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**Young Demographers**

Department of Demography and Geodemography, Charles University in Prague, Faculty of Science

Charles University in Prague, Faculty of Science

# **ACTUAL DEMOGRAPHIC RESEARCH OF YOUNG DEMOGRAPHERS (NOT ONLY) IN EUROPE**

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

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## Changing fertility patterns in the South Kazakhstan region

*Aida Baigarayeva*

The main goal of this research is the understanding of changing fertility patterns in the South Kazakhstan region since 1990. As part of the global population development the world is in the process of demographic transition, and there is a global decline in mortality and fertility, Kazakhstan is no exception. Though, in recent years the total fertility rate has increased in Kazakhstan. Basically, Kazakhstan follows the worldwide trends. Thus we need to understand the mechanisms and ways of reproductive intentions and behaviour formation in the sphere of fertility. It is well known that one of the key factors in changing of demographic behaviour is socioeconomic components. Nevertheless, we will try to consider the impact of all factors that would have been able to make the adjustments in reproductive behaviour of citizens. Moreover we are interesting in revealing how population could achieve its original reproductive intention and originally planned and desired number of children in a family. Following trends and dynamics reproductive behaviours population in the South Kazakhstan region since 1990. From the beginning to the end within this research we will deal with a target group – women of Southern Kazakhstan, who are of reproductive age. In this research the author tries to find a causal link between reproductive behaviours, attitudes, intentions and, the most importantly, the process of their implementation under the influence of the population policy and other reason which impact to changing fertility patterns in South Kazakhstan region.

**Keywords:** reproductive intentions, reproductive behaviour, fertility patterns, South Kazakhstan region

In the last years the problem of fertility takes on special significance. Nowadays questions of fertility are relevant in order that the fertility rate decreased lower than replacement level in the developed countries. However we can observe that the developing countries follow the worldwide trends as well. Therefore understanding how and why fertility changes are required to research it.

In this research we consider the changes in fertility levels and age structures in the South Kazakhstan region on the background of its developments in the Kazakhstan during the period of rapid economic and social growth. The period of economic and social growth in Kazakhstan concern to last ten (1999–2009) years therefore we would like to observe how it is influence on the South Kazakhstan region. Thus, we try to retrace the dynamic of fertility in the South Kazakhstan region. Why did we choose this region? The South Kazakhstan region is the most traditional part in Kazakhstan. Therefore it is interesting to research if the South Kazakhstan region follows the worldwide trends or not. How is old family traditions work nowadays? Will fertility rate increase or decrease in the South Kazakhstan region? What kind of problem we have in fertility case? What are women intension and attitudes in reproduction?

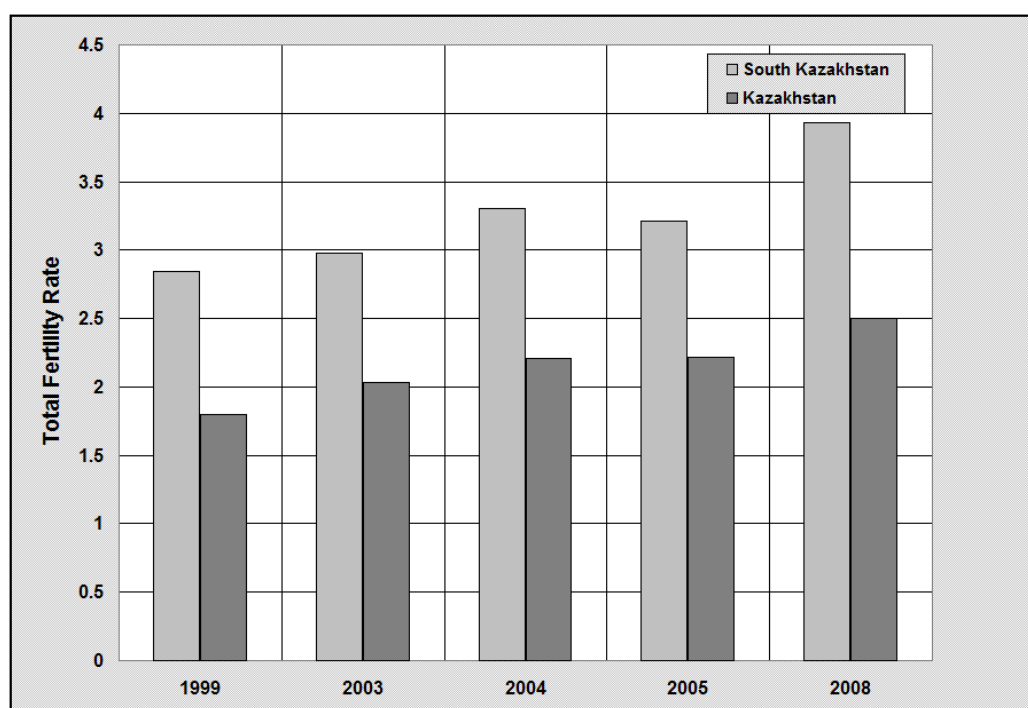
Thus, the South Kazakhstan region takes a special place in the whole Kazakhstan. In the South Kazakhstan region concentrate a significant part of country population, where live 14,82 % of Kazakhstan population. In the beginning of 2009 population size in the South Kazakhstan region was 2381, 5 thousands of people which is more than in 2008 for 2,1 %.

The South Kazakhstan region is densely populated district where density of population is 19,5 person per 1squared km whereas in Kazakhstan 5,6. Most part of the population in the South represent inhabitants from the rural areas 62,4 % (1486, 5 thousands of people) and 37,6 % (895,0 thousands of people) are urban residents. The rural inhabitants have a large value in all spheres. According to the number of live birth which is 322, 3 thousands of people in whole region from the period 2004 to 2008, rural areas took 59,8 % (192, 8 thousand of people) out of all numbers of live birth. In this (from 2004 to 2008) period in the region were born 51,4 % boys (165, 7 thousands of people) and 48,6 % girls (156, 6 thousands of people). Crude birth rate in the South Kazakhstan region is 32,0 live birth per 1000 of population (2008) which is the highest in Kazakhstan. However in urban areas of South 37,4 live birth per 1000 of population (2008) whereas in rural 28,7 live birth per 1000 of population (2008)

High level of fertility in the South Kazakhstan region we can observe among Kazakh population which is equal to 73,5 % (236, 8 thousands of people) out of all live birth from the period 2004 to 2008. Despite the fact that the South Kazakhstan region is multinational, Kazakh population take most part of population in South 70,1 % – Kazakhs, 17,4 % – Uzbeks and 6,1 % – Russians.

Therefore the South Kazakhstan region takes specific weight in Kazakhstan, especially in case of fertility (figure 1). In respect to history it was common among Kazakhs women to have big families. Most of the Kazakh women who were born in thirties and forties years of twenty century had at about 7–9 children and some of them 10–13 children. Such trends we can observe among Uzbeks women as well. Nowadays the situation in fertility changes but still remains the highest.

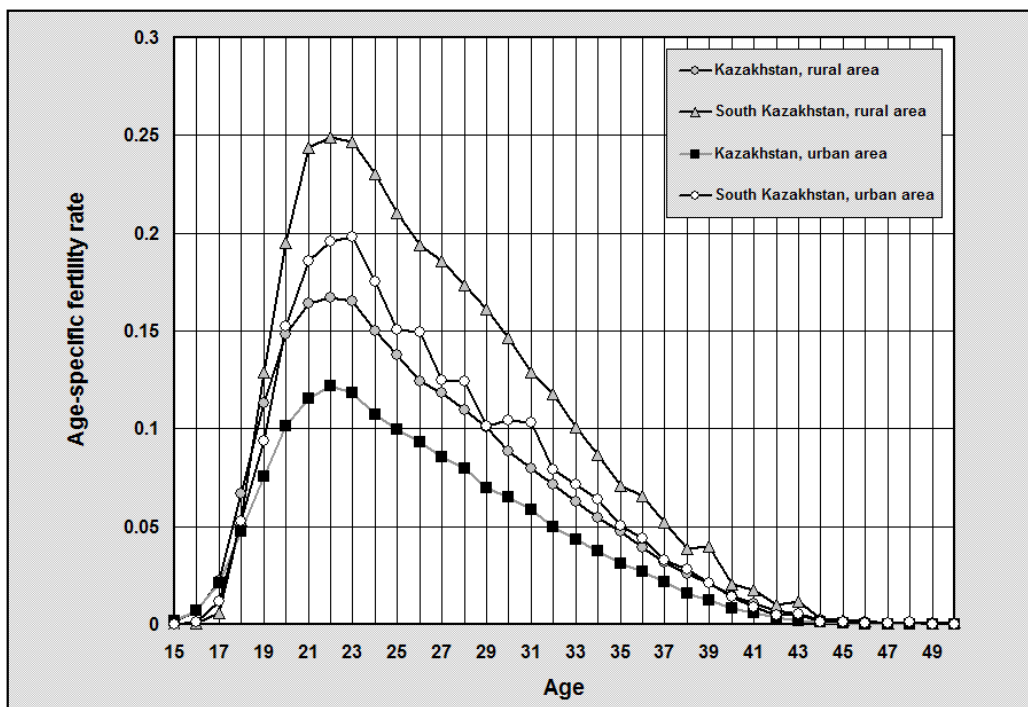
**Figure 1 – Total fertility rate in Kazakhstan and South Kazakhstan in 1999 to 2008**



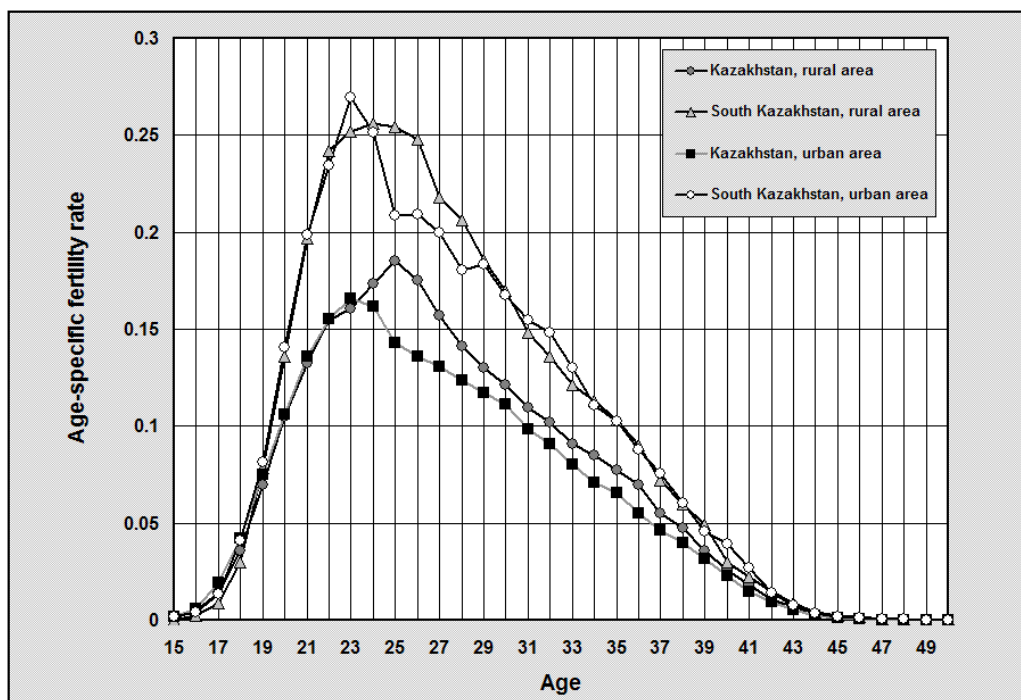
Obviously not only historic factors determine the level of fertility in the South Kazakhstan region. That is why we try to identify fertility levels, age structure and trends of its developments in the South Kazakhstan region. However it is necessary to specify rural and urban reproductive behaviour in the South Kazakhstan region. In order that in rural areas of the South Kazakhstan region live most part of population of region and especially Kazakhs ethnic what is determine the high level of fertility. However we cannot rely only for ethic factor because different lifestyle derives different aim in life. Therefore to having more children in the rural areas is considered as an additional labour power in most of the families. With regard to way of life in countryside of South Kazakhstan region most families live off the soil and farming incomes.

Thus, the trend of high fertility level in rural areas we can observe in the South part of country and in Kazakhstan as well (figure 2). However in recent years the situation of fertility at age of 22–23 is changed in the South Kazakhstan region (figure 3). As we can see that in 2006 fertility has increased among women at age of 22–23 in the urban area. It is attested that young generation after secondary school is moving to the city for being educated at university. Late on young women do not see any reason to be back to the village and they are getting married in the city. Furthermore, it is very common in South Kazakhstan region to get marry in the last course at university and in first year of marriage to give first childbearing what is correspond to the age of 22–23.

**Figure 2 – Age-specific fertility rate in rural and urban areas in the South Kazakhstan and Kazakhstan, 1999**



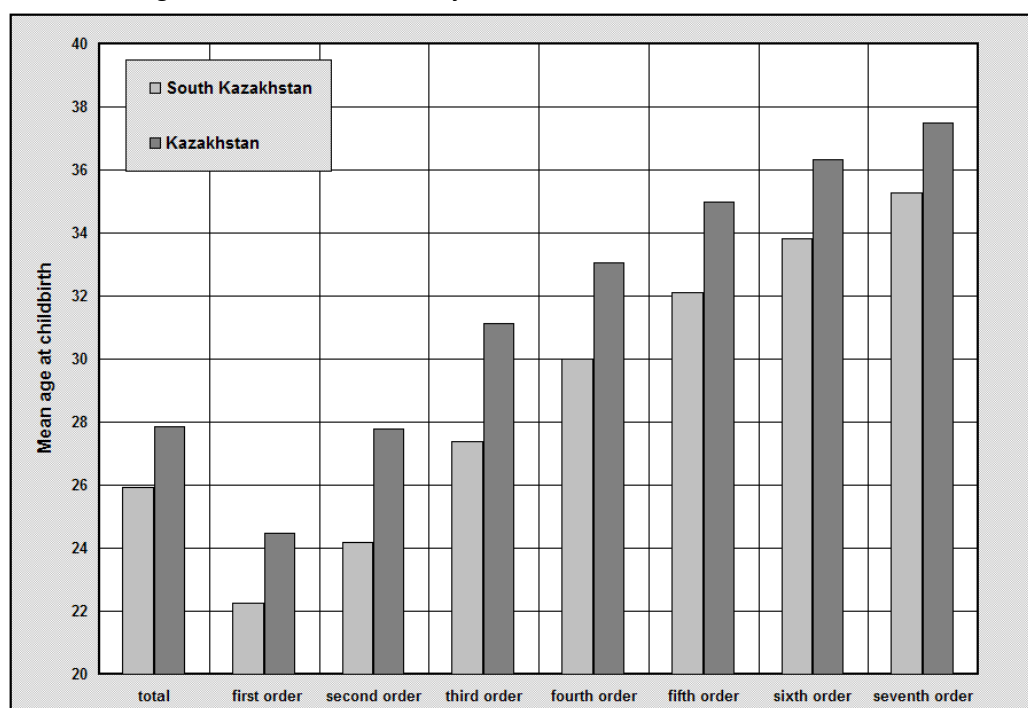
**Figure 3 – Age-specific fertility rate in rural and urban areas in the South Kazakhstan and Kazakhstan, 2006**



However mean age at first childbirth in the South Kazakhstan region depends on ethnic factor as well. According to the result of questionnaire survey in June of 2003, who was carried out by demographer and PhD of historical science, A.B. Yessimova. 47 % of Kazakh women and 32 % of Russian women gave first childbearing at age of 21–23, whereas 48 % of Uzbeks women gave first

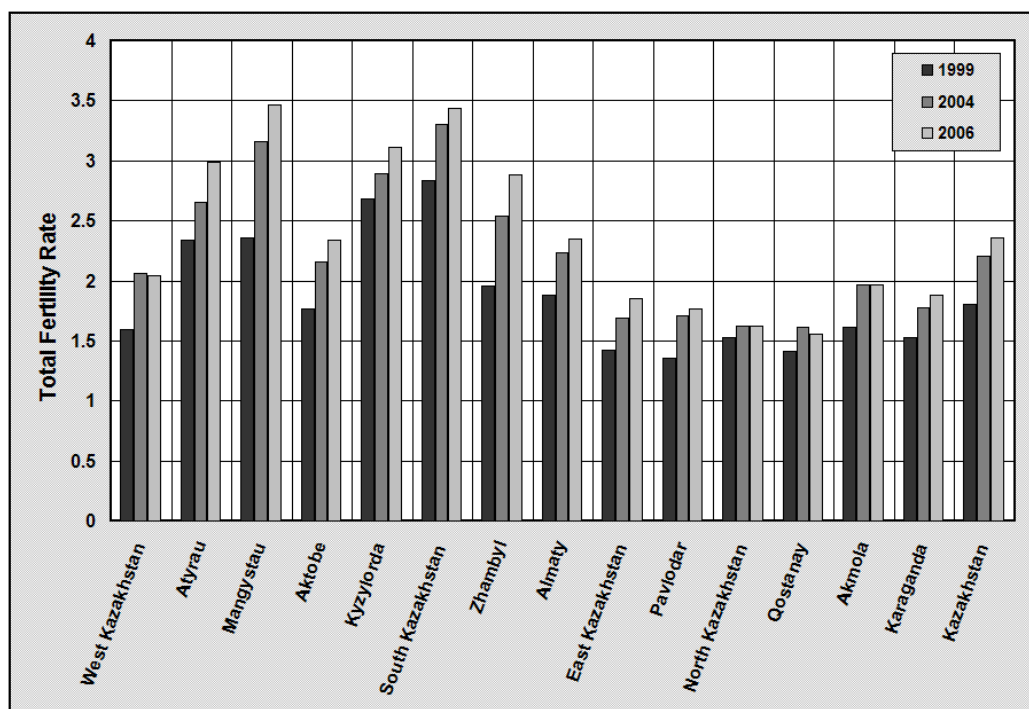
childbearing at age of 18–20 among all respondents. According to statistical data results from respondents are quite clear because as we can see in (figure 4) that first childbirth is at age of 22,2 in the South Kazakhstan region and at age of 24,4 in Kazakhstan. In comparison with whole Kazakhstan differences between South Kazakhstan about 3–4 years is at second, third and fourth childbirths (figure 4). We assume that such behaviour in fertility relate to many factors – ethnics, cultural and social. In respect that in South part of country majority of population is Kazakh ethnic, who is keeping traditional culture and get marriage early they carry out their reproductive aims early. However the mean age at childbirth has increased in whole Kazakhstan. As experience has shown that in last year's percent of women are getting married at age of 20–24 has decreased, whereas at age of 25–29 has increased in whole Kazakhstan.

**Figure 4 – Mean age at childbirth total and by order in Kazakhstan and South Kazakhstan, 2006**



Thus, the trend of increasing mean age at childbirth considered its negative effect in fertility rate. Nonetheless that women get married late than it was in the past time, they assume that the latest period to have a child can be at age of forty. (From questionnaire survey 'Research of reproductive and marriage behaviour of population', by analyst of Institute of economical research, G. A. Agybayeva). Thereby, the reproductive period of having children became shorter and in case of rapid socio-economical growth families under the condition to decide to have more children or not. It is also associated with increasing in standard of living nowadays in Kazakhstan, when the cost of living is rising. However in the recent years fertility rate has increased in Kazakhstan, but in the most part of country it is still lower than 2,0 in total fertility rate (figure 5). According to Russian demographer A.G. Vishnevskiy: 'In the Central Asia it is supposed to have an increasing in fertility rate in the future because of typical traditional demographic behaviour that is why fertility level depends on external factors than to internal attitudes of people. However it is possible to expect such trends in fertility only for short-term period, generally it will decline according to the conformity to demographic transition'.

Figure 5 – Total fertility rate in Kazakhstan and its regions, 1999, 2004, 2006



Thus, contemporary demographic situation in fertility case is required to be pay attention for it. With regards to economic development and changing in standard of living we have to understand how it is influence on the role of women, their reproductive behaviour, attitudes and which is more important their opportunity to have desirable number of children. According to the research by demographer and PhD of historical science, A.B. Yessimova in the South Kazakhstan region 33,6 % of all respondents thought are the ideal number of children in family four. However 32 % of Kazakhs women have a plan to three children, 45 % of Russians women are plan for two children and 23 % of Uzbeks women are plan of three to five. In general 29,4 % of all respondents have a plan to three children, but if they have a wide range of opportunity (economical and social welfare) 22,9 % of respondents will give four childbearing and 20,6 % will give five childbearing.

Therefore we are required to have a detailed program in supporting family, not only to support women in giving childbearing. In respect that in the South Kazakhstan region lives a significant part of country population and southern women make an important contribution to fertility rate in whole Kazakhstan (figure 6). Furthermore such positive trends in fertility in the South Kazakhstan region we can observe in the age-specific fertility rate by birth as well (figure 7–10).

Figure 6 – Age-specific fertility rate in Kazakhstan and South Kazakhstan, 1999, 2006

