



Population Projections, 2014-2050:
Different Sex Ratio at Birth Scenarios
in Azerbaijan

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The PACE Resolution 1829 (2011) on prenatal sex selection targeted Azerbaijan among few countries where the skewed ratios at birth (SRB) have “reached worrying proportions.” In 2012 UNFPA Azerbaijan Country Office in the frames of cooperation with the State Committee for Family, Women and Children’s Affairs conducted a qualitative and quantitative assessment aimed at analyzing the factors that lead to the skewed SRB and providing the series of recommendations to guide the respective state intervention to address the issue.

This present report presents additional evidence on the impact of different scenarios concerning further trends in the currently observed sex ratios at birth on the structure of future population in Azerbaijan.

The views expressed in this report are those of the authors and do not necessarily represent the official opinion of UNFPA Azerbaijan Country Office.

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1. Background

Sex ratio at birth, defined as the number of male children born per 100 female births, can be an important indicator of the degree of preference for a son or daughter in a given country. A sex ratio at birth that exceeds 106 males born for every 100 females is considered as indicating a preference for sons. Conversely, ratios lower than 103 can indicate a preference for daughters. Starting from the 1980s, demographers have demonstrated a high sex ratio at birth in several Asian countries, including China, South Korea and India (Das Gupta, 1987; Yi et al, 1993; Park and Cho, 1995; Guilmoto, 2007; Zhu, Lu and Hesketh, 2009; Guilmoto, Hoang and Van, 2009; Guilmoto, 2009; Sedgh, Singh and Henshaw, 2011; Guilmoto, 2012). The problem began to emerge following the introduction and extensive use of technologies that made it possible to determine the sex of a fetus.

In the case of Azerbaijan, the sex ratio at birth was mostly within the expected biological range until the 1980s. It climbed up to 107 in 1990, 110 in 2000 and then to 116 in the beginning of 2010s, mainly as a result of the development and use of reproductive health technologies. Although Azerbaijan has the second highest sex ratio at birth after China, and Azerbaijan is soon expected to head the list of the countries with the most skewed sex ratios, given that China's indicators are forecasted to fall back to normal in a few years, there have been limited scientific studies on the issue (Hortaccu et al, 2001; Mesle, Vallin and Badurasvili, 2007; Guilmoto, 2009; Duthé et al, 2012; Guilmoto, 2013; Yüksel, Eryurt, Koç and Çavlin, 2014). Those existing studies have relied on data from population censuses, the population registration system and demographic surveys and mainly draw attention to the issue without exploring the underlying causes. The study conducted by UNFPA Azerbaijan in cooperation with the State Committee for Family, Women and Children's Affairs and with the support of Hacettepe University Institute of Population Studies is distinct from others in that, to complement the analysis of the quantitative data, it has involved the collection and analysis of qualitative data through in-depth interviews and focus group discussions in different regions of the country. The study made two significant contributions to available research on this topic. The first was that it analyzed, for the first time, socio-demographic factors behind distorted sex ratios at birth with information obtained through in-depth interviews and focus group discussions. The second was that it explored the underlying socio-demographic causes through the combination of qualitative and quantitative data. The findings of the study indicate that the high sex ratios at birth among Azerbaijani population are caused by the phenomenon of strong son preference stemming from the patriarchal social structure observed in the country. The study also pointed out that in case the existing trend is not reversed, demographic balance in the country will reach a phase defined as *demographic masculinization*, in the medium and long term, a point where return to gender balance will be difficult if not impossible.

2. Objectives

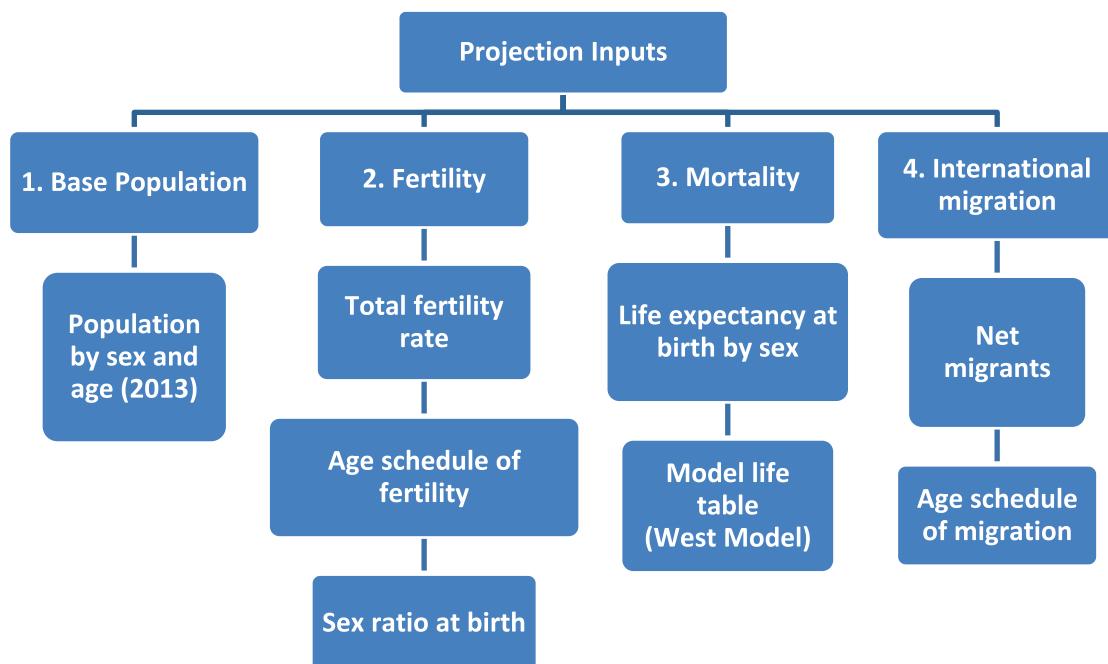
The currently observed demographic trend towards the masculinization of the Azerbaijani population is frustrating since the experiences of other countries show that such an imbalance poses serious threats to the gender equality policies of the countries.

Furthermore, the findings of the above mentioned study show that there are no any indications of the currently observed sex ratios at birth falling back to the level of biological normal. Therefore, it is important to produce more evidence to understand the impact of different scenarios concerning further trends in the currently observed sex ratios at birth on the structure of future population in Azerbaijan. This includes the development of the respective population projections evaluated with a perspective of policy recommendations.

3. Methodology

For the purposes of population projection, the population projections were realized by using the cohort component projection method for the period of 2014-2050. The cohort component projection method aims to predict the future populations based on the present age-sex structure, and with the present rates of fertility, mortality, and migration. For the cohort component projections, a demographic computer program, SPECTRUM was utilized by considering the fertility, mortality and migration levels and patterns of Azerbaijani population with different assumptions on the level of sex ratio at birth in Azerbaijan. The initial point of the projection is the year of 2014; and the end point is the year of 2050.

Figure 1. Projection inputs for the cohort component projection method



As Figure 1 shows the cohort component projection method requires data on base population, fertility, mortality and international migration. The data on fertility, mortality, migration and sex ratio at birth for the initial year was obtained from censuses, surveys and population registration system of Azerbaijan. All necessary data for inputs for the initial year was provided by UNFPA Azerbaijan Office in concert with the State Statistical Committee of the Republic of Azerbaijan. For the future levels and patterns of these inputs were derived from past and current projections, national and international sources such as World Population Prospects, and based on expert opinions.

In the project, *fixed fertility, mortality and international migration schedules* were used for all scenarios of sex ratio at birth in order to understand the impact of different SRB on the size, age and sex structures of the population.

4. Inputs for projections

The first input used in the projection process was the population size on the basis of age and sex. The base population at the beginning of 2014 was derived from the vital registration data kept by the State Statistical Committee of Azerbaijan (Table 1). The total population of Azerbaijan was 9,477,119, 50.3 percent of them constituted the females (4,763,571). The age distribution of the 2014 population bears the stamp of skewed sex ratio at birth, especially at the first 5 age cohorts. The sex ratios for the age cohorts of 0-4, 5-9, 10-14 and 15-19 were all over 106 that clearly implied a preference for sons.

The second input used in the process of projections was the total fertility rate which was defined as the average number of children that would be born to a woman over her lifetime. The State Statistical Committee provided the total fertility rate for the year of 2013 as 2.22 births per woman. Since the SPECTRUM required the values of the total fertility rate for the projection period, a value of 2.12 births per woman was used for the year 2050, borrowing from the UN World Population Prospects estimated for Azerbaijan (UN, 2014). Then, these two values were used as starting (2013) and ending (2050) points of total fertility rates in Azerbaijan, and made an interpolation for the remaining years with an assumption of linear changes. At the end of the calculation process, just the values belonging to the period of 2014-2050 were utilized.

For the life expectancy at birth for males and females, the same procedures were followed with the TFRs in order to obtain the values for the projection periods based on the values provided by the State Statistical Committee of Azerbaijan for the year of 2013. Based on the assumptions made by UN World Population Prospects estimated for Azerbaijan, it is assumed that life expectancy at birth for both sexes will increase linearly throughout the projection period, for males from 71.6 years to 74.6 years and for females from 76.8 years to 79.8 years (UN, 2014). The values of total fertility rate and life expectancy at birth for the whole periods were presented in Table 2.

Table 1. Age and sex distributions of Azerbaijani population, 2014

Age	Male	Female	Total	Sex ratio
0-4	447,709	385,116	832,825	1.16
5-9	341,065	297,240	638,305	1.15
10-14	344,694	302,817	647,511	1.14
15-19	398,758	364,090	762,848	1.10
20-24	465,830	454,520	920,350	1.02
25-29	456,527	467,045	923,572	0.98
30-34	392,436	399,038	791,474	0.98
35-39	323,713	332,213	655,926	0.97
40-44	303,186	326,178	629,364	0.93
45-49	314,522	346,174	660,696	0.91
50-54	318,773	345,661	664,434	0.92
55-59	234,038	258,183	492,221	0.91
60-64	141,064	162,886	303,950	0.87
65-69	72,310	91,099	163,409	0.79
70-74	58,118	79,330	137,448	0.73
75-79	59,489	86,719	146,208	0.69
80+	41,316	65,262	106,578	0.63
Total	4,713,548	4,763,571	9,477,119	0.99

Source: SSC, 2014

The same track with the TFRs and life expectancy at birth procedures was kept in obtaining process of the values of age schedule of fertility. The value provided by the SSC for the year of 2013 was used as starting points and the value derived from the UN World Population Prospects for the year of 2050 as ending points, and then made a series interpolation for the remaining periods (UN, 2014). The values of fertility schedule given in Table 3 clearly imply a slow transition on the peak point of the fertility schedule from 20-24 age group especially to 25-29 age group, and then to the age groups of 30-34 that can easily be observed in a population in fertility transition like Azerbaijan. This means that women in Azerbaijan will delay their prime childbearing ages further, firstly from 20-24 age group to 25-29 age group, and then to 30-34 age group during the next decades.

