



Mortality Trends in Kazakhstan in 1999- 2008: on national and regional level

Shynar Tuleshova

PhD student of Demography

17.02.2010, 2-nd Demographic Conference of Young
Demographers

Actual Demographic Research of Young
Demographers (not only) in Europe

Objective and questions:

- To investigate mortality trends in Kazakhstan in the period 1999-2008 analyzing it on national and regional level.
1. How was the mortality pattern by age and sex in Kazakhstan in the period 1999-2008?
 2. How was the mortality pattern by age and sex in regional level in the period 1999-2008?

Data

- Population and Mortality Data for whole country and for each region including sex and age groups was obtained from Statistical Agency of the Republic of Kazakhstan.

Mortality Data processing:

- Death Certificate (the date, place and the cause of death, the sex, date and place of birth, age, marital status, education, nationality, the place of work, profession, the source of living, the permanent place of living of dead);
- Village (aul) → District (rayon) → Region (oblast) → Republic;



Methods

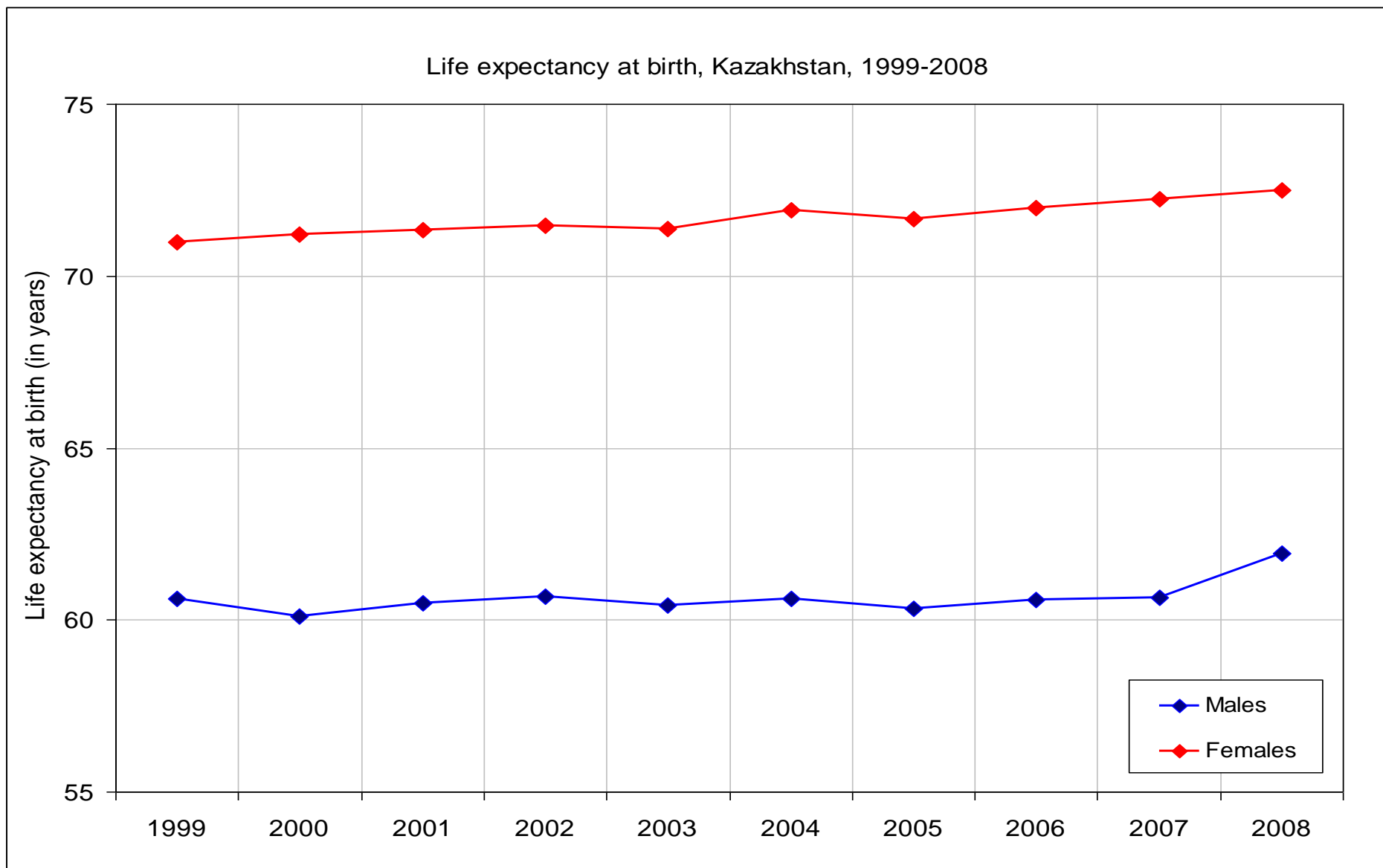
- Basic methods of demographic analysis (life expectancy at birth, probability of dying in specific ages);
- Descriptive statistic method (cross regional variation indicators);

Findings:

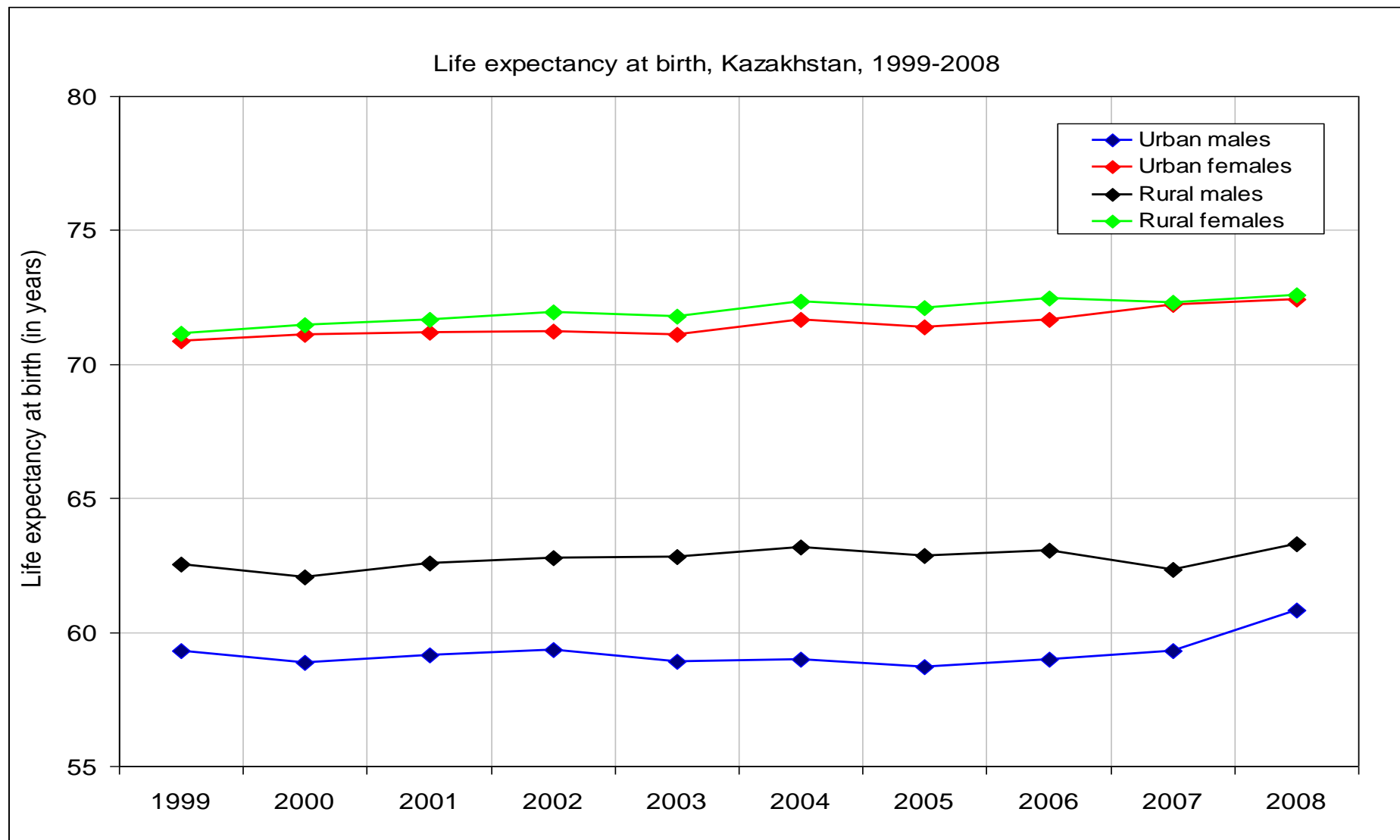
On national level:

- The gap in life expectancy at birth between two sexes slightly increased over time. (in 1999 – 10.38, in 2008 – 10.58);
- The gap in life expectancy at birth between urban males and females (in 1999-11,57, in 2008 – 11,59) was bigger than between rural ones (1999-8,62, 2008 – 9,32). But the difference between last ones increased over time more than urban ones.
- The difference in mortality level of males and females was in age group 55-69 is bigger than in age groups 40-54, 70-84;

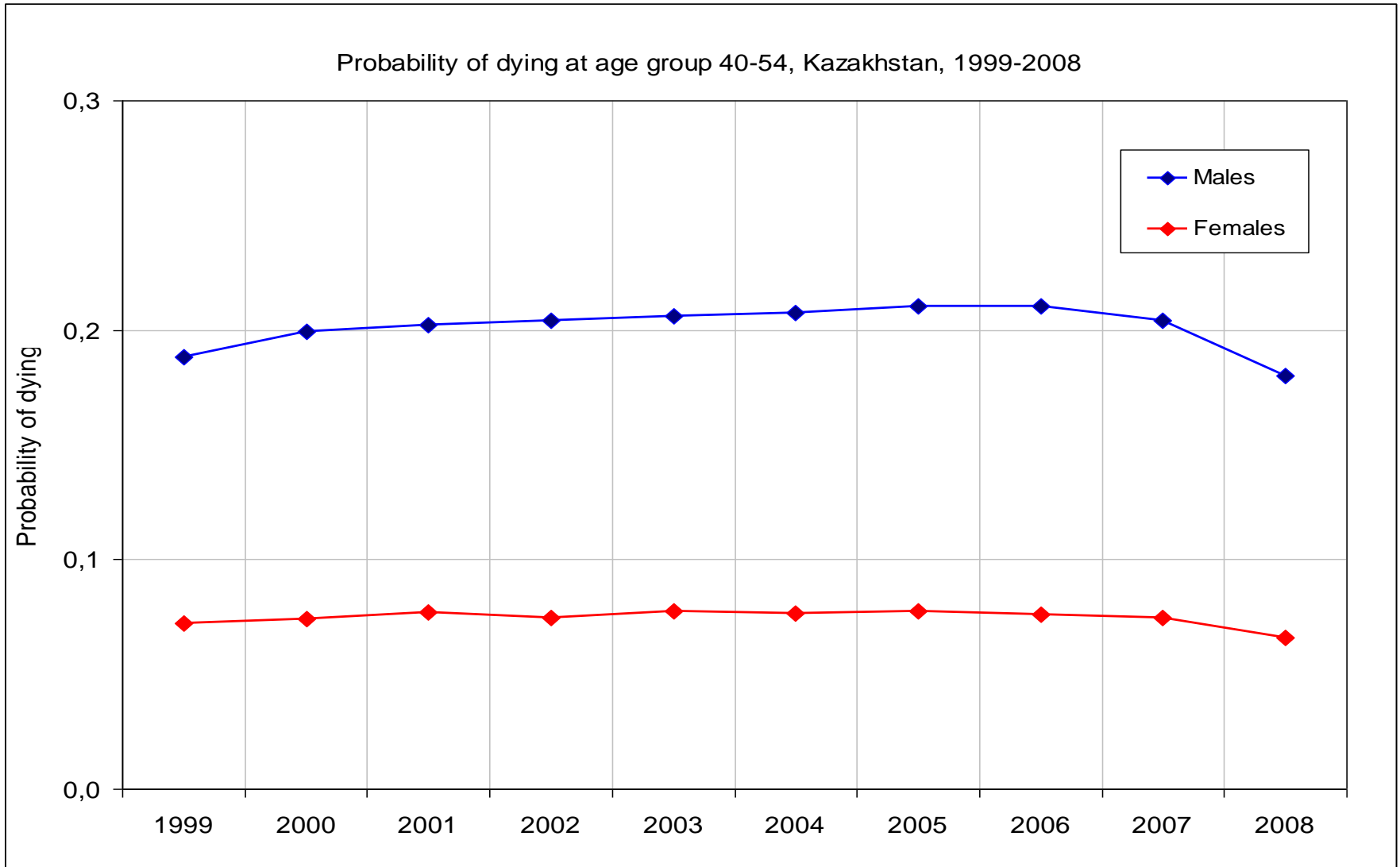
Life expectancy at birth, Kazakhstan, 1999-2008



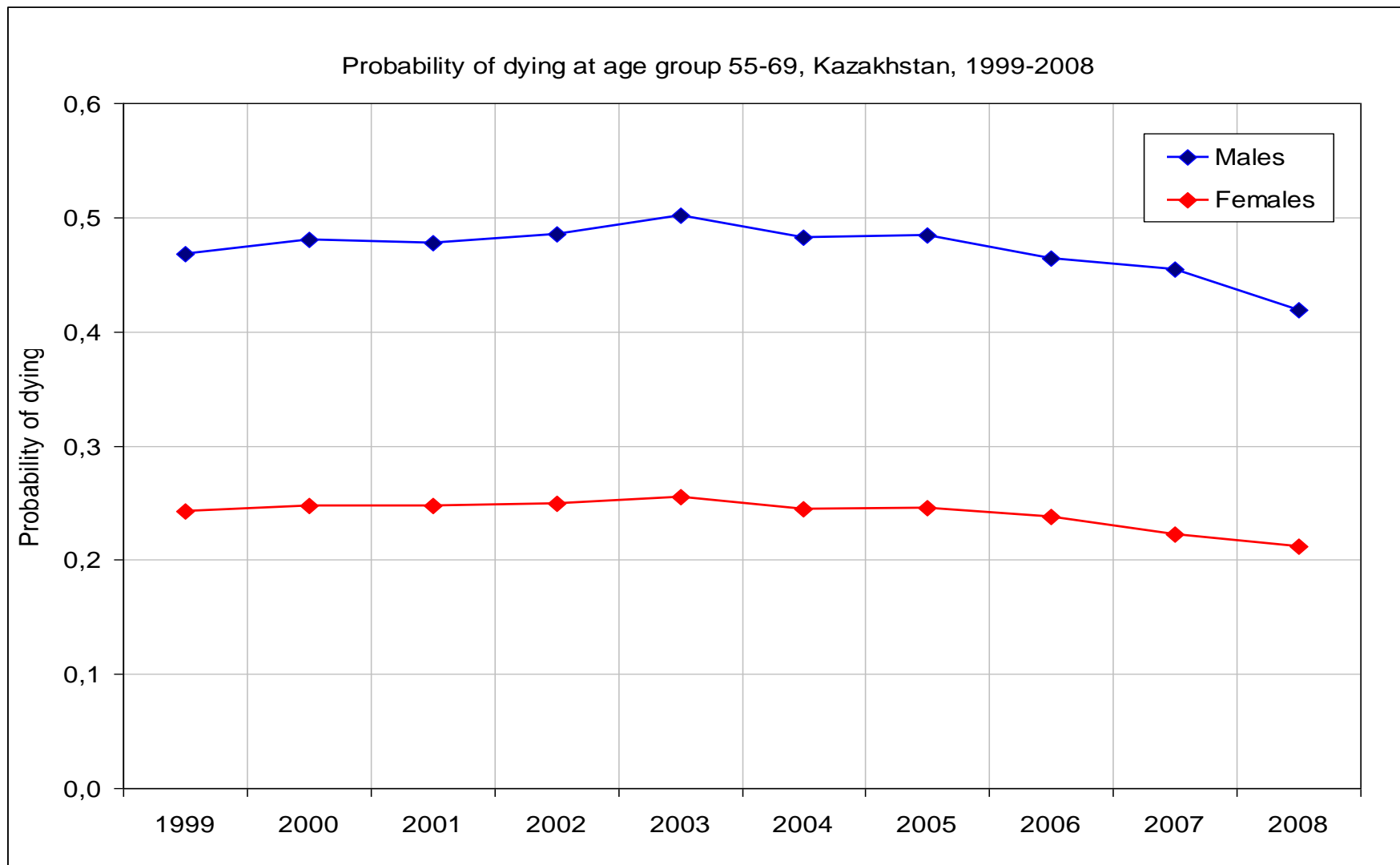
Life expectancy at birth (by type of settlement), Kazakhstan, 1999-2008