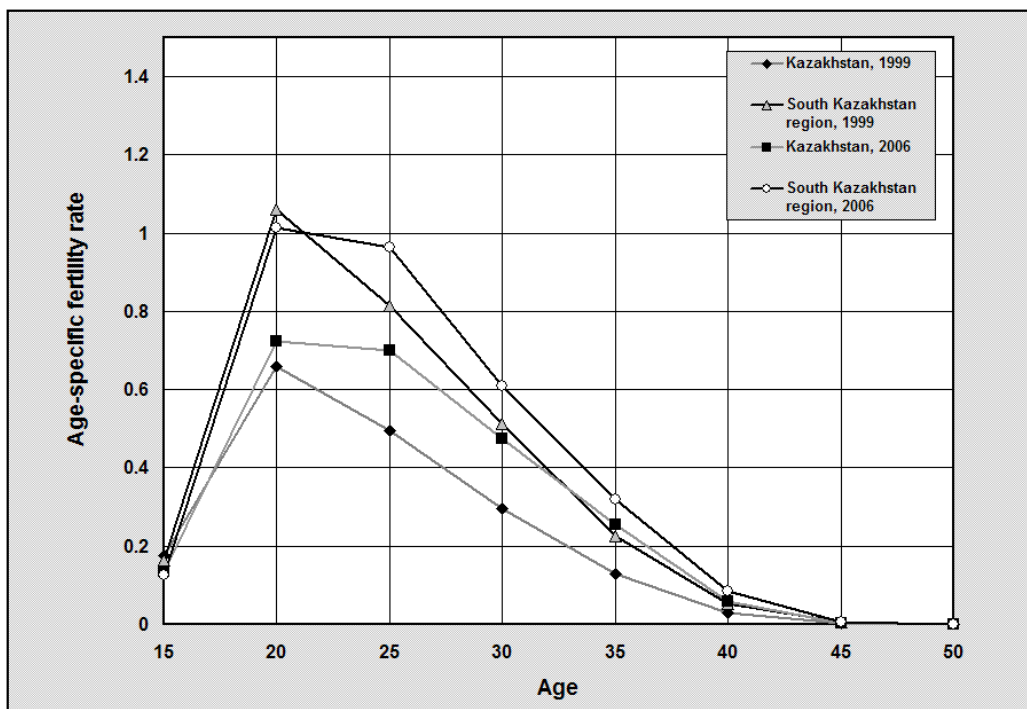


Figure 7 – Age-specific fertility rate by birth order in Kazakhstan, 1999

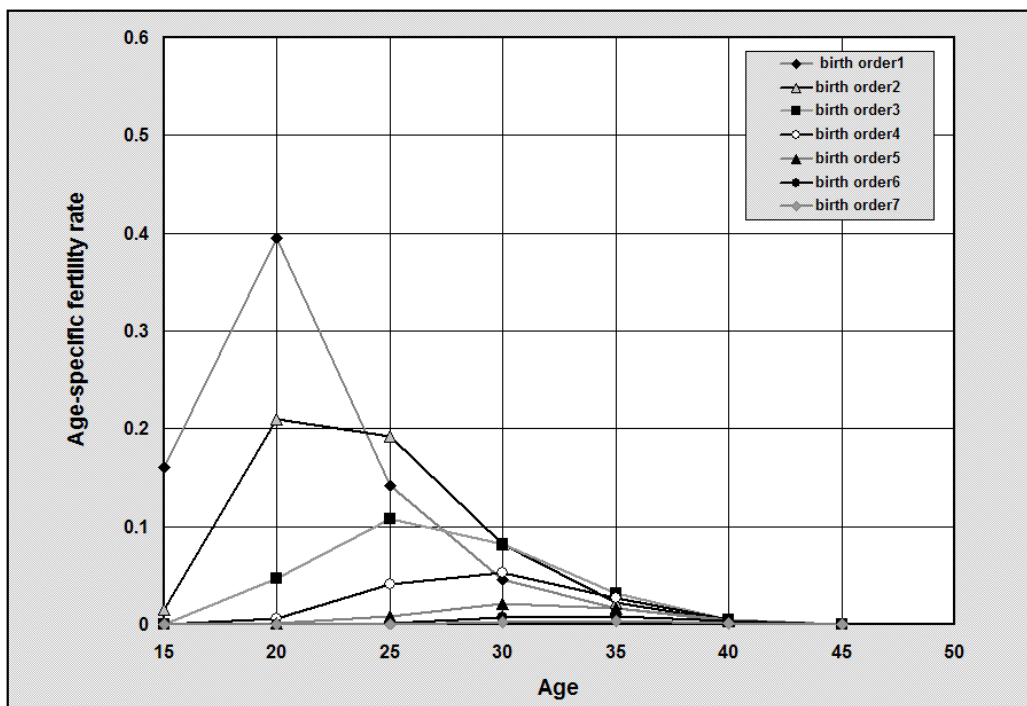


Figure 8 – Age-specific fertility rate by birth order in South Kazakhstan, 1999

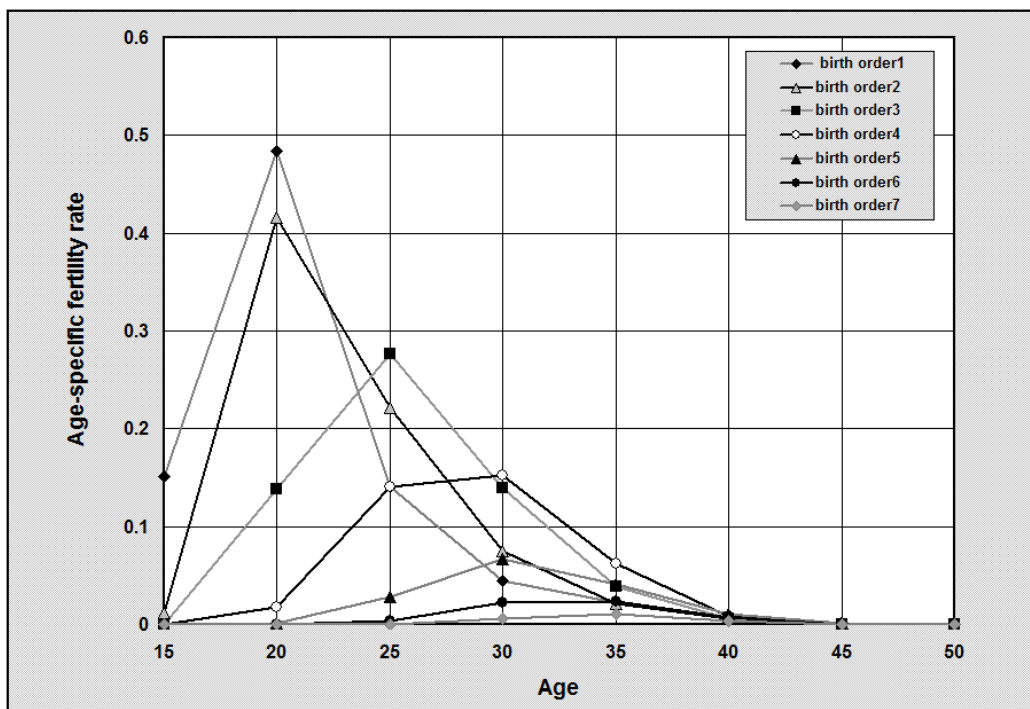


Figure 9 – Age-specific fertility rate by birth order in Kazakhstan, 2006

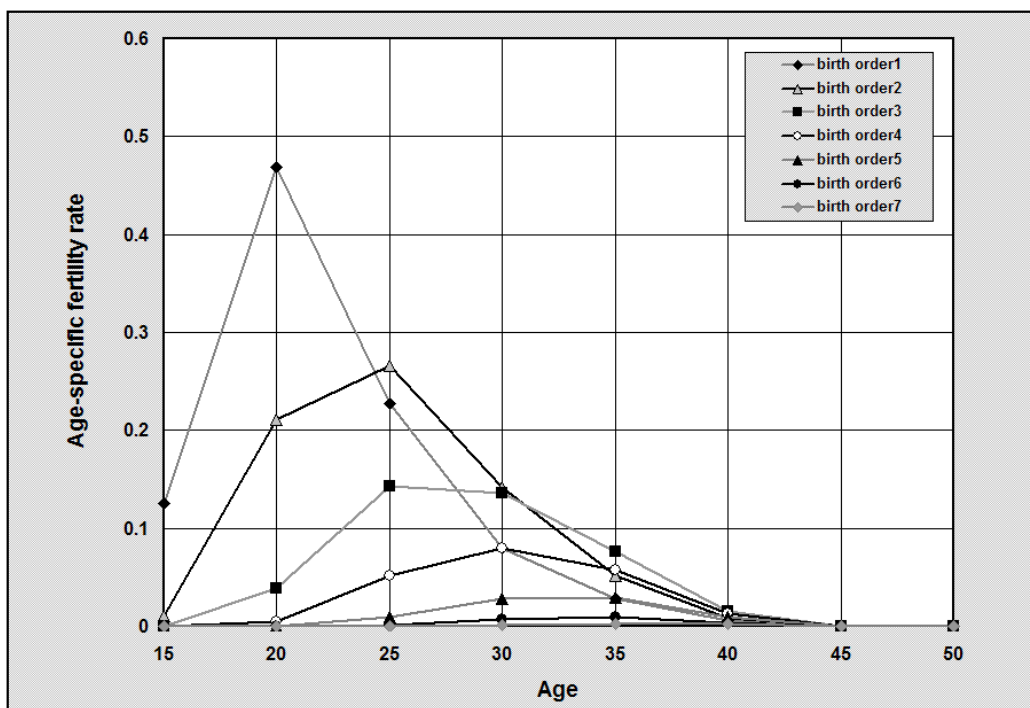
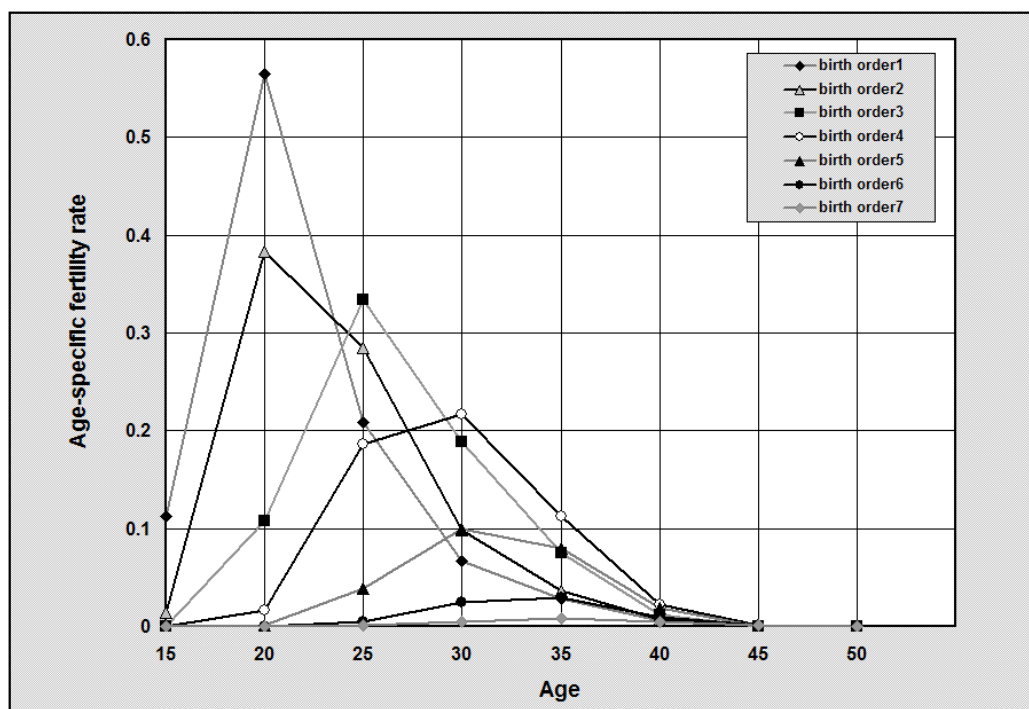


Figure 10 – Age-specific fertility rate by birth order in South Kazakhstan, 2006



Thus, the main question is will it keep or increase or decrease such a positive trends in the South Kazakhstan region. As we can observe the dynamic in fertility rate in South Kazakhstan in last ten years has regularly increased. It can be determine according to mixed of factors: rapid economic growth, traditional fertility among Kazakh women and opportunity for who already had a plan to have more children. It means that in the same time with young mothers, women at age of 35–40 gave childbearing for the last their child with a glance to the government support. However in north, east and central part of Kazakhstan we can not mention a significant increasing in fertility rate in recent years (figure 5). Moreover total fertility rate in those regions even does not get to 2,0 which is can be determine with different factors: women participations in the labour market and prevalence specific weight of European inhabitants (Russians, Ukraine's) there, who normally has one or two children in family.

Despite the fact that in South part of country we observe increasing in fertility rate it does not mean that we can expect continually increasing fertility. As experience has shown, generally, fertility rate is increasing and decreasing at different stage. Therefore we assume that in the South Kazakhstan region it will decrease due to factors: of rapid economic growth, rising in cost of life, and those – women in latest period of reproductive age already carried out their purpose in fertility, however generation from 1980s has different view of life. Moreover, according to the crisis which we had in 1990s when fertility rapidly decreased, today is time for reproduction of this generation and their view of life more individual as well. Therefore we assume that the dynamic in fertility will change to lowering. However the fertility patterns will present family of three children in Kazakh ethnic and family of two in European inhabitants (Russians, Ukraine's) in the South part of country.

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## Recent changes in extramarital fertility in Kazakhstan according to ethnicity

*Saule Dyussupova*

Kazakhstan is one of the rapidly developing countries in Central Asia. There are more than 130 ethnicities, each of them represents their own attitudes, values and religions but all ethnicities showed dominant family form – marital, and very likely that non-marital one could occur as a modern kind of family and could spread out. However, the share of extramarital birth has recently decreased in Kazakhstan. The contribution explains this phenomenon according to ethnicities, which are more sizeable there. Also, the author explains all possible reasons of changes in the proportion of extramarital fertility in Kazakhstan during the 1999–2008.

**Keywords:** Kazakhstan, changes, extramarital fertility, ethnicity

Kazakhstan is a multiethnic (multinational) post-Soviet country. There are more than 130 ethnic groups; the most sizeable of them are Kazakhs (53%), Russians (30%), Ukrainian (3.7), Uzbek (2.5%). [1] Each ethnicity is distinctive in culture, traditions, life values, demographic and social attitudes which effect fertility. For example, in Kazakhstan, those ethnic groups, that are more traditional, have more children and most of births are given in marriage, but those ethnic groups that are more modern, have less children and more frequently births – outside marriage. But what was the speed of changing trend of extramarital fertility and what was the reason of it? These questions will be answered in the research paper.

However, in general, despite the fact that in many countries cohabitation partnership becomes more and more popular nowadays, this indicator decreased in Kazakhstan. According to ethnic differences, however, an upward trend was observed among some traditional society (like Uzbek), which will be explained in the next paragraphs.

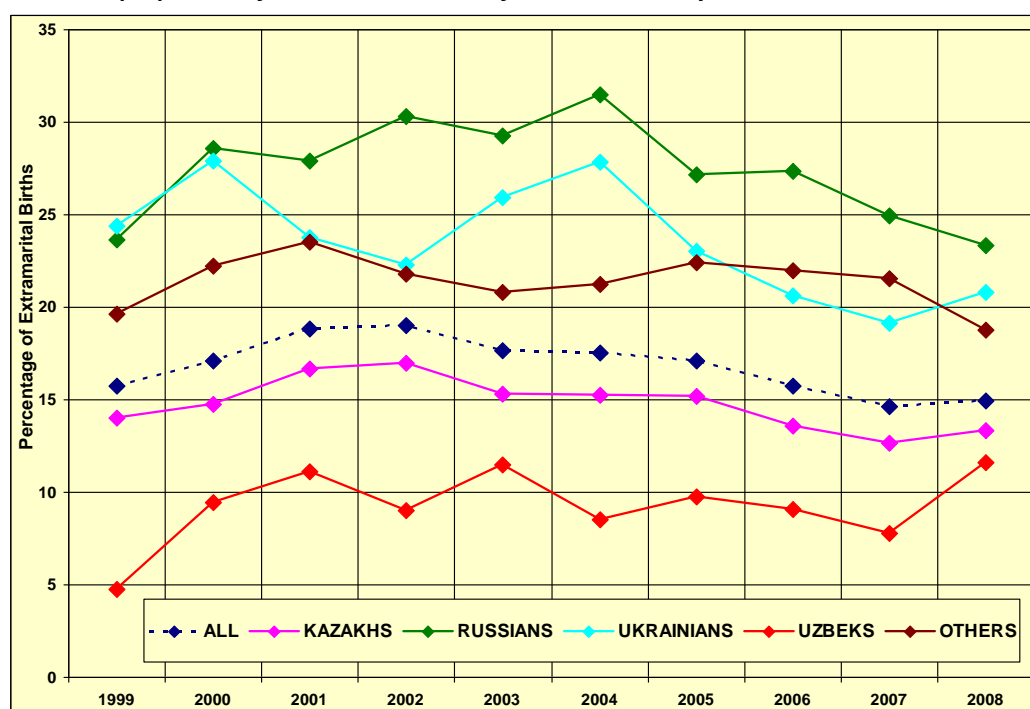
As far as the data and measurements are concerned, the data were taken from the Agency of Statistics of the Republic of Kazakhstan, for the period from 1999 to 2008. The proportion of extramarital births, and also this proportion specified according to age of mothers were used for

subsequent analysis. Mother's age started from 16, the minimum age of getting married up to the end of reproduction ages of women, which is 49 and over.

So, to clarify social aspects, the ethnic groups were divided into 3 types of society: traditional, non-traditional and mixed traditional. Traditional type includes Uzbek ethnicity, non-traditional Russian and Ukrainian, and mixed traditional – Kazakh ethnic group. In terms of the last type of society (mixed), regional differentiations of more or less traditional type of family among Kazakh ethnicity is relatively visible. For instance, the Southern and the Western Kazakhstan are more traditional than the Northern and the Eastern parts that are more modern.

Non-traditional ethnicities (Russians and Ukrainians) show higher proportion of extramarital birth compared with traditional ethnicities. However, traditional ethnicities have experienced faster increasing proportion of extramarital birth during the study period, while non-traditional population show a slowly decreasing trend of the percentage of extramarital birth (Figure 1).

**Figure 1 – The proportion of extramarital births of selected ethnicity in Kazakhstan, 1999–2008**



Source: Author's calculations based on the data from the Agency of Statistics of the Republic of Kazakhstan.

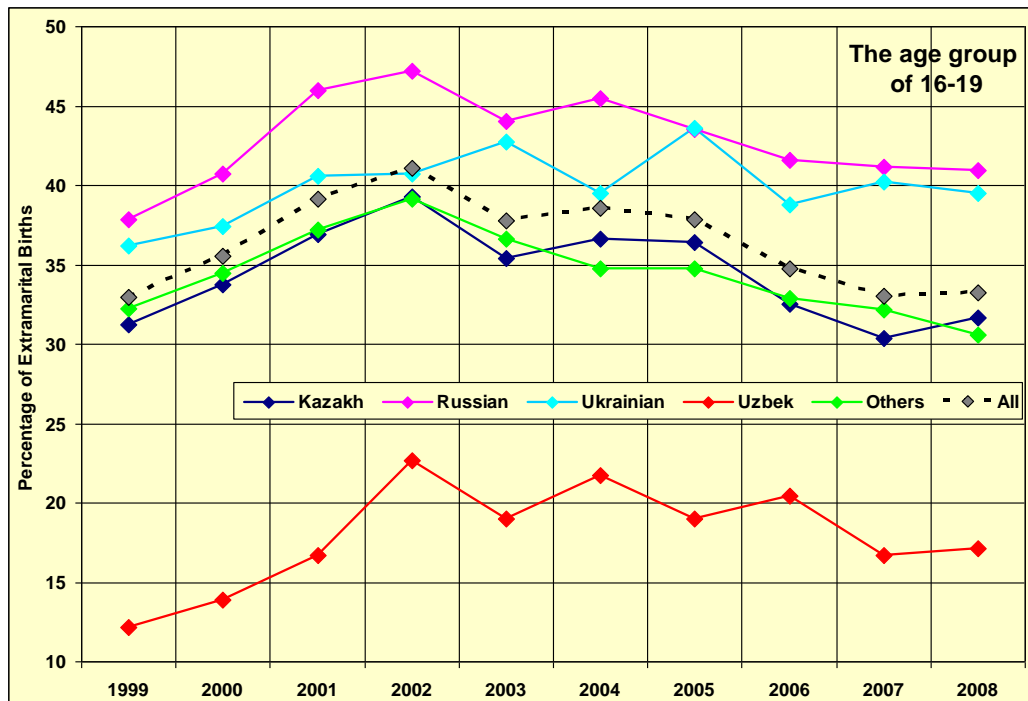
Having analyzed extramarital births by mother's age groups (16–19, 20–24, 25–29, 30–34, 35 and over), we have found out that the highest proportion of extramarital births were among the youngest age group and the lowest – among the oldest age group. Russian ethnicity displayed the highest percentage of extramarital births, whereas Uzbek ethnicity showed the lowest percentage in each age group during the 1999–2008. Moreover, each older age group displays lower percentage in the consecutive order.

The figures 2–7 show the proportions of extramarital fertility for each age group by ethnicity. In addition, the table 1 shows the number of extramarital births between 1999 and 2008.

The figure 2 presents the trend of extramarital births according to ethnicity at the age group of 16–19. As it was mentioned above, the lowest percentage of extramarital births is typical among Uzbek ethnic group, the highest – among Russians. However, the most important point is that the Uzbek ethnic group shows the highest upward tendency from 12.1 % in 1999 to 17.1 % in 2008, which means 1.41 times higher from the beginning of that period (see Table 1). Between 1999 and

2008 the highest percentage of extramarital births was observed in 2002 among almost all ethnic groups, excluding Ukrainians, and after 2002 the tendency was slowly going down.

**Figure 2 – The proportion of extramarital births of selected ethnicity at the age group 16–19 in Kazakhstan, 1999–2008**

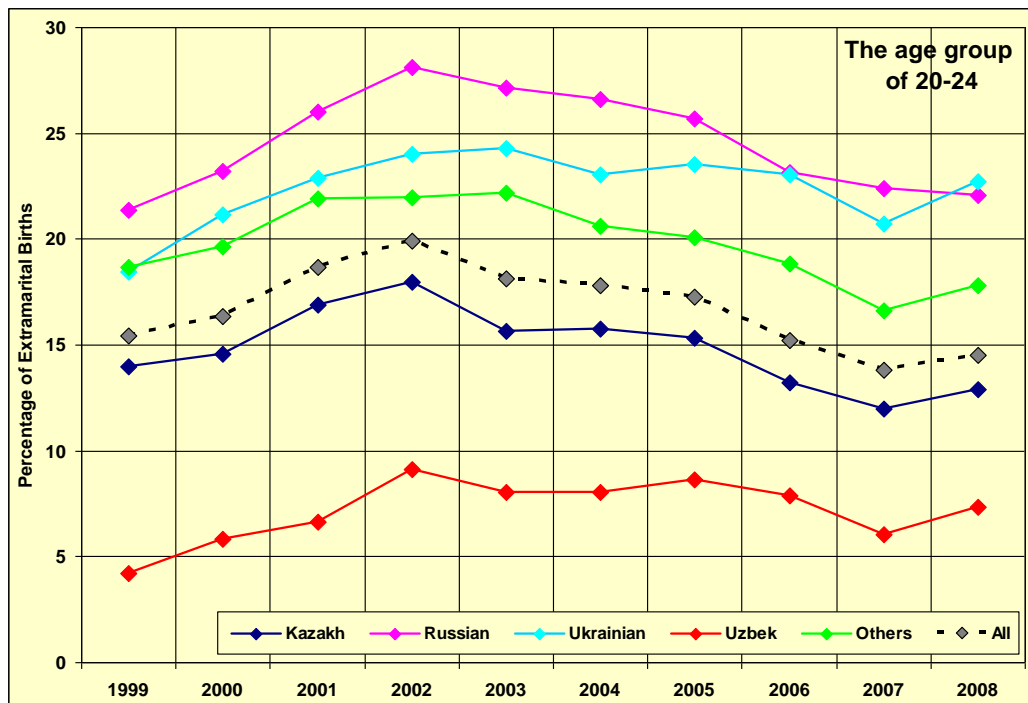


Source: Author’s calculations based on the data from the Agency of Statistics of the Republic of Kazakhstan.

The percentage of extramarital births of the next age groups 20–24, 25–29, 30–34 is relatively lower than in previous age group, despite the fact that the graphs look similar (but the scale is different): the lowest level is observed among Uzbeks and the highest among Russian ethnic groups. In 2002 almost every ethnicity experienced the “peak” of percentage of non-marital births, but among Uzbek ethnic group it was at the age group 25–29 in 2005 and at the age group 30–34 in 2006. (see Figure 3, 4, 5 and 6).

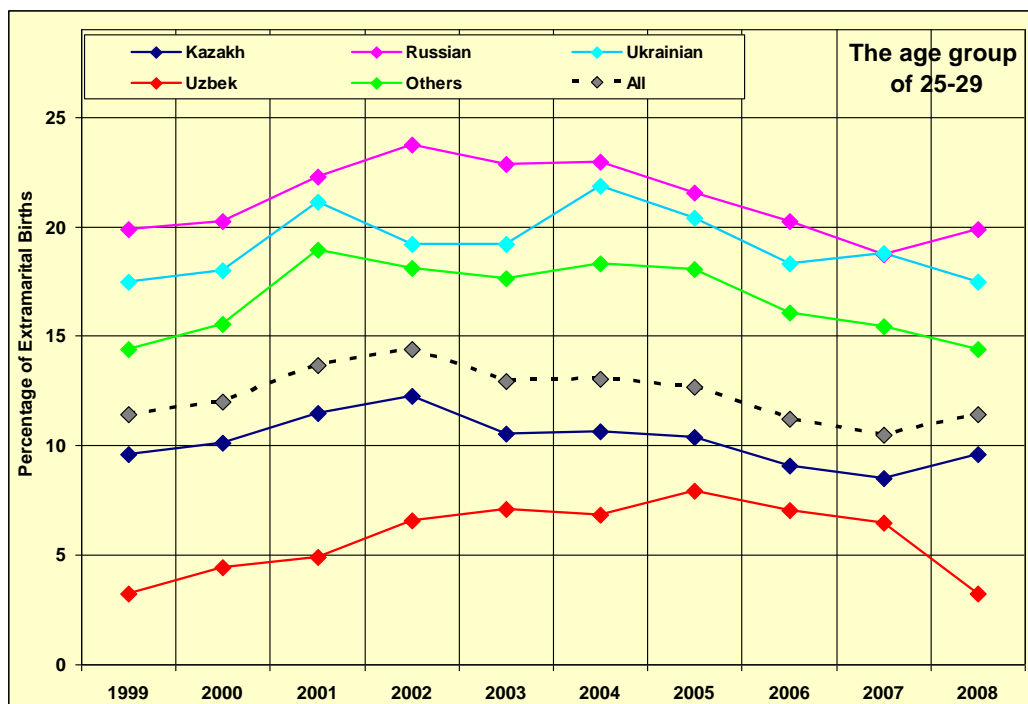
The oldest age group 40 and over, show fluctuations due to the small numbers. (see Figure 7)

**Figure 3 – The proportion of extramarital births according to ethnicity at the age group 20–24 in Kazakhstan, 1999–2008**



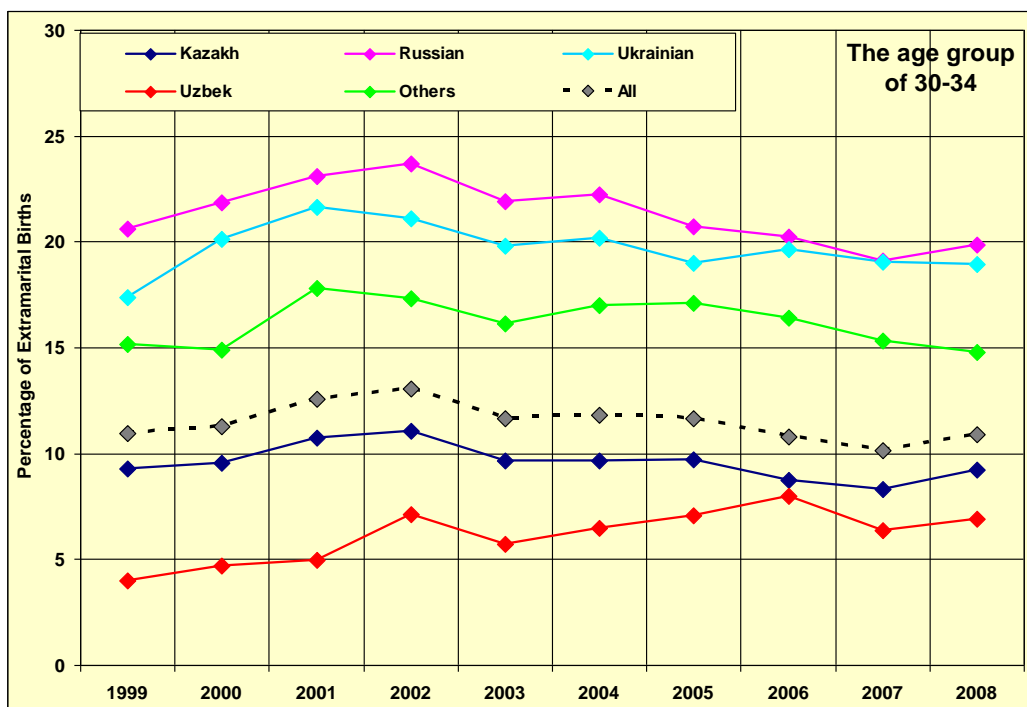
Source: Author's calculations based on the data from the Agency of Statistics of the Republic of Kazakhstan.

**Figure 4 – The proportion of extramarital births according to ethnicity at the age group 25–29 in Kazakhstan, 1999–2008**



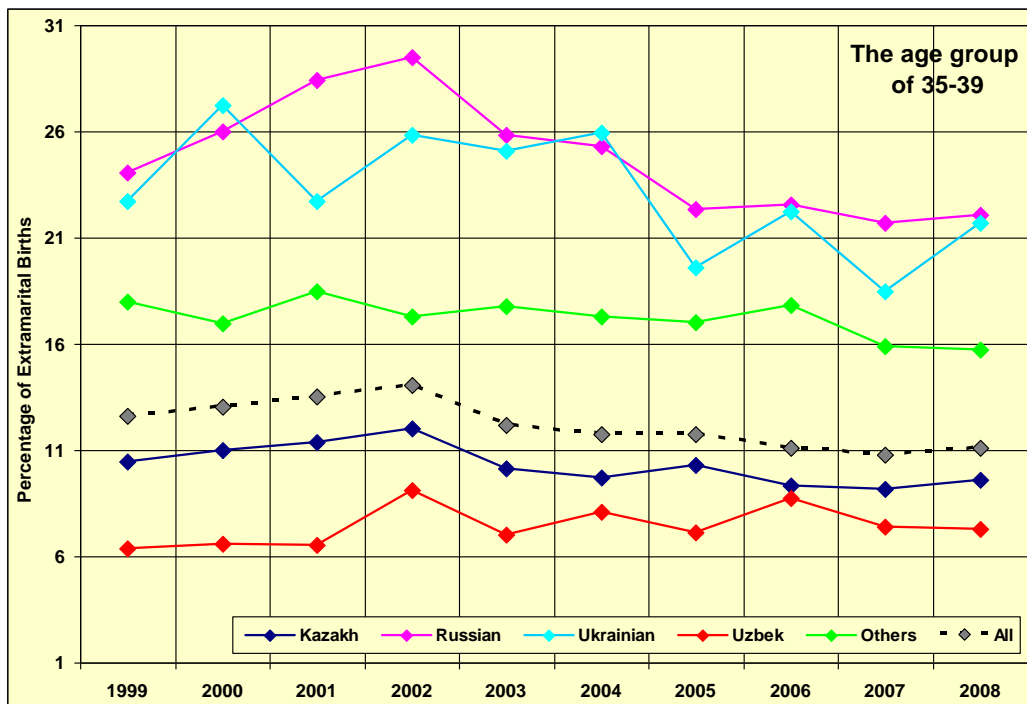
Source: Author's calculations based on the data from the Agency of Statistics of the Republic of Kazakhstan.

**Figure 5 – The proportion of extramarital births according to ethnicity at the age group 30–34 in Kazakhstan, 1999–2008**



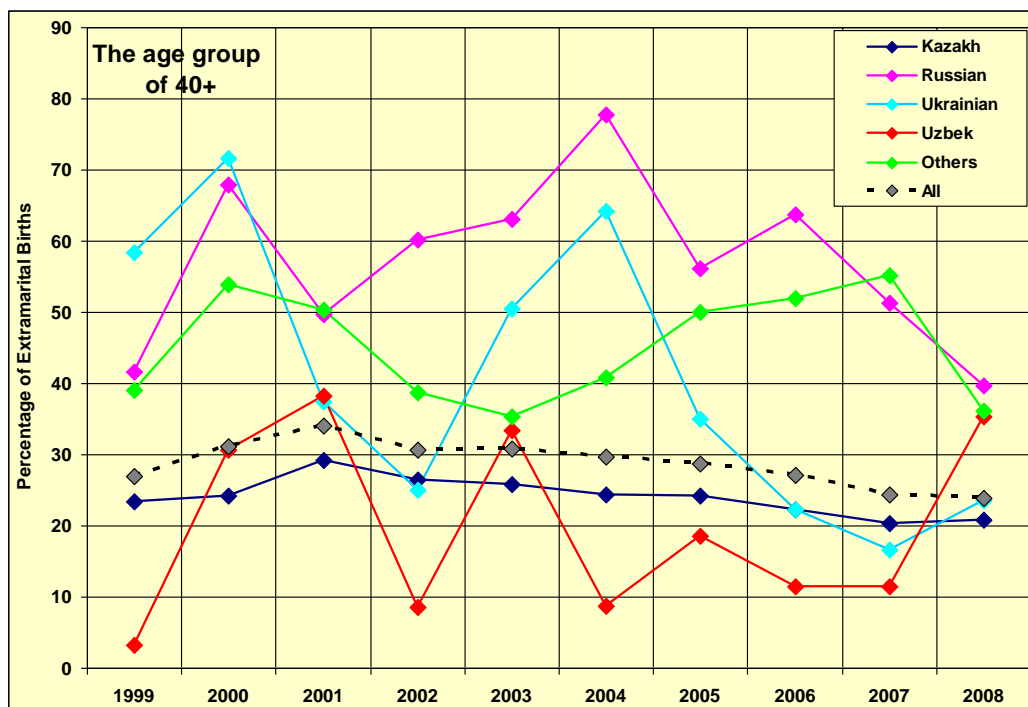
Source: Author's calculations based on the data from the Agency of Statistics of the Republic of Kazakhstan.