Table 2. Total fertility rate and life expectancy at birth for Azerbaijan, 2014-2050

Years	Total Fertility Rate	Life expectancy at birth	
		Males	Females
2014	2.22	71.6	76.8
2015	2.22	71.7	76.9
2016	2.21	71.8	77.0
2017	2.21	71.9	77.0
2018	2.21	71.9	77.1
2019	2.21	72.0	77.2
2020	2.20	72.1	77.3
2021	2.20	72.2	77.4
2022	2.20	72.3	77.5
2023	2.20	72.4	77.5
2024	2.19	72.4	77.6
2025	2.19	72.5	77.7
2026	2.19	72.6	77.8
2027	2.18	72.7	77.9
2028	2.18	72.8	78.0
2029	2.18	72.9	78.0
2030	2.18	73.0	78.1
2031	2.17	73.0	78.2
2032	2.17	73.1	78.3
2033	2.17	73.2	78.4
2034	2.17	73.3	78.5
2035	2.16	73.4	78.5
2036	2.16	73.5	78.6
2037	2.16	73.5	78.7
2038	2.16	73.6	78.8
2039	2.15	73.7	78.9
2040	2.15	73.8	79.0
2041	2.15	73.9	79.0
2042	2.14	74.0	79.1
2043	2.14	74.0	79.2
2044	2.14	74.1	79.3
2045	2.14	74.2	79.4
2046	2.13	74.3	79.5
2047	2.13	74.4	79.5
2048	2.13	74.5	79.6
2049	2.13	74.6	79.7
2050	2.12	74.6	79.8

Table 3. Age schedule of fertility rate for Azerbaijan, 2014-2050

Years	Age Groups							Total
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	
2014	11.06	41.58	29.94	12.09	4.22	0.98	0.13	100.00
2015	10.87	41.39	30.09	12.25	4.29	0.99	0.13	100.00
2016	10.68	41.20	30.23	12.42	4.36	0.99	0.12	100.00
2017	10.48	41.01	30.38	12.58	4.43	1.00	0.12	100.00
2018	10.29	40.82	30.52	12.75	4.50	1.00	0.12	100.00
2019	10.10	40.63	30.67	12.91	4.57	1.01	0.11	100.00
2020	9.91	40.44	30.81	13.07	4.64	1.02	0.11	100.00
2021	9.71	40.25	30.96	13.24	4.71	1.02	0.11	100.00
2022	9.52	40.06	31.10	13.40	4.78	1.03	0.10	100.00
2023	9.33	39.87	31.25	13.56	4.85	1.03	0.10	100.00
2024	9.14	39.69	31.39	13.73	4.92	1.04	0.09	100.00
2025	8.95	39.50	31.54	13.89	4.99	1.05	0.09	100.00
2026	8.75	39.31	31.68	14.06	5.06	1.05	0.09	100.00
2027	8.56	39.12	31.83	14.22	5.13	1.06	0.08	100.00
2028	8.37	38.93	31.97	14.38	5.20	1.06	0.08	100.00
2029	8.18	38.74	32.12	14.55	5.27	1.07	0.08	100.00
2030	7.99	38.55	32.26	14.71	5.34	1.08	0.07	100.00
2031	7.79	38.36	32.41	14.87	5.41	1.08	0.07	100.00
2032	7.60	38.17	32.55	15.04	5.48	1.09	0.07	100.00
2033	7.41	37.98	32.70	15.20	5.56	1.09	0.06	100.00
2034	7.22	37.79	32.84	15.37	5.63	1.10	0.06	100.00
2035	7.02	37.60	32.99	15.53	5.70	1.10	0.06	100.00
2036	6.83	37.41	33.13	15.69	5.77	1.11	0.05	100.00
2037	6.64	37.22	33.28	15.86	5.84	1.12	0.05	100.00
2038	6.45	37.03	33.42	16.02	5.91	1.12	0.05	100.00
2039	6.26	36.84	33.57	16.18	5.98	1.13	0.04	100.00
2040	6.06	36.65	33.71	16.35	6.05	1.13	0.04	100.00
2041	5.87	36.46	33.86	16.51	6.12	1.14	0.04	100.00
2042	5.68	36.28	34.00	16.68	6.19	1.15	0.03	100.00
2043	5.49	36.09	34.15	16.84	6.26	1.15	0.03	100.00
2044	5.30	35.90	34.29	17.00	6.33	1.16	0.02	100.00
2045	5.10	35.71	34.44	17.17	6.40	1.16	0.02	100.00
2046	4.91	35.52	34.58	17.33	6.47	1.17	0.02	100.00
2047	4.72	35.33	34.73	17.49	6.54	1.18	0.01	100.00
2048	4.53	35.14	34.87	17.66	6.61	1.18	0.01	100.00
2049	4.33	34.95	35.02	17.82	6.68	1.19	0.01	100.00
2050	4.14	34.76	35.16	17.99	6.75	1.19	0.00	100.00

5. Scenarios on sex ratio at birth

Five different scenarios of the sex ratio at birth (SRB) were used in the project as presented in Figure 2 and Table 4. The explanations for each of the scenarios are as follows:

1. Constant SRB scenario at the level of 116.

In this scenario, it is assumed that the current SRB will remain at its current level until 2050. The SRB would therefore stay at 116 in Azerbaijan during the entire projection period of 2014-2050.

2. Slightly decreasing SRB scenario from 116 to 110.

This scenario assumed that the SRB in Azerbaijan will decrease slightly from 116 to 110 in the projection period.

3. Rapidly decreasing SRB scenario from 116 to 105.

In this scenario, it was assumed that SRB in Azerbaijan would decrease rapidly from 116 to the biological normal level (105) in the projection period.

4. Slightly increasing SRB scenario from 116 to 120.

The question asked as what would have happened if the SRB increased slightly from 116 to 120 will be answered with this scenario.

5. SRB at the biological normal level scenario, 105 throughout the period of 2014-2050.

This was the most hypothetical scenario of the project. In this scenario, another question will be answered: what would have happened if Azerbaijan had the SRB at the biological normal level throughout the period of 2014-2050.

Figure 2. Different scenarios of sex ratio at birth for Azerbaijan, 2014-2050

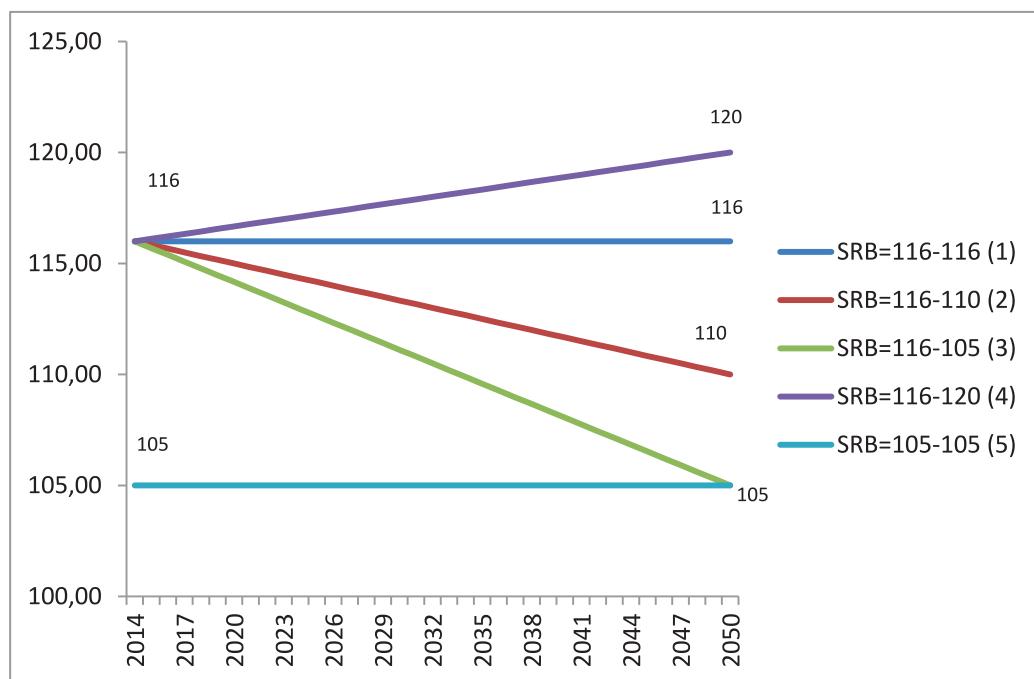


Table 4. Different scenarios of sex ratio at birth for Azerbaijan, 2014-2050

Years	Scenarios				
	1 (SRB=116-116)	2 (SRB=116-110)	3 (SRB=116-105)	4 (SRB=116-120)	5 (SRB=105-105)
2014	116.00	116.00	116.00	116.00	105.00
2015	116.00	115.83	115.69	116.11	105.00
2016	116.00	115.67	115.39	116.22	105.00
2017	116.00	115.50	115.08	116.33	105.00
2018	116.00	115.33	114.78	116.44	105.00
2019	116.00	115.17	114.47	116.56	105.00
2020	116.00	115.00	114.17	116.67	105.00
2021	116.00	114.83	113.86	116.78	105.00
2022	116.00	114.67	113.56	116.89	105.00
2023	116.00	114.50	113.25	117.00	105.00
2024	116.00	114.33	112.94	117.11	105.00
2025	116.00	114.17	112.64	117.22	105.00
2026	116.00	114.00	112.33	117.33	105.00
2027	116.00	113.83	112.03	117.44	105.00
2028	116.00	113.67	111.72	117.56	105.00
2029	116.00	113.50	111.42	117.67	105.00
2030	116.00	113.33	111.11	117.78	105.00
2031	116.00	113.17	110.81	117.89	105.00
2032	116.00	113.00	110.50	118.00	105.00
2033	116.00	112.83	110.19	118.11	105.00
2034	116.00	112.67	109.89	118.22	105.00
2035	116.00	112.50	109.58	118.33	105.00
2036	116.00	112.33	109.28	118.44	105.00
2037	116.00	112.17	108.97	118.56	105.00
2038	116.00	112.00	108.67	118.67	105.00
2039	116.00	111.83	108.36	118.78	105.00
2040	116.00	111.67	108.06	118.89	105.00
2041	116.00	111.50	107.75	119.00	105.00
2042	116.00	111.33	107.44	119.11	105.00
2043	116.00	111.17	107.14	119.22	105.00
2044	116.00	111.00	106.83	119.33	105.00
2045	116.00	110.83	106.53	119.44	105.00
2046	116.00	110.67	106.22	119.56	105.00
2047	116.00	110.50	105.92	119.67	105.00
2048	116.00	110.33	105.61	119.78	105.00
2049	116.00	110.17	105.31	119.89	105.00
2050	116.00	110.00	105.00	120.00	105.00

6. Findings

The findings of the projections are presented under four different sub-sections. The total projected populations on the basis of sex are given in the first sub-section. Then the study focuses on the projected populations' age and sex distribution. This sub-section is also devoted to the presentation of age specific sex ratios for the projected population. The impact of different sex ratio at birth scenarios on the number of births and on the marriage squeeze are discussed in the last two sub-sections.

6.1. Population Size

In regard with total projected population sizes, the scenarios produced slightly different results (Figure 3 and Appendix Table 1). For the year of 2050, the projection results showed that the total population of Azerbaijan will be in between 11,908,866 and 12,000,145. The maximum total projected population was from the scenario 5 (SRB=105-105); the minimum total projected population, on the other hand, was as a result of the scenario 4 (SRB=116-120). This forecasted difference between the minimum and maximum populations is mainly originating from the number of females in reproductive age groups. As the sex ratio at birth increases; the number of females in the reproductive age groups decreases. This, in turn, has an enhancing or inhibiting impact on the number of births to women aged 15-49. In the condition of lower sex ratio at birth, the number of births and thus the total population would increase much more compared with the higher sex ratio at birth. The reason behind the stabilized size of the total projected populations in the first 15 years of the projection periods (until 2029) was mainly related with the fact that females born in this period have not yet reached the reproductive age. Inversely, the increased size of the total projected populations after the year of 2030 is forecasted to be a result of the fact that females born in previous years have already reached the reproductive age.

The projected number of male population in the year 2050 varied between 5,975,622 and 6,093,912 (Figure 3 and Appendix Table 1). The highest projected male population was obtained from the scenario 4 that assumed an increasing sex ratio at birth from 116 to 120 in the course of projection period. Otherwise, the lowest figure was procured from the scenario 5 which is based on the assumption that there has been no deviation from the biological norm of sex ratio at birth throughout the projected period. In contradiction to findings regarding the male population, the highest and the lowest projected female population is observed with the scenario 5 (6,024,523) and scenario 4 (5,814,954) respectively (Figure 3 and Appendix Table 1). These results attained for both sexes appear to be closely related with the size of female cohorts reaching the reproductive age.

