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Retro-projection of main demographic indicators for the period 1994-2014

Introducion

The 2014 General Population Census results revealed the necessity of retro-projection of basic demographic data of previous years in order to ensure harmonization of historical data with the census results. The re-estimation of data in the inter census period is recommended by the international organizations and it is widely used by national statistical offices.

The retro-projection of the main demographic indicators was implemented with financial and technical support of the United Nations Population Fund (UNFPA).

The work was broken down by several stages due to methodology and available statistical data:

- **I Stage:** Adjustment of the number of population at the regional level according to the 2002 General Population Census;
- **II Stage:** Retro-projection of the demographic data at the regional level for the 2002-2014 period;
- **III Stage:** Retro-projection of the demographic data at the municipal level and by urban-rural settlements for the 2002-2014 period;
- **Final Stage:** Adjustment of the demographic data at the regional and municipal level and by urban-rural settlements for the 1994-2001 period;

At the first stage of retro-projection the main sources were the results of the 2014 General Population Census and the 2002 Integrated Household Survey.

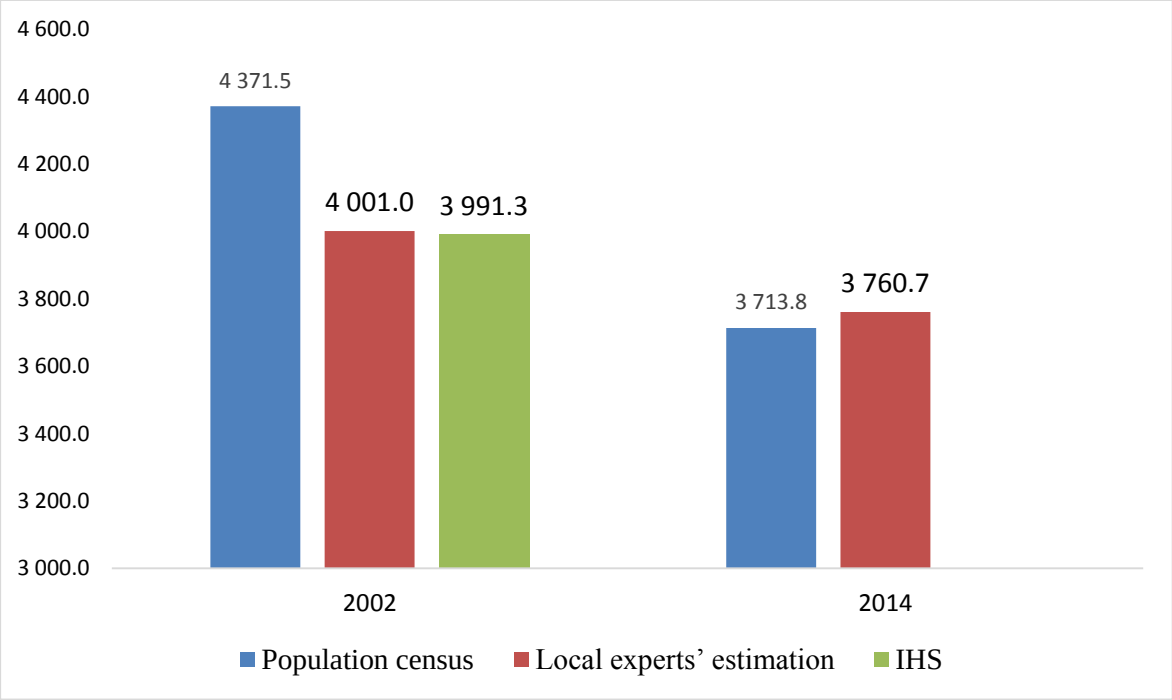
Special attention was paid to the border changes of municipalities and regions: in 2006 - the borders of Tbilisi changed as it absorbed part of Mtskheta-Mtianeti (Mtskheta municipality) and Kvemo Kartli (Gardabani municipality); in 2011 - part of the rural area of Adjara A.R. became urban (the villages of Khelvachauri municipality merged to city Batumi); in 2008 – Akhalgori, Eredvi, Kurta, Tigva and Ajara municipalities were added to the occupied territories, which entirely or partly were controlled by Central Government of Georgia before August 2008.

Population

Based on the data from various sources a probable hypothesis arose that the 2002 Population Census was over-counted. During the enumeration process in many cases actual emigrants (often illegal) were recorded by their household members as part of the usual population. According to the 2002 population census, the total number of emigrants equaled 113.7[1] thousands, while according to the new retro-projection the net migration for the inter-census period (1990-2001) was estimated to be negative 1,280.8 thousands.

Local[2] and international[3] experts argue that the number of usual population in 2002 did not exceed 4 million and the results from the quarterly HIS corroborated these estimates.