**Figure 6 – The proportion of extramarital births according to ethnicity at the age group 35–39 in Kazakhstan, 1999–2008**



Source: Author's calculations based on the data from the Agency of Statistics of the Republic of Kazakhstan.

**Figure 7 – The proportion of extramarital births according to ethnicity at the age group 40 and over in Kazakhstan, 1999–2008**



Source: Author’s calculations based on the data from the Agency of Statistics of the Republic of Kazakhstan.

The unexpected pattern has observed in traditional Uzbek society that has experienced the fastest increase in the proportion of extramarital births. (see Figure 8). The reasons behind can be the following. Firstly, the time pressure: transition from traditional to modern kind of family. Secondly, migration: the wave of illegal work immigrants of Uzbek ethnic group in Kazakhstan. Their number has increased since 2000. “The problem of labor force migration from Central Asia is going to be more perceptible from year to year for Kazakhstan. Totally its character is illegal” reported Kazakhstan’s newspapers [2], and it must be highlighted that every pregnant woman in Kazakhstan can deliver her child in state-owned hospital without showing her passport, just providing her address, which is nowadays available for everyone in Kazakhstan. Moreover, illegal migrants cannot officially register their marriage in Kazakhstan, only traditional wedding, that is why child born in that kind of family is registered as an extra-marital.

In addition, the proportion of extramarital births showed that the increasing numbers of extramarital births can also be explained by more extended non-registered marriage, so-called “co-habitation”, that is why this kind of marriage cannot be observed.

The difference of the changing trend of extramarital births between 1999 and 2008 among Kazakhs was -0.83, among Russians -0.03, Ukrainians -0.67, Uzbeks was 6.83, others -0.59 and for all ethnic groups it was -0.90. (see Figure 8).

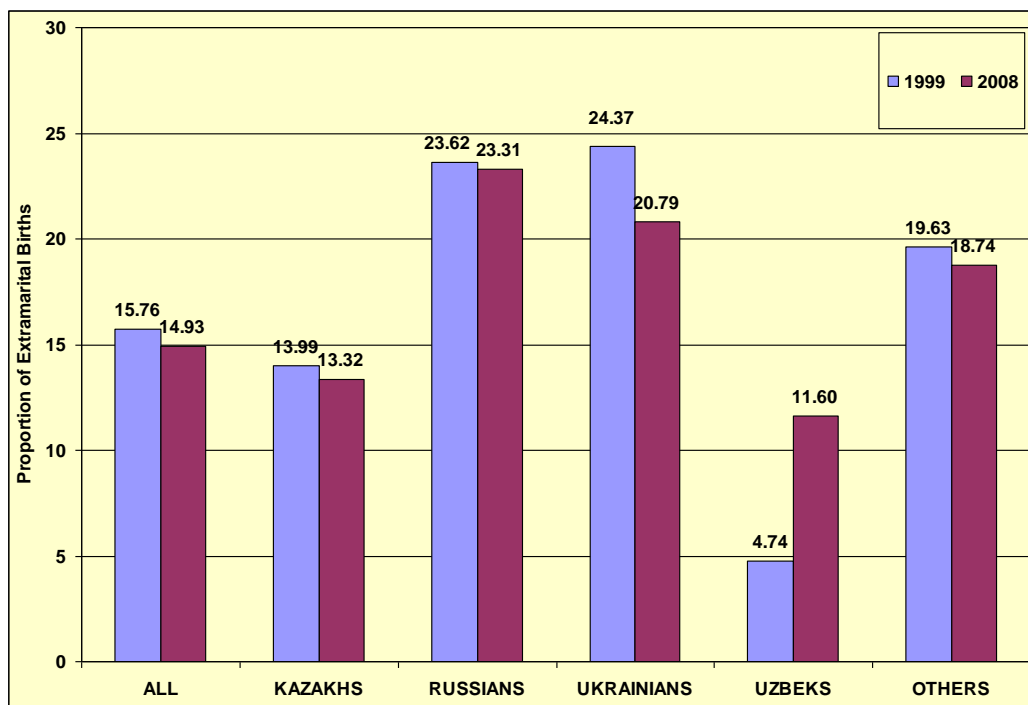
**Table 1 – The number of legal extramarital births between 1999 and 2008 for each age group and ethnicity**

		Kazakh	Russian	Ukrainian	Uzbek	Others	All
16-19	1999	31.24	37.82	36.19	12.14	32.20	32.94
	2008	31.63	40.93	39.47	17.11	30.57	33.20
	increased	1.1	1.8	1.9	1.41	0.95	1.1
20-24	1999	13.99	21.34	18.45	4.23	18.65	15.43
	2008	12.90	22.5	22.74	7.33	17.81	14.51
	increased	0.92	1.3	1.23	1.73	0.96	0.94
25-29	1999	9.60	19.85	17.47	3.25	14.41	11.41
	2008	9.60	19.85	17.47	3.25	14.41	11.41
	increased	1.00	1.00	1.00	1.00	1.00	1.00
30-34	1999	9.27	20.59	17.38	3.99	15.18	10.94
	2008	9.22	19.84	18.94	6.92	14.78	10.88
	increased	0.99	0.96	1.9	1.74	0.97	0.99
35-39	1999	10.47	24.4	22.73	6.36	17.97	12.59
	2008	9.61	22.5	21.70	7.31	15.71	11.13
	increased	0.92	0.92	0.95	1.15	0.87	0.88
40-44	1999	11.50	28.32	24.75	3.23	24.35	14.77
	2008	10.11	22.27	23.60	8.64	19.74	11.49
	increased	0.88	0.79	0.95	2.68	0.81	0.78
45+	1999	11.87	13.36	33.60	0.00	14.63	12.21
	2008	10.76	17.43	0.00	26.67	16.40	12.33
	increased	0.91	1.30	0.00	0.00	1.12	1.1

Source: Author's calculations based on the data from the Agency of Statistics of the Republic of Kazakhstan.

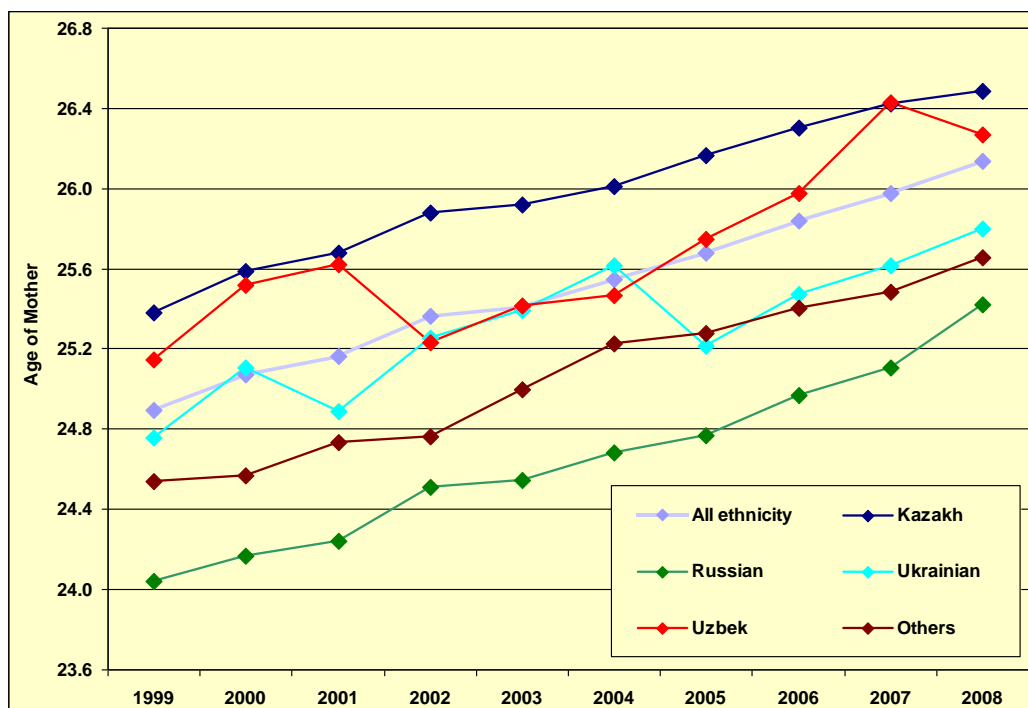
Simultaneously, the mean age of extramarital births in Kazakhstan increased during the considered period, which can be explained that women could have given a birth as a strategy of having child not for family, but for themselves. The figure 9 shows the upward trend of the mean age at childbearing for each considered ethnicity, the youngest age is observed among Russians and the oldest – among Kazakh ethnicity, and both of them displayed the gradual increase, whereas Ukrainian and Uzbek ethnic groups represented more fluctuated trend. However, in general they also showed an upward tendency. Despite the fact that the increase of the trend of the mean age at childbearing was not high, we observed the difference at about one year in each ethnic group. For example, among Kazakhs it increased since 1999 till 2008 from 25.38 up to 26.49 years, among Russians from 24.04 to 25.42, Ukrainians from 24.79 to 25.80, Uzbeks from 25.15 to 26.27 and others from 24.54 to 25.66 years old. Alongside, the Figure 10 displays the percentage of extramarital births according to the age structure for each ethnicity in 1999 and 2008. It was noticed, that women at older ages began to deliver more than in the past, which is proved by the figure 10, where at the age 35–39 the percentage increased obviously. For instance, it was 7% for Kazakh women of the age 35–39 in 1999 and in 2008 it jumped to 9%, among Russians – from 4 to 6 per cent, among Ukrainians – from 6 to 7, among others from 6 to 7. However, Uzbek ethnicity followed the same percentage (7%) in both years. In average, the change in Kazakhstan constituted 2 % (from 6% to 8%).

**Figure 8 – The proportion of extramarital births of each selected ethnicity in Kazakhstan, between 1999 and 2008**



Source: Author's calculations based on the data from the Agency of Statistics of the Republic of Kazakhstan.

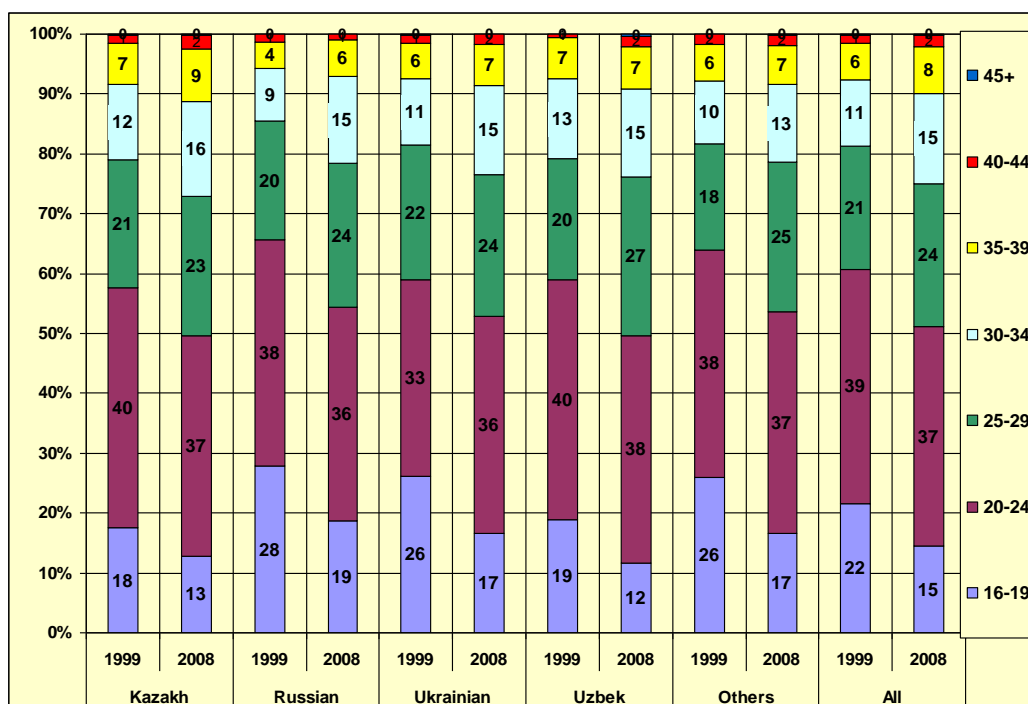
**Figure 9 – Mean age at childbirth according to ethnicity for married women in Kazakhstan, 1999–2006**



Source: Author's calculations based on the data from the Agency of Statistics of the Republic of Kazakhstan.

Note: The minimum age of ASFR is started from 16 years old.

**Figure 10 – Percentage of extramarital births by age structure according to ethnicity in Kazakhstan in 1999 and 2008**



Source: Author's calculations based on the data from the Agency of Statistics of the Republic of Kazakhstan.

Extramarital births were not in the dominant position compared with children born within legal marriage. Despite the fact that there was observed a slight decline in the proportion of extramarital births for some ethnicities, it is very likely that the trend will not continue in the same way in the near future. However, in case of the increasing trend of extramarital fertility it will not mean replacing the marital one.

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## The ethnic differences in marital behavior and fertility in Kazakhstan: main tendencies in recent time

*Ulziya Kalzhanova*

This article deals with the main tendencies in fertility, marriage and divorces in Kazakhstan from 1999–2008. Author considers this problem through ethnic features in regional aspect. Recent data sets show intensive changes in marriage, divorce and fertility processes of young woman and man. It is found that ethnic features have strong influence on fertility and marriage behavior. For instance, the high fertility rate was observed in the south regions where Kazakh live mostly than in the north regions with a prevalent European population

**Keywords:** fertility, marital behavior, family

The President of the Republic of Kazakhstan made an appeal to social scientists: “The interethnic relations can and must have key points in your present researches”.

Thereupon, it becomes necessary and crucial to study more deeply the ethnodemographic processes, marriage and fertility, in particular. Framing a comprehensive picture, including social, economical population development of Kazakhstan, will not be sufficiently full and realistic without further analysis of these demographic processes features based on the ethnic viewpoint. Moreover, one of the significant components in this research is an attempt to focus on a regional aspect. Therefore, it has as specific development characteristics as general features to make a complete picture of the whole situation.

Above all, consideration and an ascertainment of the ethnic differences in marital behavior and fertility can be helpful in understanding their nature at the present stage and in the country’s subsequent work on the national development programme.

Nowadays, Kazakhstan society has variety of family models. It might include couples with children, those who live in registered or common-law marriage, one –parent family, single mother or father. In addition, childless spouses, cohabiting couples, unions based on religious ceremonies all of the mentioned above can be referred to the family models.

According to the ethnodemographic situation, two types of region can be assigned in Kazakhstan. First, there are regions which are prevailed in European population (the North-Kazakhstan, Kostanai, the East-Kazakhstan oblasts). The second type is regions with a considerable residence of Kazakh ethnic (Kyzyl-Orda, Mangystau, the South-Kazakhstan oblasts). They are demographic development and population structure particularities can be retraced to the statistical dates from 1999 to 2008 years.

In the recent years there have proceeded with following tendencies: increasing age of first married, postponement childbirth, especially the second, third and next children. Despite an appreciable growth in the number of registered marriage, there is a high per cent age of divorces, we can find here.

These tendencies can be explained by the influence of present conditions what as getting proper education and making successful career for women are vital as marriage and childbirth.

At the same time, differences in the ethnic structure also have impact on the population reproduction and marriage processes.

To begin with the fertility rate, the South-Kazakhstan oblast has been noted as one of the region with the highest total fertility rate. If there were 2.84 children per woman in 1999 it raised to the number of 3.93 which is the highest rate all over Kazakhstan. It is above the average rate over the Republic which is estimated at 2.68 children per woman in 2008 and 1.80 in 1999, respectively.

Also Mangystau oblast has been on the top by number of children per woman. In 1999 the total fertility rate was 2.36, in 2008 it was 3.73 and it has been rising till nowadays.

Kostanai oblast – 1.69 and the North-Kazakhstan oblast – 1.77 tended to be regions with the lowest total fertility rate in 2008. However, these rates considerably were higher in 1999, 1.41 in Kostanai and 1.53 in the North-Kazakhstan oblast.

**Table 1 – Total fertility rate by regions, the Republic of Kazakhstan**

	Total fertility rate	
	1999	2008
<b>The Republic of Kazakhstan</b>	<b>1.80</b>	<b>2.68</b>
East Kazakhstan oblast	1.42	2.05
Kostanai oblast	1.41	1.69
Kyzylorda oblast	2.68	3.51
Mangystau oblast	2.36	3.73
North-Kazakhstan oblast	1.53	1.77
South-Kazakhstan oblast	2.84	3.93

Regarding to available data we divided women groups by reproductive age of woman in the five years age groups. It is necessary to take into account that in 2008 most of children were born by women who were at the ages 25–29. It made 160.54 born children per 1 000 women whereas women at the age 20–24 were leaders by this rate in 1999, 133.30.

Also mean age at childbearing was changed slightly from age of 26.5 in 1999 to the age of 28.1 in 2008.

**Table 2 – Total fertility rate by the age groups, the Republic of Kazakhstan**

	Average number of born children per 1 000 women by the age groups						
	15–19	20–24	25–29	30–34	35–39	40–44	45–49
1999	33,8	133,3	100,0	59,6	26,0	5,9	0,6
2008	31,1	158,2	160,5	112,0	60,7	14,9	0,7

Obviously, there is a real connection between the age of woman and birth order. Maximal number for the first born children is refers to 20-24 age group whereas most of the second born children were born by women at age 25-29.

Analysis of available materials has proved that the second and next children were born mainly by women who live in the South-Kazakhstan region.

In comparison, there were 3 300 third born children in Kyzyl-Orda oblast and 1 376 births in Kostanai oblast in 2008.

At the same time, there is an increase in amount of children born out of wedlock. According to the statistical data, the number of single women with children raised from 51 959 in 1999 to 75 380 in 2008.

One of a pertinent fact is that in the 2008 most of children born out of wedlock were registered in the South-Kazakhstan oblast and it equals to 13 071 in 2008. It happens, despite the fact that this region is considered as an oblast with traditional and patriarchal dominance due to historical and cultural reasons.

**Table 3 – Number of children born out of wedlock in 2008 by regions, the Republic of Kazakhstan**

	Total population	
	1999	2008
<b>The Republic of Kazakhstan</b>	<b>51 959</b>	<b>75 380</b>
East Kazakhstan oblast	4 788	5 443
Kostanai oblast	3 606	3 998
Kyzylorda oblast	1 985	2 484
Mangystau oblast	950	1 594
North-Kazakhstan oblast	2 569	2 642
South-Kazakhstan oblast	7 922	13 071

This process might be an illustrative example of changes in family models, transition to a modern type, and reference to the western marriage unions, which are not registered officially.

However this current tendency can be explained by a valuable priority of religious ceremonies of wedding particularly in the rural area in the south Kazakhstan.

In the same way, it is noticeable that demographic characteristics of family have undergone deep changes. In 1999 the number of single men was 73 870, in 2008 it increased to 119 878. The similar situation also was observed for single women, 75 678 in 1999 and 122 517 in 2008. It is important to emphasize that this tendency was typical for all the regions of the Republic.

Moreover, data which is available for analysis demonstrates a rising amount of marriage postponements. It has led to tardy in getting marriage for men as well as women. For instance, mean age of the first marriage for brides in 1999 was 23.2 years old, nowadays it ranged to 24.1. At the same time such changes in mean age of the first marriage correlated with the grooms: in 1999 were 25.9 and in 2008 it rose to 26.8.

In addition, this current trend was observed in all regions of the country. In 2008 mean age of women who live in the North-Kazakhstan oblast was 23.9, similarly to the situation with the South-Kazakhstan women who got married first time in 23.5 years old.

With reference to abovementioned data, it is clear that family making and childbearing by women are postponed for a tardy period. In recent years, education, career and other issues and aims are playing the leading part in women's life. More and more women try to get proper education or move to the top of their profession and become financially independent rather than simply get married.

These events are one of the principal factors which are impact intensively the births, marriages and divorces processes. Analysis of main characteristics of divorces proved a substantial expansion of this trend. In 1999 there were registered 25 583 divorces and in 2008 this number slightly raised to 35 852.

Furthermore, the differentiation of divorces has been continuing in all regions of the Republic. In 2008 one of the highest rates of divorces was found in Pavlodar oblast and estimated to 3.28. It is more than average rate of divorces by Kazakhstan which is indicated 2.29 cases per 1000 people.

In 2008 the number of divorces reached a peak among men at the age 30-34 and women at the age 25-29. The amount of divorces was 7 355 for men and 8 471 cases for women. It demonstrated that most of divorces occurred purposefully in the age when spouses had already had education, work and were financially provided.

In 2008 mean age of spouses who dissolved when being in the first marriage were 35.9 for men and 33.7 for women. Besides, these numbers are not strongly differed by regional dimension. In other words, similarly tendencies were registered in the North-Kazakhstan oblast with the 34.3 mean age of divorced spouse as well as in the South-Kazakhstan oblast with the 33.1.

In addition, the level of divorces is higher among women than men.

In summaries, deep changes were observed in the fertility, marriage and divorce processes in the above mentioned period. Changes in the reproductive behavior of women and in the marital behavior of men and women, transformation of family life models are confirmed in major alteration in the value and priority system and in adoption of western standard of the behavior.

Consolidation of independence competently developed social policy and endeavour of every ethnos to preserve their traditions and originality – are keys to found an auspicious environment for births and family. On the other hand, globalization effected free entrance to the western and global community, has become the main stimulus for adoption priorities, standards, values and technologies throughout social areas and the state. As a fact, it has strong impact the marital and reproductive behaviors and family models as well.

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## Cross-border Migration Between Kazakhstan and Russia: in a case of West Kazakhstan

*Ainur Karzhaubayeva*

Given article is devoted to the problems of cross-border migration between Kazakhstan and Russia. It is considered the ethno-demographic situation in frontier regions on the basis of statistical data. Also it is analyzed the reasons and character of cross-border migration based on the data of survey.

**Keywords:** Kazakhstan, Russia, frontier migration

### Introduction

Kazakhstan-Russia border is one of the longest continuous land borders in the world, dividing not only the largest countries in the post-Soviet space – Kazakhstan and Russia, but the regions as well – Russia and Central Asia, conditionally considered to belong to Western and Eastern, Christian and Muslim civilizations.

Cross-border migration did not create problems within the framework of a unified Soviet state and was not the subject of a specific scientific research. The Soviet Union's collapse and the implementation of border barriers made it impossible to preserve the old relationships and links. However, a cross-border migration between Kazakhstan and Russia continues in a quite intense form, but the nature and methods of movements has changed significantly. Therefore the purpose of this research is to examine the degree of development and the impact of cross-border migration on the formation of relationships between the neighbouring states and the population of adjacent territories.

### Ethno-demographic situation in the border regions

The prevalent general demographic background of border territories will undoubtedly influence the extent and nature of cross-border migrations. We will analyze the ethnic and demographic situation in the border areas of Russia and Kazakhstan.

There are 13 subjects of the Russian Federation and 7 regions of Kazakhstan adjoining the Kazakhstan-Russia border. Out of them, five Russian regions – Astrakhan, Volgograd, Samara, Saratov, Orenburg, and three Kazakhstan regions – West-Kazakhstan, Aktobe, Atyrau, share the West Kazakhstan sector of the border.

According to the estimates for 2009, there are 26.7 million people living in Russia regions close to the Kazakhstan border, from them 3 million people live in the administrative areas directly adjoining the border.

The border areas of Russia saw the increase in population during the period from 1989 to 1999. The total population of the Russia border regions adjacent to Kazakhstan increased by 474000 people. It should be noted that the decrease in the overall population growth, typical for Russia in 1989-1999, did not happen in the territories close to the Kazakhstan border. The migration of Russian-speaking people from Kazakhstan to the Russia border regions played a significant role in population growth.

**Table 1 – The population of Russia border regions adjacent to Kazakhstan in 1989, 1999, 2009**

Region	1989	1999	2009	Population increase	
				1989–1999	1999–2009
	Thousand				
Astrakhan	998	1 026	1 005	28	-21
Volgograd	2 694	2 750	2 599	56	-152
Samara	3 266	3 308	3 171	42	-137
Saratov	2 686	2 721	2 573	35	-148
Kurgan	1 105	1 103	953	-2	-150
Orenburg	2 174	2 230	2 112	56	-118
Chelyabinsk	3 624	3 684	3 509	60	-175
Altai Kray	2 630	2 664	2 497	34	-167
Omsk	2 140	2 178	2 014	38	-164
Tyumen	3 081	3 226	3 399	145	173
Novosibirsk	2 782	2 752	2 640	-30	-112
The Altai Republic	192	204	209	12	5
Total border region:	27 372	27 846	26 680	474	-1 166
Russian Federation	147 401	147 539	141 904	138	-5 635

**Sources:** Statistics Federal Agency of Russian Federation. <http://www.gks.ru/dbscripts/Cbsd/DBInet.cgi?pl=2403012>

As seen in Table 1, the influx of Russian-speaking people from the neighboring regions of Kazakhstan helped equalize the demographic situation, while maintaining and even increasing the total population. However, in 1999-2009 the total population growth of these regions had a negative value. This is not only the result of a natural population growth decrease, but the decline in the migration flow from Kazakhstan as well.

What is the current situation in Kazakhstan? According to the statistical data on January 1st 2010, the total population of Kazakhstan border regions amounts to 5 556 000 people. The data presented in the table shows a sharp change in the ethnic and demographic situation. During the period from 1989 to 1999, the population of Kazakhstan border regions suffered significant losses. The total number has decreased by 815000 people, which represents 65.5% of the total population decline in Kazakhstan (Table 2).

**Table 2 – The population of Kazakhstan border regions adjacent to Russia in 1989, 1999, 2010**

Region	1989	1999	2010	Population increase	
				1989-1999	1999-2010
	Thousand				
West-Kazakhstan	629	617	624	-12	7
Aktobe	737	683	720	-54	37
Atyrau	425	440	513	15	73
Kostanay	1 224	1 017	886	-207	-131
Pavlodar	942	807	751	-135	-56
North Kazakhstan	912	726	643	-186	-83
East Kazakhstan	1 767	1 531	1 419	-236	-112
Altai Krai	2 630	2 664	2 497	34	-167
Total border region:	6 636	5 821	5 556	-815	-265
Kazakhstan	16 199	14 955	15 999	-1 244	1 044
Relative ratio of frontier regions	41.0	38.9	34.7	65.5	25.4

**Sources:** Itogi Vsesojuznoi perepisi naseleniya 1989 goda po Kazakhskoi SSR. – Alma-Ata, 1990; Itogi perepisi naseleniya 1999 goda Respubliki Kazakhstan. Chislennost' i razmeshenie v Respublike Kazakhstan. Tom 2. – Almaty, 2000; Demographicheskii ezhegodnik Kazakhstana. – Astana, 2007 – p.6.