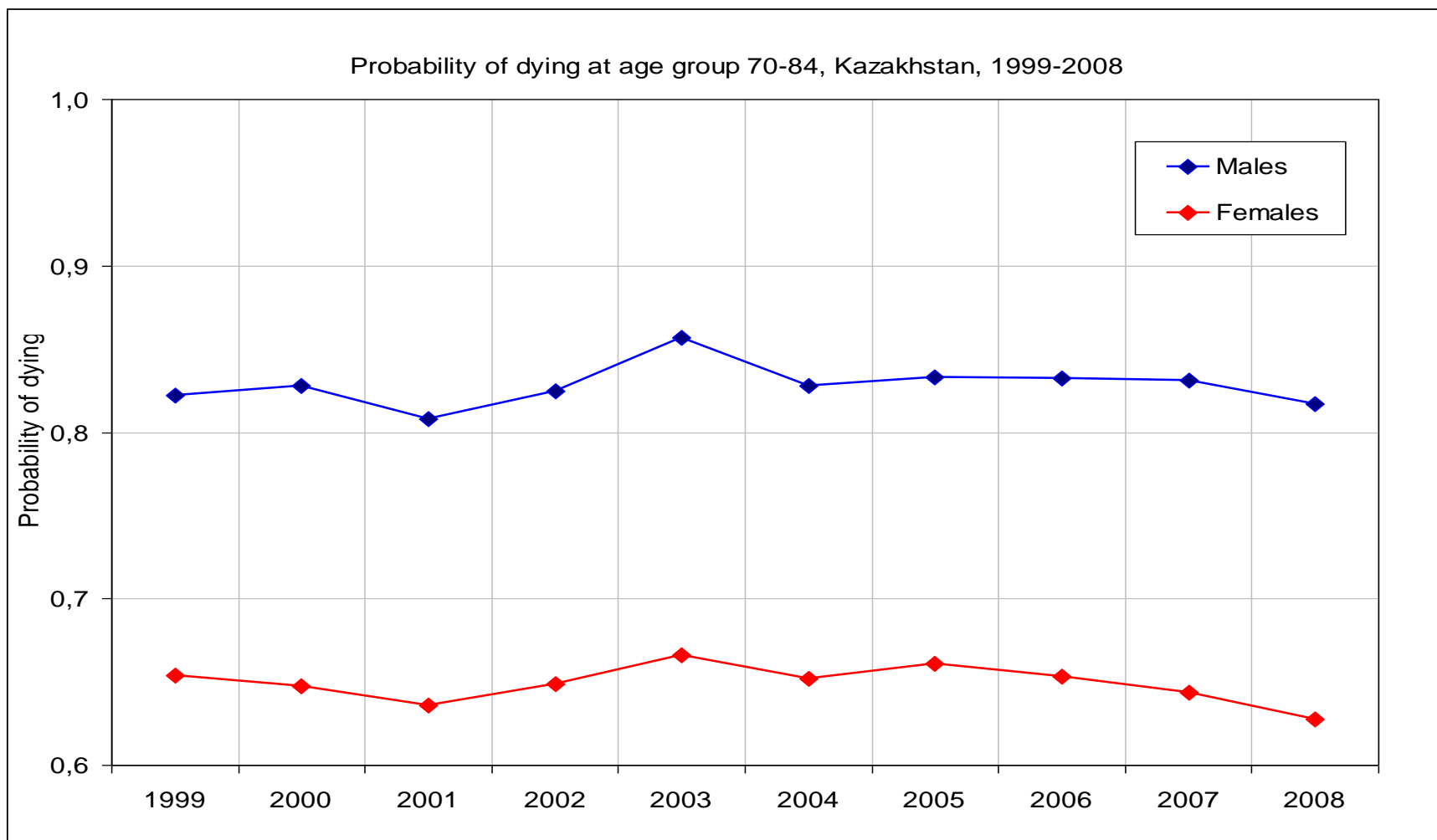
Probability of dying at age group 40-54, Kazakhstan, 1999-2008



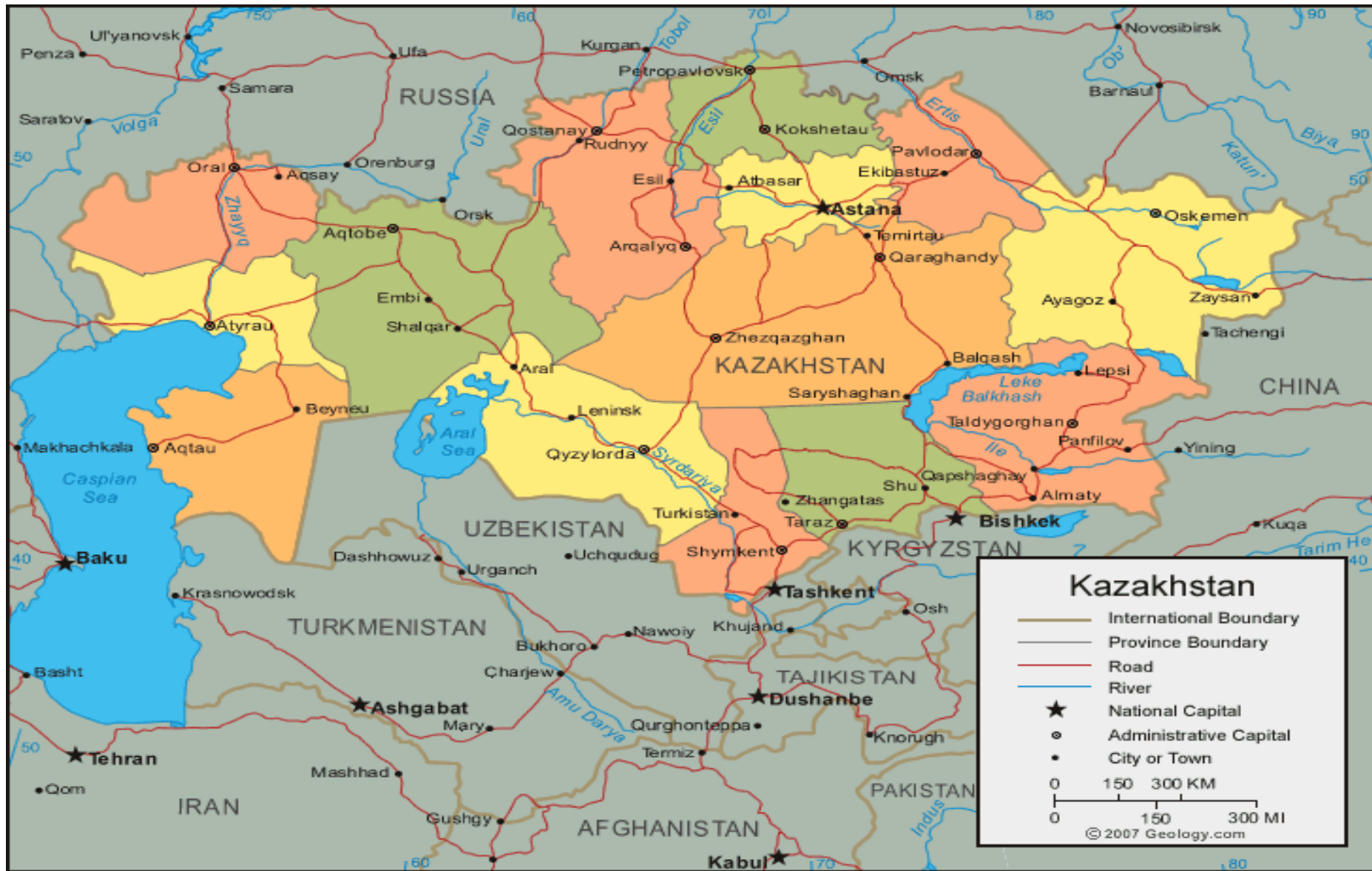
Probability of dying at age group 55-69, Kazakhstan, 1999-2008