Figure 1: Number of population in 2002 and 2014 by different sources (thousand persons)



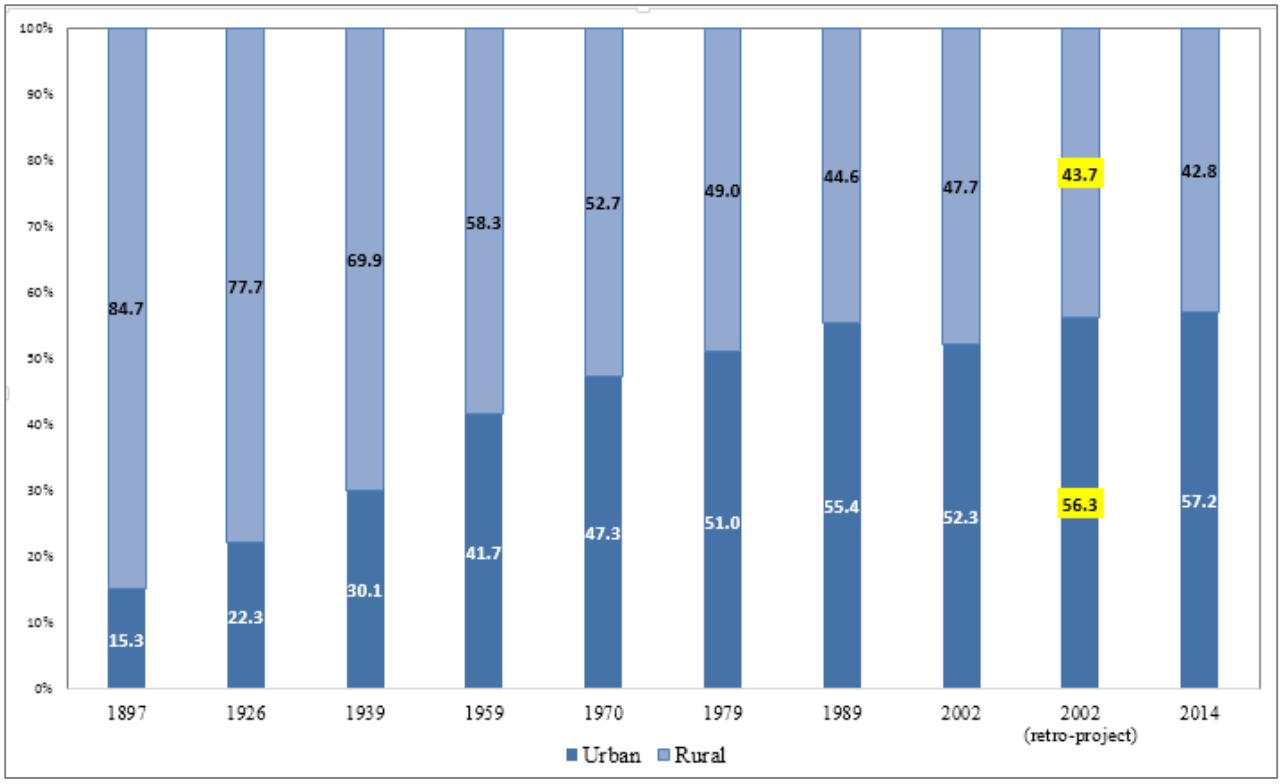
Based on the existing sources, the 2002 census was estimated to have been over-counted by 8.7 percent at the national level. The differences were by urban and rural settlements. In particular, after the retro-projection the share of urban population increased from 52.3 percent to 56.3 percent. The share of rural population decreased accordingly.

[1] 2002 General Population Census Results, vol. III (ch. II). Tbilisi: State Department of Statistics

[2] Tsuladze, G. (2015). Demographic yearbook of Georgia. Tbilisi: Institute of Demography and Sociology at Ilia State University;
Meladze, G., Tsuladze, G. (1998) Demographic situatin in Georgia 1997;
Meladze, G., Tsuladze, G. (1997) Population and Demographic Processes in georgia (1990-1996).

[3] Hakkert, R., & et all. (2015). *Population Situation Analysis (PSA): Georgia 2014.* . Tbilisi: UNFPA Georgia.