Figure 3. Projected population of Azerbaijan by sex according to different SRB scenarios, 2014-2050

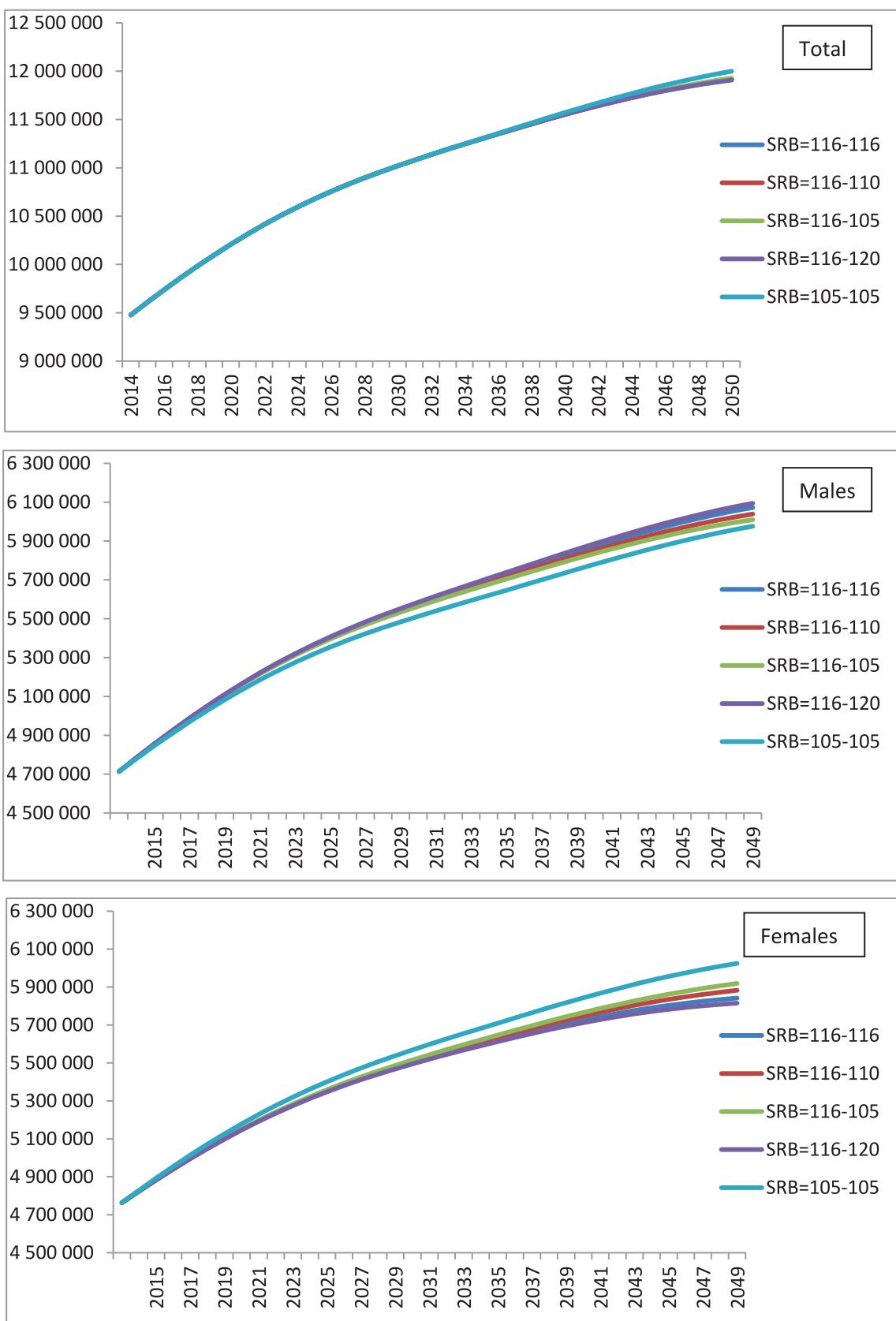


Figure 4. Age-sex distribution of Azerbaijani population by different SRB scenarios, 2015 and 2050

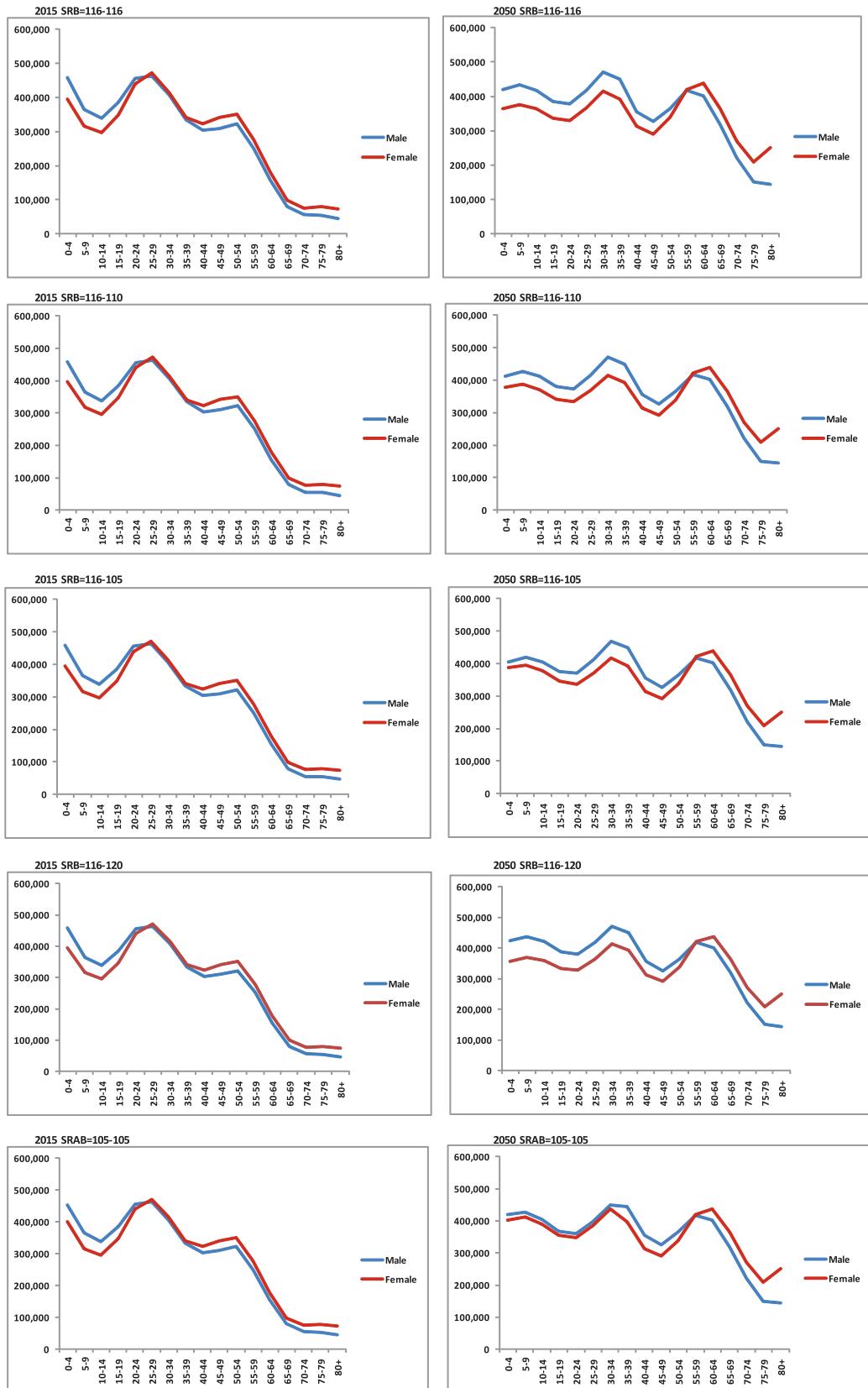


Figure 5. Population pyramids of Azerbaijan by different SRB scenarios, 2015 and 2050

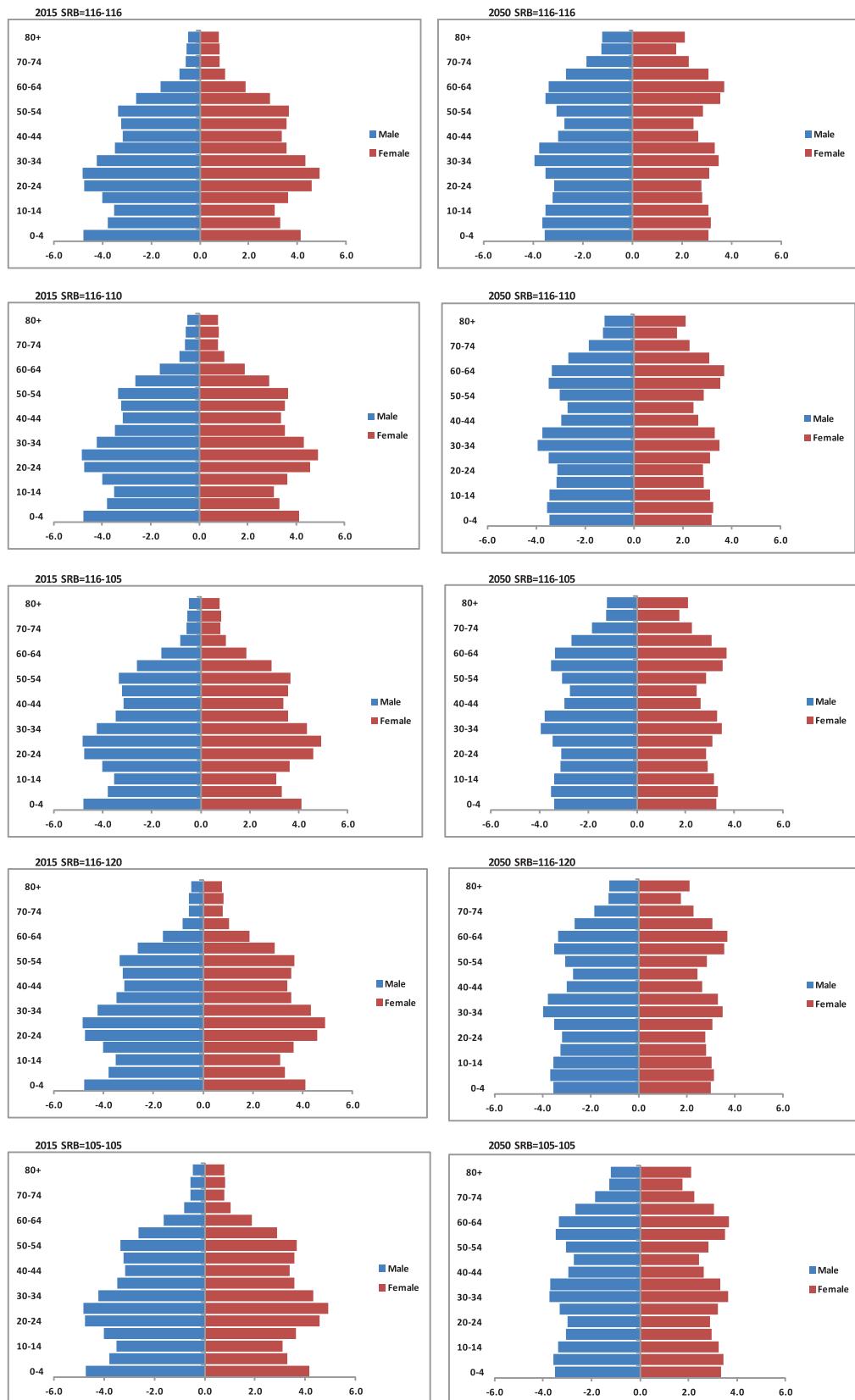
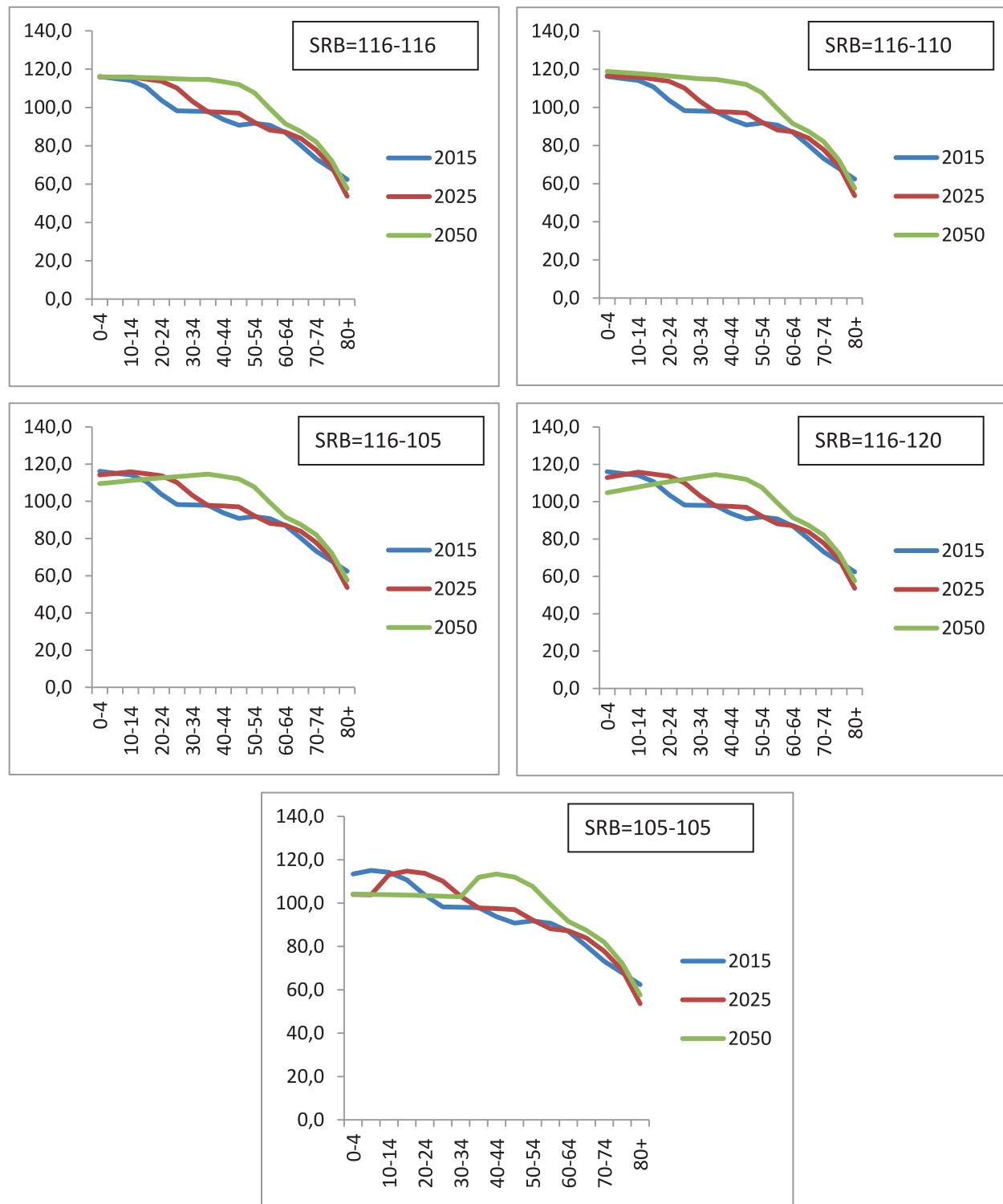