Probability of dying at age group 70-84, Kazakhstan, 1999-2008



Map of Kazakhstan

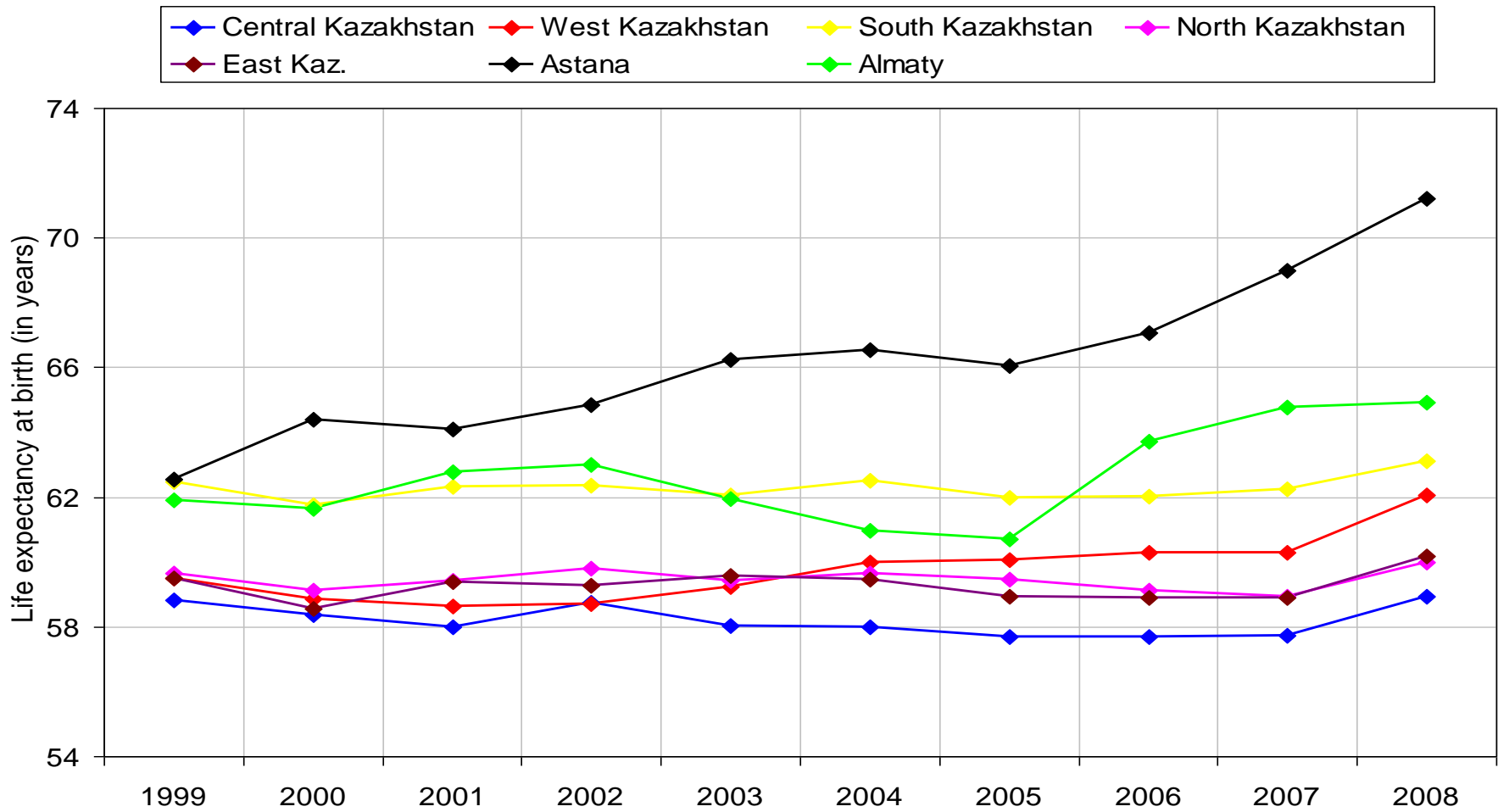


On regional level:

- Mortality level is highest in Central Kazakhstan, lowest in Astana for both sexes and it decreased over time here;
- Regional differentiation in life expectancy increased over time for males more than for females;
- Regional differentiation in mortality level in higher ages increased over time for both sexes;