As seen in Table 2, the regions close to Russia were affected with a high degree by the migration of Russian-speaking population. Outflow of the population from Kazakhstan regions with high proportion of Russian-speaking people continues in an intensive form. These regions are – Kostanay, Pavlodar, North Kazakhstan and Eastern Kazakhstan.

In Kazakhstan as compared with the Soviet period, the number of Russian population and its relative proportion has fallen. Nevertheless, there is about 47% of Kazakhstan's Russian population living in the border regions. Therefore, the Kazakhstan border territories continue to remain the regions with the concentration of Russian population.

In fact, this statistical data indicates that the population of border areas in the 1990s entered a period of declining demographic development. The sharp decline in population is typical for both Russia and Kazakhstan. In Kazakhstan, the situation has changed as a result of mass migration of Russian-speaking population outside of the country. It was exactly the influx of population from the neighboring Kazakhstan regions that has helped to equalize the demographic situation in the Russia border regions, while maintaining and even increasing the total population.

## Sociological survey results

We conducted a sociological survey in the city of Uralsk in order to study the cross-border migration problems. Uralsk is the regional center of West Kazakhstan region with well-developed infrastructure, which is located near the border, and has rail and road links to Russia. The survey was conducted in August 2009. 300 people were surveyed and about the same number of people in the sex ratio. The national composition of the respondents reflects the ethnic structure of the region's population. The people who visited Russia were surveyed.

**Education and employment.** The people with high intellectual potential and special education prevail among migrants. 71.3% of the respondents are specialists with diplomas. 30.3% of them have higher or incomplete higher education and 41% have secondary vocational education. Migrant employment is

distributed as follows: 47.6% are employed in state-owned enterprises and budgetary organizations, 35.7% are employed in the private sector, 11% are the unemployed and pensioners and 5.7% are the students. This allows to find out what proportion of the population is involved in the trans-boundary migration between Kazakhstan and Russia and determine the nature of cross-border migration and population problems.

*Self-identification.* Of the total number of respondents, 92.6% identify themselves as citizens of Kazakhstan. At the same time, only 80.8% to the question: "Whom do you consider yourself in the first place?" answered: "a citizen of Kazakhstan", 1.8% – "a representative of my nationality" and 1.1% – a representative of West-Kazakhstan region". Of the total number of respondents who are residents of West-Kazakhstan region, 7.4% did not consider themselves as citizens of Kazakhstan and most of them had Russian citizenship.

*Perception of Russia by Kazakhstan population.* Considering Kazakhstan-Russia relations, it is necessary to note the nature and level of perception of Russia by Kazakhstan population. Russia was called: "second homeland" by 10.3% of respondents, "friendly country" – by 47.6%, "good neighbor" – by 40.7%. In other words, 98.6% of respondents regard Russia as a special place in their lives, expressing a favorable attitude toward this country. It should also be noted that the number of respondents who called Russia: "second homeland" is almost three times less than the number of respondents of Russian nationality.

*The intensity of migration.* In spite of the border division and the strengthening control at border checkpoints, common space of social and economic relations remains. Nearly half of the population in the border area continues to travel to the neighboring country with varying intensity. However, in recent years, cross-border migration has a tendency to decline. The main reason for the travel decrease identified by respondents: no need to travel– 12.7%; financial possibilities – 7.5% and border crossing difficulties – 5.7%.

*Causes of cross-border migration.* The data on purpose of travel show the nature of communication between people of the border regions. Of the total number of respondents visiting Russia regions, a significant portion – 56.7% visited relatives and friends, 11.7% of respondents traveled with a purpose of treatment in Russian clinics, 8.0% visited Russia for with the purpose of buying household goods, 6.3% went on a business trip. However, if we compare these data with the results from previous surveys, it will be clear that the trips performed for commercial purpose declined from 17.5% to 3.3%, as well as employment finding trips in 2009.

*Seasonal character of cross-border migration.* Trips to Russia became clearly a matter of seasonal nature. According to the survey, 80% of all visits were performed in the summertime. These survey results are also confirmed by the Border Service of Kazakhstan's Department of National Security Committee in West Kazakhstan region. There are about 19000 people crossing the Kazakhstan-Russia border monthly. For the most part, these trips take place during the summer months – June, July, August and September. At this time, more than 21000 people cross the border monthly. In winter, cross-border flow of migrants is reduced by 30% and amounts to 13-14000 people a month. However, the number of migrants from the Kazakhstan side outnumbers those who come from Russia.

*Mixed marriages.* There is a relatively high percentage of mixed marriages among respondents. Thus the percentage of families where one of the parents was Kazakh or Russian was 7.2%, which is several times higher than the percentage of mixed marriages in the West Kazakhstan region, which is equal to 2.3%.

*Migrants sentiments.* Sentiment analysis performed among migrants showed that the majority of the respondents – 73.7% do not plan to emigrate from the country. The largest proportion of people wishing to leave in the coming years are Russians, in general, they are going to move to Russia. Kazakhs and representatives of other nationalities simply would like to live in economically developed countries. For the most part, people of active working-age (20-49 years) with higher education are going to leave. According to the research, the migrants sentiments clearly direct at the West direction.

*Motives for migration.* The main motives for migration are the socio-economic ones. People decide to move more easily, when they have real connections with family or friends in the country of destination that will facilitate their settlement at the new location. 21.6% of respondents note that they are going to move following the invitation of relatives. But on the other hand, a large portion of respondents will not move from Kazakhstan because of the difficulties arising from moving to a new place and settlement there. 14% of the respondents pragmatically note that the move will not solve their problems.

## Conclusion

- The research suggests that the border has not become the barrier constraining the development of trans-boundary contacts, even though the Russian side strengthens border control year after year, citing the need to ensure security.
- Border barriers between the two neighbouring states, whose inhabitants have always had family and economic relations and continue to maintain it, have seriously complicated the lives of people both in Kazakhstan and in Russia. The newly imposed barriers worsened and complicated the already difficult course of socio-economic transformations for people in the two countries, intensifying their economic isolation and peripherality.
- At the same time, as the survey showed, on condition of maintaining a relative openness, the border territory may provide some benefits to the residents, who are in favour of interstate integration and are able to make a profit from cross-border contacts for themselves and their families. In the long run, this may give additional incentives to the development of the territories on both sides of the border.

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## Long-term Care in Health Care Establishments in the Czech Republic

*Romana Malečková*

This paper introduces information about institutes for long-term patients, hospitals with chronic beds, hospices and nursing care departments in hospitals and other special therapeutic institutes in the Czech Republic during the period 2000-2009. Social hospitalization in health care establishments, especially with the intention of number of beds and number of days of stay, are also mentioned.

**Keywords:** long- term care, hospital, hospice, number of beds, number of days of stay

### Demographic situation in the Czech Republic

The number of inhabitants of the Czech Republic increased in 2008 as a result of both natural increase and migration. Foreign migration had the largest share in this increase; its balance was 71.8 thousand persons in 2008. But the natural increase became more important; in 2008 it was 14.6 thousands. The main cause of the growing natural increase is the growing number of births. The other factor influencing the natural population increase is mortality. Although in 2008 more persons died than in 2007, the level of mortality has decreased. The life expectancy at birth increased to the values of 74.0 years for men (an increase by 0.3 year) and 80.1 years for women (an increase by 0.2 years). In addition, people from World War II's baby boom generation get retired and move from productive to post-productive age. This increase means growing share of seniors (persons older than 65) in population. 14,9 % of all persons in the Czech Republic was older than 65 and 3,5 % was older than 80 years in 2008.

Other increase of seniors is expected in the Czech Republic in accordance with main Czech or foreign forecasters. With a view to continuing ageing of population, increase of establishments for seniors (providing health or social services) is expected.

## Data sources

The data about social establishments (retirement houses, houses for seniors, etc.) are collected by the Ministry of Labour and Social Affairs (not mentioned in this paper). The Institute of Health Information and Statistics of the Czech Republic (IHIS CR) collects data about health care establishments. IHIS CR uses methodology of the National Health Information System (NHIS), which defines these types of medical facilities offered care especially for persons older than 65.

### Type of health establishments according to provided health care

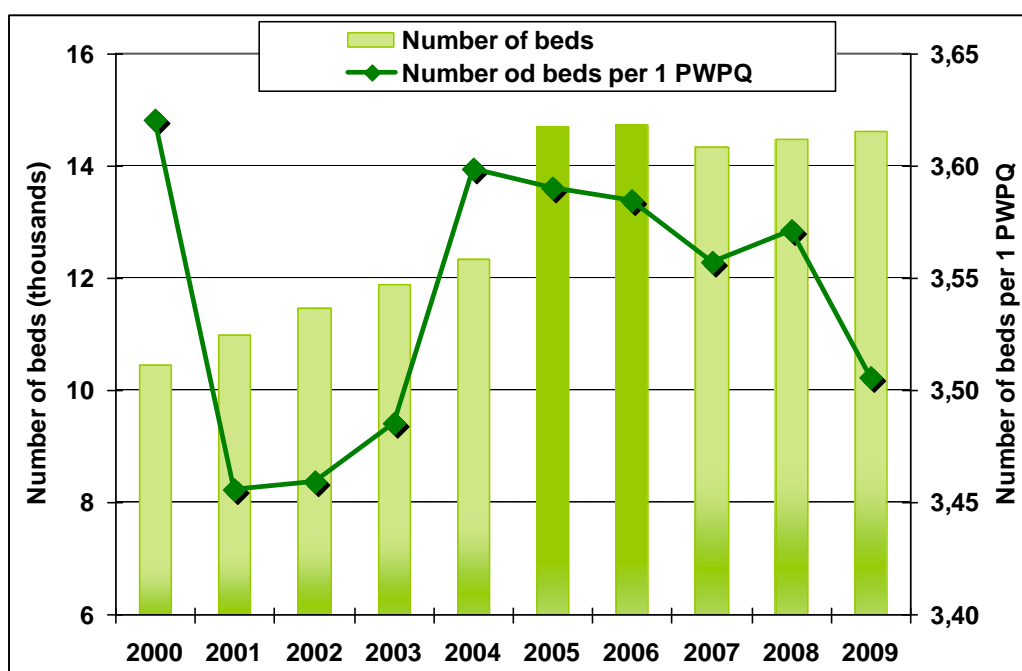
- Hospital with chronic beds – nursing and after-treatment care following up to the acute care in hospitals
- Institute for long-term patients – type of specialized therapeutically institute, which provides nursing and rehabilitative care for seniors with chronic diseases
- Hospice – specialized establishment, which provides palliative care for patients with pre-terminal or terminal stage of disease
- Other special therapeutic institutes – different types of establishments, which also provide nursing or rehabilitative care
- Departments of nursing after-care in hospitals or University hospitals – earmarked beds in hospitals and University hospitals used for patient with chronic diseases

## Trend of number of beds

The number of nursing after-care beds has increased during the last decade by more than 4 thousands (40 %). The largest increase was found in departments of nursing after-care in hospitals or University hospitals.

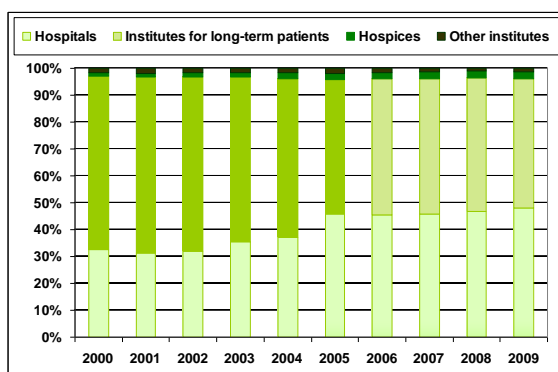
The first figure shows annual grow of number of nursing after-care beds from 2000 to 2006. In 2007 slight decrease was recorded, but during the last two years the number of nursing beds has increased again. Indicator of number of beds per 1 PWPQ (paramedical workers with professional qualification) oscillated between 3,46 and 3,62 beds per 1 PWPQ.

Figure 1 – Trend of number of beds

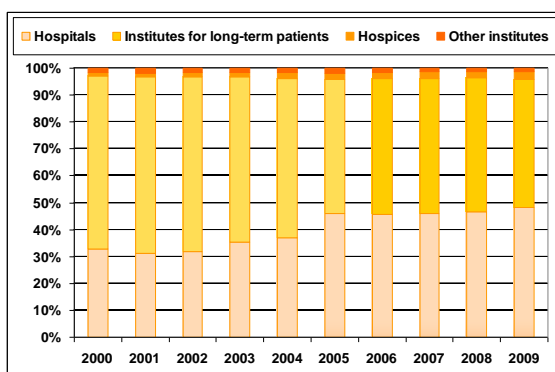


As was mentioned above, the largest increase of beds was found in departments of nursing after-care in hospitals or University hospitals. Changes in the structure of number of beds in different types of establishments are shown on the second figure. While in 2000 only about 30 % of all long-term beds were situated in hospitals, it was nearly 50 % in 2009. On the contrary, the share of all long-term beds in institutes for long-term patients decreased from 64 % to 48 % in the respective period. Nearly the same situation is in the share of days of stay according to type of establishment.

**Figure 2 – Changes in proportion of number of beds**



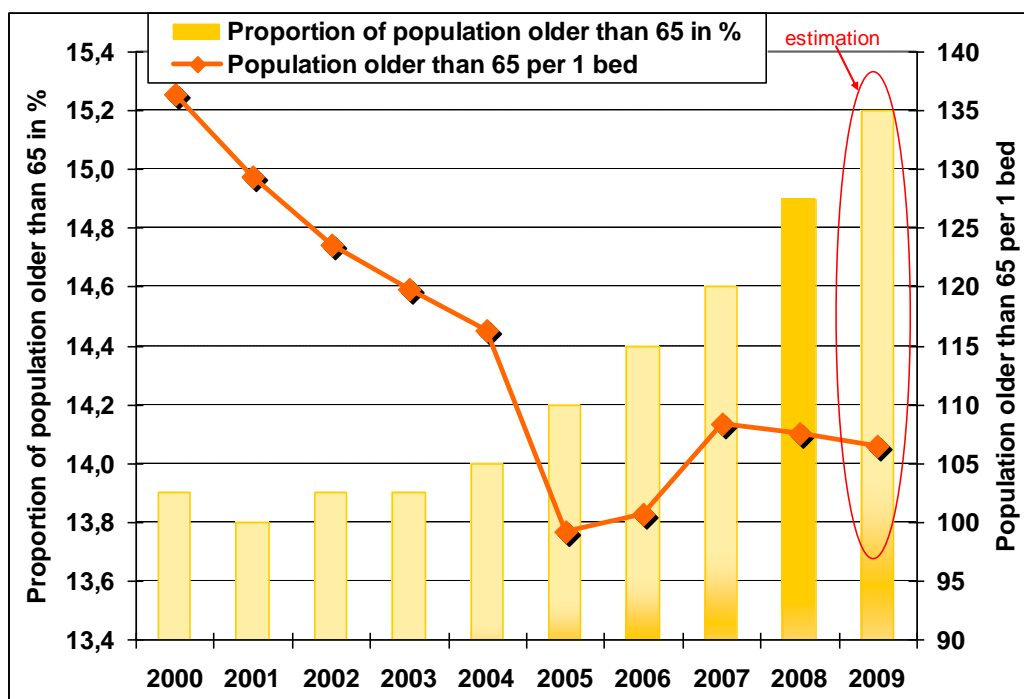
**Figure 3 – Changes in proportion of number of days of stay**



The increasing share of seniors in population, can be seen on the figure 4. Proportion of persons older than 65 in the year 2009 was estimated on the basis of development in previous years. The official data were not available at the time of preparing this paper.

While the proportion of elderly has increased, the share of persons per 1 bed has decreased significantly. In 2000 about 136 persons older than 65 were per 1 bed, in 2005 only 100 seniors were per 1 bed. In the next two years, slight increase was recorded to the value of 108 seniors per 1 bed in 2007. In 2009 there were 106 persons older than 65 per 1 bed in the Czech Republic.

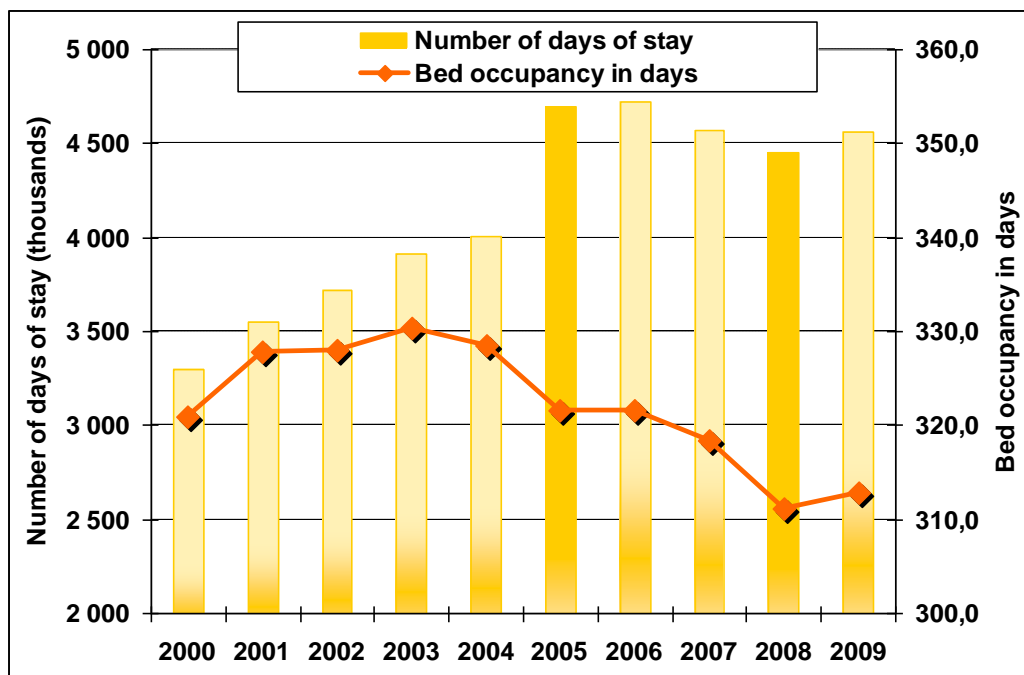
**Figure 4 – Changes in proportion of seniors in percents and seniors per 1 bed**



In proportions measured by numbers of days of stay, over the whole period, the extent of provided nursing care increased. Slight decrease in 2008 may be connected with introduction of medical fees in health care establishments.

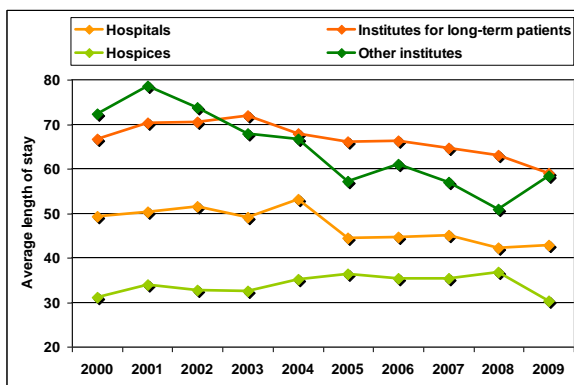
The bed occupancy in days decreased between 2003 and 2008. In 2009 on average each nursing after care bed was occupied 312,8 days of the year.

**Figure 5 – Trend of number of days of stay**

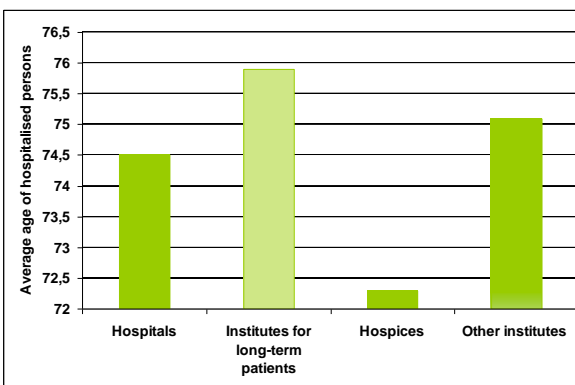


On the figure 6 we can find decrease of average length of stay in each type of establishment. But differences in average length of stay exist between types of establishment. While in hospices average length of stay oscillated between 30 and 36 days, the average length of stay in institutes for long-term patients was on average twice higher than in hospices. Big differences are also between establishments according to the average age of hospitalised persons (figure 7). This illustrates different structure of patient in each type of establishment, which was mentioned at the beginning of the article.

**Figure 6 – Trend of average length of stay according to type of establishment**



**Figure 7 – Average age of hospitalized persons according to type of establishment**



IHS CR has been monitoring social services data in health care establishments from 2007 (connect with Act no. 108/2006). The number of nursing after-care beds increased by 25 % between 2008 and 2009. The number of days of stays increased by 36 % and numbers of patients increased by 13 %. Annual increase of patients, beds and days of stay are relatively high, which is probably connected to the fact that it is a new service. We think, the other development will be very interesting to analyze.

**Table 1 – Social services in in-patient establishments**

Region	Number of establishments			Number of beds			Hospitalised persons			Number of days of stay		
	2007	2008	2009	2007	2008	2009	2007	2008	2009	2007	2008	2009
Hlavní město Praha	5	9	8	68	99	99	221	283	249	16 437	29 986	28 830
Středočeský	5	7	7	67	92	84	98	154	170	8 008	13 239	15 504
Jihočeský	3	6	6	19	61	69	20	94	88	876	4 802	16 182
Plzeňský	7	9	10	54	104	231	153	483	452	15 596	39 382	85 597
Karlovarský	3	4	3	57	81	60	48	82	72	7 737	18 245	13 732
Ústecký	4	7	7	61	84	111	114	155	212	17 533	22 545	28 418
Liberecký	3	3	3	9	9	9	15	33	25	1 770	3 086	2 216
Královohradecký	1	1	2	14	14	30	14	14	27	5 110	2 576	7 186
Pardubický	0	5	5	0	74	87	0	123	160	0	15 481	22 910
Vysočina	4	4	4	20	56	56	99	153	178	7 866	22 960	21 669
Jihomoravský	5	5	5	26	25	39	59	89	93	2 398	9 314	9 002
Olomoucký	2	2	2	56	56	63	128	129	157	17 390	18 495	22 895
Zlínský	2	2	2	34	54	54	85	122	134	7 758	14 179	17 116
Moravskoslezský	5	8	9	126	150	208	286	451	650	27 371	47 330	63 753
Česká republika	49	72	73	611	959	1 200	1 340	2 365	2 667	135 850	261 620	355 010

## Conclusions

During the last decade ageing of population has been observed. Number of beds for seniors in health establishments has increased. Structure of number of beds and number of days of stay has changed during the last decade. A change in average length of stay according to type of establishment between 2000 and 2009 can be observed; in general, average length of stay has decreased in all types of establishments.

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## Review of the methods and models of human capital measurement<sup>1</sup>

*Murat Narkulov*

This paper is intended to provide reader with basic information about phenomena of population quality and human capital as scientific terms and necessary factors in the life of society and state, as well as, with basic information about development of human capital and population quality of Kazakhstan from the end of the XIXth and the beginning of the XXI century. In this paper author will try to research the reproductional model of human capital and population quality in conjunction with institutional factors in transition, such as socio-demographic changes, development and the current level of human capital and population quality of Kazakhstan (the shaping factors, parameters and criteria). Paper will concentrate on description of the specificity of human capital and population quality in Kazakhstan (stages of development, becoming history, current state, prospects for future development), identification of key factors shaping, forming and developing of human capital and population quality in the society, especially in Kazakhstan, definition the role of society and other social institutions in the building of human capital and population quality, analyzing the policy and strategy for human development, capacity building, human capital and population quality formation in the society. The main goal of this research is the perceiving socio-demographic changes and the process of a modern level of population quality and human capital establishing in Kazakhstan.

**Keywords:** human capital, population quality, Kazakhstan, transition, demographic development

Nowadays the problem of measuring human capital is increasingly coming to the fore of understanding of features and mechanisms of human capital. However, the common principles in calculation of this complex indicator have not been elaborated yet. Some studies have already developed the most important principles of unified calculation of its separate components such as the

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<sup>1</sup> This article is a shortened version of the presentation "Development of population quality and reproduction of human capital in Kazakhstan" at 2<sup>nd</sup> Demographic Conference of Young Demographers in Prague (17.02.2010).

life expectancy of one generation, the active employment period, the net balance of the workforce, the cycles of family life, earning functions etc. The value of rearing and education of new employees, along with advanced training, the lengthening of employment period, the loss due to morbidity, mortality and other factors, etc. have been recognized as essential elements, during the process of human capital assessment. Currently, the idea of "lifetime education" becomes widespread in the world. In Kazakhstan the system of "continuous education" is insinuated.

The estimates of cost in country, families, enterprises and various funds allow the determination of current annual total costs of the society on human capital reproduction or, in other words, the investment in people. The changes in types of skilled workers reproduction were established due to demands of scientific and technological progress and rapid development of science. Such significant changes in characteristics of humanity development demanded a clarification of information about reproduction of the aggregate worker and his/her participation in economic processes. Most of the researchers consider necessity of regular assessment of the educational level achieved by different groups of workers, as well as, by the whole country. This allows an establishing the dependence of production results from such an important factor as education.

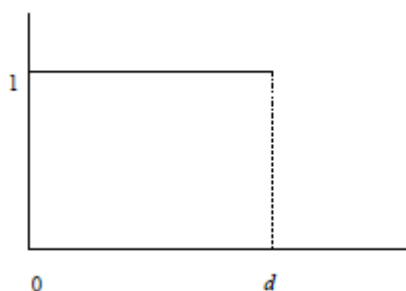
"American economists on the basis of census data and various surveys, for the 1980's, have concluded that the average length of personnel training which was needed for secondary special education was 13–14 years. Family and country had spent approximately \$350 000 for preparation of employee. World Bank used this assessment as guidance in determining the values of human capital indicators for the estimates of national wealth." (Piskunov, 2006)

Today, the comparatively sufficient conditions have been established and the extensive information in the databases of international organizations for experimental evaluation of the human capital indicators within the concept of national wealth has been accumulated. Such monetary assessments are important for measurement of the actual volume of current savings, as well as aggregate savings in the society for the whole cycle of reproduction of the national wealth. So, as we see the different methodological approaches can be applied during carrying out practical calculations of the human capital indicators based on the concept of national wealth.

American economist John W. Kendrick suggested using the "perpetual inventory method" in determining the accumulative value of the investment in human. His methodology was expounded on the basis of detailed statistical information concerning the United States. This method is acceptable for statistical estimates for the countries with long-term dynamic series of the accumulation and consumption structures. Kendrick's assessment technique determines family and society costs on maintenance of children until they reach the working age and get a particular profession, retraining, professional development, labour migration, health, etc. Along with these costs the investments in housing, in household durable goods, in stocks of family goods, as well as the costs of research and development are taken into consideration. These specified aggregate costs of families and society are summed for a mid-period of labour-force preparation. Using deflator index the exponents of values are converted from the current year in comparable prices, on date when human capital is assessed. (Kendrick, 1997)

"Perpetual Inventory Method (PIM) for the calculation of the stock of fixed assets whenever direct information is missing. The calculation of consumption of fixed capital can be based on these stocks of assets. Besides net capital stock, which appears in the balance sheets can be derived within a PIM approach. Using the PIM, gross capital stock is calculated as the sum of gross fixed capital formation in previous years, of which the service life is not yet expired. In the simplest case it is assumed that the total investment of a particular asset does not deteriorate during the expected service life of that asset

and is discarded as a whole after that period of time. That is, denoting the expected service life of an asset by  $d$ , an asset lasts exactly  $d$  years (See figure)



$$GCS_{t,t} = \sum_{i=0}^{d-1} I_{t-i} * P_{t-i,t}$$

of which:

$GCS_{t,t}$  = stock of fixed assets (gross) in year  $t$  in prices of year  $t$

$I_t$  = gross fixed capital formation in year  $t$  in current prices

$P_{t-i,t}$  = price index of year  $t$  with base year  $t-i$

$d$  = expected service life

Calculations using the PIM result in a gross capital stock by the end of an accounting period." (Meinen, Verbiest, Wolf, 1998)

According to PIM calculations, the share of human capital in accumulated national wealth of the U.S. (excluding government investment) in 1970 was more than a half. Thus, Kendrick derived the estimates of human capital accumulation in its full "replacement cost". As for methodologies of assessing "net value" of human capital, they still need additional studies and researches, because now there are no satisfactory evaluation methods of depreciation or obsolescence of human knowledge, production skills, etc. So, what part of the cost for reproduction of human capital is used in "real accumulation"? The World Bank specialists have proposed the "genuine savings" indicators, which value approximately the half of total human capital cost in country. (The World Bank)

National Bureau of Economic Research (NBER) developed this topic and held discussions on the role of human capital in economic growth and methods of its evaluation. General conclusion of the discussions was reflected in two working papers: one was represented by Jacob Mincer, "Human capital and economic growth" another one by Casey Mulligan and X. Sala-i-Martin "A Labor Income Based Measure of Human Capital".