Figure 6. Age specific sex ratios of Azerbaijani population by different SRB scenarios, 2015, 2025 and 2050



6.2. Age-sex distribution

The examination of the age-sex distribution of population provides the information on the past, current and future demographic experiences of the population. The first panel (year of 2015) of Figure 4 and Figure 5 clearly shows that especially in the young age cohorts (0-4, 5-9 and 10-14) there are certain imbalances between the size of male and female population, the number of males exceeds the number of females. This appears to be a consequence of the increased sex ratio at birth during the last two decades in Azerbaijan. The second panel of the Figure 4 and Figure 5 (for the year of 2050), on the other hand, reported different demographic experiences on the basis of different SRB scenarios. The gender gap in population size in the younger age cohorts will deteriorate in the first (SRB=116-116) and the fourth (SRB=116-120) scenarios; while it will be recuperated for the other scenarios, the recuperation will be much better in the scenario 5 (SRB=105-105) which assumed the SRB would remain the same during the whole periods at the level of biological normal. According to this scenario, the number of males in the younger age cohorts will be by 13 percent higher than the number of males in the year of 2015; this will decrease to 4 percent in the year of 2050. The population pyramids given in Figure 5 apparently predict that Azerbaijan will have a stable population structure in the year of 2050 regardless of the scenarios, mainly as a result of fertility transition that the country experiencing starting from 2000s.

The level of sex ratio at birth also determines the sex ratios in further age groups, and furthermore it has an impact on the sex ratio for all population. As seen in Figure 6, the first (SRB=116-116) and the fourth (SRB=116-120) scenarios have an enhancing impact on age specific sex ratios; conversely other scenarios, especially scenario 3 (SRB=116-105) and 5 (SRB=105-105), have inhibiting effect on the age specific sex ratios. For the last scenario (SRB=105-105), it is observed a steady trend at around 100 in age specific sex ratios at younger age cohorts next following a hump with the effect of past experiences regarding with high sex ratio at birth, and then a declining trend as age cohorts become older.

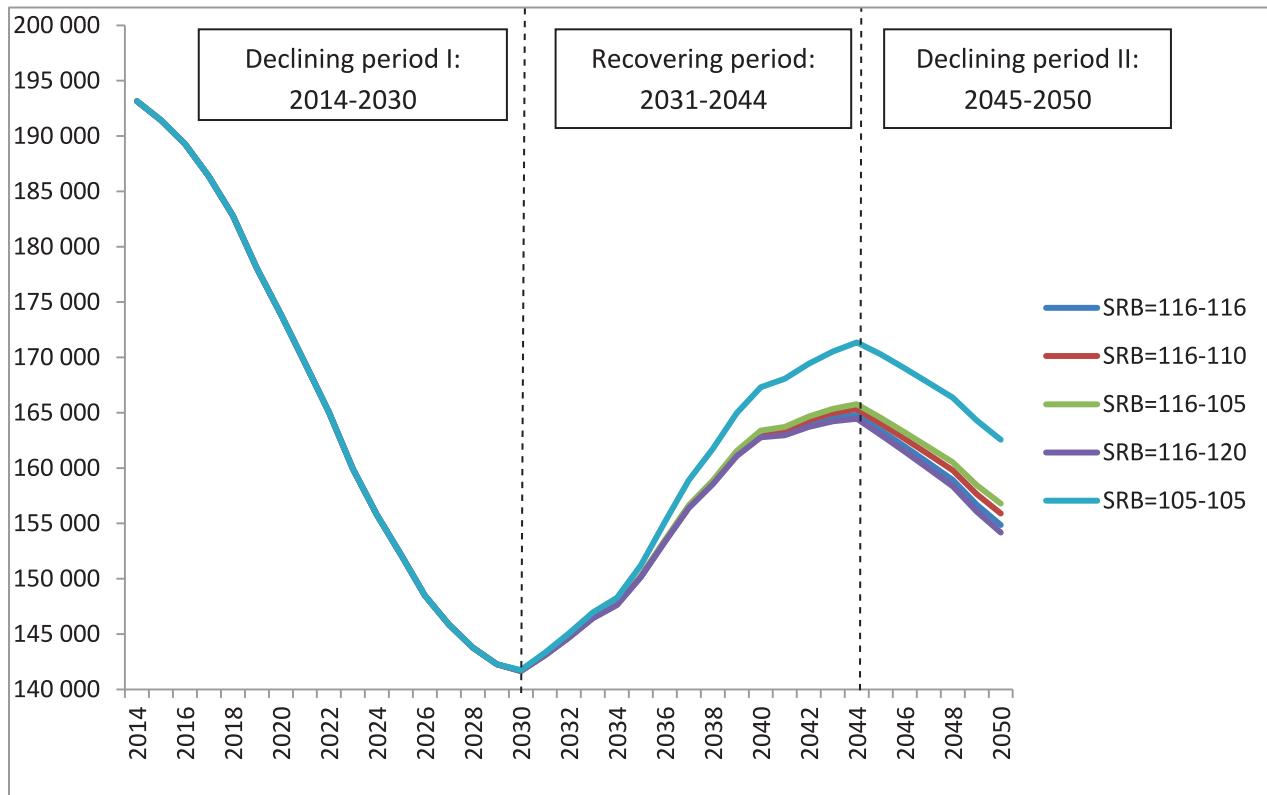
6.3. Number of births

The differentiations on the level of sex ratio at birth have important impact on the number of birth and its sex composition. This impact becomes evident in the medium term, generally after 15 years following the changes when the female babies reach the reproductive age groups. Figure 7 presents the number of babies that will be born during the prospective 35 years on the basis of different SRB scenarios in Azerbaijan. This figure can be examined under three phases. The first phase covers the period of 2014-2030. The most important feature of the first period is the substantial decline in the number of births. Since the assumed SRBs in scenarios have no impact in this period yet, the decrease should be associated with the fertility decline in the past, as well as increasing the SRB up to 116 during the last two decades. The latter factor, scaling up the SRB in the last two decades, is in the model due to the increased level of SRB that has detractive impact on the size of female cohorts, and this in turn levels down the size of the births.

In the second phase defined as recovering stage that covers the period of 2031-2044, the number of births step up for all scenarios, the increase appears to be substantial especially

for the scenario 5 (SRB=105-105) with the impact of the rising the number of females in the population, and then their entrance into the reproduction process. The lowest increase is observed in the number of births in the scenario 4 (SRB=116-120) which assumed slight growth of the SRB in the projection period. In the last period (2045-2050), a decline in the number of births is noticed in all scenarios and in the 4th one particularly. This seems to be a result of fertility decline that Azerbaijan will be experienced during the projection period.

Figure 7. Number of projected births by sex according to different SRB scenarios, 2014-2050



As Figure 8 presents, the shape of the curves for male and female births is almost identical with the curves given in Figure 7 for total number of births. The changes in the SRB during the projection period have much more impact on female births as opposed to male births. The linkage between the number of births by different SRB scenarios resembles with the principle of computational fluids. As the number of male births increases in one of the scenarios, the number of female births decreases automatically, or vice versa. The situation, especially in the scenario 5 (SRB=105-105) deserves particular attention since it is resistant to decrease the number of births substantially, and at the same time produces much more female births compared with all other scenarios. Mainly due to this characteristic, it has also crucial impact on the population age and sex structure in Azerbaijan.

Figure 8. Number of projected births by sex according to different SRB scenarios, 2014-2050

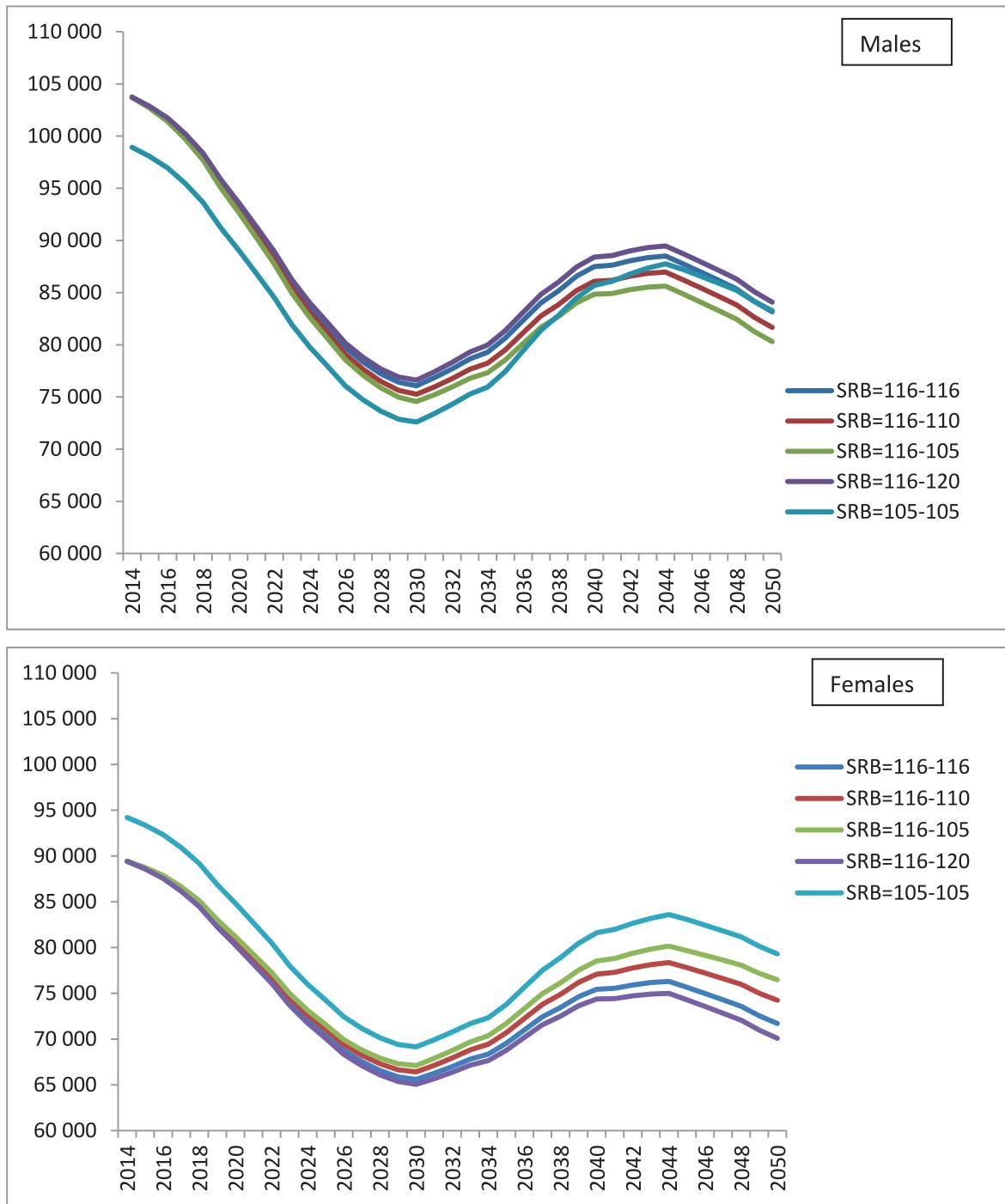
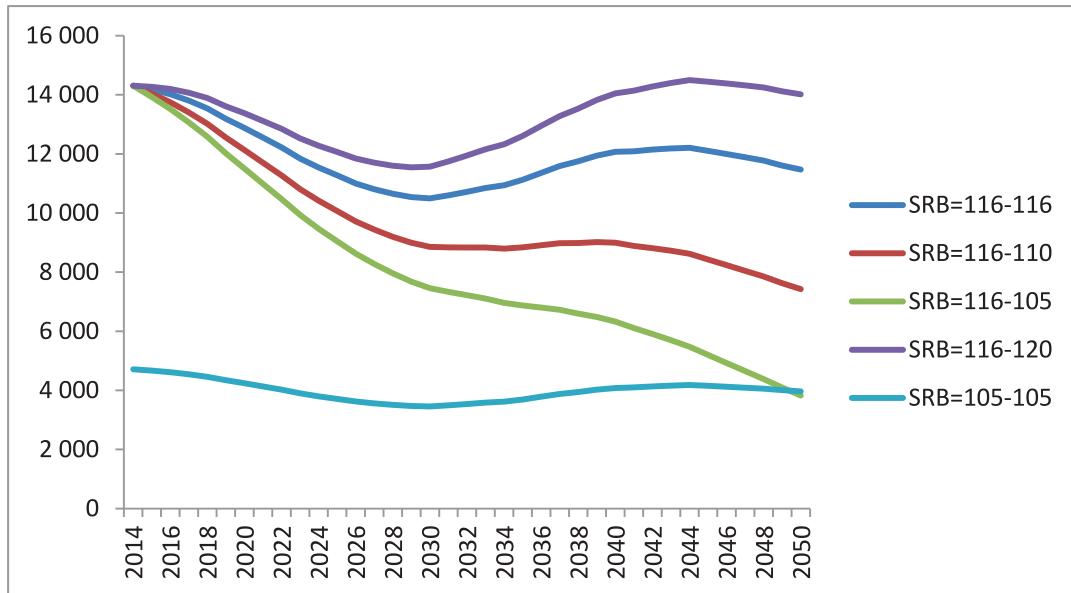