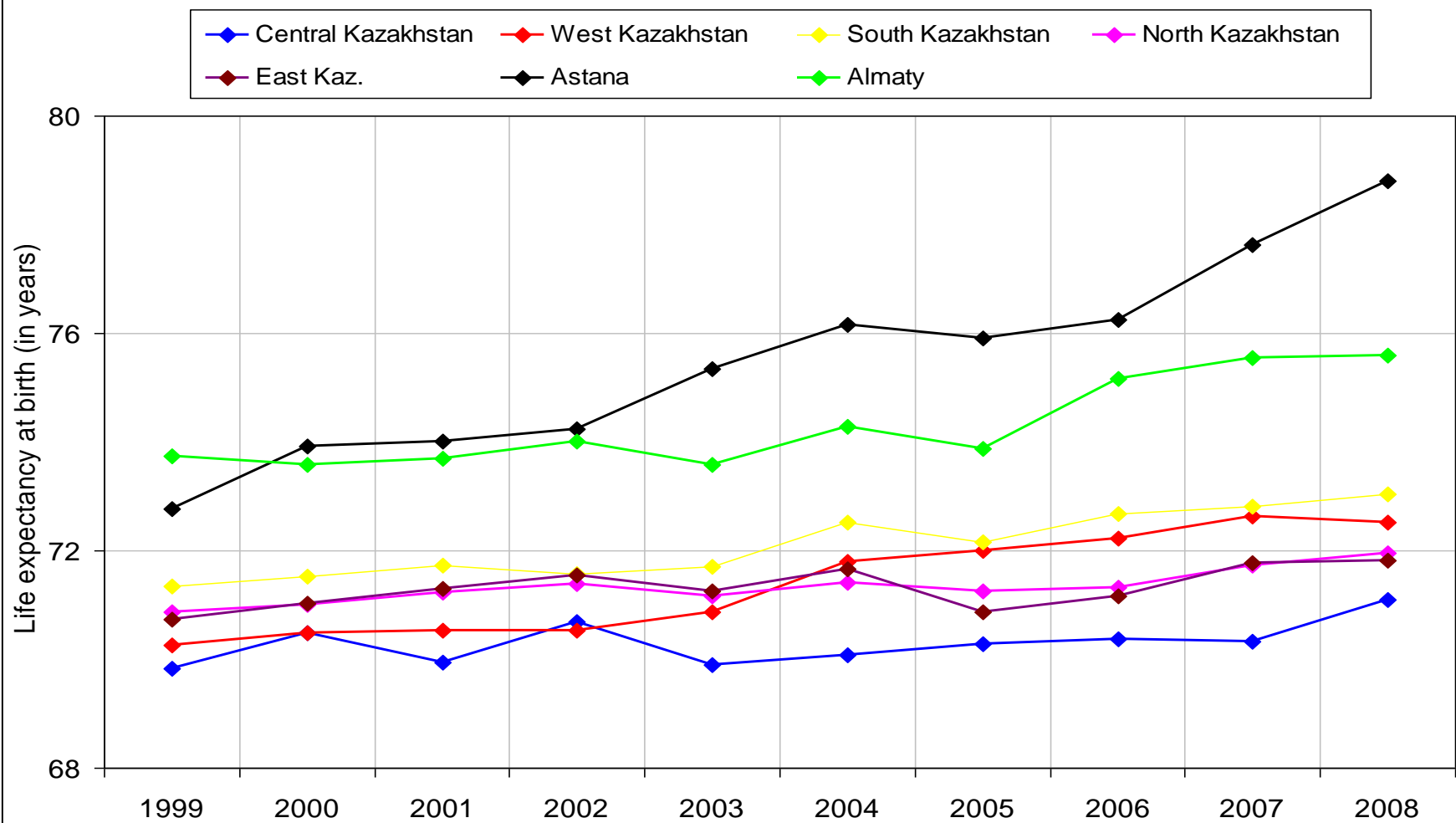
Life expectancy at birth in regions, 1999-2008 (Males)

Life expectancy at birth in regions, 1999-2008 (Males)

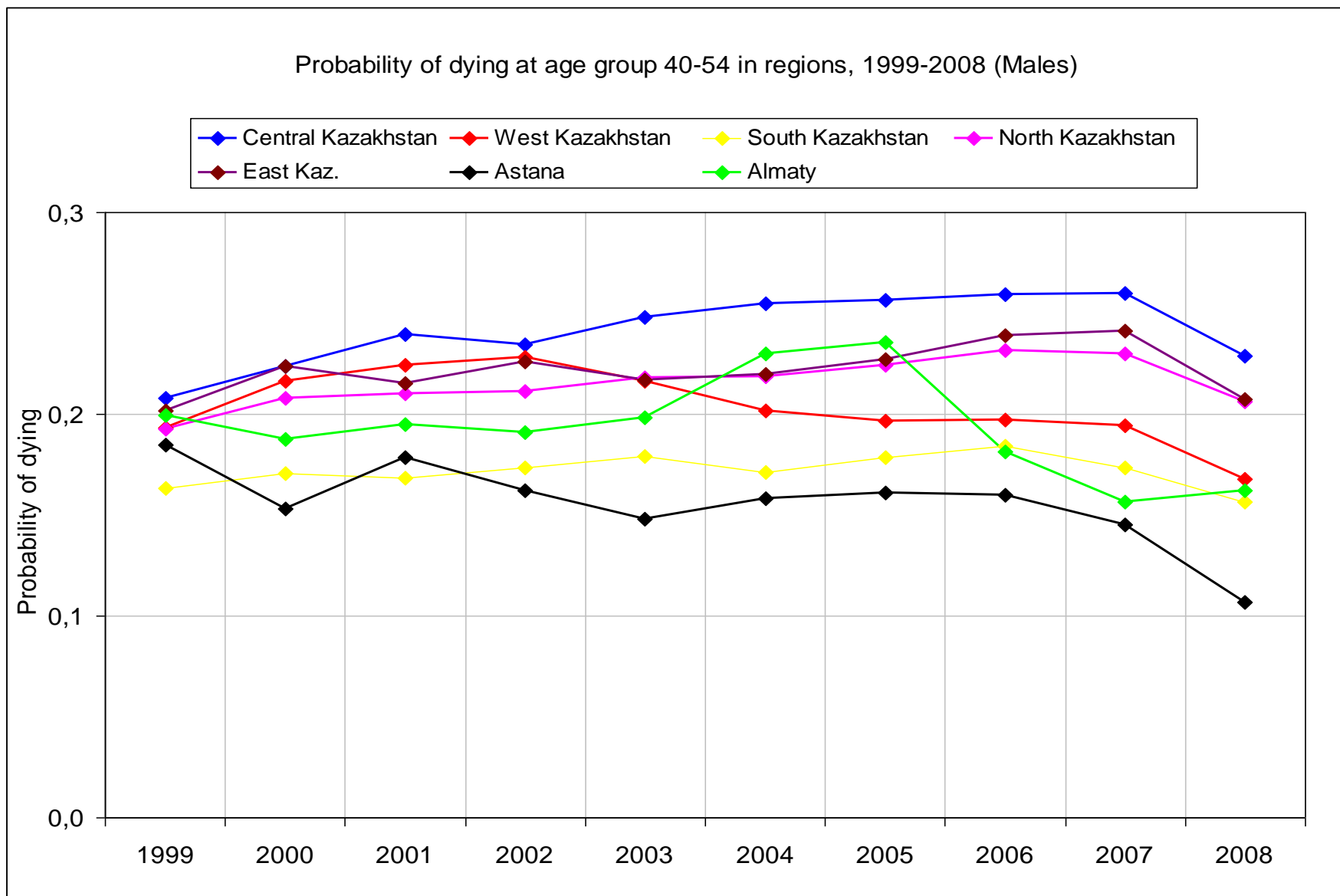


Life expectancy at birth in regions, 1999-2008 (Females)

