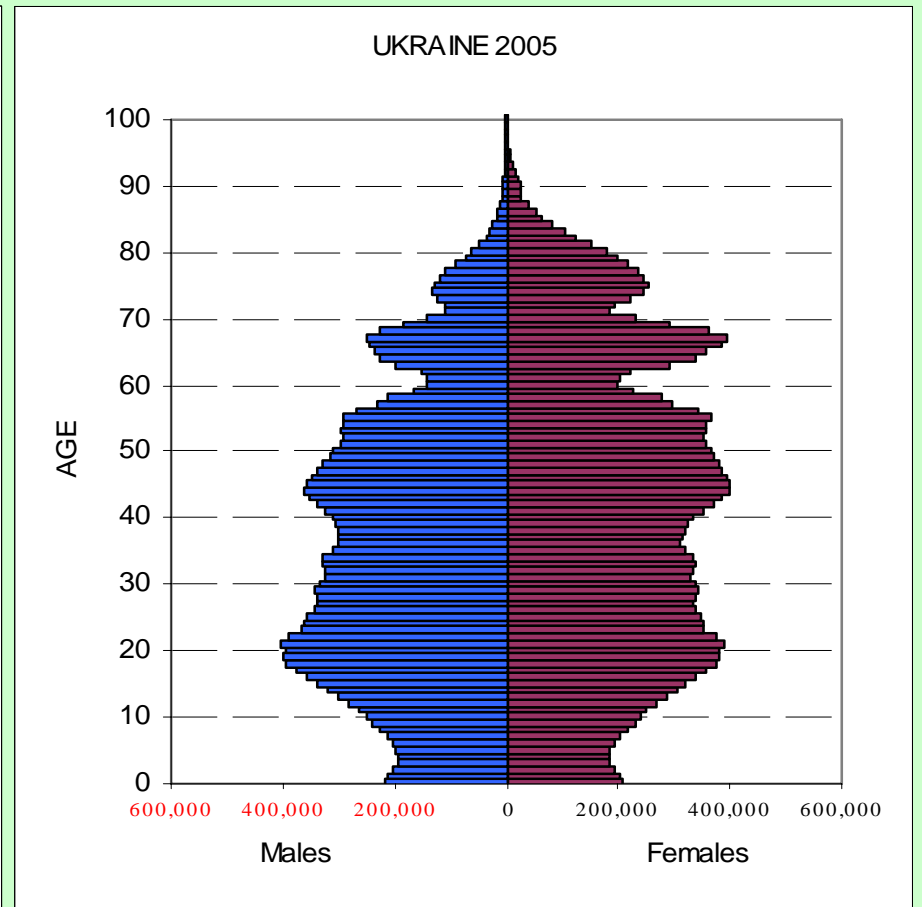
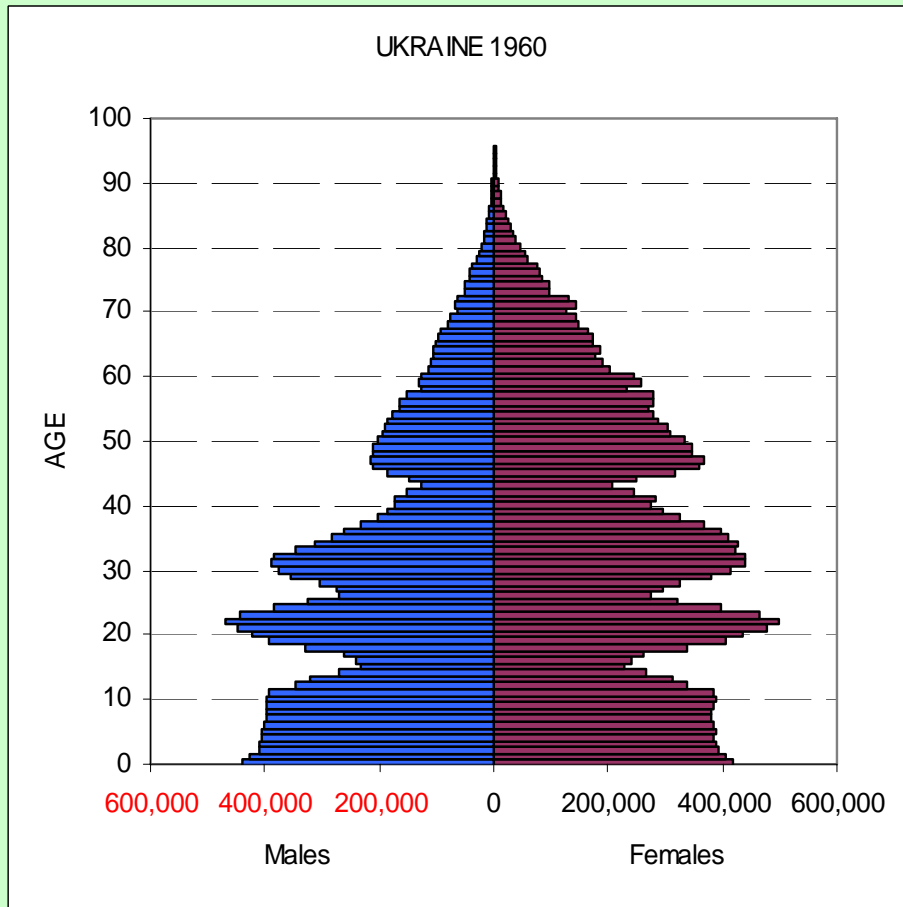
UN projection medium variant

	Percent 65+			Dependency ratio		
	1990	2005	2050	1990	2005	2050
Albania	5	8	19	9	13	30
Bosnia and Herzegovina	6	14	28	9	20	47
Bulgaria	13	17	30	20	24	53
Croatia	11	16	29	17	26	50
FYR Macedonia	7	11	25	11	16	41
Romania	10	15	29	16	21	50
Serbia + Montenegro	10	14	24	14	21	39
Turkey	4	5	17	7	8	26

	Percent 65+			Dependency ratio		
	1990	2005	2050	1990	2005	2050
Armenia	6	12	24	9	18	39
Azerbaijan	4	7	12	7	11	30
Belarus	11	15	26	16	21	43
Georgia	9	14	27	14	21	46
Moldova	8	10	26	13	14	42
Russia	10	14	23	15	19	38
Ukraine	12	16	29	18	23	50

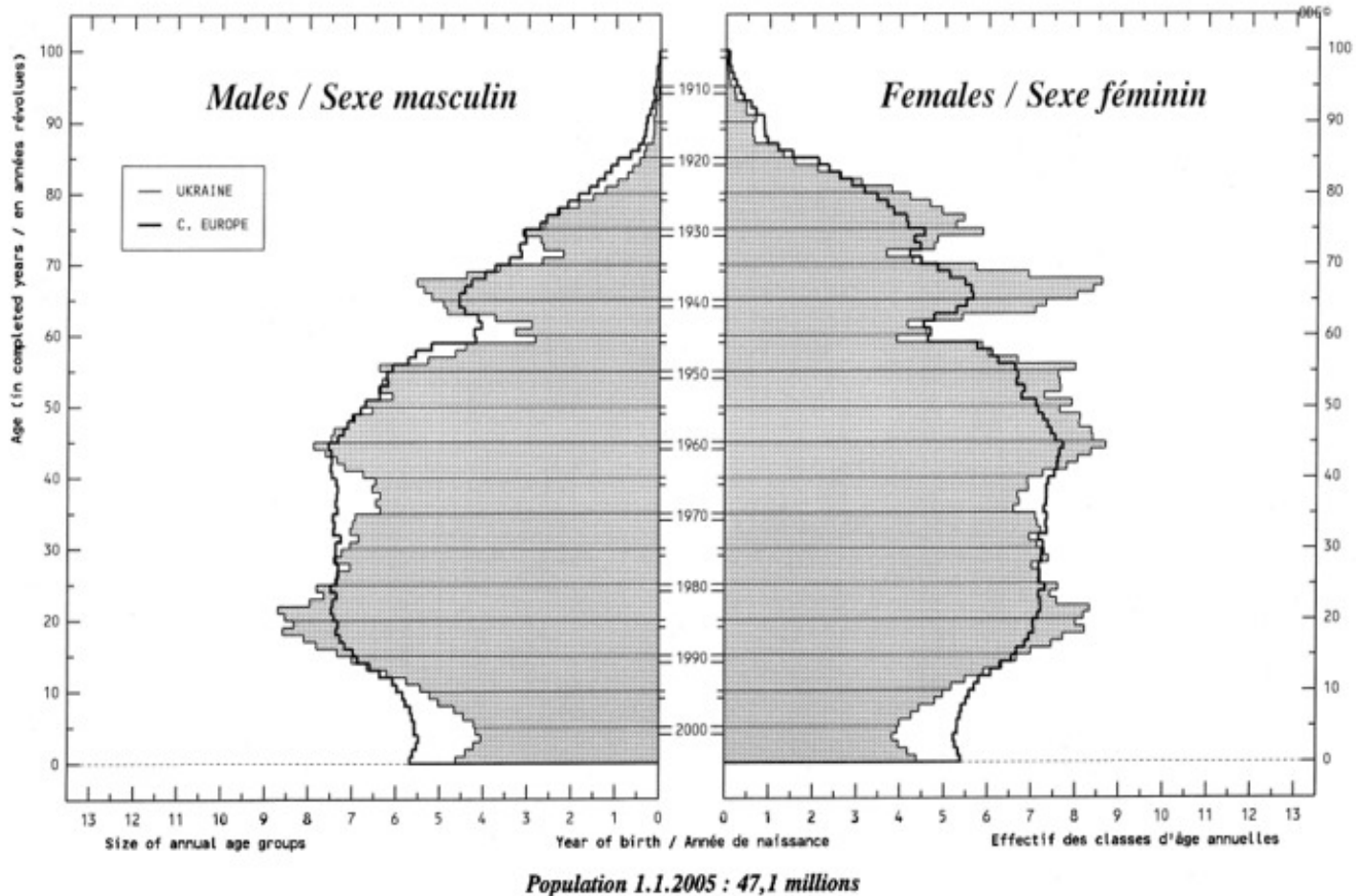
	Percent 65+			Dependency ratio		
	1990	2005	2050	1990	2005	2050
Kyrgyzstan	5	6	16	9	10	23
Tajikistan	4	4	11	7	7	15
Turkmenistan	4	5	15	7	7	22
Uzbekistan	4	5	15	7	7	22
Kazakhstan	5	9	19	8	12	30

	65+			Dependency ratio		
	1990	2005	2050	1990	2005	2050
World	6	7	16	10	11	25
Asia	5	6	18	8	10	27
Eastern Asia	6	9	25	9	12	41
Europe	13	16	28	19	23	48
Western Europe	14	17	28	21	26	48
Italy	15	20	36	22	30	69