Figure 9 presents the results in respect of the excess number of male births according to different SRB scenarios. The number of excess male births remains almost at the same level (around 4,000 excess male births) in the scenario 5 (SRB-105-105), that can be easily tolerated by any population since it is originating from the biological process. However, the number of excess male births increases up to 14,000-15,000 per year in the scenario 4 (SRB=116-120) and up to 11,000-12,000 per year in the scenario 1 (SRB=116-116) during the projection period. The number of excess male births per year at this level cannot be tolerated by any of the population in the medium terms, and especially in the long terms.

Figure 9. Number of excess male births by different SRB scenarios, 2014-2050



6.4. Marriage squeeze

Skewed sex ratio at birth not only in the short term but in the medium or long term has grave consequences for the marriage market through creating a marriage squeeze. When surplus male bachelors fail to marry in a given year, they will unavoidably inflate the pool of potential grooms in the following year, and if the sex disequilibrium does not reduce rapidly, unmarried bachelors will accumulate in the “*marriage market*” and further aggravate the initial squeeze conditions. Since the marriage market is not only the function of “*cohort size*”, but also a function of “*the number of years spent unmarried*” so that the impact of skewed sex ratio at birth is manifested not only in the short term but in the medium or long terms as well. Thus the analysis related to the marriage squeeze is mainly based on the projection results for the year 2050.

Figure 10. Sex ratio at birth in prime marriage ages by different SRB scenarios, 2050

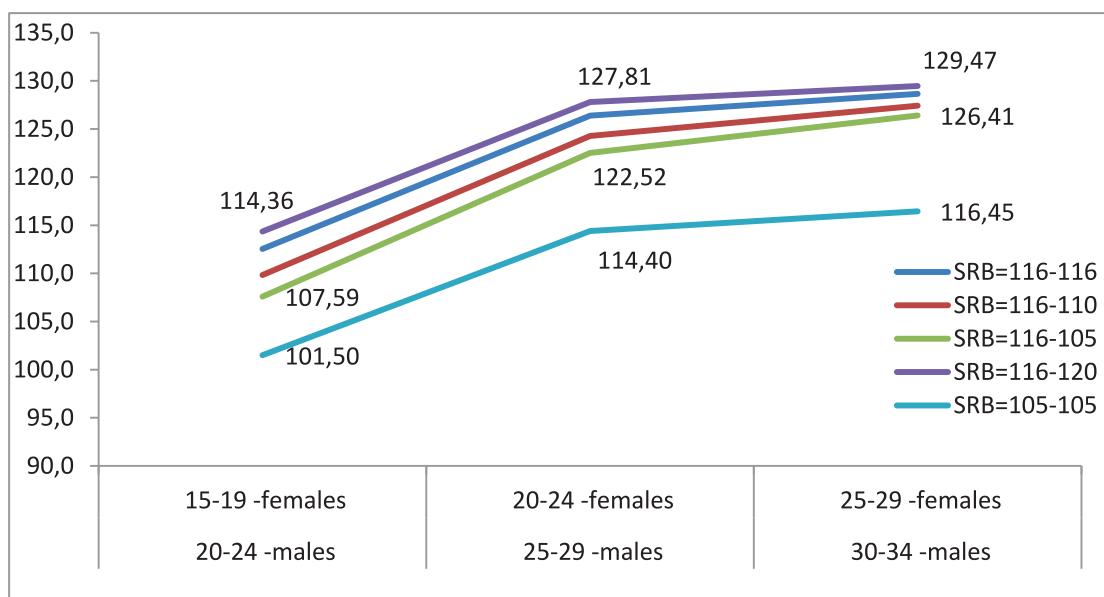


Figure 11. Number of females per 100 males in prime marriage ages by different SRB scenarios, 2050

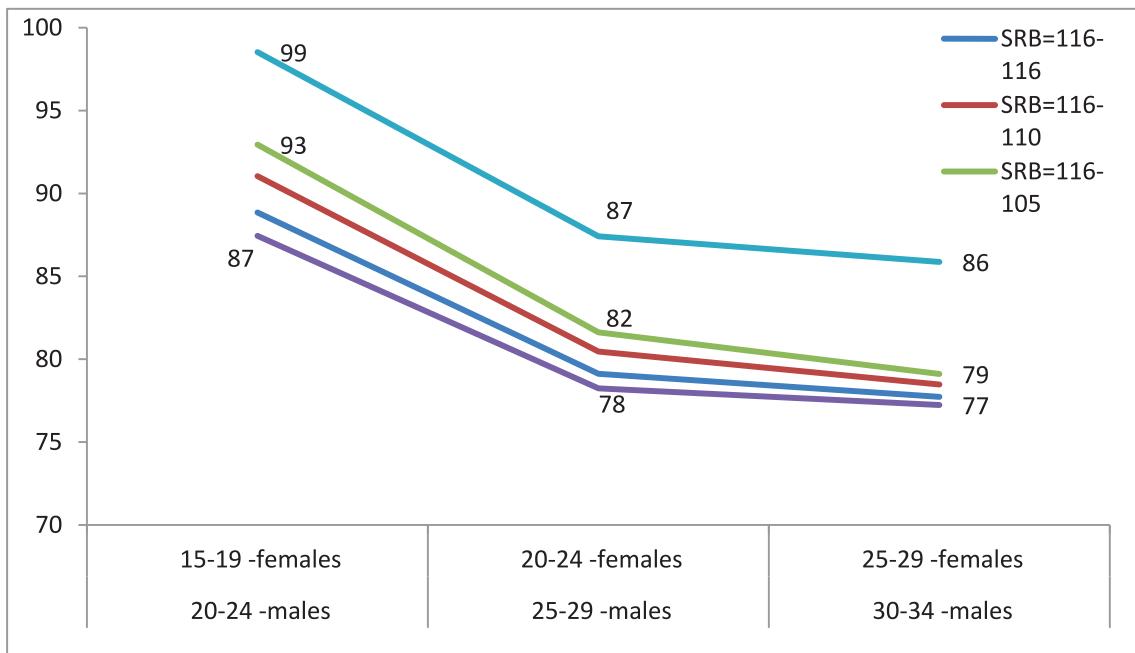


Figure 10 presents the sex ratio at birth in prime marriage ages by different SRB scenarios, considering the spousal age difference is approximately 5 years in Azerbaijan. The information obtained from SSC shows that the age gap between spouses varied between 4-5 years in the period of 1993-2013. The sex disequilibrium becomes much more evident as the age cohorts getting older, and it is the highest for scenarios 4 (SRB=116-120) and 1 (SRB=116-116). This situation is originated from both smaller cohort size of females and increased number of years spent unmarried among male cohorts. Inversely, for other scenarios the sex ratios at most common age at marriage is smaller although they escalate with the age cohorts. As expected, the lowest sex ratios are observed for the scenario 5 (SRB=105-105), that produces much more females compared with other scenarios. The indicator of the number of females per 100 males at the prime marriage ages as presented in the Figure 11 provides further evidence for possible deterioration of the marriage market in Azerbaijan. For all the scenarios, the sex disequilibrium increases with age cohorts, the most acceptable sex disequilibrium is provided by the scenario 5 (SRB=105-105). For this scenario, the number of females per 100 males is found to be 87 females in the second age cohort, while it is as lowest as 78 females for the scenario 4 (SRB=116-120). These analyses indicate that the structure of marriage market in Azerbaijan shaped by past and current demographic experiences, such as fertility decline and skewed sex ratio at birth, turned into a market in the condition of marriage squeeze. Furthermore, the persistence of skewed sex ratio at birth as putting into the model with scenarios 1 (SRB=116-116) and 4 (SRB=116-120) will aggravate the marriage market conditions, forcing the further squeezing in the marriage market. Even if SRB were to revert to normal levels immediately, 10-15 per cent of men would be forced to remain unmarried when the imbalanced birth cohorts reach marriageable age at 20-30 years. The consequences for

the marriage market will be cumulative, as men who remain unmarried remain on the market.

7. Conclusions and recommendations

This project aims to understand the impact of different levels of sex ratio at birth on age and sex structure of future population in Azerbaijan. In the study, the impact of skewed sex ratio at birth on size and structure of Azerbaijani population and marriage market were examined using the cohort component population projection methodology. Population projections, which were realized from 2014 to 2050 by using a fixed fertility, mortality and international migration schedules, based on five different sex ratios at birth scenarios. Five different scenarios of the sex ratio at birth (SRB) are:

1. Constant SRB scenario at the level of 116,
2. Slightly decreasing SRB scenario from 116 to 110,
3. Rapidly decreasing SRB scenario from 116 to 105,
4. Slightly increasing SRB scenario from 116 to 120,
5. SRB at the biological normal level scenario from 105 to 105.

Initial input data for the year of 2013 was derived from registration data of the State Statistical Committee of Azerbaijan and final input data were gathered from UN World Population Prospect estimates for Azerbaijan. The results of sex ratio at birth-specific population projections can be evaluated in terms of five topics.

Firstly, in regard with the total projected population sizes, for the year 2050, scenario 5 (SRB=105-105) produced the maximum population (12,000,145) and scenario 4 (SRB=116-120) produced the minimum population (11,908,866). Accordingly, scenario 5, which assumes sex ratio at birth will remain at biological normal, produced highest number of female population (6,024,523); scenario 4, which assumes sex ratio at birth will increase from 116 to 120, produced the lowest number of female population (5,814,954).

Secondly, results of population projections vary in terms of age and sex distribution of the population. Since starting point of all projection scenarios is the same, imbalanced size of males and females were observed especially in young age cohorts (0-4, 5-9, 10-14) for the year 2015 in all scenarios. The gender gap in population size of young age cohorts differs according to SRB assumptions of population projections. While scenarios assuming that SRB will remain at the level 116 or will increase to 120 deteriorate the sex composition in young age cohorts, other scenarios especially the scenario which assumes SRB will remain at 105 recuperates the sex composition.

Thirdly, the impact of different SRB assumptions is visible on number of births and its sex composition. Although, in the period of 2014-2030 a substantial decline in the number of births is common in all scenarios, in the following years number of births starts to increase in all scenarios, and together with the entrance of newly born generations into the reproductive ages, scenarios start to produce different number of births. Between the years of 2044-2050 number of births again starts to decline in all scenarios due to the assumption

of fertility decline. In the end of the projection period the scenario assuming SRB will remain 105 produces highest number of births (162,570) and the scenario assuming SRB will increase to 120 produces lowest number of births (154,169). Number of male and female births also differs according to SRB assumptions, number of excess male births increases up to 15,000 in the scenario assuming SRB will increase to 120.