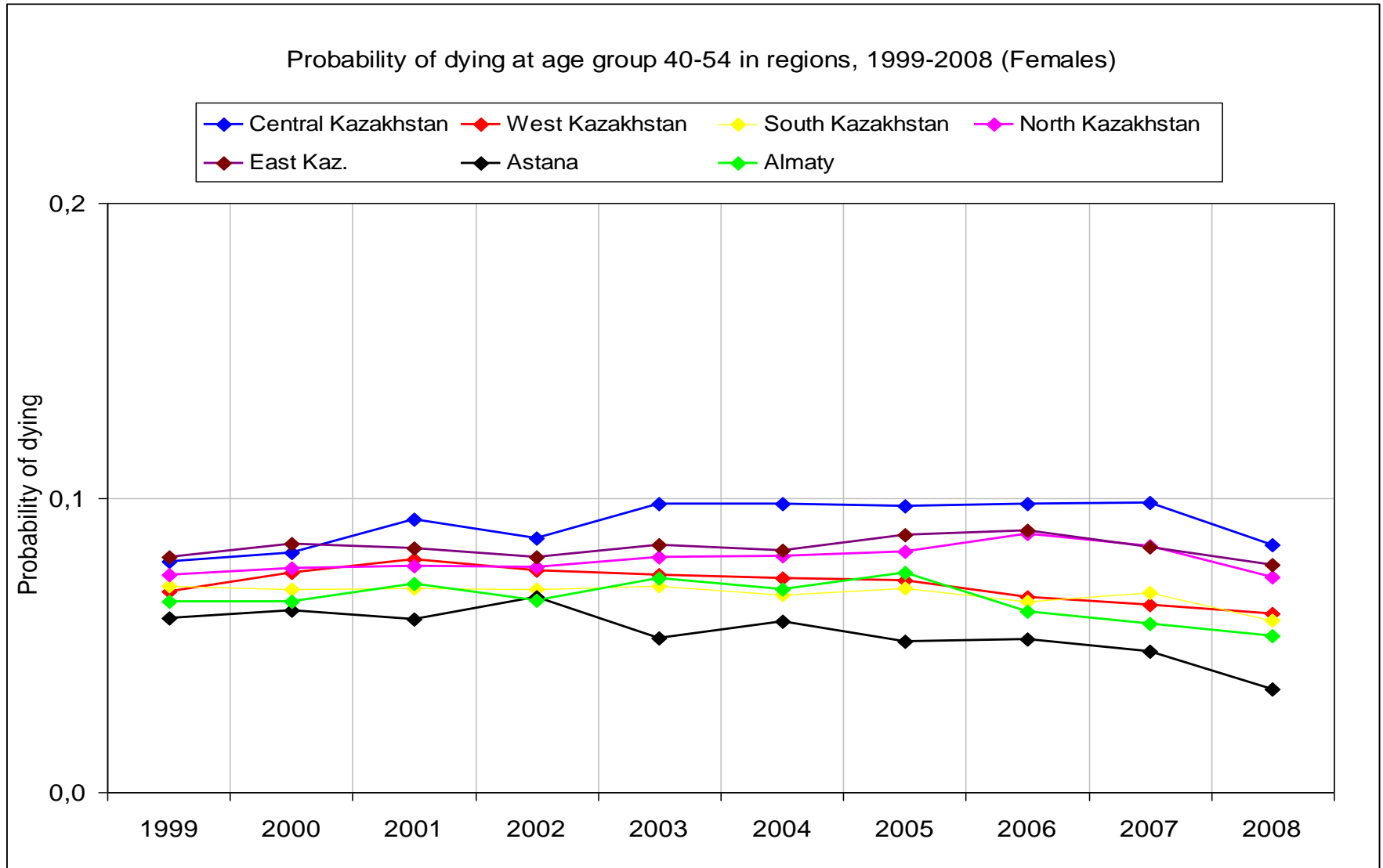
Life expectancy at birth in regions, 1999-2008 (Females)



Probability of dying at age group 40-54 in regions, 1999-2008, (Males)



Probability of dying at age group 40-54 in regions, 1999-2008, (Females)

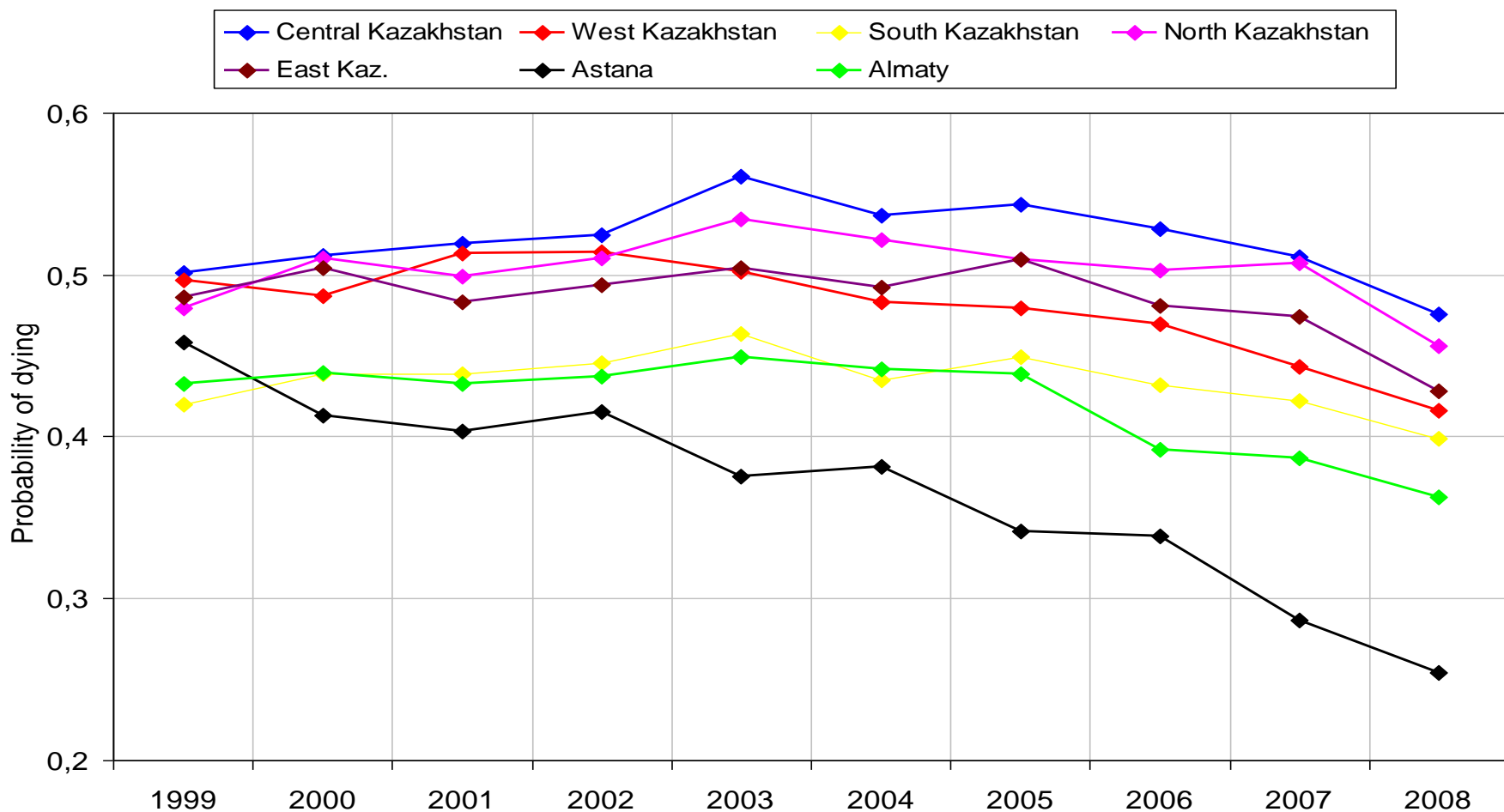


Cross-regional Variation of the probability of Dying for the Age Group 40-54 , 1999-2008, male and female