Figure 2: Distribution of population (%) by urban and rural settlements, according to population censuses since 1897



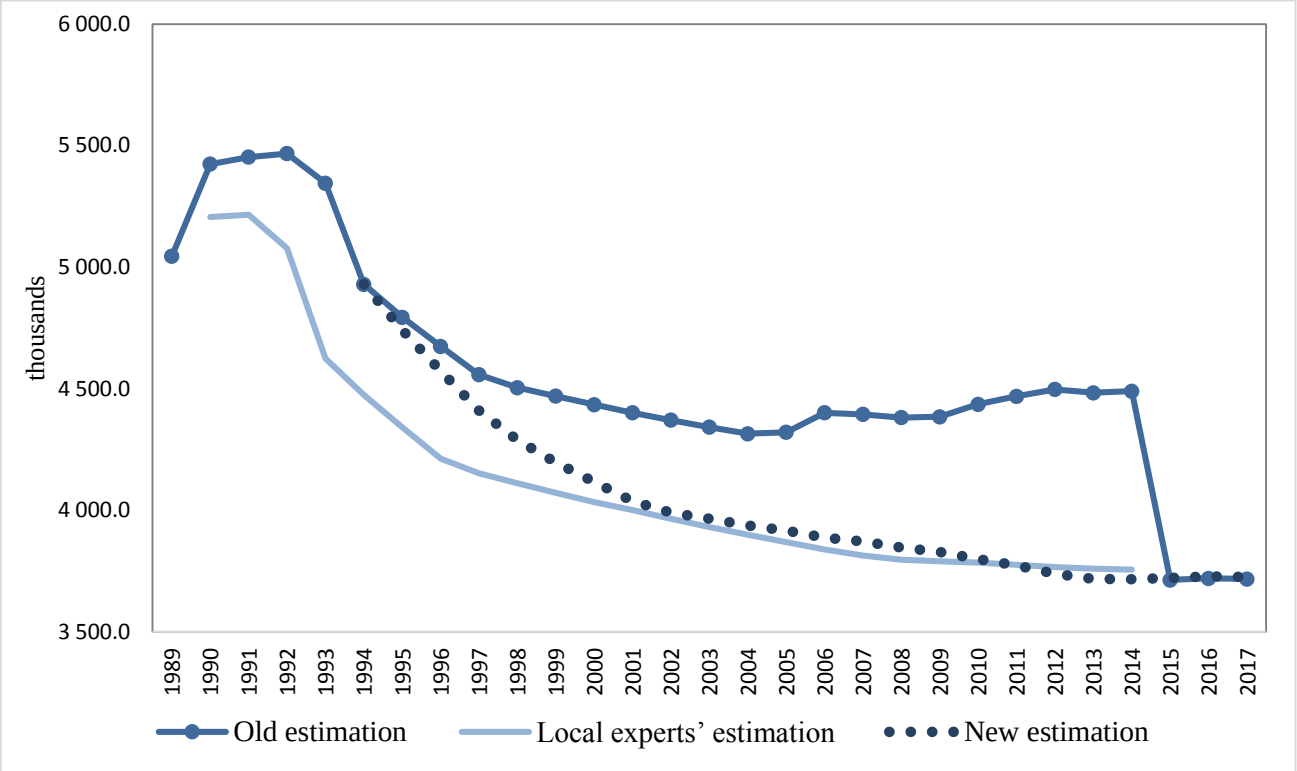
Due to the larger correction in the rural areas, the presumed population distribution by regions in 2002 also changed, as predominantly rural regions were adjusted more than predominantly urban regions.

Table 1: Increase/decrease in the number of population by regions compared to 2002 census and retro-projection

region	2002		Difference	
	census	retro-projection	number	(%)
Georgia	**4,371,535**	**3,991,273**	**380,262**	**8.7**
Tbilisi	1,081,679	1,062,157	19,522	1.8
Abkhazia A.R. (Ajara municipality)	1,956	1,633	323	16.5
Adjara A.R.	376,016	342,088	33,928	9.0
Guria	143,357	125,308	18,049	12.6
Imereti	699,666	632,126	67,540	9.7
Kakheti	407,182	352,736	54,446	13.4
Mtskheta-Mtianeti	125,443	109,548	15,895	12.7
Racha-Lechkhumi and Kvemo Svaneti	50,969	44,003	6,966	13.7
Samegrelo and Zemo Svaneti	466,100	416,349	49,751	10.7
Samtskhe-Javakheti	207,598	183,096	24,502	11.8
Kvemo Kartli	497,530	443,110	54,420	10.9
Shida Kartli	314,039	279,119	34,920	11.1

As the annual population numbers use the last population census as a baseline, the over-count of the 2002 population census and under-count of the demographic events resulted in the over-estimated population dynamics in the inter-census period.

Figure 3: Population dynamics according to the different sources



Migration

As it has been mentioned, after the 2014 General Population Census Geostat encountered a new reality when the number of population by the new census results turned out to be 700 000 less than the number of population for 2014 from the current demographic statistics.

This difference is essentially conditioned by incomplete registration of migration flows. In the 1990s the registration of international migration deteriorated significantly. Before 2004 the migration registration system virtually ceased to exist, and the net-migration was published on the basis of 'expert estimates'.