Finally, one of the most significant impacts of skewed sex ratio at birth is related with the squeezing the marriage market for male population. Scenarios assuming higher SRB contribute more to increasing the excess male population in the marriage market, and accordingly decrease the probability to marry for the male population with females 5-years younger than the male cohorts. In terms of marriage market condition scenario assuming SRB will remain at 105 produces the most acceptable results. Increased excess male population in the marriage market observed in pessimistic scenarios may result with decreasing age at first marriage for females; this may have an increasing impact on the “*child brides*” in Azerbaijan. This would be one of the consequences of demands of males, who remained unmarried at prime marriage ages in a cumulative way, from the “*new pool of spouses*” consisted by females in the late and even early adolescent age groups (15-19 and 10-14 respectively), mainly emerged as a result of insufficient number of spouses in “*old pool of spouses*” consisted by females in the upper age groups. Another results originated from the increasing of the excess males in prime marriage ages may be the fact that Azerbaijani males may seek new marriage markets from outside of the country, and this in turn increases the marriages in the form of “*foreign brides*”.

This study has shown that the impact of past trend of skewed sex ratio on population size and structure of Azerbaijani population will be long lasting. Even in optimistic population projection scenarios, it seems that it is hard to reach an ideal sex balance for Azerbaijani population up to the mid- of this century. To prevent unfavorable results of skewed sex ratio at birth on population and marriage market, necessary policy measures should be implemented urgently.

Past trend, current situation and population projections of Azerbaijan calls for a massive advocacy campaign to sensitize the policy makers and build awareness among the population overall. This campaign should underline how skewed sex ratio at birth impacts on the population age-sex structure, number of births, sex composition of births and how squeezes the marriage market, and should emphasize on the provision of gender equality and old age security issues. Additionally, a system should be formed to monitor the trend of sex ratio at birth and the effects of measures adopted. This monitoring and evaluation system should monitor indicators such as sex ratio at birth, induced abortion rate, number of late term abortions, level of contraceptive use, women’s rate of participation in the labour force, size of population covered by gender education programmes, percentage of population covered by health insurance scheme, and the like. The efficiency of policy measures will determine which population projection scenario will be realized in Azerbaijan, optimistic or pessimistic ones.

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Appendix Table 1. Projected total, male and female populations by different SRB scenarios, 2014-2050

Years	Total						Males						Females						
	SRB=116-116	SRB=116-110	SRB=116-105	SRB=116-120	SRB=105-105	SRB=116-116	SRB=116-110	SRB=116-120	SRB=105-105	SRB=116-110	SRB=116-116	SRB=116-110	SRB=116-120	SRB=105-105	SRB=116-110	SRB=116-116	SRB=116-110	SRB=116-120	SRB=105-105
2014	9,477,119	9,477,119	9,477,119	9,477,119	9,477,119	4,713,548	4,713,548	4,713,548	4,713,548	4,713,548	4,763,571	4,763,571	4,763,571	4,763,571	4,763,571	4,763,571	4,763,571	4,763,571	4,763,571
2015	9,609,096	9,609,096	9,609,096	9,609,095	9,609,095	4,784,798	4,784,798	4,784,674	4,784,842	4,784,128	4,824,298	4,824,366	4,824,422	4,824,253	4,829,006	4,829,006	4,829,006	4,829,006	4,829,006
2016	9,737,672	9,737,673	9,737,674	9,737,671	9,737,752	4,854,408	4,854,208	4,854,040	4,854,541	4,845,131	4,883,264	4,883,465	4,883,634	4,883,130	4,892,621	4,892,621	4,892,621	4,892,621	4,892,621
2017	9,862,377	9,862,381	9,862,384	9,862,376	9,862,504	4,921,878	4,921,482	4,921,151	4,922,142	4,908,072	4,940,499	4,940,899	4,941,233	4,940,234	4,954,432	4,954,432	4,954,432	4,954,432	4,954,432
2018	9,982,954	9,982,960	9,982,965	9,982,950	9,983,126	4,987,132	4,986,479	4,985,933	4,987,566	4,968,884	4,995,822	4,996,481	4,997,032	4,995,384	5,014,242	5,014,242	5,014,242	5,014,242	5,014,242
2019	10,098,191	10,098,199	10,098,208	10,098,185	10,098,409	5,049,493	5,048,527	5,047,719	5,050,134	5,026,920	5,048,698	5,049,672	5,050,489	5,048,051	5,071,489	5,071,489	5,071,489	5,071,489	5,071,489
2020	10,208,543	10,208,556	10,208,553	10,208,535	10,208,808	5,109,189	5,107,857	5,106,739	5,110,073	5,082,394	5,059,354	5,100,699	5,101,827	5,098,462	5,126,444	5,126,444	5,126,444	5,126,444	5,126,444
2021	10,313,750	10,313,766	10,313,780	10,313,738	10,314,060	5,166,062	5,164,312	5,162,843	5,167,221	5,135,152	5,147,688	5,148,454	5,146,937	5,146,517	5,178,908	5,178,908	5,178,908	5,178,908	5,178,908
2022	10,413,384	10,413,405	10,413,423	10,413,369	10,413,738	5,219,994	5,217,779	5,215,919	5,221,459	5,185,077	5,193,390	5,195,326	5,197,504	5,191,910	5,228,661	5,228,661	5,228,661	5,228,661	5,228,661
2023	10,506,618	10,506,645	10,506,666	10,506,600	10,507,017	5,270,311	5,267,590	5,265,301	5,272,111	5,231,512	5,236,307	5,239,055	5,241,365	5,234,489	5,275,504	5,275,504	5,275,504	5,275,504	5,275,504
2024	10,594,444	10,594,477	10,594,504	10,594,424	10,594,886	5,317,661	5,314,391	5,311,638	5,319,823	5,275,082	5,276,783	5,280,086	5,282,856	5,274,601	5,319,804	5,319,804	5,319,804	5,319,804	5,319,804
2025	10,677,224	10,677,262	10,677,294	10,677,708	10,677,798	5,362,245	5,358,383	5,355,131	5,364,794	5,315,973	5,314,979	5,318,879	5,322,163	5,312,404	5,361,735	5,361,735	5,361,735	5,361,735	5,361,735
2026	10,754,627	10,754,672	10,754,710	10,754,597	10,755,154	5,403,899	5,399,408	5,395,623	5,406,861	5,354,024	5,350,728	5,355,264	5,359,087	5,347,736	5,401,130	5,401,130	5,401,130	5,401,130	5,401,130
2027	10,827,470	10,827,523	10,827,566	10,827,436	10,828,039	5,443,080	5,437,920	5,443,565	5,446,482	5,389,666	5,384,390	5,389,033	5,394,001	5,380,954	5,438,374	5,438,374	5,438,374	5,438,374	5,438,374
2028	10,895,699	10,895,758	10,895,808	10,895,660	10,896,309	5,479,929	5,474,056	5,469,096	5,483,797	5,423,026	5,415,770	5,426,712	5,441,863	5,473,284	5,473,284	5,473,284	5,473,284	5,473,284	
2029	10,959,874	10,959,941	10,959,997	10,959,830	10,960,527	5,514,637	5,508,008	5,502,404	5,518,999	5,454,282	5,445,237	5,451,933	5,457,593	5,440,831	5,506,245	5,506,245	5,506,245	5,506,245	5,506,245
2030	11,020,376	11,020,453	11,020,517	11,020,325	11,021,151	5,547,313	5,539,882	5,533,594	5,552,199	5,483,562	5,473,063	5,485,571	5,486,923	5,486,126	5,537,588	5,537,588	5,537,588	5,537,588	5,537,588
2031	11,079,282	11,079,371	11,079,447	11,079,222	11,080,329	5,579,232	5,570,940	5,563,917	5,584,679	5,512,128	5,500,050	5,508,431	5,515,530	5,494,543	5,568,201	5,568,201	5,568,201	5,568,201	5,568,201
2032	11,136,624	11,136,734	11,136,827	11,136,553	11,138,088	5,610,443	5,601,232	5,593,423	5,616,490	5,540,019	5,526,181	5,535,302	5,543,404	5,520,063	5,598,069	5,598,069	5,598,069	5,598,069	5,598,069
2033	11,192,459	11,192,595	11,192,711	11,192,370	11,194,469	5,641,005	5,630,813	5,622,165	5,647,689	5,567,284	5,551,454	5,561,782	5,570,546	5,544,681	5,627,185	5,627,185	5,627,185	5,627,185	5,627,185
2034	11,245,828	11,246,000	11,246,145	11,245,715	11,248,502	5,670,598	5,659,369	5,649,830	5,677,956	5,593,633	5,575,230	5,586,631	5,598,315	5,567,759	5,654,890	5,654,890	5,654,890	5,654,890	5,654,890
2035	11,298,371	11,298,593	11,298,780	11,298,225	11,302,127	5,699,954	5,687,622	5,677,135	5,708,026	5,619,835	5,598,417	5,610,971	5,621,645	5,590,199	5,682,272	5,682,272	5,682,272	5,682,272	5,682,272
2036	11,350,418	11,350,714	11,350,964	11,350,222	11,355,966	5,729,116	5,715,614	5,704,120	5,737,945	5,646,188	5,621,302	5,635,100	5,646,844	5,664,844	5,709,778	5,709,778	5,709,778	5,709,778	5,709,778
2037	11,402,286	11,402,691	11,403,032	11,402,020	11,410,318	5,758,422	5,743,687	5,731,127	5,768,048	5,672,943	5,643,864	5,650,004	5,671,905	5,633,972	5,737,375	5,737,375	5,737,375	5,737,375	5,737,375
2038	11,453,140	11,453,694	11,454,162	11,452,774	11,454,314	5,787,436	5,771,413	5,757,739	5,787,892	5,699,689	5,665,704	5,682,281	5,694,882	5,764,882	5,867,583	5,867,583	5,867,583	5,867,583	5,867,583
2039	11,504,498	11,504,252	11,504,886	11,503,001	11,518,459	5,816,445	5,799,079	5,784,238	5,827,765	5,726,695	5,687,053	5,705,173	5,720,648	5,675,236	5,791,301	5,791,301	5,791,301	5,791,301	5,791,301
2040	11,552,285	11,553,295	11,554,145	11,551,618	11,571,628	5,845,067	5,826,311	5,810,262	5,857,277	5,753,575	5,707,218	5,726,884	5,743,883	5,818,053	5,818,053	5,818,053	5,818,053	5,818,053	
2041	11,598,552	11,599,879	11,600,997	11,597,674	11,622,814	5,872,592	5,852,417	5,835,130	5,885,710	5,779,628	5,725,960	5,747,462	5,765,867	5,731,964	5,843,186	5,843,186	5,843,186	5,843,186	5,843,186
2042	11,642,761	11,644,476	11,645,919	11,641,627	11,672,492	5,899,084	5,877,459	5,858,901	5,913,127	5,804,909	5,743,677	5,767,017	5,787,018	5,867,583	5,867,583	5,867,583	5,867,583	5,867,583	
2043	11,685,375	11,687,553	11,689,387	11,683,936	11,721,117	5,924,940	5,901,837	5,881,981	5,939,723	5,829,817	5,760,435	5,785,716	5,807,406	5,744,013	5,891,301	5,891,301	5,891,301	5,891,301	5,891,301
2044	11,726,481	11,729,201	11,731,493	11,724,683	11,768,766	5,950,173	5,925,569	5,904,391	5,966,106	5,854,364	5,776,308	5,803,632	5,827,102	5,758,577	5,914,401	5,914,401	5,914,401	5,914,401	5,914,401
2045	11,764,718	11,768,063	11,770,880	11,762,510	11,813,869	5,974,018	5,947,911	5,925,401	5,990,901	5,877,724	5,790,700	5,820,152	5,845,479	5,771,609	5,936,145	5,936,145	5,936,145	5,936,145	5,936,145
2046	11,799,897	11,803,949	11,807,365	11,797,221	11,856,096	5,996,545	5,968,934	5,945,089	6,014,373	5,899,895	5,803,352	5,835,015	5,862,276	5,782,848	5,956,201	5,956,201	5,956,201	5,956,201	5,956,201
2047	11,832,557	11,837,404	11,841,492	11,829,361	11,895,933	6,017,792	5,988,680	5,963,496	6,036,562	5,920,939	5,841,765	5,848,724	5,877,996	5,792,799	5,975,074	5,975,074	5,975,074	5,975,074	5,975,074
2048	11,862,823	11,868,552	11,873,385	11,859,046	11,933,688	6,037,790	6,007,181	5,980,655	6,057,494	5,940,838	5,825,033	5,861,371	5,892,730	5,901,552	5,992,859	5,992,859	5,992,859	5,992,859	5,992,859
2049	11,889,674	11,896,371	11,902,025	11,885,261	11,968,138	6,035,776	6,023,684	5,995,824	6,076,402	5,958,869	5,833,898	5,872,687	5,908,2						