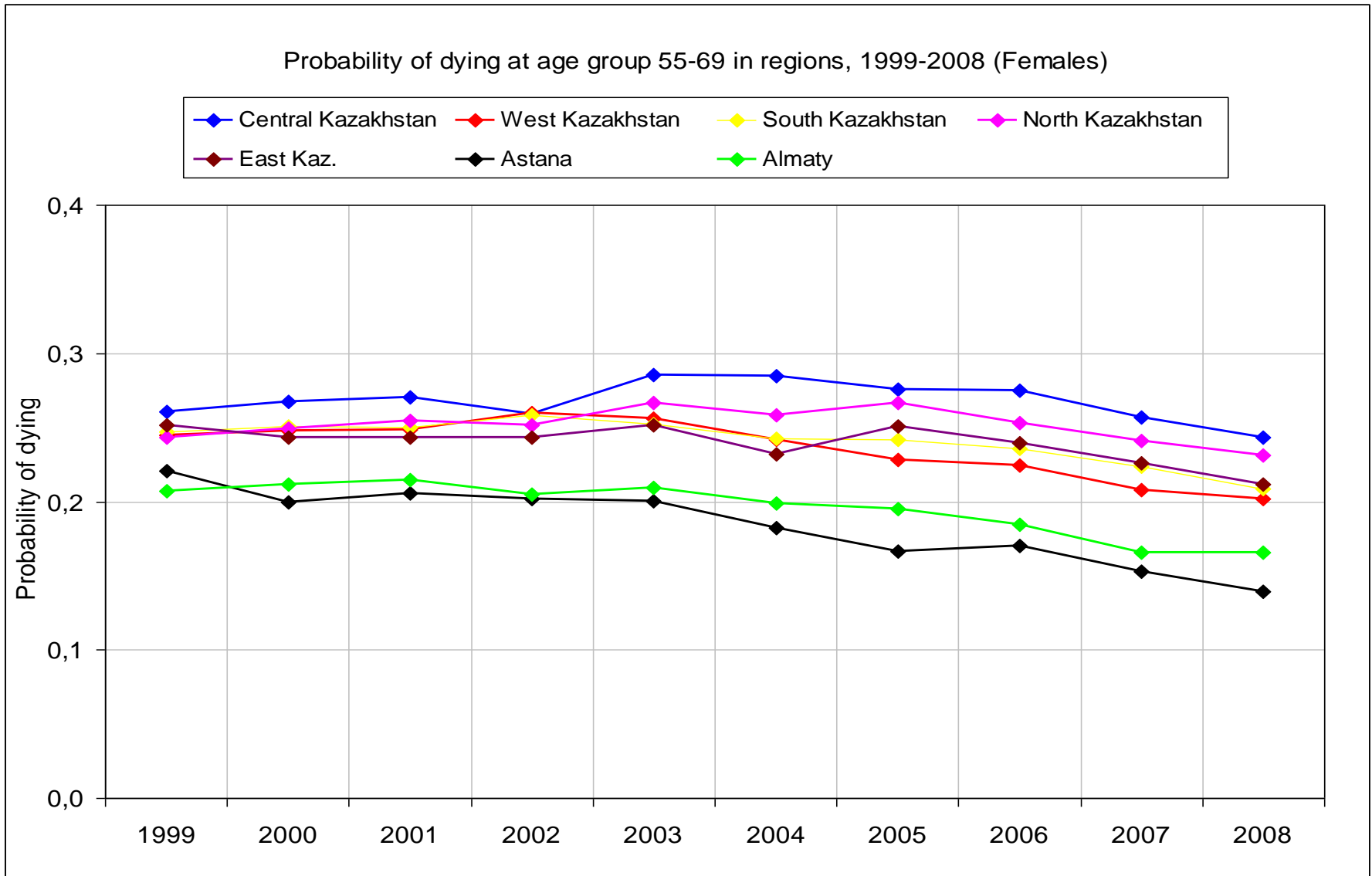
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
	Male									
Minimal value	0,154	0,153	0,157	0,162	0,148	0,150	0,161	0,160	0,145	0,107
Maximal value	0,219	0,237	0,247	0,243	0,254	0,268	0,270	0,264	0,272	0,235
Range	0,065	0,084	0,090	0,081	0,106	0,118	0,109	0,104	0,127	0,128
Standard deviation	0,02	0,03	0,03	0,03	0,03	0,03	0,03	0,03	0,04	0,03
Coefficient of variation	0,09	0,13	0,13	0,14	0,14	0,15	0,14	0,15	0,19	0,19
	Female									
Minimal value	0,059	0,062	0,059	0,065	0,052	0,058	0,051	0,052	0,042	0,035
Maximal value	0,081	0,085	0,095	0,087	0,099	0,098	0,098	0,100	0,099	0,089
Range	0,022	0,023	0,036	0,022	0,047	0,040	0,046	0,048	0,056	0,054
Standard deviation	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,02	0,01
Coefficient of variation	0,09	0,10	0,13	0,09	0,15	0,16	0,15	0,20	0,22	0,20

Probability of dying at age group 55-69 in regions, 1999-2008, (Males)

Probability of dying at age group 55-69 in regions, 1999-2008 (Males)



Probability of dying at age group 55-69 in regions, 1999-2008, (Females)

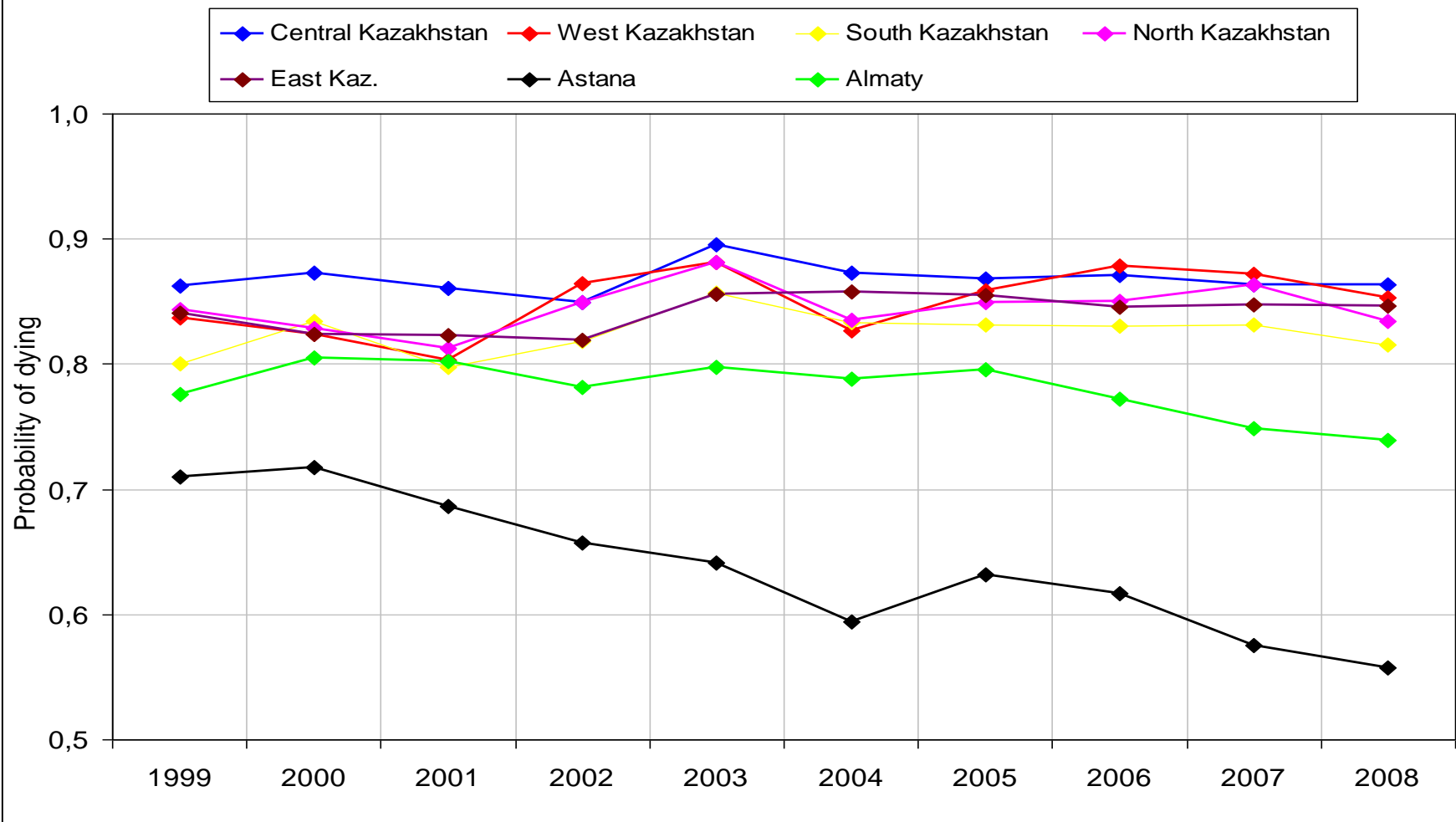


Cross-regional Variation of the probability of Dying for the Age Group 55-69 , 1999-2008, male and female