UKRAINE, 2005

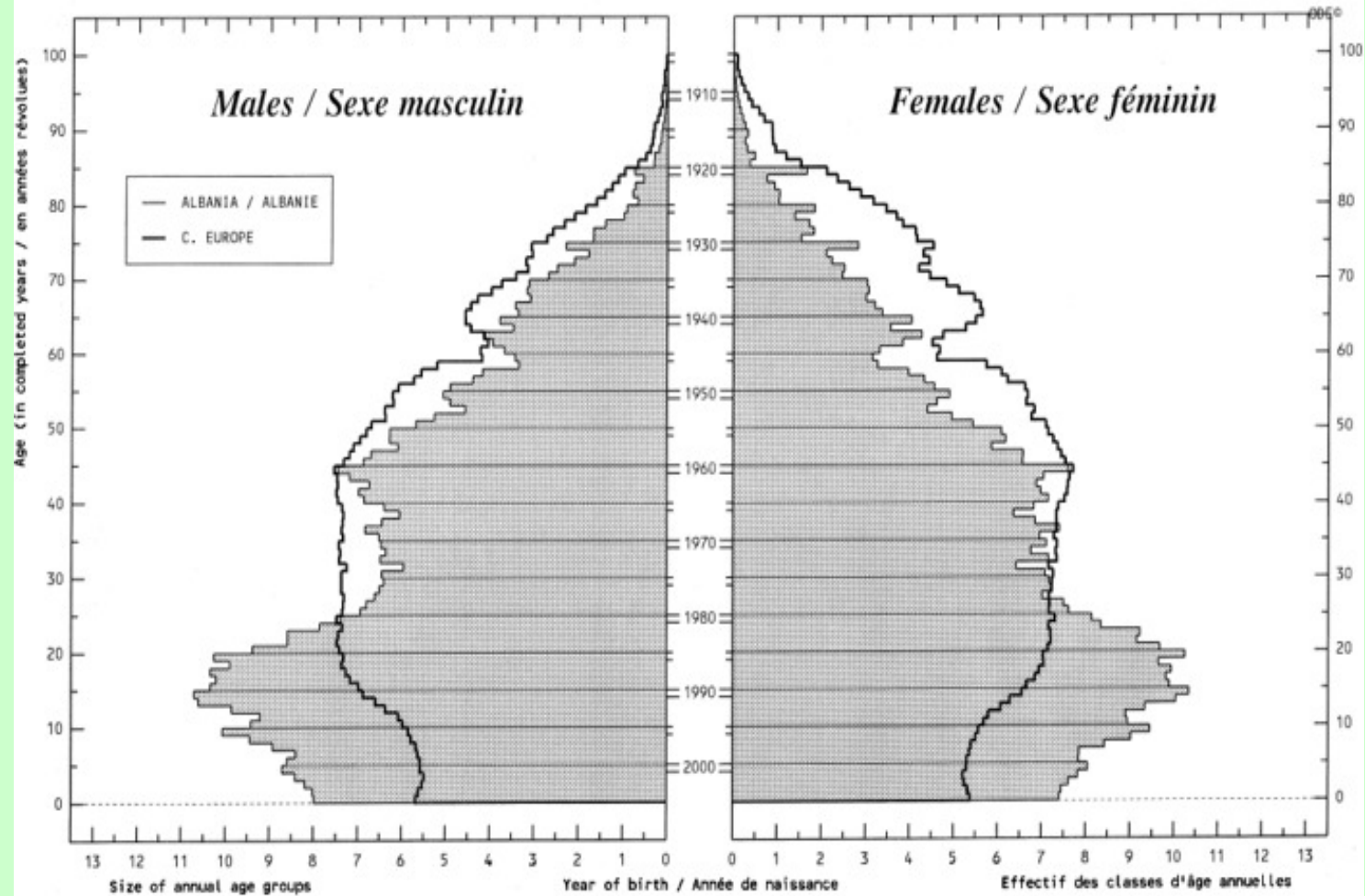
Age-pyramids on January 1st, 2005, with total population reduced to 1,000 persons in both cases
Pyramides des âges au 1er janvier 2005, populations totales ramenées à 1 000 personnes dans les deux cas
compared to the 46 member states of the COUNCIL of EUROPE
comparées à l'ensemble des 46 états membres du CONSEIL de l'EUROPE



Note: per thousand distribution of the total population

ALBANIA, 2005 / ALBANIE, 2005

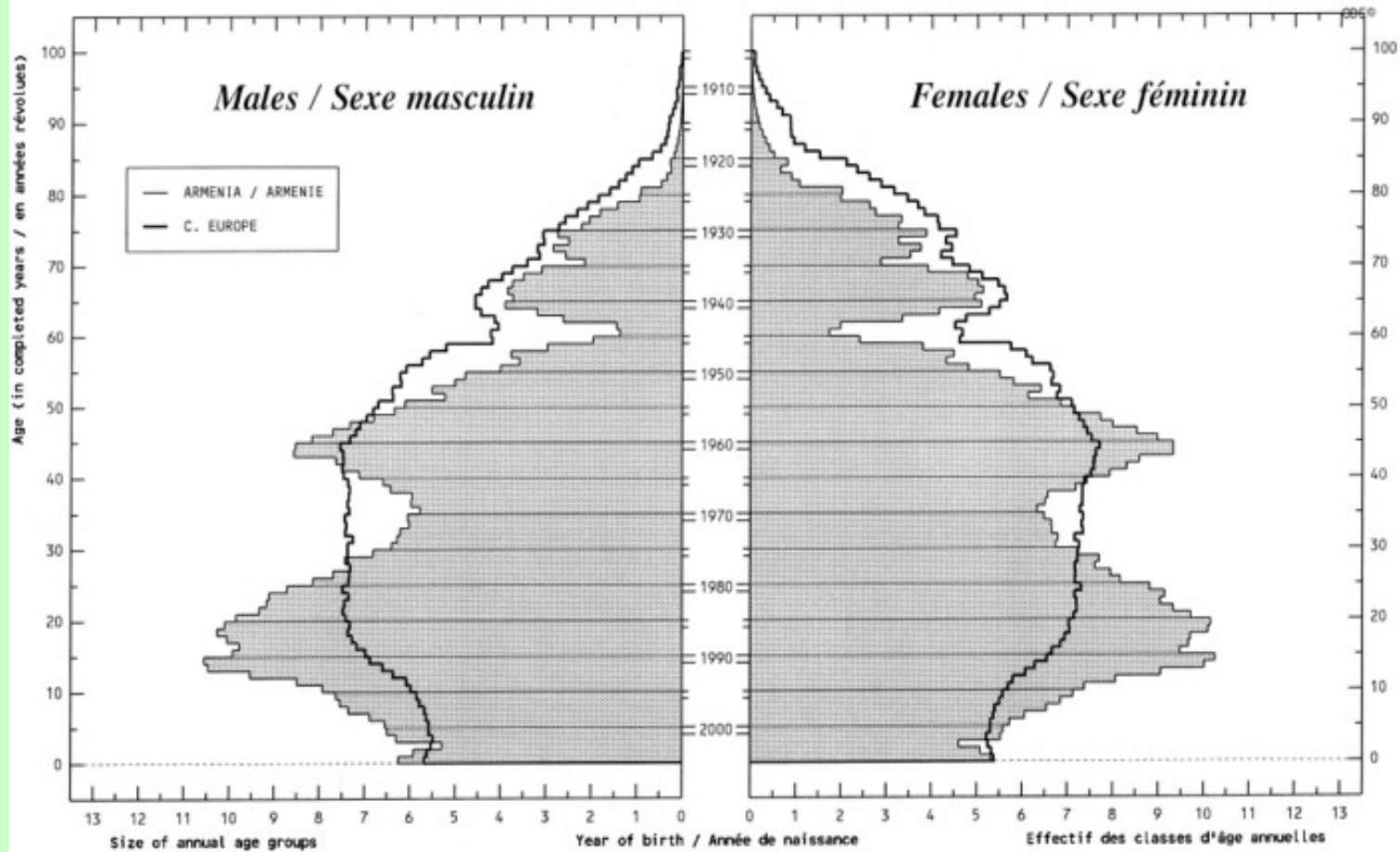
Age-pyramids on January 1st, 2005, with total population reduced to 1,000 persons in both cases
Pyramides des âges au 1er janvier 2005, populations totales ramenées à 1 000 personnes dans les deux cas
compared to the 46 member states of the COUNCIL of EUROPE
comparées à l'ensemble des 46 états membres du CONSEIL de l'EUROPE



Population 1.1.2005 : 3,1 millions

ARMENIA, 2005 / ARMENIE, 2005

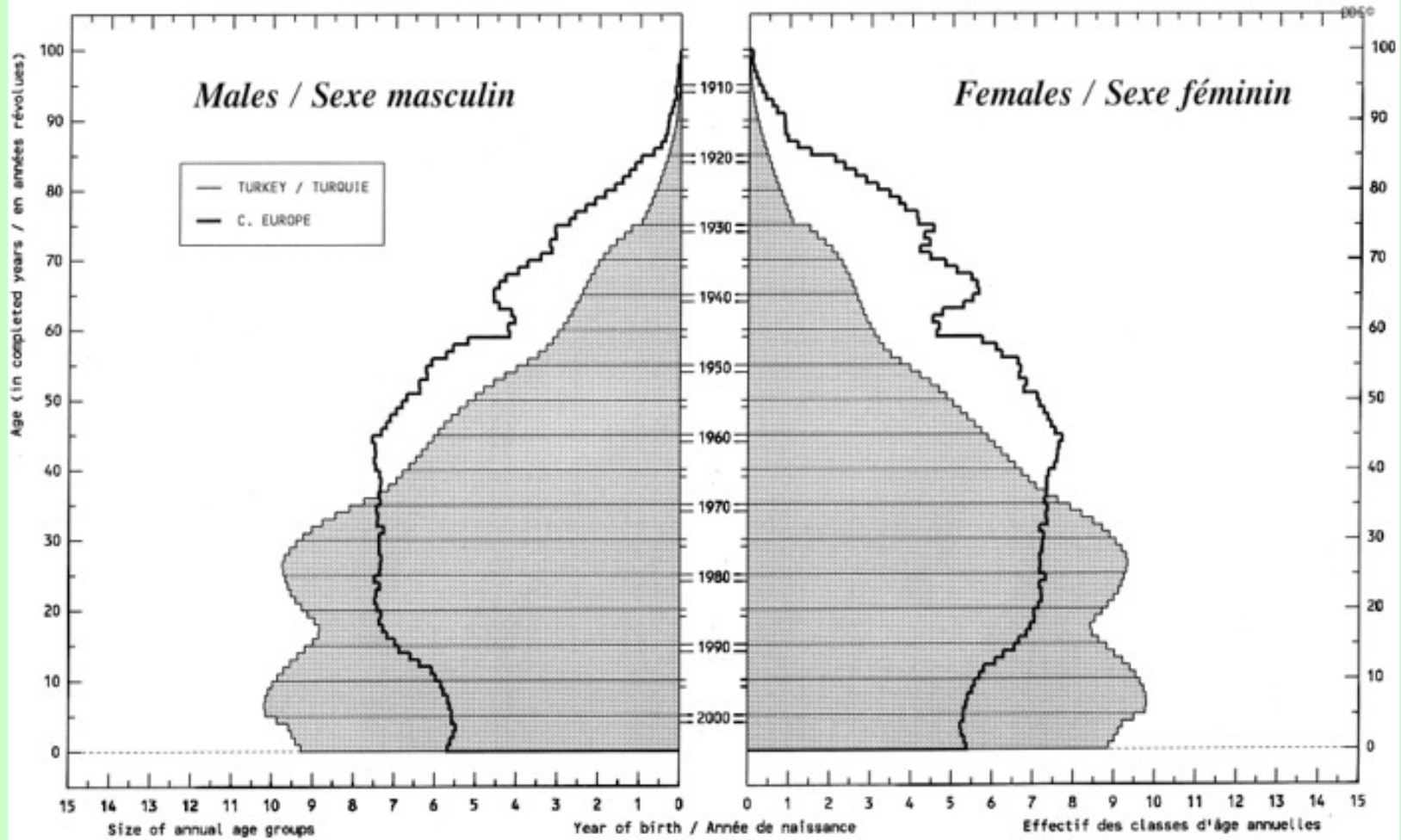
Age-pyramids on January 1st, 2005, with total population reduced to 1,000 persons in both cases
Pyramides des âges au 1er janvier 2005, populations totales ramenées à 1 000 personnes dans les deux cas
compared to the 46 member states of the COUNCIL of EUROPE
comparées à l'ensemble des 46 états membres du CONSEIL de l'EUROPE