J. Mincer in the evaluation of human capital accumulation presented the data on the employee's total income for the period of his/her participation in economic activities and the use of these incomes for reproduction of labor power. Using statistical data for the U.S. in 1980's he traced the action period of human capital and its effectiveness change depending on the number of general education and vocational training years, as well as the age of worker. (Mincer, 1981)

Mulligan and Sala-i-Martin in their paper had proposed the methodology of measurement of total stock of human capital through a system of indices. Their estimation is based on average timing of education and training of workers in the U.S. according to censuses. They also have noted the

differences in the productivity of workers, depending on the quantity, quality and duration of labor. They concluded that the level of employee's income is directly related to the amount of accumulated value of human capital and knowledge. (Mulligan, 1995)

Researchers came to conclusion that employees with higher levels of education and training require less cost per unit for sustaining their families than others, because their work more efficient. A higher level of human capital accumulation is observed among workers with higher education and qualification which enables them to have a high level of income and more often be involved in different training programs, etc.

The U.S. Bureau of Economic Analysis (BEA) under the direction of Carol S. Carson, together with experts from the OECD for a long time were developing a system of scientific and technological advance indicators, including the costs of "research and development" (R&D). The concept and methodology for estimating the volume of total expenditure on R&D was presented in the "Frascati Manual", which became an international standard, which is used for comparative analysis of the scientific research results in many countries. The BEA experts have also developed a methodology for estimating the current R&D expenditures and their accumulation as intangible capital and as an important factor of economic growth. BEA methodology is based on information which is available for the United States concerning detailed information on expenditures on science since 1920.

The proposed methods, surely, contain a lot of conditional assumptions in the rearrangements of statistical values, especially during calculations with constant prices for such a long period. Conditionality can be found: (1) in the magnitude of the lag between the period of implementation of R&D and the period of their realization in the accumulated human capital as an increment in stock of knowledge and skills; (2) in determination of mean lifetime of this type of capital (approximately 18 years) and the average age of this capital. The values of the residual value of such capital in R&D, estimated by other researchers are close to estimates of the BEA, J. Kendrick and other researchers adhered to the OECD standards. Such calculations were carried out by following scheme (Kendrick, 1997):

1. Current expenditure, total, including fundamental and applied researches and designs.
2. Accumulation per period.
3. Changes in stock.
4. Consumption for current period.
5. Gross accumulation.
6. Net accumulation.

It is clear that the use of such estimation methodologies of human capital accumulation is possible only with detailed statistical data, which many countries, including Kazakhstan, do not have. However, the experience in methodological development by U.S. scientists' estimation of R&D definitely assists in solving the complex problems associated with the assessment of human capital of population in Kazakhstan.

World Bank suggested the major unified principles of national wealth concept, which create preconditions for improvement of estimation methodology of human capital indicators. Thereby several methods for estimating the value of accumulated and used human capital and its intellectual component were developed:

*1. Expansion concept* excels in relatively simple use of available statistical data on GDP, as well as their rearrangement and value specification of investment indicators in human capital and accumulation of national wealth. The methodology summarized the experience of above mentioned methods for assessment of human capital. This methodology allows for well-grounded and more reasonable

estimation of human capital values as an element of national wealth. Herewith, the knowledge gained through effective participation in economic life and labour remuneration (the income earned) is taken into account. The estimations of such indicators are quite accessible for experts in most countries, and provided by statistical data reporting, results of sample surveys, expert assessments and other fragmentary information.

2. *Method of "investment estimates"*, based on the calculation of investment and term-wise values of all costs on formation and use of human capital.

3. *Method of "reproduction estimates"* assumes the estimation of cost on formation and use of human capital adjusted with the norms of its accumulation and real reproduction overturn.

4. *Method of "innovation estimates"* considers innovation upgrade cycles of vocational and qualification parameters of human capital, which are adequate to cycles of scientific-and-technological advance and to renewal cycles of physical capital.

5. *Method of "return estimates"*, since human capital is one of the forms of capital (it is a source of future income and can be accumulated), rates of return are applied in analysis of its effectiveness, which are calculated by appropriation of the human capital income to its cost.

Nesterova and Sabrianova proposed the standard model of human capital estimation for post-communist Russia, which includes following variables:

1. rates of return on investment in human capital, which are calculated based on the Mincer's earning function. Here, the earnings of an individual acting as the dependent variable and represented in logarithmic form;
2. number of schooling years (or education level);
3. potential experience in the labor market;
4. professional experience at current workplace. (Nesterova, Sabrianova, 1998).

Estimated human capital in almost all countries of the world exceeds the half of accumulated national wealth. This shows the differences in the levels of development as well as in material well-being. However, high proportion of human capital in most of the countries is conditioned by extremely uneven distribution of natural resources in the territory and their insufficient research. Unfortunately, in Kazakhstan, the estimated share of human capital is one of the lowest due to the high proportion of natural resources value in national income.

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## The impact of migration on reproductive behaviour of repatriants from Mongolia

*Kuanysh Nurpeisova*

Recently there has been growing interest in ethnic return migration among scholars. This article examines return migration of ethnic Kazakhs from Mongolia after independency of Kazakhstan. This article is based on result from Survey and analysis of Statistical data from Mongolian National Statistical Office. Contemporary socio-demographic situation in Kazakhstan after the repatriation of ethnic Kazakhs is relevant to learn differences and changes of reproductive behavior of repatriants from Mongolia and ethnic Kazakh women in Mongolia before and after migration to Kazakhstan during 1991–2009. If there is something related to the crisis after migration or impact of new society or adaptation of new environment, socialization, psychological disruption on reproduction behavior and fertility of repatriants. We found that reproductive behavior changed just only in the second generation at the moment of moving when they were children and they grew up in a new environment and we also found out postponed birth. The studies were conducted in Karazhal-Zhairem district of Karaganda region and Bayan-Olgii aimag in Mongolia. Kazakh returnees do not roam with their cattle, "according zhaylau" as it was seen in the aimag of Bayan-Olgii, they are more "settled". In general, in 2008 the total fertility rate in Kazakhstan – 2.4, in Mongolia TFR – 2.6. The total fertility rate for ethnic Kazakh women in Mongolia is -3.2.

**Keywords:** Kazakhstan, repatriation, survey, respondents, reproductive behavior, number of birth of repatriants

At the end of the twentieth century, Kazakhstan was a country that is losing its population; the reasons were not only reduction of natural growth but also a result of emigration that in turn greatly affected the economic and demographic situation of the country. In 1989 total population was 16,199.2; in 1999 it decreased to 14,953.1 (The Agency of Statistics of the Republic of Kazakhstan).

The demographic situation in Kazakhstan needs to find a way out of this situation. In such situation, oralmans' return to their historic homeland would help to solve the demographic problem of our

country. First of all let's start with the definition of who are oralmans? Oralman – a person of the indigenous nationality, exiled from the territory of their historical homeland by acts of mass political repression, illegal requisition, forced collectivization, and other inhumane acts voluntarily resettling in the Republic of Kazakhstan for permanent residence. On the other hand oralmans called as repatriants (December 1997, Law "On Migration" RK).

After receiving its independence Kazakhstan started to make diaspora policy in foreign countries. According to the World Association of Kazakhs over 5 million Kazakhs live in foreign countries. In 1991 it was adopted the program of repatriation of ethnic Kazakhs from near and far foreign countries. The main emphases were placed on the return of ethnic Kazakhs, as they were focused on large families.

The repatriation of Kazakhs to their historic homeland declared a priority of the migration policy of the Republic of Kazakhstan. Peak repatriation took place in mid 90-ies and the settlers were located mainly in rural areas of Karaganda, Pavlodar, Kokchetav, Semipalatinsk and East Kazakhstan regions where the largest negative migration took place.

The basic purpose of immigration policy is to address the ethnic and demographic issues. First, it will be eliminated ethnic and demographic disparities prevailing in the Soviet period, and restored historic justice. Secondly, immigration will be able to compensate for the loss of migration, to stabilize the demographic situation, finally to solve a problem posed by the President of Kazakhstan N. Nazarbayev – 2015 to raise the number of population to 20 million people (Alekseenko 2008). It should be noted that the state hopes for improving the demographic situation at the expense of immigrants.

However, we must take into account the crisis impact of migration on fertility, which can lead to unexpected results. If the hope of our country is checked out, if the repatriants will continue to demonstrate the behavior of the old environment and give a birth many children and thus stabilize the demographic situation of the country or whether they will take the behavior of local residents, going through stages of self-identity of the new environment and to postpone the birth of children with regularity of contraceptives.

Based on those studies we take groups of returnees who have moved to Kazakhstan from 1991 to 1993, with labor agreements, without quotas, and who are already living in the region for almost 18 years. This group of returnees is considered as the most important object in comparison, and only through them we can find any changes in the behavior of immigrants. Since 2006, the region began to accept arriving immigrants on a quota, but in our sample, there are no such immigrants who moved to the new conditions. We suppose that in a short period of stay it is difficult to trace the influence reproductive behavior of local residents on the returnees. Therefore, the objects of the study were women aged 18 to 60 years with the first stream. Distribution of respondents in this study identified the following 4 groups of age groups, representing different generations: 1) c 17 – 19 years old, 2) with 25 - 29 years, and 3) with 35 – 40, 4), 55 – 60 years but the age ranges irregular groups. We can explain why we decided to organize this way.

The first group includes respondents in school and also this group of students who were born and grew up in Kazakhstan, unmarried, goes together to the same school with the local Kazakhs and had already taken the behavior of local Kazakhs.

The second group includes respondents born in Mongolia, but grew up in Kazakhstan or married in Kazakhstan, on arrival they were maximum 14 years old. The third group includes respondents who began to marry and have children already in Mongolia, but continue these events in Kazakhstan and on arrival they were maximum 25 years old. The fourth group includes respondents who already have children, and were almost at the end of reproductive age, on arrival they were maximum 45 years old.

Respondents in each group are unique in their own way; to compare changes in reproductive behavior in particular we need to pay attention to the immigrants of the first and second group, which has merged with the local Kazakhs. Study of the third group will give us answers to the example of how they behaved before and after migration, they began to have children after the move or postpone childbirth until later, the behavior of ethnic Kazakhs of the same group remained in Mongolia. Respondents from the fourth group need to know with how many children they moved to Kazakhstan, and what impact older generations have on the rest of the generation that is to find reproductive behavior among mothers of the respondents.

**Survey methods were sample survey and data collection.** Sociological studies included the questionnaire and interviews. Total number of respondents is 720 persons, from each group were chosen by 30 respondents living in urban and rural areas from selected regions of Kazakhstan and Mongolia. Analysis of the data produced in the program SPSS 12.0R.

Basically the comparison is often based on the total fertility rate (TFR), and age-specific fertility rate (ASFR). However, in Kazakh statistics total fertility rate and age-specific fertility rate are not considered separately for returnees, and we also have no data in quantifying the amount that would help with accuracy to calculate these rates. For ethnic Kazakhs of Bayan-Olgii aimag statistical data are available from yearbooks, as well as 90% of the population in this aimag is Kazakhs. Total number of population in Bayan-Olgii aimag – 101.3, among them the ethnic Kazaks – 94.0.

As a result of moving to a new one social environment for immigrants is changing the old way of life to which they are accustomed as well as the changing of social environment, they face with many domestic problems and that each person is required for the super-self-in a new environment and almost all have to start everything again. Therefore, individual behavior is more dependent on the environment, socialization, adaptation, disruption. The socialization emphasizes the critical role of the social environment at the childhood place of residence. Values and norms dominant during childhood shape the migrant's behavior in later stages of life (Goldberg 1960). The disruption suggests that immediately following migration, migrants show particularly low levels of fertility due to the disruptive factors associated with the migration process (Goldstein a, Hervitz 1985). The adaptation in contrast, assumes that the reproductive behavior of migrants, sooner or later, converge to that of the natives at the current place of residence (Goldstein b).

During the period of adaptation to the new place, immigrants have the opportunity to get acquainted with the social norms of behavior of the environment. Some changes may begin to emerge within five years after the moving. Thus, it is assumed that immigrants begin to delay births to later dates and to regulate the birth of children with contraception until they improve their life conditions, because the appearance of the child in the family creates additional costs.

## Results

To learn the impact of migration on fertility, we examined the number of children born before and after migration by age group of mothers (Table 1). Among women aged 25-29 years we can see that the proportion of women who have one or two children – 41%, the proportion of women with three or four children – 8%, just 1 % of women has 5 and more children, however if to draw attention to the fact that 50 % women has no children, they show us the postponed birth. This confirmed the concept of socialization, as well as the hypothesis that higher educated women have fewer children. If we look at the educational level of women in this age group the proportion of women with higher education – 41% (Figure 5), and women who have no children – 45 % has high education (Figure 6). If you look on the most important group of respondents, who began to marry and have children already in Mongolia, but

continue these events in Kazakhstan you can see that at the age of 35-40 years the proportion of children born before migration only 5%, the rest of proportion of children born after migration – 95 %, among them the proportion of women who have three or four children is dominated – 41%, the proportion of women who have one or two children – 39%, only 5% of women gave birth 5 or more children (Table 1). In comparison, if we look total fertility rate of women in these age groups among repatriants- 3.7 and ethnic Kazaks-3.4, this means that there is no impact of adaptation on fertility (Figure 3).

The last group of respondents at age 55-60 years, who already have children, however on arrival time they were almost at the end of reproductive age, they show that the proportion of children before migration -86%, the proportion of children born after migration is 14% (Table1). Distribution of number of children in this focus group of women who have five or more children is dominated by repatriants – 71.4%, compared to ethnic Kazakhs – 49.5%, the difference between them accounts for 21, 9% (Figure 4). Also total fertility rate for repatriants is 5.6 and for ethnic Kazakhs is 4.6 (Figure 3). Here we can say that the behavior of this age group gives an explanation to the hypothesis of a selective group.

Important research in the study of reproductive value is the question of the number of birth per woman. If we compare the number of birth among respondents, and ethnic Kazakhs in the age groups it can be distinguished as follows (Figure 4): among women aged 25-29 years the proportion with no children is higher for immigrants – 49.5% than that of ethnic Kazakhs – 37.9 % , the difference between them is 11.6%, if to draw attention to the fact in practice who have one or two children from ethnic Kazakhs – 47.12% higher at 6.2% than the immigrants – 40.92%, the proportion of women who have three or four children in the difference of 6.3 % from ethnic Kazakhs – 14.9% higher than that of immigrants -8,6%. At the age of 35-40 years women who give birth to three or four children in Mongolia – 57%, in Kazakhstan – 47,3%, the difference between them is 9.7%, while those who have five children and more can be seen from repatriants – 31,9% than ethnic Kazakhs – 20.6% which means the difference of 11.3%.

## Conclusion

In the result of survey we found that in a system of natural reproduction the birth of children depends on biological and cultural aspects than the individual solutions of desired family size in families of immigrants. Indeed, culture and tradition play an important role in the lives of repatriants reproductive regardless of residence and immigrants continue to demonstrate the behavior of the old environment. Repatriants live separately concentrated in one place; it helps them keep their old behaviour. The reproductive behavior of repatriants still has an orientation to large births. However, the reproductive behaviour of second generation today is significantly different from the reproductive patterns of their mothers. Despite that the returnees face a sharp change in the daily conditions of life they still continue to demonstrate behavior of the old environment. In the result of survey we found that ethnic Kazakhs in Mongolia began to give a birth less than repatriants from Kazakhstan. Explanation for this that the State of Mongolia overturned family allowances, as well as poverty.

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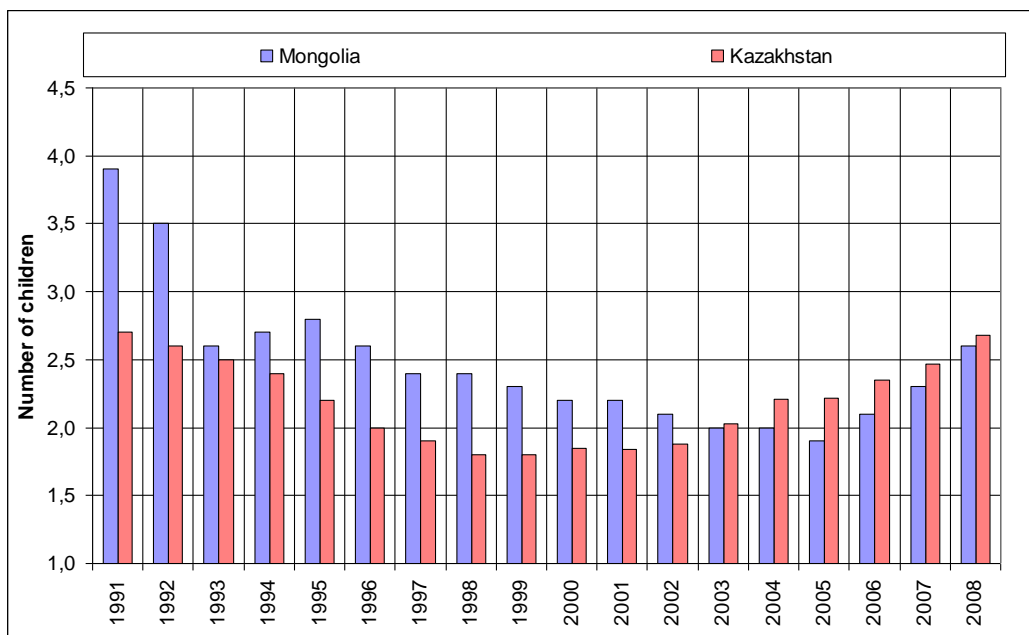
## Appendices

**Table 1 – Children born before and after migration by age group of mothers, oralmans, in Karazhal-Zhaim district , sample, 2009, (%)**

Age group	Bayan-Olgii Before migration	1-2 children After migration	3-4 children After migration	5 and more After migration	Total
25-29		41	8	1	50*
35-39	5	39	41	15	100
55-60	86	13	1		100

\*Note: 50% no birth

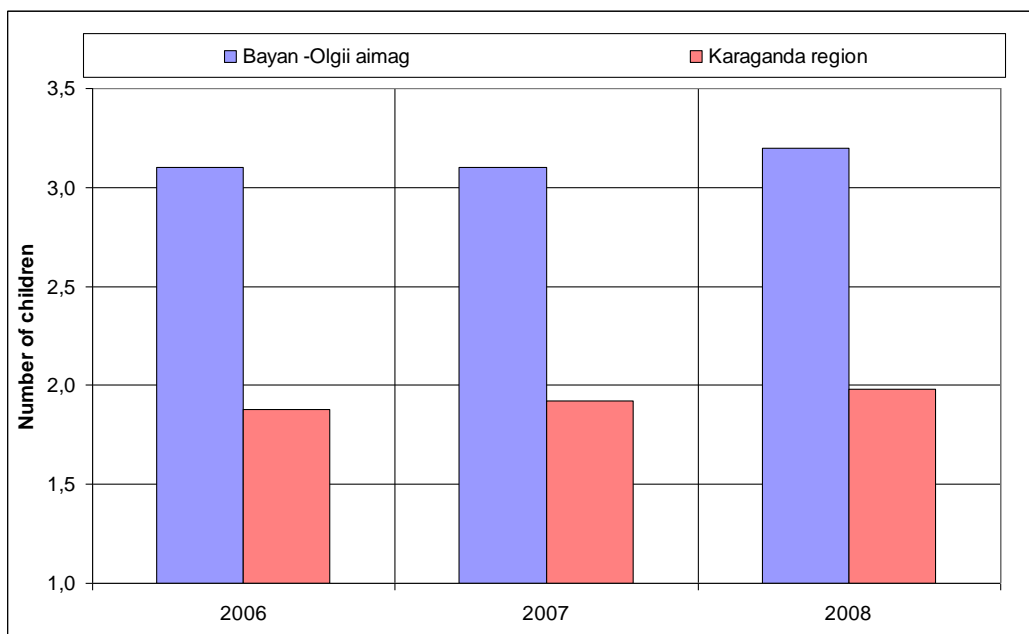
**Figure 1 – Total fertility rate, Mongolia, Kazakhstan, 1991-2008**



Note: Here included females aged 15-49

Source: Vital statistics

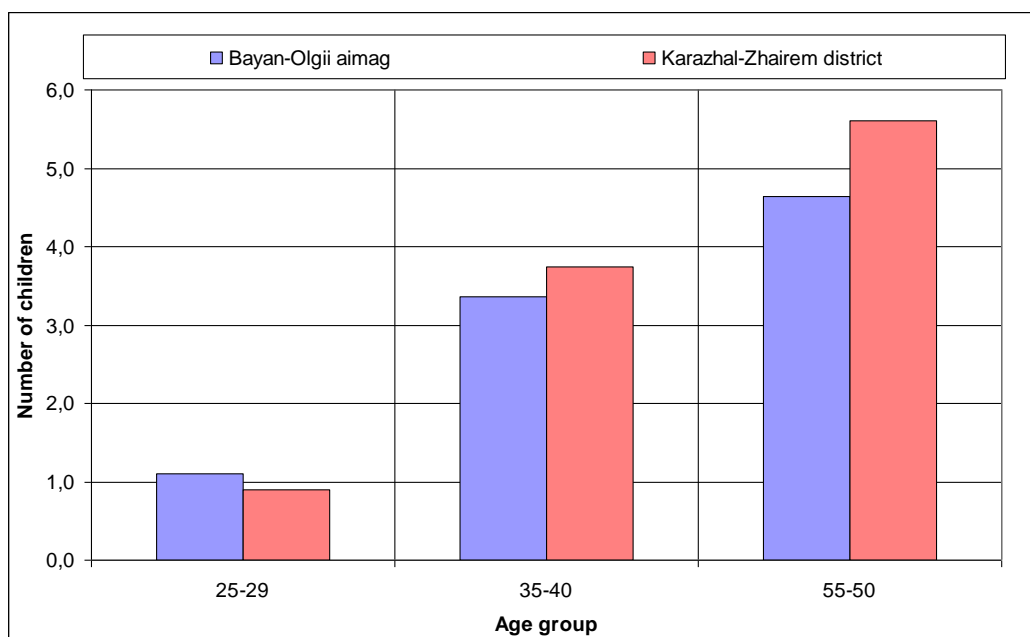
**Figure 2 – Total fertility rate, Bayan-Olgii aimag, Karaganda region, 2006-2008**



Note: Here included females aged 15-49

Source: Vital statistics

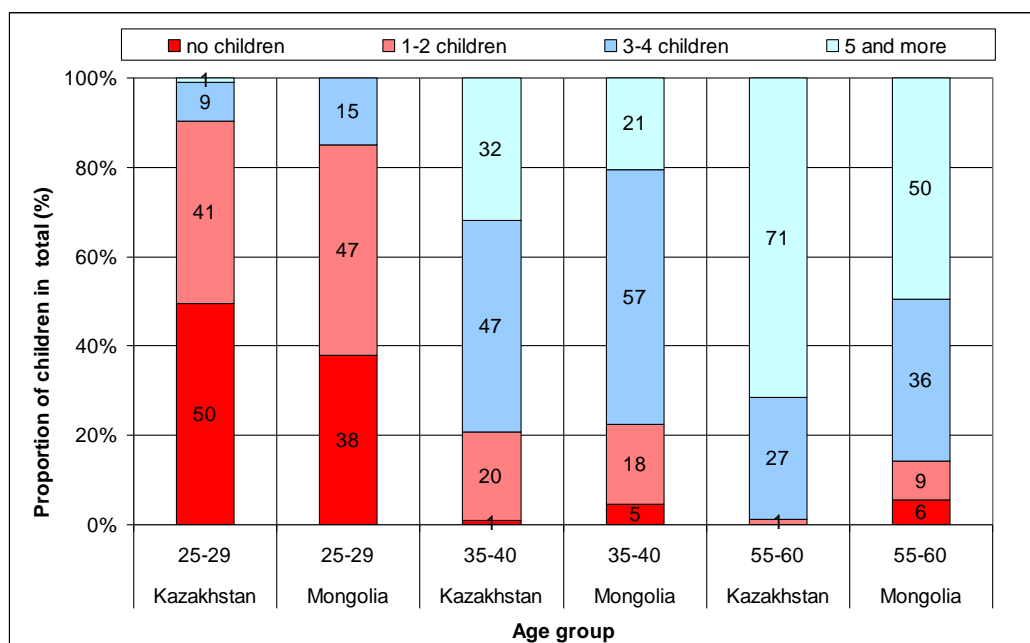
**Figure 3 – Total fertility rate, Bayan-Olgii aimag, Karazhal-Zhairem district, sample, 2009**



**Note:** Here included females aged 25-29, 35-40, and 55-60

**Source:** Survey data, 360+360=720 respondents

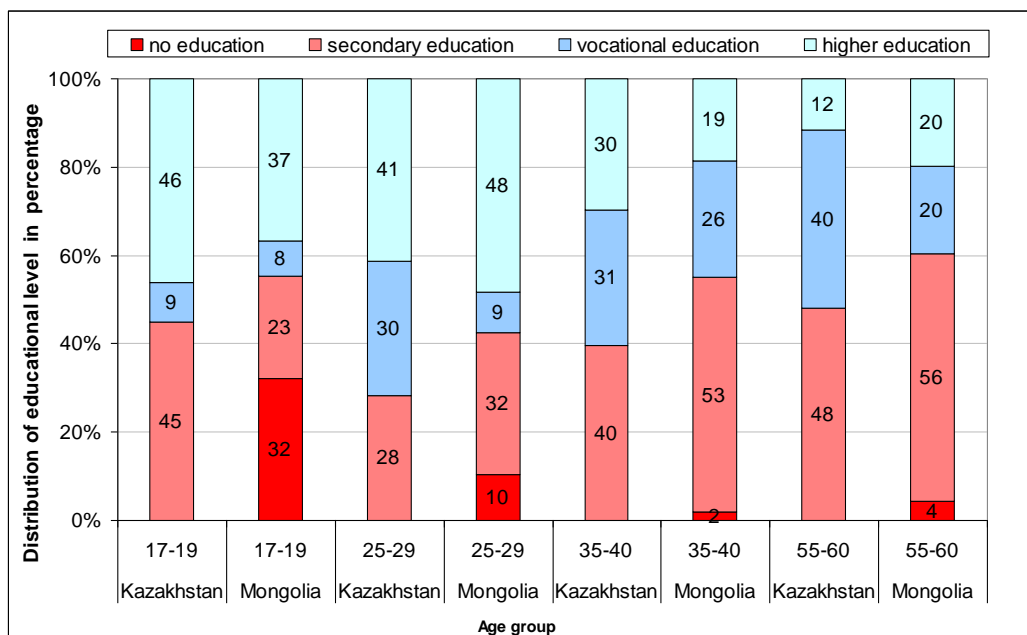
**Figure 4 – Distribution of children of repatriants and ethnic Kazakhs, sample, 2009, (%)**



**Note:** Here included females aged 25-29, 35-40, and 55-60

**Source:** Survey data, 360+360=720 respondents

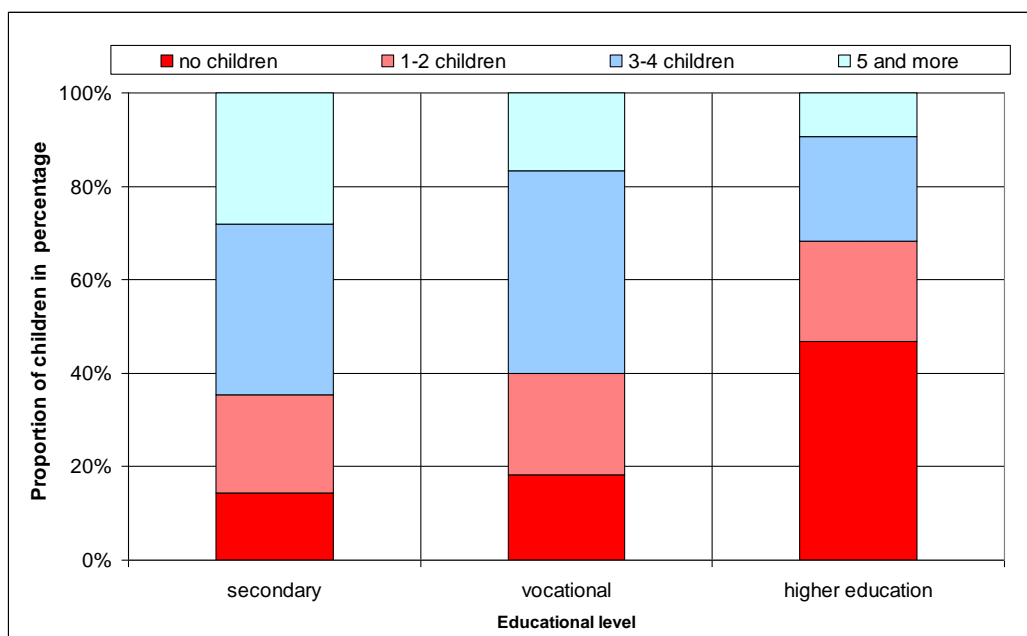
**Figure 5 – Distribution of educational level females by age group of repatriants and ethnic Kazakhs, 2009, (%)**



Note: Here included females aged 25-29, 35-40, and 55-60

Source: Survey data, 360+360=720 respondents

**Figure 6 – Distribution of educational level of mothers, in Karazhal-Zhairem district, sample, 2009, (%)**



Source: Survey data, 360+360=720 respondents

## The influence of demographic factor on geopolitical status of Kazakhstan

*Viktor Rodionov*

The theory of geopolitics supposes that demographic factor is quite significant in determination of geopolitical status in the particular country. The Republic of Kazakhstan is quite relevant subject for geopolitical analysis. It is a country with obvious economic potential and strategic geographical location in Central Asian region. Such factors could support geopolitical ambitions of the country. However, Kazakhstan has some demographic problems which could be a serious restrictive factor of improving its geopolitical position in future.