Appendix Table 2. Summary Demographic Indicators by Different SRB Scenarios, 2014-2050

Summary Demographic Indicators - Total		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050																																																																																					
Azerbaijan-2014-2050-S3																																																																																																																											
Fertility		2.22	2.21	2.21	2.21	2.2	2.2	2.2	2.2	2.2	2.2	2.19	2.19	2.18	2.18	2.18	2.18	2.19	2.19	2.19	2.19	2.19	2.18	2.18	2.17	2.17	2.17	2.16	2.16	2.15	2.15	2.14	2.14	2.13	2.13	2.12	2.12																																																																																						
Input TFR		2.22	2.21	2.21	2.21	2.2	2.2	2.2	2.2	2.2	2.2	2.19	2.19	2.18	2.18	2.18	2.18	2.19	2.19	2.19	2.19	2.19	2.18	2.18	2.17	2.17	2.17	2.16	2.16	2.15	2.15	2.14	2.14	2.13	2.13	2.12	2.12																																																																																						
Calculated TFR		2.22	2.21	2.21	2.21	2.2	2.2	2.2	2.2	2.2	2.2	2.19	2.19	2.18	2.18	2.18	2.18	2.19	2.19	2.19	2.19	2.19	2.18	2.18	2.17	2.17	2.17	2.16	2.16	2.15	2.15	2.14	2.14	2.13	2.13	2.12	2.12																																																																																						
GFR		1.03	1.02	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03																																																																																					
NRR		1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01																																																																																					
Mean Age of Childbearing		25.6	25.6	25.7	25.7	25.8	25.8	25.9	25.9	26	26	26.1	26.1	26.2	26.3	26.4	26.4	26.5	26.5	26.6	26.7	26.8	26.8	26.9	26.9	27	27	27	27	27	27	27	27	27	27	27	27																																																																																						
Child-Woman ratio		0.31	0.32	0.33	0.34	0.35	0.34	0.35	0.34	0.33	0.32	0.31	0.3	0.29	0.28	0.28	0.27	0.27	0.27	0.26	0.26	0.26	0.27	0.27	0.28	0.29	0.3	0.31	0.32	0.32	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.32																																																																																					
FertilityRateCustom																																																																																																																											
Mortality																																																																																																																											
Male LR		71.7	71.6	71.7	71.7	71.8	71.9	72	72.1	72.2	72.3	72.4	72.5	72.6	72.7	72.8	72.9	73	73.1	73.2	73.3	73.4	73.5	73.6	73.7	73.8	73.8	73.9	74	74.1	74.2	74.3	74.4	74.4	74.5																																																																																								
Female LE		76.9	76.9	77	77.1	77.1	77.2	77.3	77.4	77.5	77.6	77.7	77.8	77.9	78	78.1	78.2	78.3	78.4	78.5	78.6	78.7	78.8	78.9	79	79.1	79.2	79.3	79.4	79.5	79.5	79.6	79.7	79.8	79.8	79.8																																																																																							
Total LE		74.3	74.2	74.3	74.4	74.5	74.6	74.7	74.8	74.9	75	75.1	75.2	75.3	75.4	75.5	75.6	75.7	75.8	75.9	76	76.1	76.2	76.3	76.4	76.5	76.6	76.7	76.7	76.7	76.7	76.7	76.7	76.7	76.7	76.7	76.7																																																																																						
IMR		16.1	15.8	15.7	15.6	15.5	15.4	15.3	15.2	15.1	14.9	14.8	14.6	14.5	14.4	14.3	14.1	13.8	13.6	13.3	12.9	12.6	12.3	12.1	11.9	11.6	11.3	11.1	10.8	10.7	10.4	10.3	9.8	9.4	8.9	8.6	8.6																																																																																						
ISMR		18.5	18.2	18	17.9	17.6	17.3	17	16.7	16.5	16.4	16.1	15.8	15.5	15.2	15	14.8	14.6	14.3	14	13.7	13.6	13.3	13.1	12.8	12.5	12.2	12.1	11.8	11.5	11.4	11.1	10.8	10.5	10.3	10	9.9	9.6																																																																																					
Life table: Coale-Demeny/West																																																																																																																											
Vital Rates																																																																																																																											
CBRper 1000		20.4	19.9	19.4	18.9	18.3	17.6	17	16.4	15.8	15.2	14.7	14.3	13.8	13.5	13.2	13	12.9	12.7	12.4	12.1	11.9	11.7	11.5	11.3	11.1	10.9	10.7	10.5	10.3	10.1	10.3	10.4	10.5	10.6	10.7	10.8	10.9																																																																																					
CBRper 1000		6.3	6.2	6.3	6.2	6.3	6.2	6.2	6.2	6.3	6.3	6.4	6.5	6.6	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7																																																																																						
RW/G		1.41	1.37	1.36	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35																																																																																					
GRecent		1.41	1.37	1.31	1.26	1.21	1.14	1.14	1.08	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02																																																																																					
Doubling time		49.6	50.8	52.8	55.2	57	61.1	64.5	68.3	72.8	78.4	84	87	96.6	103.4	111	118.7	126.7	134.7	142.7	149.82	156.82	163.85	169.87	175.91	181.95	187.99	193.93	199.97	205.99	211.99	217.99	223.99	229.99	235.99	241.99	247.99	253.99	259.99	265.99	271.99																																																																																		
Annual births and deaths		193,443	191,422	189,388	186,351	182,809	178,055	173,881	169,507	165,043	159,918	155,765	151,719	148,487	145,882	143,780	142,270	141,673	140,062	138,092	137,005	135,918	134,730	133,447	132,062	130,677	129,292	127,897	126,492	125,097	123,692	122,287	120,882	119,487	118,082	116,682	115,282	113,882	112,482	111,082	109,682	108,282	106,882	105,482	103,982	102,582	101,182	99,782	98,382	96,982	95,582	94,182																																																																							
Births		103,725	102,675	101,406	99,710	97,684	95,035	92,691	90,247	87,760	84,977	81,267	80,612	78,556	77,079	75,803	74,976	75,213	75,961	76,736	77,255	78,565	80,138	81,677	82,738	84,016	84,855	84,916	85,382	85,531	85,681	85,831	85,981	86,131	86,281	86,431	86,581	86,730	86,880	86,930	86,980	87,030	87,080	87,130	87,180	87,230	87,280																																																																												
Males		89,418	88,447	87,882	86,641	85,115	83,20	81,089	79,260	77,284	74,991	73,148	71,567	69,931	68,303	67,510	67,290	67,294	67,108	67,879	68,743	68,691	70,367	71,644	73,334	74,553	75,753	76,139	77,533	78,808	79,333	80,765	82,165	83,565	84,965	86,365	87,765	89,165	90,565	91,965	93,365	94,765																																																																																	
Females		59,864	59,444	60,711	61,641	62,228	62,812	63,322	64,293	65,401	66,674	67,928	69,389	71,072	73,026	75,538	78,880	81,154	84,162	87,325	90,683	94,528	97,633	101,288	104,563	107,746	110,924	114,216	117,520	120,822	124,126	127,424	130,724	134,024	137,324	140,624	143,924	147,224	150,524	153,824	157,124	160,424	163,724																																																																																
Deaths		98,935	98,918	98,939	98,959	98,978	98,995	99,011	99,023	99,035	99,047	99,057	99,067	99,076	99,085	99,094	99,103	99,112	99,121	99,130	99,139	99,148	99,157	99,166	99,175	99,184	99,193	99,202	99,211	99,221	99,231	99,241	99,251	99,261	99,271	99,281	99,291	99,301	99,311	99,321	99,331	99,341	99,351	99,361	99,371	99,381	99,391	99,401	99,411	99,421	99,431	99,441	99,451	99,461	99,471	99,481	99,491	99,501	99,511	99,521	99,531	99,541	99,551	99,561	99,571	99,581	99,591	99,601	99,611	99,621	99,631	99,641	99,651	99,661	99,671	99,681	99,691	99,701	99,711	99,721	99,731	99,741	99,751	99,761	99,771	99,781	99,791	99,801	99,811	99,821	99,831	99,841	99,851	99,861	99,871	99,881	99,891	99,901	99,911	99,921	99,931	99,941	99,951	99,961	99,971	99,981	99,991	99,001	99,011	99,021	99,031	99,041	99,051	99,061	99,071	99,081	99,091	99,101	99,111	99,121	99,131	99,141	9