In 2004-2011 despite changes in the methodology but the situation did not improve. The official statistical data was based on border crossings provided by the Border Police of Georgia, Ministry of Internal Affairs. This data only included gross numbers of entries and exits, which precluded from tracking individual entries and exits in order to identify migrants in line with the international methodology.

Starting from 2012 the methodology for estimating migration improved. The Geostat receives migration data from the Ministry of Internal Affairs which allows for defining the statuses of immigrants and emigrants according to the international recommendations. Based on the above, the international migration statistics adjusted only before 2012.

It should be noted that internal migration estimates are only available from the population censuses. At the same time the retro-projection methodology provided for estimating internal migration flows by regions.

Natural increase

The 2014 Population Census revealed differences between the number of registered live births and the number of census-estimated live births. This difference is possibly explained by the plausible reason of under-enumeration of children at 0 ages. But the main reason is related to distinguishing non-residents in the registered births. Accordingly, the number of births was adjusted from 1995 to 2013 at the national, regional and municipal level.

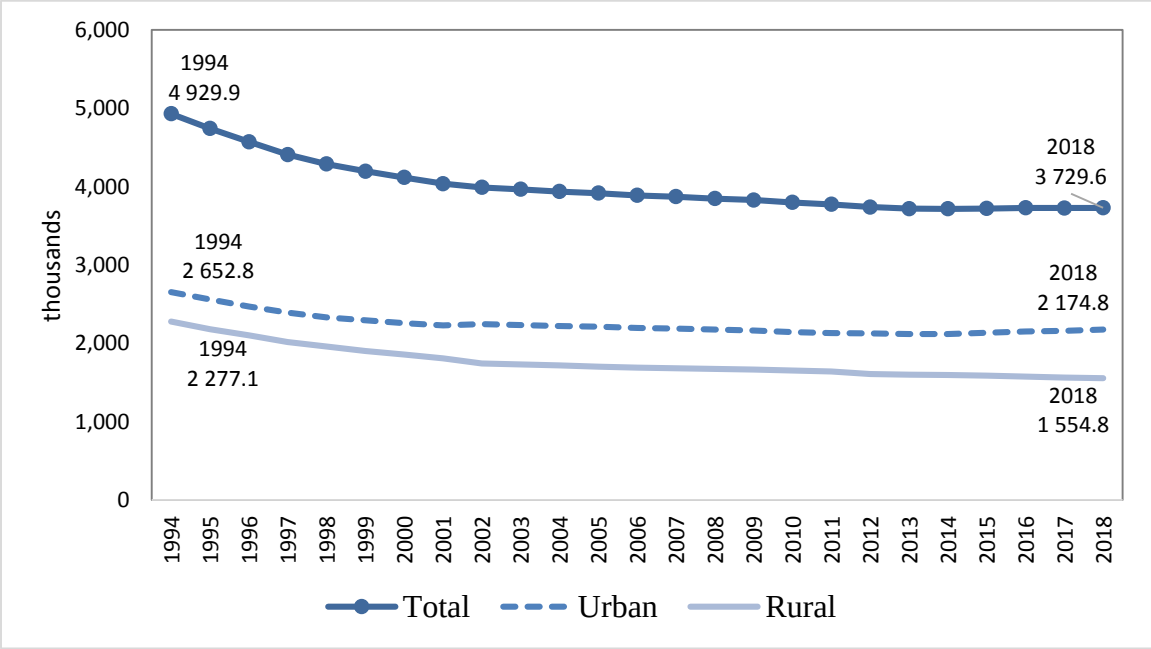
Retro-projection of the number of deaths was made for the period of 1995-2010, while the death figures after 2010 were considered reliable. It should be noted that relative adjustment of infant mortality figures was higher compared to other age groups. The adjustment factors were largely based on the results of the 2010 Georgia Reproductive Health Survey.

Main findings

The number of population of Georgia reveals a decreasing trend. During 1994-2017 the population declined both in urban and rural areas. The decline in the population figures is largely conditioned by the migration processes.