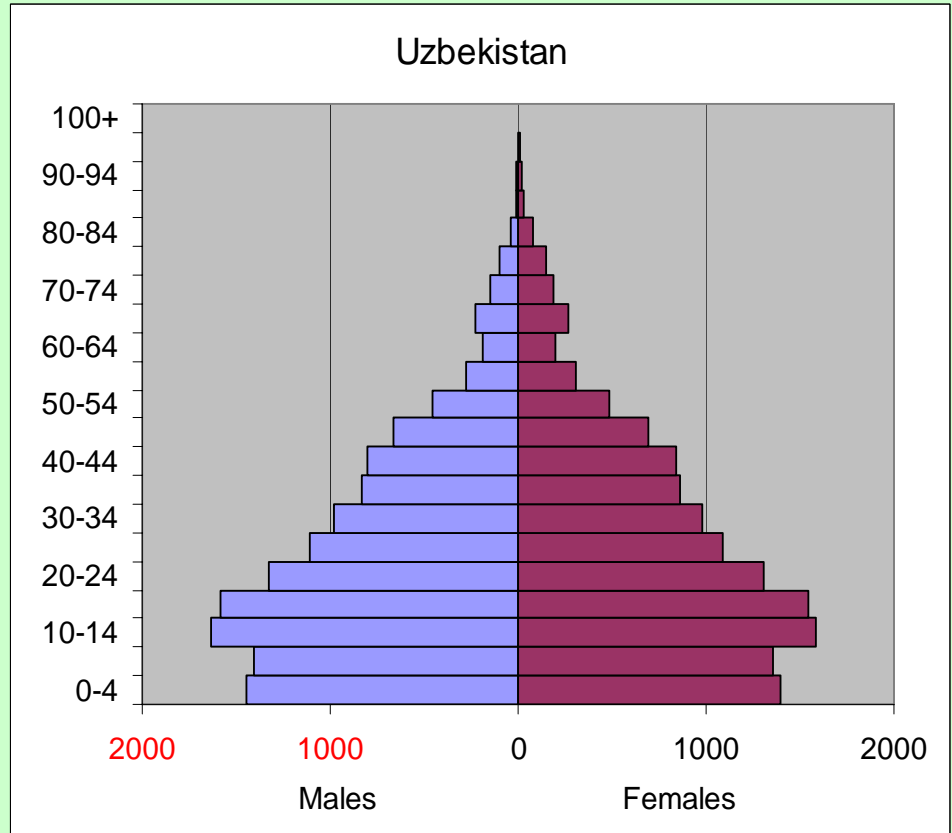
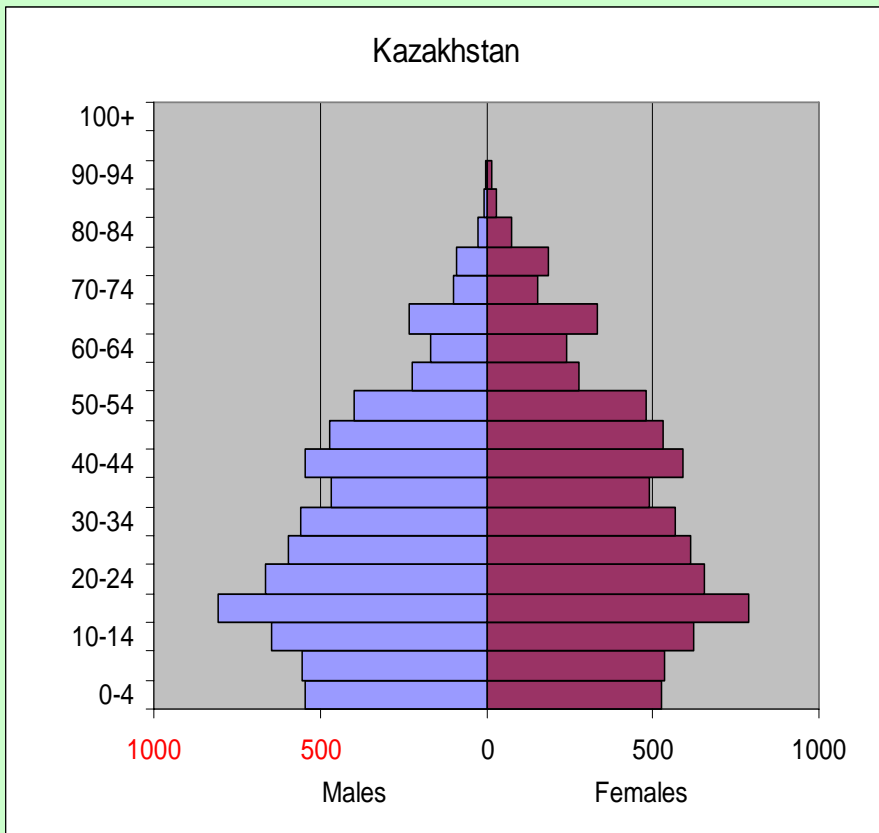
Population 1.1.2005 : 3,2 millions

TURKEY, 2005 / TURQUIE, 2005

Age-pyramids on January 1st, 2005, with total population reduced to 1,000 persons in both cases
Pyramides des âges au 1er janvier 2005, populations totales ramenées à 1 000 personnes dans les deux cas
compared to the 46 member states of the COUNCIL of EUROPE
comparées à l'ensemble des 46 états membres du CONSEIL de l'EUROPE



Population 1.1.2005 : 71,6 millions

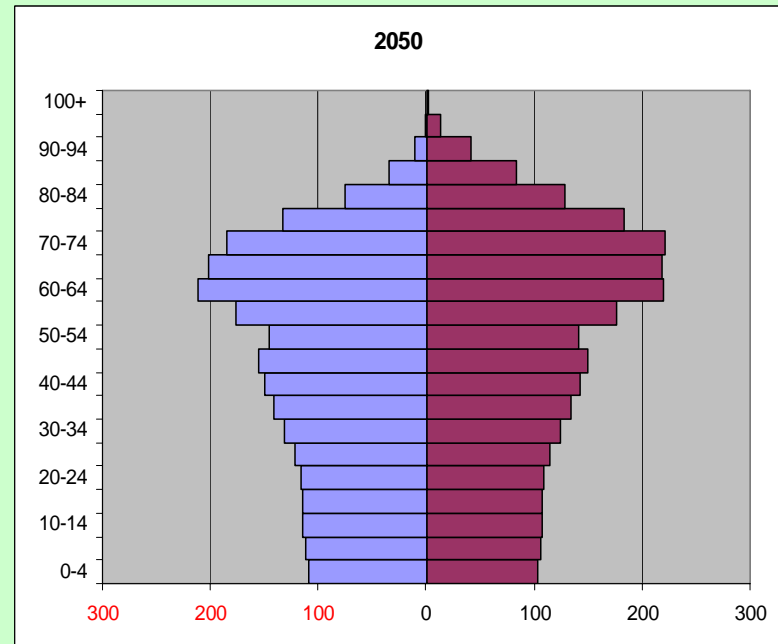
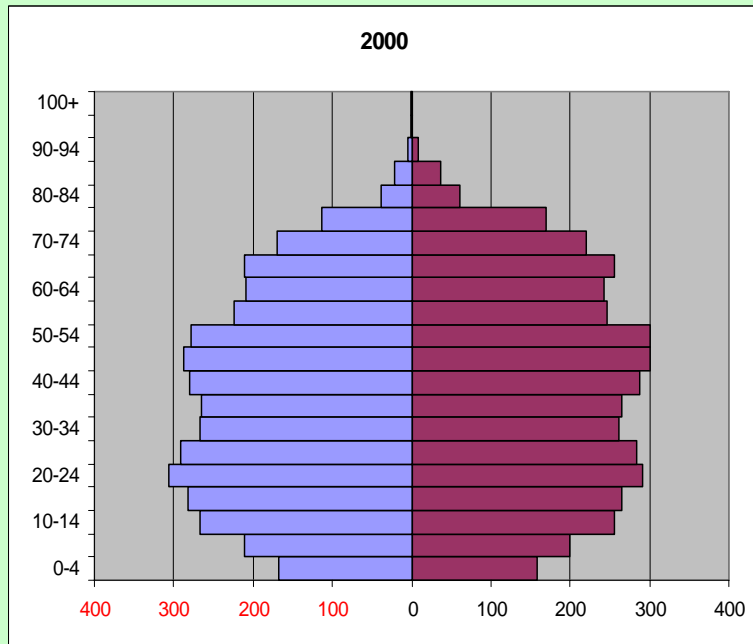
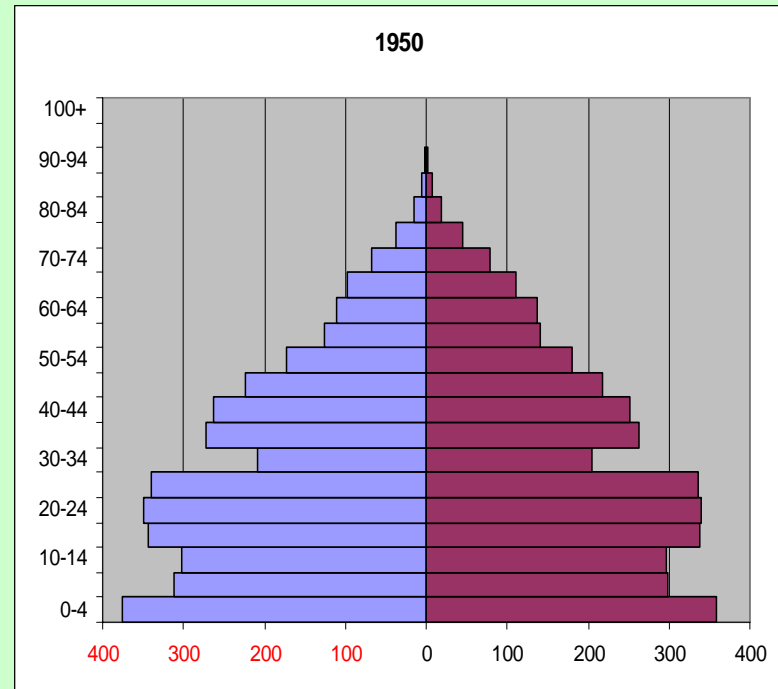


Bulgaria:

1950

2000

2050



Causes of demographic ageing:

Two main causes:

- *Drop in fertility. It has a relative effect*
- *Drop in mortality. It has a direct effect*
- *(Migration may have an effect)*

Stages in the process of ageing:

The demographic transition caused population ageing in all countries:

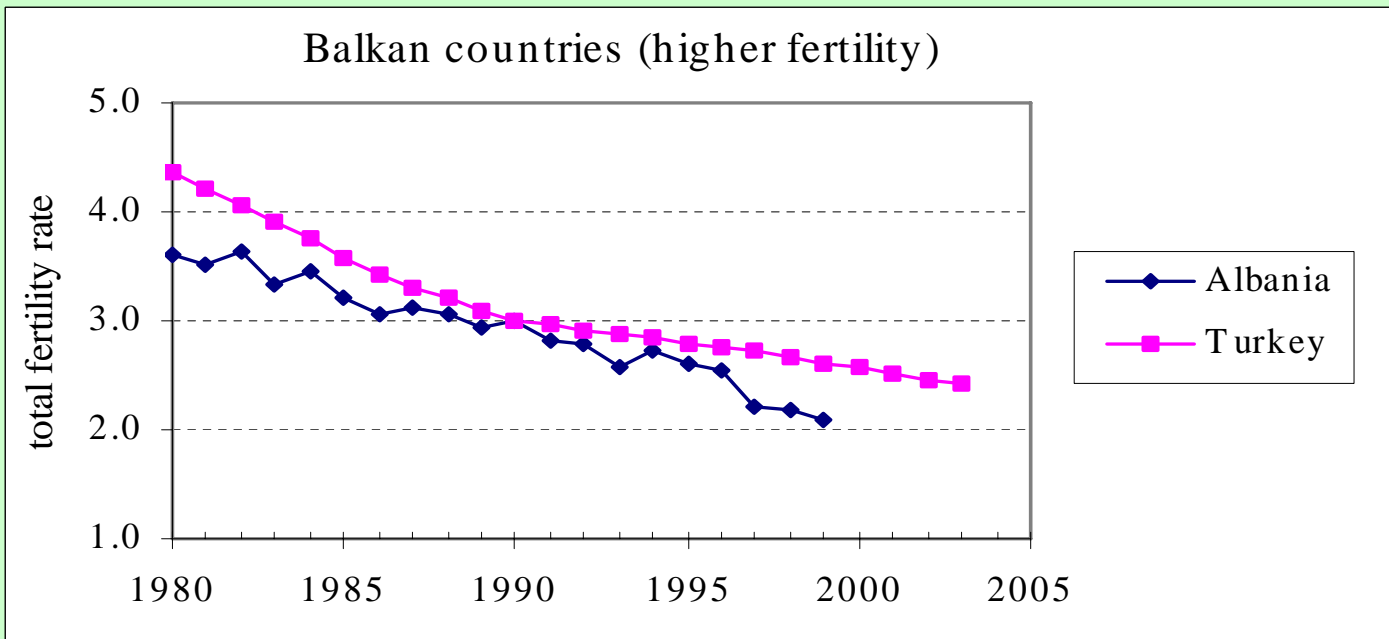
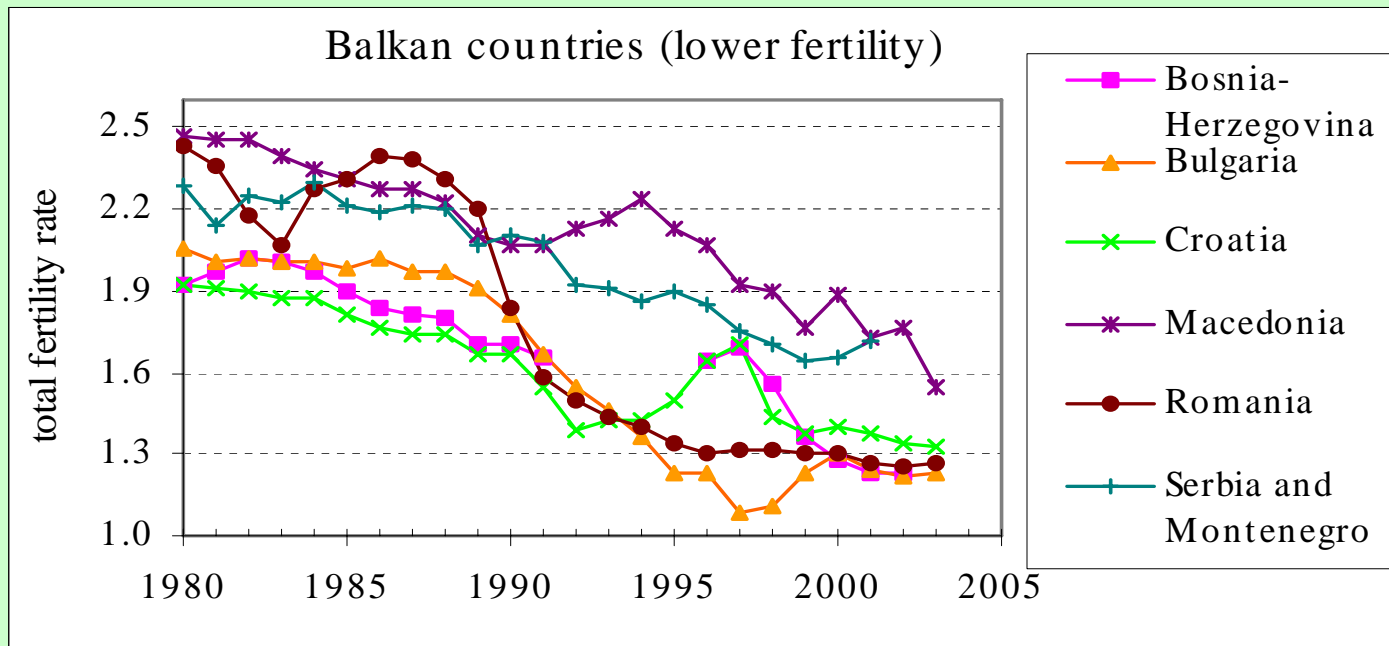
- *First, a steady drop in fertility*
- *the pyramid shrinks from below*
- *Second, a drop in mortality rises life expectancy*
- *may effect the whole age structure;*
- *Exceptions: both changes start about together (some CEE countries).*

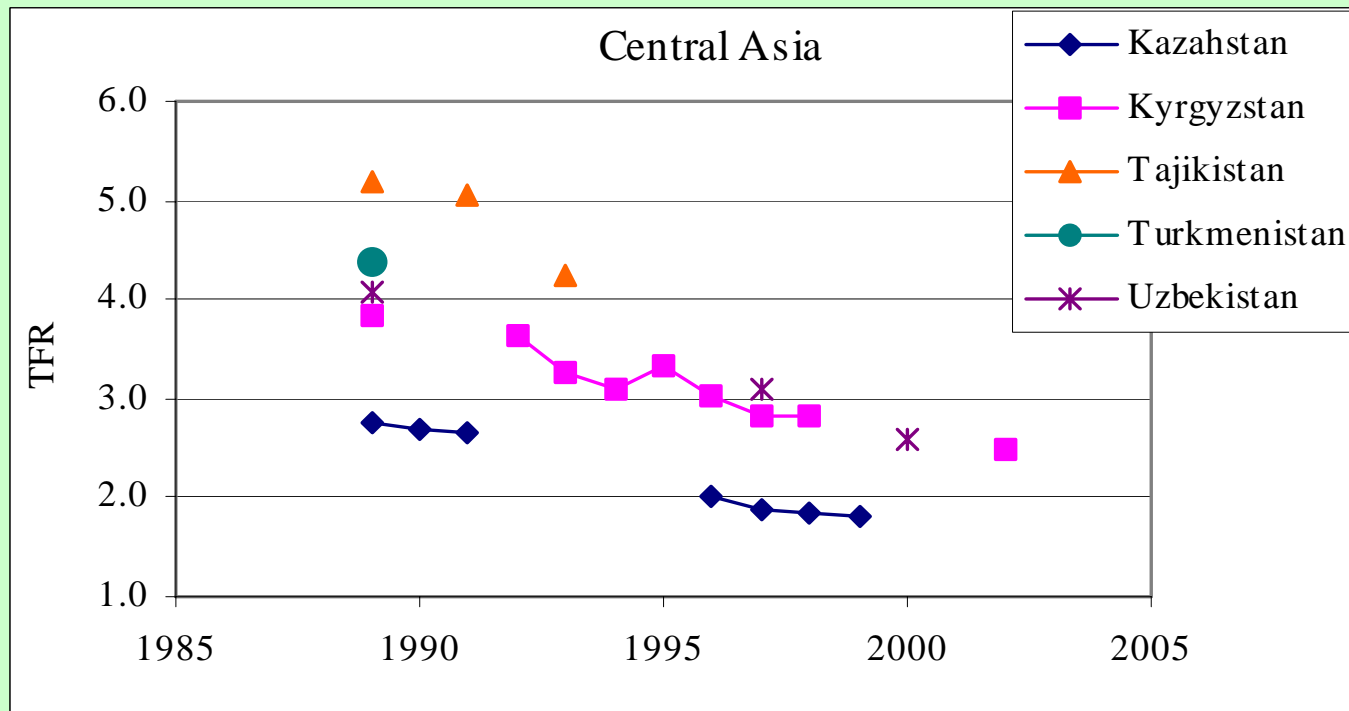
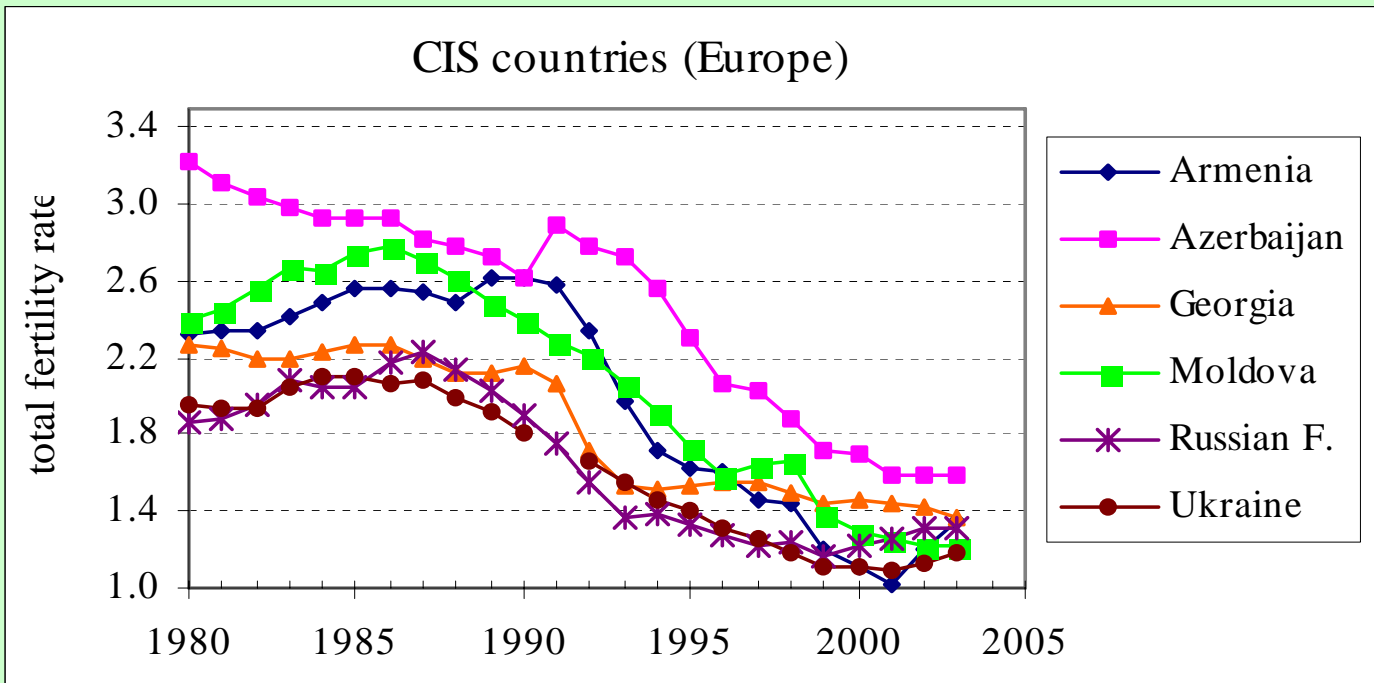
Which cause has stronger effect?

- During the first stage: fertility
- During the second stage: mortality (after child and adult mortality have declined, old-age mortality decline continues)
- At present times the cause is country-specific
 - The first stage prevails in the CARK countries
 - The second stage prevails in the other countries (of our interest)