Summary Demographic Indicators - Total		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050																																																																																																																																																																																																																																																																														
Azerbaijan-2014-2050-54																																																																																																																																																																																																																																																																																																																				
Fertility		2.22	2.21	2.21	2.21	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2																																																																																																																																																																																																																																																																																
Input TFR		2.22	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21																																																																																																																																																																																																																																																																																		
Calculated TFR		2.22	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21																																																																																																																																																																																																																																																																																		
GFR		1.03	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01																																																																																																																																																																																																																																																																																	
NRR		1.01	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1																																																																																																																																																																																																																																																																																		
Mean Age of Childbearing		25.6	25.6	25.7	25.7	25.8	25.8	25.9	25.9	26	26.1	26.1	26.2	26.3	26.4	26.4	26.5	26.5	26.6	26.7	26.8	26.8	26.9	26.9	27	27	27	27	27	27	27	27	27	27	27																																																																																																																																																																																																																																																																																	
Child-Woman ratio		0.31	0.32	0.33	0.33	0.34	0.34	0.35	0.35	0.35	0.33	0.32	0.31	0.31	0.30	0.29	0.28	0.28	0.27	0.27	0.26	0.26	0.27	0.27	0.28	0.29	0.3	0.31	0.32	0.33	0.33	0.33	0.33	0.33	0.33	0.32																																																																																																																																																																																																																																																																																
FertilityRateCustom																																																																																																																																																																																																																																																																																																																				
Mortality																																																																																																																																																																																																																																																																																																																				
Male LR		71.7	71.6	71.7	71.7	71.8	71.9	72	72.1	72.2	72.3	72.4	72.5	72.6	72.7	72.8	72.9	73	73.1	73.2	73.3	73.4	73.5	73.6	73.7	73.8	73.9	74	74.1	74.2	74.3	74.4	74.4	74.5	74.5	74.5	74.5																																																																																																																																																																																																																																																																															
Female LE		76.9	76.9	77	77.1	77.1	77.2	77.3	77.4	77.5	77.6	77.7	77.8	77.9	78	78.1	78.2	78.3	78.4	78.5	78.6	78.7	78.8	78.9	79	79.1	79.2	79.3	79.4	79.5	79.5	79.5	79.5	79.5	79.5																																																																																																																																																																																																																																																																																	
Total LE		74.3	74.2	74.3	74.4	74.5	74.6	74.7	74.8	74.9	75	75.1	75.2	75.3	75.4	75.5	75.6	75.7	75.8	75.9	76	76.1	76.2	76.3	76.4	76.5	76.6	76.7	76.8	76.9	77	77.1																																																																																																																																																																																																																																																																																				
IMR		16.1	15.8	15.7	15.6	15.4	15.1	14.9	14.6	14.4	14.1	14.5	14.5	14.3	13.9	13.7	13.4	13.3	13	12.9	12.7	12.5	12.2	12.1	11.8	11.7	11.5	11.3	11.1	10.9	10.8	10.7	10.6	10.5	10.3	10.3	10.2	10.2																																																																																																																																																																																																																																																																														
ISMIR		18.5	18.2	18	18	17.9	17.6	17.4	17.1	16.8	16.5	16.5	16.2	15.9	15.6	15.3	15.2	14.9	14.8	14.5	14.2	13.9	13.7	13.4	13.3	13	12.7	12.5	12.3	12	11	11.3	11.1	10.8	10.6	10.3	9.9																																																																																																																																																																																																																																																																															
Life table: Coale-Demeny/West																																																																																																																																																																																																																																																																																																																				
Vital Rates																																																																																																																																																																																																																																																																																																																				
CRper 1000		20.4	19.9	19.4	18.9	18.3	17.6	17	16.4	15.8	15.2	14.7	14.3	13.8	13.5	13.2	13	12.9	12.7	13	13.1	13.3	13.5	13.7	13.8	14	14.1	14.1	14.1	14	13.9	13.7	13.4	13.1	12.9	12.7	12.5																																																																																																																																																																																																																																																																															
ORper 1000		6.3	6.2	6.2	6.3	6.2	6.2	6.2	6.3	6.3	6.4	6.5	6.6	6.6	6.7	6.7	6.7	6.7	6.7	6.7	6.8	6.8	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9																																																																																																																																																																																																																																																																													
RM		1.41	1.37	1.32	1.26	1.21	1.14	1.08	1.02	0.96	0.89	0.83	0.78	0.72	0.67	0.63	0.59	0.55	0.51	0.47	0.43	0.40	0.37	0.34	0.31	0.29	0.26	0.23	0.21	0.19	0.17	0.15	0.14	0.13	0.12	0.11	0.10	0.09	0.08																																																																																																																																																																																																																																																																													
GR percent		1.41	1.37	1.31	1.26	1.21	1.14	1.08	1.02	0.96	0.89	0.83	0.78	0.72	0.67	0.63	0.59	0.55	0.51	0.47	0.43	0.40	0.37	0.34	0.31	0.29	0.27	0.25	0.22	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2																																																																																																																																																																																																																																																																														
Doubling time		49.6	50.8	52.8	55.2	57	61.1	64.5	68.3	72.8	73.5	74	75.6	76.3	77.1	77.9	78.7	79.5	79.9	80.7	81.1	81.5	81.9	82.3	82.7	83.1	83.5	83.9	84.3	84.7	85.1	85.5	85.9	86.3	86.7	87.1	87.5	87.9	88.3																																																																																																																																																																																																																																																																													
Annual births and deaths		193,443	191,422	189,388	186,351	183,309	180,055	173,881	169,507	165,043	159,918	155,765	151,719	148,487	145,882	143,780	142,270	141,671	140,801	144,681	146,446	147,630	150,162	153,336	156,393	158,536	161,084	163,722	167,779	172,944	178,142	183,331	188,492	193,650	198,821	204,000	209,175	214,351	219,531	224,722	229,913	235,104	240,295	245,487	250,680	255,877	261,075	267,271	273,469	279,667	285,865	292,063	298,261	304,459	310,657	316,855	323,053	329,251	335,449	341,647	347,845	354,043	360,241	366,439	372,637	378,835	385,033	391,231	397,429	403,627	409,825	416,023	422,221	428,419	434,617	440,815	447,013	453,211	459,409	465,597	471,795	477,993	484,191	490,389	496,587	502,785	508,983	515,181	521,379	527,577	533,775	539,973	546,171	552,369	558,567	564,765	570,962	577,160	583,358	589,556	595,753	601,950	608,147	615,345	622,543	629,741	636,939	644,137	650,335	656,533	662,731	668,929	675,127	681,325	687,523	693,721	699,919	706,117	712,314	718,511	724,708	730,895	737,082	743,279	749,476	755,673	761,870	768,067	774,264	780,461	786,658	792,855	799,052	805,250	811,447	817,644	823,841	829,038	835,235	841,432	847,629	853,826	859,023	865,220	871,417	877,614	883,811	889,008	895,195	901,382	907,579	913,776	919,973	926,170	932,367	938,564	944,761	950,958	957,155	963,352	970,549	977,746	984,943	992,140	999,337	1006,524	1013,711	1020,900	1028,087	1035,274	1042,461	1049,648	1056,845	1064,042	1071,239	1078,436	1085,633	1092,830	1099,027	1106,224	1113,421	1120,618	1127,815	1135,012	1142,209	1150,406	1157,603	1164,799	1171,995	1179,191	1186,387	1193,583	1199,780	1205,977	1212,174	1218,371	1224,568	1230,765	1236,962	1243,159	1250,356	1257,553	1264,750	1271,947	1279,144	1286,341	1293,538	1300,735	1307,932	1315,129	1322,326	1329,523	1336,720	1343,917	1351,114	1358,311	1365,508	1372,705	1379,902	1387,100	1394,297	1401,494	1408,691	1415,888	1423,085	1430,282	1437,479	1444,676	1451,873	1459,070	1466,267	1473,464	1480,661	1487,858	1495,055	1502,252	1509,449	1516,646	1523,843	1531,040	1538,237	1545,434	1552,631	1559,828	1567,025	1574,222	1581,419	1588,616	1595,813	1603,010	1610,207	1617,404	1624,591	1631,788	1638,985	1646,182	1653,379	1660,576	1667,773	1674,970	1682,167	1689,364	1696,561	1703,758	1710,951	1718,148	1725,341	1732,534	1739,727	1746,920	1754,113	1761,306	1768,499	1775,692	1782,885	1789,078	1796,271	1803,464	1810,657	1817,849	1825,042	1832,235	1839,428	1846,621	1853,814	1861,007	1868,199	1875,392	1882,585	1890,778	1900,971	1909,164	1918,357	1927,549	1936,742	1945,935	1955,128	1964,321	1973,514	1982,707	1991,899	2000,992	2009,185	2018,278	2027,371	2036,464	2045,557	205

Summary Demographic Indicators - Total		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050																																																																																																																																																																																																																																																							
Azerbaijan-2014-2050-55																																																																																																																																																																																																																																																																																													
Fertility		2.22	2.21	2.21	2.21	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2																																																																																																																																																																																																																																																									
Input TFR		2.22	2.21	2.21	2.21	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2																																																																																																																																																																																																																																																									
Calculated TFR		2.22	2.21	2.21	2.21	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2																																																																																																																																																																																																																																																									
GFR		1.08	1.08	1.08	1.08	1.08	1.08	1.07	1.07	1.07	1.07	1.07	1.07	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06																																																																																																																																																																																																																																																										
NRR		1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05																																																																																																																																																																																																																																																										
Mean Age of Childbearing		25.6	25.6	25.6	25.7	25.7	25.8	25.8	25.9	25.9	26	26	26	26.1	26.1	26.2	26.2	26.3	26.4	26.4	26.5	26.5	26.6	26.7	26.8	26.8	26.9	26.9	27	27	27	27	27	27																																																																																																																																																																																																																																																											
Child-Woman ratio		0.31	0.32	0.33	0.34	0.34	0.35	0.34	0.35	0.34	0.33	0.33	0.32	0.31	0.31	0.30	0.29	0.28	0.28	0.27	0.27	0.27	0.26	0.26	0.26	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25																																																																																																																																																																																																																																																										
Fertility rate,Custom																																																																																																																																																																																																																																																																																													
Mortality																																																																																																																																																																																																																																																																																													
Male LR		7.17	7.16	7.17	7.17	7.18	7.19	7.2	7.21	7.22	7.22	7.23	7.24	7.25	7.26	7.27	7.28	7.29	7.3	7.31	7.32	7.33	7.34	7.35	7.36	7.37	7.38	7.38	7.39	7.4	7.41	7.42	7.43	7.44	7.45	7.46																																																																																																																																																																																																																																																									
Female LR		7.69	7.69	7.69	7.7	7.71	7.71	7.72	7.73	7.73	7.74	7.75	7.75	7.76	7.77	7.78	7.79	7.79	7.8	7.82	7.83	7.84	7.84	7.85	7.86	7.87	7.87	7.87	7.87	7.87	7.87	7.87	7.87	7.87	7.87	7.87	7.87																																																																																																																																																																																																																																																								
Total LR		7.43	7.42	7.43	7.43	7.44	7.45	7.46	7.47	7.48	7.48	7.49	7.50	7.51	7.51	7.52	7.53	7.54	7.54	7.55	7.55	7.56	7.57	7.58	7.59	7.60	7.60	7.60	7.60	7.60	7.60	7.60	7.60	7.60	7.60																																																																																																																																																																																																																																																										
IMR		15.8	15.6	15.5	15.4	15.4	14.9	14.6	14.4	14.3	14.2	13.9	13.7	13.4	13.2	13	12.8	12.7	12.5	12.2	12	11.8	11.6	11.5	11.2	11	10.8	10.6	10.3	10	9.8	9.5	9.4	9.2	8.9	8.6																																																																																																																																																																																																																																																									
U5MR		18.2	18	17.8	17.8	17.7	17.4	17.1	16.8	17.1	17.1	16.5	16.3	16.2	15.9	15.6	15.4	15.1	14.9	14.6	14.5	14.2	13.9	13.6	13.5	13.2	13	12.7	12.5	12.2	12	11.7	11.5	11.3	11	10.7	10.3	10	9.9	9.6																																																																																																																																																																																																																																																					
<i>Life-table-Cette-Benney/West</i>																																																																																																																																																																																																																																																																																													
Violates		20.4	19.9	19.4	18.9	18.3	17.6	17	16.4	15.8	15.2	14.7	14.3	13.8	13.5	13.2	13	12.9	13	13.1	13.2	13.3	13.4	13.7	13.9	14.1	14.3	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5																																																																																																																																																																																																																																																								
CBR per 1000		63	62	62	62	62	62	62	62	62	63	63	63	64	64	65	66	66	67	67	67	67	67	67	68	68	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69																																																																																																																																																																																																																																																			
CBR per 1000		14.1	13.7	13.2	12.6	12.1	11.4	10.8	10.2	9.6	9.0	8.3	7.8	7.2	6.7	6.2	5.7	5.3	5.0	4.7	4.3	4.0	3.7	3.4	3.1	2.8	2.5	2.2	1.9	1.6	1.3	1.0	0.7	0.4	0.2	0.1	0.0																																																																																																																																																																																																																																																								
RW percent		1.41	1.37	1.32	1.26	1.21	1.14	1.08	1.02	0.96	0.90	0.83	0.78	0.72	0.67	0.63	0.59	0.55	0.53	0.52	0.5	0.48	0.45	0.42	0.39	0.36	0.33	0.30	0.27	0.24	0.21	0.18	0.15	0.12	0.09	0.06	0.03	0.01	0.00	0.00																																																																																																																																																																																																																																																					
GR percent		1.41	1.37	1.32	1.26	1.21	1.14	1.08	1.02	0.96	0.90	0.83	0.78	0.72	0.67	0.63	0.59	0.55	0.53	0.52	0.5	0.48	0.45	0.42	0.39	0.36	0.33	0.30	0.27	0.24	0.21	0.18	0.15	0.12	0.09	0.06	0.03	0.01	0.00																																																																																																																																																																																																																																																						
Doubling time		49.6	50.8	52.8	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1																																																																																																																																																																																																																																																							
Annual births and deaths		193,443	191,422	189,388	186,351	182,899	178,055	173,881	169,507	165,043	159,918	155,765	151,719	148,487	143,882	143,780	142,270	141,751	141,335	140,060	140,933	140,755	140,639	140,539	140,439	140,349	140,260	140,171	140,089	140,009	139,930	139,850	139,770	139,690	139,610	139,530	139,450	139,370	139,290	139,210	139,130	139,050	138,970	138,890	138,810	138,730	138,650	138,570	138,490	138,410	138,330	138,250	138,170	138,090	137,990	137,890	137,790	137,690	137,590	137,490	137,390	137,290	137,190	137,090	136,990	136,890	136,790	136,690	136,590	136,490	136,390	136,290	136,190	136,090	135,990	135,890	135,790	135,690	135,590	135,490	135,390	135,290	135,190	135,090	134,990	134,890	134,790	134,690	134,590	134,490	134,390	134,290	134,190	134,090	133,990	133,890	133,790	133,690	133,590	133,490	133,390	133,290	133,190	133,090	132,990	132,890	132,790	132,690	132,590	132,490	132,390	132,290	132,190	132,090	131,990	131,890	131,790	131,690	131,590	131,490	131,390	131,290	131,190	131,090	130,990	130,890	130,790	130,690	130,590	130,490	130,390	130,290	130,190	130,090	129,990	129,890	129,790	129,690	129,590	129,490	129,390	129,290	129,190	129,090	128,990	128,890	128,790	128,690	128,590	128,490	128,390	128,290	128,190	128,090	127,990	127,890	127,790	127,690	127,590	127,490	127,390	127,290	127,190	127,090	126,990	126,890	126,790	126,690	126,590	126,490	126,390	126,290	126,190	126,090	125,990	125,890	125,790	125,690	125,590	125,490	125,390	125,290	125,190	125,090	124,990	124,890	124,790	124,690	124,590	124,490	124,390	124,290	124,190	124,090	123,990	123,890	123,790	123,690	123,590	123,490	123,390	123,290	123,190	123,090	122,990	122,890	122,790	122,690	122,590	122,490	122,390	122,290	122,190	122,090	121,990	121,890	121,790	121,690	121,590	121,490	121,390	121,290	121,190	121,090	120,990	120,890	120,790	120,690	120,590	120,490	120,390	120,290	120,190	120,090	119,990	119,890	119,790	119,690	119,590	119,490	119,390	119,290	119,190	119,090	118,990	118,890	118,790	118,690	118,590	118,490	118,390	118,290	118,190	118,090	117,990	117,890	117,790	117,690	117,590	117,490	117,390	117,290	117,190	117,090	116,990	116,890	116,790	116,690	116,590	116,490	116,390	116,290	116,190	116,090	115,990	115,890	115,790	115,690	115,590	115,490	115,390	115,290	115,190	115,090	114,990</td