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
	Male									
Minimal value	0,407	0,412	0,403	0,416	0,376	0,381	0,342	0,339	0,286	0,255
Maximal value	0,552	0,519	0,534	0,548	0,566	0,542	0,555	0,538	0,521	0,476
Range	0,145	0,107	0,131	0,133	0,190	0,160	0,213	0,199	0,234	0,222
Standard deviation	0,04	0,04	0,04	0,04	0,05	0,05	0,05	0,05	0,06	0,05
Coefficient of variation	0,08	0,08	0,09	0,08	0,10	0,10	0,10	0,11	0,13	0,12
	Female									
Minimal value	0,207	0,200	0,205	0,202	0,200	0,182	0,166	0,170	0,153	0,139
Maximal value	0,274	0,270	0,278	0,268	0,295	0,294	0,285	0,287	0,268	0,244
Range	0,067	0,070	0,072	0,067	0,095	0,111	0,118	0,117	0,115	0,105
Standard deviation	0,02	0,02	0,02	0,02	0,02	0,03	0,03	0,03	0,03	0,03
Coefficient of variation	0,06	0,08	0,07	0,08	0,09	0,11	0,12	0,12	0,13	0,13

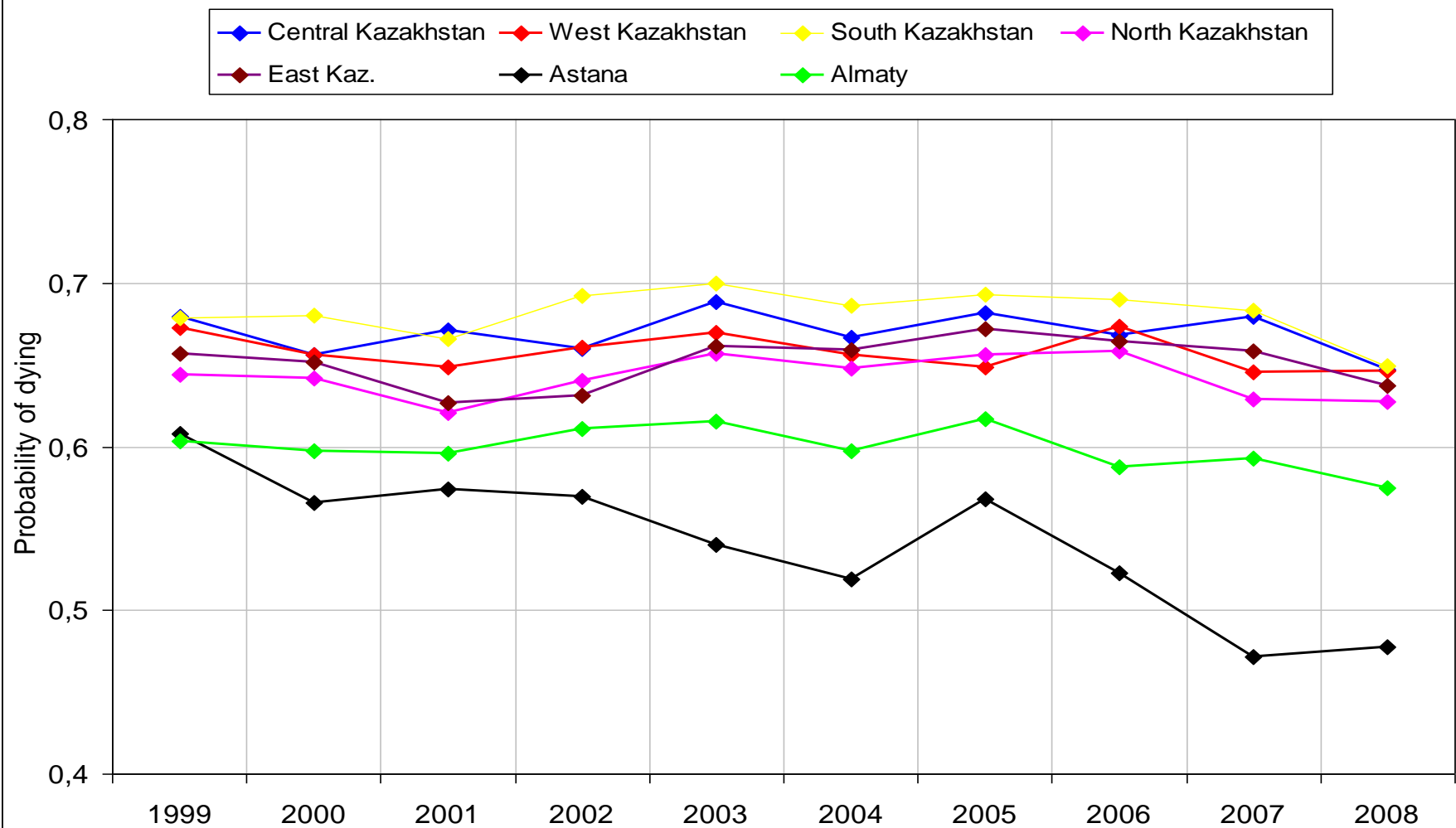
Probability of dying at age group 70-84 in regions, 1999-2008, (Males)

Probability of dying at age group 70-84 in regions, 1999-2008 (Males)



Probability of dying at age group 70-84 in regions, 1999-2008, (Females)

Probability of dying at age group 70-84 in regions, 1999-2008 (Females)



Cross-regional Variation of the probability of Dying for the Age Group 70-84, 1999-2008, male and female

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
	Male									
Minimal value	0,710	0,718	0,686	0,657	0,641	0,594	0,631	0,616	0,576	0,557
Maximal value	0,871	0,888	0,877	0,923	0,939	0,909	0,946	0,947	0,942	0,955
Range	0,162	0,170	0,191	0,266	0,298	0,315	0,314	0,330	0,367	0,398
Standard deviation	0,04	0,04	0,04	0,05	0,06	0,07	0,06	0,07	0,08	0,08
Coefficient of variation	0,05	0,05	0,05	0,07	0,07	0,08	0,08	0,08	0,09	0,10
	Female									
Minimal value	0,603	0,566	0,574	0,569	0,540	0,519	0,568	0,523	0,471	0,478
Maximal value	0,751	0,720	0,735	0,774	0,724	0,732	0,748	0,771	0,759	0,692
Range	0,148	0,154	0,161	0,205	0,184	0,213	0,180	0,248	0,288	0,214
Standard deviation	0,03	0,04	0,04	0,04	0,04	0,04	0,04	0,05	0,06	0,05
Coefficient of variation	0,05	0,06	0,06	0,06	0,06	0,07	0,06	0,08	0,09	0,07

Conclusion

- The Mortality level in Kazakhstan decreased over time for both sexes. But the gap in mortality between males and females slightly increased. The gap can be explained by the type of place taking into account that urban males have the higher mortality than rural ones, which can be caused by the accidents which mainly take place in urban areas.
- Central Kazakhstan has the highest mortality level whereas Astana has the lowest one for both sexes. Regional differentiation of mortality increased over time.
- The study is limited by the description of the mortality level on national and regional level. The contribution of causes of death to the overall mortality level and the possible influence of factors on the mortality can be the theme of further analysis.



Thank you