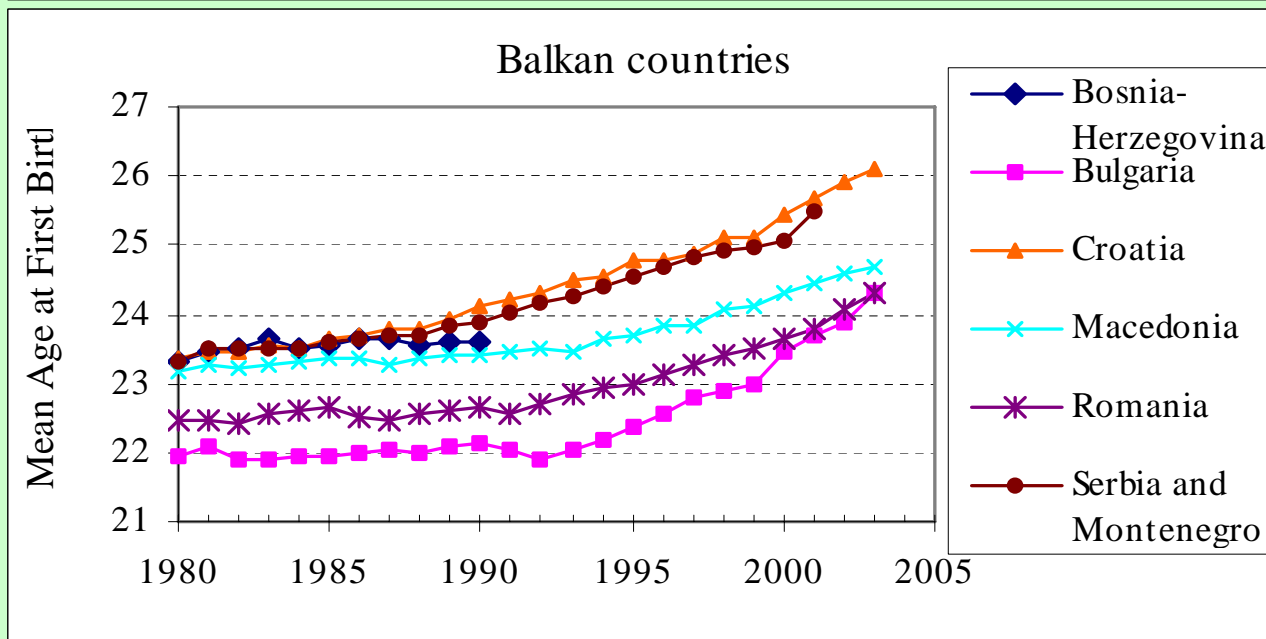
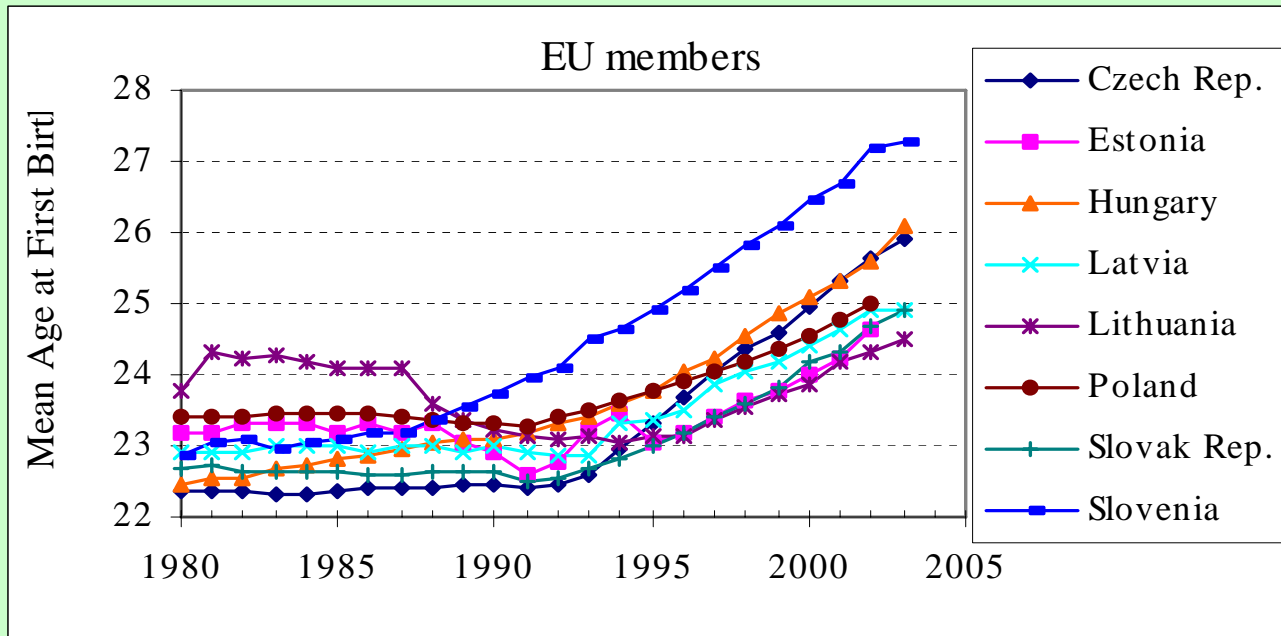
Fertility: recent trends

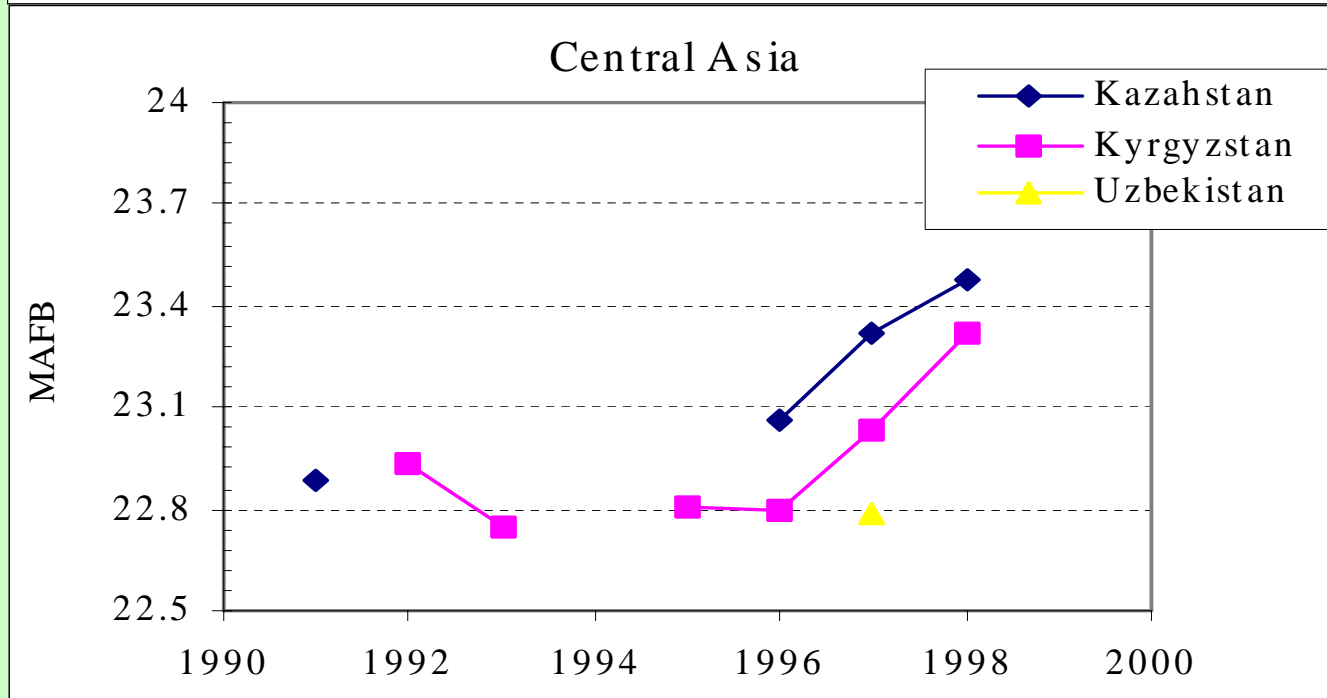
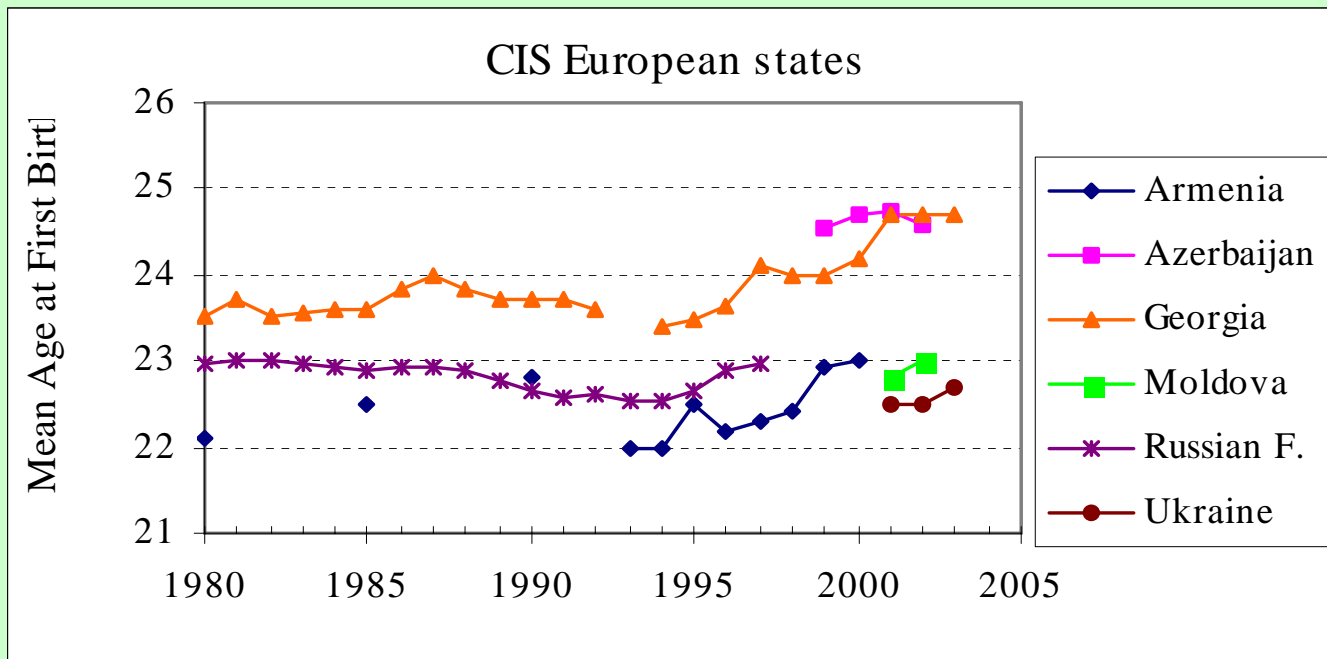
- TFR
- Mean age
- Postponement effects



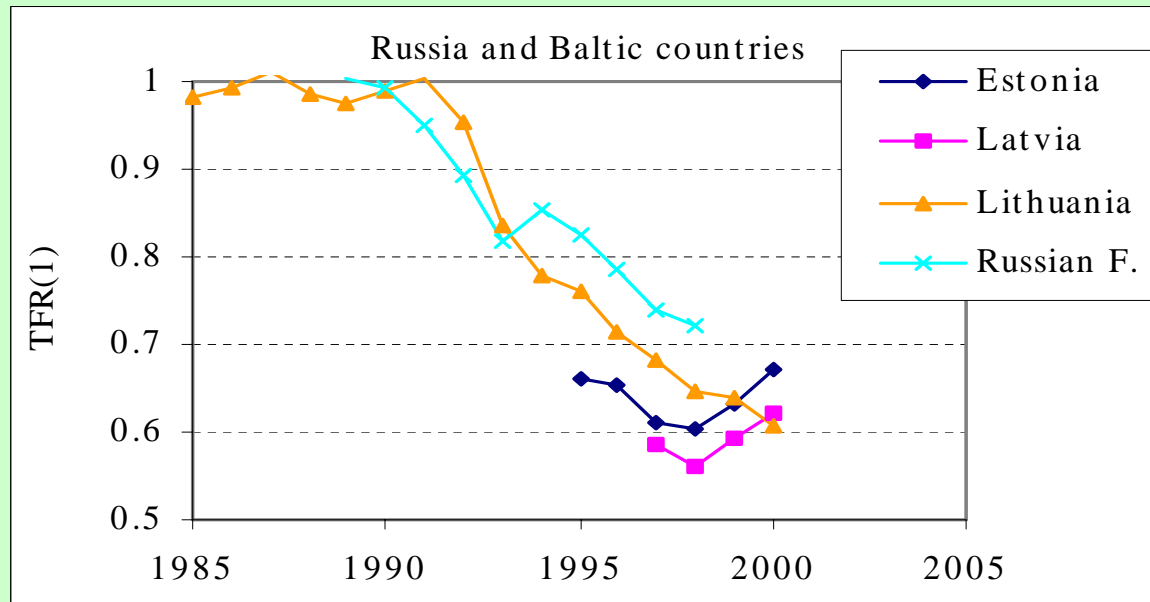
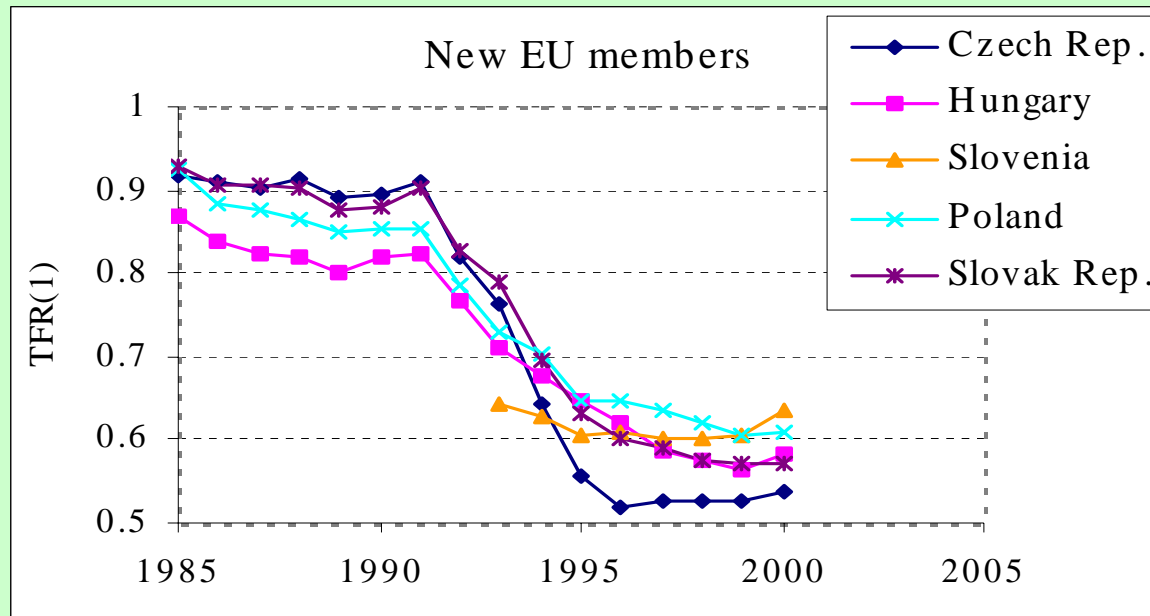