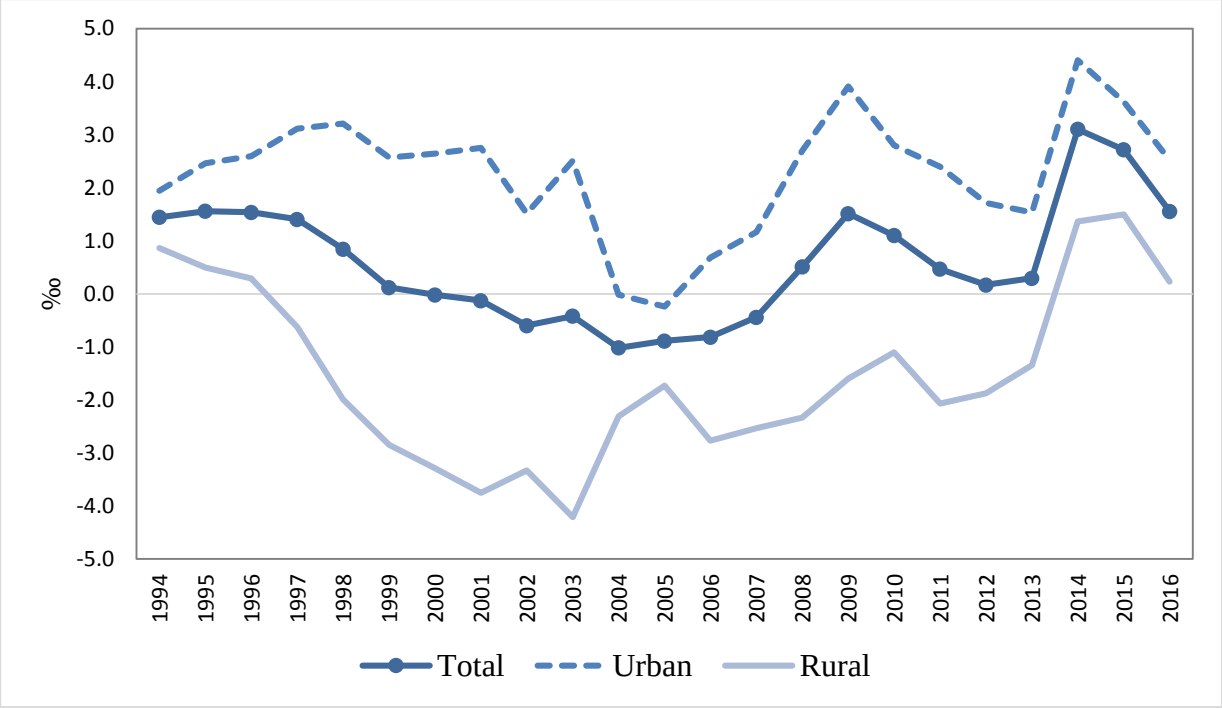
In the same period the urbanization rate has risen, resulting in an increase in the share of urban population from 53.8 percent to 58.3 percent.

Figure 4: Number of population at the beginning of year by urban and rural settlements



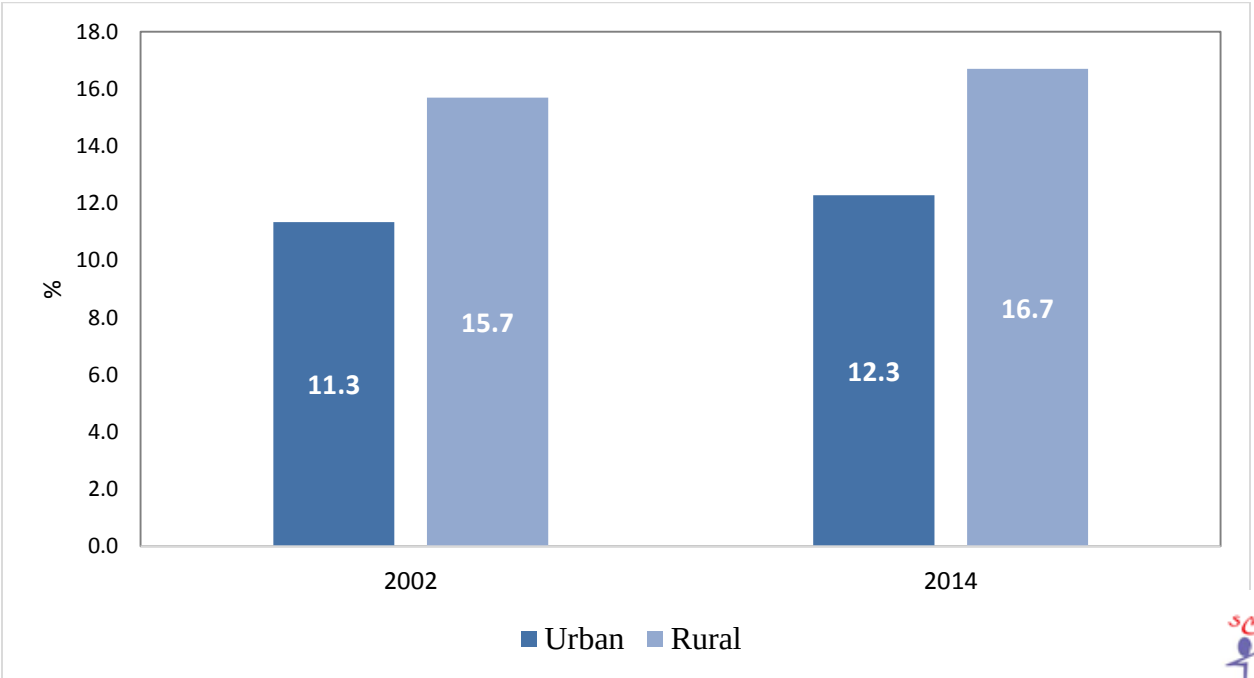
The natural increase remained positive (i.e. births exceeded deaths) until 2000. The positive trend was restored in 2008.