**Keywords:** geopolitics, population development

Traditionally, the theory of geopolitics considers that demographic component is one of the most important in determination of geopolitical status in the particular country. In some cases the population with specific qualitative and quantitative characteristics is very difficult object for study and analysis, because the role of this factor might be quite contradictory and it depends on a subjective position of an expert quite often.

According to the particular geopolitical strategy, population is able to be a tool or an object of geopolitical goals at the same time. This important idea usually helps to achieve of success in real geopolitical strategies. At the same time, difficulty and contradictoriness of the problem have a strong impact on its scientific relevance. Moreover, with no doubt each specific case requires a special approach to the problem with taking into account unique details.

We consider The Republic of Kazakhstan to be very pertinent example for such kind of analysis. Kazakhstan is a country with obvious economic potential, strategic geographical location. Definitely, such factors could support geopolitical ambitions of the country. On the other hand, population development of Kazakhstan might be a serious restrictive factor of improving its geopolitical position in Central Asian Region. Since the time of independence, Kazakhstan has faced with some demographic problems, which didn't exist before or weren't so important in scale of Soviet Union. Some of them were simply ignored.

The most specific feature of Kazakhstan is a huge territory of the country with relatively small number of population. Moreover, the Republic has been surrounded by countries whose overcome Kazakhstan by number and density of population.

During the Soviet time this problem was not so important in scale of united country. Kazakhstan used to be a geopolitical periphery, because of the fact that it was surrounded by the other soviet countries. At the same time economic development of Kazakhstan required a lot of people resources. That resulted in an immigration problem. Intensive immigration determined the polyethnic structure of population of Kazakhstan. The most significant period was after WWII and during the Khrushchev agricultural policy, when the economic development of the country was achieving gradually.

As a result of such an intensive immigration was rapid decrease in share of native population. During the whole soviet period this situation was instable. However, the last Soviet Population Census (1989) fixed the share of ethnic Kazakh in the republic on the level of 40.1%. The other considerable ethnic groups in Kazakhstan were Russians -37.4%, Ukrainians- 5.4% and Germans-5.8% [1]. During the Soviet period such a situation was assessing just from economical point of view. The government was interested in population size and economic efficiency. Since the time of independence the attitude of sovereign government has changed. From geopolitical point of view, polyethnic structure of population has become one of the most important factors which are able to determine domestic and foreign policy.

Further analysis of the issue uncovers us the other important demographic problems. One of them has connected with aforementioned specific of demographic development. On the base of main ethnic groups demographic behavior in Kazakhstan has two models at present time. There is traditional Asian and modern European types which have strong correlation with style of life (rural and urban).

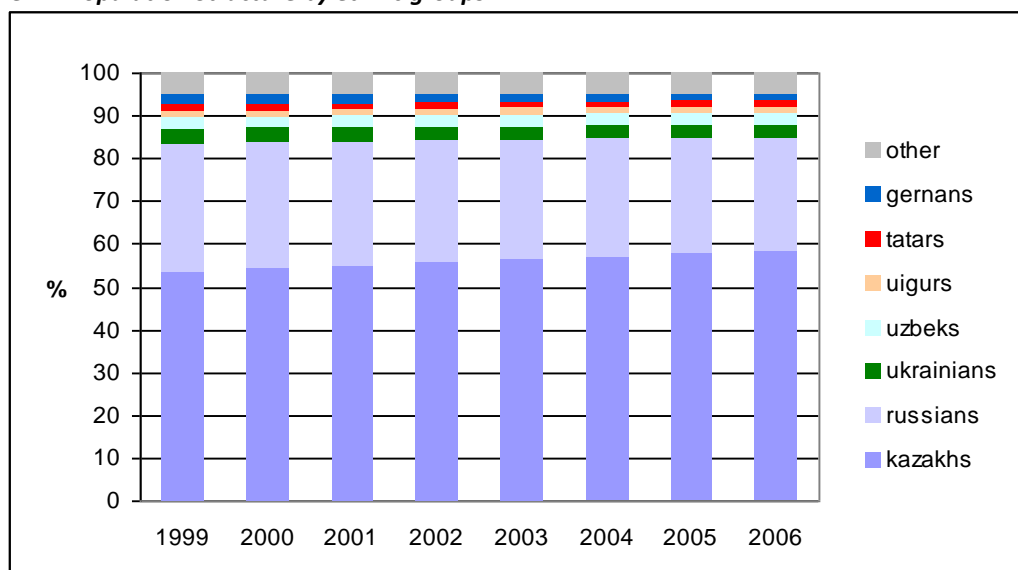
As it was mentioned before, city and industrial centres of Kazakhstan were formed by ethnic European (mostly Russians and Ukrainians) immigrants who were majority during the Soviet time in urban population of Kazakhstan. On the other hand, the rural area in the country was populated mostly by Asian ethnics. According to census, in 1989 the share of ethnic Kazakh who lived in urban area was equal to 38.3%, Russian were present in urban area by 77% [1].

Such differentiation had an impact on demographic behavior of these ethnic groups. Contemporary depopulation process of European ethnic groups in Kazakhstan is the result of previous intensive modernization. On the other hand, current native Kazakh population have realized third phase of demographic transition and as a result its population has grown.

The situation unexpectedly changed after collapse of Soviet Union. Social-economic crisis forced intensive emigration from Kazakhstan. During the 1990-s European part of Kazakhstan population was rapidly decreasing. Demographic situation in the country seriously deteriorated. As a result, in 1999 (First National Population Census) population size considerably declined and was equal to 14953.1 millions. [1]. At the same time, during the period since 1989 to 1999 an increase in number and share of Kazakh ethnos was fixed. Population growth was equal to 1.488 million or 22.9%. The share of Kazakh has increased from 40.1% to 53.4%. Population size of European ethnic groups in Kazakhstan decreased: Russian -1.582 million, 26.1%; Germans- 593,5 thousands, 62,7 %; Ukrainians- 328.6 thousands [2].

Nevertheless, the share of non-indigenous population in Kazakhstan is still considerable. However, population growth in country have been supplying during quite a long time by ethnic Kazakhs.

**Figure 1 – Population Structure by ethnic groups**



Source: Ethnodemographic Yearbook, 2006

Taking into account the problem of depopulation in European ethnic groups, we could assume that the role of ethnic factor in geopolitical strategy for Kazakhstan would decline in foreseen prospects.

In addition, we would point out the fact that recent migration trends in Kazakhstan have lost its determinate importance which this process had had before. Population has adapted to the new social-economic conditions. Nowadays, considerably more important process is urbanization which has connection with economic changes. During the several years, a positive balance in urban migration has been fixed in Kazakhstan. In 1999 this number was more than 48 thousand immigrants; in 2008 more than 58 thousands of rural population were immigrated to the urban area [3].

With reference to the world practice, we could say that the process of urbanization changes traditional demographic behavior. New oriented people are not interested in large family; they prefer better education, career success instead. As a result is steadily increasing of the average age of mother at first birth. For example, in 1999 (in Kazakhstan) it was equalled to 26.6; in 2007 – 28.3 [3]. The government attempts to find some proper tools to change such a not optimistic tendency, to support a traditional family. Nevertheless, it seems to be not so effective. Disappearance of traditional attitude to family and changes of fertility patterns is imminent problem for the country. Kazakhstan has chosen the way of modernization, democracy and attempting to integrate with the world community. The Republic has already realized the National conception concerning an achievement of level of 50 the most successful countries in the world.

Kazakhstan has some advantages in comparison with the other developed countries. One of them is demographic resources of the rural area of the country, which could be able to support the further economic growth in the country by providing a necessary number of labor forces. During the previous years the labor forces from rural area have been replacing the European labor forces which were emigrated from the country. Despite the intensive urbanization, the share of rural inhabitants in Kazakhstan is in comparison with the other developed industrial countries still quite considerable. In 2008, the share of rural inhabitants in Kazakhstan was equal to 53.2% (7381.4 thousands) [4]. Based on this fact, we could suppose that the rural area will be able to support further economic growth by satisfying country's requests in labor force. In addition, we would point out that the economic success, especially adoption of new technologies and increase of production efficiency, would influence restriction in usage of labor force. Repatriation of ethnic Kazakhs is also very important reserve. In the

period from 1991 till 2009 Kazakhstan accepted more than 706 thousands ethnic Kazakhs [5]. Despite some problems with immigrants adaptation, this process definitely has a positive impact on increasing of population size in Kazakhstan, especially the share of ethnic Kazakhs in the whole amount of the population. Moreover, the majority of repatriates are followers of traditional attitude to marriage, reproductive behavior, etc. It seems very optimistic from strategic point of view.

Aforementioned specific features of population development in Kazakhstan do not provide us comprehensive analysis of demographic factors which have importance in geopolitical prospects. We should also pay attention to the characteristic of the other quite remarkable process such as age structure, fertility, mortality, regional demographic analysis, population density etc. However, such a brief description of the main problems could show us the importance of demographic approach to the assessment of the role of demographic factor in geopolitical strategy and its impact on real policy.

Since the time of political independence Kazakhstan has faced the problem of choosing a proper solution to the problem of strategy in foreign and domestic policy. The Republic of Kazakhstan became an object of intersection of global and regional geopolitical interests. From this point of view, the most attractive feature of Kazakhstan is considerable reserve of strategic natural resources. Crucial geographical location provides abilities to realize strategic transit potential in the regional (Central-Asian region) scale.

In present time, it has become clear that none of the countries in the world, not even the most powerful are able to realize any effective policy of national security by use own resources. 'here is no doubt that, in 21 century, transboundary character of threats of regional security demands measuring the regional security in global scale', as N.A.Nazarbayev said [6]. Kazakhstan, which is located in the middle of strategic triangle of powerful Russia, China and Islamic countries, has faced the problem of choosing an appropriate partner (meanwhile, Kazakhstan has understood that potential partners has owns strategic goals and interests).

Concerning to Russian's geopolitical priorities, Kazakhstan is an important partner in security of its south boarder. In this case, territory of the country is a buffer zone for Russia. From economic point of view Kazakhstan is very attractive for Russia, because the republic has substantial abilities for trade traffic, especially for oil transport trade. In additional, Russia has worried about illegal migration from economically depressive south countries.

On the other hand, Kazakhstan is interested in partnership with Russia because it is traditional partner which tends to be a real guarantor of regional security. The Collective Security Treaty Organization has found itself as real tool which units strategic interests of two countries. The Republic of Kazakhstan has consistent intention to support integration process with post-soviet countries, especially by participation in the Eurasian Economic Community (EAEC). Customs union, which recently has been coordinated, confirms the seriousness of integration process between partners. Moreover, Russia is quite safe from demographic point of view, because during the lately time Russia has demographic problems and has been attractive for immigrants.

Different situation has developed in Kazakh-Chinese partnership. The collapse of Soviet Union opened Central Asia and Kazakhstan for China. Partnership with China has been in due since the time of independence. During economic crisis Kazakhstan found an opportunity to purchase cheap and necessary goods, what positively affected the support of domestic market of the country. Moreover, China has major market of raw materials and fuel resources important for diversification of export policy of Kazakhstan. On the other hand, China is also quite interested in mutual partnership with Kazakhstan on the same level. Further development of China's economic depends on stable and reliable sources of oil and raw materials.

Kazakhstan realizes cautious and balancing policy in relation to China. The main achievement of this policy is the agreement about boundary status. Such a successful dialog with China is also a consequence of Kazakhstan's active membership of intergovernmental Shanghai Cooperation Organization (SCO). This fact indicates increasing of importance of Kazakhstan in region and equal cooperation between all the members. SCO is quite appropriate ground for constructive dialog among Kazakhstan, China and Russia in solving problems of regional security and economic collaboration.

The other significant partner for Kazakhstan (despite the geographical distance) is the USA. Since the time of Kazakhstan's independence United States has been quite important investor for sovereign country. In addition, during the first several years of independence, the USA supplied democratic changes and economic reforms, supporting integration in international institutes. The most meaningful result of such policy for Kazakhstan might have been recognition of the EU (2000) and the USA (2001) market-based economy status.

Foreign-policy strategy of the USA concerning Kazakhstan is mostly based on its geopolitical interests, which including economic and military and political aspects. One of the most important objects of such interests is the Caspian Sea and its strategic oil resources, especially transport systems. Such importance is based on idea of diversification of world's fuel products supply. Supporting the export diversification seems to be useful for Kazakhstan's economic security and political sovereignty. From this point of view, the US are important and powerful partner who has quite strong tools and abilities. Kazakhstan is also interesting for the USA as a convenient base for military control of China and Russia.

Assessing the interrelation between Kazakhstan and its strategic partners, we could conclude that the economic factor is one of the most important and attractive one in partnership with the country. Interweaving of economic, politic and military interest has allowed Kazakhstan to realize successful ideas of multi-vector foreign policy and to improve its geopolitical position in region as a consequence.

To sum up aforementioned, we would point out that Kazakhstan have neutralized the negative influence of the demographic factor by realization of such balanceful foreign policy. The effective social-economic model has become the main tool for improving the geopolitical status of the country. as In consequence economic success, would have a positive impact on qualitative changes of population (education, health, well-being of the population). Such population would be a good fundament for the new level of the economic growth in foreseen future.

It is quite early to make an assessment of the results of current changes in Kazakhstan; we are not able to clarify the trends, because the process still in the beginning phase. However, we could suppose that the policy of improving of quality characteristics of population with the strong modern economics has a real chance to be one of the most effective solutions of the demographic problem for Kazakhstan, as far the population development use to be presented as the main restrictive geopolitical factor.

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## Maternal Mortality in South Africa

*Šárka Šustová*

This contribution is focused on maternal mortality in South Africa between 1997 and 2007. South Africa was one of the 189 countries that accepted Millennium Declaration in 2000 and therefore it pledged to fulfil eight goals stated in this document by 2015. One of these goals was to improve maternal health. However, maternal mortality is increasing in South Africa and it is partially because of the HIV/AIDS epidemic. South Africa is considered to be one of the countries with the highest HIV prevalence rates in the world and therefore the contribution is partially focused on the impact of HIV/AIDS on maternal mortality. There are also other factors that contribute to the high level of maternal mortality in South Africa. On the basis of these factors the National Committee on Confidential Enquiries into Maternal Death suggested improvements that could help South Africa to diminish maternal mortality and thus to bring South Africa closer to the fulfillment of this specific goal.

**Keywords:** maternal mortality, South Africa, direct and indirect causes of death, AIDS, recommendations

### Millennium development goals

The Millennium Development Goals (MDGs) are eight goals that should be achieved by 2015. They respond to the world's main development challenges. The goals have been commonly accepted as a framework for measuring development progress. The Millennium Declaration, which included these goals, was adopted by UN member states at the UN Millennium Summit in September 2000. The eight MDGs presented in the following table are further divided into 21 targets that are measured by 60 indicators (Tožička et al. 2008).

**Table 1 – Millennium development goals**

Goal 1	Eradicate extreme poverty and hunger
Goal 2	Achieve universal primary education
Goal 3	Promote gender equality and empower women
Goal 4	Reduce child mortality
Goal 5	Improve maternal health
Goal 6	Combat HIV/AIDS, malaria and other diseases
Goal 7	Ensure environmental sustainability
Goal 8	Develop a Global Partnership for Development

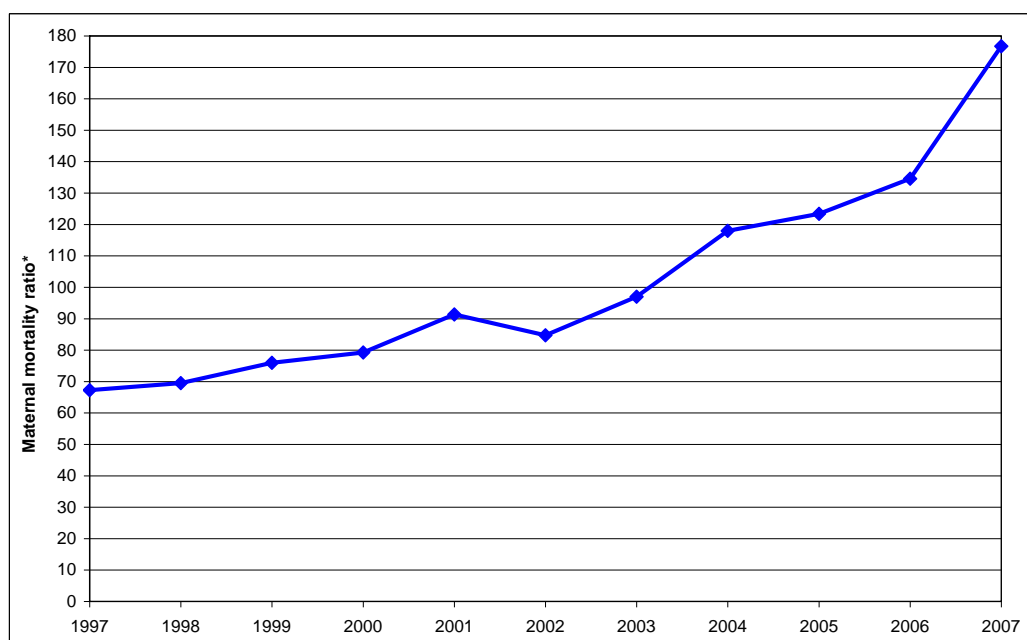
Source: Tožička et al., 2008

### Fulfillment of the fifth millennium development goal in South Africa

The first South Africa MDGs country progress report from 2005 indicated that SA is well on course to meet all MDGs and targets. In fact, it suggested that SA had already met some of the MDGs (SA MDGs Country Report 2005, SA MDGs mid-term Country Report 2007). This contribution is focused on the fulfilment of the fifth millennium development goal – The improvement of maternal health. Is this goal one of those that had already been fulfilled? Or is South Africa far from the meeting this goal? This contribution tries to answer these questions.

The improvement of maternal health could be measured by maternal mortality ratio, which is defined as the number of maternal death per 100 000 live births. Maternal mortality ratio in South Africa increased more than two times between 1997 and 2007. It increased slightly from 67,3 in 1997 to 79,3 in 2000. However, there was a significant increase of maternal mortality between 2001 and 2007, which is also evident from the following figure. In 2007, 176,7 mothers died per 100 000 live births.

**Figure 1 – Maternal mortality in South Africa, 1997–2007**



Notes: \*maternal mortality ratio= the number of maternal deaths per 100 000 live births

Sources: Stats SA 2006, 2007, 2008, 2009a a 2009b. Author's own calculations.

The figure illustrates only deaths that are directly connected to the pregnancy, delivery or puerperium. However, there are also deaths that are not directly related to the pregnancy, delivery or puerperium and those include among others AIDS. The table that follows represents the percentage distribution of direct and indirect causes of maternal deaths with special attention to deaths due to AIDS. The data come from the reports "Saving mothers" of National Committee on Confidential Enquiries into Maternal Deaths (NCCEMD), which was established by the Department of Health in 1997 because of the high level of maternal mortality in the country (NCCEMD 2007).

**Table 2 – Maternal deaths according to causes of death, SA, 1998–2007**

Causes of death	1998		1999		1999–2001		2002–2004		2005–2007	
	N	%	N	%	N	%	N	%	N	%
Direct	358	61,2	345	57,8	1 462	58,7	1 767	51,9	1 819	44,6
Indirect	189	32,3	219	36,7	939	37,7	1 430	42,0	1 966	48,2
AIDS	82	14,0	93	15,6	416	16,7	662	19,4	915	22,4
Unknown	18	3,1	20	3,4	44	1,8	99	2,9	174	4,3
Coincidental death	20	3,4	13	2,2	45	1,8	110	3,2	118	2,9
Total	585	100,0	597	100,0	2 490	100,0	3 406	100,0	4 077	100,0

Sources: NCCEMD 1999, 2004 a 2007

The study of NCCEMD confirms the increasing trend of maternal mortality that was presented earlier and was based on the data from Statistics South Africa. The number of death has risen by 60 percent from the first triennium (1999–2001) to the last one. The proportion of maternal death caused by direct causes of death has decreased, while the deaths related to the indirect causes of death has grown during the studied period of time. In 1998, 61,2 % mothers died of direct causes of death, while 44,6 % in the years 2005–2007. On the other hand, the proportion of indirect deaths has risen from almost one third in 1998 to nearly one half in 2005–2007. It is important to know how HIV/AIDS influences the intensity of maternal mortality in the era of HIV/AIDS epidemic and therefore the percentage of maternal deaths from AIDS is included in the table 2 as well. The number of maternal death due to AIDS has grown as well as its proportion on the overall maternal mortality. AIDS-related deaths contributed to the overall maternal mortality with 14 percent in 1998, while with more than the fifth in 2005–2007.

### Avoidable factors and preventable deaths

The experts from NCCEMD identified some avoidable factors and missed opportunities both on the side of patients and health care system. If those problems were removed, there would be fewer maternal deaths. The main patient oriented problem was delay in seeking medical help. However, it is likely that this was influenced by the lack of transport facilities both vehicles and roads rather than patients' ignorance. Another important factor that contributed to the number of preventable deaths was no or infrequent antenatal care. To attend antenatal health care facility is very important because a disease could be diagnosed in time and therefore maternal death could be prevented. Women that do not visit those facilities have four times higher probability to die in comparison with women that attend them. One fifth in 2002–2004 and one fourth in 2005–2007 of women who died of abortions died due to unsafe ones. To provide women with information about reproductive health, to provide them with contraception and to allow them to end their pregnancy legally and for free is therefore crucial in order to reduce those deaths.

A lack of blood for transfusion was identified as the main organisational problem in 2005–2007. Blood for transfusion is a necessity wherever cesarean sections are pursued. There were 477 210 cesarean sections in South Africa in 2005–2007, which represented 18,4 % from overall deliveries. The women who delivered children via cesarean sections were 2,5 times likely to die than those women who had vaginal delivery. Higher probability to die for women who gave births through cesarean section was partially caused by the lack of blood for transfusion. A lack of appropriately trained staff and a lack of specific health care facilities were determined as the most problematic in 2002–2004. There were transport problems in both trienniums (NCCEMD 2004 and 2007).

The number of deaths clearly preventable within the health care system is shown in the table 3. The aim of identifying those deaths was to find out the potential for improvements and to establish areas for focusing attention. More than one third of maternal deaths was preventable in both trienniums. Deaths from direct causes of death could have been prevented from almost 60 % in all studied years, while indirect causes of death could have been prevented in 10,4 % and 21,4 % in 2002–2004 and 2005–2007, respectively. More than eighty percent of women who died due to anaesthetic complications and postpartum haemorrhage could have survived. Over seventeen percent of maternal deaths from AIDS in 2005–2007 were thought to be avoidable (NCCEMD 2004 and 2007).

**Table 3: Avoidable deaths per disease category, South Africa, 2002–2007**

Causes of death	2002–2004			2005–2007		
	D	AD	%	D	AD	%
Direct	1 767	1 059	59,9	1 819	1 065	58,5
Indirect	1 430	149	10,4	1 966	421	21,4
AIDS				915	161	17,6
Total	3 296	1 208	36,7	3 959	1 519	38,4

**Notes:** D=the number of deaths, AD=the number of avoidable deaths

**Sources:** NCCEMD 1999, 2004 a 2007

## Recommendations

On the basis of the identified avoidable factors the National Committee on Confidential Enquiries into Maternal Death suggested a set of improvements that could help South Africa to improve maternal health and to diminish maternal mortality:

- Protocols on the management of important conditions causing maternal deaths must be available and utilised appropriately in all institutions where women deliver. All midwives and doctors must be trained on the use of these protocols.
- Training should be provided for all health professional working in maternity units in practical obstetrical and surgical skills. Skills should be provided in anaesthesia as well.
- All pregnant women should be offered information on, screening for and appropriate management of non-pregnancy related infections and common medical disorders.
- Emergency transport facilities must be available for all pregnant women in need.
- Postnatal care must be strengthened.
- Staffing and equipment norms must be established for every health institution concerned with the care of pregnant women.
- Blood for transfusion must be available at every institution where caesarean sections are performed.
- Contraceptive use must be promoted through education and service provision and the number of deaths from unsafe abortion must be reduced.