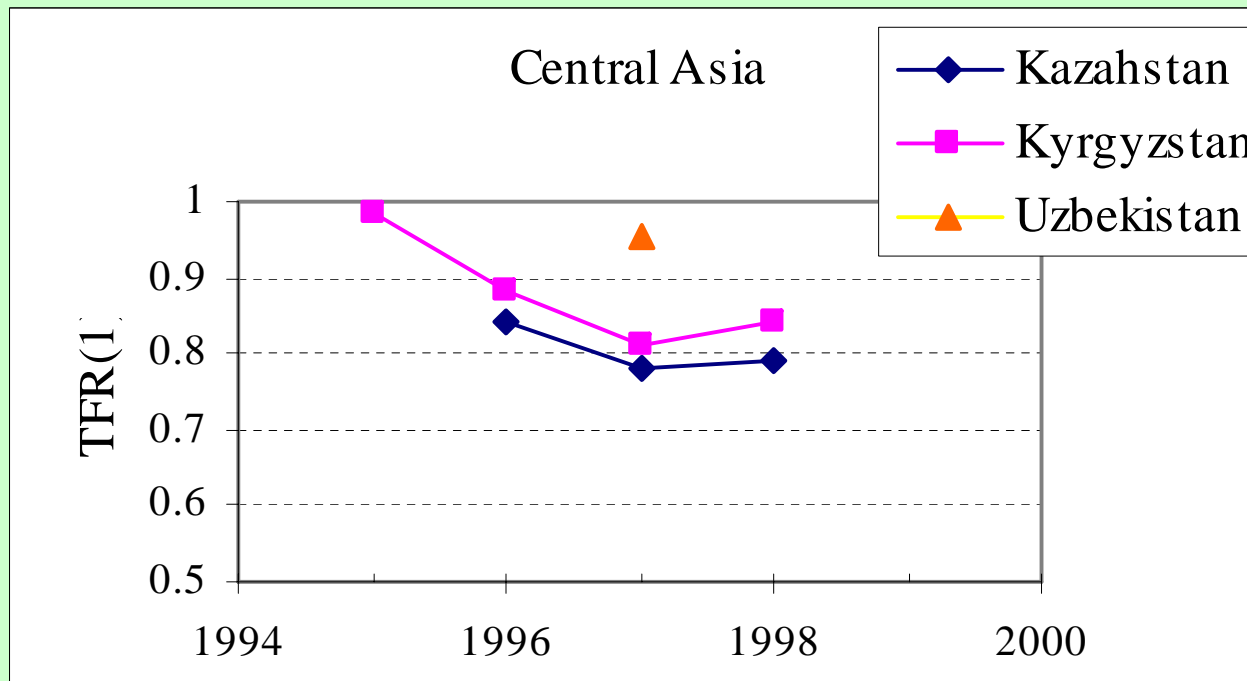
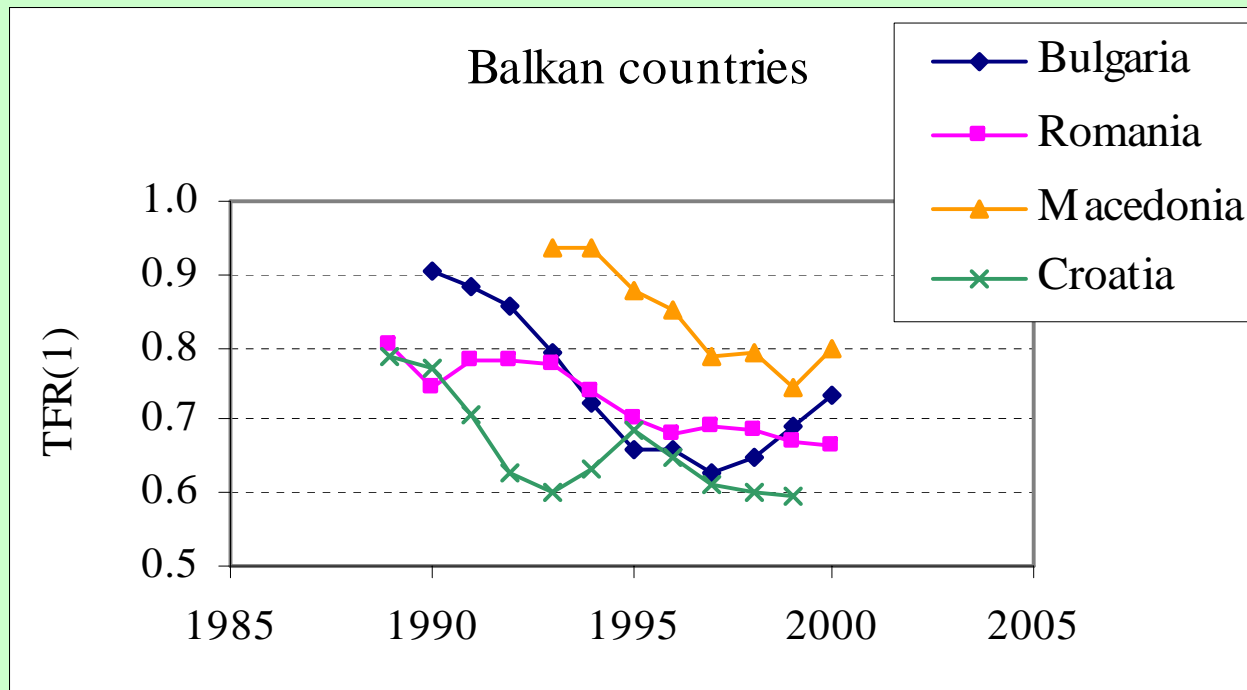
Mean age at first birth





First-order TFR





The effect of postponement of births on the TFR

24-yr. olds born in: 1973 1974 1975 1976 ...

Year	...	1997	1998	1999	2000	2001	2002	...
Age:	...	...	...	...	...	...	...	...
...	0	0	0	0	0	0	...	...
24	1	1	1	0	0	0	0	...
25	...	1	1	1	1	1	1	1
26	...	0	0	0	0	1	1	1
...	...	0	0	0	0	0	0	0
...
TFR	...	2	2	1	1	2	2	...
CF	...	...	...	2	2	2	2	2

“Tempo” and “Quantum” of Fertility

Observed TFR is distorted, because of the tempo effect;

Demographers discuss the estimation of a TFR clear of tempo effect. It is called adjusted TFR;

The adjusted TFR is a measure of quantum;

Adjustment is done for each birth order.

Adjusted TFR(1)

- It is app. 15-20% higher than the observed one.

	Observed	Adjusted
• Bulgaria, 2001	0.72	0.90
• Croatia, 1998	0.60	0.68
• Romania, 1997	0.69	0.81
• Kazakhstan, 1998	0.79	0.98

Fertility Trends - Summary

Before the start of the transition:

- *Universality of childbearing;*
- *First child at an early age;*
- *Stopping childbearing at an early age;*
- *App. 2 children per woman*

After the start of the transition

- *No universality of childbearing, voluntary childlessness increased*
- *Drop in fertility: Single-child families prevail*
- *Postponement of childbearing*
- *Increase in extra-marital births*
- *Diversity in choices increased*

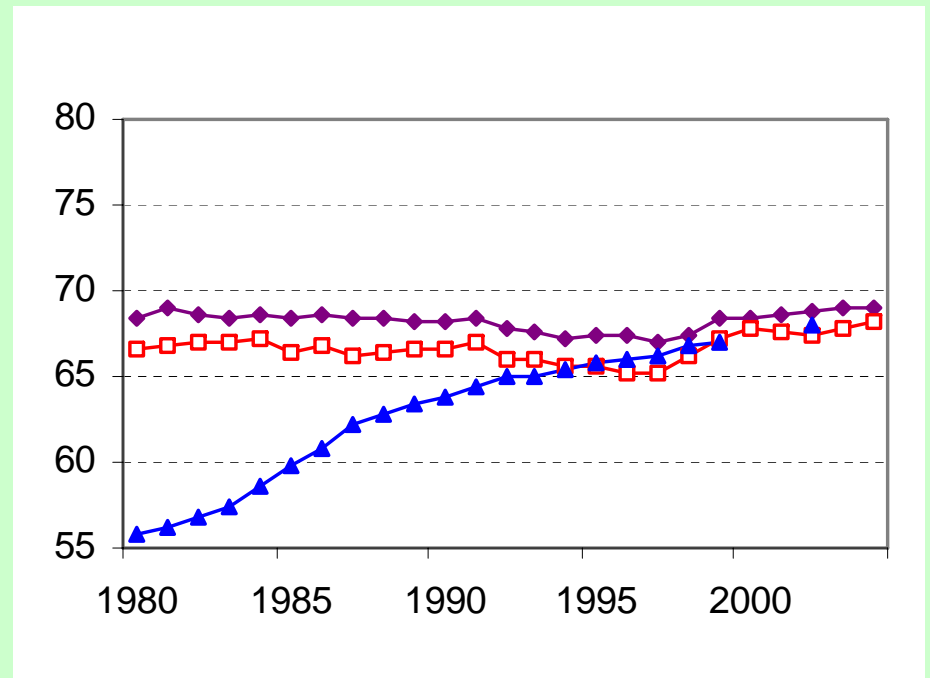
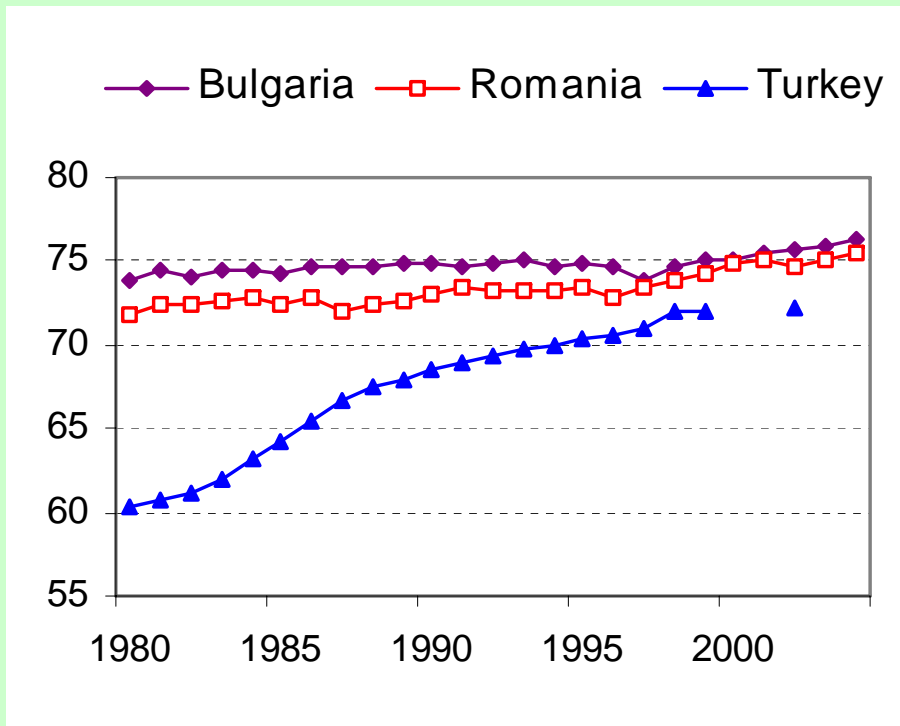
Fertility forecasts