Figure 5: Natural increase rate (per 1,000 population) by urban-rural



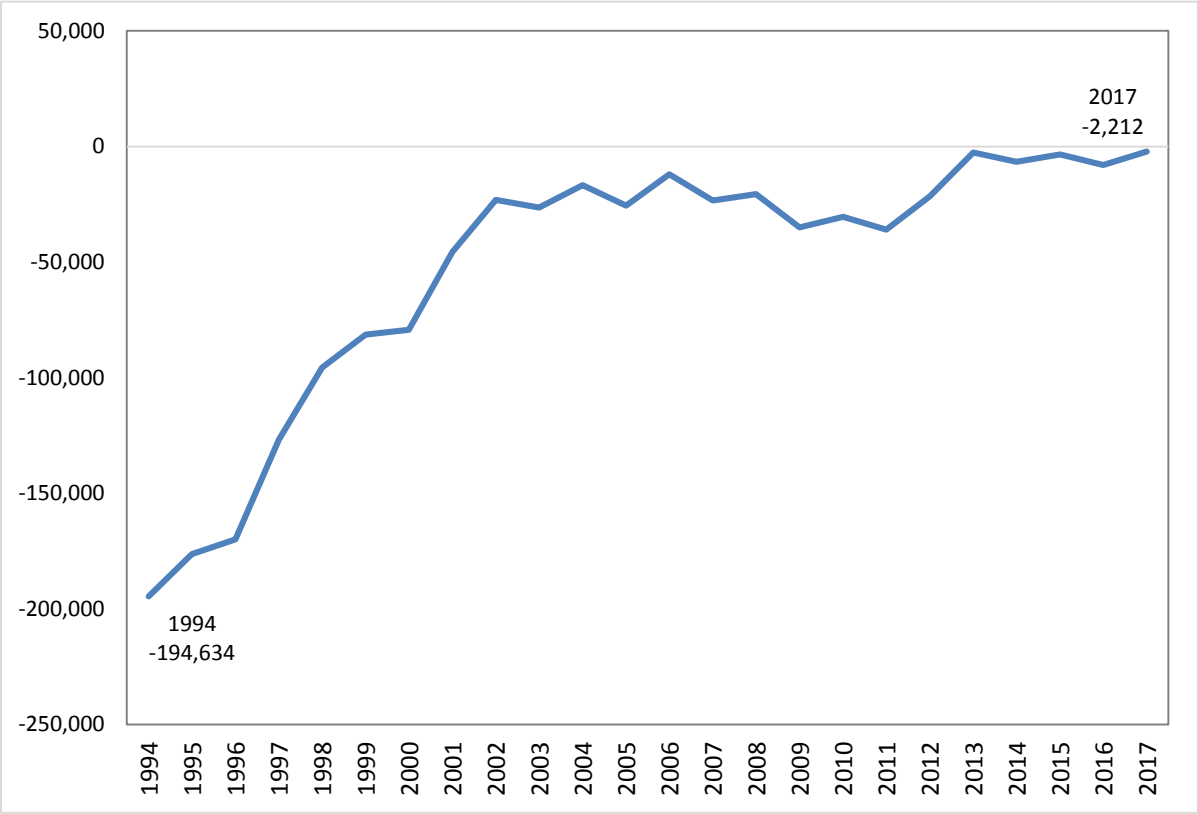
Almost during the entire period the population increase rate was positive (except 2004-2005) in urban areas, while the situation was opposite in rural areas during the 1997-2013 period, owing to population ageing processes. In 2014 the share of population aged 65 years and older equaled 16.7 percent in rural and 12.3 percent in urban areas.