- Correct use of the partogram should become the norm in each institution conducting births.
- Women, families and communities must be empowered, involved and participate actively in activities, projects and programmes aiming at improving maternal and neonatal health as well as reproductive health in general.

By the end of March 2007 85 % of health care facilities implemented this set of recommendations (NCCEMD 2004, 2007 and SA MDGs mid-term Country Report 2007).

## Conclusion

Unfortunately, South Africa is not very successful in fulfilling the fifth millennium development goal, in spite of the fact that over eighty percent of all deliveries occur in health care facilities already in 1992–1998 and assistance at delivery by a nurse, midwife or a doctor increased from 84,4 % in 1998 to 92,0 % in 2003 (Department of Health 1998 and 2008). The number of maternal death is increasing and one reason is HIV/AIDS epidemic. AIDS contributed to the overall maternal mortality with 14 % in 1998 and 22 % in 2005–2007 and it is thought that the impact of HIV/AIDS epidemic is still underestimated because only about sixty percent of dead women were tested on HIV in 2005–2007 and because HIV could contribute indirectly to other causes of death. HIV positive women are for example more likely to die due to postpartum haemorrhage. There are still many problems both on the side of patients and health care system. If those problems were removed, there would be fewer deaths by more than one third. Despite the fact that 85 % health care facilities implemented the recommendations of NCCEMD by the end of March 2007, there is no progress in decreasing maternal mortality.

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

*Shynar Tuleshova*

The paper investigates mortality trends in Kazakhstan in 1999–2008 analyzing it on national and regional level. For analysis of mortality trends in 1999–2008 on national and regional level population and mortality data for the whole country and for each region including sex, age groups was obtained from Statistical Agency of the Republic of Kazakhstan. The trends of mortality was analysed for 1999–2008 for Kazakhstan and for each region including two municipalities. Life expectancy at birth and probability of death in age groups 40–54, 55–69, 70–84 for each sex and for each region were calculated. The Mortality level in Kazakhstan decreased over time for both sexes. But the gap in mortality between males and females was big in all years. The gap can be explained by the accidents which mainly take place in urban areas and homicide, suicide, life style, behavior and diet of males.

**Keywords:** mortality trend, Kazakhstan, region, age, sex, time

Kazakhstan is one of the former Soviet Republics which is not less important factor in demographic development of the country. In terms of epidemiological transition stage Kazakhstan is considered to be one of the Formerly Socialist Economies' countries which have the unique experience in demographic and epidemiological transition from other developed countries (National Research Council 1997).

As post Soviet country Kazakhstan had the deep economic crisis after the collapse of Soviet Union which was followed by the new one in 1997–1998. This situation was reflected in the mortality level of the country. We analysed the mortality only from 1999, from the period of economic stabilization in the country.

## Data

For analysis of mortality trends in 1999–2008 on national and regional level Population and Mortality Data for the whole country and for each region including sex, age groups was obtained from Statistical Agency of the Republic of Kazakhstan.

Mortality Data is compiled on the basis of death certificates. Death Certificate is registered on the place, where the dead lived or died by the reference of doctor about death, which is allocated to the second copy of Death Certificate.

The Death Certificate includes such information as 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.

For infant deaths Death certificate is registered by the report of mother and it includes the information of mother: the order of birth, age, marital status, education, nationality, the place of work, profession, the source of living, the permanent place of living of mother.

The statistical Data processing of death in The Republic of Kazakhstan is conducted by the order of the administrative division of the republic: Republic consists of 14 regions (oblasts) each of which is divided into districts (there is a different number of districts (rayons) in each region). Each district is divided into villages (aul). The data processing begins from the smallest unit. But there is no any statistical bureau in villages. The Statistical Bureau of the Regional Department of Statistics in each district includes the Statisticians from its villages. This bureau compiles the Death Certificates from the Bureau of Civil registration of District Justice Administration and reports them to the Regional Department of Statistics. The Department counts the number of deaths and deaths by cause in each district on the basis of these Certificates and in turn reports this data on regional level to the Statistical Agency of the Republic of Kazakhstan. The Agency compiles the data from each region in such way and counts the numbers at the national level and can calculate rates of vital events. The errors in data are considered to be caused mainly in local reports (Charles M. Becker and Dina S. Urzhumova 2005)

## Methods

The trends of mortality was analysed for 1999–2008 for Kazakhstan and for each region including two municipalities. For analysis 14 regions were regionalized into 5 parts (south, north, central, west, and east). Two municipalities Almaty and Astana are considered separately. Life expectancy at birth for sex and urban, rural types of places, probability of death for specific age groups (40–54, 55–69, 70–84), and cross regional variation in life expectancy at birth and probability of death for specific age groups were calculated.

## Results

### Mortality Patterns in the country

One of the particularities in mortality patterns of the country which is common for almost all post Soviet countries is excess male mortality. Life expectancy at birth for males was 60.60 whereas for females it was 70.97 in 1999 in the country. Within ten years in 2008 it changed for 61.93 for males and 72.50 for females. The trend was stable over time (see Figure 1). But in 2008 for males it increased slightly. Such a big gap in life expectancy between two sexes in Kazakhstan can be explained by premature male mortality from external causes of mortality like traffic accidents, accidents in the working conditions, homicide, suicide, life style, behavior and diet of males.

The gap in life expectancy between rural and urban males of the country in comparison with urban and rural females can approve the causes of the gap what was said above (see Figure 2). Rural males are not likely to be victims of accidents because of their less dangerous working places.

The mortality level by age decreased slightly for both sexes (see Figures 3–5), especially in the year 2008. The higher level of mortality in age groups 40–54 and 70–84 in 2003 demands the explanation which is impossible without further analysis. The gap in the level of mortality between two sexes is bigger in age group 55–69, which appoints higher male mortality in this age group.

### **Mortality by region**

Each region of Kazakhstan has its socio-economic position and some of them are ecologically polluted ones which definitely influence its mortality patterns.

The regional analysis of mortality discovered that the central part of Kazakhstan had the lowest life expectancy for both sexes whereas Astana had the highest one over time (see Figures 6-7). The central part of Kazakhstan includes Akmola and Karagandy regions. Karagandy is the center of coal mine in the country from the Soviet period, which can explain this trend. Astana is the new capital which has the better access and quality of health care and bigger development of the service sector than other ones. The proportion of service sector increased here from 63.9 to 79.7% (Nathan Associates Inc. 2006). The regional variation in life expectancy at birth increased slightly for both sexes (see Table 1).

The analysis of mortality by age pointed that level of mortality was highest in the central part of Kazakhstan in all examined age groups, except females in age group 70-84 who had the highest mortality in the southern part of Kazakhstan (see Figure 13), This part of Kazakhstan (Almaty, Zhambyl, South Kazakhstan, and Kzylorda) includes Kzylorda region which had the highest level of mortality in this age group for females and is considered to be the ecologically polluted one (UNESCO 2006). The lowest mortality in all observed ages was in Astana for both sexes and it was decreasing here over time (see Figures 8–12). The level of mortality for males in age group 40–54 fluctuated in Almaty appointing the high one in years 2004, 2005. The regional variation in mortality level by age increased over time for both sexes (see Tables 2–4).

### **Conclusion**

The Mortality level in Kazakhstan decreased over time for both sexes. But the gap in mortality between males and females was big in all years. The gap can be explained by the type of place taking into account that urban males had the higher mortality than rural ones, which can be caused by the accidents which mainly take place in urban areas. The author explained some important points of mortality trends hypothetically by the socio-economic, ecological position of the region. 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.

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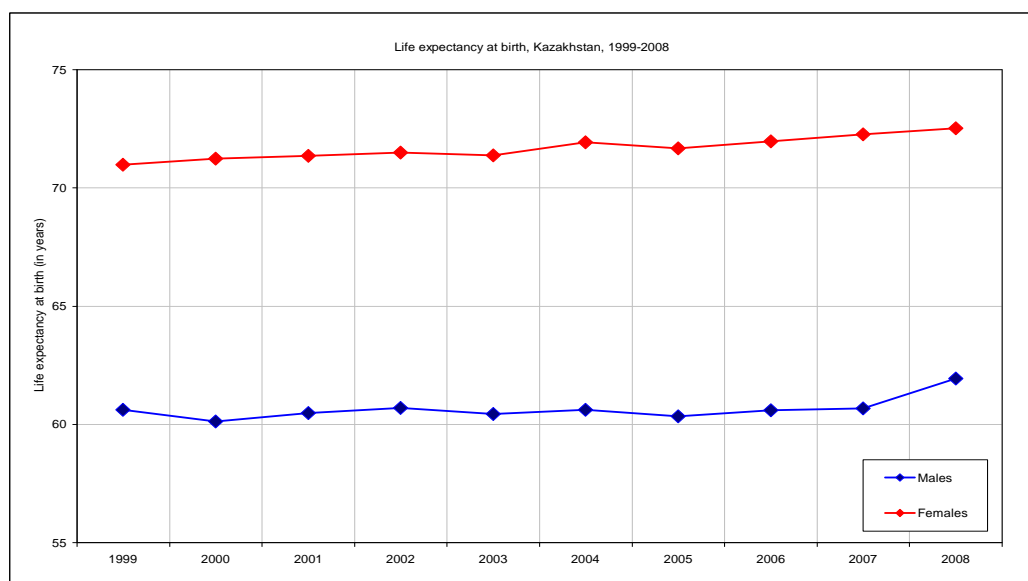
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## Appendices

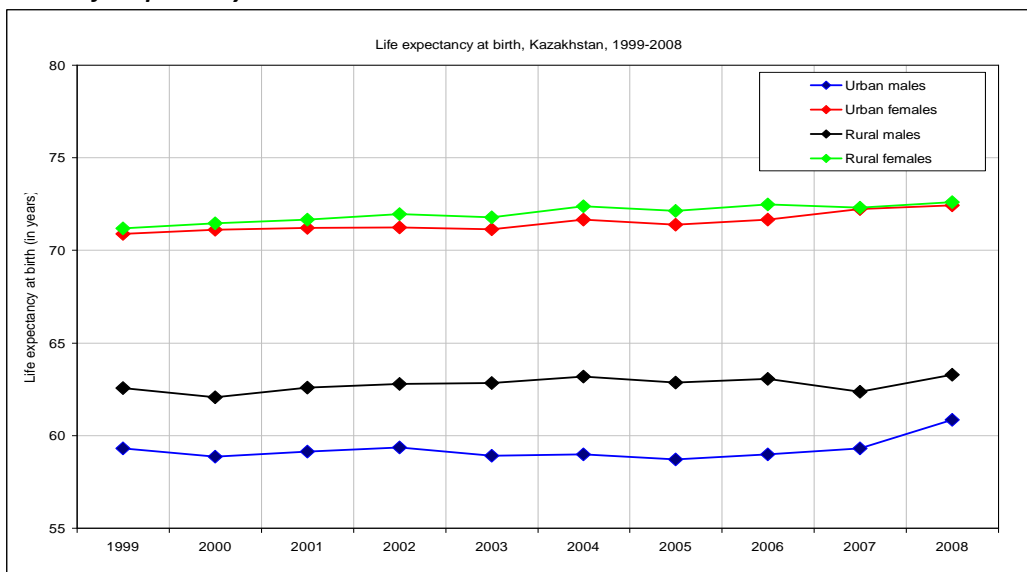
**Figure 1 – Life expectancy at birth in Kazakhstan in 1999-2008**



Notes: Here included males and females aged 0-85+

Sources: Author's calculations based on the data from the Agency of Statistics of the Republic of Kazakhstan

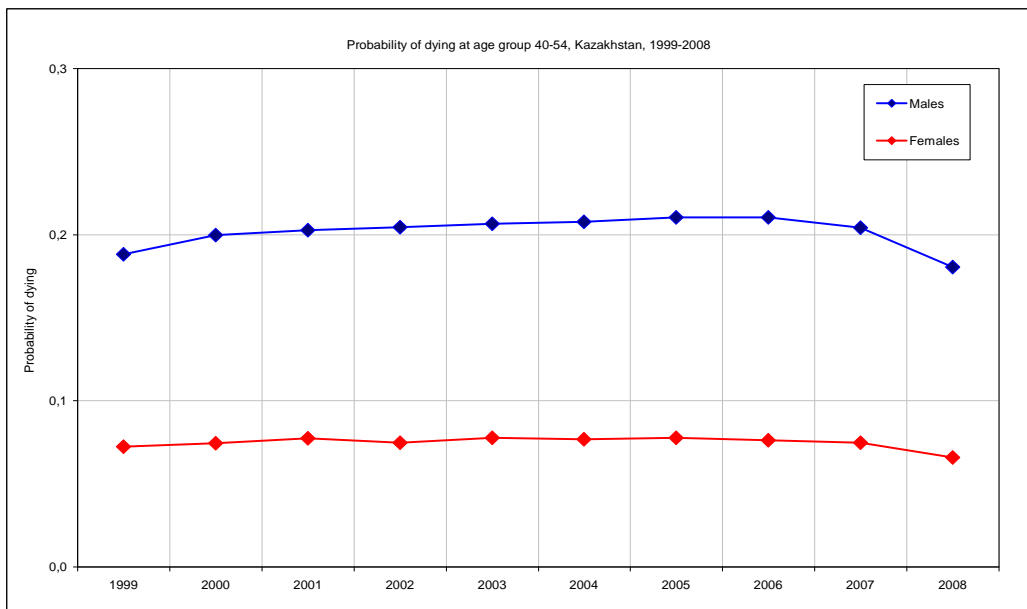
**Figure 2 – Life expectancy at birth in Kazakhstan in 1999-2008**



**Note:** Here included urban, rural males aged 0-85+ and urban, rural females aged 0-85+

**Source:** Author's calculations based on the data from the Agency of Statistics of the Republic of Kazakhstan

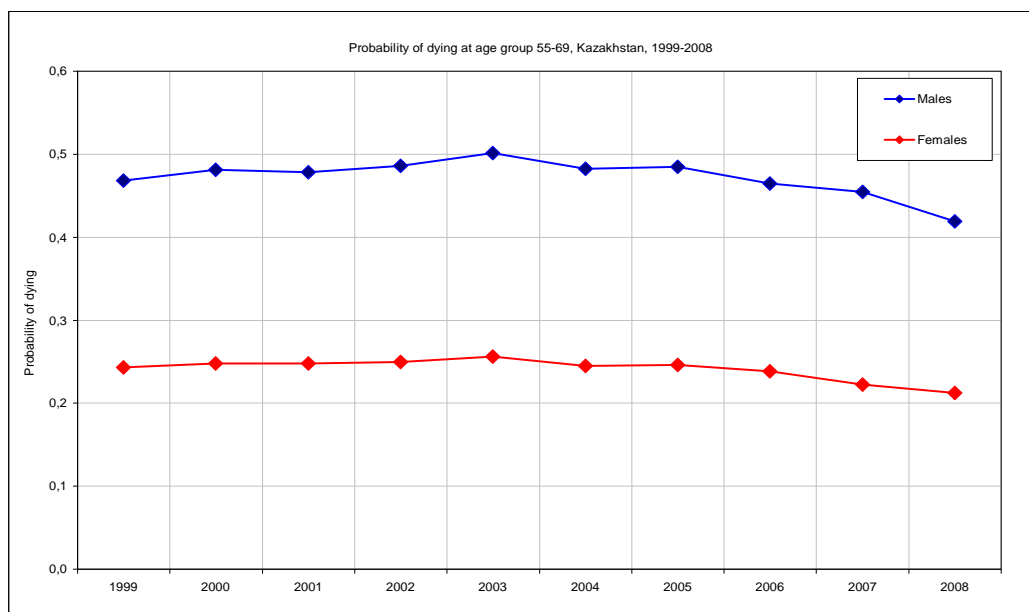
**Figure 3 – Probability of dying at age group 40-54 in Kazakhstan in 1999-2008**



**Note:** Here included males and females aged 40-54

**Source:** Author's calculations based on the data from the Agency of Statistics of the Republic of Kazakhstan

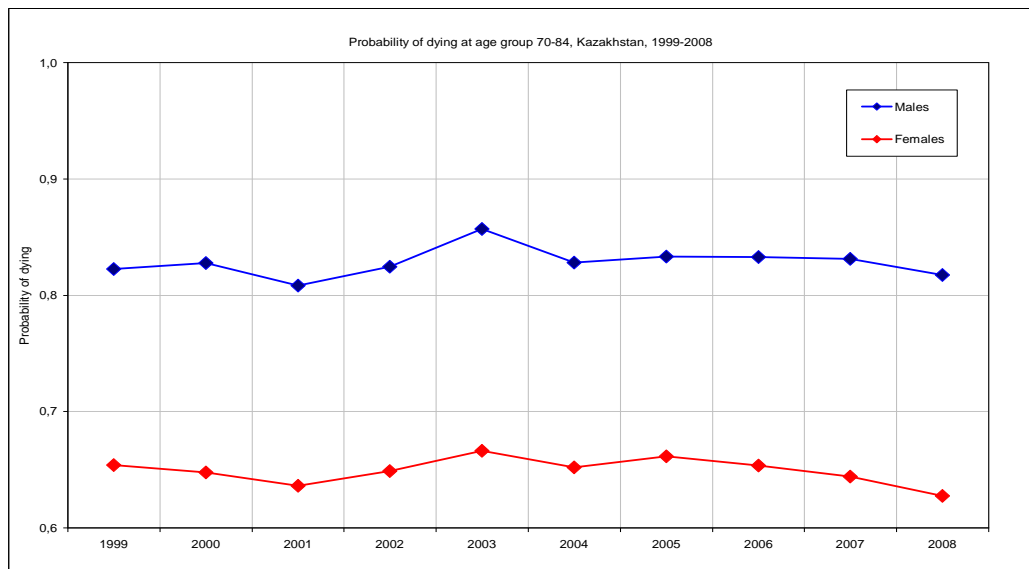
**Figure 4 – Probability of dying at age group 55-69 in Kazakhstan in 1999-2008**



**Note:** Here included males and females aged 55-69

**Source:** Author's calculations based on the data from the Agency of Statistics of the Republic of Kazakhstan

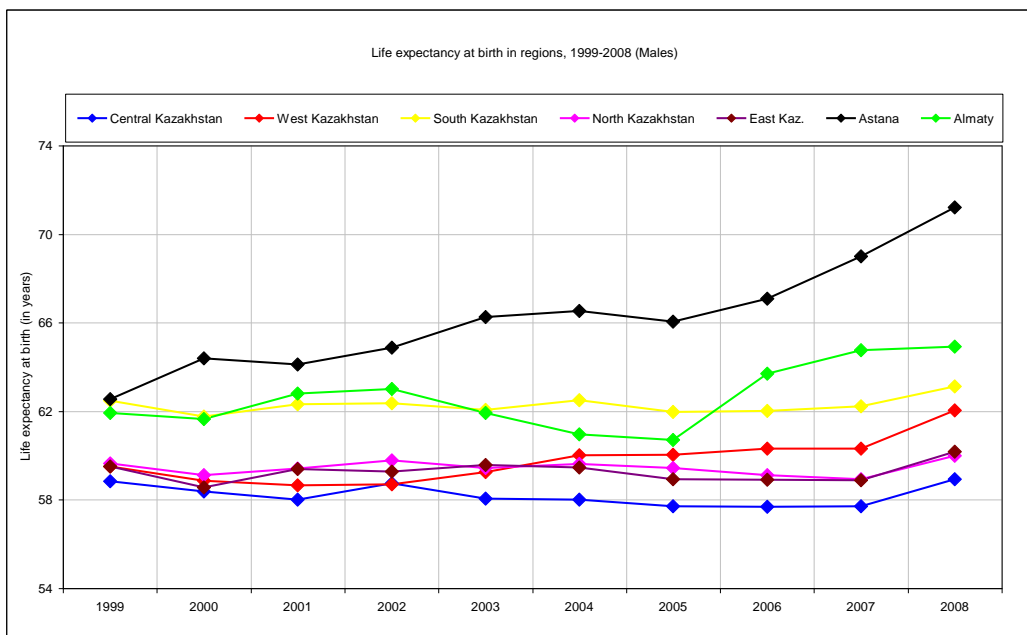
**Figure 5 – Probability of dying at age group 70-84 in Kazakhstan in 1999-2008**



**Note:** Here included males and females aged 70-84

**Source:** Author's calculations based on the data from the Agency of Statistics of the Republic of Kazakhstan

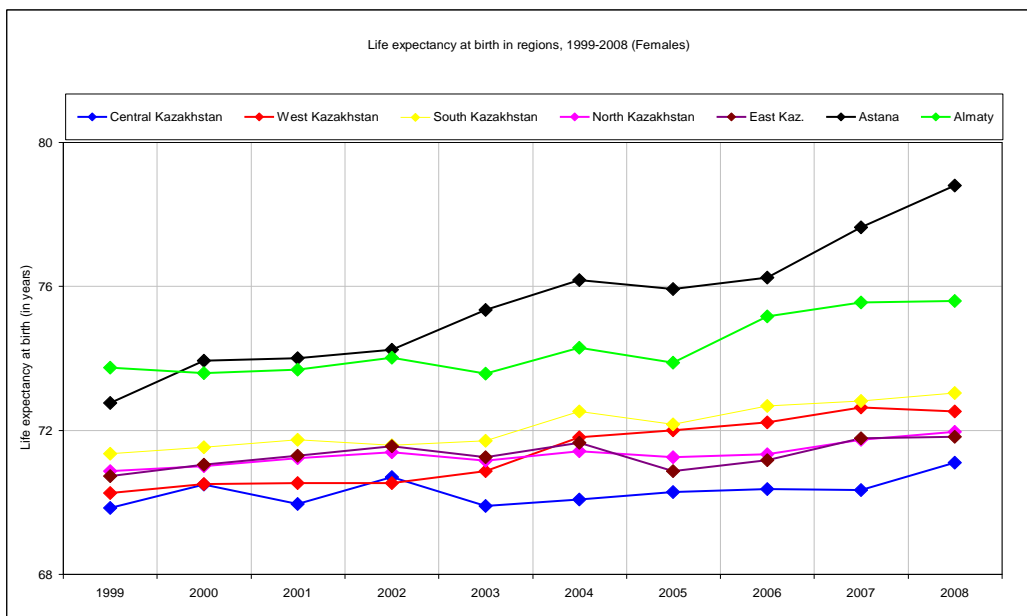
Figure 6 – Life expectancy at birth in regions in 1999-2008 (Males)



Note: Here included males aged 0-85

Source: Author's calculations based on the data from the Agency of Statistics of the Republic of Kazakhstan

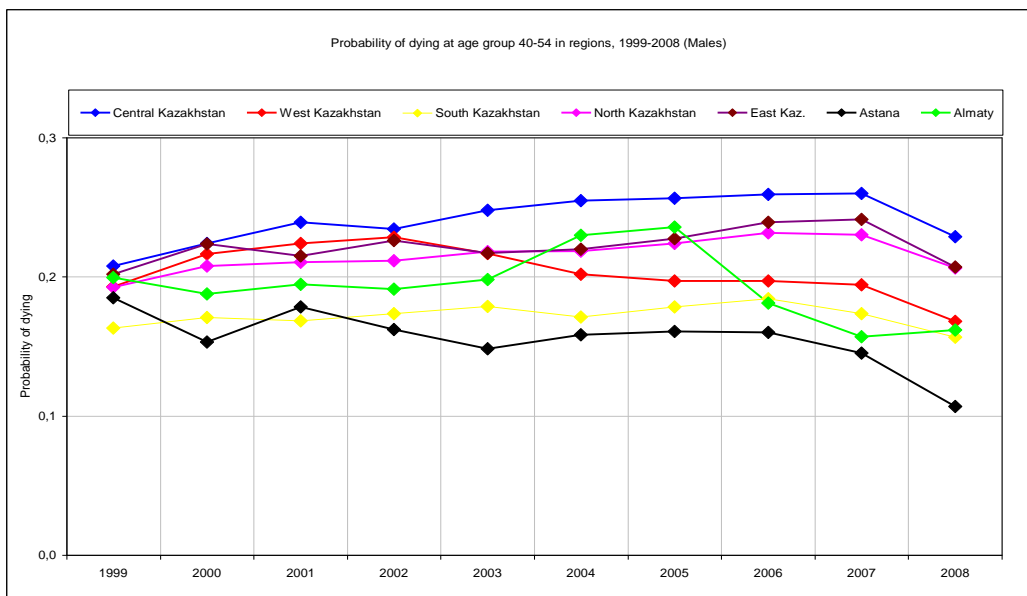
Figure 7 – Life expectancy at birth in regions in 1999-2008 (Females)



Note: Here included females aged 0-85

Source: Author's calculations based on the data from the Agency of Statistics of the Republic of Kazakhstan

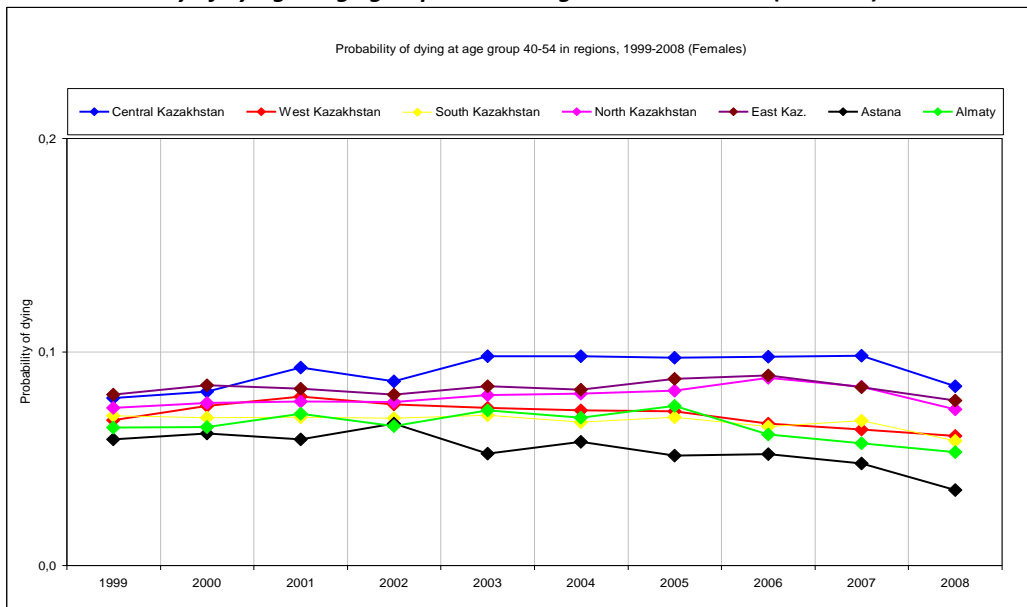
**Figure 8 – Probability of dying at age group 40-54 in regions in 1999-2008 (Males)**