- Very high uncertainty
- Assumption that TFR goes back to replacement level is not as favorite as in the past
- UN projections:
 - Medium variant: ultimate value of TFR=1.85
 - Low variant: TFR(2005) - 0.5
 - High variant: TFR(2005) + 0.5

Mortality

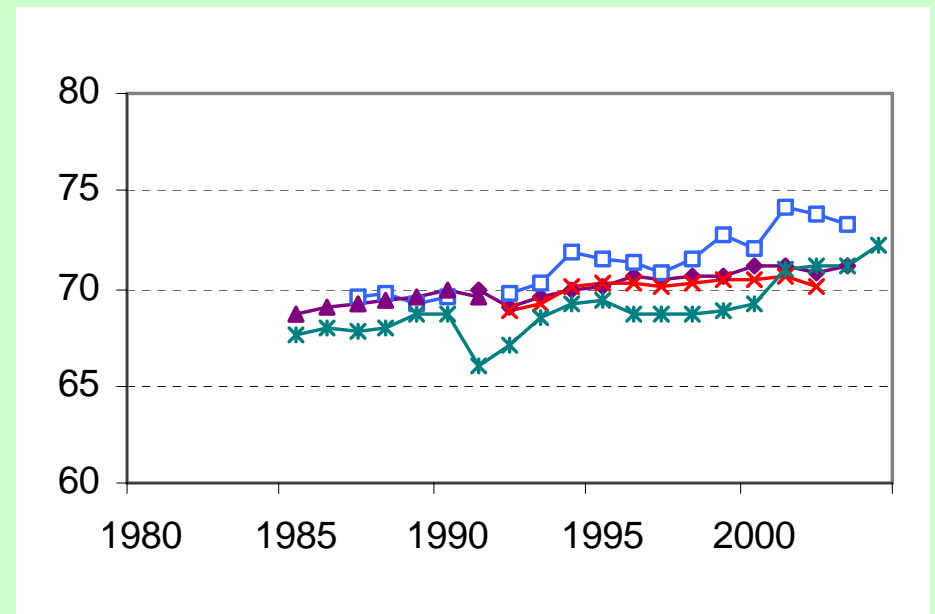
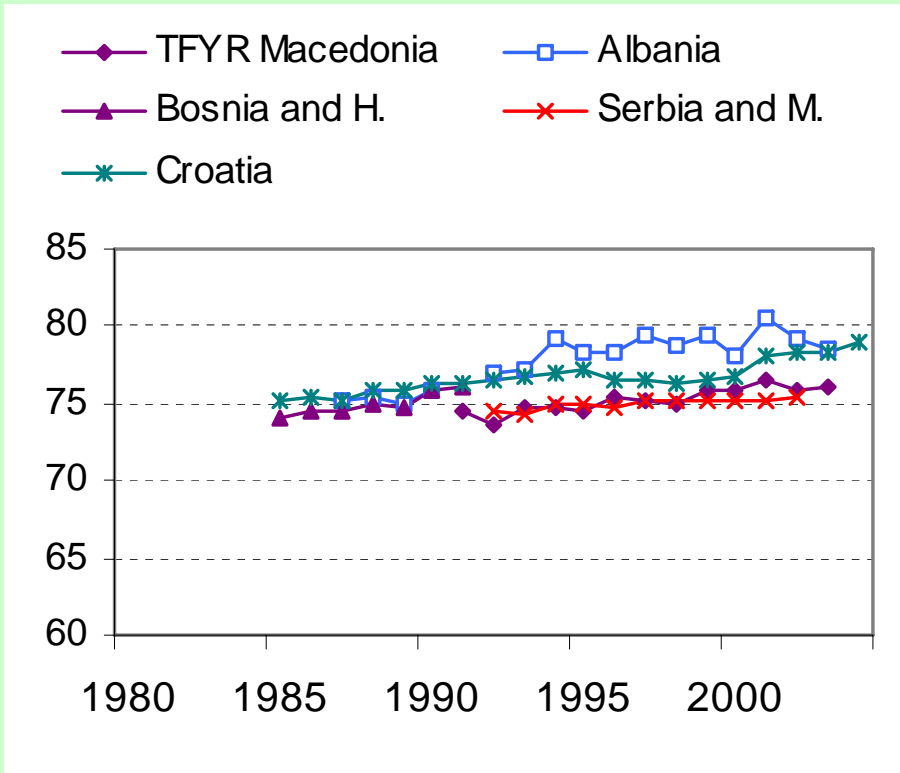
- Expectation of life at birth
- Infant mortality
- Adult mortality
- Causes of mortality

Expectation of life at birth: Balkan countries (1)



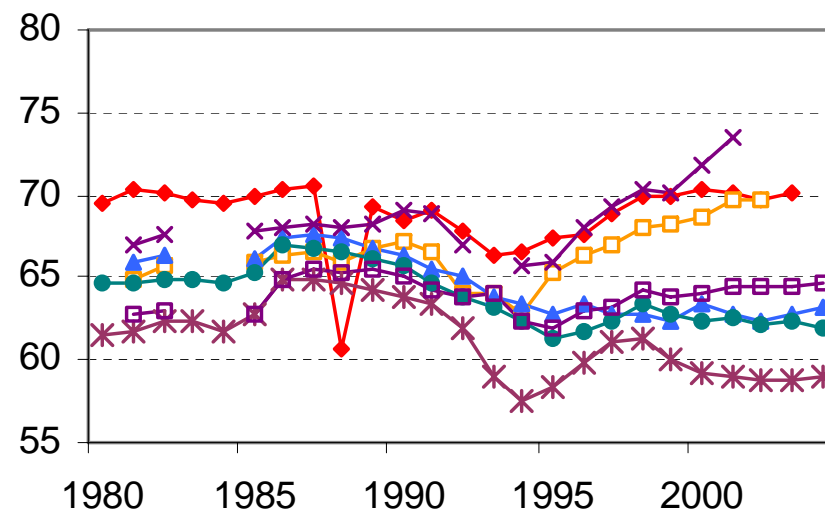
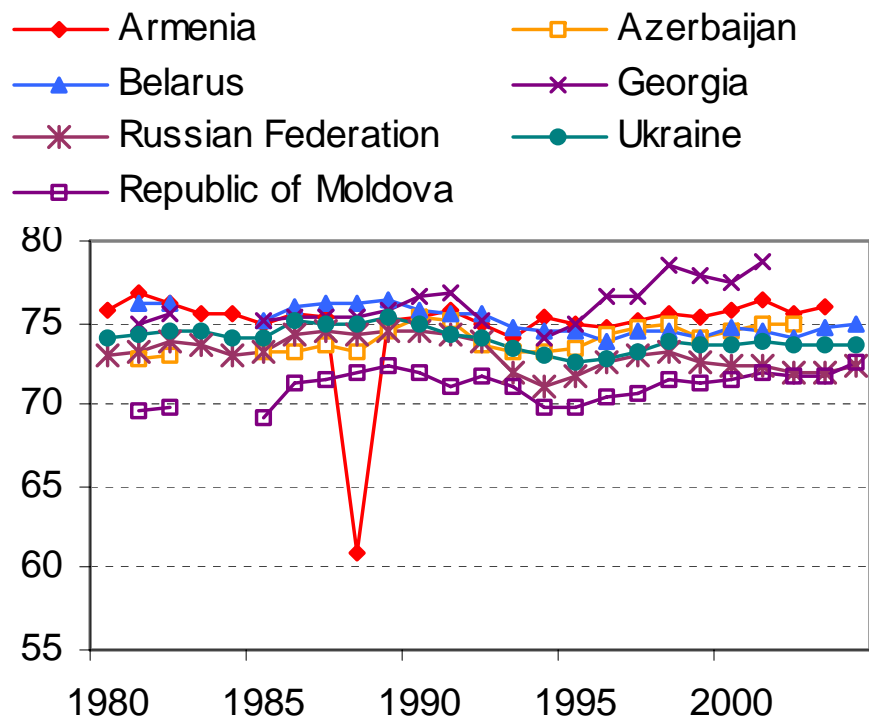
Left – females, right - males

Balkan countries (2)



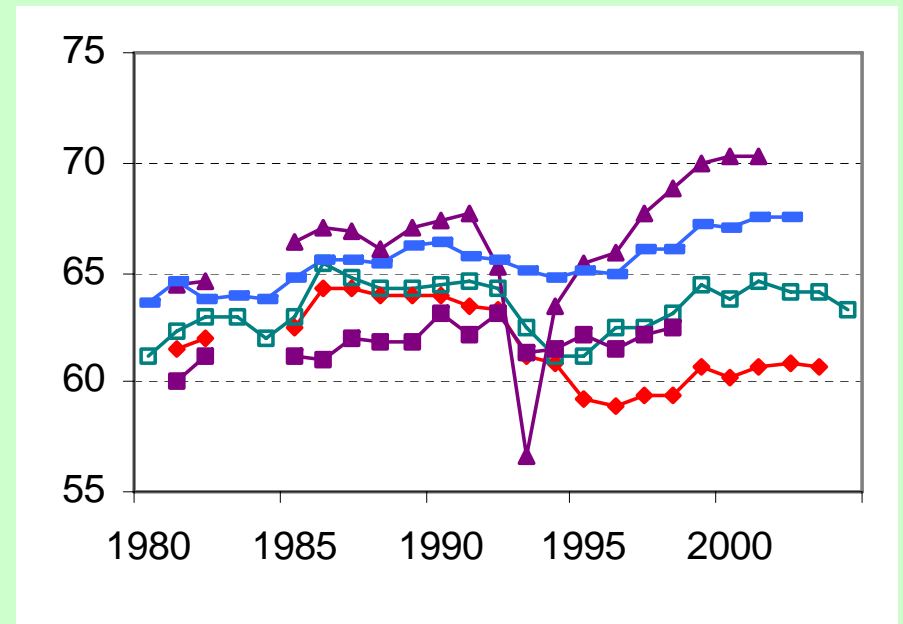
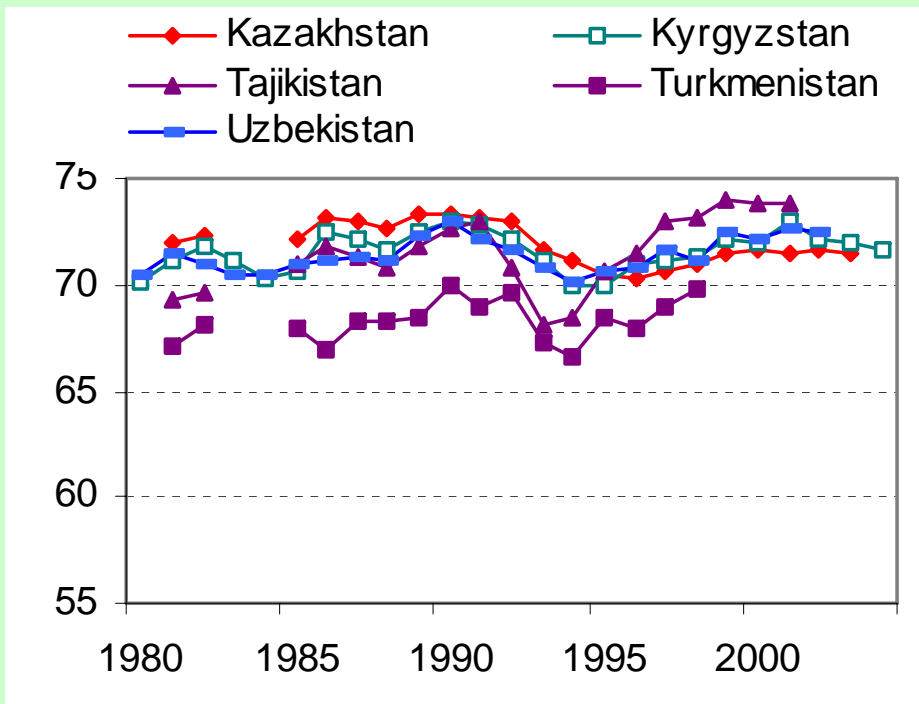
Left – females, right - males