Figure 6: Percentage distribution of population aged 65 years and older by urban and rural areas



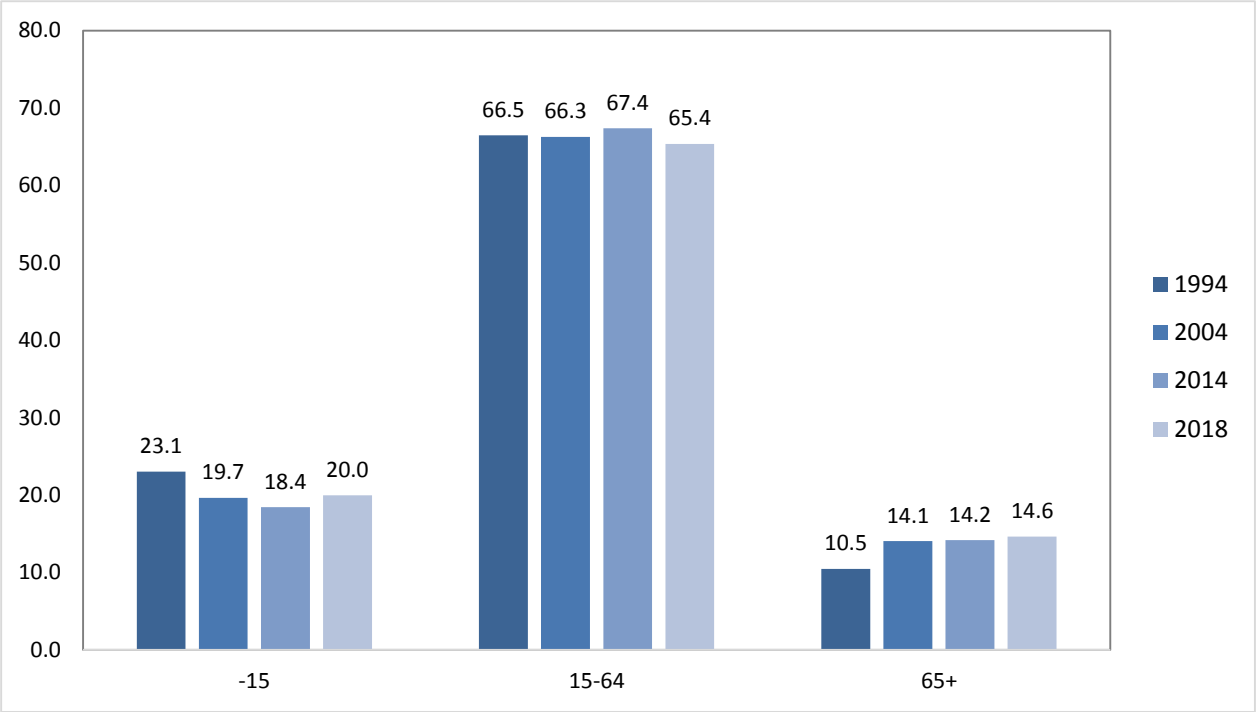
The net migration has been negative throughout the entire period. Since 1994 the number of people who left the country exceeded those entering the country by approximately 1,260.7 thousand persons.

Figure 7: Net migration



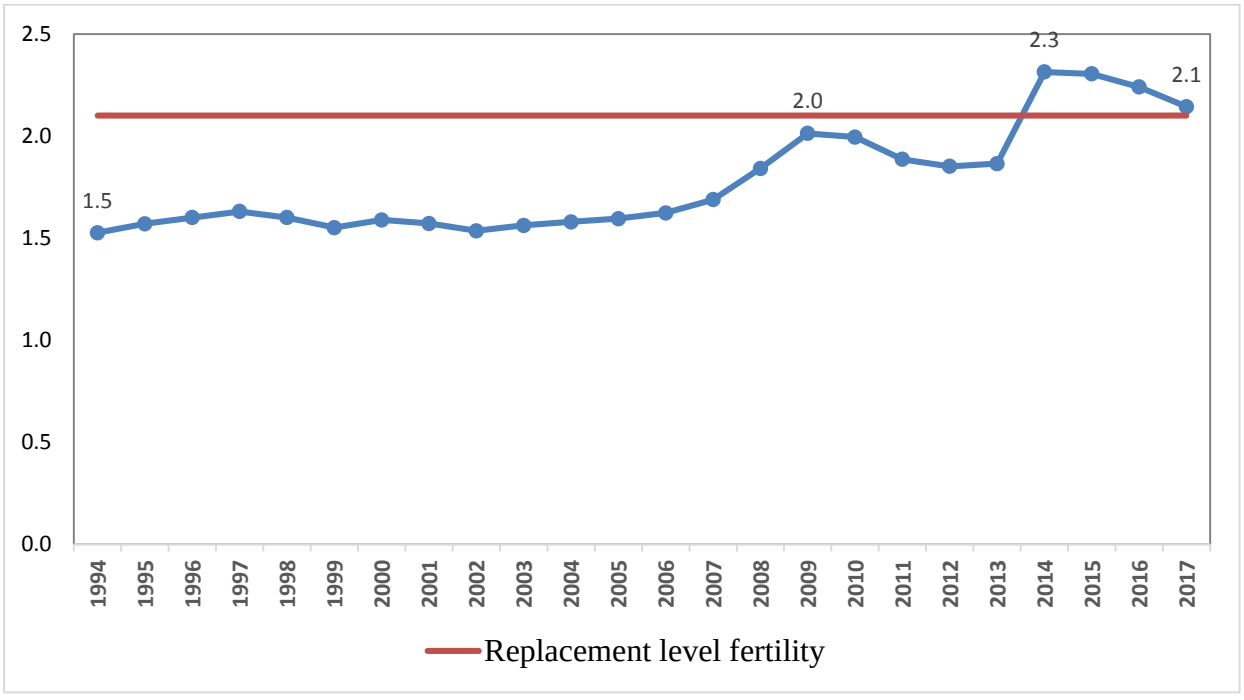
The decreasing population trends affected the age structure during 1994-2018. In this period the share of persons aged 0-14 shrank to 20.0 percent, while the share of elderly (65 years and older) increased from 10.5 percent to 14.6 percent. The decrease in the share of the 0-14 age group is related to a decline in fertility rates and large migration of population in the reproductive age.