**Note:** Here included males aged 40-54

**Source:** Author's calculations based on the data from the Agency of Statistics of the Republic of Kazakhstan

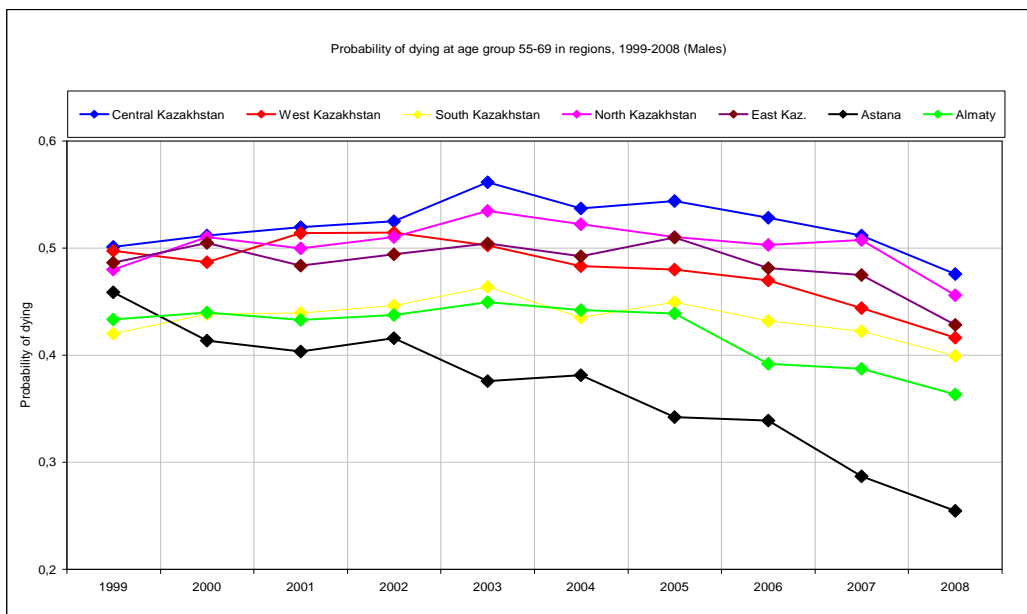
**Figure 9 – Probability of dying at age group 40-54 in regions in 1999-2008 (Females)**



**Note:** Here included females aged 40-54

**Source:** Author's calculations based on the data from the Agency of Statistics of the Republic of Kazakhstan

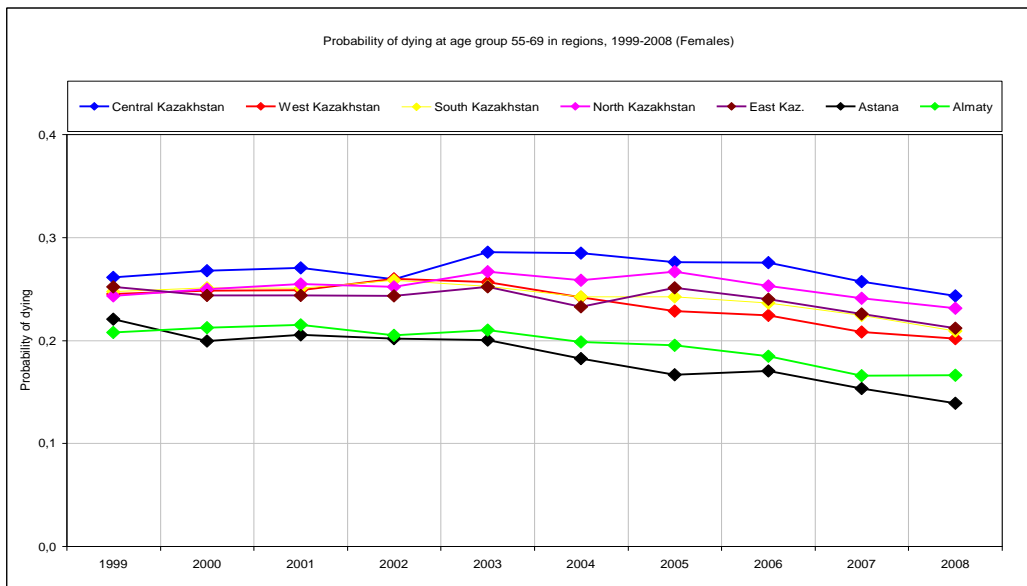
**Figure 10 – Probability of dying at age group 55-69 in regions in 1999-2008 (Males)**



**Note:** Here included males aged 55-69

**Source:** Author's calculations based on the data from the Agency of Statistics of the Republic of Kazakhstan

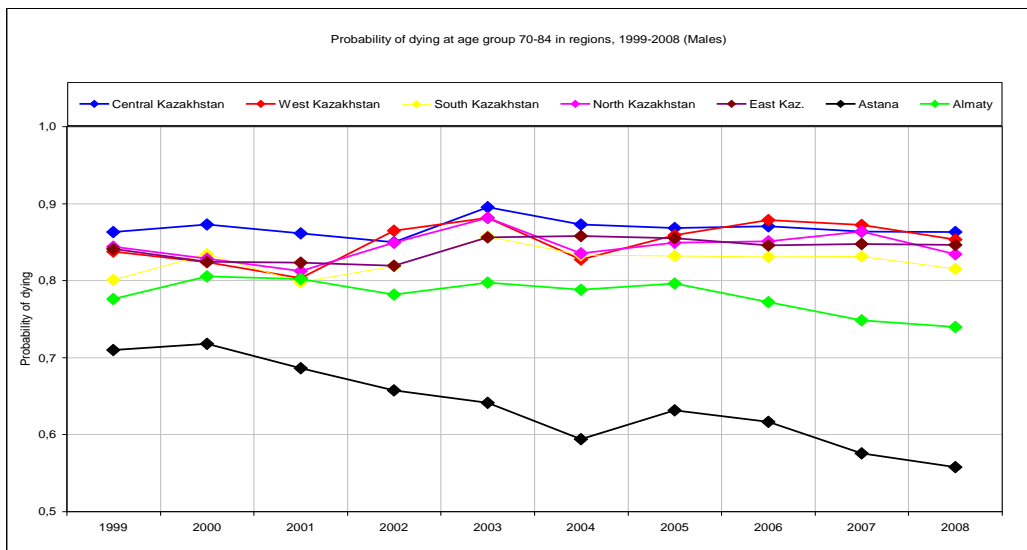
**Figure 11 – Probability of dying at age group 55-69 in regions in 1999-2008 (Females)**



**Note:** Here included females aged 55-69

**Source:** Author's calculations based on the data from the Agency of Statistics of the Republic of Kazakhstan

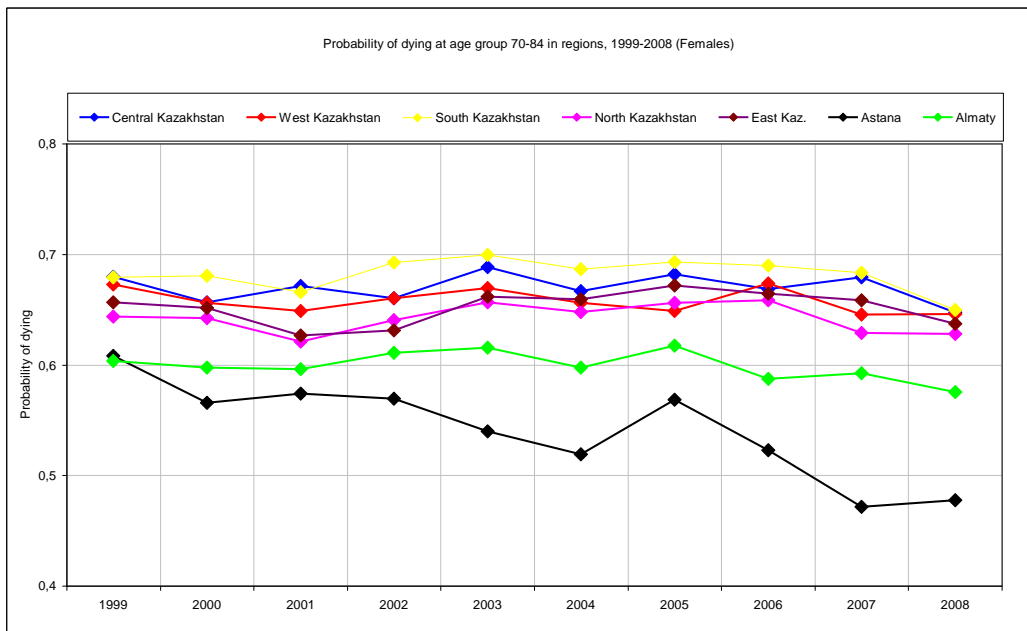
**Figure 12 – Probability of dying at age group 70-84 in regions in 1999-2008 (Males)**



**Note:** Here included males aged 70-84

**Source:** Author's calculations based on the data from the Agency of Statistics of the Republic of Kazakhstan

**Figure 13 – Probability of dying at age group 70-84 in regions in 1999-2008 (Females)**



**Note:** Here included females aged 70-84

**Source:** Author's calculations based on the data from the Agency of Statistics of the Republic of Kazakhstan

**Table 1 – Cross-regional Variation in Life Expectancy at Birth, 1999-2008, male and female**

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
	Male									
Minimal value	58,27	57,96	57,51	58,47	57,73	57,74	57,62	57,47	57,25	58,69
Maximal value	63,40	64,40	64,11	64,86	66,26	66,54	66,05	67,09	69,00	71,21
Range	5,13	6,44	6,60	6,39	8,53	8,80	8,42	9,62	11,75	12,52
Standard deviation	1,55	1,85	2,05	2,01	2,09	2,10	2,04	2,37	2,83	2,90
Coefficient of variation	0,03	0,03	0,03	0,03	0,03	0,03	0,03	0,04	0,05	0,05
	Female									
Minimal value	69,03	69,25	69,62	69,54	69,35	70,06	69,91	70,00	70,06	70,87
Maximal value	73,74	73,93	74,01	74,23	75,35	76,17	75,92	76,24	77,63	78,80
Range	4,71	4,67	4,39	4,69	6,00	6,11	6,01	6,24	7,58	7,93
Standard deviation	1,13	1,17	1,23	1,21	1,37	1,45	1,36	1,55	1,82	1,86
Coefficient of variation	0,02	0,02	0,02	0,02	0,02	0,02	0,02	0,02	0,03	0,03

**Note:** Here included males and females aged 0-85

**Source:** Author's calculations based on the data from the Agency of Statistics of the Republic of Kazakhstan

**Table 2 – 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

**Note:** Here included males and females aged 40-54

**Source:** Author's calculations based on the data from the Agency of Statistics of the Republic of Kazakhstan

**Table 3 – 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

**Note:** Here included males and females aged 55-69

**Source:** Author's calculations based on the data from the Agency of Statistics of the Republic of Kazakhstan

**Table 4: 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

**Note:** Here included males and females aged 70-84

**Source:** Author's calculations based on the data from the Agency of Statistics of the Republic of Kazakhstan

## Future of the Population in Rural Areas in the Czech Republic<sup>1</sup>

*Jana Vobecká*

The main goal of this paper is to discuss the future prospect of the population dynamics in the rural areas of the Czech Republic, namely what are the tendencies and the possible positive and negative consequences of such evolution. That can be only concluded after the presentation of what do we consider as rural space and rural population and after a review of the recent population development and socio-economic structure of rural population. The spatial population dynamics which frame the search of the prospects of rural population is twofolded. First, it assumes that there exist differences in population structure in different spatial categories, which can be created or reproduced by spatially distinct demographic reproduction. The spatially unequal demographic reproduction may be caused by differences in the composition of the population, or by actual specificities of the localities. Second, migration can influence demographic structures. Both demographic reproduction and migration can mutually influence each other and affect the population structure together.

**Keywords:** rural areas, rural population, Czech Republic, human geography

### What is rural space and rural population?

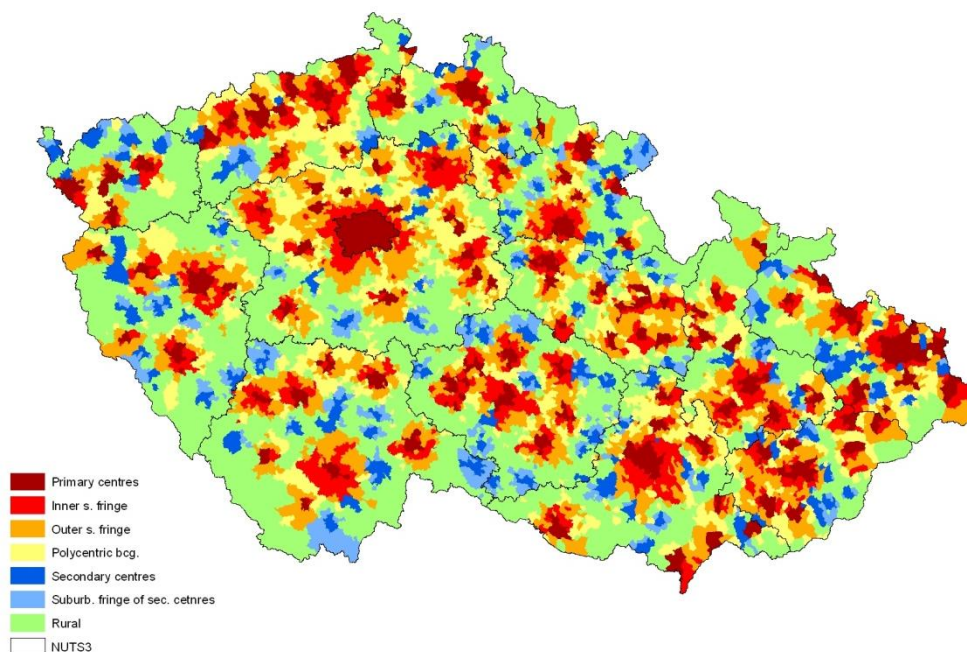
The definition of rural areas and rural population derives from urban-rural gradient commuting approach classification which consists of three main spatial categories: centres, their suburban areas and more remote rural areas. The starting point of the classification construction was data concerning inter-municipal commuting flows and the number of jobs in municipalities. Municipalities in which more than one third of employed inhabitants commute to work to centres are considered as suburban. Municipalities in which less than one third of employed inhabitants commute to centres are considered as more remote rural areas. On the basis of data from the population census of 2001, seven spatial

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<sup>1</sup> This study was supported from a research project financed by the Grant Agency of the Czech Republic (GAČR 403/09/1779).

categories were defined: Primary centres and three concentric suburban zones around them: inner suburban fringe, outer suburban fringe and polycentric background, then secondary centres and their suburban fringes and rural areas. Rural areas are therefore defined negatively as those areas which are not urban nor under the strong economic influence of them. Rural population is the residents of rural areas.<sup>2</sup>

**Figure 1 – Urban suburban and rural areas in the Czech Republic according to urban-rural gradient commuting approach classification**



Source: Author. Based on the Census 2001 data.

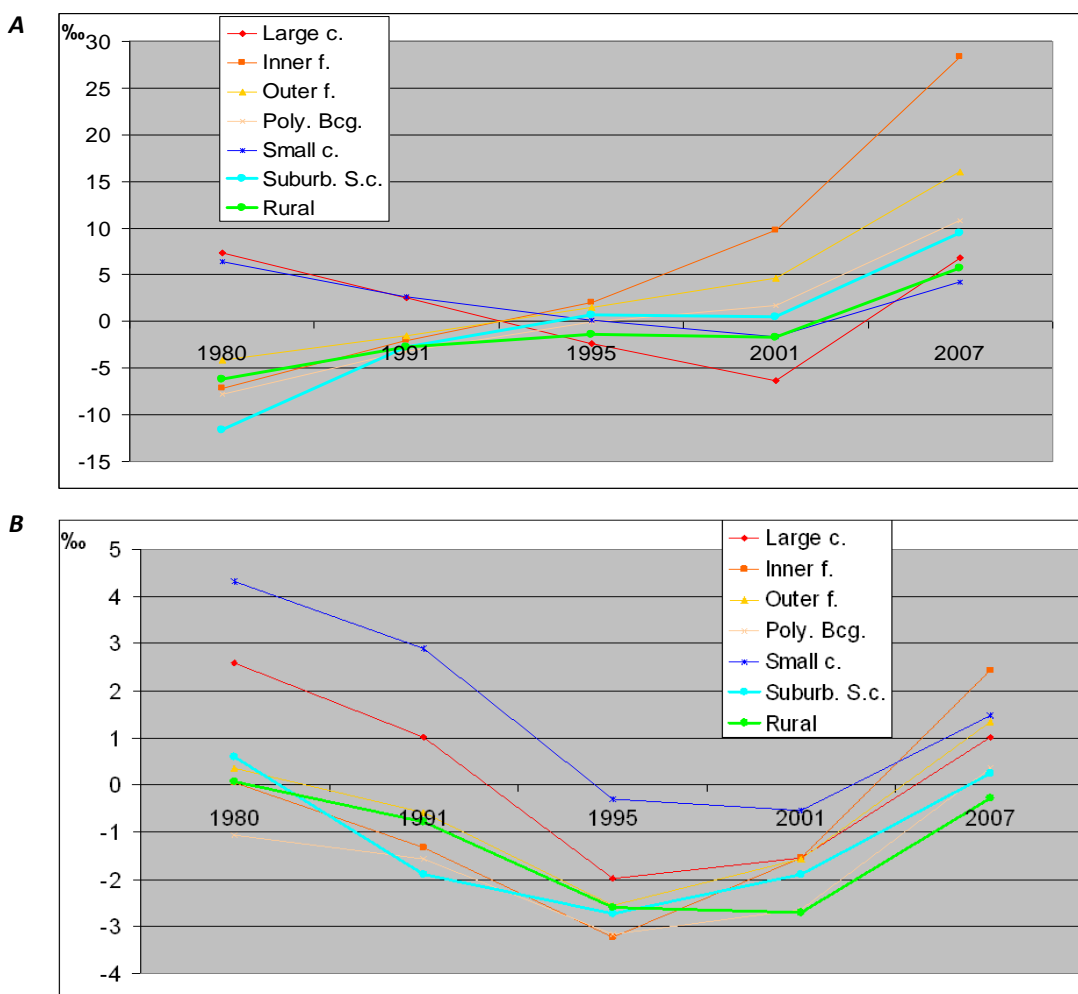
## Population development and socio-economic structure of rural population

Population growth has evolved in the past three decades from slightly positive in the 1980s to negative in the 1990s to slightly positive again in recent years. It is important to look at this evolution from a wider time perspective, that is, since 1980, because there occurred a change in tendencies in the processes of spatial population modification as a result of overall societal changes. The elements of population change, natural increase and net migration rate, were shaping both the particular form of this evolution and its intensity. Migration, which plays an extremely important role in spatial population differentiation and dynamics turned from positive net in-flows to urban centres to negative ones in the scope of the few years between 1991 and 1995. On the other hand, the previously non-attractive suburban areas have experienced population growth since the beginning of the 1990s marked by an intensifying tendency from about 2000 onwards. Rural areas knew net migration increase only after the year 2000. Natural increase differentiation is of much smaller scope but moving in the same direction as net migration. The positive natural increase of urban centres became negative in the 1990s, with a decreasing differentiation between the urban-rural gradient categories. Only recently, suburbanisation has brought slight growth in natural increase into the inner fringes. In general, the population change

<sup>2</sup> This classification was inspired by the logic of French definition of urban and rural areas used by National Institute for Statistics and Economic Studies (INSEE)

differentiation between urban, suburban and rural areas has recently become more important, due mainly to differentiated migration flows, which will probably only later be accompanied by higher differentiation of natural increase with the first signs given by the natural increase in inner fringes of primary centres. The most dynamic evolution in net migration and recently in natural increase as well, is clearly in suburban areas. This evolution means that rural and suburban categories no longer belong to a single cluster. Migration losses and natural decrease clearly follow the logic of proximity to important centres of employment, with inner fringes being the most dynamic, largely outdistancing more remote suburbs and rural areas.

**Figure 2 – Natural increase rates (A) and net migration rates (B) in urban-rural gradient categories in selected years between 1980 and 2007, in ‰**



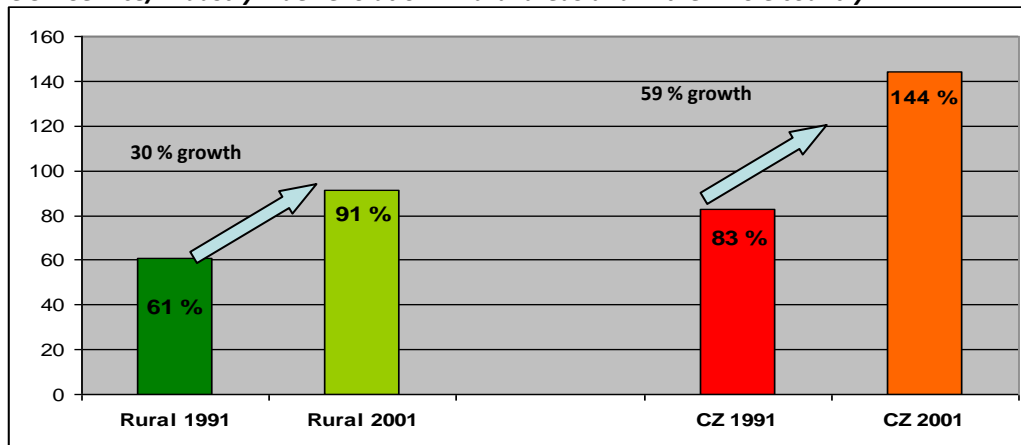
Source: Czech Statistical Office (CSO), author's computation.

As the whole Czech economy, rural areas went through a deep economic restructuring which resulted in remoulding of the employment structure, as well.

The most dramatic was the decline of agricultural employment in rural areas. Between 1991 and 2001 the number of jobs in agriculture declined by 121 thousand which accounted for the decline from 28 % to 11 % of economically actives. In the whole country the proportion of agricultural employment declined from 12 % to 4 % in 2001. Rural areas were not able to keep up with the rhythm of restructuring of employment sectors. In the Czech Republic, there was an important shift of employment to the underdeveloped sector of services. In 2001 the service/industry index was 144 %,

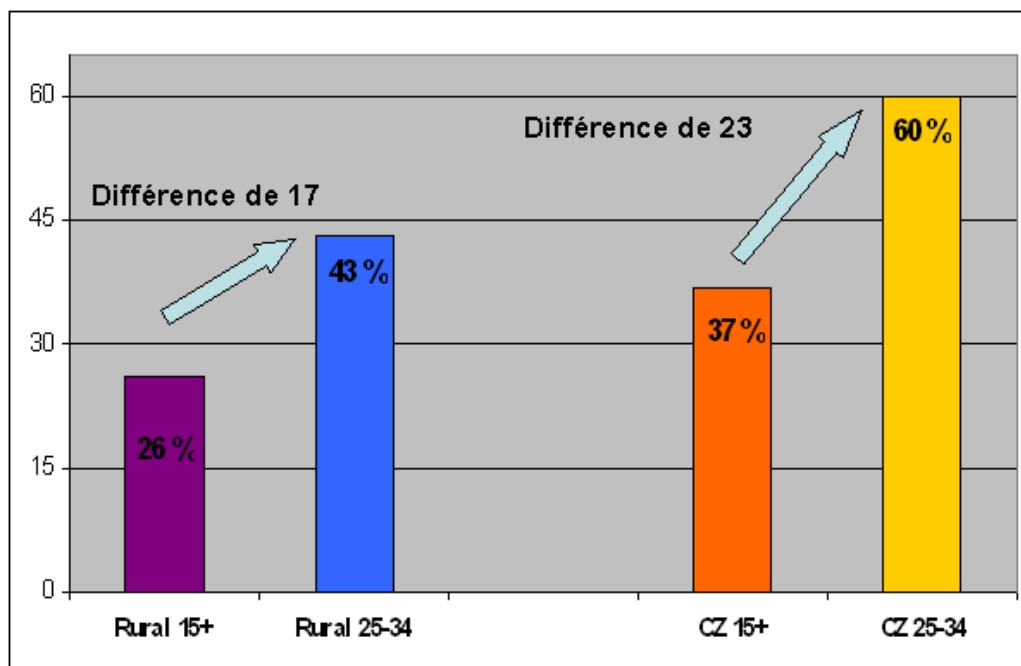
whereas in rural areas it was 91 % (it means that on 100 employees in industry there is 91 employed in services). The dynamics of increase between 1991 and 2001 was much swifter in non-rural areas (Figure 3).

**Figure 3 – Service/ Industry index evolution in rural areas and in the whole country**



Source: Czech Statistical Office (CSO), author's computation.

**Figure 4 – The level of education among all 15+ and among aged 25-34 in rural areas and in the whole country in 2001**



Source: Czech Statistical Office (CSO), author's computation.

Similar tendency of delayed dynamics is among the level of education. The level of education of young adults (aged 25–34) in rural areas less importantly higher from the total population aged 15+ than in the average of the whole country. That shows that the scissors of economic advancement of rural areas compared to other spatial categories is not diminishing but growing during the post-communist transformation.

## Residential migration

From a long-term perspective, the volume of migration diminished in the Czech Republic with a steep decline after 1989 and only a mild recovery after 1995. It declined from 250 000 in the year 1980 to 164 000 in 1996 and rose slowly to surpass 200 000 after 2004. Nowadays, only 2 % of the population changes residence annually, which means that one would change residence once in 40–50 years which de facto means once in lifetime. Moreover, the decline would be steeper, if the number of municipalities had not risen by one third in the early 1990s. The essential factors in the decline of mobility were the halt in subsidised dwelling construction leading to a steep decline in housing construction in the early 1990s, a decline in centrally planned industrial production and therefore the diminished attractiveness of some towns and regions for migrants, the collapse of the socialist habit of housing provision for newly arrived workers and the financial inaccessibility of new dwellings on the free-market for a majority of the population, at least during the whole first decade of transformation.

The demographic and social profile of domestic migrants varies according to the category of destination on the urban-rural gradient scale. The analysis has shown some regularities and common patterns valid in both core and periphery regions. First, the more educated and young adults (mainly aged 20–29) migrate more frequently than all other age groups. Second, concerning the migration destination, the choice to leave urban centres for suburban areas is overrepresented among the higher educated than among the little educated. It shows that mainly the upper and upper-middle classes (approximated by the level of education) prefer the suburban areas and especially the inner fringes, closer to primary centres.

Therefore the analysis proved that the inner suburban fringes are prioritized by the better well off social groups because their budget constraints are less tight. It does not mean that lower educated do not move to these areas, but their proportion is significantly lower than expected according to their proportion in the sum of migrants. The middle and lower classes (with A-levels and less) decide more often to move to remote suburban areas, secondary centres or to rural areas. This socially stratified migration is very clear and it is not an effect of age – it occurs in all age groups above age 20. From the viewpoint of life-cycle position, the decision to migrate to rural areas is more often among the population aged 45 plus. The seniors aged 60 plus are also a part of that group but their importance is rather small because their absolute number is low. Therefore we can conclude that the in-migrants to rural areas are more frequently, lower educated, economically active in their preretirement age and retired. The populations which move away from rural areas are better educated and young people.

## Future of the rural population

From all of the above mentioned tendencies we can conclude few positive and few negative patterns.

When starting with the positives, we can say that the positive net migration rate after the year 2000 is a new phenomenon non-witnessed at least from the industrial revolution. If it continues, it means that rural areas will not face depopulation (at least in the macro-general view which I provide here). The process we witness now is more about the slow change of demographic and socio-economic structure of population. Czech specific feature which can help to prevent Czech rural areas and its population of the fall into periferality, the poverty or exclusion trap is a dense settlement structure and generally short commuting distances to local employment centres. The improvement of infrastructure which is clearly discernable in the Czech villages is a basic prerequisite of their possible attractiveness and therefore we can count that between the positive sides of Czech rural areas evolution and prospects.

The rooted tradition of secondary dwelling is maintained and creates a specific form of survival and maybe also an economic potential for the present and future Czech rural areas.

On the other hand, if the tendency spatial social stratification deepens, some rural areas may at risk of becoming social exclusion trap. The prevailing in-migration of pre-senior and senior population and outflow of younger one may cause a problem of quick ageing of rural areas. These potential problems can be quite hard to solve by the municipal politics and budgets as the Czech settlement structure is fragmented with a majority of municipalities under 1 000 inhabitants.

Nevertheless, the new tendencies of spatial population dynamics are relatively recent and their consequences are not yet having a discernable impact on the macro-level observation. At the same time, the path is taken up and I am convinced that the consequences more or less along the lines outlined here is very probable.

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