CIS - Europe



Left – females, right - males

CARK countries

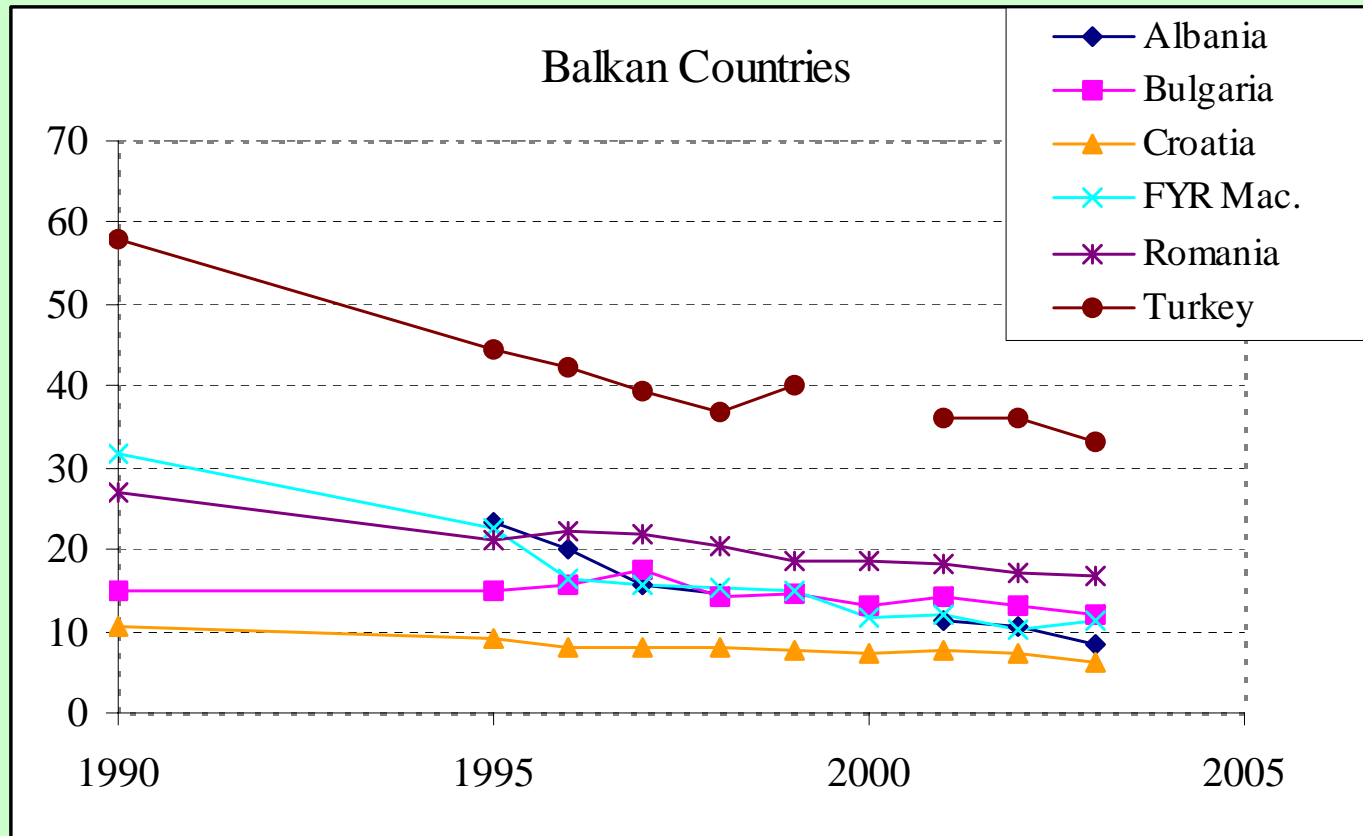


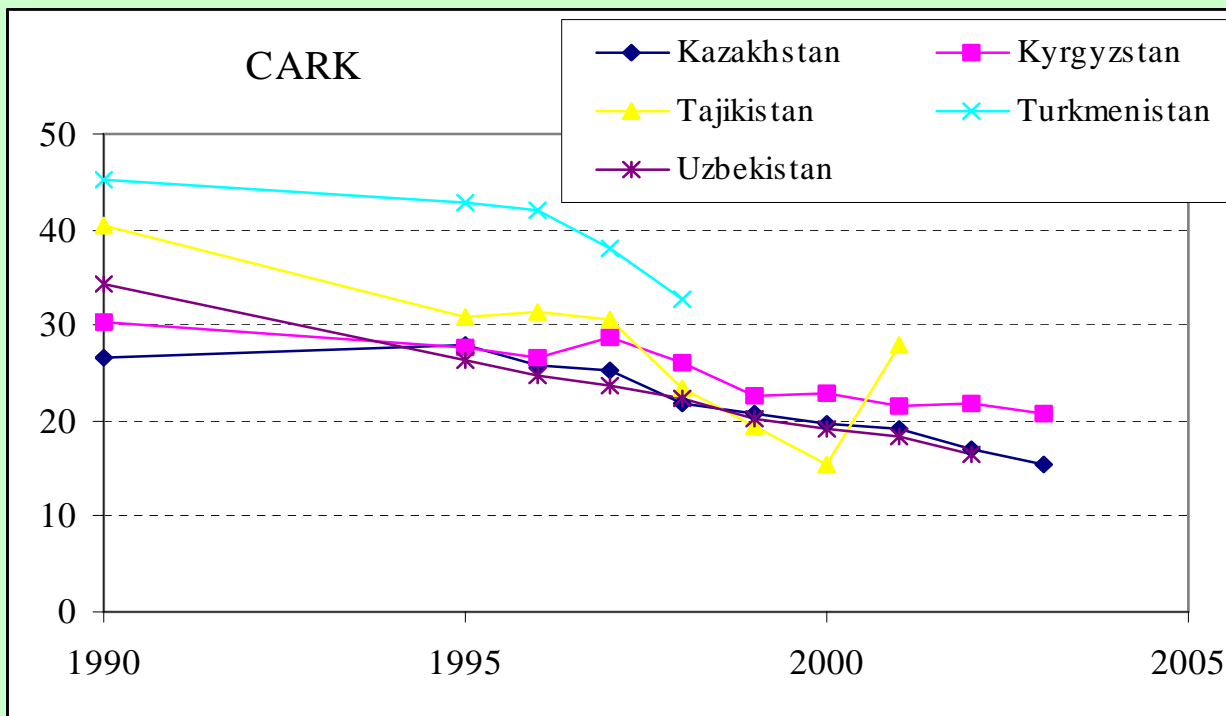
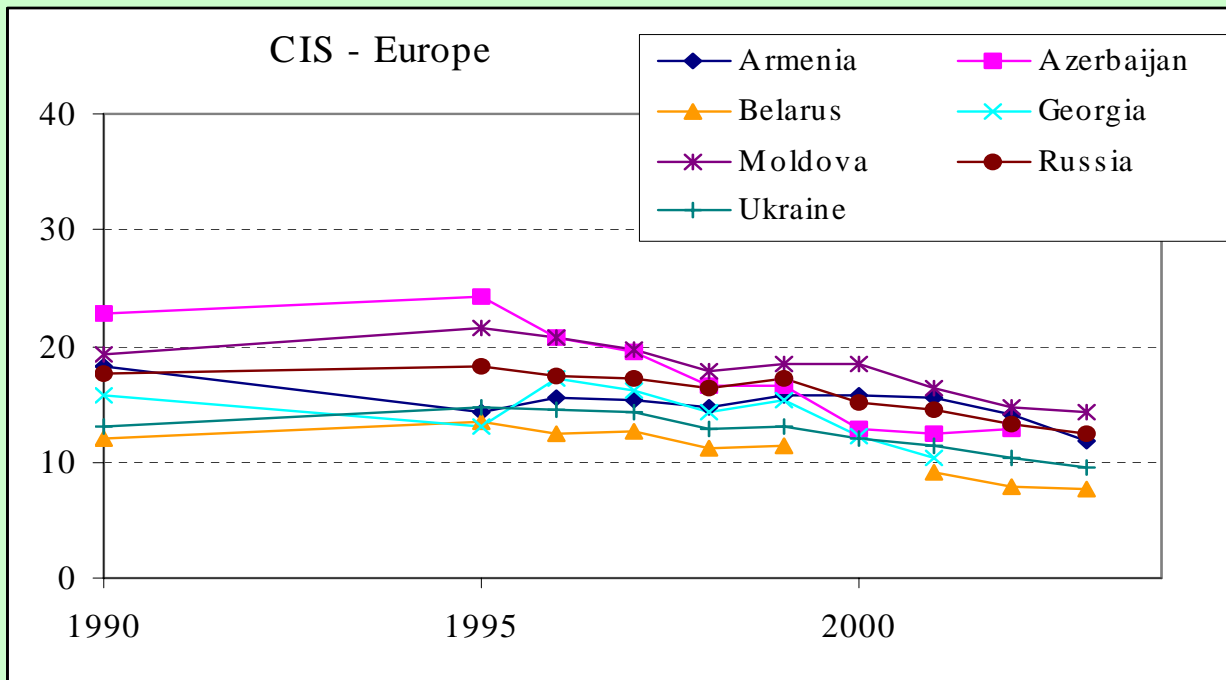
Left – females, right - males

Infant mortality

- Definition: number of deaths of babies less than 1 year old to 1000 live births
- WHO and ex-Soviet definitions of a birth differ and their impact on infant mortality

Infant mortality 1990-2003





Causes of Death

- Definitions: ICD-10
- Main cause: Increase in cardio-vascular diseases and injuries in CIS+CARK;
- Alcohol consumption and Smoking;
- Reasons: unhealthy diet and lifestyle, result of impoverishment and stress;
- Impact stronger among people with lower education, lower income, unemployed

Mortality forecasts

- Lower uncertainty than those for fertility
- Gradual increase in life expectancy at birth due to:
 - fall in infant mortality
 - fall in adult mortality
 - fall in old-age mortality: main component

Demographic aspects of ageing

- Gender differences in the aged population
Old women outnumber old men (cf. sex-specific life expectancy)
- Marital status of the aged
Many old women are widows; frequently living alone
- Regional aspects of ageing: T-shaped pyramids can be observed!

SUMMARY

(Back to population ageing)

- Population ageing is a slow, long-term process. Once begun, it lasts for decades.
- The pace of the process is determined by:
 - The age structure of the population
 - Changes in fertility
 - Changes in mortality

Summary: support ratio

- Old-age support ratio does not change considerably during the first state of population ageing (can even temporarily decline)
- It can be estimated with high accuracy for at least 15 years ahead

Summary: population ageing

- Is it a negative process? NO!
- Problems caused by population ageing need to be addressed with adequate policies
- Longer life raises the issue of healthy life
- Oldest-old: an emerging population subgroup