Figure 8: Population by major age groups (%)



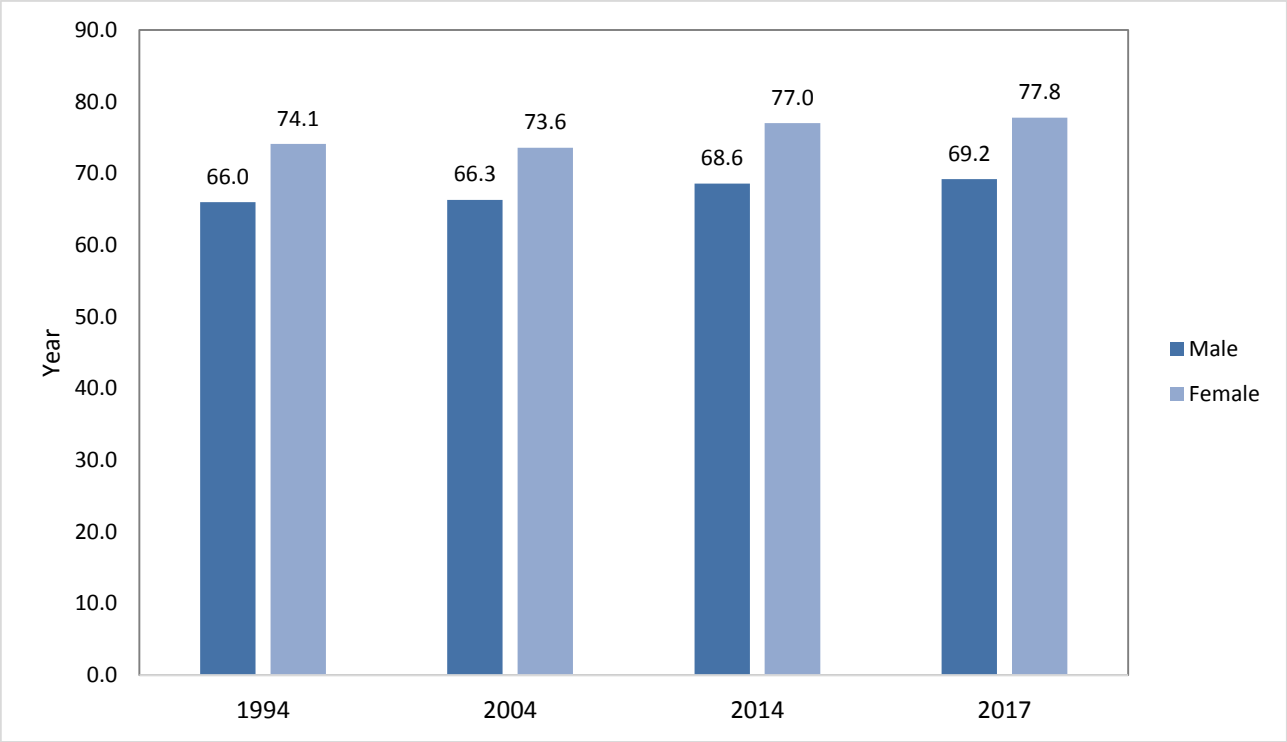
In early 1990s the total fertility rate (TFR) – average number of live births per woman in reproductive age - did not exceed 1.5. However, starting from 2007 the TFR has significantly improved.

Figure 9: Total Fertility Rate



In 1994 the life expectancy at birth equaled 74.1 years for females and 66.0 years for males. As of 2017 the life expectancy increased by 3.7 years for females and by 3.2 years for males. The gender difference in life expectancy equaled 8.6 years in 2017.

Figure 10: Life expectancy at births by sex (in year)



Detailed demographic data is available at the Geostat's website: www.geostat.ge

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